

**IN THE MATTER OF A JOINT PANEL REVIEW BY THE ALBERTA ENERGY REGULATOR AND THE
CANADIAN ENVIRONMENTAL ASSESSMENT AGENCY**

AND IN THE MATTER OF TECK RESOURCES LIMITED'S FRONTIER OIL SANDS MINE PROJECT

**AND IN THE MATTER OF APPLICATION NO. 1709793
MADE PURSUANT TO THE *OIL SANDS CONSERVATION ACT*, CO-7**

**AND IN THE MATTER OF APPLICATION NO. 001-00247548
MADE PURSUANT TO THE *ENVIRONMENTAL PROTECTION AND
ENHANCEMENT ACT*, R.S.A. 2000, C.E-12**

**AND IN THE MATTER OF APPLICATION NO. 00303079
MADE PURSUANT TO THE *WATER ACT*, R.S.A. 2000, C.E-12**

AND IN THE MATTER OF THE *CANADIAN ENVIRONMENTAL ASSESSMENT ACT*, S.C. 2012, c 19

**FINAL ARGUMENT OF FORT MCKAY FIRST NATION
December 5, 2018**

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INTRODUCTION

1. This is the final argument of Fort McKay First Nation ("**Fort McKay**") in the public hearing of the Frontier Oil Sands Mine Project ("**Project**") proposed by Teck Resources Ltd. ("**Teck**").
2. The Project is a new 260,000 barrel per day oil sands mining project. The Project will take up about 29, 220 ha of land approximately 35km north of Fort McKay's Reserves¹ and community at the Hamlet of Fort McKay, and approximately 40km east of its culturally significant Moose Lake Reserves, I.R. 174A and 174B.
3. Fort McKay has entered into a Long-Term Sustainability Agreement with Teck and does not object to approval of the Project on the basis that Teck has adequately addressed its Project specific concerns.
4. Sustainable and responsible energy development that seeks to balance the protection of Treaty and Aboriginal rights with the economic benefits of oil sands development cannot occur with project-specific mitigation alone. Due to the scale and intensity of development in the oil sands region, adequate cumulative effects management is required.
5. Accordingly, Fort McKay's participation at the public hearing has been to request that the Joint Review Panel make a number of key recommendations to the Governments of Alberta and Canada to help address the cumulative effects of industrial development on Fort McKay's Treaty and Aboriginal rights and interests, to which the Project will contribute, and to help implement some of Teck's proposed regional mitigation measures.
6. The need for government action is acknowledged by the Government of Canada stating in its submissions by Environment and Climate Change Canada:

ECCC shares concerns the Indigenous groups that have commented on the Project regarding the potential cumulative environmental effects on air quality, GHGs, water quality, water quantity, and wildlife, including biodiversity, resulting from oil sands development in northern Alberta. Individual project reviews may not fully account for the broad range of cumulative regional impacts given their project-scale focus. The need to address cumulative effects on a regional scale

¹ Government of Canada submissions, Registry No. 489 at pdf. pg. 327.

requires the cooperation and collaboration of all orders of government, project proponents, including Teck Resources, stakeholders, and Indigenous groups. This is necessary to coordinate actions to minimize and mitigate risks, monitor effects, and manage consequences related to development.²

Legal Framework

7. The Joint Review Panel ("**JRP**") is established pursuant to the Amendment Agreement to Establish a Joint Review Panel for the Frontier Oil Sands Mine Project between the Minister of Environment, Canada and the Alberta Energy Regulator, Alberta of August 24, 2017 ("**Agreement**").³
8. The Agreement requires the JRP to prepare a report that will set out the rationale, conclusions and recommendations of the JRP relating to the environmental assessment of the Project and provide a summary of comments received from the public, including aboriginal persons and groups.⁴
9. The JRP's assessment shall include consideration of:
 - (a) any cumulative environmental effects that are likely to result from the Project in combination with other projects or activities that have or will be carried out;
 - (b) comments from the public, including Aboriginal persons;
 - (c) mitigation measures;
 - (d) effects of the project on asserted or established Aboriginal or Treaty rights; and
 - (e) community and traditional knowledge, including traditional land use studies.⁵
10. The Agreement requires the JRP to consider any evidence presented concerning any likely project effects on Treaty and Aboriginal rights including effects on lifestyle, culture, health and quality of life and the ability of future generations to pursue traditional activities or lifestyle; and evidence concerning the measures proposed to manage, mitigate and compensate any identified effects.⁶

² GOC Submissions, CEAA Registry No. 489 at pg. 20.

³ JRP Agreement, CEAA Registry No. 340.

⁴ JRP Agreement, CEAA Registry No. 340 at para. 5.3.

⁵ JRP Agreement, CEAA Registry No. 340 at p. A1-1 & A1-2.

⁶ JRP Agreement, CEAA Registry No. 340 at Part II, p. A1-2 & A1-3.

11. The JRP is required to conduct its review in a manner that discharges the responsibilities of the Alberta Energy Regulator ("AER") under the *Responsible Energy Development Act*. This includes deciding on Teck's applications for approvals under the *Oil Sands Conservation Act*, *Environmental Protection and Enhancement Act* and the *Water Act*. These Acts are broad public interest statutes that grant the AER with broad remedial powers. This public interest analysis requires consideration of potential impacts of Crown inaction on the cumulative effects of Treaty and Aboriginal rights and related recommendations.
12. On receipt of the report of JRP, pursuant to section 52 of the Canadian Environmental Assessment Act, the Minister of Environment and Climate Change Canada must decide if the Project is likely to cause significant environmental effects and refer to Project to Cabinet if the Project effects are likely significant. The Minister and Cabinet must engage in meaningful and reciprocal dialogue with Fort McKay on Fort McKay's concerns in meeting its duty to consult and accommodate Fort McKay.⁷

Fort McKay's Treaty and Aboriginal Rights

13. Fort McKay's submissions set out its Treaty and Aboriginal rights, which are as follows:
 - (a) Treaty rights as guaranteed by the text of Treaty 8 (1899) and the oral assurances made on behalf of the Crown at the time the Treaty was negotiated. These treaty rights include the meaningful right to hunt, trap and harvest natural resources within their traditional territory for food, social, spiritual and cultural purposes; to the continuity and non-interference of their way of life; to teach their traditions to younger generations; to the use, enjoyment and control of lands reserved for them; the right to be meaningfully consulted and accommodated in the take up of land and other Crown action; and the right to sufficient lands, and access to them, within their traditional territory, of a quality and nature sufficient to support the meaningful exercise of their treaty rights.
 - (b) The right to hunt for food in all seasons pursuant to the *Natural Resources Transfer Agreement (Schedule 2 of the Constitution Act, 1930)*;
 - (c) The right to co-manage the lands and resources of its traditional territory.⁸
14. The historical report of Dr. Patricia McCormack describes the oral assurances made to Fort McKay in the negotiating of Treaty 8 including the promise of the non-interference with Fort McKay's traditional way of life.⁹

⁷ *Tsleil-Waututh Nation v. Canada (Attorney General)*, 2018 FCA 104; *Gitxaala Nation v. Canada*, [2016] 4 FCR 418, 2016 FCA 187.

⁸ FMFN submission, CEAA Registry No. 490 at pdf pgs. 3-4.

15. As a party to Treaty, the Crown will always have notice of the contents of Treaty.¹⁰ However, Alberta takes an wholly impoverished approach Fort McKay's Treaty 8 rights, demonstrated, among other evidence, in the Aboriginal Consultation Office's Hearing Report, which found that all of Fort McKay's concerns about the cumulative effects of development at the hearing were all outside of the scope of Alberta's consultation process.¹¹
16. Alberta's failure in this regard requires the federal government to actively engage with Alberta and Fort McKay to meet its obligation to protect Fort McKay's Treaty 8 rights.

Cumulative Environmental Effects of Oil Sands Development on Fort McKay

17. The environmental assessment for the Project provides an assessment of the cumulative impacts oil sands development on Fort McKay's culture and current use of lands and resources for traditional purposes.
18. Teck commissioned a Fort McKay-led traditional land use study and filed it as an appendix to its environmental impact assessment.¹² Key Community concerns for both the Project and cumulative effects included the following:
 - (a) Wildlife: negative development effects on wildlife (including changes in wildlife composition, loss of habitat);
 - (b) Air: negative effects of development on air (air quality, dust);
 - (c) Vegetation negative effects of development on vegetation (changes in composition);
 - (d) Changes in Access: changes in access due to oil sands development (increased non-Aboriginal access, vandalism, competition for resources and change in access routes);
 - (e) Fish: negative development effects on fish (changes in fish abundance, habitat);
 - (f) Cultural Knowledge Transmission: reduced cultural knowledge transmission due to socio-economic changes, access and land loss due to oil sands development

⁹ FMFN Submission, CEAA Registry No. 490 at pdf pgs. 785, 793-799.

¹⁰ Mikisew Cree, 2005 SCC 69 at para. 34.

¹¹ ACO Hearing Report, CEAA Registry No. 672 at pdf. pg. 2; FMFN Submission, CEAA Registry No. 490 at pdf. pg. 34; October 1, 2018 Hearing Transcript at p. 1354.

¹² Teck Environmental Impact Assessment, CEAA Registry No. 5 at 0016.00.

(and changes in social structure; lost opportunities to share knowledge, changes in Community values and other social effects);

- (g) Direct Loss of Land: direct land loss due to oil sands development (including key cultural sites – e.g., hunting areas, traplines, gravesites, traditional trails);
 - (h) Community Health and Stress: reduced Community health and increased stress due to socio-economic and environmental changes brought on by oil sands development;
 - (i) Reclamation: community scepticism regarding the potential success of oil sands reclamation, concern about lack of current demonstrated reclamation and suggestions for improvement; and
 - (j) Consultation and Community Involvement: community concerns with the inadequacy of government and industry consultation and Community involvement activities.¹³
19. Teck considered Fort McKay's traditional land use assessment in its initial traditional land use assessment and addressed many of Fort McKay's concerns with its original assessment in its Project Update.¹⁴
20. Teck's environmental assessment found that compared to the pre-development case, all indicators identified by Teck (hunting, trapping, plant harvesting and use of cultural sites), with the exception of continued opportunities to fish for traditional important species (which was assessed as low to moderate) were assessed to be "regional" in extent, "long-term" in duration, "irreversible" and "high" at the Base Case and are expected to continue through the Application Case and the PDC.¹⁵
21. Teck concluded that both Fort McKay's traditional land study and Teck's environmental impact assessment concluded that cumulative effects of the Project in combination with existing and approved projects are adverse and high in magnitude even in the alternate base and application cases.¹⁶
22. Teck also funded and filed Fort McKay commissioned Cultural Impact Assessment Study that was modelled after assessments completed by the MacKenzie Valley Environmental

¹³ FMFN Technical Review of Project Update, CEAA Registry No. 174 at pdf. pg. 136.

¹⁴ FMFN Technical Review of Project Update, CEAA Registry No. 174 at pdf. pg. 15.

¹⁵ Project Update, CEAA Registry No. 163 - 0048.00 at pdf. pg. 977.

¹⁶ Responses to JRP IRs 4; CEAA Registry 291 at pg. 4-6.

Impact Review Board and built on the Cultural Heritage Baseline Assessment completed as part of the Shell's Jackpine Mine Expansion environmental assessment.¹⁷

23. The JRP for the Shell Jackpine Mine decision found that the cumulative effects on some elements of Fort McKay's cultural heritage are already adverse, long-term, likely irreversible, and significant. The JRP in order to mitigate the adverse effects on the land use and culture of Fort McKay and the other Aboriginal groups, recommended greater involvement of First Nations in regional planning and in the stewardship of the traditional resources.¹⁸
24. Fort McKay's cultural impact assessment conducted for Teck's environmental assessment ("CIA"), identified core cultural elements to assess cultural change. These were physical cultural sites; cultural practices; cultural landscapes; cultural values and well-being. Change in each core element was measured from pre-industrial to current and future timeframes by measuring selected indicators. The CIA combined both qualitative and quantitative information, which included ALCES simulation modelling that modelled landscape, biotic, ecosystem and TLU indicators based on their relevance to core cultural elements and related indicators.
25. The CIA concluded that the cumulative effects of industrial development in Fort McKay's traditional territory has had and will continue to have adverse impacts on the core cultural elements of Fort McKay and the Project would contribute to this. The CIA identified six strategies to help minimize negative effects to Fort McKay's culture:
 - (a) Cultural strategy. Develop a community-endorsed strategy that is founded on traditional principles and can serve as an overarching framework to coordinate the five cultural and environmental options listed below. This will help preserve opportunities for cultural activities, the transmission of knowledge, and the protection of cultural landscapes.
 - (b) Continued monitoring of culture. Establish regular monitoring of FMFN culture to enable FMSD to observe, assess and respond to thresholds of undesirable change. The monitoring should include youth perspectives and expand to cultural activities or **?lenses?** other than what was examined in this CIA.
 - (c) Language retention initiatives. Take steps to ensure language learning is incorporated into community initiatives and programs to ensure the traditional knowledge, values and stories continue to be taught into the future.

¹⁷ FMFN CIA, CEAA Registry No. 261 at pdf pg. 24-25.

¹⁸ 2013 ABAER 011 at para. 1741 – 1742.

- (d) Cumulative effects and land-use planning research. Create a long-term land use plan that incorporates the spatial modeling of cumulative effects as part of their long term plan for addressing and minimizing impacts from industrial development.
 - (e) Reclamation initiatives. Develop initiatives to allow the FMFN community to participate in the reclamation process in order to elicit community member feedback on reclamation for return of traditional use potential and to foster relationships between community members and industry representatives.
 - (f) Land-based employment. Broaden employment opportunities to include land-based jobs that foster a greater connection with the land and cultural practices, as well as foster teaching and learning of traditional knowledge about the land.
26. The CIA recommends a cohesive cultural strategy that considers both cultural and environmental planning and will ensure consistency of community goals and actions for maintaining Fort McKay's culture across existing and planned initiatives that span cultural and environmental spheres. The CIA recommends land use planning exercises to study the cumulative effects of development to identify areas of ecological integrity that could be protected to preserve opportunities for traditional land use and cultural purposes.
27. Fort McKay has for many years sought to implement such a cultural strategy and land use planning initiative with its efforts to protect the Moose Lake area for cultural preservation.

Treaty Rights Protection and the Moose Lake Area

Fort McKay seeks the following recommendations to the Governments of Alberta and Canada with respect to :

1. The Government of Canada support aboriginal communities in the region have the Government of Alberta recognize the correct nature and scope of their Treaty 8 rights.
2. The Government of Canada support and participate in the development of the Moose Lake Access Management Planning process with the Government of Alberta.

28. Fort McKay presented evidence about the history and the current status of the "Moose Lake Access Management Plan" which Fort McKay is seeking to protect the Moose Lake area.

29. Mr. Arrobo's evidence was that Fort McKay has been seeking the protection of the Moose Lake area from the cumulative effects of development since 2001.¹⁹
30. In 2011, Fort McKay commissioned a cumulative effects study to identify management tools that could be implemented to meet Fort McKay's objective for maintaining ecological integrity and land use opportunities in its Traditional Territory. This study identified a suite of community-supported mitigation options that, if adopted and implemented, the authors opined, would substantially reduce the current and predicted future adverse effects of industrial development on the health and integrity of ecosystems in the Fort McKay traditional territory. The management tools were not limited to facilitation of Fort McKay access across oil sands development but importantly were targeted to preserve the ecological integrity needed to protect Treaty and Aboriginal rights. These management tools required expanded protected areas beyond those that are identified in LARP, control of public recreational land use and regulatory requirements for best management practices, such more rapid reclamation practices. The Moose Lake area because of the cultural significance of the Reserves and surrounding area and relative remoteness from existing development provided ideal conditions for the protection of Fort McKay's culture and rights. This study was submitted to CEAA as part of consideration of the environmental assessment process for the Project.²⁰
31. Mr. Arrobo's affidavit proceeds to explain how Alberta has made commitments to develop a protective the Moose Lake Access Management Plan, including consideration of buffers, environmental thresholds and improved management practices but those have not yet been fulfilled by Alberta.²¹
32. Importantly, Mr. Arrobo states the Government of Canada has not yet been engaged in this important initiative despite the following issues:
 - (a) The JRP for the Shell Jackpine Expansion reported Fort McKay's requests for both Alberta and Canada to establish protected areas for traditional land use opportunities at the Moose Lake Reserves;²²
 - (b) the MLAMP is in part intended to protect the meaningful exercise of Treaty 8 rights on Reserve lands – which is exclusive federal jurisdiction;²³

¹⁹ FMFN Submission, CEAA Registry No. 490 at pdf. 1106.

²⁰ FMFN Submission, CEAA Registry No. 490 at pdf. 1105; CEAA Registry No. 141.

²¹ FMFN Submission, CEAA Registry No. 490 at pdf. 30.

²² 2013 ABAER 011 at pdf. 414.

²³ FMFN Submission, CEAA Registry 490 at pdf. 1106-1107.

- (c) there is evidence of impacts to air quality and wildlife populations on the Moose Lake Reserves as a result of industrial development raising concerns about the use of the Moose Lake Reserves for intended purpose of cultural preservation;²⁴
 - (d) Teck Project is located within the broader Moose Lake Area, and only 40km from the Moose Lake Reserves. Teck's application identified the concerns with the Project to include:
 - (i) proximity to Moose Lake, including Fort McKay Indian Reserves 174A and 174B, Moose Lake trail and the Birch Mountain area;
 - (ii) It was also noted in Fort McKay and Integral Ecology Group (2011) that some Fort McKay members no longer consume fish from the Athabasca River because of health concerns, and that currently, much of Fort McKay's fishing activities are concentrated in the area of Namur and Gardiner lakes.²⁵
33. The Government of Canada's witness Panel specifically, Dr. Ross claimed that Canada's responsibilities with respect to the Moose Lake Access Management Plan were severely limited stating the Moose Lake Access Management Plan is largely provincial responsibility and any engagement with Fort McKay would be limited to identifying additional studies that might come from a complementary measures regime that could inform the plan.²⁶
34. Dr. Ross appeared to be speaking on behalf of Fisheries and Oceans, which did not appear to consider the federal responsibility with respect Reserve Lands and the protection of Treaty and Aboriginal rights. As is evident by CEEA, 2012, the protection of Treaty and Aboriginal rights from cumulative effects of development is the responsibility of federal governments and Fort McKay's submits the federal government's leadership in the Moose Lake Access Management Plan beyond funding fisheries studies to a broader and more active role.
35. Dr. Ross's comments however do lead to a concern raised by Fort McKay at the hearing and that is the inadequacy of DFO's regulatory powers with respect to protecting aboriginal rights to fisheries. Dr. Ross's evidence was that complementary measures

²⁴ FMFN Submission, CEEA Registry No. 490 at pdf. 903, 907, 1107, 1113 & 1144.

²⁵ Project Update, CEEA Registry No. 163 – 0048.00 at pdf. 836 & 863.

²⁶ Hearing Transcript October 24, 2018 at pdf. pg. 166.

could be potentially used for to support studies occurring in the Moose Lake area,²⁷ which Fort McKay has requested.

Fisheries and Aquatic Resources

Fort McKay seeks the following recommendations to the Governments of Alberta and Canada with respect to Fish Concerns:

1. Alberta and Canada should establish meaningful consultation with communities regarding regional aquatics monitoring.
2. Alberta and Canada should provide communities the annual data analyses and reporting of government and other regional monitoring programs.
3. Alberta and Canada should provide funding for communities to technically review draft annual monitoring reports and incorporate feedback into final reports.
4. Alberta and Canada sharing of data and a comprehensive understanding of regional aquatic systems, compilation of all aquatic research and monitoring data and reports into a single online portal.

Complementary Measures/offsets

5. Department of Fisheries and Ocean ("DFO") should be flexible in the percentage of fisheries offsets that is acceptable as complementary measures. The allowable percentage of complementary measures should be more flexible to enable research or offset projects that are of high value to Fort McKay to be implemented

Fisheries Offset Planning

6. DFO should play a strong role in encouraging other proponents to engage communities in fisheries offset planning, similar to the way Teck has done.
7. DFO require that decisions about fish and fish habitat, including offsets, incorporate the traditional knowledge and concerns of Indigenous peoples.
8. DFO consult with Fort McKay about how the upcoming revised Fisheries Act will be implemented regarding projects in the oil sands region.
9. DFO collaborate with Fort McKay on an action plan to prevent and/or respond to impacts to water and fish that might be caused by the wide range of cumulative stresses that may occur. Development and implementation of a comprehensive plan for the Moose Lake

²⁷ Hearing Transcript October 24, 2018 at pdf. pg. 166.

area remains a gap to preserve the Area for future generations.

Fort McKay's Action Plan Outline

10. DFO engage in ongoing consultation with Fort McKay to understand the community's concerns about water quality, fish, and fish habitat in the Moose Lake area, in the Ells and Mckay Rivers, and other lakes and rivers in their traditional territory (i.e. east side of the Athabasca River).
11. DFO develop an affirmative action plan for protecting water quality, fish and fish habitat in these areas applying list of knowledge and information gaps.
12. DFO support the implementation of research plans to address the knowledge and information gaps, and provide scientific and technical advice to Fort McKay.
13. DFO seek opportunities to link knowledge gaps with research-related complementary measures and/or offsetting projects.

Fort McKay's Research or Knowledge Gaps

14. DFO prepare an Action Plan, which incorporate the following as offsets or complementary measures:
 - (a) Moose Lake
 - (i) continue to compile baseline limnology, water quality, water quantity (water balance), and bathymetry so that future change may be detected and remedied, if possible.
 - (ii) chemical composition and quantification of aerial fallout (fugitive dust), which could be incorporated into the air monitoring station on Namur Lake, with a goal of determining the importance to lake contaminant and nutrient input assessments;
 - (iii) record and map fish habitat characteristics to better understand the habitats of walleye, northern pike and other species.
 - (iv) Fish (walleye, northern pike, whitefish, lake trout, other species) population and fish health monitoring;
 - (v) Studies of in-lake and out-of-lake nutrient sources (nutrient budgets) that promote algal blooms; studies of aquatic invertebrate communities, and bottom sediments;
 - (b) Ells and Mackay Rivers

- (i) Fish population and fish health monitoring in selected reaches, including fish tagging studies to track the migration of key fish species;
- (ii) Aquatic studies and traditional use support, including fish habitat mapping, habitat improvements and/or restoration of key traditional use areas of the Rivers.
- (c) Ells and Mackay Rivers, and Namur/Gardiner Lakes and their key inflows and outflows – Explore ways to enhance or restore degraded aquatic habitat, where feasible.
- (d) Other rivers and lakes on the east side of the Athabasca River are also within Fort McKay's traditional territory and could be considered for research projects as well.

15. DFO undertake or support the following assessments for Fort McKay's Moose Lake, Ells River and Mackay River specific studies:

- (a) Regional climate modelling to extrapolate information about the future quality and quantity of fish habitat.
- (b) The impacts of forestry, development, other land changes, plus climate change on the hydrology in large areas of wetlands/muskeg to better understand the influence of changes in water levels on fish communities.
- (c) On the assumption that future discharges or seepage from any tailings holding areas will result in cumulative inputs, develop oil sands process water contaminant loading estimates and other studies for key contaminants including acid-extractible organics (naphthenic acids), metals, soluble polycyclic organic compounds (PACs) and salts.
- (d) Cumulative impacts to all aspects of aquatic systems from all regional development and land uses, future climate change, aerial pollution (gases and dust fallout) should be further studied.

16. DFO support Fort McKay in their efforts to monitor and protect the aquatic resources and important fisheries in the Moose Lake (Namur L, Gardiner L, Ells River) area as well as the suggested cumulative effects focused studies aimed at protecting the fisheries in Fort McKay's traditional territory.

36. A key concern about DFO's policy that its intent is to consider and address losses to fish habitat but does not consider the loss of fishing opportunities for aboriginal people.²⁸
37. While Teck has complied with the *Fisheries Act* and *DFO's Productive Investment Policy* to the extent possible within the requirements and included Fort McKay in its efforts,²⁹ DFO policy falls short in meaningfully mitigating impacts to fishing rights. As stated by DFO, the intent of compensation lakes are not to be actively fished but to potentially contribute to the productivity of the system overall.³⁰
38. One way that DFO can contribute to offsetting loss to fishing opportunities for aboriginal peoples is to support complementary measures that support fisheries at other intact aboriginal fisheries undergoing cumulative effects stresses. This was acknowledged by Dr. Ross.³¹ However, DFO only allows 10% of the required amount of offsetting to be directed towards complementary measures. This is a small pot especially relative to the value of complementary measures for mitigation for aboriginal communities.³²
39. The Report of Dr. Miskimmin recommends that the Governments of Alberta and Canada collaborate with Fort McKay to develop an action plan to protect the significant fisheries at Moose Lake, the Ellis and MacKay Rivers, that are exposed to a wide range of stresses, including climate change, industrial development, algal blooms and threatened sustainability of some fish species.³³ Studies have indeed noted a small influence of industrial emissions on PAH levels on sediments in Namur Lake,³⁴ which makes action necessary now before further impacts accumulate. Dr. Miskimmin recommends that development of such action plan should include funding or undertaking studies for identified knowledge gaps and for DFO to share its scientific and technical knowledge in development of the action plan.³⁵
40. While Department of Fisheries and Oceans has not responded to Fort McKay's requests in its hearing submissions, DFO stated it would be willing to continue to Fort McKay on its proposals, which Fort McKay seeks.³⁶ The JRP's recommendations in support of Fort McKay's request would be helpful in this regard.

²⁸ FMFN's Submissions, CEAA Registry No. 490 at pdf pg. 1330; Hearing Transcripts, October 23, pdf. pgs. 130; In. 12-14; 132, In. 7-9, 143 at In. 15-23; CEAA Registry No. 190.

²⁹ FMFN Submission, CEAA Registry No. 490 at pdf pg. 1327

³⁰ Hearing Transcript, October 23, 2018, p. 143, In. 15-23.

³¹ Hearing Transcript October 24, 2018 at pdf. pg. 166.

³² FMFN Submission, CEAA Registry No. 490 at pdf pg. 1329;

³³ FMFN Submission, CEAA Registry No. 490 at pdf pgs. 1332 & 1334.

³⁴ FMFN Submission, CEAA Registry No. 490 at pdf pg. 903.

³⁵ FMFN Submission, CEAA Registry No. 490, pdf pg. 1108 at para. 16.

³⁶ Hearing Transcript, October 24, p. 156, In. 14-21.

Wildlife

Fort McKay seeks the following recommendations to the Governments of Alberta and Canada with respect to wildlife:

Wildlife

Species at Risk

1. Government of Canada should implement recovery strategies that include action plans to provide mechanisms to protect critical habitat and species at risk populations.
2. The Governments of Canada and Alberta through OSM develop monitoring that determines the effectiveness of recovery strategies (i.e., measure populations).

Woodland Caribou

3. The Governments of Alberta and Canada through OSM should prioritize caribou, wolf, deer, moose population monitoring to assist will caribou recovery efforts. Caribou monitoring should include DNA analysis.
4. Government of Canada and Alberta immediately finalize caribou range plans that outline specific steps for providing immediate action to recover caribou populations. Action should occur before completion of the Alberta Government's planned 3-year socio-economic study.

Wildlife Health

5. Alberta Health and Wellness and Health Canada should complete health studies on food consumption and the health impacts of country foods as recommendation by the Review Panel 2015.

Regional Wildlife Monitoring and Management

6. The Governments of Canada and Alberta review OSM's approximate budget of approximately \$60 million dollars annually and assess whether this is adequate to fulfill its large mandate. For example, two projects that incorporate western science and traditional knowledge were not funded through the EMSD in 2018/2019.
7. Moose should be a LARP BMF indicator and the Government of Canada and Alberta should work together to ensure adequate management of moose populations and their habitat. Moose should be considered a species at risk in wildlife management units where

populations are well below Alberta Government goals.

8. The Governments of Canada and Alberta should develop protocols that can effectively measure cumulative effects in the oil sands region. The current ABMI grid pattern and rotation frequency is ineffective at measuring meaningful biodiversity indicators (e.g., species at risk) at scales (e.g. WMU and the LARP area) smaller than the province of Alberta.

9. The Governments of Canada and Alberta should develop an effective monitoring program that measures changes in wildlife populations in a timely manner (e.g., five years) and provides sound data to determine mitigation and recovery plan effectiveness.

Reclamation and Re-colonization

10. The Government of Canada work with Government of Alberta to re-fund CEMA or to develop an alternative multi-stakeholder committee to assess the return of wildlife to reclaimed oil sands land.

11. The Government of Canada and Alberta through their participation in OSM should require standardized monitoring of wildlife on reclaimed lands in the oil sands region.

Conservation offsets and Habitat Protection

12. Government of Canada should work with the Government of Alberta to develop a formal process for conservation offsets and habitat protection that preserve the suite of species (e.g., species at risk and culturally important wildlife species) and ecosystems and maintain local and regional biodiversity in consideration of traditional territories of Aboriginal communities.

Wood Buffalo National Park Strategic Environmental Assessment

13. The Government of Canada should work with the Government of Alberta to complete a Strategic Environmental Assessment similar to the one complete for the WBNP of the Fort McKay traditional territory that evaluates impact to values and resources that are important to the Community.

41. Regional wildlife population declines have been assessed on a number of occasions. This includes the JRP on the Shell Jackpine Mine Expansion found a high level of cumulative effects on wildlife species including Species at Risk³⁷ and cumulative effects studies

³⁷ FMFN Submission, CEAA Registry No. 490 at pdf. pg. 945.

completed by Fort McKay³⁸. Since the Shell Jackpine Mine Decision in 2013 more Species at Risk have been identified and listed³⁹.

42. Most of the Fort McKay traditional territory is comprised of WMU 530 and WMU 531 with some of the territory within WMUs 518, 529 and WMU 519. In each of these cases the WMUs have estimated moose population far below the Alberta government's population goals. Population viability analyses completed in the region, predict local extinction of moose in the western half of the Fort McKay traditional territory (the Moose Lake area).⁴⁰
43. In April 2018, Environment and Climate Change Canada ("**ECCC**") issued a progress report on unprotected critical habitat for woodland caribou and concluded that the laws of Alberta were not protective of caribou. Declines of caribou populations in Alberta started in the early 2000s and continue. ECCC's commitment to achieve self-sustaining local populations has not been met and does not appear to be capable of being met in the near term.⁴¹
44. Teck's environmental assessment concludes the Project will affect the abundance of wildlife both at the local and regional scale. The mitigation planned by Teck includes reclamation of disturbed habitat and it has committed to participate in regional committees, research organizations and future multi-stakeholder organizations and work with government on potential conservation agreements and offsets.⁴²
45. Government led regional wildlife monitoring remains deficient. There is no dedicated systematic monitoring of Species at Risk and there is no core biodiversity monitoring to estimate populations of birds and mammals.⁴³ There is also no regional monitoring of wildlife recolonization of reclaimed lands. Individual operators and COSIA are not required to publically disclose their monitoring results.⁴⁴
46. No monitoring exists for caribou populations in the oil sands region and Alberta still has no final Caribou Range Plans. The Shell Jackpine Mine Expansion JRP recommendation for monitoring caribou predators and their usual prey has not been met. Draft plans for

³⁸ FMFN Submission at CEAA Registry No. 490 at pdf. pg. 956.

³⁹ FMFN Submission at CEAA Registry No. 490 at pdf. pg. 946.

⁴⁰ FMFN Submission at CEAA Registry No. 490 at pdf. pg. 950 & 1144.

⁴¹ FMFN Submission at CEAA Registry No. 490 at pdf. pg. 948.

⁴² FMFN Submission at CEAA Registry No. 490 at pdf. pg. 944.

⁴³ FMFN Submission at CEAA Registry No. 490 at pdf. pg. 947.

⁴⁴ FMFN Submission at CEAA Registry No. 490 at pdf. pg. 954.

Caribou primary rely on restoration of 250,00 km² of seismic lines and other disturbance which will take decades to achieve.⁴⁵

47. Teck notes its RSA is a minor component of the broader resource management and land use frameworks now being considered in the Lower Athabasca planning region (e.g., LARP 2011 to 2022 [GOA 2012]). As such, the environmental consequence of changes in wildlife diversity and sustainability must be considered within the context of these broader resource characteristics and regional plans and objectives.⁴⁶
48. This context must consider that LARP which is expected to manage regional biodiversity and cumulative effects remains incomplete. The draft BMF states that all management triggers for caribou have been exceeded requiring aggressive management action. The draft BMF relies on the Alberta Biodiversity Monitoring Index as the Tier 1 Terrestrial Biodiversity Intact which is currently at 93.7%, which does reflect the assessments conducted in the region, the experience of Fort McKay and Alberta environment moose surveys. The ABMI index does not consider indirect impacts such as increase in invasive species, or population declines. Further ABMI monitoring is not done at the scale or frequency with statistical robustness to assess change on a management scale.⁴⁷
49. As regional mitigation, Teck has committed to working with provincial and federal government agencies to develop conservation agreements and conservation offset plans. Alberta has no formal process for conservation offsets making challenging the implementation of offsets and agreements. Alberta's recent announcement of the formalization of the protected areas identified in LARP is insufficient in size and does not offset oil sands development and protection of biodiversity for Fort McKay as they parks in its territory only represent a small percentage of wildlife habitat lost in areas important to Fort McKay.⁴⁸
50. Swift and concrete actions is needed both at the provincial and federal levels to protect the declining wildlife populations and loss of biodiversity in the region.

⁴⁵ FMFN Submission, CEAA Registry No. 490 at pdf. pg. 9947-948.

⁴⁶ Project Update, CEAA Registry No. 163 – 0048.00 at p. 11-41.

⁴⁷ FMFN Submission, CEAA Registry 490 at pdf. pg. 952, 994 and 998 (para. 35).

⁴⁸ FMFN Submission, CEAA Registry 490 at pdf. pg. 952, 955-956.

Air Quality

1. The Federal and Provincial Governments:
 - (a) involve Fort McKay as a partner in establishing specific community, Reserve Land and Traditional Territory air quality objectives and requirements related to achieving Fort McKay's air quality vision;
 - (b) Once specific community, Reserve Land and Traditional Territory air quality objectives and requirements are developed, they be used by the Federal and Provincial Governments in cumulative air quality impact assessments of new and/or expanded industrial projects, in associated project approval decision making and in other air quality management decisions.

EIA Development Scenarios Required by Alberta

2. The Government of Alberta revise its Standard EIA Terms of Reference for oil sands projects to require background, current and project only case air quality impact assessments in addition to the standard baseline, application and planned development cases.

The use of Ambient Air Quality Objectives and Standards in Assessing Project and Cumulative Impacts

3. The Federal and Provincial Governments develop mandatory instructions on how air quality criteria are to be used in assessing air quality impacts and also specify the approach that applicants must use to rate the magnitude of predicted air quality changes and that this guidance be developed in consultation with regional communities like Fort McKay.
4. The Government of Alberta revise its Standard EIA Terms of Reference for oil sands projects to require project and cumulative air emission impacts be assessed against any applicable air quality criteria that aboriginal communities like Fort McKay have established for their communities and/or Reserve Lands.

Air Emission Estimates and Impact Assessment Uncertainties

5. The Federal-Provincial Oil Sands Monitoring Program continue its systematic and comprehensive characterization and quantification of all air emission sources and/or source types associated with oil sands development; and that this work cover the entire range of operating and/or upset conditions associated with each source or source type.
6. The Oil Sands Monitoring Program continue to generate as reliable as possible oil sands development related air emission inventories for a wide range of air contaminants and that these inventories be used to track trends in air contaminant emissions associated with oil sands development.

7. Federal and/or Provincial Governments ensure that oil sands emission data is publically available on a timely basis.
8. The Federal and Provincial Governments develop mandatory Guidance Document that provides specific guidance on when, where, and how emission factors are to be used for certain sources and that there be a strong technical basis for these emission factors, i.e. they are based on actual measurement data from oil sands developments.
9. In cumulative effects decision making related to oil sands development Federal and/or Provincial agencies apply the “precautionary principle”.

Air Emission Management

10. The Government of Alberta revise its Standard EIA Terms of Reference to require that EIAs thoroughly evaluation all possible air emission minimization management options and controls.
11. Provincial and federal regulators develop and/or update, on a regular basis e.g. every five years, best available technology economically achievable (BATEA) based limits for certain common and significant oil sands development air emission source types e.g. boilers, heaters, co-generation units, sulphur recovery units, mobile equipment, etc. to reflect advancements in, and availability of, new practices and/or emission control technologies.
12. Provincial and federal regulators provide Fort McKay and other regional stakeholders with the opportunity to have a meaningful role in the development of BATEA limits for oil sands developments.
13. Provincial and federal regulators establish a “best practices” benchmarking process that would provide an open and transparent mechanism for assessing whether or not “best practices” are being required and/or employed for minimizing emissions from oil sands development.

Air Modelling

14. Regulatory authorities use air quality modelling predictions, and particularly predicted exceedances of objectives and standards, to guide cumulative effects management actions and policy and the establishment of “best management” practices and controls.
15. The Government of Alberta revise its Standard EIA Terms of Reference to require that project proponents assess predicted air quality impacts in relation to relevant air quality criteria e.g. CAAQS and LAR air quality thresholds and limits.
16. Governments of Canada and Alberta develop specific and mandatory guidelines on air modelling use and model inputs that will allow model predictions over time, and between projects, to be compared.

17. Government of Canada conduct regional air quality modelling on a periodic basis to provide benchmark model predictions that can be used to evaluate and validate EIA modelling outputs.

Air Emission Related Impact Management Frameworks

18. Governments of Alberta and Canada give priority to developing and/or completing already partially developed air emission related impact thresholds and associated implementation frameworks/plans for oil sands-related air emission parameters of relevance in terms of potential regional impacts e.g. acidification, eutrophication, alkalization, odours and dust.

19. Governments of Alberta and Canada:

- (a) develop region specific thresholds and associated frameworks/plans in a multi-stakeholder forum and in collaboration with those whose environment and/or health is affected and being managed by these thresholds using a process similar to one used by CEEMA;
- (b) once developed, Governments adopt the region specific thresholds and associated frameworks/plans as the impact assessment criteria that project proponents must use and clearly indicate that project proponents will be required to control their emissions to stay below specified thresholds.

Upset Conditions and Associated Emissions

20. The Government of Alberta revise the Standard Terms of References for EIAs for oil sands projects to include details on possible upset events, how the likely frequency of such events is determined, options to reduce or eliminate such events and how such events are managed in terms of ensuring that associate releases are managed/treated to extent possible and do not pose a risk to communities or the public.

Odour Assessment

21. Government of Alberta and Canada provide clear mandatory direction in EIA terms of reference regarding the approach to be followed in conducting odour impact assessments.

22. Government of Alberta and Canada develop regulatory standards for developers to undertake periodic detailed odorant source emission quantification and characterization on all major and potentially significant project odorant emission sources.

23. Government of Alberta and Canada develop regulatory standards that require “best practices” to manage all odorant emission sources associated with the proposed development.

Dust

24. Federal and Provincial Governments take a more active role in addressing regional oil sands related dust issues. This more active role could involve one or more of the following:

- (a) Developing specific guidance on how fugitive dust emissions are to be:
 - (i) estimated and characterized,
 - (ii) modelled and assessed in terms of environmental, health and nuisance impacts, and
 - (iii) managed (i.e. outline the approach and considerations that must be part of a project's dust mitigation plan);
- (b) Including fugitive dust emission management requirements in the oil sands Base-Level Industrial Emission Requirements (BLIERs) that are currently under development;
- (c) Participating in a study with Fort McKay to better quantify the magnitude and spatial extent of dust fall in Fort McKay, on Fort McKay's Reserve Lands and throughout its Traditional Territory;
- (d) Ensuring that material management and interim and final reclamation planning includes considerations related to minimizing the potential for dust generation;
- (e) Establishing a regional multi-stakeholder working group to address the issue of dust in the region; and/or
- (f) Funding studies and/or programs related to technology and dust management practice development to identify and demonstrate economic and effective methods to minimize dust generation associated with oil sands mining facilities in the AOSR.

Monitoring

25. Federal and Provincial Governments, in conjunction with Fort McKay, develop a long term air quality monitoring program focused on the both comprehensive measurement of ambient air quality and the factors affecting air quality in Fort McKay and on Fort McKay's Traditional Lands Reserve Lands.

26. Governments provide funding for community based monitoring and providing access to government air scientists and experts to assist Fort McKay in interpreting and understanding air quality data and in developing its own monitoring programs.

27. The Government of Canada participate in the assessment of oil sands projects until Alberta has a functioning cumulative effects management system that demonstrates, protective measures are in place for the monitoring and management of cumulative effects or Canada conducts a regional impact assessment under the proposed Bill C-68.

51. It is not disputed that air quality is related to human welfare, quality of life and human health.⁴⁹ However, the cumulative air quality impacts of oil sands development are having adverse effects on Fort McKay's welfare, quality of life and health without adequate government action.⁵⁰
52. Fort McKay agrees with the Government of Canada submissions which state states "All governments have a collective responsibility to prevent air quality from deteriorating, to work to ensure that air pollutant concentrations do not exceed the CAAQS within their borders, and to strive for continuous improvements in air quality. The CAAQS are not limits to which 'polluting-up-to' is acceptable. The principles of Keeping Clean Areas Clean and Continuous Improvement apply to the Project and therefore Teck should aim to reduce emissions to the greatest degree possible"⁵¹ However, governments have not been upholding their responsibilities as described in the report of David Spink, P.Eng.⁵²
53. The air quality predictions in the Teck Frontier Oil Sands Mine 2015 Project Update for the planned development case would indicate that future air quality in the Moose Lake area could be at, or slightly above Fort McKay's proposed "keeping clean areas clean" air quality criteria for PM2.5, SO2 and NO2. The Teck Frontier Oil Sands Mine Project air quality predictions distant from the core area of oil sands development North of Fort McMurray highlight the cumulative impact that oil sands emissions can have on regional air quality. These predictions are confirmed by an analysis of air quality data from Fort McKay continuous air monitoring station at its Moose lake Reserves which indicated that at times air emissions from oil sands developments are influencing air quality in this area. It was also noted that overall air quality in this area is currently very good air quality and could still be managed consistent with the CAAQS "keeping clean areas clean" principle.⁵³
54. Teck's 2015 Project Update is the first to undertake a detailed review and assessment of the cumulative effects of fugitive dust emissions associated with oil sands mine haul roads in terms of contributing to total particulate matter, ambient metal levels,

⁴⁹ FMFN Submission, CEAA Registry No. 490 at pdf pg. 880; Government of Canada Submissions, CEAA Registry No. 489 at HC005.

⁵⁰ FMFN Submission, CEAA Registry No. 490 at pdf pg. 880 & 998.

⁵¹ Government of Canada Submissions, CEAA Registry No. 489 at pdf. pg. 165.

⁵² FMFN Submission, CEAA Registry No. 490 at pdf pg. 880.

⁵³ FMFN Submission, CEAA Registry No. 490 at pdf pg. 890.

deposition and exposure. Overall Teck's analysis concludes that oil sands mining are significant source of regional particular matter emissions. This is further to studies completed by WBEA that showed dust impacts to berries in FM's traditional territory the closer the patch was to the mineable oil sands region. Studies have concluded that fugitive dust emissions account for 65% of total PM2.5 emissions from the oil sands, which have significant health concerns. Overall, Teck's environmental assessment demonstrates the need for Government action on the management dust in the region in support of Fort McKay's recommendations.⁵⁴

55. Work completed under the Oil Sands Monitoring program has indicated current emission estimates are low and the consequences for secondary air pollutants, such VOCs, significant, making the oil sands the second largest source of anthropogenic secondary organic aerosols in North America. This type of secondary organic aerosol formation has to date not be considered in any project EIAs and the current model used in EIAs i.e. CALPUFF, is not capable of modelling such secondary particulate matter formation. While Teck has acknowledged the impact of the considerable uncertainties in emission composition and quantity, the precautionary principle on impacts must apply while Alberta and Canada need continue a systematic and comprehensive characterization and quantification of all air emission sources and/or source types.⁵⁵
56. As with Fort McKay, ECCC is supportive of Teck's commitments plans to implement best available technology, design and implement a local air quality monitoring program, and participate on local and regional air quality management initiatives.⁵⁶ What is missing however is Canada and Alberta's commitment to work with stakeholders including aboriginal communities to develop BATEA based limits and a best practices benchmarking process, for effective implementation across the region.⁵⁷
57. Some of the key inabilities that prevent meaningful management of cumulative air quality concerns is the failure of Alberta's environmental assessment processes to adequately and correctly assess air quality impacts. While the cumulative effects of air quality are of significant concerns in Fort McKay's traditional territory and its Reserve lands. However, environmental assessments completed by the Province and regulatory guidance are falling significantly short of understanding, assessing and managing such cumulative effects. This indicates the need for federal intervention and guidance to protect Fort McKay's Treaty rights and health. These failures are as follows:

⁵⁴ FMFN Submission, CEAA Registry No. 490 at pdf pg. 902, 904-905.

⁵⁵ FMFN Submission, CEAA Registry No. 490 at pdf pg. 891-893.

⁵⁶ Government of Canada Submissions, CEAA Registry No. 489 at pdf. pg. ECCC20 & ECCC166.

⁵⁷ FMFN Submission, CEAA Registry No. 490 at pdf pg. 894.

- (a) Despite ongoing document odour concerns at Fort McKay both within the Expert Panel Environmental and Health Impacts of Canada's Oil Sands Industry Report and the AER and Alberta Health, Recurrent Human Health Complaints Technical Information Synthesis: Fort McKay Area, project EIAs have found no or minimal impact to offsite odours and Alberta has not taken action to standardize odour assessment region despite the noted deficiencies raised by Fort McKay and acknowledged by Alberta Health and the AER. Fort McKay had made efforts to propose such standardize assessment and Teck was responsive to this request.⁵⁸
- (b) Alberta's (AER) standard terms of references for environmental impact assessments continue to limit the assessment requirement to the baseline case (approved project emissions), application case (baseline plus the project) and planned development case (emissions from existing, approved and announced projects) without the necessary real life scenario of the pre-disturbance (background), current and project only case. These cases are acknowledged as necessary by Environment Canada and Health Canada, but Alberta has not ever required such assessment. Teck's assessment which included a background, current and project only case demonstrates these additional assessments are feasible and very informative and should be required for all oil sands projects in Alberta, beyond Joint Review Panels.⁵⁹
- (c) Similarly, Alberta (AER) continues to permit the misuse of Ambient Air Quality Objectives and Standards to assess the magnitude of air quality assessments.⁶⁰
- (d) There is also no clear requirement by Alberta (AER) for proponents to assess the number of different types of upset events and to evaluate possible options to reduce or prevent such events. This is despite Fort McKay have experienced a number of significant air quality upset events.⁶¹
- (e) There is also no clear Alberta policy on how the results modelling predictions in environmental impact assessments are to be considered or used in cumulative environmental effect management and related project development decisions. In many Project EIAs and/or applications, there are usually many model predicted exceedances of Alberta Ambient Air Quality Objectives (AAAQOs) under the baseline, application, and/or planned development case scenarios but no policy guidance around how predicted exceedances factor into cumulative

⁵⁸ FMFN Submission, CEAA Registry No. 490 at pdf pg. 901-902.

⁵⁹ FMFN Submission, CEAA Registry No. 490 at pdf pg. 885-886.

⁶⁰ FMFN Submission, CEAA Registry No. 490 at pdf pg. 888-889.

⁶¹ FMFN Submission, CEAA Registry No. 490 at pdf pg. 898-899.

effects management decision e.g. changes to minimum emission management requirements, more intensive impact monitoring, development of contingency plans in the event of measured threshold/criteria exceedances.⁶²

58. Alberta and Canada must take stronger action to protect the health and well-being and of Fort McKay and enjoyment of its Treaty rights adversely affected by regional air quality emissions from the oil sands.

Wetlands

Wetlands

Alberta Wetland Policy

1. Government of Alberta Wetland Policy be immediately revised to require specific description of the wetland types lost from the pre-disturbance landscape and the functional type of wetland being reclaimed in the closure plan and require as regulatory standard the same and wetland types as pre-disturbance are replaced on the landscape post-disturbance.

Alberta Wetland Mitigative Directive

2. The Government of Alberta should immediately revise Alberta Wetland Mitigative Directive to require the Reclamation Proposal from Alberta Mitigation Directive to require information of what using appropriate reclamation techniques specifically entail as part of any application to operate an oil sand mine to ensure development aligns with the new Alberta Wetland Policy.

Water for Life: Alberta's Strategy for Sustainability

3. The Government of Alberta should complete the wetland offset program and a conservation offset program as soon as possible for public lands as both are critical to mitigate cumulative effects on the landscape. The programs should provide protection status to the offsets for the long term not temporary and require equivalency in their description and ongoing monitoring to demonstrate the functional value of these offsets.

Federal Policy

4. The Government of Canada apply Federal Conservation Allowances in respect to the cumulative loss of wetlands and the ecological services and biodiversity provided by wetlands.

Current research and knowledge gaps with respect to cumulative impacts to wetlands and wetland restoration and reclamation

⁶² FMFN Submission, CEAA Registry No. 490 at pdf pg. 895.

5. The Government of Alberta and Canada establish a regional wetland monitoring system immediately under the authority of the joint Alberta Canada oil sands monitoring agreement. A monitoring plan that represents the entire oil sands area needs to be established for wetlands and biodiversity.

6. The Government of Alberta and Alberta should developing regional plans for reclamation of wetlands and surface water movement across the mined landscape rather than project by project reclamation that is not integrated over the larger regional landscape.

59. Tecks' update assessment indicates a substantial reduction in wetland area of approximately 50% of the planned development case compared to the base case. There are a number of policy gaps preventing effective mitigation and management of this significant impact.⁶³ These gaps were identified in report the of Eric Butterworth.⁶⁴

60. Teck refers to the potential of using offsets to mitigate some of the effects of the loss of wetlands during the mining period. However, Alberta's Wetland Offset program and Conservation Offset program is still in development with Alberta Environment and Parks. This is despite the JRP for the Shell Jackpine Mine Expansion recognizing the use of offsets to help mitigate cumulative regional effects on wetlands. Wetland and conservation offset programs are critical to mitigate cumulative effects on the landscape. The programs need to provide protection status to the offsets for the long term not temporary. The programs need to require equivalency in their description and ongoing monitoring to demonstrate the functional value of these offsets.⁶⁵

61. Teck proposes constructed wetlands, engineered wetlands, opportunistic wetlands and wetlands for bioremediation. Policy directives and guidelines from the Alberta Government for treatment and constructed wetlands in the boreal region are still being developed and updated.⁶⁶

62. The wetland valuation system as explained in the Wetland Policy and the Mitigative Directive does not differentiate or require a specific description of the wetland types lost from the pre-disturbance landscape and the functional type of wetland being reclaimed in the closure plan, nor does it require the same and wetland types as pre-disturbance are replaced on the landscape post-disturbance.⁶⁷

⁶³ FMFN Submission, CEAA Registry No. 490 at pdf pg. 1343-1344.

⁶⁴ FMFN Submission, CEAA Registry No. 490 at pdf pg. 1343.

⁶⁵ FMFN Submission, CEAA Registry No. 490 at pdf pg. 1344 & 1348.

⁶⁶ FMFN Submission, CEAA Registry No. 490 at pdf pg. 1344.

⁶⁷ FMFN Submission, CEAA Registry No. 490 at pdf pg. 1346.

63. A sound, regional monitoring program to measure the cumulative effects on wetlands in the oil sands mining region is needed but is currently not proposed within the region's Oil Sands Monitoring program.⁶⁸ One-off individual projects whose impacts only affect their local project area or part of a Land Use Regional Plan. Currently the one by one project evaluation is not integrated into a regional impact on the landscape.⁶⁹

Tailings Management, End Pit Lakes, Reclamation and Closure Landscape

Tailings, End Pit Lake, Reclamation and Closure Landscape

1. The Government of Alberta and Canada establish a multi-stakeholder initiative similar to CEMA or re-fund CEMA with stable funding to address current priority management and knowledge gaps with respect to tailings management integration into final reclamation and closure landscape.
 - (a) complete the work of the Closure Coordination Task Group to develop a Landscape Design Guidance Document for designing oil sands mining landforms for natural appearance and landform integration (See Donald Report Section 2.4).
 - (b) follow up the gaps identified in the End Pit Lake Guidance Document (See Donald Report at Table 2.2).
 - (c) as priority issue, develop risk pathways for chemicals of potential concern in treated tailings deposit by treatment technology and placement on landscape and to understand risks to reclamation of treated tailings deposits by treatment technology and placement on landscape. As the placement of treated tailings is about to ramp up with the approval of the tailings management plans and implementation of the treatment technologies at all of the mines, it is an extremely high priority to convene a multi-stakeholder table to include Aboriginal communities in the risk assessment work. The results of this work could also contribute to further developing the liability calculations of treated tailings deposits on the landscape under the Mine Financial Security Program which is another critical gap.
 - (d) as priority issue, develop climate mitigation and adaptation planning for oil sands mine reclamation with inclusion of Aboriginal communities and conducting a regional analysis of climate change for the mineable oil sands is required, with consideration of a Ecosystem Based Approach prompted by the International Union for Conservation of Nature.

⁶⁸ FMFN Submission, CEAA Registry No. 490 at pdf pg. 1344.

⁶⁹ FMFN Submission, CEAA Registry No. 490 at pdf pg. 1350.

(e) follow up the gaps identified in 2015 for reclamation planning, operations, effectiveness monitoring, and certification compiled by CEMA's Reclamation Working Group (See Donald Report Section 2.3).

64. Teck has committed to progressive reclamation to reduce effects on traditional resources. Teck acknowledges there are outstanding concerns about the potential for reclamation to restore landscapes in a manner compatible with the cultural values of Aboriginal communities.⁷⁰ Such reclamation would include tailings reclamation, which are required to be treated and progressively reclaimed pursuant to the Tailings Management Framework.⁷¹
65. The Expert Report of Dr. Donald provides a comprehensive analysis of key knowledge gaps and assumptions in tailings management, reclamation, end pit lakes and mine closure.⁷² These key knowledge gaps indicate a number of uncertainties in the ability of the landscape to support traditional land use into the future, many of which were identified and sought to be addressed through the work of CEMA through its Reclamation Working Group and Closure Coordination Task Group, whose important work remains incomplete with the loss of CEMA funding.
66. Dr. Donald's analysis included identifying priority issues based on Teck's reclamation related mitigation and commitments made for potential impacts to Fort McKay First Nation as identified in Table 10.12-6 of JRP IR Response 10.12. Dr. Donald compared the reclamation related mitigated measures to the uncertainties identified across the industry and CEMA's work to conclude that the incomplete work of the Closure Coordination Task Group to develop a Landscape Design Guidance Document for designing oil sands mining landforms for natural appearance and landform integration and follow up on the gaps identified in the End Pit Lake Guidance Document would inform the mitigation measures proposed by Teck.⁷³
67. If refunded, the work of the Closure Coordination Task Group could also extend to support incorporation of traditional knowledge and biodiversity needs as identified by Dr. Donald in the Reclamation Gaps of CEMA's Reclamation Working Group⁷⁴ to plan and design a regional landscape as sought by Fort McKay and recommended by Eric

⁷⁰ Project Update, CEAA Registry No. 163 – 0048.00 at pdf pg. 123

⁷¹ FMFN Submission, CEAA Registry No. 490 at pdf pg. 1387.

⁷² FMFN Submission, CEAA Registry No. 490 at pdf pg. 1356.

⁷³ FMFN Submission, CEAA Registry No. 490 at pdf pg. 1392, 1394, 1419.

⁷⁴ FMFN Submission, CEAA Registry No. 490 at pdf pg. 1423.

Butterworth for regional plans for reclamations of wetlands and surface water movement across the mined landscape.⁷⁵

68. With respect to End Pit Lakes, Dr. Gillian notes that a regional adaptive management framework could directly evaluate the assumptions and uncertainties in the mitigation measures and reclamation guidance for end pit lakes and reclamation and closure plans. Dr. Gillian notes the lack of a regional adaptive management framework as the biggest gap in the cumulative effects management despite CEMA's substantive work in developing an Adaptive Management Framework and Effectiveness Monitoring program.⁷⁶
69. Lastly with respect to end pit lakes and other tailings deposits, Alberta has committed to the cumulative effects management that includes assessing risk within the Tailings Management Framework. However, regional triggers and management limits and actions remain undeveloped under the TMF and further directive 85 does not require ecological risk assessment of proposed tailings deposits although some work is be done at industry's COSIA. As human health and ecological risk assessment of tailings is a critical issue for aboriginal communities, there is need for multi-stakeholder table to include Aboriginal communities in the risk assessment work.⁷⁷
70. With respect to Panel's questions to Teck about the impact of climate change on reclamation outcomes including for aboriginal peoples, Dr. Gillian recommends that proactive, direct research and development of guidance to provide regional support to oil sands operators for preparing Climate Mitigation and Adaptation Plans for mine reclamation is required as recommended to the Minister of Alberta Environment and Parks by the Climate Change Advisory Panel, which is still not require.⁷⁸ The is despite, the Reclamation Working Group of CEMA, with matching funds from Natural Resources Canada's Enhancing Competitiveness in a Changing Climate Program, having developed a Climate Change Adaptation Decision Support Tool to support reclamation planning for mines to facilitate an understanding of the risks associated with climate change to reclamation outcomes.⁷⁹

⁷⁵ FMFN Submission, CEAA Registry No. 490 at pdf pg. 1108 & 1394.

⁷⁶ FMFN Submission, CEAA Registry No. 490 at pdf pg. 1397-1398 & 1384

⁷⁷ FMFN Submission, CEAA Registry No. 490 at pdf pg. 1398-1399.

⁷⁸ FMFN Submission, CEAA Registry No. 490 at pdf pg. 1405 & 1390.

⁷⁹ FMFN Submission, CEAA Registry No. 490 at pdf pg. 1405.

Regional and Community Based Monitoring

Oil Sands Monitoring

1. The Government of Alberta and Canada through the Oil Sands Monitoring (OSM):
 - (a) commit to long-term, reliable, and stable funding to the Wood Buffalo Environmental Association (WBEA) for the duration of resource extraction and project life-cycle;
 - (b) enter into a Traditional Knowledge (TK) sharing agreement with Fort McKay with respect to the confidentiality and intellectual property in TK and to ensure the integrity of the science and data collected through TK to be applied for all funding programs;
 - (c) commit to long-term funding for Fort McKay's community based monitoring for water quantity and quality and air quality in the Moose Lake Area;
 - (d) commit to long-term funding for Oski-Otin to continue at Fort McKay,
 - (e) commit to increased speciated hydrocarbon/VOC monitoring in the region; and
 - (f) that Alberta implement a responsible performance target for THC/NMHC as part of its Ambient Air Quality Objectives.
2. To the Governments of Alberta and Canada increase funding:
 - (a) to OSM to ensure timely dissemination of information in plain and accessible language and formats.
 - (b) the development and implementation of easily accessible and consistently formatted, one-page summary documents that outline the findings and associated significance of any focused study aspects of the OSM program, as well as long-term monitoring results, and trends so that stakeholders at all levels can easily understand the findings from each of the components of the OSM program.
 - (c) the development of a single all-encompassing online portal that is user-friendly and allows stakeholders to be able to quickly access meaningful environmental monitoring information trends in long-term monitoring, reports, and one-page summaries, etc.
3. The Governments of Alberta and Canada through OSM prioritize the inclusion of TEK and rights-based indicators into OSM program designs, so that Aboriginal and Treaty rights are

meaningfully protected through direct monitoring and reporting as a priority.

4. Alberta and Canada provide the resources and financial support for Fort McKay to develop and implement a community-based monitoring (CBM) program to track and measure indicators that support Fort McKay's right-based activities.

5. Alberta and Canada should commit to working with Fort McKay to use the findings from the CBM to assess, respond and adapt environmental management practices in an effort to sustain and improve the capacity of Fort McKay community members to exercise their land-based rights.

(a) Alberta and Canada should develop and implement, in cooperation with Fort McKay, an integrated, scientifically valid and culturally relevant, and transparent system for assessing and monitoring cumulative environmental and cultural impacts in the region.

71. Teck has committed to contribute to participate in the Oil Sands Monitoring program. The evidence of Ryan Abel provides an update and outstanding deficiencies of Alberta and Canada's oil sands monitoring program.⁸⁰

72. While improvements have been made to the regional monitoring program, the success of the inclusiveness of aboriginal peoples' remains unknown at this very early stage and significant areas of needed improvement exist. These include the integration of land, water and air data; timely reporting of evaluation data in a manner that is easy for stakeholders to understand; broader incorporation of traditional environmental knowledge the development of rights based indicators to support rights protections; and the need for further investment in ongoing long term programs rather than seasonal, campaign style monitoring in support of academic research. Some of OSM's long-term programs require re-evaluation while others secured and long-term funding.⁸¹

73. Alberta's Biodiversity Monitoring Program needs re-evaluation which calculates a composite indicator on a course scale. Additionally, OSM's limited water monitoring of the mainstem of the Athabasca River is highly deficient and has led to Fort McKay committing its own funding for water monitoring at Moose Lake.⁸²

⁸⁰ FMFN Submission, CEAA Registry No. 490 at pdf pg.988.

⁸¹ FMFN Submission, CEAA Registry No. 490 at pdf pg.994.

⁸² FMFN Submission, CEAA Registry No. 490 at pdf pg.994.

74. OSM is currently funding Oski Otin air monitoring at Fort McKay, which is a world class monitoring station. The station monitors a parameters that are not available in the provincial system and provides real time data to the community in a visual format. ECCC has indicated it intends to decommission this station in the near term, which is of significant concern to Fort McKay as it provides valuable and important data that the province does not provide.⁸³
75. Support for community based monitoring also needs improvement at OSM, which currently supports little community based programs based on community needs. For example, Fort McKay air and limited water monitoring initiatives cost Fort McKay approximately \$500,000 of its own funding.⁸⁴
76. Fort McKay's evidence included the Technical Memo of Integral Ecology Group that describes the value of community-based monitoring as a tool to monitor results that are meaningful to aboriginal communities to allow them to inform and engage industry and regulators on the management of development impacts. Such engagement could include the development of regional land use and regulatory measures such as the development of best practices. Integral Ecology Group identifies a number of key principles that are a necessary part of a meaningful community-based monitoring program and which would be the basis upon which the Government of Alberta and Canada should seek to work with Fort McKay in the development such programs⁸⁵
77. Like, Dr. Donald, Mr. Abel's evidence is that the greatest deficiency in cumulative effects management remains the lack of thresholds to trigger adaptive management plans, and subsequent adaptive management plans. The LARP Review Panel and numerous AER decisions have acknowledged that no threshold exists for Treaty and Aboriginal rights and LARP's land disturbance and biodiversity thresholds remain undeveloped. When thresholds exists, little to no substantive action is taken by the AER or Alberta Environment. This is shown with exceedances of air quality thresholds.⁸⁶

Multi-Stakeholder Initiatives Inclusive of Aboriginal People

Inclusion of Aboriginal Peoples in Land Use Planning

1. The Government of Alberta respond to or implement CEMA's submitted Indigenous Community-Specific Engagement Guidelines, Traditional Knowledge Research Guidelines Revised Edition or Indigenous Traditional Knowledge Framework as model governance

⁸³ FMFN Submission, CEAA Registry No. 490 at pdf pg. 906-907.

⁸⁴ FMFN Submission, CEAA Registry No. 490 at pdf pg. 995-996.

⁸⁵ FMFN Submission, CEAA Registry No. 490 1450-1451.

⁸⁶ FMFN Submission, CEAA Registry No. 490 at pdf pg. 998.

structure for multi-stakeholder organizations.

4. The Government of Canada and Alberta participate in co-planning initiatives with a view of applying the principles and structure preferred by Fort McKay.

78. As stated above, Teck makes commitments to participate and contribute to regional organizations and initiatives as they emerge with the loss of the *Cumulative Effects Management Association* (CEMA). Teck expects that other regional initiatives will emerge, or existing organizations may be expanded.⁸⁷

79. The report of Dr. Gillian Donald sets out the history, role and significance of CEMA for inclusion of aboriginal communities in cumulative effects management. The value of CEMA's work is emphasized throughout Fort McKay's submissions including:

- (a) David Spink's discussion of regional thresholds and frameworks for air quality issues like those done by CEMA for Acid Deposition Management, Ozone Management and Interim Nitrogen Eutrophication Management, who notes that the Frameworks were never fully completed because of CEMA's loss of mandatory funding in 2015 despite all stakeholders and Alberta committing to adopt the frameworks;⁸⁸
- (b) opportunities for government and aboriginal input into reclamation and re-colonization practices as discussed by Lorne Gould;⁸⁹
- (c) Eric Butterworth's discussion of the assessment of impacts of cumulative effects on wetland function in providing ecological services to the people of the region; and⁹⁰
- (d) the extensive work completed for reclamation related issues as discussed by Dr. Gillian Donald, including guidance documents specifically referred to in EPEA approvals.

80. The role of CEMA came under review when Alberta's new regulatory system was established with the Alberta's single regulator (the AER), a new monitoring program (the then AEMERA) and regional land use planning (LARP). These actions were intended to achieve Alberta's new cumulative effects management focus through the Integrated

⁸⁷ FMFN Submission, CEAA Registry No. 490 at pdf pg. 1358.

⁸⁸ FMFN Submission, CEAA Registry No. 490 at pdf pg. 897.

⁸⁹ FMFN Submission, CEAA Registry No. 490 at pdf pg. 954.

⁹⁰ FMFN Submission, CEAA Registry No. 490 at pdf pg. 1350.

Resource Management System that remains an elusive concept, particularly in how it will engage indigenous people.⁹¹

81. CEMA was in operation for 15 years by 2015 and was established as a key advisor to the provincial and federal governments on cumulative environmental effects management for air, land, water and biodiversity. Membership was intended to be inclusive and included First Nations and Métis Groups, municipal, provincial and federal governments, environmental advocacy groups, educational institutions, and energy and forestry industry organizations.⁹²
82. Within CEMA, guidance was developed for culturally appropriate processes and methodologies for the inclusion of aboriginal communities in governance and work of CEMA. This included three major projects to further define processes for inclusion of Aboriginal Communities: Community-Specific Engagement Guidelines, Traditional Knowledge Research Guidelines Revised Edition, and Indigenous Traditional Knowledge Framework.⁹³
83. Following the ratification by cabinet in 2012 of the Lower Athabasca Regional Plan, Alberta Environment and Sustainable Resource Development (AESRD) initiated a review of regional multi-stakeholder organizations, including an assessment of the Cumulative Environmental Management Association (CEMA), and CEMA's ability to contribute to the Integrated Resource Management System (IRMS) Functions, and a transition plan with options for how regional organizations could inform and contribute to IRMS functions in the future. This was done by the Human Environment Group with a final report issued in October 2014.⁹⁴
84. Recommendations were made to establish the Lower Athabasca Advisory Council (LAAC) to act as a key advisor to Alberta to play an active role in ensuring environmental, social and economic strategic intent is being achieved in the region; and for Alberta to continue to fund and support CEMA as a multi-stakeholder organization to transition the organization into a component of the LAAC.⁹⁵
85. These recommendations were never implemented. No advisory body was established based on the LAAC model. In June 2015, Alberta announced that it would no longer require funding of CEMA. Alberta claimed that in the same year it would engage

⁹¹ FMFN Submission, CEAA Registry No. 490 at pdf pg. 1358, 1360-1361.

⁹² FMFN Submission, CEAA Registry No. 490 at pdf pg. 1359.

⁹³ FMFN Submission, CEAA Registry No. 490 at pdf pg. 1365.

⁹⁴ FMFN Submission, CEAA Registry No. 490 at pdf pg. 1375.

⁹⁵ FMFN Submission, CEAA Registry No. 490 at pdf pg. 1382.

stakeholders with concept and proposal for government-led, regional multi-stakeholder forums to focus on regional plan implementation and action.⁹⁶ This did not occur.

86. As of August 2018, CEMA has not merged with other multi-stakeholder organizations and no multi-stakeholder initiative under IRMS has been launched to conduct the incomplete work of CEMA's working groups or to address CEMA's mandate. The workplans defined by the working groups of CEMA remain incomplete and no government-led "multi-stakeholder" forums have addressed the knowledge gaps identified by CEMA working groups, as the focus of Environment and Parks has been the implementation of the Lower Athabasca Regional Plan.⁹⁷
87. Over six years since the coming into force of LARP, the regional plan remains incomplete and un-protective of (indeed harmful to) biodiversity and treaty and aboriginal rights as confirmed by the LARP Review Panel Report. Yet regulators and Alberta's consultation office continues to rely on the defective plan to by-pass aboriginal communities; concerns with cumulative effects of development.⁹⁸
88. LARP has not created an inclusive aboriginal in cumulative effects management despite this being one of its key outcomes. This is all a major failure on the part of Alberta Environment and Parks to address cumulative effects management in the Athabasca Oil Sands region.
89. One way Alberta could begin to ameliorate this, is by committing to meaningful co-management schemes with respect decision-making on the industrial stressors affecting Treaty and Aboriginal rights. Alberta acknowledges co-management would assist in implementing UNDRIP as it has committed but it remains unwilling to carry this out in a meaningful way as described by Dr. Pinto. To be meaningful, co-management needs to meet the principles identified by Fort McKay in the evidence of Dr. Alvaro Pinto.⁹⁹

⁹⁶ FMFN Submission, CEAA Registry No. 490 at pdf pg. 1361.

⁹⁷ FMFN Submission, CEAA Registry No. 490 at pdf pg. 1360.

⁹⁸ FMFN Submission, CEAA Registry No. 490 at pdf pg. 31 & 329.

⁹⁹ FMFN Submission, CEAA Registry No. 490 at pdf pgs. 29-38.