Environment Canada **Environnement Canada**

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February 27, 2009

Our file: 4703 001 106
NIRB file: 2BE-GEO0210

Phyllis Beaulieu
Manager of Licensing
Nunavut Water Board
P.O. Box 119
Gjoa Haven NU X0B 1J0

Via email at licensing@nunavutwaterboard.org

RE: 2BE-GEO0210 Dundee Precious Metals Inc. George Lake Project – Amendment – Type "B"

On behalf of Environment Canada (EC), I have reviewed the information submitted with the above-mentioned application. The following specialist advice has been provided pursuant to the *Canadian Environmental Protection Act*, Section 36(3) of the *Fisheries Act*, the *Migratory Birds Convention Act,* and the *Species at Risk Act*.

Dundee Precious Metals Inc. is requesting an amendment to their existing water licence to increase the daily allowable volume of water from 100 m^3 to 140 m^3, to allow for all four diamond drills to be operations at one time. The second portion of the amendment is requesting permission to take water from various lakes in the George Lake claim group. The current licence allows for water withdrawal from only George Lake.

Environment Canada recommends that the following conditions be applied throughout all stages of the project:

Drilling and Camp Activities:

- The proponent shall not deposit, nor permit the deposit of any fuel, chemicals, wastes or sediment 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 other deleterious substance that results from the deposit of the deleterious substance, may enter any such water, is prohibited.
- Any fuel caches established to support this project shall be located above the high water mark of any waterbody and in such a manner to prevent the contents from entering any waterbody frequented by fish.
- EC recommends the use of an artificial berm, such as self-supporting insta-berm, in place of a snow berm when storing barrelled fuel on site. If surfaces are found to be slippery then traction devices, such as wooden platforms or webbed matting, should be used to reduce slipping hazard and thus potential spillage.
- For any "on-ice" drilling, return water released must be non-toxic, and not result in an increase in total suspended solids in the immediate receiving waters above the Canadian Council of Ministers for the Environment Guidelines for the Protection of Freshwater Aquatic Life (i.e. 10mg/L for lakes with background levels under 100 mg/L, or 10% for those above 100mg/L).
- Drilling additives or muds shall not be used in connection with holes drilled through lake ice unless they are re-circulated or contained such that they do not enter the water, or are demonstrated to

be non-toxic.

- Land based drilling should occur a sufficient distance from the high water mark of any water body, to ensure that no deleterious substances enter any water bodies. Drilling wastes from land based drilling shall be disposed of in a sump, such that the contents do not enter any water body.
- Environment Canada would like to inform the proponent that the *Canadian Environmental Protection Act* has listed CaCl as a toxic substance. If CaCl is to be used as a drill additive during land based drilling, the proponent shall ensure that sumps containing CaCl are properly constructed and located in such a manner as to ensure that the contents will not enter any water body.
- If an artesian flow is encountered, the drill hole shall be immediately plugged and permanently sealed upon project termination.
- The proponent shall not store materials on the surface ice of lakes or streams, except that which is for immediate use.
- The proponent should follow and comply with Canada Wide Standards for Dixons and Furans, and the Canada Wide Standards for Mercury emissions with respect to burning or incineration. In order for these guidelines to be met, at a minimum, an incinerator with dual chamber and forced air to allow for sufficient residence time and temperature to maximize combustion should be used.
- Environment Canada recommends the use of sumps for the disposal of drilling cuttings and sludges, camp greywater and sewage, including sludge. All sumps shall be located above the high water mark of any water body and in such a manner as to prevent the contents from entering any water body frequented by fish. Further, all sumps shall be backfilled upon completion of the field season and contoured so as to match the surrounding landscape.
- Once available, please forward the locations of any drill holes.

Spill Contingency Planning:

- The proponent should be aware that any spill of fuel or hazardous materials, adjacent to or into a water body, **regardless of quantity**, shall be reported immediately to the NWT 24-hour Spill Line, (867) 920-8130.
- In Section 7.1, page 14, of the proponents Spill Contingency Plan (February 2008) the following contact and numbers for Environment Canada should be added in place of Cindy Parker's contact information:

Environment Canada's 24 Hour Duty Officer (Curtis Didham)
Phone: 867-975-4644
Cell: 867-2221925
Fax: 867-975-4645

Migratory Birds and Species at Risk:

- Comments and recommendations provided by the Canadian Wildlife Service (CWS) relating to the *Migratory Birds Convention Act,* the *Migratory Birds Regulations*, and the *Species at Risk Act* in the letter submitted by Colette Spagnuolo on behalf of Environment Canada on July 28, 2006 for the Nunavut Impact Review Board application 06QN028, would also apply to this amendment (Please see Appendix I).

Thank-you for the opportunity to comment on the proposed amendment to the current water license for the George Lake Project. If there are any changes in the proposed project, EC should be notified, as further review may be necessary. Please do not hesitate to contact me with any questions or comments with regards to the foregoing at (867) 975-4631 or by email at carrie.spavor@ec.gc.ca.

Yours truly,

Original signed by

Carrie Spavor
Environmental Assessment Coordinator
Environmental Assessment - North,
Environmental Protection Operations

cc: Carey Ogilvie (Head, EA-North, Environment Canada)
Anne Wilson (Water Pollution Specialist, Environment Canada)

Appendix I

Environment Canada **Environnement Canada**

Environmental Protection Operations
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July 28, 2006

Our file: 4703 001 002

Sylvia Novoligak
Nunavut Impact Review Board
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Cambridge Bay, NU X0B 0C0
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Fax: (867) 983-2594

Via email at snovoligak@nirb.nunavut.ca

RE: NIRB 06QN028 – Dundee Precious Metals Inc. – George Lake Project

On behalf of Environment Canada (EC), I have reviewed the information submitted with the above-mentioned application. The following specialist advice has been provided pursuant to Environment Canada's mandated responsibilities for the enforcement of the *Canadian Environmental Protection Act*, Section 36(3) of the *Fisheries Act*, the *Migratory Birds Convention Act,* and the *Species at Risk Act*.

Dundee Precious Metals Inc. has acquired the George Lake and Goose Lake camps from Miramar Bathurst Resources. The camps will be upgraded as required. As part of these upgrades, Dundee Precious Metals Inc. is proposing to construct a tank farm at the George Lake project to support ongoing exploration work. The proposed project includes quarrying an esker for material, the construction of a winter road to access the esker, and the construction of the tank farm.

Environment Canada notes that the application documents state that the project was anticipated to begin in April 2006. Environment Canada would like to remind the proponent that all required permits and approvals must be in place prior to the start of any work.

Environment Canada recommends that the following conditions be applied throughout all stages of the project:

- The proponent shall not deposit, nor permit the deposit of any fuel, chemicals, wastes or sediment 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 other deleterious substance that results from the deposit of the deleterious substance, may enter any such water, is prohibited.
- Any fuel caches established to support this project shall be located above the high water mark of any waterbody and in such a manner to prevent the contents from entering any waterbody frequented by fish. Environment Canada recommends the use of secondary containment, such as self-supporting insta-berms, when storing barrelled fuel on site.
- The proponent shall ensure that all hazardous wastes, including waste oil, receive proper treatment and disposal at an approved facility.
- The Spill Contingency Plan included with the application states that "Calcium chloride…is of minimal environmental concern." The *Canadian Environmental Protection Act* (1999) lists CaCl as a toxic substance. The proponent shall therefore ensure that CaCl is properly stored and that any sumps used for its disposal are properly constructed such that the contents do not enter any waterbody frequented by fish.
- The contact number for Environment Canada is incorrectly reported in the Spill Contingency Plan. The appropriate contact for EC is Mr. James Noble, who can be reached at (867) 975-4644. Environment Canada also operates a 24-hour Emergency Pager, which is monitored by Enforcement and Emergencies Officers. The pager can be reached at (867) 920-5131.

Winter Road

- A map outlining the route of the winter road and the total distance of the road should be submitted for review.
- Stream crossings shall be located to minimize approach grades. Bank disturbance is to be avoided, and mechanized clearing should not be done immediately adjacent to any watercourse.
- Winter lake/stream crossings shall be constructed entirely of ice and snow materials; stream crossings shall be removed or notched prior to spring break-up.
- Spill kits should accompany the loader on the winter road in order to provide immediate response in the event of a spill.
- Drip pans, or other similar preventative measures, should be used when refueling equipment on site.
- The proponent shall not store materials on the surface ice of lakes or streams, except that which is for immediate use.

Quarrying

- A map indicating the location of the proposed esker quarry should be submitted for review, and should clearly show the location of the quarry in relation to any waterbodies.
- Environment Canada requests clarification regarding the amount of material that will be removed from the esker.
- The proponent shall not deposit, nor permit the deposit of sediment into any water body. It is recommended that an undisturbed buffer zone of at least 100 metres be maintained between the proposed quarry operation and the normal high water mark of any water body.

Tank Farm Construction

- The application presents conflicting statements regarding the size of storage tanks on site. The application documents refer to the use of double-walled storage tanks, while the Spill Contingency Plan states that the George Lake camp will only use 205 L drums. Environment Canada requests that Dundee Precious Metals clarify the size of fuel storage tanks at the George Lake camp.
- Environment Canada is proposing to repeal the existing "Registration of Storage Tank Systems for Petroleum Products and Allied Petroleum Products on Federal Lands and Aboriginal Lands Regulations" and replace it with a regulation that has a broader scope of application. The new regulation under the *Canadian Environmental Protection Act* (1999), Part 9 will incorporate mandatory technical requirements (secondary containment, leak detection, corrosion protection, overfill, spill containment) and be more in line with those regulations that already exist in most provincial and territorial jurisdictions. Compliance with the proposed regulations will be mandatory, and EC will conduct inspections to ensure compliance with the regulations. These new regulations are based on the 2003 CCME Guidance document PN 1326 "Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products". Environment Canada encourages Dundee Precious Metals Inc. to consult this document and ensure that the tank farm is designed and operated in accordance with it.

The Canadian Wildlife Service (CWS) of Environment Canada has reviewed the above-mentioned submission and makes the following comments and recommendations pursuant to the *Migratory Birds Convention Act* (the *Act*) and *Migratory Birds Regulations* (the *Regulations*).

- 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 vicinity of the nest).
- In order to reduce disturbance to nesting birds, CWS recommends that aircraft used in conducting project activities maintain a flight altitude of at least 610 m during horizontal (point to point) flight.
- In order to reduce disturbance to resting, feeding, or moulting birds, CWS recommends that aircraft used in conducting project activities maintain a vertical distance of 1000 m and minimum horizontal distance of 1500 m from any observed concentrations (flocks / groups) of birds.

- CWS recommends that camp waste be made inaccessible to wildlife at all times. Camp waste can attract predators of migratory birds (e.g., foxes and ravens) to an area if not disposed of properly. Incineration of camp waste is a recommended option.
- Section 35 of the *Migratory Birds Regulations* states that no person shall deposit or permit to be deposited, oil, oil wastes or any other substance harmful to migratory birds in any waters or any area frequented by migratory birds.
- 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, but will not necessarily ensure that the proponent remains in compliance with the *Migratory Birds Convention Act* (the *Act*) and *Migratory Birds Regulations (*the *Regulations)*. The proponent must ensure they remain in compliance with the *Act* and *Regulations* during all phases and in all undertakings related to the project.

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, EC asks that species listed on other Schedules of SARA and under consideration for listing also be included in this type of assessment.

Species at Risk that may be encountered	**Category of Concern**	**Schedule of SARA**	**Government Organization with Expertise on Species**
Short-eared Owl	Special Concern	Schedule 3	Government of Nunavut
Peregrine Falcon (subspecies tundrius)	Special Concern	Schedule 3	Government of Nunavut
Grizzly Bear	Special Concern	Pending	Government of Nunavut
Wolverine (Western Population)	Special Concern	Pending	Government of Nunavut

Impacts to these species could be disturbance and attraction to operations.

Environment Canada recommends:

- Species at Risk that could be encountered should be identified and any potential adverse effects noted. Refer to the Species at Risk registry at www.sararegistry.gc.ca for information on specific species.
- If Species at Risk are encountered, the primary mitigation measure should be avoidance. The proponent should avoid contact with or disturbance to each species.
- The proponent should consult with the Government of Nunavut and appropriate status reports, recovery strategies, action plans, and management plans to identify other appropriate mitigation measures to minimize effects to these species from the project.
- The proponent should record the locations and frequency of any observations of Species at Risk and note any actions taken to avoid contact or disturbance to the species.

If there are any changes in the proposed project, EC should be notified, as further review may be necessary. Please do not hesitate to contact me with any questions or comments with regards to the foregoing at (867) 975-4639 or by email at colette.spagnuolo@ec.gc.ca.

Yours truly,

Original signed by

Colette Spagnuolo
Environmental Assessment / Contaminated Sites Specialist

cc: (Stephen Harbicht, Head, Environmental Assessment - North, Environment Canada, Yellowknife)