

Decision Statement
Issued under Section 54 of the *Canadian Environmental Assessment Act, 2012*

to
Canadian Natural Upgrading Limited
c/o Paul Mendes, Vice President and Corporate Secretary

2100 Banker's Hall, East Tower, 855, 2nd Street SW
Calgary, Alberta
T2P 4J8

for the
Jackpine Mine Expansion Project

Description of the Designated Project

Canadian Natural Upgrading Limited (the Proponent) proposes to expand its current Jackpine Mine to access adjacent oil sands mining leases. The Jackpine Mine Expansion project (the Designated Project) would increase the capacity of the Jackpine Mine by 100 000 barrels per day (15 900 m³/d), bringing the total bitumen production capacity of the mining facility to 300 000 barrels per day (47 700 m³/d). The proposed expansion would extend mining to the east and north of the Jackpine Mine and include construction of a new external tailings disposal area.

Conduct of the environmental assessment

The federal Minister of the Environment (the Minister) and the Chairman of the Energy Resources Conservation Board entered into an Agreement to Establish a Joint Review Panel for the Jackpine Mine Expansion project on September 20, 2011. The Joint Review Panel conducted its review in a manner that discharged the responsibilities of the Alberta *Resource Energy Development Act*, the Alberta *Oil Sands Conservation Act*, and the requirements of the *Canadian Environmental Assessment Act, 2012* (CEAA 2012). The Joint Review Panel submitted its report to the Minister and the Alberta Energy Regulator (formerly the Energy Resources Conservation Board) on July 9, 2013.

Decision on Environmental Effects referred to in subsection 5(1) of CEAA 2012

In accordance with paragraph 52(1)(a) of CEAA 2012, after considering the Report of the Joint Review Panel on the Shell Canada Energy Jackpine Mine Expansion project and the implementation of mitigation measures that I consider appropriate, I determined that the Designated Project is likely to cause significance adverse environmental effects referred to in subsection 5(1) of CEAA 2012.

In accordance with subsection 52(2) of CEAA 2012, I referred to the Governor in Council the matter of whether those significant adverse environmental effects were justified in the circumstances.

In accordance with paragraph 52(4) (a) of CEEA 2012 the Governor in Council decided that the significant adverse environmental effects that the Designated Project is likely to cause, are justified in the circumstances.

In accordance with subsection 53(1) of CEEA 2012, I have established the conditions below, in relation to the environmental effects referred to in subsection 5(1) of CEEA 2012, with which Canadian Natural Upgrading Limited must comply.

Decision on Environmental Effects referred to in subsection 5(2) of CEEA 2012

The carrying out of the Designated Project may require the following federal authorities to exercise a power or perform a duty or function conferred to it under an Act of Parliament other than CEEA 2012:

- Fisheries and Ocean Canada may issue a *Fisheries Act* Authorization due to the harmful alteration, disruption, and/or destruction of fish habitat, and
- Transport Canada may issue a Navigable Waters Permit under the *Navigable Waters Protection Act*.

In accordance with paragraph 52(1)(b) of CEEA 2012, I have decided, after considering the Report of the Joint Review Panel on the Shell Canada Energy Jackpine Mine Expansion Project that the Designated Project is not likely to cause significant adverse environmental effects referred to in subsection 5(2).

Issuance

This Decision Statement is issued on December 6, 2013 at Ottawa by:

< original signed by >

The Honourable Leona Aglukkaq
Minister of the Environment

Definitions

The following definitions are for the purposes of interpreting the condition set out in this decision statement.

- 1.1. *Aboriginal Groups* – means the Athabasca Chipewyan First Nation, Mikisew Cree First Nation, Fort McKay First Nation, Fort McKay Metis Local 63, Fort McMurray #468 First Nation, Metis Nation of Alberta Region 1, Fort Chipewyan Metis Local 125, Fort McMurray Metis Local 1935.
- 1.2. *Activities* – means any Proponent action in the project area to advance the Jackpine Mine Expansion project that may cause an environmental effect referred to in subsection 5(1) of CEEA 2012
- 1.3. *Agency* – means the Canadian Environmental Assessment Agency.
- 1.4. *Approval* – means written confirmation of Agency approval.
- 1.5. *Aquatic* – means water, riparian, wetland, and littoral zones frequented by fish, aquatic organisms, and migratory birds.
- 1.6. *Aquatic Health* – means the health of aquatic species, aquatic habitat (including population diversity), and water quality.
- 1.7. *Baseline* – means the pre-disturbance environmental conditions.
- 1.8. *End pit lake water release criteria*¹ – means, at any point in the life of the Jackpine Mine Expansion, the current version of the end pit lake water release criteria approved by the Government of Alberta.
- 1.9. *Fish habitat* – means spawning grounds and nursery, rearing, food supply, and migration areas on which fish depend directly or indirectly in order to carry out their life processes.
- 1.10. *Fish passage* – means the free transit of fish, upstream and downstream, associated with migration or localized movement that is necessary to complete their life cycle and a route for fish to move between habitat types.
- 1.11. *Functioning aquatic ecosystem* – means a geomorphically stable, biologically healthy, self-sustaining ecosystem based on the monitoring of biological performance of components and parameters to be determined between the Proponent and Fisheries and Oceans Canada.
- 1.12. *Guidelines for Wetland Establishment on Reclaimed Oilsands* – means the current version of the policy document published by the Cumulative Environmental Management Association or any superseding document.
- 1.13. *Industrial waterbody(ies)* – means any anthropomorphically constructed or modified waterbody.

¹ Report of the Joint Review Panel Shell Canada Energy Jackpine Mine Expansion Project (July 2013) page 77

- 1.14. *Jackpine Mine Expansion* – means the expansion of the Shell Jackpine Mine Oil Sands Processing Plant and Associated Mines as described in documents to support the environmental assessment under the Canadian Environmental Assessment Act, 2012. Canadian Environmental Assessment Registry Reference Number 59540.
- 1.15. *Lenticular patterned fen* – means the fen located in the northeast portion of the Jackpine Mine Expansion project area as referenced in the environmental assessment.
- 1.16. *Migratory bird* – means a migratory bird referred to in the *Migratory Bird Convention Act, 1994* and includes the sperm, eggs, embryos, tissue cultures and parts of the bird.
- 1.17. *Muskeg River* – means one whole reach upstream from any activities related to the Jackpine Mine Expansion project, not including the reach where the most upstream disturbance is located, and all reaches downstream of any disturbance from the Jackpine Mine Expansion project.
- 1.18. *Muskeg River Diversion* – means the current version of all physical activities related to the diversion of the Muskeg River, as specified by the Proponent in the environmental assessment and the Muskeg River Diversion Plan or any superseding document.
- 1.19. *Muskeg River Management Framework for Water Quality and Quantity* – means the current version of the policy document published by the Alberta Government and any superseding document.
- 1.20. *Navigability* – means sufficient flow rate, water depth, and water width to allow for the passage of a vessel, including a vessel used by Aboriginal peoples in the context of their current use of lands and resources for traditional purposes.
- 1.21. *Off-road equipment* – means all machines that are equipped with an off-road engine, that meet the definitions of machine and off-road engine set out in subsection 1(1) of the *Off-Road Compression Ignition Engine Emission Regulations (Canadian Environmental Protection Act, 1999)*, operated within the Jackpine Mine Expansion project area.
- 1.22. *Pre-disturbance landscape* – means the state of the Jackpine Mine Expansion project landscape prior to clearing activities.
- 1.23. *Project area* – means the Jackpine Mine Expansion project area which includes Oil Sand Leases 7277080T13 (Lease 13), 728101AT36 (Lease AT3), 7288080T88 (Lease 88), 7288080T89 (Lease 89), 7405120015 (Lease 015), and 7405090631 (Lease 631) and any future fish compensation sites.
- 1.24. *Process affected water*² – means any water that may be affected by process-related operations (including seepage into mine pits).
- 1.25. *Proponent* – means Canadian Natural Upgrading Limited.

² *Report of the Joint Review Panel Shell Canada Energy Jackpine Mine Expansion Project (July 2013)* Paragraph [362], page 62

- 1.26. *Surface Water Quality Management Framework, Lower Athabasca Regional Plan* – means the current version of the policy document produced by the Alberta Government or any superseding document.
- 1.27. *Wetland* – means land saturated with water long enough to promote formation of water altered soils, growth of water tolerant vegetation, and various kinds of biological activity that are adapted to the wet environment, and separated into 5 classes: fen, bog, marsh, swamp, and shallow open water wetlands (includes open water areas < 2 m deep with wetland characteristics).

Conditions

These conditions do not relieve the Proponent from any obligation to comply with other legislative or other legal requirements.

Establish baseline and evaluate mitigation measures

- 2.1. The Proponent shall prepare an Aquatic Ecosystem Monitoring Plan and obtain approval from the Agency for the plan six months prior to initiating activities that may affect the water bodies listed in 2.2.
- 2.2. The Aquatic Ecosystem Monitoring Plan shall apply to:
 - 2.2.1. Kearl Lake;
 - 2.2.2. Muskeg River;
 - 2.2.3. Muskeg River Diversion;
 - 2.2.4. future end pit lakes; and
 - 2.2.5. future fish habitat compensation site(s).
- 2.3. The Aquatic Ecosystem Monitoring Plan shall include:
 - 2.3.1. the methods to characterize and quantify aquatic health using, as appropriate, parameters set out in :
 - 2.3.1.(a) Muskeg River Water Quality and Quantity Management Framework;
 - 2.3.1.(b) Surface Water Quality Management Framework for the Lower Athabasca Regional Plan;
 - 2.3.1.(c) end pit lake water release criteria; and
 - 2.3.1.(d) Canadian Council of Ministers of the Environment Canadian Water Quality Guidelines for the Protection of Aquatic Life including naphthenic acid water quality objectives.
 - 2.3.2. the methods to characterize and quantify all sources of mercury and polycyclic aromatic hydrocarbons in fish tissue and the aquatic environment of the fish habitat compensation site(s) and end pit lakes.
 - 2.3.3. the methods to quantify:
 - 2.3.3.(a) the volume of end pit lake water released daily (measured as an average in cubic metres;

- 2.3.3.(b) flow rates between Kears Lake and the Muskeg River;
 - 2.3.3.(c) fish passage between Kears Lake and the Muskeg River;
 - 2.3.3.(d) flow rates in the Muskeg River and the Muskeg River Diversion;
 - 2.3.3.(e) the navigability of the Muskeg River; and
 - 2.3.3.(f) fish passage in the Muskeg River and in the Muskeg River Diversion.
- 2.4. The Proponent shall establish the baseline aquatic health, flow rates, fish passage, mercury and polycyclic aromatic hydrocarbons in fish tissue, and navigability for Kears Lake and the Muskeg River using the parameters described in condition 2.3, as applicable. The baseline for each of these considerations shall be established prior to any project impacts occurring on Kears Lake and the Muskeg River using five years of data, with no data set older than ten years.
- 2.5. The Proponent shall conduct monitoring
- 2.5.1. to evaluate the parameters in condition 2.3 as project impacts occur on each of the components in condition 2.2; and
 - 2.5.2. to evaluate the effectiveness of the mitigation measures in this Decision Statement, and to verify the accuracy of the projections made during the environmental assessment, on the parameters in 2.3, as applicable:
 - 2.5.2.(a) for ten years following the initiation of activities that will affect Kears Lake;
 - 2.5.2.(b) for ten years following the initiation of activities that will affect the Muskeg River;
 - 2.5.2.(c) for ten years following the completion of the Muskeg River Diversion;
 - 2.5.2.(d) from the completion of the construction of the future fish habitat compensation site(s) until there is a functioning aquatic ecosystem; and
 - 2.5.2.(e) from the initiation of end pit lake construction until there is a functioning aquatic ecosystem.
- 2.6. The Proponent shall prepare and submit to the Agency on an annual basis an analysis and summary of results of the monitoring of all parameters defined in condition 2.3.
- 2.6.1. For Kears Lake and the Muskeg River the analysis of the monitoring data shall include an annual comparison of the aquatic health quality, navigability, flow rates, and fish passage with the baseline established in condition 2.4.1
 - 2.6.2. For the Muskeg River Diversion, the analysis of the monitoring data shall include an annual comparison of the navigability, flow rates, and fish passage with the baseline established for the Muskeg River in condition 2.4.1.
 - 2.6.3. The analysis shall include trends in annual flow rates and a comparison of those results to climate change model predictions.
- 2.7. The Proponent shall update and obtain approval from the Agency for the Aquatic Ecosystem Monitoring Plan every five years to incorporate information and improvements based on monitoring data and to reflect completion of project activities which no longer require monitoring or follow-up.
- 2.8. The Proponent shall implement the approved Aquatic Ecosystem Monitoring Plan, as amended from time to time, and report annually on the results as per condition 15.

Kearl Lake aquatic health maintained

- 3.1. The Proponent shall maintain the baseline flow rates and fish passage between Kearl Lake and the Muskeg River as established in condition 2.4.
- 3.2. The Proponent shall maintain the baseline aquatic health in Kearl Lake as established in condition 2.4.
- 3.3. The Proponent shall not allow process affected water to enter Kearl Lake.

Muskeg River navigability, fish health, and fish abundance maintained

- 4.1. The Proponent shall maintain the baseline aquatic health within the Muskeg River as established in condition 2.4.
- 4.2. The Proponent shall maintain the baseline water quality and quantity in the Muskeg River Diversion as established in condition 2.4.
- 4.3. The Proponent shall not allow process affected water to enter the Muskeg River or the Muskeg River Diversion.
- 4.4. The Proponent shall maintain baseline fish passage rates in the Muskeg River, and the Muskeg River Diversion when constructed, as established in condition 2.4.
- 4.5. The Proponent shall maintain the baseline navigability in the Muskeg River, and the River Diversion when constructed, as established in condition 2.4.

Protect fish and fish habitat

- 5.1. The Proponent shall prepare and submit to the Agency an annual schedule identifying the location and timing of dewatering activities six months prior to such activities occurring. To avoid destruction of fish, the Proponent shall implement fish rescue procedures during dewatering, as developed with Fisheries and Oceans Canada.
- 5.2. The Proponent shall conduct an analysis of feasible fish habitat compensation sites(s) that includes:
 - 5.2.1. predictions of climate change effects on fish habitat loss/gains;
 - 5.2.2. migratory bird use of the proposed fish habitat compensation site(s);
 - 5.2.3. terrestrial species use of the proposed fish habitat compensation site(s);
 - 5.2.4. species at risk use of the proposed fish habitat compensation sites(s) and a comparative assessment of the effects of the proposed sites on areas used by species at risk. The analysis will consider available draft or final species at risk recovery strategies, including critical habitat identification;
 - 5.2.5. current use of lands and resources for traditional purposes by Aboriginal peoples;
 - 5.2.6. effects on migratory birds and their habitat;

- 5.2.7. effects on terrestrial species and their habitat;
 - 5.2.8. effects on terrestrial species at risk and species at risk habitat;
 - 5.2.9. additional criteria identified by relevant federal departments(s);
 - 5.2.10. sources of mercury and polycyclic aromatic hydrocarbons; and
 - 5.2.11. hydrologic modelling of inputs and outputs including groundwater.
- 5.3. The Proponent shall implement measures to manage the level of mercury and polycyclic aromatic hydrocarbons, as established in condition 2.4.
- 5.4. The fish habitat compensation plan shall include specific benchmarks or thresholds that assess individual target fish species, fish population diversity, and fish abundance.
- 5.5. The Proponent shall incorporate the results of the analysis in condition 5.2, the measures identified in condition 5.3 and the benchmarks or thresholds to be proposed in condition 5.4 into any fish habitat compensation plan developed for Fisheries and Oceans Canada for the Jackpine Mine Expansion project.

Avoid disturbances and destruction of migratory birds

- 6.1. In conducting its vegetation clearing and removal activities, the Proponent shall avoid impacting migratory birds, their nests, and eggs.
- 6.2. The Proponent shall prepare and submit to the Agency an annual schedule, describing the location and timing for vegetation clearing and removal, six months prior to initiating any of the annual clearing and removal activities.
- 6.3. The Proponent shall determine the presence or absence of migratory birds, their nests, or eggs or migratory bird breeding and nesting activity immediately prior to the vegetation clearing and removal activities.
- 6.4. The Proponent shall implement measures to avoid impacts to migratory birds, their nests and eggs should any indication of migratory birds, nests, or eggs, or migratory bird breeding and nesting activity be encountered prior to or during any vegetation clearing or removal activities.
- 6.5. The Proponent shall avoid, and monitor for, noise disruption or disturbance of breeding migratory birds in and adjacent to the Jackpine Pine Mine Expansion project area during activities.

Avoid migratory bird mortality

- 7.1. In managing its tailings ponds and other industrial waterbodies created for the Jackpine Mine Expansion project, the Proponent shall avoid migratory bird mortality.
- 7.2. The Proponent shall implement methods, on a continual basis, to prevent migratory birds from landing on or residing near tailing ponds or other industrial waterbodies created for the Jackpine Mine Expansion project.
- 7.3. The Proponent shall remove vegetation, initially and on a continual basis, from the surface of and adjacent to tailings ponds and other industrial waterbodies created for the Jackpine Mine

Expansion project prior to filling and throughout the life of the tailings ponds and other industrial waterbodies.

7.4. The Proponent shall implement methods, on a continual basis, to contain and remove oil/bitumen from the tailings ponds.

7.5. The Proponent shall not discharge untreated froth tailings into tailing ponds.

Protect migratory birds and Aboriginal traditional use of lands and resources

8.1. The Proponent shall establish the baseline function, biotic structure, and diversity of the lenticular patterned fen, including ground and surface water quality and quantity, vegetation cover, structure and diversity, migratory bird density and diversity, species at risk density and diversity, and current use of the fen for traditional purposes by Aboriginal people, including the plant and wildlife species that support that use. The baseline shall be established prior to any activities that may impact the lenticular patterned fen using five years of data, with no data set older than ten years.

8.2. The Proponent shall implement economically and technologically feasible measures to maintain the baseline condition, function, biotic structure, and diversity of the lenticular patterned fen, including ground and surface water quality and quantity, vegetation cover, structure and diversity, migratory bird density and diversity, species at risk density and diversity and use of the fen for traditional purposes by Aboriginal people, including the plant and wildlife species that support that use.

8.3. The Proponent shall implement economically and technologically feasible measures to prevent drawdown on the lenticular patterned fen.

8.4. The proponent shall monitor the condition, function, biotic structure, and diversity of a reference patterned fen in the region, as a control site for monitoring project-specific impacts on the lenticular patterned fen.

8.5. The Proponent shall monitor the lenticular patterned fen from the commencement of any activities that may impact the fen until no project effects on the fen are detected, or for twenty five years, whichever is longer.

8.6. The Proponent shall prepare an annual analysis and summary of results of monitoring of the condition, function, biotic structure, and diversity of the lenticular patterned fen and reference patterned fen, and provide an analysis of changes to the lenticular patterned fen over time relative to the baseline and reference fen.

Maintain Aboriginal use of traditional lands and resources and protect Aboriginal health

9.1. The Proponent shall notify Aboriginal groups of the process for accessing project lands not under construction, operation, or restoration, including the Muskeg River, and the Muskeg River Diversion when constructed, to practice traditional uses.

9.2. The Proponent shall restrict access to any end pit lake until the aquatic health and water quality objectives as prescribed within the Surface Water Quality Management Framework for the Lower

Athabasca Regional Plan and the end pit lake release criteria are met and there is a functioning aquatic ecosystem.

- 9.3. The Proponent shall, after consulting with each Aboriginal group on the most appropriate manner in which to do so, provide each Aboriginal group an annual update on:
 - 9.3.1. the aquatic health, water quality, and health of the fishery for the fish habitat compensation site(s);
 - 9.3.2. the aquatic health, water quality, and health of the fishery in end pit lakes; and
 - 9.3.3. the results of the fish tissue monitoring and the presence of health risks associated with the consumption of fish from the fish habitat compensation site(s) and end pit lakes, until monitoring indicates that for five consecutive years, fish can be consumed according to Alberta's Fish Consumption Guidelines.

Protect Aboriginal Health – off road emissions and odours

- 10.1. The Proponent shall implement a retrofit and replacement schedule demonstrating off-road equipment conversion to best available emissions technology with new engines meeting the *Off-Road Compression Ignition Engine Emission Regulations (Canadian Environmental Protection Act, 1999)*.
- 10.2. The Proponent shall not remove emission control technologies from off-road equipment.
- 10.3. The Proponent shall implement an emission control technology maintenance program.
- 10.4. The Proponent shall provide employee training on minimizing off-road equipment idling.
- 10.5. The Proponent shall implement an Odour Management Plan prior to initiating activities.
- 10.6. The Proponent shall annually document the investigation and response to each odour complaint received.

Protect fish, fish habitat, migratory birds, and Aboriginal health

- 11.1. The Proponent shall not release any water from the end pit lakes until the water quality criteria, as prescribed by the Surface Water Quality Management Framework, for the Lower Athabasca Regional Plan, the Muskeg River Water Quality and Quantity Management Framework, the end pit lake water release criteria, and the water quality of the natural receiving water, are met, unless the Proponent can demonstrate that components identified are naturally exceeded in the natural receiving water.
- 11.2. Six months prior to the intended release of any end pit lake waters the Proponent shall provide the Agency with the release location of the water and demonstrate that the water quality criteria in 11.1 are met.
- 11.3. The Proponent shall create a functioning aquatic ecosystem in the end pit lakes.
- 11.4. The Proponent shall not dispose of mature fine tailings in the end pit lakes.

Protect migratory birds and traditional use of lands and resources

- 12.1. The Proponent shall prepare a Life of Mine Closure Plan and obtain approval from the Agency for the plan six months prior to initiating reclamation or closure activities.
- 12.2. The Life of Mine Closure Plan shall include:
 - 12.2.1. five years of baseline data, with no data set older than ten years, prior to any vegetation clearing of the Jackpine Mine Expansion project area including:
 - 12.2.1.(a) migratory bird diversity, distribution, abundance, productivity, habitat use; and
 - 12.2.1.(b) current use of lands and resources in the project area for traditional use by Aboriginal peoples;
 - 12.2.2. methods that will be employed for the creation of wetlands on depressional landscapes;
 - 12.2.3. methods that will be employed for reclaiming areas surrounding closure drainage features;
 - 12.2.4. how the *Guidelines for Wetland Establishment on Reclaimed Oilsands* will be followed;
 - 12.2.5. the most recent methods for the reclamation of old growth forest and wetland habitat, to be updated as required, to achieve successful reclamation;
 - 12.2.6. methods to monitor the effectiveness of reclamation, including comparison to baseline and regional reference data, to achieve a quantitative evaluation of the re-colonization of reclaimed habitats by migratory birds and traditional use species;
 - 12.2.7. consideration of pre-disturbance use of lands and resources in the project area for traditional purposes by Aboriginal peoples in establishing the objectives for mine reclamation and in closure design and implementation, including consideration of equivalent land capability that support that use; and
 - 12.2.8. how environmental changes resulting from climate change will be and were considered in the reclamation.
- 12.3. The Proponent shall implement methods to eliminate all fluid tailings.
- 12.4. The Proponent shall update and obtain approval from the Agency for the Life of Mine Closure Plan every five years.
- 12.5. The Proponent shall implement the approved Life of Mine Closure Plan, as amended from time to time, and report annually on the results as per condition 15.

Submission/Amendment of plans

- 13.1. When submitting a plan, an update and/or an amendment to a plan, to the Agency for approval as part of any condition in this Decision Statement the Proponent shall include:
 - 13.1.1. a summary of consultation with:
 - 13.1.1.(a) any federal or provincial department/agency with relevant expertise; and
 - 13.1.1.(b) Aboriginal groups;

- 13.1.2. a description of how the information and views obtained during the consultation have been taken into consideration in the preparation or updating of the plan.
- 13.2. In advance of undertaking the consultation described in condition 13.1.1, the Proponent shall seek advice from the Agency on the proposed departments, agencies and Aboriginal groups to be consulted and the manner in which the Proponent proposes to undertake those consultations.
- 13.3. A plan, an updated plan, or an amendment to a plan submitted for approval as part of any condition in this Decision Statement is not effective until Agency approval is received.

Use of best available knowledge and application of new technology

- 14.1. The Proponent shall, throughout the life of the Designated Project, ensure that its actions in meeting the conditions set out in this Decision Statement are informed by the best available knowledge, based on validated methods and models, undertaken by qualified individuals and apply the best available economically and technologically feasible mitigation strategies.
- 14.2. The Proponent shall, throughout the life of the Designated Project, ensure that its actions in meeting the conditions set out in this Decision Statement are informed by consultation with any federal or provincial department/agency and Aboriginal group with relevant knowledge and expertise.

Reporting

- 15.1. The Proponent shall submit to the Agency an annual report for the preceding calendar year on or before March 31.
- 15.2. Each annual report shall describe how the Proponent has considered and incorporated the factors set out in condition 14.1 and the results of consultations set out in condition 14.2 in the implementation of the conditions set out in this Decision Statement.
- 15.3. The annual report shall include the results of the implementation of each condition.
- 15.4. Annual reporting for a condition or aspect of a condition will end when all the activities associated with the condition cease.
- 15.5. The annual reporting for condition 2 shall include:
 - 15.5.1. a description of the baseline, including the minimum and maximum, of the parameters for the aquatic health for Kears Lake and the Muskeg River;
 - 15.5.2. a description of the baseline, including the minimum and maximum, of the parameters for the flow rates and fish passage rates between Kears Lake and the Muskeg River;
 - 15.5.3. a description of flow rates and fish passage rates, including the minimum and maximum, in the Muskeg River Diversion;
 - 15.5.4. a list of the instances, and circumstances surrounding, when monitoring results deviated from the baseline established in condition 2.4;
 - 15.5.5. a summary of the data collected by the monitoring in condition 2.4;

- 15.5.6. an interpretation of how the monitoring data collected compares to what was projected by the hydrologic, hydrogeological, and climate change modeling done in support of the environmental assessment for the Jackpine Mine Expansion project; and
 - 15.5.7. an indication of whether the monitoring data indicates a need for revised or further hydrologic, hydrogeological or climate change modelling to inform compliance with the conditions set out in this Decision Statement.
- 15.6. The annual reporting for conditions 3 shall include:
- 15.6.1. a description of whether the baseline flow rate and fish passage between Kearl Lake and the Muskeg River established condition 2.4 have been maintained; and
 - 15.6.2. a description of whether the Kearl Lake baseline aquatic health parameters established in condition 2.4 have been maintained.
- 15.7. The annual reporting for condition 4 shall include:
- 15.7.1. a description of whether the baseline aquatic health of the Muskeg River established in condition 2.4 has been maintained;
 - 15.7.2. a description of whether the baseline flow rates and fish passage within the Muskeg River and Muskeg River Diversion established in condition 2.4 have been maintained; and
 - 15.7.3. a description of whether navigability of the Muskeg River Diversion, established in condition 2.4 for the Muskeg River, has been maintained.
- 15.8. The annual reporting for condition 5 shall include:
- 15.8.1. a description of the results of any fish rescue operations that occurred in the previous calendar year;
 - 15.8.2. an evaluation of mercury and polycyclic aromatic hydrocarbons management measures implemented in condition 5.3; and
 - 15.8.3. a comparison of individual target fish species, fish population diversity, and fish abundance with the specific benchmarks or thresholds developed in condition 5.4.
- 15.9. The annual reporting for condition 6 shall include:
- 15.9.1. a description, and an evaluation, of actions taken to monitor and avoid noise effects on breeding migratory birds in and adjacent to the Jackpine Mine Expansion project area;
 - 15.9.2. a summary of the locations and timing of vegetation clearing and removal;
 - 15.9.3. a summary of survey methods and results on the presence or absence of migratory birds, nests or eggs, or migratory bird breeding and nesting activity, number of birds and species encountered during the vegetation clearing and removal and the actions taken;
 - 15.9.4. a description of whether there were any instances that the measures in 6.4 were implemented, the circumstances surrounding the instances, and the results of the implementation; and

15.9.5. a summary of any migratory bird, nest or egg mortality or disturbance or destruction events, the location, the species, and the number resulting from vegetation clearing and removal activities.

15.10. The annual reporting for condition 7 shall include:

- 15.10.1. a description of incidents of bird mortalities at tailings ponds and other industrial waterbodies containing substances deleterious to migratory birds created for the Jackpine Mine Expansion project including:
 - 15.10.1.(a) species;
 - 15.10.1.(b) number of individuals;
 - 15.10.1.(c) location;
 - 15.10.1.(d) dates; and
 - 15.10.1.(e) identification of the cause(s) of the mortality event; and
 - 15.10.1.(f) measures implemented or to be implemented to avoid such events occurring in the future;
- 15.10.2. an evaluation of the effectiveness of the methods implemented in 7.2;
- 15.10.3. an evaluation of the actions taken to remove vegetation in 7.3; and
- 15.10.4. an evaluation of the effectiveness of the methods implemented in 7.4.

15.11. The annual reporting for condition 8 shall include:

- 15.11.1. a description of the baseline conditions established in condition 8.1;
- 15.11.2. a description of the rate of drawdown in the lenticular patterned fen;
- 15.11.3. an evaluation of the effectiveness of the measures implemented to prevent drawdown in condition 8.3;
- 15.11.4. an annual analysis and summary of results of monitoring of the condition, function, biotic structure, and diversity of the lenticular patterned fen in condition 8.6;
- 15.11.5. an annual comparison of the lenticular patterned fen conditions with the baseline lenticular patterned fen conditions established in condition 8.1;
- 15.11.6. an annual comparison of the lenticular patterned fen conditions with the reference fen control environment in condition 8.4; and
- 15.11.7. a summary and interpretation of lenticular patterned fen monitoring data collected compared to what was projected by the modeling undertaken to support the environmental assessment of the Jackpine Mine Expansion project.

15.12. The annual reporting for condition 9 shall include:

- 15.12.1. a summary of instances when access was requested including:
 - 15.12.1.(a) date and location; and
 - 15.12.1.(b) number of persons
- 15.12.2. A summary of instances when access was granted including:
 - 15.12.2.(a) date and location; and

15.12.2.(b) number of persons

15.12.3. an explanation of any instances when access was denied; and

15.12.4. copies of the annual updates referred to in condition 9.3.

15.13. The annual reporting for condition 10 shall include:

15.13.1. a description of the prior actions, planned actions, and the actual and projected change in emissions of NOx and PM 2.5 related to the retrofit and replacement of off-road equipment with the best available emissions technology

15.13.2. a description of the maintenance program in condition 10.3;

15.13.3. a description of the training provided to employees in condition 10.4; and

15.13.4. a summary of the odour complaints and the Proponent response to the compliant.

15.14. The annual reporting for condition 11 shall include:

15.14.1. a description of the status of the planning and development of end pit lakes;

15.14.2. a description of the source waters, including volumes, being directed to the end pit lakes;

15.14.3. a description of whether the criteria as outlined in condition 11.1 are being met; and

15.14.4. a description of the status of the creation of a functioning aquatic end pit lake ecosystem.

15.15. The annual reporting for condition 12 shall include:

15.15.1. a summary of baseline data collected on migratory birds and current use of the project area for traditional purposes by Aboriginal people in condition 12.2.1;

15.15.2. a description of the most recent methods developed for successful reclamation of old growth forest and wetland habitat;

15.15.3. a description of the status of the creation of wetlands on depressional landscapes;

15.15.4. a description of the status of reclamation for areas surrounding closure drainage features;

15.15.5. a description of the status of reclamation of old growth forest and wetland habitat;

15.15.6. a summary of the quantitative evaluation of the re-colonization of reclaimed habitats by migratory bird and species used for traditional purposes by Aboriginal peoples; and

15.15.7. a description of the status on the elimination of fluid tailings.

Implementation schedule

16.1. The Proponent shall submit to the Agency an implementation schedule for the conditions within this Decision Statement six months prior to initiating activities.

- 16.2. The Proponent shall submit an update to the schedule in writing every two years from the date of the initial submission of the schedule until all mining activities have been completed and all closure activities have commenced.
- 16.3. The Proponent shall provide the Agency with notice of any implementation schedule changes from the initial schedule and any subsequent updates three months prior to the implementation of the change.

Record keeping

- 17.1. The Proponent shall record the following information in respect of any monitoring data collected, sampling conducted, or analyses performed in accordance with this Decision Statement:
 - 17.1.1. the place, date and time of sampling;
 - 17.1.2. the analyses that were performed and the dates they were performed;
 - 17.1.3. the analytical techniques, methods, or procedures used in the analyses;
 - 17.1.4. the names of the persons who collected and analyzed each sample; and
 - 17.1.5. the results of the analyses.
- 17.2. The Proponent shall retain any monitoring data collected, sampling conducted, or analyses performed in accordance with this Decision Statement for a minimum of twenty five years at a facility close to the Jackpine Mine Expansion project area, unless specified below:
 - 17.2.1. all work undertaken to support condition 7 will be kept until the tailings ponds and other industrial waterbodies created for the Jackpine Mine Expansion project are reclaimed;
 - 17.2.2. all work undertaken to support condition 8 will be kept until no project effects on the lenticular patterned fen are detected, or for twenty five years, whichever is longer; and
 - 17.2.3. all work undertaken to support the Life of Mine Closure Plan will be retained until reclamation activities at the Jackpine Mine Expansion project area are completed.