Environment Canada Environnement Canada

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November 22, 2012

EC file: 4704 004 067
NWB file: 2BE-KLG1116

Phyllis Beaulieu
Manager of Licensing
Nunavut Water Board
PO Box 119
Gjoa Haven, NU X0B 1J0

Via email: licensing@nunavutwaterboard.org

Attention: Ms. Beaulieu

**RE: 121022 2BE-KLG1116 Amendment 2 – Prosperity Goldfields Corp – Kivalliq Region**

Environment Canada (EC) has reviewed the above-mentioned amendment application and supporting materials submitted to the Nunavut Water Board (NWB). The following specialist advice has been provided pursuant to the *Canadian Environmental Protection Act 1999*, the pollution prevention provisions of the *Fisheries Act*, the *Migratory Birds Convention Act*, and the *Species at Risk Act.*

Prosperity Goldfields Corp. is applying to the NWB to amend water license 2BE-KLG1116 to allow for the addition of a third drill, increased on-site fuel storage, and the expansion of the temporary camp to accommodate up to 50 people. These additions would increase camp size and associated waste and increase permitted water usage from 100 $m^3$/day to 160 $m^3$/day.

Based on a review of the proposed amendment, EC has no comments further to those submitted to the NWB regarding the original Type B water license application and the previous amendment application (as attached). If there are any additional proposed changes to the project EC should be notified, as further review may be necessary. Please do not hesitate to contact the undersigned with any questions or comments with regards to the foregoing at (867) 975-4631 or Paula.C.Smith@ec.gc.ca.

Regards,

Paula C. Smith
A/Senior Environmental Assessment Coordinator

cc: Carey Ogilvie, Head Environmental Assessment North, EA and Marine Programs Division, EC

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22 December 2011

EC file : 4704 004 067
NWB file : 2BE-KLG1116

Phyllis Beaulieu
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**RE: 111130 2BE-KLG1116 Prosperity Goldfields Corp – Amendment Type B – Kivalliq Region**

Environment Canada (EC) has reviewed the information submitted with the above-mentioned amendment application as submitted to the Nunavut Water Board (NWB). The following specialist advice has been provided pursuant to the *Canadian Environmental Protection Act 1999*, Section 36(3) of the *Fisheries Act*, the *Migratory Birds Convention Act*, and the *Species at Risk Act*.

Prosperity Goldfield Corp. is proposing to amend water license 2BE-KLG1116 to allow for additional project components. The original project components include the transportation of materials to site, construction of an airstrip and a temporary camp, as well as associated fuel storage, and a drilling program. The proposed additional activities would include an increase of on-site fuel storage capacity, an increase in camp capacity, an expansion of exploration activities and an associated increase of overall water use. The on-site fuel storage would increase from five 4540 L tanks through an addition of six 4540 L double-walled tanks for an on-site capacity of 49 940 L. The camp size and function would be increased through the addition of buildings and infrastructure and the exploration program would be increased through the addition of one drill and therefore increasing drilling activity. These activities would result in the increase in water usage from 55 $m^3$/day to 100 $m^3$/day.

Based on a review of the proposed exemption, EC provides the following comments for the NWB's consideration:

**General**

- The proponent shall not deposit, nor permit the deposit of chemicals, sediment, wastes, or fuels associated with the project into any water body. According to the *Fisheries Act*, Section 36 (3), the deposition of deleterious substances of any type in water frequented by fish, or in any place under any conditions where the deleterious substance, or any deleterious substance that results from the deposit of the deleterious substance, may enter any such water, is prohibited.

- EC does not foresee any major issues with the increased water use as long as there are proper measures in place to cope with the increase in waste water. For example, with respect to drilling, will additional sumps be created or do the current sumps have enough capacity to deal with the increased waste water? Should additional sumps be needed, are there enough suitable locations available?

**Fuel Storage and Spill Contingency Planning**

- EC recommends that AEM update the Fuel Spill Contingency Plan and the Abandonment and Restoration Plan for the Kiyuk Lake Project to reflect these proposed changes to on-site facilities.
- Please note the new CEPA *Storage Tank System for Petroleum Products and Allied Petroleum Products Regulations* that came into force on June 12, 2008. These regulations apply to both outside, aboveground and underground storage tank systems (including the piping and other tank associated equipment) under federal jurisdiction containing petroleum and allied petroleum products that have a capacity greater than 230 litres. This includes tanks located on federal or Aboriginal lands. Exceptions are pressurized tanks, mobile tanks, tanks regulated by the National Energy Board, and outdoor, aboveground storage tank systems that have a total combined capacity of 2500 litres or less and are connected to a heating appliance or emergency generator. All storage tank system owners must identify their tank systems to EC and installation of new systems must comply with the regulation's design requirements. Further information on these regulations can be found at www.ec.gc.ca/st-rs.
- The proponent is encouraged to consult and implement the recommendations found in the 2003 CCME Guidance Document PN 1326 *Environmental Code of Practice for Above Ground and Underground Storage Tank Systems containing Petroleum Product and Allied Petroleum Products*. This document provides up to date information regarding best practices for the storage of petroleum products and allied petroleum products. EC recommends that double-wall storage tanks be placed entirely within a dyked area, with an impermeable barrier in the floor and sides of the containment area.

Comments previously submitted on behalf of EC on 10 May 2011 would still apply to this project. If there are any additional proposed changes to the project EC should be notified, as further review may be necessary. Please do not hesitate to contact the undersigned with any questions or comments with regards to the foregoing at (867) 975-4631 or by email at Paula.C.Smith@ec.gc.ca.

Yours truly,

Paula C. Smith
Environmental Assessment Coordinator

cc: Carey Ogilvie (Head, Environmental Assessment-North, EPO, Yellowknife, NT)
Ron Bujold (Environmental Assessment Officer, EPO, Yellowknife, NT)
Allison Dunn (Sr. Environmental Assessment Coordinator, EPO, Iqaluit, NU)

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10 May 2011

EC file: 4704 004 067
NWB file: 2BE-KLG----

Phyllis Beaulieu
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**RE: 110325 2BE-KLG---- Prosperity Goldfields Corp – New Type B – Kivalliq Region**

Environment Canada (EC) has reviewed the information submitted regarding the above-mentioned application, to the Nunavut Water Board (NWB). The following specialist advice has been provided pursuant to the *Canadian Environmental Protection Act 1999*, Section 36(3) of the *Fisheries Act*, the *Migratory Birds Convention Act*, and the *Species at Risk Act*.

Prosperity Goldfields Corp. is applying to the NWB for a new, five year term, Type B water license to support exploration activities in the Kiyuk Lake area of the Kivalliq region of Nunavut, near the Manitoba border, approximately 350 km southwest of the community of Arviat. The proposed project activities in 2011 include a diamond drill program consisting of 22 land-based targets and a 20 person camp.

Based on the information provided, EC provides the following comments for the NWB's consideration:

**General**

- The proponent shall not deposit, nor permit the deposit of chemicals, sediment, wastes, or fuels associated with the project into any water body. According to the *Fisheries Act*, Section 36 (3), the deposition of deleterious substances of any type in water frequented by fish, or in any place under any conditions where the deleterious substance, or any deleterious substance that results from the deposit of the deleterious substance, may enter any such water, is prohibited.
- The proponent shall not erect camps or store materials on the surface ice of lakes or streams, except that which is for immediate use.
- All sumps, spill basins, and fuel caches should be located in such a manner as to ensure that their contents do not enter any water body, are to be backfilled, and re-contoured to match the surrounding landscape when they are no longer required.

**Drilling**

- Environment Canada assessed inorganic chloride salts and concluded that these salts in high concentrations are harmful to the environment. As a result, when using calcium chloride ($CaCl_2$) for drilling purposes and disposing return water into a sump, the proponent should not rely on permafrost integrity to contain and isolate drilling wastes.

- All drilling effluent should be directed to a sump that is properly constructed and adequately sized to ensure there is no runoff and that water bodies downstream of drilling activities are not affected. All efforts shall be made to prevent drill mud, drill additives, return water and cuttings from migrating from the drill site.
- For land-based drilling, drilling wastes should be disposed of in a sump such that they do not enter any body of water.
- If artesian flow is encountered, core-drill holes shall be plugged and permanently sealed upon project termination.

**Spill Contingency Planning**

- Refuelling shall not take place below the high water mark of any water body and shall be done in such a manner as to prevent any hydrocarbons from entering any water body frequented by fish. EC recommends that drip pans, or other similar preventative measures, should be used when refuelling equipment.
- A spill kit, including shovels, barrels, absorbents, etc. should be readily available at all locations where fuel is being stored or transferred in order to provide immediate response in the event of a spill (i.e. must accompany snowmobiles and tractors).
- In Section 6.1 Preventative Measures of the Spill Prevention and Response Plan, the proponent states that they will "Create fuel caches in natural depressions that are located a minimum of 31 metres from the normal high-water mark of any water body". EC recommends the use of secondary containment, such as self-supporting insta-berms, for storage of all barrelled fuel rather than relying on natural depressions to contain spills.
- Under Section 5.3 Emergency Contact List – Spill Reporting and Response, the listing for the Environment Canada 24 hour pager should be removed as it is no longer in service.
- Spills are to be documented and reported to the NWT/NU 24 hour Spill Line at (867)920-8130. EC recommends that all releases of harmful substances, regardless of quantity, are immediately reported where the release:
    - is near or into a water body;
    - is near or into a designated sensitive environment or sensitive wildlife habitat;
    - poses an imminent threat to human health or safety; or,
    - poses an imminent threat to a listed species at risk or its critical habitat.

**Waste Disposal**

- In the application, the proponent states that combustible waste and sewage will be incinerated using a Model A200 Waste Incinerator manufactured by Inciner8 Ltd. EC requests that the proponent provide the NWB information demonstrating that this model of incinerator is capable of meeting the CCME Canada-wide Standards for Dioxins and Furans.
- EC recommends the use of an approved incinerator for the disposal of combustible camp wastes. EC has developed a Technical Document for Batch Waste Incineration, and is available at the following web link:
  http://www.ec.gc.ca/gdd-mw/default.asp?lang=En&n=F53EDE13-1
  The technical document provides information on appropriate incineration technologies, best management and operational practices, monitoring and reporting. This information should be incorporated into an incineration management plan for the camp. EC would like the opportunity to review this plan prior to implementation.
- If the proponent ships non-combustible waste off-site for disposal, EC suggests that confirmation and authorization be obtained from the intended community landfill prior to shipment.
- Used absorbent materials, oily or greasy rags, and equipment servicing wastes (such as used engine oil, antifreeze, hydraulic oil, lead acid batteries, brake fluid, and other lubricants) should be safely stored and transported in sealed containers (odour-free to prevent animal attraction) and safely transported to a facility that is authorized for the treatment and disposal of industrial hazardous wastes.
- The proponent should be aware that if hazardous waste is transported from the Kiyuk Lake

exploration area in Nunavut to Manitoba for disposal that the Interprovincial Movement of Hazardous Wastes Regulations under the *Canadian Environmental Protection Act* (CEPA 1999) requires the proponent complete movement documents. The Government of Nunavut only regulates waste in Nunavut and has no authority in Manitoba. An approved movement document should be completed.

**Wildlife and Species at Risk**

- Section 6 (a) of the *Migratory Birds Regulations* states that no one shall disturb or destroy the nests or eggs of migratory birds. If active nests are encountered during project activities, the nesting area should be avoided until nesting is complete (i.e., the young have left the nest).
- EC recommends that food, domestic wastes, and petroleum-based chemicals (e.g., greases, gasoline, glycol-based antifreeze) be made inaccessible to wildlife at all times. Such items can attract predators of migratory birds such as foxes, ravens, gulls, and bears. Although these animals may initially be attracted to the novel food sources, they often will also eat eggs and young birds in the area. These predators can have significant negative effects on the local bird populations.
- Section 5.1 of the *Migratory Birds Convention Act* prohibits persons from depositing substances harmful to migratory birds in waters or areas frequented by migratory birds or in a place from which the substance may enter such waters or such an area.
- In order to reduce aircraft disturbance to migratory birds, Environment Canada recommends the following:
  - Fly at times when few birds are present (e.g., early spring, late fall, winter)
  - If flights cannot be scheduled when few birds are present, plan flight paths that minimize flights over habitat likely to have birds and maintain a minimum flight altitude of 650 m (2100 feet).
  - Minimize flights during periods when birds are particularly sensitive to disturbance such as migration, nesting, and moulting.
  - Plan flight paths to avoid known concentrations of birds (e.g., bird colonies, moulting areas) by a lateral distance of at least 1.5 km. If avoidance is not possible, maintain a minimum flight altitude of 1100 m (3500 feet) over areas where birds are known to concentrate.
  - Avoid the seaward side of seabird colonies and areas used by flocks of migrating waterfowl by 3 km.
  - Avoid excessive hovering or circling over areas likely to have birds.
  - Inform pilots of these recommendations and areas known to have birds.
- The following comments are pursuant to the *Species at Risk Act* (SARA), which came into full effect on June 1, 2004. Section 79 (2) of SARA, states that during an assessment of effects of a project, the adverse effects of the project on listed wildlife species and its critical habitat must be identified, that measures are taken to avoid or lessen those effects, and that the effects need to be monitored. This section applies to all species listed on Schedule 1 of SARA. However, as a matter of best practice, Environment Canada suggests that species on other Schedules of SARA and under consideration for listing on SARA, including those designated as at risk by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), be considered during an environmental assessment in a similar manner. The Table below lists species that may be encountered in the project area that have been assessed by COSEWIC as well as their current listing on Schedules 1-3 of SARA (and designation if different from that of COSEWIC). Project impacts could include species disturbance, attraction to operations, and destruction of habitat.

| Terrestrial Species at Risk potentially within project area [1] | COSEWIC Designation | Schedule of SARA | Government Organization with Primary Management Responsibility [2] |
|---|---|---|---|
| Horned Grebe | Special Concern | Pending | EC |

| | | | |
|---|---|---|---|
| (Western population) | | | |
| Peregrine Falcon | Special Concern (*anatum-tundrius* complex[3]) | Schedule 3 – Special Concern (*tundrius)* | Government of Nunavut |
| Short-eared Owl | Special Concern | Schedule 3 | Government of Nunavut |
| Rusty Blackbird | Special Concern | Schedule 1 | Government of Nunavut |
| Polar Bear | Special Concern | Pending | Government of Nunavut |
| Grizzly Bear | Special Concern | Pending | Government of Nunavut |
| Wolverine (Western population) | Special Concern | Pending | Government of Nunavut |

[1] The Department of Fisheries and Oceans has responsibility for aquatic species.

[2] Environment Canada (EC) has a national role to play in the conservation and recovery of Species at Risk in Canada, as well as responsibility for management of birds described in the Migratory Birds Convention Act (MBCA). Day-to-day management of terrestrial species not covered in the MBCA is the responsibility of the Territorial Government. Populations that exist in National Parks are also managed under the authority of the Parks Canada Agency.

[3] The *anatum* subspecies of Peregrine Falcon is listed on Schedule 1 of SARA as threatened. The *anatum* and *tundruis* subspecies of Peregrine Falcon were reassessed by COSEWIC in 2007 and combined into one subpopulation complex. This subpopulation complex was listed by COSEWIC as Special Concern.

  - For any Species at Risk that could be encountered or affected by the project, the proponent should note any potential adverse effects of the project to the species, its habitat, and/or its residence. All direct, indirect, and cumulative effects should be considered. Refer to species status reports and other information on the Species at Risk registry at www.sararegistry.gc.ca for information on specific species.
  - If Species at Risk are encountered or affected, the primary mitigation measure should be avoidance. The proponent should avoid contact with or disturbance to each species, its habitat and/or its residence.
  - Monitoring should be undertaken by the proponent to determine the effectiveness of mitigation and/or identify where further mitigation is required. As a minimum, this monitoring should include recording the locations and dates of any observations of Species at Risk, behaviour or actions taken by the animals when project activities were encountered, and any actions taken by the proponent to avoid contact or disturbance to the species, its habitat, and/or its residence. This information should be submitted to the appropriate regulators and organizations with management responsibility for that species, as requested.
  - For species primarily managed by the Territorial Government, the Territorial Government should be consulted to identify other appropriate mitigation and/or monitoring measures to minimize effects to these species from the project.
  - Mitigation and monitoring measures must be taken in a way that is consistent with applicable recovery strategies and action/management plans.
- All mitigation measures identified by the proponent, and the additional measures suggested herein, should be strictly adhered to in conducting project activities. This will require awareness on the part of the proponents' representatives (including contractors) conducting operations in the field. Environment Canada recommends that all field operations staff be made aware of the proponents' commitments to these mitigation measures and provided with appropriate advice / training on how to implement these measures.
- Implementation of these measures may help to reduce or eliminate some effects of the project on migratory birds and Species at Risk, but will not necessarily ensure that the proponent remains in compliance with the *Migratory Birds Convention Act*, *Migratory Birds Regulations*, and the *Species at Risk Act*. The proponent must ensure they remain in compliance during all phases and in all undertakings related to the project.

If there are any additional changes in the proposed project, EC should be notified, as further review may be necessary. Please do not hesitate to contact the undersigned with any questions or comments with regards to the foregoing at (867) 975-4631 or by email at Paula.C.Smith@ec.gc.ca.

Yours truly,

Paula C. Smith
Environmental Assessment Coordinator

cc: Carey Ogilvie (Head, Environmental Assessment-North, EPO, EC, Yellowknife, NT)
Ron Bujold (Environmental Assessment Technician, EPO, EC, Yellowknife, NT)
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