



VIA EMAIL

Mark Cliffe – Phillips
Executive Director
Mackenzie Valley Environmental Impact
Review Board
Box 938, 5102-50th Ave
YELLOWKNIFE, NT X1A 2N7

October 23, 2015

Dear Mr. Cliffe – Phillips,

**RE: Environmental Assessment of Dominion Diamond Ekati Corporation
Jay Project (EA1314-01 [2013]) – Government of Canada Closing Remarks**

The Northern Projects Management Office, on behalf of the Government of Canada, is submitting the attached closing remarks for the environmental assessment of the Dominion Diamond Ekati Corporation's Jay Project.

The Government of Canada would like to take this opportunity to thank the Mackenzie Valley Environmental Impact Review Board, the developer and Parties for their continued participation throughout this environmental assessment.

Regards,

Matthew Spence
Director General
Northern Projects Management Office
Canadian Northern Economic Development Agency

cc. Chuck Hubert, Sr. Environmental Assessment Officer, MVEIRB



Environment Canada Environnement Canada

Environmental Protection Operations Directorate (EPOD)
Prairie & Northern Region (PNR)
5019 52nd Street, 4th Floor
P.O. Box 2310
Yellowknife, NT X1A 2P7

October 23, 2015

EC File: 5100 000 012/015
MVEIRB File: EA1314-01

JoAnne Deneron, Chairperson
Mackenzie Valley Environmental Impact Review Board
200 Scotia Centre
Box 938, 5102-50th Ave
Yellowknife, NT X1A 2N7

Via NPMO Submission

RE: EA1314-01 Dominion Diamond Ekati Corporation (DDEC) – Jay Project Environmental Assessment – Environment Canada Closing Comments

Attention: JoAnne Deneron

Environment Canada (EC) is pleased to provide its closing comments to the Mackenzie Valley Environmental Impact Review Board for the DDEC Jay Project Environmental Assessment (EA1314-01).

To date, EC has participated in all phases of the Environmental Assessment (EA) of the proposed DDEC Jay Project in order to provide specialist advice, information and knowledge to the Mackenzie Valley Environmental Impact Review Board (MVEIRB). EC will not be issuing permits or authorizations associated with the proposed project. EC's participation in this environmental assessment is based on mandated and legislated responsibilities under the *Canadian Environmental Protection Act, 1999*, the pollution prevention provisions of the *Fisheries Act*, the *Migratory Birds Convention Act, 1994*, and the *Species at Risk Act*.

In its Technical Report of July 31, 2015 (Public Registry 510) EC provided recommendations on seven (7) outstanding issues:

1. Phosphorus Benchmark Concentration
2. Effects Study Area for Fish and Fish Sampling Program
3. Pit Closure Water Quality in Misery Pit
4. Waterbird By-catch
5. Avoiding Incidental Take of Migratory Birds

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6. Migratory Bird Use of Mine-altered Water
7. Species at Risk

At the public hearing EC addressed the seven (7) issues identified above in consideration of the August 17, 2015 DDEC response to the EC Technical Report (Public Registry 554).

EC's closing remarks in this letter consider the issues presented at the September 14-16, 2015, Public Hearing in Yellowknife, and the resulting final commitments (Public Registry 681).

Water

After the review of the Developers Assessment Report (DAR), EC identified issues with the phosphorus benchmark (0.02 mg/L) that DDEC had selected. According to the Canadian Council of Ministers of the Environment (CCME) phosphorus framework, Lac du Sauvage is classified as an oligotrophic lake; however, the 0.02 mg/L benchmark value selected by DDEC exceeds the CCME phosphorous framework value for oligotrophic of 0.01 mg/L. Setting the benchmark at 0.02 mg/L would indicate that the lake was changing from mesotrophic to mesoeutrophic, rather than from oligotrophic to mesotrophic (0.01 mg/L).

Since Lac du Sauvage is a low phosphorus system an input of phosphorus into the lake could cause increased plant and algal productivity. Increases in phosphorus can also cause undesirable effects such as: decrease in biodiversity, changes in the dominant biota, decline in ecologically sensitive species and increase in tolerant species, increases in plant and animal biomass, increases in turbidity, increases in organic matter leading to sedimentation and seasonally anoxic conditions. Given the higher benchmark of 0.02 mg/L selected by DDEC, a high degree of change could occur in Lac du Sauvage before their benchmark is exceeded and mitigative action is taken. EC had indicated that a more suitable guideline of 0.01 mg/L (the transition from oligotrophic to mesotrophic) should be used as a threshold to detect change in the receiving environment before a substantial change occurred.

DDEC has accepted EC's recommendation that the trophic status of the lake be maintained as oligotrophic, and the CCME upper bound trigger concentration for oligotrophic lakes (0.01 mg/L) will be used as a benchmark for changes in the trophic status. This lower CCME benchmark will provide a more appropriate threshold to detect increasing phosphorus concentrations that will allow appropriate responses and mitigation measures to be implemented in a timely manner.

At the final hearing, EC was asked for their recommendation for how total phosphorus should be measured in Lac du Savage to ensure that the oligotrophic status is maintained. At the time, EC did not have a response. However, after further review, EC

now recommends that total phosphorus be measured as the median concentration at the outlet of Lac du Sauvage. This location will provide an integrated representation of any increases of phosphorus concentration in Lac du Sauvage before it flows into Lac de Gras.

In its Technical Report EC recommended that the effects study area for the project be reduced from the outlet of Lac de Gras to the outlet of Lac du Sauvage in order to more accurately detect effects to the immediate receiving environment. During the public hearing the issue of the effects study area for fish was adequately addressed. Dominion clarified that within the effects study area, Lac de Gras and Lac du Sauvage will be considered separately. This alleviates EC's concern with the effects study area. Additionally, in EC's Technical Report, EC expressed concern with the level of detail in the AEMP and did not have confidence in the ability to detect effect in the receiving environment. This issue was discussed at the technical meetings and in the final commitments table DDEC has committed to conducting an Aquatic Effects Monitoring Program (AEMP) engagement workshop prior to submission to the Wek'eezhii Land and Water Board during the anticipated regulatory permitting process.

In its Technical Report EC expressed concern with the post-closure water quality in Misery pit, as guidelines would be exceeded upon closure and Misery would be discharging to Lac de Gras. During the public hearing and in the final commitments table, DDEC has committed to a study to investigate optimization of the freshwater cap in Misery so that guidelines are not exceeded upon closure. Water quality predictions and optimal depth will be continually updated under the final closure and reclamation plan to alleviate any impacts to the environment upon closure.

Wildlife

EC is satisfied with DDEC's responses to the four (4) wildlife issues identified in its technical review, at the Public Hearing, and the final commitments. In particular, DDEC has committed to engaging EC in the development and review of the diving bird mitigation strategy, the Wildlife and Wildlife Habitat Protection Plan and Wildlife Effects Monitoring Program as per the DDEC's commitments during the EA process.

EC provided a response to Public Hearing Undertaking #15 (Public Registry 672) to determine "...if, based on the water quality predictions for the Misery Pit and the Jay project mixing zone, they anticipate any harm to migratory birds under the Migratory Bird Convention Act." EC responded that, "... Based on its evaluation of the water quality predictions, no harm is anticipated to migratory birds from the pit waters." EC notes no further comments or questions were brought forward by other parties prior to submission of these closing comments.

Thank you for the opportunity to participate in the DDEC Jay Project Environmental Assessment. Should you require further information, please contact Loretta Ransom at (867) 669-4744 or loretta.ransom@ec.gc.ca.

Sincerely,

A handwritten signature in dark ink, appearing to read 'S. Forbrich', written over a light blue horizontal line.

Susanne Forbrich
Regional Director, PNR-EPOD

cc: Sarah-Lacey McMillan, A/Head, Environmental Assessment North (NT and NU),
PNR-EPOD
EC Review Team



Fisheries and Oceans
Canada

Pêches et Océans
Canada

301-5240 50th Ave.
Yellowknife, NT
X1A 1E2

October 21, 2015

Our file Notre référence
13-HCAA-CA6-00070

Mackenzie Valley Environmental Impact Review Board
Attention: Chuck Hubert, Senior EA Officer
PO Box 938
Yellowknife, NT
X1A 2N7

Via email to: chubert@reviewboard.ca

Dear Mr. Hubert,

**Subject: Fisheries and Oceans Canada – Final Closing Comments for the
Dominion Diamond Jay Project.**

Fisheries and Oceans Canada (DFO) would like to thank the Mackenzie Valley Environmental Impact Review Board for the opportunity to participate in the environmental impact review for the proposed Dominion Diamond Jay Project (DDEC).

Please find attached DFO's final closing comments following the public hearing for your consideration, which summarizes our recommendations put forward in our technical submission and in our hearing presentation.

We trust that our comments and recommendations will be helpful to the Board in their deliberations.

Sincerely,

Julie Dahl
Regional Manager, Regulatory Review
Fisheries Protection Program

Cc Mark D'Aguiar, Fisheries and Oceans Canada

Fisheries and Oceans Canada
Closing Submission
Mackenzie Valley Environmental Impact Review Board
Dominion Diamond Ekati Corporation – Jay Project

Fisheries and Oceans Canada (DFO) is pleased to provide the following closing submission to the Mackenzie Valley Environmental Impact Review Board (MVEIRB) for the environmental assessment of Dominion Diamond Ekati Corporation's (DDEC) Jay Project.

DFO is participating in the environmental assessment of DDEC's Jay Project as an Intervener to assist the MVEIRB in their assessment of potential environmental impacts associated with this development proposal. DFO's primary focus in reviewing proposed developments in and around Canadian fisheries waters is to ensure that works, undertakings and activities are conducted in a manner that complies with the applicable provisions of the *Fisheries Act*.

Below is a summary of recommendations related to DFO's mandate based on our review of all submitted documents, and evidence provided during the Final Hearing and the Community Sessions on September 14-17, 19 and 21, 2015.

Recommendations

As proposed, the Project will impact Lac du Sauvage through the requirement for dike construction, dewatering, and open pit mining. Other works, undertakings and activities associated with the development of the Jay Project, such as blasting, stream diversions and the construction of several watercourse crossings, also have the potential to cause *serious harm to fish* as defined by the *Fisheries Act*. DFO presented recommendations and supporting rationale at the Final Hearing on September 16, 2015 regarding measures to avoid, mitigate or offset *serious harm to fish* as a result of the proposed Jay Project.

1. Blasting

DFO recommends that the Developer revise their instantaneous pressure threshold limit of 100 kPa to 50 kPa, and recalculate the appropriate setback distances, in order to develop adequate monitoring and mitigation measures to address the effects of blasting on fish and reduce the risk of *serious harm to fish* as a result of the Jay Project. DFO also recommends that the Developer develop an appropriate blast monitoring and mitigation plan to ensure that peak particle velocities do not exceed 13 mm/s at shoal S4 during the time of Lake Trout egg incubation, including procedures to be followed in the event that blasts may exceed this threshold.

DFO notes that DDEC has committed to developing a blasting plan for the Jay Project to avoid and mitigate *serious harm to fish*, and to engage with DFO on development and implementation of the plan as appropriate.

2. Water Crossings

DFO recommends that the Developer implement all available best management practices to avoid and mitigate *serious harm to fish* as a result of water crossing construction, operation and decommissioning. This includes the appropriate design of water crossings to facilitate fish passage at both high and low flows, timing windows that incorporate spawning, incubation and hatch times for all species using water courses, sediment and erosion control, protection and replanting of riparian vegetation, and other forms of bank stabilization. DFO also recommends that an appropriate water crossing maintenance and monitoring plan be in place to minimize the potential for barriers to fish passage to develop over the life of the water crossings.

DFO also recommends that the Developer provide DFO with detailed engineering plans of all water crossings, supported by measured or modeled stream flow data, for review prior to construction.

DFO notes that DDEC has committed to implementing best management practices, developing and implementing appropriate maintenance and monitoring plans to avoid and mitigate *serious harm to fish*. DFO also notes that DDEC has committed to providing detailed design and construction plans for the water crossings during the regulatory phase, and will engage with DFO as appropriate.

3. Sub-Basin B Diversion Channel

DFO recommends that the Developer implement all available best management practices in the design of Sub-Basin B Diversion Channel to avoid and mitigate *serious harm to fish* as a result of the diversion, as well as develop and implement an appropriate stream diversion maintenance and monitoring plan with appropriate sediment and control mitigation measures to ensure barriers to fish passage do not form over the life of the diversion channel. DFO also recommends that DDEC provide DFO with detailed with detailed plans of the diversion channel for review prior to construction, including such things as design, flows, stabilization, consideration of fish passage, erosion and sediment control, and detailed closure and reclamation plans for the Sub-basin B Diversion channel for review during the regulatory phase.

DFO notes that DDEC has committed to appropriately designing the diversion channel to avoid and mitigate *serious harm to fish* (following restricted activity timing windows, providing channel flows that facilitate passage of Arctic Grayling during all life stages, reclaim disturbed riparian areas), and will implement an appropriate maintenance and monitoring that includes regular inspections to ensure the diversion channel is functioning as intended. DDEC has also committed to providing DFO with detailed design plans and detailed closure and reclamation plans for the Sub-Basin B diversion channel during the regulatory phase.

4. Lake C1/Stream C1 and the Narrows

DFO recommends that water levels be monitored in Lake C1/Stream C1 and at depth-limiting locations in the Narrows during the open water season, particularly during years of low precipitation, extended drought or back-flooding of the pit at closure, to ensure that Project effects on these water bodies do not

negatively impact fish passage or fish habitat. In addition, DFO recommends that a mitigation response or action plan be developed to mitigate the risk of the formation of barriers to fish passage or *serious harm to fish* in Lake C1/Stream C1 and the Narrows due to Project induced changes in water levels.

DFO notes that DDEC has committed to engaging DFO and communities in the design of an Aquatic Effects Monitoring Plan (AEMP) and AEMP Response Framework that includes both hydrology monitoring of Lake C1, Stream C1, and the Narrows and early-warning action levels for changes that require actions to prevent *serious harm to fish*.

5. Offsetting Plan and Fish-Out

DFO recommends that during the regulatory phases, DDEC conduct additional consultation with affected communities regarding: a) the handling and fate of fish captured during the fish-out of the diked area in Lac du Sauvage, b) the development of appropriate quantification of fisheries productivity impacts in Lac du Sauvage and Streams Ac35 and B0, and c) options to offset the impacts of the Project on fisheries productivity that cannot be avoided or mitigated.

DFO acknowledges that DDEC has committed to continue to engage DFO and the affected communities on the handling and fate of the fish from the fish-out of the diked areas in Lac du Sauvage, the development of the offsetting options and methods for quantifying fisheries productivity, during the regulatory phase of the Project.

Conclusions

If the project is approved to proceed to the regulatory phase, DFO will continue to work with DDEC, the impacted communities and other interested parties to identify measures to avoid and mitigate *serious harm to fish*. Additionally, once the requested information has been received, DFO will also be able to determine which components of the Project, in addition to the dewatering of a portion of Lac du Sauvage, may require a *Fisheries Act* Authorization. The offsetting plan, which will be required, should be developed in consultation with DFO and the affected communities, and DDEC has committed to engaging in such consultations.

DFO has requested several plans and documents in support of our review of the Project, and has requested that appropriate mitigation measures and monitoring programs are developed and implemented. DDEC has committed to addressing all of DFO's concerns raised in our Technical Review submission and at the Final Hearing.

DFO would like to thank the MVEIRB for giving DFO the opportunity to provide input into the environmental assessment process for the Jay Project.



Transport Canada Transports Canada

Prairie and Northern Region
Environmental Services, Programs
P.O. Box 8550
3rd Floor, 344 Edmonton Street
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Your file Votre référence
EA 1314-01

Our file Notre référence
7075-70-7-22

October 23, 2015

Chuck Hubert
Senior EA Officer
Mackenzie Valley Review Board
200 Scotia Centre
P.O. Box 938, 5102-50th Ave
Yellowknife, NT X1A 2N7

**Re: Dominion Diamond Ekati Corporation, Jay Project Closing Arguments –
Transport Canada**

The Mackenzie Valley Review Board (MVRB) requested written closing arguments from parties prior to the closure of the public record for EA 1314-01 Dominion Diamond Ekati Corporation's Jay Project. Transport Canada provides this submission in response to the Review Board's request.

Transport Canada has participated in the environmental assessment process through written submissions, technical sessions and workshop participation. Transport Canada has jurisdictional responsibility for regulating components developed for the Jay Project including dikes, water intakes, temporary works, outfalls, dewatering of a lake, aerodrome certification and transportation of dangerous goods. All of these components are to be in accordance with all applicable legislation and regulations within the Departmental mandate.

Transport Canada has focused on the review of the water-retaining dike on Lac du Sauvage and its related activities. Transport Canada has informed Dominion Diamond Ekati Corporation to submit information to Transport Canada to determine the navigability of Lac du Sauvage and the applicability of sections 21 to 23 of the *Navigation Protection Act* (NPA).

Dominion Diamond has identified that the requested information will be provided to Transport Canada during the Jay Project permitting phase at which time the Navigation Protection Program will complete a navigability assessment.

Transport Canada generally agrees that the conclusions contained within the Developers Assessment Report, related to our mandate, are supported by analysis as the documentation provided reflects adherence to applicable regulatory requirements.

Transport Canada will continue to work with Dominion Diamond Ekati Corporation and other interested parties throughout the various stages of this environmental assessment. Transport

Canada

Canada looks forward to continued dialogue and cooperation with all stakeholders to ensure that Transport Canada's areas of jurisdiction are being addressed.

Should you have any questions regarding Transport Canada's comments, please contact Christopher Aguirre via email at christopher.aguirre@tc.gc.ca by telephone at (204) 984-2615.

Regards,

A handwritten signature in blue ink, appearing to read 'D. K. C.', with a stylized flourish at the end.

Dale Kirkland
Regional Director, Programs
Prairie and Northern Region

cc: Anita Gudmundson, Transport Canada Environmental Services
Dallas Babuik, Transport Canada NPP