Environment Canada Environnement Canada

Canada

ENVIRONMENT CANADA'S INTERVENTION ON THE TAMERLANE VENTURES INC. PINE POINT PILOT PROJECT

Fort Resolution
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October 16, 2007

Overview

- Mandate
- Comments and recommendations regarding:
  - Species at risk and migratory birds
  - Water management
  - Air quality

Mandate

- *Department of the Environment Act*
- *Migratory Birds Convention Act* and *Migratory Birds Regulations*
- *Species at Risk Act*
- *Fisheries Act* – Pollution Prevention Provisions
- *Canadian Environmental Protection Act*

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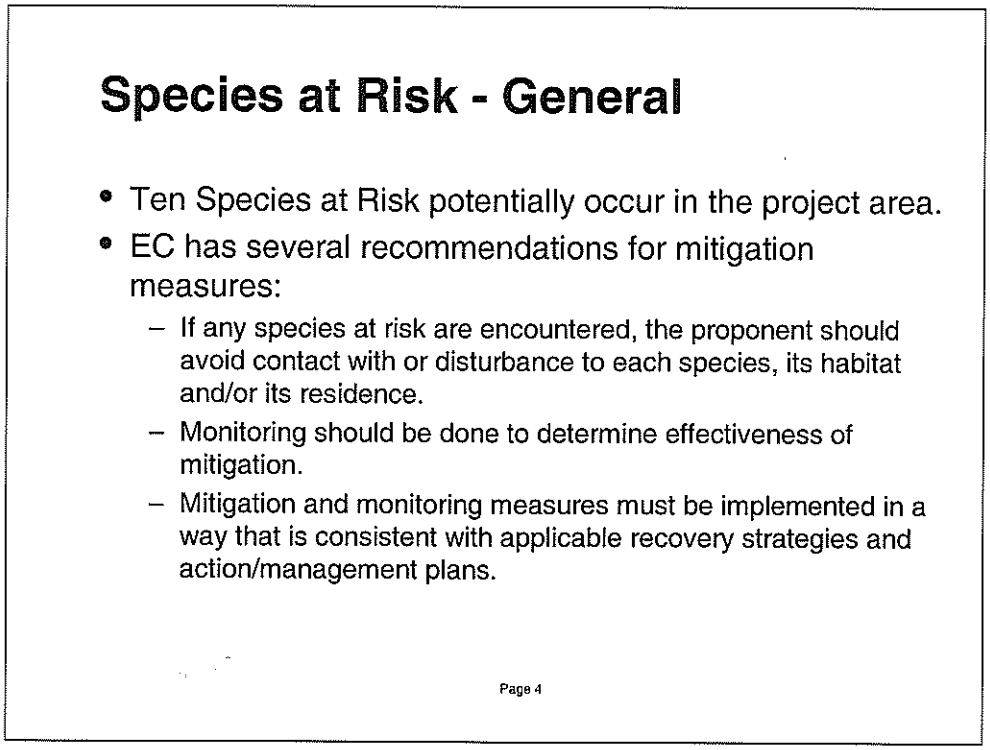
•The *Department of the Environment Act* provides the Department with a general responsibility for environmental management and protection in terms of the need to foster harmony between society and the environment for the economic, social, and cultural benefit of present and future generations of Canadians. Environment Canada is also responsible for providing specialist or expert information and knowledge to federal government agencies and for the preservation and enhancement of environmental quality.

•Section 6 (a) of the MBR states that no one shall destroy or disturb the nests or eggs of migratory birds and Section 5.1 of the MBCA 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.

•Environment Canada also administers and enforces the *Species at Risk Act* (SARA). Section 32 (1) of SARA states that no person shall kill, harm, or harass an individual of a species listed as endangered or threatened and Section 33 states that no person shall damage or destroy the residence of one or more individuals of a wildlife species listed as a endangered or threatened.



Ten Species at Risk potentially occur in the project.

Legally Listed on Schedule 1: Whooping crane, Wood Bison, Woodland Caribou (boreal), Yellow Raid, Northern Leopard Frog

***Peregrine Falcon - Last COSEWIC designation in April 2007 changed the designation from Threatened to Special Concern and combined the *anatum* subspecies with the *tundrius* subspecies.

Under consideration for Schedule 1: Short-eared Owl, Wolverine (western population), Rusty Blackbird, and Common Nighthawk.

Primary mitigation measure for Species at Risk should be avoidance. If any species at risk are encountered, the proponent should avoid contact with or disturbance to each species, its habitat and/or its residence.

Monitoring should be done to determine effectiveness of mitigation. 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.

Mitigation and monitoring measures must be implemented in a way that is

Species at Risk – Whooping Crane

- The proponent should undertake monitoring for Whooping Cranes near the project site.
- Wetland areas near the project site, including the area identified as Shrubby Fen in the Local Study Area, should be visually checked every two weeks from May to September to see if any cranes are present.
- Project personnel should also be instructed to report any sightings of Whooping Cranes. Observations should include the location, date, number of cranes, behaviour or actions taken by the animals if project activities encountered, and any actions taken by the proponent to avoid contact or disturbance.

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Whooping Cranes are of concern, as there are less than 400 in existence in the wild. Whooping cranes nest south of the project area and young, non-breeding "sub-adults" may be seen in the project area.

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Wetland areas near the project site, including the area identified as Shrubby Fen in the Local Study Area, should be visually checked every two weeks from May to September to see if any cranes are present.

If a Whooping Crane is observed, the wetland area should be visually checked on a weekly basis for crane(s) and measures undertaken to avoid disturbance to the bird. Environment Canada should be contacted to determine whether any further mitigation measures might be required.

Any observations of Whooping Cranes should be reported to Environment Canada.

Species at Risk – Yellow Rail

- The proponent should conduct a survey for Yellow Rails near the project site.
- The area identified as Shrubby Fen in the Local Study Area and any other wetland areas near the project site should be surveyed for Yellow Rails in June 2008 or the year before project activities begin.
- Project personnel should record any sightings of Yellow Rails. Observations should include the location, date, number of birds, behaviour or actions taken by the birds if project activities encountered, and any actions taken by the proponent to avoid contact or disturbance.

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Yellow Rail may be present in the area but may not have been detected during the baseline surveys done by the proponent. The proponent should conduct a survey for Yellow Rails near the project site.

The area identified as Shrubby Fen in the Local Study Area and any other wetland areas near the project site should be surveyed for Yellow Rails in June 2008 or the year before project activities begin.

If Yellow Rails are observed or heard, measures should be undertaken to avoid disturbance to the birds, the area should be re-surveyed in subsequent years, and Environment Canada contacted to determine whether any further mitigation measures might be required.

Any observations of Yellow Rails should be reported to Environment Canada.

Migratory Birds – Power Lines

- Birds, including Species at Risk such as Whooping Cranes, have been killed from collisions with power lines.
- Mitigation measures can be used to minimize the risk of bird collisions and these were discussed with the proponent during the July 5, 2007 video conference.
- Mitigation measures might include:
  - Ensuring power line away from wetland area;
  - Lines below tree tops rather than just above;
  - Markers on line.

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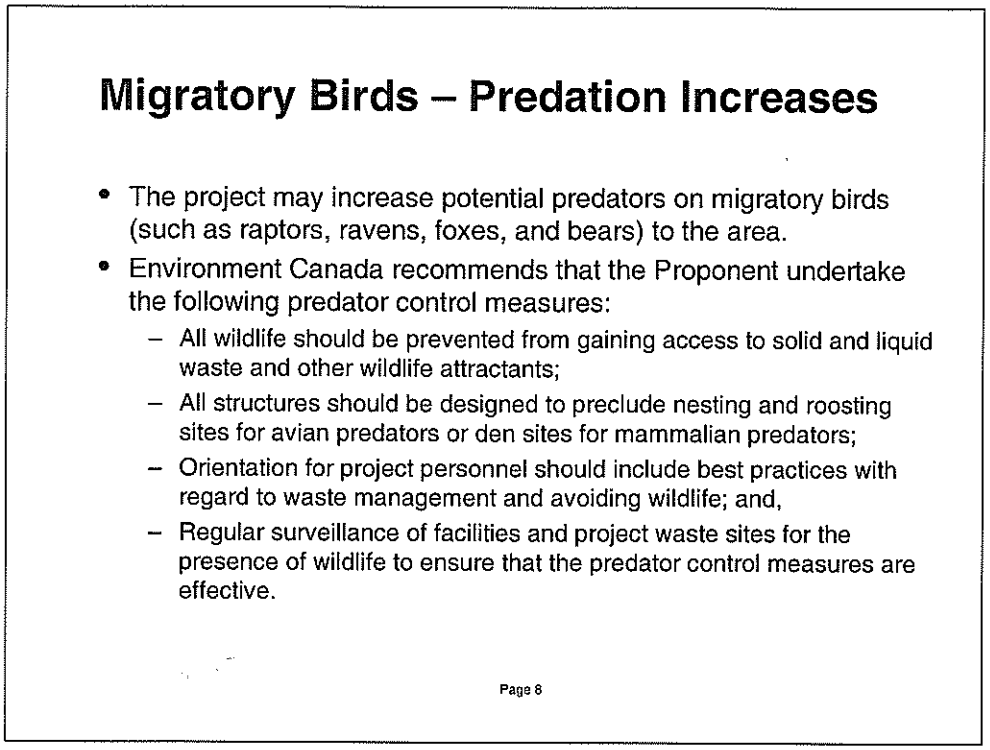
•Birds, including Species at Risk such as Whooping Cranes, have been killed from collisions with power lines.

•Mitigation measures can be used to minimize the risk of bird collisions and these were discussed with the proponent during the July 5, 2007 video conference.

•Mitigation measures might include:

- •Ensuring power line away from wetland area
- •Lines below tree tops rather than just above
- •Markers on line



•The project may increase potential predators on migratory birds (such as raptors, ravens, foxes, and bears) to the area.

•Increases of these predators in an area can have negative effects on local bird populations, including Species at Risk such as Whooping Cranes, Yellow Rails, and Common Nighthawks.

•Preventing attraction includes not only good waste management practices, but also consideration of building design to discourage roosting, nesting, and denning sites on or within the infrastructure. Suggestions on potential infrastructure design to reduce roosting, nesting and denning were discussed with the proponent during the video conference on July 5, 2007.

•Orientation for project personnel should include best practices with regard to waste management and avoiding wildlife; and,

•Regular surveillance of facilities and project waste sites for the presence of wildlife to ensure that the predator control measures are effective.

Water Management – Injection Well

- The Proponent has revised the wastewater disposal method from use of the quarry area as an infiltration basin, to downhole disposal in a deep injection well.
- Contingency plans for wastewater disposal include maintaining a second well, and planning for use of the quarry area to construct a lined holding pond for use in the event both injection wells are not functioning.
- The containment area will be constructed at the same time as the wells, and is intended to be used only if both wells are not working for water disposal, and will provide about four days holding capacity.

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Plans for the injection wells and containment area have been recently developed, and along with the containment area should provide reasonable water management options.

Water Management – Injection Well

- EC recommends that details of well operation and associated contingency plans be included in an adaptive management plan.
- The plan should include contingencies for water treatment of suspended solids as well as regulated constituents of the wastewater.
- Methods for addressing injection blockage problems (e.g. injection of water under pressure, injection of drilling muds under pressure to fracture bedrock, use of chemicals to dissolve precipitates, etc) should be reviewed and included.
- Seasonal challenges should also be addressed, such as use of the pond during freezing conditions.

Air Quality Issues

- There are two main issues associated with the proposed project:
  - Use of a site-specific air quality assessment, and
  - Prevention of fugitive dust emissions along the ore transportation corridor.

Site-specific Air Quality Assessment

- TVI commissioned a project-specific air quality assessment in July 2007 which would include air dispersion modeling for the Pine Point Pilot Project.
- This was done in response to concerns from EC and GNWT that site-specific factors needed to be used in the assessment.
- A preliminary summary was submitted Oct. 8 and reviewed by EC.

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Note that if we haven't received anything further before Oct. 12, there will be no EC staff available to review. We will have to rely on the GNWT air expertise for the next 5 months.

Site-specific Air Quality Assessment

- Based on this very limited summary, it appears that an **ambient** monitoring program to measure dust and particulate (Total Suspended Particulate (TSP), PM10 and PM2.5) will be needed.
- The summary did not discuss deposition, so we don't know if dust fall will be a problem. For this reason, monitoring for dust fall is recommended.
- Metal analyses should be done on the dust fall samples.
- SO_2 and NO_2 do not appear to be of concern.
- The complete Air Quality Assessment Report needs to be reviewed.

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Fugitive Dust

- EC has concerns with the escape of dust during ore transport.
- A report done by the Alaskan State Government includes the following relevant information:

> "The primary sources and mechanisms of fugitive dust transport along the...road include tracking...and windblown dust from the road surface. Dust on truck surfaces may be blown from those surfaces and carried onto the road or into the surrounding environment. Surface water runoff from the road can carry metals containing dust from the surface of the road to the tundra just off the road shoulder. In the past, concentrate spillage and escapement from trucks was likely a significant factor...".

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The quote references recent studies done in Alaska of contamination of the transportation corridor for the Red Dog Mine. Reports done by the US Geological Survey and the National Parks Service have documented significant concentrations of lead, zinc, and cadmium in snow and vegetation along the transportation system easement from the mine to the shipping point.

References:

•http://arcticcircle.uconn.edu/SEEJ/RedDog/alaska_dec/

•Ford, J., Hasselbach, L., 2001. Heavy Metals in Mosses and Soils on Six Transects Along the Red Dog Mine Haul Road, Alaska, National Park Service. http://www.dec.state.ak.us/spar/csp/docs/reddog/reddogrpt2.pdf

•Hasselbach, L., Ver Hoef, J., Ford, J., Neitlich, P., Crecelius, E., Berryman, S., Wolk, B., Bohle, T., 2004. Spatial patterns of cadmium and lead deposition on and adjacent to National Park Service lands near Red Dog Mine, Alaska, National Park Service. http://www.nps.gov/akso/NPS_CAKR-Metals_2004.pdf

Fugitive Dust

- EC would like to note the importance of dust containment during all aspects of handling and shipping of the ore and concentrate.
- Trucks which will be used to transport the ore should not only be covered, but should be checked to ensure there are no openings in the concentrate hold which would allow the escape of materials.

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While acknowledging that the Pine Point Pilot Project will be occurring on a small scale, we note the potential for future ore extraction which may extend the trucking duration and volumes.

Conclusion

Environment Canada thanks the Board for the opportunity to present our recommendations, and would be happy to take any questions which may arise.