

Jay Project (EA1314-01)

Summary of measures and suggestions from Report of Environmental Assessment

**Mackenzie Valley
Review Board**



March 24th, 2016

Purpose of this meeting

- To help walk readers through the EA
 - measures and suggestions only
- If there is a conflict between this document and the *Report of Environmental Assessment and Reasons for Decision, February 1, 2016*, the *Report of Environmental Assessment and Reasons for Decision, February 1, 2016* prevails

Water and Fish

(sections 4 and 5 pg 43 – 80)

Water and fish measures

SECTIONS 4

4-1 Closure objectives

4-2a Site water management plan

4-2b Pit lake water quality
(meromixis)

Suggestion – contingency options

4-3 Fine processed kimberlite

*Suggestion – deposition study for
FPK in pits*

4-4 Dike stability and safety

SECTION 5

5-1 Monitoring and
maintaining water levels at
the Narrows

*Suggestion – minimize fish
mortality*

Measures in Section 4: Water

Construction, operations, and closure of the Jay Project will affect **water** quality in the environment, and in turn likely affect **traditional uses** in the vicinity of the Jay Project after closure.(p 43)

The measures are intended, **collectively**, to protect traditional users by (pp 54-55):

- requiring that **traditional land uses** be considered during **closure planning**, and
- **managing water** during operations and closure to ensure the **aquatic environment** and **traditional land uses** are protected.

Measure 4-1: Closure objectives (pg 55)

Why – prevent **cultural impacts after closure** from changes in water quality (pg 51 – 52)

Who – WLWB

How – ensure closure objectives and criteria are **suitable for traditional uses** in the vicinity of the Jay Project

Where – Jay Project components (Jay pit, Misery Pit, Lynx Pit, Jay WRSA)

When – during closure planning

Site water management plan - Measure 4-2a (pg 55)

Why – prevent **impacts to traditional uses** in the vicinity of the Jay Project after **closure** (pg 52 – 53)

What – Developer will manage water during **operations** to ensure water quality will support traditional use at **closure** (while protecting environment during operations)

How – Developer will submit **site water mgmt plan to WLWB:**

- a list of contingencies
- scenarios when contingencies would be used
- preferred contingencies
- how Dominion will monitor and evaluate

Where – Jay pit, Misery Pit, Lac du Sauvage, Lac de Gras

When – prior to dike construction

Pit lake water quality - Measure 4-2b (pg 56)

Why – prevent **impacts to traditional uses** in the vicinity of the Jay Project after **closure** (pg 53 – 54)

Who – the developer

How – establish meromixis and **stabilize** meromictic **pit lakes** for the long term

What – submit contingencies to **WLWB** and describe the feasibility, conditions, and timing of each

Where – Jay pit, Misery pit

When – conditions and timing of contingencies to be submitted to WLWB before implementation

Water contingencies – Suggestion (pg 56)

In fulfilling measures 4-2a and 4-2b, consider the water-management **contingencies** identified in the EA, including:

- deeper freshwater cap in meromictic pit lakes
- discharging water earlier during operations
- using additional storage
- treating minewater

FPK in Panda & Koala - Measure 4-3 and suggestion (pg 60)

Why – prevent impacts to **water quality** in Panda and Koala pit lakes and downstream environment **after closure** (pg58-60)

Who – the developer and WLWB

How – requiring WLWB approval prior to placement of FPK into Panda and Koala

WLWB will consider Beartooth pit results

(ultimately, FPK must be deposited into an approved processed kimberlite containment area)

Where – Panda, Koala, and downstream

Suggestion: Dominion complete a deposition study and freshwater cap optimization study for FPK into pits

Dike stability and safety - Measure 4-4 (pg 69)

Why – prevent impacts to people and the environment (pg 68-69)

Who – the developer

How – Establish **independent dike review panel** to evaluate and, if necessary, advise on the design, construction, operation, and maintenance

Where – Jay dike

When – prior to dike construction and throughout operations

The Narrows - Measure 5-1 (pg 73)

Why – prevent ecological and traditional use impacts from **drops in water level** at the Narrows (pg 72 – 73)

Who – the developer

How – **maintain water levels** for fish passage and traditional use

Incorporate monitoring into AEMP and Response Framework

Where – the Narrows

When – closure

Fish mortality – Suggestion (p80)

Why – minimize fish mortality (pg 78 – 80)

Who – DFO

How – develop protocols that **minimize fish mortality** and handling protocols consistent with the wishes of Aboriginal communities

What – fish in Lac du Sauvage

Where – Jay fish out areas

Caribou

(section 6 p81-137)

Jay Project Report of EA

Purpose of this presentation

1. To summarize Board finding that significant adverse impacts to caribou from Jay project are likely
2. To describe why the Review Board made this determination
3. To present the measures required to reduce adverse impacts from the Jay Project to caribou so that they are no longer significant

Why the Board finds significant adverse impacts to caribou from Project likely p111-126

1. Project located in important migration corridor during time when herd is in a precarious state
2. Existing cumulative effects already significant, additional stresses on herd at this time matter
3. Project by itself creates physical and sensory barriers to caribou movement
4. There is no caribou management plan
5. Any activities that inhibit ability of herd to recover (such as cumulative effects of Jay and other human activities) affect Aboriginal communities and cause serious public concern

(summary of Review Board findings p81)

Measures required to ensure adverse impacts to caribou are no longer significant p234-239

- 6-1 Road mitigations from caribou impacts
- 6-2a Caribou offset and mitigation plan
- 6-2b Research to design successful offset projects (GNWT)
- 6-3 Air Quality Plan
- 6-4 Dustfall standards (GNWT)
- 6-5 TK based caribou monitoring and mitigation
- 6-6 Completion of caribou management plan (GNWT)

Section 6.6

Caribou measures and suggestions

Why

This **group** of measures, combined with Dominion's **other actions and commitments** to reduce or prevent impacts to caribou, will mitigate the significant adverse project-specific and cumulative impacts on caribou that are otherwise likely. (p127)

Measure 6-1

Road mitigations for caribou impacts

(p127-29)

6-1 Road mitigations for caribou impacts

(p127-29)

Why:

There are impacts from barriers to caribou movement and sensory disturbance impacts from the project.

6-1 Road mitigations for caribou impacts

(p127-29)

How:

Measure builds on commitment from Dominion

a) Dominion will:

- **use convoys** or other methods to manage traffic on the road
- use **real-time caribou collar satellite information** as a trigger for action levels for management responses
- construct **caribou crossing features**

6-1 Road mitigations for caribou impacts

(p127-29)

b) Dominion will **update and revise the Wildlife Effects Monitoring Plan** with the appended Caribou Road Mitigation Plan according to **GNWT requirements** under section 95 of the *Wildlife Act*

When:

In force for the duration of the Jay Project.

6-1 Road mitigations for caribou impacts

(p127-29)

What:

In the Caribou Road Mitigation Plan, Dominion will:

- investigate and implement **innovative actions** to mitigate impacts to caribou
- define specific **thresholds that trigger road management responses**, including actions to slow traffic, stop traffic and close roads
- describe the **minimum size of the kimberlite stockpiles**

6-1 Road mitigations for caribou impacts

(p127-29)

- describe methods for **monitoring approaching caribou**
- prepare a **dust management best practices document** with adaptive management **triggers**
- **use Traditional Knowledge when designing** the Caribou Road Mitigation Plan, the Jay road, esker crossing and waste rock storage area and the monitoring of caribou responses

6-1 Road mitigations for caribou impacts

(p127-29)

- c) The Caribou Road Mitigation Plan details **how to** avoid or **minimize habitat disturbance**, with **response framework** that links monitoring results to changes in mitigation.

Specify **contingency measures** if caribou do not cross the Jay road at the esker.

- d) GNWT ENR approves Plan before construction with **opportunity for public comment**.

Dominion will **annually report monitoring results**

6-1 Suggestion

To allow for mitigation of potential barrier effects from the Jay Project, Dominion should:

- conduct pilot **studies into technologies** and approaches **to detect caribou before they perceive sensory disturbances** from the Jay Project

(such as un-manned aerial vehicles, large animal detection systems, remote video cameras or on- the-land monitors).

Measure 6-2a (Dominion)
Caribou offset and mitigation plan
(p131-132)

6-2a Caribou offset and mitigation plan

(p131-132)

Why

To ensure no net additional impacts to the Bathurst caribou herd.

What

to **offset residual adverse impacts to caribou** from the Jay Project that cumulatively affect the herd

6-2a Caribou offset and mitigation plan

(p131-132)

How

- Dominion to implement the Plan, including:
- **caribou offsets** related to roads that result in enhanced mitigation, such as:
 - **scheduling** of activities during caribou migration
 - **dust suppression** offsite from Jay Project
- apply mitigations at **other Ekati operations**
- Enhanced **dust mitigation study**
- **Zone of influence research**

6-2a Caribou offset and mitigation plan

(p131-132)

- **accelerate progressive reclamation** of Long Lake Containment Facility to return it to productive caribou habitat sooner
- incorporate waste rock storage area egress **ramps, designed in consultation with Elders** to prevent injuries and entrapment of caribou

6-2a Caribou offset and mitigation plan

(p131-132)

iii: Following implementation of the Caribou Offset and Mitigation Plan, Dominion will:

- **annually report on the effectiveness** of monitoring, mitigation and adaptive management to communities, GNWT ENR, WRRB and IEMA
- **update** Caribou Offset and Mitigation Plan for approval by GNWT ENR **every three years** with the opportunity for **public comment**

iv: The GNWT to enforce Plan under *Wildlife Act*.

When - within one year of Minister's acceptance

Measure 6-2b (GNWT)
Research to design and implement
offsetting projects
(p131-132)

6-2b Research to design and implement offsetting projects (p131-132)

Why– to measure and evaluate **effectiveness of offsets** to ensure objectives are being met

How – GNWT required to:

- Conduct a **study on ways to evaluate and measure offsets**
- **Publically report** on results of this study within one year of approval of the Caribou Offset and Mitigation Plan

Measure 6-3 (Dominion)
Air Quality Emissions Monitoring and
Mitigation Plan
(p133-134)

6-3 Air Quality Emissions Monitoring and Management Plan (p132-133)

Why -To reduce adverse **impacts from dustfall** within the Jay project area to caribou so they are no longer significant

What –Dominion will **finalize and implement an AQEMMP prior to construction.**

How -**implement commitments** with linkages to the Caribou Road Mitigation Plan and the Caribou Offset and Mitigation Plan.

6-3 Air Quality Emissions Monitoring and Management Plan (p132-133)

- reduce dustfall by continuing and **improving management and monitoring practices**, including:
 - applying **dust suppressant**, managing **vehicle speed**, implementing a dustfall **monitoring** program
 - **sampling lichen**
 - planning responses with **triggers and action levels**
 - opportunity for **public comment** on updates or changes AQEMMP

6-3 Air Quality Emissions Monitoring and Management Plan (p132-133)

- annually **report monitoring results**
- submit an updated Air Quality Emissions Monitoring and Management Plan for **public review and approval process** as required by the GNWT

Measure 6-4 (GNWT)

Dustfall standards (p133-134)

6-4 Dustfall standards (p133-134)

Why – reduce adverse **impacts from dustfall to caribou** and to habitat effectiveness

What development of **interim dustfall objectives**

Who GNWT

When Prior to construction

6-4 Dustfall standards (p133-134)

Prior to construction, the GNWT will **develop an interim dustfall objective** for all types of dustfall that impact caribou and caribou habitat, including impacts on lichen and other caribou forage within the Jay Project zone of influence.

The objective will **reduce dust-related sensory disturbances to caribou** to the greatest extent practicable.

6-4 Dustfall standards (p133-134)

Dominion will use the interim dustfall objective to **inform its actions to reduce impacts to caribou and caribou habitat from dustfall.**

Measure 6-5 (Dominion)

Funding TK-based monitoring and mitigation (p134-135)

6-5 Funding TK-based monitoring and mitigation (p134-135)

Why

- Applying TK will reduce impacts from the project to caribou

What

- Results in **practical mitigation actions** that reduce impacts from the Jay Project to caribou so they are no longer significant.

When

This Traditional Knowledge group will be in place prior to construction, throughout operations and closure.

6-5 Funding TK-based monitoring and mitigation (p134-135)

Dominion will:

- Implement research program incorporating Traditional Knowledge to **identify the causes of the zone of influence** for caribou avoidance within one year of acceptance of the Report of EA
- summarize and report annually and implement the research findings

6-5 Funding TK-based monitoring and mitigation (p134-135)

- Dominion will **fund a Traditional Knowledge Elders group** to
 - **advise on the construction and operation** of the Jay road, esker crossing and waste rock storage area and **monitor caribou** reactions
 - report on results
 - recommend mitigation based on monitoring results

Measure 6-6 (GNWT)
Timely completion of caribou
management plans (p135-137)

6-6 Timely completion of caribou management plans (p135-137)

Why

there is no management plan, are very low numbers and a declining population trend

What

The GNWT needs to **complete and implement an interim recovery and management plan for the Bathurst caribou herd before this herd's population is so reduced** that recovery of the herd is no longer likely.

This measures requires GNWT to manage cumulative impacts of development and other human activities that are otherwise likely to combine with the cumulative effects of the Jay Project to worsen the situation.

6-6 Timely completion of caribou management plans (p135-137)

Who GNWT

When within one year of Minister's approval of Report of EA

How

To mitigate cumulative significant impacts from the Jay Project and other human activities on the Bathurst caribou herd, within one year of Ministerial approval of this EA Report, the GNWT will:

- investigate and **report on the causes** for the current population change

6-6 Timely completion of caribou management plans (p135-137)

How

- complete and implement an **interim management plan** for the Bathurst caribou herd
- implement an **interim herd recovery strategy** towards a sustainable and ongoing Aboriginal harvest

6-6 Suggestion (p137)

GNWT should work towards producing **interim thresholds** for developments and other human activities within the range of the Bathurst caribou herd.

Cultural & Socio-Economic

(Sections 7 and 8, pg 138 – 178)

Cultural & Social Measures

7. Cultural aspects and Traditional Knowledge

7-1 Traditional Knowledge Management Framework

Suggestion – Traditional Knowledge Use Protocol

7-2 Cultural offsets for lost use of the land Site water management plan

8. Maximizing Benefits and Minimizing Impacts to Communities

8-1 Adaptive management of social impacts

Suggestion – Development of socio-economic baseline studies

8-2 Reducing barriers to employment for women

7. Cultural Aspects and Traditional Knowledge

Summary of Significance

Significance determination (p139)

1. Aboriginal groups told the Review Board that their cultural well-being and way of life now face serious challenges. These include the transition to a wage economy, reduced time on the land, less practice of an Aboriginal way of life, reduced Aboriginal language use, the stress of the potential loss of the Bathurst caribou herd, and reduced transmission of culture between generations.
2. Aboriginal groups emphasized how diamond mining has contributed significantly to these challenges since it began in 1996.

... continued

3. As a continuation of the Ekati project, the Jay Project is likely to add to and increase the duration of these impacts on important aspects of cultural well-being.
4. Aboriginal groups told the Review Board that land disturbance from diamond mines has decreased the harvesting value of the Lac de Gras area and discourages harvesters and their families from using it.
5. Reduced traditional harvesting has resulted in a significant loss in knowledge transfer and cultural experience about this area to an entire generation. The expansion of diamond mining in this area from the Jay Project is likely to prolong this loss of knowledge transfer and learning, or make the loss permanent.

Traditional Knowledge Management Framework - Measure 7-1 (p150)

Why – to mitigate the Jay Project’s cultural impacts to traditional use areas or culturally valued components like caribou, water or aquatic life (pp 148-149)

Who – the developer

What – develop a Traditional Knowledge Management Framework that describes **protocols for collecting, storing, managing and using Traditional Knowledge**

How – Framework developed by Dominion via **consultation with affected Aboriginal groups**, with annual reports describing how Traditional Knowledge influenced Project decision-making

Where – Jay Project components

When – developed **prior to the construction** phase of the Project; applicable for the **lifetime of the Project** (construction, operations and closure phases)

Traditional Knowledge Protocol Suggestion (p152)

Why – To inform how Traditional Knowledge is captured, managed, reported on and used for that Aboriginal group. This would facilitate Dominion's effort in establishing a meaningful TK Management Framework

Who – Aboriginal groups affected by the Jay Project

What – develop a **standard Traditional Knowledge Use Protocol** and work with Dominion to establish what Traditional values should be monitored for Jay Project impacts, and how monitoring should occur

How/Where – to be determined independently **by each affected Aboriginal group**

When – as early as practical

Cultural offsets for lost use of land

Measure 7-2 (p151)

Why – to mitigate significant adverse impacts of the Jay Project on traditional **use of the area** and **transmission of cultural values** (pp148-149)

Who – the developer

What – support an on-the-land **culture camp**, in a traditionally used area near the Jay Project

How – camp will be used by Aboriginal groups to:

- maintain or establish a connection with disturbed areas of land
- restore Traditional Knowledge transfer between generations about the area affected by diamond mining

Where – location to be determined **through consultation** with participant Aboriginal groups

When – timing and frequency to be determined **through consultation**

8. Maximizing Benefits and Minimizing Impacts to Communities

Summary of significance

Significance determination (p154)

1. Cumulative adverse impacts to the health and well-being of diamond mine communities are significant.
2. Communities have identified adverse cumulative impacts associated directly or indirectly with diamond mining, which are currently affecting communities. The developer has acknowledged that existing impacts to health and well-being are significant.
3. Communities have indicated that these adverse impacts have worsened over the history of diamond mining in the NWT, and are a significant concern of residents and communities affected by the Jay Project.
4. As a continuation of the Ekati project, the Jay Project is likely to add to these existing adverse impacts.
5. Aboriginal groups are concerned about employment barriers for vulnerable community members.

Adaptive management of social impacts

Measure 8-1 (p177)

Why – to ensure health and well-being issues identified by communities, and GNWT priority issues, are acted upon by the GNWT while it investigates the link between diamond mining and adverse social impacts (pp 166-170)

Who – the GNWT

What – engage and work with diamond mining communities to adaptively manage adverse social impacts to health and well-being from the Jay Project, in combination with other diamond mining projects

Where – diamond mining communities

When – within one year of Ministerial approval or REA, and annually thereafter

Adaptive management of social impacts

Measure 8-1 (cont)

How

1. GNWT will actively **investigate** and address **linkages of diamond mining effects on the health and well-being** of affected communities
2. Annual discussions that
 - (a) **prioritize relevant social issues** identified by communities and by the GNWT,
 - (b) review the **effectiveness of GNWT programs** to address those issues, and
 - (c) plan how to implement **improvements** to mitigate identified issues
3. Submitting **annual reports to each community** on the adaptive management of social impacts and efforts to address identified issues

Suggestion – Development of socio-economic baseline studies (p179)

Why – to assist the GNWT in fulfilling Measure 8-1 to **adaptively manage** cumulative adverse **socio-economic impacts of diamond mining on communities** (pp172-174)

Who – the GNWT with diamond mining communities

What – **establish threshold levels of acceptable social impacts** and **evaluate** how close each indicator is to that threshold

How

- vulnerability and resilience assessment
- assessment of existing cumulative impacts on well-being
- define well-being and how it will be measured
- establish appropriate well-being indicators

Where – diamond mining communities

Supporting increased employment opportunities for women

Measure 8-2 (p180)

Why – to **promote gender equity** and reduce barriers to women's employment by increasing opportunities for them (pp 171- 172)

Who – the developer

What – update strategy for the training, recruitment and employment of women

How – Dominion to update its employment strategies for women through **consultation with the GNWT, the Status of Women Council of the NWT and the Native Women's Association of the NWT**

Where – throughout Jay Project's NWT operations

When – prior to construction phase

Air Quality

(Section 9, pp180-198)

Air Measures

- Dioxins and furans - incinerator emissions
- Greenhouse gas emissions

Dioxins and Furans

Measure 9-1 (p189)

Why - to reduce the likelihood of **impacts from dioxins and furans**

What

1. monitoring

- **incinerator stack testing** every 3 years
- submit the results to GNWT ENR

2. If incinerator fails stack test, Dominion will develop, submit to GNWT and implement Adaptive Management Response Plan

Who – the developer

Where – the Jay project incinerators

When – project lifespan

Suggestion – Enhanced monitoring of incinerators (p190)

Why – to further reduce the likelihood of the formation and emissions of dioxins and furans

How – assess feasibility and utility of additional inline continuous emissions monitoring and report findings

Who –Developer, GNWT and Environment and Climate Change Canada.

Where – Jay Project incinerators

When – within one year of the Ministerial approval of the REA

Greenhouse Gas Emissions

Measure 9-2 (p198)

Why –

1. To encourage innovation and efficiency in greenhouse gas emission management, and
2. To address public concern

What – Dominion will annually report information on its greenhouse gas management, including

- Emissions
- Targets for the upcoming year and how they were determined
- Whether past reduction targets were achieved and how, or if not, why not
- Description of monitoring
- Description of adaptive policies, strategies or mitigative actions undertaken or proposed

Greenhouse Gas Emissions

Measure 9-2 (p198)

What (cont.):

During community visits, Dominion will:

- engage on its greenhouse gas emissions management, and
- report on how results of past engagement have been incorporated

Who – the developer

When – annually for life of project

Impacts to Diavik

(Suggestion only, section 11, pg 209 – 211)

Effects to Diavik – Suggestion (p211)

Why – Effects of Jay Project and Diavik may overlap

Jay may affect Diavik's closure (pg 210 - 211)

Who – WLWB and GNWT

How – **consider effects of Jay** to the environment **when setting closure criteria** and considering relinquishment of security

Where – Jay Project and Diavik mine

Reporting and Follow-up on EA Measures

(Section 13, pg 222 – 228)

Summary Review Board's findings (p 222 & 224)

- **All** measures in Report are necessary to prevent significant adverse impacts
- Monitoring & reporting necessary to ensure measures **implemented** and impacts **prevented**
- **Adaptive management** may be needed to ensure mitigations are effective
- Section 13 measures do not stand alone, they represent the monitoring, adaptive management, and reporting needed to ensure other measures are effective

Measure 13-1: Monitoring and Adaptive Management by Dominion (p 225)

Why – ensure measures are implemented effectively and impacts avoided

How – 1. Developer to implement monitoring programs to:

- **Measure effects, assess effectiveness of measures**, assess impact predictions, support regional monitoring

– 2. Developer to implement adaptive management to adjust mitigation and minimize impacts

Who – Developer

Where – Jay Project (anywhere other measures apply)

When – all phases of development

Measure 13-2: Engagement on cultural impacts (pp 225-6)

Why – Engagement is important and engagement RE cultural impacts uniquely important. Engagement is needed to **evaluate** and, through adaptive management, improve effectiveness of mitigation of **cultural impacts**.

How – Developer will:

- Engage Aboriginal groups to **identify** cultural impacts
- Seek input on ways to **strengthen mitigation** of cultural impacts
- **Report annually** on effectiveness of mitigation

Who – Developer

Where – wherever cultural impacts, mitigations, and engagement occur

When – report annually

Measure 13-3: Annual reporting from Dominion (pp 226-7)

Why – demonstrate how measures are implemented and evaluate effectiveness

Who – Developer to prepare report and provide copy to Review Board

How – 1. Report that will

- Describe **implementation** actions (incl. adaptive management)
- Demonstrate how **intent** of measures is fulfilled
- Include concise **summary** of monitoring programs and results
- Address reporting requirements for **specific** measures

Where – Jay Project (anywhere other measures apply)

When – report annually throughout all phases of development

Measure 13-4: Annual reporting from government and regulatory authorities (pp 227-8)

Why – All measures are necessary to prevent significant adverse impacts. **Government & regulators** are **responsible for** some **measures**. Reporting is needed to demonstrate measures are being **implemented** and evaluate **effectiveness**.

Who – **Regulatory authorities** and **government**

How – Report (to Review Board and public) to

- Describe **implementation** actions (incl. adaptive management)
- Demonstrate how **intent** of measures is fulfilled

Where – Jay Project (anywhere other measures apply)

When – report **annually** throughout **all phases** of development