

Susanne Calabrese, Matt Hulse,  
Zachary Biech (lawyers) and Jasen  
Erbežnik (student-at-law)  
1810, 801 – 6 Avenue SW  
Calgary, Alberta T2P 3W2  
Tel: (403) 705-0202  
Fax: (403) 452-6574  
Email: [scalabrese@ecojustice.ca](mailto:scalabrese@ecojustice.ca),  
[zbiech@ecojustice.ca](mailto:zbiech@ecojustice.ca),  
[mhulse@ecojustice.ca](mailto:mhulse@ecojustice.ca),  
[jerbeznik@ecojustice.ca](mailto:jerbeznik@ecojustice.ca)

File No: 2203

March 28, 2025

*Sent via E-mail*

Regulatory Applications  
Alberta Energy Regulator  
Suite 1000, 250 – 5 Street SW  
Calgary, Alberta T2P 0R4  
Fax: 403-297-7336  
Email: [SOC@aer.ca](mailto:SOC@aer.ca)

Cc:  
Suncor Energy Operating Inc.  
150- 6th Avenue SW  
Calgary, AB T2P 3E3  
Attention: Cher Jacobs, Manager Fort Hills Approvals and Projects  
Telephone: 368-995-7931  
E-mail: [chejacobs@suncor.com](mailto:chejacobs@suncor.com)

To Whom This May Concern:

**Re: Statement of Concern regarding Suncor’s Fort Hills Renewal Applications,  
Nos. 024-00151469, 028-00151636 and 015-00190012**

---

Please accept the following statement of concern, submitted on behalf of Barbara Faichney, a member of Fort McKay First Nation, and a lifelong resident of the Fort McKay area. The statement of concern relates to the integrated renewal application (“Application”) by Suncor Energy Operating Inc. (“Suncor”) on behalf of the Fort Hills Energy Corporation for the renewal of the following *Environmental Protection and Enhancement Act* (EPEA) approval and *Water*

*Act* approvals and licences for the Fort Hills Oil Sands Processing Plant and Mine (the “Mine” or “Fort Hills”):

- Approval No. 00151469-01-00, as amended, under EPEA;
- Approval No. 00151636-01-00, as amended, under the *Water Act*; and
- Water Diversion Licence No. 00190012-01-00, as amended under the *Water Act* (together, the “Application”).

The Mine is located approximately 90 km north of Fort McMurray, Alberta, and about 500 km northeast of Edmonton. The Mine is contained within Townships 96, 097 and 098 and Ranges 09, 10 and 11, W4M.

Ms. Faichney respectfully requests that the Alberta Energy Regulator (“AER”) conduct a hearing pursuant to s. 34(2) of the *Responsible Energy Development Act* (“REDA”) to more fully consider the issues in the Application.

## Table of Contents

<b>I</b>	<b>Introduction .....</b>	<b>1</b>
<b>II</b>	<b>The Application Directly and Adversely Affects Ms. Barbara Faichney .....</b>	<b>2</b>
<b>III</b>	<b>Required Information is Missing from the Application.....</b>	<b>5</b>
<b>A.</b>	<b><i>Information Requirements for the Application .....</i></b>	<b>5</b>
<b>B.</b>	<b><i>Failure to provide the information required by EPEA and the EPEA Guide.....</i></b>	<b>6</b>
<b>C.</b>	<b><i>Failure to Address Relevant Contraventions .....</i></b>	<b>8</b>
<b>IV</b>	<b>Technical Review of the Application and Recommendations from Mandy Olsgard .....</b>	<b>10</b>
<b>A.</b>	<b><i>Expert Qualifications.....</i></b>	<b>11</b>
<b>B.</b>	<b><i>Findings in Olsgard Report .....</i></b>	<b>11</b>
<b>C.</b>	<b><i>Technical Recommendations from Olsgard Report .....</i></b>	<b>12</b>
<b>V</b>	<b>Destruction of McClelland Lake Causes Unacceptable Ecological Destruction and Fire Risk.....</b>	<b>17</b>
<b>A.</b>	<b>The Operational Plan fails to adequately protect the unmined portion of MLWC .</b>	<b>18</b>
<b>1.</b>	<b><i>The Application does not address the Operational Plan’s deficiencies .....</i></b>	<b>19</b>
<b>B.</b>	<b>Suncor is Causing an Unacceptable Fire Risk .....</b>	<b>20</b>
<b>1.</b>	<b><i>Expert Qualifications.....</i></b>	<b>20</b>
<b>2.</b>	<b><i>Summary of the Wilkinson Report on Fire Risk .....</i></b>	<b>20</b>
<b>3.</b>	<b><i>Recommendations from the Wilkinson Report.....</i></b>	<b>25</b>
<b>VI</b>	<b>Failure to Consider Cumulative Effects Due to Inadequacy of the Lower Athabasca Regional Plan and its frameworks.....</b>	<b>26</b>
<b>A.</b>	<b>LARP directly and adversely affects Indigenous communities .....</b>	<b>26</b>
<b>B.</b>	<b>Inadequacy of the Surface Water Quantity Management Framework.....</b>	<b>27</b>
<b>C.</b>	<b>Failure of Alberta to complete a Biodiversity Management Plan .....</b>	<b>27</b>
<b>VII</b>	<b>Conclusion and Outcome Sought .....</b>	<b>28</b>

## I Introduction

Barbara Faichney is a person “directly and adversely affected” by the Application. Ms. Faichney is an active and long-time user of the land in the McClelland Lake area. As discussed below, the Application and the Mine’s expanded work plan will affect Ms. Faichney’s ability to access and to use the McClelland Lake area. As a member of the Fort McKay First Nation, which is a signatory to Treaty 8, Ms. Faichney holds rights under the Treaty 8. The Application will impede her ability to hunt, trap, fish, and access safe drinking water - generally interfering with her preferred means of exercising her Treaty rights.

In support of this Statement of Concern, Ms. Faichney provides analysis of the deficiencies in the Application and submits two expert reports.

First, Environmental Toxicologist, Mandy Olsgard, M.Sc, P. Biol., reviewed the Application submitted by Suncor and found many troubling gaps in the monitoring and mitigation planning in the proposed permit renewals. Ms. Olsgard’s analysis indicates that Suncor has failed to provide an adequate assessment of the current environmental setting and the project’s environmental influences, contrary to requirements in the *EPEA Guide to Content for Energy Project Applications* (the “EPEA Guide”).<sup>1</sup> Moreover, the observational data shows that the Mine is in violation of its current permit conditions and is causing measurable environmental impacts as conditions are deteriorating. Because of this, the AER must either reject the Application or carefully reconsider the approval conditions granted to the Mine, including any expansion plans into delicate and complex ecosystems, such as McClelland Lake Wetland Complex (MLWC).

Second, fire expert, Dr. Sophie Wilkinson, reviewed the Operational Plan that was submitted by Suncor on December 15, 2021 and was approved by the AER. She found that mining in the MLWC could cause an unacceptable risk of fire that was not addressed in Suncor’s Application. Not only does the Application fail to address the ecological impacts and conditions that have been identified with the Operational Plan to mine the MLWC – but the Operational Plan could

---

<sup>1</sup> Alberta Energy Regulator (2014) *Environmental Protection and Enhancement Act – Guide to Content for Energy Project Applications*, accessed [online](#) [EPEA Guide].

cause a catastrophic peat fire that burns longer, is more toxic, is more difficult to extinguish than forest fire, and would create smoke that could endanger urban centers. This increased risk of fire was not addressed anywhere in the Application.

For these reasons, we respectfully request that the AER reject Suncor's Application. In the alternative, Ms. Faichney requests that the AER implement the permit conditions recommended below. If these recommendations are not adopted in their entirety, Ms. Faichney requires an opportunity to be heard before this tribunal.

## **II The Application Directly and Adversely Affects Ms. Barbara Faichney**

Barbara Faichney is a member of Fort McKay First Nation and is a lifelong resident of the Fort McKay area. There are several ongoing impacts from Fort Hills which would continue and expand if the Application is approved, and which directly and adversely affect Ms. Faichney.

In 1899, the predecessors to Fort McKay First Nation signed Treaty 8 with the Crown. Treaty 8 guarantees the rights of signatories to hunt, trap, and fish, and carry out their traditional way of life. As a member of Fort McKay First Nation, Ms. Faichney enjoys the rights protected by Treaty 8.

Ms. Faichney has trapped, hunted, and used the land and waterways for most of her life in the area between the Firebag river and Bitumont, including McClelland Lake and the MLWC. Ms. Faichney continues to regularly access and use the lands and waterways between the Firebag river and Bitumont, including on her family's Registered Fur Management Area. The area between the Firebag river and Bitumont is where Ms. Faichney was raised, where she learned her community's culture, where she formed relationships with her family, and where she feels truly at home. The McClelland Lake area and Ms. Faichney's use of the area are critical for Ms. Faichney's health, livelihood, spirituality, connection to culture, and ability to transmit that culture to her children and grandchildren. As an elder member of her family, Ms. Faichney also has traditional responsibilities to steward the McClelland Lake area and to enable her family's continued use and enjoyment of the area. It is also essential for her and her family's ability to exercise their Treaty rights. The impacts to the McClelland Lake area detailed in the Application would therefore directly and adversely affect Ms. Faichney.

In Ms. Faichney's experience, Fort Hills has already resulted in significant safety impacts to her land use, particularly due to the increased number of roads, traffic, work camps, gates and locks, and heavy equipment in the area. The project activities outlined in the Application, including the mining in the McClelland Lake area, would exacerbate these impacts, because they would require construction of new roads and infrastructure, and would lead to an increase in the amount of heavy equipment and machinery in the McClelland Lake area. Such construction activities and heavy equipment pose significant danger to her traditional use of the land. The Application would result in increased vehicle traffic, which would in turn pose additional dangers to Ms. Faichney. The Application would also result in increased numbers of workers and work camps, increased amounts of trash, increased risk of human-caused fires, and increased risk to wildfire, as discussed below. Even the availability of safe drinking water in the McClelland Lake area will likely suffer increased pressures from the Application. Ms. Faichney already lost the ability to make bottles for her children and grandchildren using the water from McClelland Lake since the beginning of major mining operations in the tar sands. The project's continuation as proposed in the Application will likely prolong this problem. All of these heightened risks will impact Ms. Faichney's safety and ability to use the McClelland Lake area, and will hinder her preferred means of exercising her Treaty rights.

The project activities detailed in the Application would also increase human presence in the McClelland Lake area and would therefore exacerbate human-caused pressures on wildlife and Ms. Faichney's ability to safely access and use the McClelland Lake area. The noise and disruption which will result from the activities proposed in the Application will exacerbate Fort Hills' disruption of the habitat and food sources of many local species. The increased road traffic which the Application entails would also pose higher risk of wildlife-vehicle collisions. As the Fort Hills project drives away prey species, predator species will also leave to find other food sources. This issue is already significant, as demonstrated by the recent increase in starving bears entering residential areas in Fort McKay out of desperation. These starving bears pose significant danger to Ms. Faichney and her community, and the issue extends to bears in the McClelland Lake area where Ms. Faichney uses the land. In Ms. Faichney's experience, encounters with bears while out on the land have become increasingly dangerous, as the bears have become

significantly more aggressive recently due to pressures they face from Fort Hills. Ms. Faichney and her family's ability to hunt will also come with higher risk, as the Application will increase the presence of project personnel in the area with insufficient hunting safety training. Project personnel with insufficient safety training have already interfered with Ms. Faichney and her family's ability to hunt safely several times, and the Application is likely to exacerbate the problem. The increase in wildfire risk, both from human-ignited fires and from the project's ecological impacts on the McClelland Lake area's wildfire resilience, are also of great concern for Ms. Faichney. In addition to the immediate physical danger which such wildfires pose, they could also compound in a negative feedback loop of ecosystem degradation, which will harm Ms. Faichney's ability to use the McClelland Lake area in the longer term.

Furthermore, the Application's implications for the McClelland Lake area's ecosystem would have direct physical impacts on Ms. Faichney's land use activities, thereby adversely affecting her livelihood and her ability to exercise her Treaty rights. The Application's implications for tree health and tree removal will directly impact Ms. Faichney and her family's ability to trap rabbits and squirrels, as rabbit and squirrel snares must be set in trees and would be useless without trees. The Application's implications for water levels within and beyond the MLWC will also directly impact Ms. Faichney and her family's ability to trap beavers, as beaver traps must be set in a certain level of water and would be rendered useless if that water level is not achieved. Ms. Faichney and her family's ability to make a livelihood from trapping already faces pressure from the current stress in the market for furs, and the impacts resulting from the Application on Ms. Faichney and her family's ability to trap will exacerbate this pressure.

The cumulative impacts of Fort Hills to date, combined with the impacts proposed in the Application, will also cause long-term changes and disruptions to the McClelland Lake area which will impair Ms. Faichney's ability to transmit her knowledge and culture to her descendants.

For all these reasons, Ms. Faichney is a "directly and adversely affected" person entitled to submit this statement of concern and be heard by the AER under the provisions of EPEA and the *Water Act*.

### III Required Information is Missing from the Application

The Application fails to provide the information required by the EPEA Guide or follow the supplemental guidance in *Manual 025: Applications Under the Water Conservation Policy for Upstream Oil and Gas*<sup>2</sup> (“Manual 025”).

The EPEA Guide assists applicants in fulfilling application requirements under *EPEA* and its regulations.<sup>3</sup> It sets mandatory requirements for an application’s content.<sup>4</sup> *EPEA’s Approvals and Registrations Procedure Regulation* (the “Approvals Regulation”) stipulates that applications to the Director must include information required by a guideline.<sup>5</sup> The Director cannot review an application to make a decision on the application until it is complete.<sup>6</sup> The Director must notify the applicant if the application is incomplete, and may reject the application if the applicant does not provide the necessary information within a reasonable time.<sup>7</sup>

The following sections highlight these information requirements and information gaps in the Application, and make recommendations for the revision of the Application and Fort Hills’ EPEA Approval to permit a more comprehensive assessment of the Application and its impacts on the MLWC.

#### A. Information Requirements for the Application

In exercising its responsibilities under EPEA, the AER must fulfill the purposes set out in EPEA and its regulations, which include the Approvals Regulation.

The Approvals Regulation states that the purpose and scope of the review of EPEA applications is “to determine whether the impact on the environment of the activity, the change to the activity or the amendment, addition or deletion of a term or condition of an approval is in accordance with the Act and the regulations made under the Act.”<sup>8</sup> The Approvals Regulation also stipulates

---

<sup>2</sup> Alberta Energy Regulator (2022) *Manual 025: Applications Under the Water Conservation Policy for Upstream Oil and Gas*, accessed [online](#) [Manual 025].

<sup>3</sup> EPEA Guide at 3.

<sup>4</sup> EPEA Guide at 8.

<sup>5</sup> *Approvals and Registrations Procedure Regulation*, [Alta Reg 113/1993](#), s 3(1)(s) [*Approvals Regulation*].

<sup>6</sup> *Approvals Regulation*, s 4(1).

<sup>7</sup> *Approvals Regulation*, s 4(2), 4(3).

<sup>8</sup> *Approvals Regulation*, s 6(1).



the information that proponents must provide in an application for an EPEA approval, including the renewal of an approval.<sup>9</sup> This information includes:

- (h) a list of substances, the sources of the substances and the amount of each substance that will be released into the environment as a result of the activity, the change to the activity or the amendment, addition or deletion, as the case may be, the method by which the substances will be released and the steps taken to reduce the amount of the substances released; (...)
- (k) the justification for the release of substances into the environment as a result of the activity, the change to the activity or the amendment, addition or deletion, as the case may be;
- (l) the measures that will be implemented to minimize the amount of waste produced, including a list of the wastes that will or may be produced, the quantities and the method of final disposition of them; [and] ...
- (s) any other information required by the Director, including information that is addressed in a standard, code of practice or guideline in respect of the activity that is published or adopted by the Department.<sup>10</sup>

The AER has published the EPEA Guide to supplement the Approvals Regulation and provide further clarity on information requirements in an application. Suncor must provide the information specified in the EPEA Guide under the Approvals Regulation. If the AER receives an incomplete application, it is required to “notify the applicant in writing and request the information necessary to make the application complete.”<sup>11</sup> EPEA also authorizes the AER to require Suncor to submit any additional information that the Director considers necessary<sup>12</sup> and to impose any terms and conditions on an approval, which “may be more stringent, but may not be less stringent, than applicable terms and conditions provided for in the regulations.”<sup>13</sup>

### ***B. Failure to provide the information required by EPEA and the EPEA Guide***

The EPEA Guide states that information submitted in a renewal application is intended to, *inter alia*, “assess changes in the nature or magnitude of potential risks to achieving environmental outcomes and of contributing to potential environmental adverse effects in the area of the activity.”<sup>14</sup>

---

<sup>9</sup> *Approvals Regulation*, s1(b)(i); *Environmental Protection and Enhancement Act*, [RSA 2000, c E-12](#), s 1(f) [EPEA].

<sup>10</sup> *Approvals Regulation*, s 3(1).

<sup>11</sup> *Approvals Regulation*, s 4(2).

<sup>12</sup> EPEA, s 66(2).

<sup>13</sup> EPEA, s 68(3).

<sup>14</sup> EPEA Guide at 36.

Section 12 of the EPEA Guide asks the proponent the following questions:

- What is the setting for the activity and what has changed in the setting?
- What environmental risks must be addressed and have they changed?
- What environmental objectives must be achieved and have they changed?<sup>15</sup>

It also notes that the information provided in the section 12 assessment will:

- ensure that the proponent is considering the broader implications of the activity in the area throughout its full life cycle;
- inform the nature of current and future environmental issues in the area;
- identify and assess the consequence of other existing and emerging influences and environmental pressures to environmental conditions in the area, such as other activities and land or water uses.<sup>16</sup>

The following information requirements in section 12 are particularly relevant:

- 12.1 For this section, update the current setting and environmental conditions description, and also assess the facility's contributions to the influences (effects) in the area, highlighting changes over the past approval period.
- 12.2 Describe the current setting and any changes to features of the local and regional landscape, drainage and surface watercourses, and groundwater. Identify and highlight any changes in land use and zoning for the site and adjacent lands, since the last approval period.
- 12.3 Describe the current ambient air quality and identify influences and environmental pressures within a 5-kilometre radius of the site, and assess any changes over the last approval period. Include:
  - topography and elevation;
  - any collected ambient air environmental monitoring data at or near the site and its collection location;
  - the various environmental influences, effects and trends; and
  - all constraints and limiting factors in the receiving environment.

Further, section 12 also says “[f]or all requested descriptions, pertinent data and analysed information must be supplied electronically along with referenced sources.”<sup>17</sup>

As set out below in the expert report of Mandy Olsgard, Suncor's Application does not meet the information requirements set out in the EPEA Guide and Manual 025. As a result, Suncor's Application should be rejected. The AER must obtain further information from Suncor that

---

<sup>15</sup> EPEA Guide at 40.

<sup>16</sup> EPEA Guide at 40.

<sup>17</sup> EPEA Guide at 40.

conforms to the EPEA Guide and Manual 025. In the alternative, the AER should reconsider Suncor's expansions of its mine operations, including into the MLWC.

### ***C. Failure to Address Relevant Contraventions***

The EPEA Guide dictates that Suncor should have analyzed project condition contraventions (or violations of its permit conditions) in the Application. When describing its general objectives, the EPEA Guide notes that:

The applicant must also include proposed monitoring and performance measures, details and considerations, to obtain information:

- to enable performance evaluation of all aspects of the activity with respect to:
  - compliance with environmental regulatory requirements,
  - achievement of identified environmental outcomes,
  - verification of information from Environmental Impact Assessments, and
  - substantiation of performance optimization;<sup>18</sup>

Section 13 of the EPEA Guide requires Suncor to evaluate the environmental performance of its current operations and mitigation measures, which further suggests that the Suncor should explain gaps identified through contraventions. Section 13 asks the applicant to describe:

How effective is the performance of the pollution prevention or control equipment?  
What performance issues have been identified requiring design resolutions?<sup>19</sup>

Section 13 further notes that it aims to ensure that applicants have “evaluated the design of a plant or facility for its ability to achieve desired environmental outcomes and meet requirements, as well as evaluates opportunities to improve the design and performance. This assessment includes information regarding ... the effectiveness of the mitigation measures to prevent adverse effects.”<sup>20</sup> In a specific subsection, section 13 requires Suncor to “[i]dentify any failures and repairs or maintenance issues, particularly those required to improve reliability to reduce the release of substances.”<sup>21</sup> Separate subsections of section 13 also ask Suncor to evaluate the

---

<sup>18</sup> EPEA Guide at 5.

<sup>19</sup> EPEA Guide at 43.

<sup>20</sup> EPEA Guide at 44.

<sup>21</sup> EPEA Guide at 49.

effectiveness and reliability of containment systems,<sup>22</sup> treatment and release systems,<sup>23</sup> and pollution control systems.<sup>24</sup>

The EPEA Guide's section 13.18 requires Suncor to "[e]valuate the performance effectiveness and reliability of the treatment and release systems identified in 13.6 noting any variations from original design predictions, and identify any failures and repairs or maintenance issues. Compare the performance to that of design predictions."<sup>25</sup>

Despite there being 30 written reports of contraventions from 2014-2023,<sup>26</sup> Suncor does not explicitly reference any contravention reports in the Application. The only reported contraventions indirectly mentioned in the application are air oxides of nitrogen tonnes/day incidents, which are noted as exceedances in Table 14.15-1.

The Application should have also disclosed numerous contraventions at the Fort Hills' West Process Affected Water Pond, pursuant to EPEA Guide section 13.18. Nine of the 30 reported contraventions concerned exceedances at that pond. Most of those exceedances involved elevated rates of total dissolved solids. However, the Application does not mention any exceedances at the pond. It mentions none of the elevated concentrations measured in the contravention reports, despite providing a "summary of analytical testing results" at the pond in Table 14.3-4. The table shows "average", "minimum", and "maximum" substance concentrations observed during testing. Instead of evaluating the effectiveness of its treatment systems in considering these contraventions, the Application's response to section 13.18's question fails to mention any specific system failures. Suncor only states that it reports contraventions to the AER:

[Suncor] operates the [Industrial Wastewater (IWW)] and [Industrial Runoff (IR)] operations in accordance with Section 4.2 of EPEA Approval 00151469-01, as amended. A surface water management plan is updated on an annual basis and assists with the management of IWW and IR at [Fort Hills]. Sedimentation ponds are monitored as specified in Table 4.2-B of EPEA Approval 00151469-01, as amended. Contraventions of the approval conditions are reported to the AER and recorded in

---

<sup>22</sup> EPEA Guide at 49.

<sup>23</sup> EPEA Guide at 49-50.

<sup>24</sup> EPEA Guide at 50.

<sup>25</sup> EPEA Guide.

<sup>26</sup> Olsgard Report at Appendix D.

[Suncor’s] incident management software platform called Enablon. The current process of maintaining a surface water management plan and the monitoring of sedimentation ponds as per EPEA Approval 00151469-0, as amended, is effective and reliable.”<sup>27</sup>

By failing to mention numerous exceedances at the West Process Affected Water Pond, Suncor did not fulfill the requirements of subsection 13.18. It did not mention failures that occurred at its treatment and release system. Suncor met the reporting requirements under condition 4.2.11(e); however, none of these contraventions were discussed in the Application.<sup>28</sup>

Section 14 of the EPEA Guide also requires the Suncor to provide details on the current project’s operational performance. It asks:

How well has the plant operations performance met the environmental objectives?  
What operating and environmental management systems have been employed and what improvements have been made to these systems?<sup>29</sup>

The EPEA Guide clarifies that “[t]his section is intended to allow the applicant to demonstrate the performance of the various ongoing monitoring and reporting systems, as well as operating, training, management, and maintenance systems contribute to ensure the designed environmental controls have met the stated goals, requirements and limits.”<sup>30</sup> Again, Suncor fails to discuss most of the listed contraventions in the Application. A project system’s ability to meet stated requirements and limits cannot be properly assessed without analyzing most failures at the project.

Finally, in 2023, Suncor reported that 9 of the approved industrial runoff discharges actively released wastewater off-site to the Athabasca River (Ponds 1, 1A, 14, 17A, 18A), two unnamed creeks (Ponds 3, 5B), Fort Creek (Pond 4), and McClelland Lake (Pond 16).

#### **IV Technical Review of the Application and Recommendations from Mandy Olsgard**

The Application reports on conditions and effects regarding the air, water, and wildlife at the Fort Hills mine site and in surrounding areas. Environmental Toxicologist, Mandy Olsgard, reviewed the Application and found many troubling gaps in the monitoring and mitigation

---

<sup>27</sup> Application at PDF page 235.

<sup>28</sup> Olsgard Report at 24.

<sup>29</sup> EPEA Guide at 50.

<sup>30</sup> EPEA Guide at 50.

planning in the proposed permit renewals. Below is a summary of her findings. A full copy of her technical report is attached as Appendix A (the “Olsgard Report”).

### ***A. Expert Qualifications***

Mandy Olsgard, M.Sc., P. Biol., is currently the Principal of Integrated Toxicology Solutions and has practiced as an environmental and human health risk assessor in Alberta since 2007 with a focus on understanding the fate and transport of contaminants and potential health risks related to energy development, primarily focusing on the oilsands sector.

As a consultant, Ms. Olsgard has supported regulatory hearings, undertaken air dispersion modelling and environmental impact assessment studies (including human health and ecological risk assessments), developed community monitoring programs, and conducted independent research and toxicity studies of soil, air, and water contaminants to support the development of environmental and human health quality guidelines.

As the Senior Environmental Toxicologist at the AER from 2015-2017, Ms. Olsgard supported subject matter experts agency-wide with project applications and regulatory decisions and developed internal programs for compliance under the environmental mandate. Since 2017, Ms. Olsgard has undertaken over 300 technical reviews and research studies for Indigenous communities and currently supports technical working groups as an expert in toxicology and health risk assessment.

Building on her experiences developing and teaching college level toxicology, environmental site assessment, and fate and transport courses, Ms. Olsgard continues to train environmental monitors under the Eco-Canada BEAHR programs.

### ***B. Findings in Olsgard Report***

Please refer to Ms. Olsgard’s Technical Report for a complete discussion of her review, attached as Appendix A. Due to the technical complexity of the issues discussed in the Olsgard Report, the information is best viewed alongside the technical graphs, charts and examples present in her report. In the alternative, we welcome an opportunity to discuss the report with the AER and walk through the full Olsgard Report.

As you will see, the Olsgard Report contains analysis and technical review of: (i) air quality; (ii) soil quality; (iii) surface water quality; (iv) biological effects (aquatic, vegetation, and wildlife health); and (v) groundwater.

To inform her analysis, Ms. Olsgard reviewed: (i) Suncor's Application; (ii) the Environmental Impact Assessment for the Mine; (iii) local, regional and national environmental monitoring data (such as data from the National Pollutant Release Inventory ("NPRI"), the Wood Buffalo Environmental Association ("WBEA"), the Oil Sands Bird Contact Monitoring Program, Integrated Sustainability Groundwater Monitoring Reports, as well as others); and (iv) the regulatory reports submitted by Suncor to the AER. Over 70 reports submitted by Suncor (as required by the Fort Hills EPEA Approval conditions) were obtained by Ms. Olsgard from the AER and reviewed as part of her analysis.

### *C. Technical Recommendations from Olsgard Report*

Based on findings of the technical review, the following amendments and modifications to Suncor's Application and the conditions in the Fort Hills' EPEA Approval are recommended:

**Recommendation 1:** Suncor evaluate the air monitoring data reported in 2023 and revise the Application to state whether this year is anomalous (i.e., an outlier) for the reporting period (2014-2023). Once this has been completed, Suncor should assess the reported data for temporal trends and to determine if conditions are significantly different from background conditions as reported in the Environmental Impact Assessment (EIA) (TrueNorth, 2001).

**Recommendation 2:** The AER update EPEA Approval Table 4.1-A to include specified limits for sources of fine (PM<sub>2.5</sub>) and coarse particulate matter (PM<sub>10</sub>, TSP, and dustfall).

**Recommendation 3:** The AER update EPEA Approval Table 4.1-B to require source emission monitoring for fine (PM<sub>2.5</sub>) and coarse particulate matter (PM<sub>10</sub>, TSP, and dustfall). This update requires identification of point and area-based sources for both fine (i.e., combustion) and coarse (i.e., mine dust emissions) particulate matter.

Note: Appendix 12B (Section 4) of the Application presents updated source emissions, several of which are not identified in the previous EPEA Approval, and should be relied on to identify sources (Tables 4.1-A and 4.1-B) and establish limits (Table 4.1-A)

**Recommendation 4:** The AER update EPEA Approval condition 4.1.19 to require continuous monitoring for TSP and dustfall.

**Recommendation 5:** If the AER determines that continuous monitoring is required for VOCs and PM<sub>10</sub> as specified in condition 4.1.19, the AER must enforce this as Suncor is not currently in compliance based on continuously monitored parameters reported at AMS 23 by the regional monitoring agency WBEA.

**Recommendation 6:** The AER update condition 4.1.23 to require Suncor to conduct biomonitoring in the Air Quality Local Study Area(s) defined in previous assessments of Fort Hills, including the EIA (TrueNorth, 2001), Integrated Plan Amendment (SEOI, 2024; Appendix 12B Section 2.6).

**Recommendation 7:** The AER amend EPEA Approval condition 4.1.28 to specify that statistical analysis is required to establish trends for parameters reported under condition 4.1.19.

**Recommendation 8:** Suncor update the Application to provide results of a comparison of continuous TRS monitoring data for the specified averaging period to the TRS AAAQG and report the number of exceedances in each reporting year with available monitoring data (2017-2023).

**Recommendation 9:** Suncor update the Application to include an assessment of trends in bird contacts, oiling and mortality associated with liquid impoundment facilities at Fort Hills and that the AER update EPEA Approval conditions to enforce reporting requirements for trends analysis and identify limits to support these activities.

**Recommendation 10:** Suncor update the Application to provide results of a comparison of continuous total reduced sulphur compounds (TRS) monitoring data for the specified averaging period to the TRS AAAQG (30 min; 5 ppb) and report the number of exceedances in each reporting year with available monitoring data (2017-2023).

**Recommendation 11:** AER establish EPEA Approval conditions that require Suncor to monitor and report on localized environmental effects in local aquatic, wetland, and terrestrial environments adjacent to Fort Hills. These areas should align with discrete receptor locations relied on for establishing baseline conditions in soil quality and vegetation communities' health indices to support air dispersion modelling and risk assessments conducted in the EIA. Where baseline data was not reported in the EIA, this data should be collected immediately to establish



soil quality and vegetation community health and diversity to support future monitoring and assessment. These potential adverse environmental effects are directly related to point and area source air emissions from the Fort Hills mine and therefore are not considered under the scope and mandate of the Oil Sands Monitoring Program and must be directed through EPEA Approval conditions.

**Recommendation 12:** Suncor update the Application to present and analyze time integrated monitoring data for each parameter monitored and reported by WBEA between 2014 and 2024 and present results of comparisons to regulatory guidelines (i.e., number of exceedances) and temporal trends.

**Recommendation 13:** AER establish EPEA Approval conditions that require Suncor to monitor and report on localized environmental effects in local aquatic, wetland, and terrestrial environments adjacent to the Fort Hills mine. These areas should align with discrete receptor locations relied on for establishing baseline conditions in soil quality and vegetation communities' health indices to support air dispersion modelling and risk assessments conducted in the EIA. Where baseline data was not reported in the EIA, this data should be collected immediately to establish soil quality and vegetation community health and diversity to support future monitoring and assessment. These potential adverse environmental effects are directly related to point and area source air emissions from the Fort Hills mine and therefore are not considered under the scope and mandate of the Oil Sands Monitoring Program and must be directed through EPEA Approval conditions.

**Recommendation 14:** The renewed EPEA Approval direct Suncor to develop, execute, and report on a soil quality monitoring plan specific to measuring and assessing predicted deposition of chemicals to local soils in the air study LSA described in Appendix 12B associated with Fort Hills air emission sources, including the following: Update EPEA Approval Section 4.1 to require Suncor to prepare and submit an annual soil quality monitoring plan specific to the Fort Hills air quality assessment local study area (LSA). At a minimum, the soil monitoring plan must:

Specify sampling locations and methods to collect surface soil samples (based on depth or horizon) Include laboratory analysis to report on the concentration of each chemical parameter detected in WBEA time integrated PM<sub>10</sub> filter samples at AMS 23 (Fort Hills compliance

station). Standard biological tests for terrestrial plant and invertebrate species Suncor must submit an annual LSA soil monitoring report which compares monitoring data to: Alberta Tier 1 Soil and Groundwater Remediation Guidelines, Alberta Environment, May 2014, as amended; and Baseline soil quality relied on in the Project Application (TrueNorth 2001; Volume 2: Section 8); and

Where baseline soil quality data was not reported for chemical parameters, alternative data sources must be identified and relied on to establish pre-development baseline condition to support the assessment of changes associated with Fort Hills air emissions.

**Recommendation 15:** AER amend the EPEA Approval to remove release limits for floating solids, visible foam, oil and other substances from Table 4.2-A when updating release limits in Tables 4.2-A to reflect chemical parameters which are reported as exceeding regulatory guidelines for the protection of environmental and human health and are increasing over time (in sedimentation pond discharges and receiving environments) as reported by Suncor in the renewal application (Appendix 12C), annual IWW and runoff reports, and under the NPRI program (as discussed previously).

**Recommendation 16:** AER expand chronic toxicity testing requirements in Table 4.2-B for sedimentation pond discharges (condition 4.2.3) and receiving environments to include the following standard biological tests:.

- Growth Inhibition Test Using a Freshwater Alga;
- Test for Survival, Growth and Reproduction in Sediment and Water Using the Freshwater Amphipod *Hyalella azteca*;
- Test for Survival and Growth in Sediment Using Larvae of Freshwater Midges;
- Test for Measuring the Inhibition of Growth Using the Freshwater Macrophyte, *Lemna minor*; and
- Toxicity Tests Using Aquatic Life Stages of Frogs (*Lithobates pipiens*)

**Recommendation 17:** AER to undertake substantial revisions to the EPEA Approval to address limitations in the following conditions related to monitoring and assessment of biological effects in the LSA from Fort Hills activities.

- Section 4.6 require annual reporting to include statistical analysis and reporting on temporal trends. Where increasing or stable trends are identified, updates to the Bird Monitoring Plan should be proposed to decrease avian mortality and contacts. Section 4.6 require biological effects monitoring in wildlife species including tissue residue monitoring to verify ERA and HHRA predictions.
- Section 6.3 require biological effects monitoring in wetland species including tissue residue monitoring in prey and diet items (ecological and human receptors) to verify ERA and HHRA predictions.
- Section 6.4 require biological effects monitoring in fish and wildlife species including tissue residue monitoring in prey and diet items (ecological and human receptors) to verify ERA and HHRA predictions.
- Condition 4.1.23 require report results and interpretation of TEEM monitoring station located within Fort Hills' LSA to support assessment of Fort Hills activities on surrounding environment.
- Condition 4.1.28(p)(q) be expanded to include biological monitoring including tissue residue analysis in air LSA to verify ERA and HHRA predictions.
- Conditions 4.2.12 to 4.2.17 be enforced, the operator has not provided data as per this condition. It is recommended that this condition be modified to require the operator to provide the data within Fort Hills LSAs and where not available, develop a monitoring plan for biological effects including tissue residues to support monitoring and reporting specific Fort Hills surrounding areas.

**Recommendation 18:** AER respond to the complexity associated with biological effects monitoring by adding, a new section for Biological Effects to the EPEA Approval, requiring Suncor to develop and execute a biological effects monitoring program in the Fort Hills air and water LSA which includes tissue residue monitoring in fish, invertebrates, plant and wildlife species to support assessment of condition and potential risks to consumers for toxic, bio-accumulative and persistent substances measured as per air, soil, and water monitoring conditions.

**Recommendation 19:** AER should amend the EPEA Approval to establish release limit and monitoring tables (similar to Tables 4.2-A and 4.2-B) in Section 5.4 for the approved groundwater monitoring performance indicators and chemical components of significance identified in the approved groundwater monitoring plan (GMP) and reported annually to the AER for the four primary contaminant sources and their associated area of concern as defined in the GMP (Tailings pond solids and associated fluid, Overburden dumps and associated leachate [West Dump and future Center Dump], Plant Site and OPP operational areas [i.e. chemicals and fuels present], and Accidental spills due to material handling across the Site) as these are well established in the management of contaminant seepage at Fort Hills.

At a minimum, where suspected influences related to industrial runoff (i.e., seepage of oil sands process affected water from tailings facilities) are identified in annual reporting, these should be addressed through EPEA Approval conditions requiring increased reporting to the AER to support appropriate compliance and enforcement actions.

## **V Destruction of McClelland Lake Causes Unacceptable Ecological Destruction and Fire Risk**

The opportunity to review Suncor's approvals and licences for Fort Hills is an important opportunity to ensure that the conditions that Suncor must comply with are adequate to monitor and mitigate potential impacts from upcoming developments at the mine site. In particular, the expansion of the Mine into the McClelland Lake Wetland Complex (MLWC).

The MLWC is one of Alberta's largest wetlands and serves diverse ecological functions. It houses migratory birds and helps mitigate climate change by acting as a carbon sink.<sup>31</sup> The MLWC also creates a large fire break, protecting oil sands infrastructure and the communities in northern Alberta from out-of-control forest fires, which are increasing in intensity throughout the province. However, Suncor's Operational Plan for the MLWC fails to protect the ecosystem and would expand mining activities into the MLWC's peatlands, generating a significant fire risk. Both of these issues are discussed more fully below.

---

<sup>31</sup> See Appendix B, Reconsideration Request at PDF page 10 for more information on McClelland Lake Wetland Complex's significance.

**A. The Operational Plan fails to adequately protect the unmined portion of MLWC**

The *Water Act* approval for Fort Hills requires Suncor to develop an Operational Plan “for the sustainability of the non-mined portion of the McClelland Lake Wetland.”<sup>32</sup> The *Water Act* approval sets specific conditions outlining the Operational Plan’s required content. Notably, the Operational Plan must assess the MLWC’s physical and biological conditions and include monitoring, evaluation indicators, and mitigation measures to maintain ecosystem diversity and functionality in the unmined portion of the MLWC.<sup>33</sup> On December 15, 2021, Suncor applied for the AER’s approval of its proposed Operational Plan. On September 9, 2022, the AER approved the Operational Plan.

As the AER considered the Operational Plan, the Alberta Wilderness Association (AWA) engaged Dr. Lorna Harris and Dr. Kelly Biagi—boreal peatland experts—to review the Operational Plan and its ability to adequately protect the MLWC’s unmined portion. Dr. Biagi and Dr. Harris, identified serious shortcomings in the Operational Plan that jeopardize the sustainability of the unmined portion of MLWC’s. Their concerns about the Operational Plan included:

1. Unaddressed potential saline contamination of freshwater (wetlands and groundwater);
2. Lack of modelling for potential impacts to groundwater quality;
3. Insufficient observational data for hydrological model calibration;
4. Uncertainty and risk with proposed “conceptual stage” water management plan;
5. Assumption of negligible impacts from predicted water level changes;
6. Unrecognized impacts to the ecological integrity and functionality of the patterned fen; and
7. Unrecognized impacts to peatland carbon stores and the resulting increase in greenhouse gas emissions.

The expert review findings indicated that Suncor’s Operational Plan lacked sufficient understanding of the MLWC’s nuanced natural water flow regime. This undermines the Operational Plan’s ability to anticipate environmental threats and protect ecological diversity and functionality in the MLWC’s unmined portion. The review findings also raise significant concerns regarding whether mitigation measures, including a proposed underground wall and

---

<sup>32</sup> Alberta Energy Regulator, *Water Act* Approval No. 00151636-01-00, s 3.11 [*Water Act* Approval].

<sup>33</sup> *Water Act* Approval, s 3.13.

water pipeline system, can adequately substitute for natural flows. Similarly, it is unclear that the Operational Plan's mitigation measures can counteract mining impacts upon local groundwater sources throughout the mine's operation and reclamation.

The AWA concluded that the Operational Plan fails to guarantee protection of the unmined MLWC. The analysis suggests that the Operational Plan's mitigation strategies threaten to cause irreversible damage to the unmined portion of the MLWC. Therefore, AWA believed that the Operational Plan may violate the conditions of the 2002 EUB Decision Report and 2002/2015 Water Act approvals requiring Suncor to maintain the sustainability of the non-mined portion of the MLWC.

On May 8, 2023, the AWA—relying on the expert analysis—submitted a request to the AER asking it to reconsider its authorization of the Operational Plan under section 42 of the *Responsible Energy Development Act (REDA)* (the “Reconsideration Request”), attached hereto as **Appendix B**.

### ***1. The Application does not address the Operational Plan's deficiencies***

Despite the legitimate concerns identified in the Reconsideration Request, Suncor's Application neither analyzes those concerns nor modifies any operations at Fort Hills. The Application does not address any of the concerns AWA presented in its Reconsideration Request. The Application fails to consider salinity contamination or water level changes when evaluating groundwater and watercourses for environmental influences. Instead of supplementing groundwater modelling, it fails to disclose water quality testing results for the MLWC, as noted above. It does not assess the complex ecological processes required to maintain the MLWC nor the potential impacts of the project's peat mining operations on greenhouse gas emissions. Neither the Application nor its supporting materials propose to change the Operational Plan in any way.

All AWA's concerns expressed in the Reconsideration Request remain relevant to this Application, including the Operational Plan's potential violation of Fort Hills' associated *Water Act* approval. Suncor should have remedied these deficiencies in its Operational Plan—or at least assessed the Operational Plan's environmental impacts—in the Application. Suncor's failure to do so casts doubt on its ability to fulfill its obligations under Fort Hills' *Water Act* approval in

the proposed renewal period. The Application should conduct a more fulsome analysis of potential impacts to the non-mined portion of the MLWC to ensure that it can comply with the *Water Act* approval that it seeks to renew.

## **B. Suncor is Causing an Unacceptable Fire Risk**

The expansion of Fort Hills in the MLWC also creates fire risk that would affect local communities and ecosystems. Dr. Sophie Wilkinson, an expert on peatlands and wildfire, reviewed the Operational Plan that was submitted by Suncor on December 15, 2021 and was approved by the AER. In a report, is attached as **Appendix C (the “Wilkinson Report”)**, she concluded that mining in the MLWC could cause an unacceptable risk of fire. This risk was not addressed in Suncor’s Application and it must be addressed both in the Application before it can be accepted by the AER as well in relevant EPEA and *Water Act* approval conditions.

### ***1. Expert Qualifications***

Dr. Sophie Wilkinson is an Assistant Professor of Applied Terrestrial Ecology in the School of Resource and Environmental Management at Simon Fraser University. She is also the lead of the Fire and Ecosystems Research Lab. Dr. Wilkinson has more than 10 years of experience working at the intersection of peatland ecohydrology and wildfire science, specifically focusing on understanding patterns of wildfire severity in boreal regions and identifying thresholds to high-severity peatland fire. Dr. Wilkinson has strong working relationships with the Canadian Forest Service, Alberta and BC Wildfire Services, and the horticultural peat industry. She has been involved in experimental fires and is conducting fuel-modification treatment testing in boreal peatland fuels to help protect communities and critical infrastructure from wildfire.

### ***2. Summary of the Wilkinson Report on Fire Risk***

Oil sands facilities in the Athabasca Oil Sands Region (AOSR) are at high risk from wildfires, which can result in evacuations of personnel and facility shutdowns. Indeed, over the last five years, there have been at least 25 occurrences where oil sands facilities have had to evacuate personnel, or their production has been impacted due to wildfire. Some examples of facilities impacted by wildfire are attached as Appendix 1; Table 1 to the Wilkinson Report.

By mining a significant part of the MLWC at Fort Hills, Suncor will significantly increase fire risk in the region. The major natural disturbance in the region is wildfire. Fort Hills' mine footprint includes a variety of peatland types, including a large open fen, that can become vulnerable under certain weather conditions.<sup>34</sup> The Mid-Continental Canadian Forest region that covers the AOSR has a greater fire frequency than the average across boreal Canada.<sup>35</sup> On average, approximately 220,000 hectares (ha) of land burns per year, or 0.59 % of the forest region, compared to 0.36 % of the wider boreal ecozone (2000-2019 dataset).<sup>36</sup> In this landscape, healthy peatlands can act as "fire refugia", which are areas that do not burn when a wildfire passes through the area. As such, they serve as landscape fire breaks, limiting fire from spreading across the land and constraining fire size.<sup>37</sup> Conversely, when peatlands are subjected to drainage, either via severe drought conditions or direct drainage or dewatering by humans, they can allow fires to spread across the landscape more easily and increase fire size and lead to long periods of combustion and smoke emissions. This also requires increased firefighter resources to extinguish residual burning materials.<sup>38</sup> For example, the 2016 Fort McMurray fire (also known as the Horse River Wildfire - MWF009) officially burned for 456 days due to smouldering in peat soils, while the 2018 Parry Sound wildfire (PS033) officially burned for 105 days, despite the flaming fire moving through most of the 11,000 ha area in only eight days.<sup>39</sup>

The readiness of drained peat to burn and the persistence of smouldering combustion means that degraded peatlands burn much more severely than undisturbed peatlands.<sup>40</sup> Further, due to the incomplete combustion reaction of smouldering, peat fires tend to produce more hazardous smoke with high particulate matter content (e.g., particulates with a diameter of < 2.5 µm; PM2.5) that is known to be detrimental to human health, causing increased hospital admissions and above average seasonal death counts.<sup>41</sup> Mining in the MLWC and removing ~16 km<sup>2</sup> of healthy, wet peatland from the AOSR landscape is, therefore, likely to contribute to an overall

---

<sup>34</sup> Wilkinson Report at 6.

<sup>35</sup> Wilkinson Report at 6.

<sup>36</sup> Wilkinson Report at 6.

<sup>37</sup> Wilkinson Report at 7.

<sup>38</sup> Wilkinson Report at 7.

<sup>39</sup> Wilkinson Report at 7.

<sup>40</sup> Wilkinson Report at 7.

<sup>41</sup> Wilkinson Report at 9.



increase in wildfire risk locally, and for the wider region.<sup>42</sup> The draining and stock piling of peat from the mined portion of the MLWC also represents a considerable peat fire risk within the Fort Hills mine footprint.<sup>43</sup>

The engineering measures that Suncor has proposed in its Operational Plan to maintain ecological and hydrological functioning of the non-mined portion of the MLWC are on an unprecedented scale and currently untested, raising concerns that they will not be effective. There are several concerns with the proposed engineering measures.

First, the construction of the cutoff wall has the potential to cause several negative impacts on the non-mined portion of the MLWC.<sup>44</sup> To accommodate the heavy machinery required, the water levels of the peatland will need to be lowered causing damage to the ecosystem. The proposed mitigation measures (wall, culvert and pumping systems) have all been proven to have limited effectiveness when applied in other circumstances, including system failure and destruction of the wetland function. One example is the failure of the pumping system at Syncrude's Sandhill Fen that caused the transition of the fen peatland into brackish marsh.<sup>45</sup> Across the region, there are no working examples of a cutoff wall and water distribution system of a similar scale and complexity as proposed in Suncor's Operational Plan. Suncor's Operational Plan provides no alternative mitigation strategy should the cutoff wall or pumping system fail or have unanticipated challenges.

Second, Suncor's Operational Plan does not effectively evaluate or address the changes to climate and increased wildfire activity in the region. There is a high potential for lower water levels across the region.<sup>46</sup> Projections from 13 climate change scenarios for the Boreal Plains ecozone in Alberta (inc. AOSR) found that undisturbed peatland water levels may decrease by up to 1 meter by 2090.<sup>47</sup> This represents a significant decrease in water levels, which tend to sit within 30 centimeters of the ground surface. Water level decline will likely be enhanced in disturbed peatlands that lack the feedback mechanisms to regulate reduced water availability.

---

<sup>42</sup> Wilkinson Report at 10.

<sup>43</sup> Wilkinson Report at 10.

<sup>44</sup> Wilkinson Report at 11.

<sup>45</sup> Wilkinson Report at 13.

<sup>46</sup> Wilkinson Report at 14.

<sup>47</sup> Wilkinson Report at 14.

Despite this, the Operational Plan currently shows a limited understanding of how future climate changes and climatic variability (particularly from 2040 to 2070 and beyond) will impact the proposed management strategy. It is important to note that periods of the highest fire risk tend to co-occur with periods of lowest water availability, making advance planning for regional water deficits critical to both engineering measures success and the health and safety of employees at the Fort Hills mine in the case of an on-site or nearby fire.<sup>48</sup>

Third, the Operational Plan does not contain details of a risk assessment or mitigation measures for the increased wildfire risk associated with mining the MLWC, including in the drained and/or stockpiled peat within the Fort Hills Mine site. An increase in dry conditions, decrease in surface water, and general lowering of peatland water tables leads to increased ignition probability, fire spread, and fire severity - however, these are not currently accounted for in Suncor's Operational Plan or addressed in their Application.<sup>49</sup> The potential for lower water levels was highlighted in a Suncor 2019 Interim Technical memo, having: "*the potential to increase the duration of dry periods in the remnant fen and decrease surface water and groundwater fluxes into the remnant fen.*"<sup>50</sup> A serious concern is that lowering the peatland water level can greatly enhance fire severity. Under these expected degraded peat conditions, ignition and spread of smouldering combustion would be more likely.<sup>51</sup>

Fourth, large volumes of peat are scheduled to be drained, before being removed and/or stockpiled (stored) at the Fort Hills mine site to be used in the future as part of the reclamation of the fen (See Operating Plan, Obj. 4: section 5.4.6.3.3., page 50). Drained peatlands pose a considerable fire risk within the Fort Hills mine footprint. When peat is drained, the moisture content is purposefully reduced which increases the likelihood of ignition. Reduced moisture content also increases the potential for the spread of smouldering combustion. Smouldering fire can self-propel as the reaction dries adjacent fuel, raises it to combustion temperature and then continues to consume the fuels. In dry peat the smouldering reaction can proceed for weeks to months, including throughout winter conditions. Drained peat also burns more severely and

---

<sup>48</sup> Wilkinson Report at 14.

<sup>49</sup> Wilkinson Report at 14.

<sup>50</sup> Wilkinson Report at 14.

<sup>51</sup> Wilkinson Report at 16.

emits more carbon from combustion than healthy peatlands. And most concerning, because of the depths (multiple meters) that smouldering combustion can reach below-ground, it is very hard to extinguish.<sup>52</sup> In drained peatlands evidence shows that some areas can burn down to mineral soil or bedrock. The sheer amount of dried peat that will be stored on the Suncor site is very concerning. As Dr. Wilkinson describes:

Upwards of 2 to 3 km<sup>2</sup> of peat are proposed to be drained at a time as Suncor mines the MLWC [McClelland Lake Wetland] (Figures 5.3-5, 5.3-6, 5.3-7). Using a conservative average peat depth of 5m (peat depth ranges from 2 to 8m deep in the MLWC), this represents up to 15 million m<sup>3</sup> of dry peat on-site, either in-situ or in stockpiles. This considerable volume of dry peat represents a significant fire risk and poses associated health and safety concerns for the employees of the Fort Hills mine and surrounding areas. At present, neither the increased fire risk or health and safety concerns are addressed in Suncor's Operational Plan.<sup>53</sup>

Peat stockpiles create a major fire risk and self-ignition is possible in this scenario. Peat fire smoke is also exceptionally toxic and creates a serious health risk to employees, and local or regional residents. Peat smoke is especially high in fine particulate matter (i.e. with a diameter of < 2.5 µm; PM2.5) and peat fire smoke can contain toxic trace gases such as formaldehyde or carcinogenic trace metals such as Cadmium or Nickel.<sup>54</sup> Peatland fires can emit these previously sequestered toxic metals and metalloids raising significant concerns about the human health impacts of peat fires.

Because peat fires can burn and/or smolder for weeks to months, smoke can continue to be produced over long periods of time, creating chronic poor air quality conditions.<sup>55</sup> Depending on the duration of the fire and the ability to suppress the fire, air quality impacts could also reach the nearby urban centres of Fort McKay, Fort McMurray and Edmonton, representing approximately 1 million people.<sup>56</sup>

---

<sup>52</sup> Wilkinson Report at 15-16.

<sup>53</sup> Wilkinson Report at 17.

<sup>54</sup> Wilkinson Report at 18.

<sup>55</sup> Wilkinson Report at 18.

<sup>56</sup> Wilkinson Report at 18.

The lack of risk assessment and protocol regarding a peat fire on, or near, Fort Hills limits the ability to protect the health and wellbeing of on-site employees, local to regional residents, and community members. The Application should be rejected, or, in the alternative, amended to account for the recommendation of Dr. Wilkinson in mitigating the risk of fire.

### ***3. Recommendations from the Wilkinson Report***

To limit the increased risks of severe peat fire and mitigate the existing risks of wildfire to Suncor's employees and nearby population centres, Suncor should not mine any portion of the MLWC.<sup>57</sup>

If Suncor proceeds with mining in the MLWC, it should take the following actions to attempt to mitigate the risks that this mining will cause. At present, the potential for increased wildfire risk caused by mining the MLWC is not examined or mitigated by Suncor's Operational Plan or addressed in the Application. Therefore, Dr. Wilkinson's report makes the following recommendations:

1. Suncor must develop and test (via simulation) a plan for the construction of the cutoff wall in the varying peatland types (ecohydrology zones) it is proposed to cross.
2. Suncor must conduct a small-scale test of the proposed mitigation measures in a low-risk area and monitor key hydrologic and ecological indicators for at least one year before developing a final engineering works proposal.
3. Suncor should conduct a specific sensitivity analysis on the evaporation rates from the MLWC and storage ponds under a range of climate change scenarios.
4. Suncor must design and implement a temperature and moisture monitoring scheme for surface mosses and peat (at depth) in the mined and non-mined portion of the MLWC, considering the effect of distance from engineered hydrologic mitigation measures.
5. Suncor must develop and implement a fire risk mitigation strategy for stockpiled peat including a temperature and moisture monitoring scheme and fire mitigation measures when fire weather is classified as High to Extreme.

---

<sup>57</sup> Wilkinson Report at 1.

6. Suncor must develop and implement a temperature and moisture monitoring scheme for peat being actively drained prior to mining, and near-surface peat in the non-mined portion of the MLWC.
7. Suncor must implement a policy of issuing stop-work orders when fire weather is classified as Extreme.
8. Suncor must conduct an evaluation of toxic metal concentrations in peat in the MLWC.

Suncor's Application should not be approved until the significant risk of fire is addressed in the Application. We urge the AER to implement these recommendations in the EPEA and *Water Act* approvals to protect the public from wildfires, and in particular from the toxic, long-burning, and intense fires that can be caused by dried peat.

## **VI Failure to Consider Cumulative Effects Due to Inadequacy of the Lower Athabasca Regional Plan and its frameworks**

Section 11.1 of the EPEA Guide requires the Application to identify all government approved regional initiatives or plans that pertain to the area with requirements that relate to environment and resource management for the activity.

The Application responds to this information requirement in Volume 1, sections 6.0 and 7.0, where it lists the government-approved regional initiatives and regional joint monitoring programs, participation, and cooperation. The first item on this list is the Lower Athabasca Regional Plan ("LARP") and its frameworks.

### **A. LARP directly and adversely affects Indigenous communities**

In 2015, a statutory review panel concluded that the several local First Nations have been "directly and adversely affected" by health effects, loss of income, and the loss of quiet enjoyment of property due to LARP.<sup>58</sup> However, LARP has not been amended to address these issues. Today, LARP is under its 10-year statutory review for ongoing relevancy and effectiveness, but consultation has been minimal and there is no legal requirement that Alberta will amend LARP if the review concludes that it is not relevant or effective.

---

<sup>58</sup> *Review Panel Report 2015 – Lower Athabasca Regional Plan*, accessed [online](#).

**Recommendation:** The AER should not rely on references to LARP to assess environmental conditions under the EPEA Guide until Alberta amends LARP and its framework in consultation with local Indigenous communities and the public.

### **B. Inadequacy of the Surface Water Quantity Management Framework**

The list in Volume 1, Section 6 includes the *Surface Water Quantity Management Framework (SWQMF)*. In Volume 3, section 4.72, the Application compares its water withdrawals from the Athabasca River with the thresholds in the SWQMF.

However, the Application fails to assess the status of Indigenous navigability on the Lower Athabasca River since the Mine started operations, over the next 10 years, and the impact of the Mine on navigability. Over the past decade, Indigenous communities in the Lower Athabasca Region have raised concerns the SWQMF fails to adequately protect Indigenous navigability on the Lower Athabasca River, which is critical for access to their reserves and territories.<sup>59</sup>

Therefore, Suncor's compliance with the SWQMF does not mitigate a project's impacts to Indigenous navigability.

**Recommendation:** The AER should not rely on references to LARP to assess environmental conditions under the EPEA Guide until Alberta amends the SWQMF to adequately protect Indigenous navigability; in consultation with local Indigenous communities and the public.

### **C. Failure of Alberta to complete a Biodiversity Management Plan**

The list in Volume 1, section 6.0 of the Application does not include a Biodiversity Management Framework under the LARP. This omission is a reminder that the Government of Alberta has failed to complete this Framework, despite committing to do so by the end of 2013.<sup>60</sup>

**Recommendation:** The AER should not rely on references to LARP to assess environmental conditions under the EPEA Guide until Alberta completes the Biodiversity Management Framework, in consultation with local Indigenous communities and the public.

---

<sup>59</sup> *Review of SWQMF and Syncrude MLX* at 4; Carver, M. (2018) *Indigenous Navigability of the Lower Athabasca River: Alberta's SWQMF & Teck's Effects Assessment* at 4.

<sup>60</sup> Government of Alberta (2012) *Lower Athabasca Regional Plan 2021-2022* at 28.

## VII Conclusion and Outcome Sought

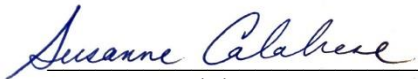
Ms. Faichney requests that the AER recognize her rights as a “directly and adversely affected person” with respect to the Suncor Application and accept the foregoing statement of concern. This statement of concern seeks to ensure that environmental health and fire safety are a key consideration in the AER’s assessment of the Application.

Ms. Faichney further requests that the AER reject the application or set the matter down for hearing. In the alternative, she requests that the AER implement the environmental monitoring and fire safety recommendations explained in detail throughout this submission immediately as conditions of any Approval.

Finally, she requests that mining in MLWC be reconsidered or denied, as the risk of ecological destruction and the risk of a catastrophic and uncontrollable peat fire are too great.

We thank the AER for its careful consideration of the important issues raised in this statement of concern.

Sincerely,



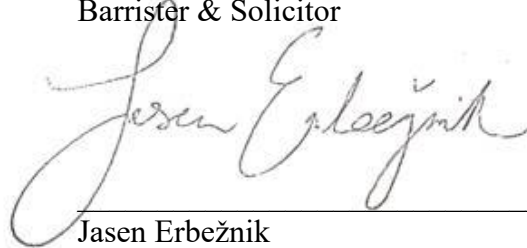
Susanne Calabrese  
Barrister & Solicitor



Matt Hulse  
Barrister & Solicitor



Zachary Biech  
Barrister & Solicitor



Jasen Erbežnik  
Student at Law

cc: Barbara Faichney

Attachments:

Appendix A – Environmental Toxicology Technical Report, Mandy Olgard, M. Sc., P. Biol

Appendix B – Alberta Wilderness Association – Request for Reconsideration

Appendix C – Fire Risk at the Fort Hills Mine, Dr. Sophie Wilkinson