



Report of Environmental Assessment & Reasons for Decision

EA0708-001: Selwyn Resources Ltd.

Mineral Exploration at Howard's Pass

July 3, 2009

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List of acronyms

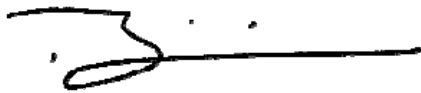
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|---------|---|
| SSI | Sahtu Secretariat Incorporation |
| DFO | Department of Fisheries and Oceans |
| GNWT | Government of the Northwest Territories |
| INAC | Indian and Northern Affairs |
| TDLC | Tulita District Land Corporation |
| PWNHC | Prince of Wales Northern Heritage Centre |
| SARA | Species at Risk Act |
| COSEWIC | Committee on the Status of Endangered Species in Canada |

Review Board environmental assessment decision

To make its decision in this environmental assessment, the Mackenzie Valley Environmental Impact Review Board (Review Board) has relied upon all the information on the public record. Having considered the evidence, the Review Board has made its decision in accordance with section 128 of the *Mackenzie Valley Resource Management Act*.

It is the Review Board's opinion that the proposed Selwyn Mineral Exploration Project at Howard's Pass is not likely to cause significant adverse impacts or to be a cause of significant public concern if mitigation commitments are implemented by the developer.

The Review Board further determines, under subsection 128 (1)(a) of the *Mackenzie Valley Resource Management Act*, that an environmental impact review of the proposed development does not need to be conducted.

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Richard Edjericon

Chairperson of the Mackenzie Valley
Environmental Impact Review Board

Date: July 3, 2009

Report summary

The Mackenzie Valley Environmental Impact Review Board conducted an environmental assessment of Selwyn Resources Ltd. (Selwyn)'s mineral exploration project at Howard's Pass in the Sahtu region of the Northwest Territories, near the Yukon border (the Howard's Pass exploration project). The Tulita District Land Corporation, a member organization of the Sahtu Secretariat Incorporated, requested the referral according to ss. 126(2)(b) of the *Mackenzie Valley Resource Management Act*. Selwyn proposes an advanced exploration drilling project of up to 100 holes in the Sahtu region. The project is an expansion of a fully permitted project nearby in the Yukon. Over a five year period, this development's purpose is to further explore and define sub-surface zinc and lead resources on Selwyn claims and leases in the Northwest Territories portion of the project property. The activities will primarily be helicopter supported and the developer will create up to ten kilometres of new access trails for the project activities.

The main biophysical issues which parties identified throughout the environmental assessment process were sensitive caribou post calving activity in the project area, wildlife monitoring, site reclamation, and air quality. The main human environment issues were potential impacts on heritage resources, appropriate community engagement by the developer and fair distribution of socio-economic benefits to the local Sahtu communities. The Tulita District Land Corporation (TDLC) was particularly concerned that the Selwyn project posed a threat to the ecological integrity of the nearby land in the proposed Naats'ihch'oh National Park Reserve. The Review Board focused on the evidence parties and the public submitted to identify whether there were any significant adverse impacts in these key areas of interest.

The Review Board has considered that:

- the scale and type of project proposed is small, and the developer committed to mitigate specific issues of concern;
- potential impacts on wildlife are largely avoided, particularly through flying practices that avoid impacts on wildlife and by stopping work when wildlife is in the area; (this also prevents potential impacts on future parklands);

- monitoring of potential impacts on wildlife will include monitors from Tulita;
- negotiations are underway between Selwyn Resources Ltd. and the TDLC regarding on-going monitoring;
- waste incineration will not occur in the Northwest Territories, and only a small portion of the incinerated waste will come from the activities in the Northwest Territories; and,
- Elders have no specific traditional knowledge of heritage resources in the area.

In this Report of Environmental Assessment, the Review Board suggests that:

- the developer improve monitoring by involving TDLC;
- the developer consult with TDLC on reclamation design, and with TDLC and GNWT about inspections of reclamation;
- the developer continue communicating with Parks Canada, Sahtu Secretariat Incorporated and the GNWT on caribou observation and research;
- the developer continue communicating with the Government of the Yukon territory about transboundary surveys and monitoring work;
- GNWT and Environment Canada along with other regulators work together to finalize enforceable air quality standards specific to the Northwest Territories.
- GNWT and Environment Canada in the Northwest Territories work with relevant Yukon agencies to ensure a coordinated approach to monitoring and managing air quality as it relates to Selwyn's proposed and future activities at Howard's Pass; and
- the developer minimize the possibility of public concern in the future by consulting with Parks Canada about the design of any future expansion.

Based on the considerations and the commitments of the developer, the Review Board concludes that the proposed Selwyn project is not likely to be a cause of significant adverse environmental impacts or significant public concern (under subsection 128(1)(a) of the Act). Therefore, this development may proceed to permitting subject to a ten day waiting period required by s. 129 (a) of the Act.

1 Introductory information

This is the Mackenzie Valley Environmental Impact Review Board (Review Board)'s *Report of Environmental Assessment and Reasons for Decision* for Selwyn Resources Ltd. (Selwyn)'s proposed mineral exploration project at Howard's Pass, Northwest Territories. The purpose of this report is

- a) to satisfy the reporting requirements of the *Mackenzie Valley Resources Management Act* (the Act) sections 121 and 128;
- b) to convey the Review Board's decision on whether the proposed development is likely to cause significant adverse impact on the environment or be a cause for public concern; and
- c) to document relevant parts of the environmental assessment.

1.1 Overview

This overview section provides background information on the regulatory history and referral of this development to the Review Board. This section also sets out the requirements of the Act and provides a brief description of the development proposal.

Section 2, describes the Review Board's environmental assessment process for this project. The section provides information about the parties to this assessment and the steps of the process the Review Board took to identify if there were any significant adverse impacts or public concern as required by section 128 of the *Mackenzie Valley Resource Management Act*. Section 2 of this report also describes the scope of the assessment and the changes to the proposed development's design, which took place during the proceedings.

Section 3, outlines the environmental components that the Review Board required the developer to examine during the impact assessment. This section includes the proposed development's impacts on both the biophysical environment and the human environment; an analysis of those impacts and includes the Review Board's conclusions on the likelihood of those impacts.

Section 4, considers the extent of, the reasons for, and the significance and likelihood of any public concern resulting from the proposed development.

Section 5, entitled “Environmental assessment decision”, includes a summary of all conclusions as well as the report’s overall conclusion. This section also provides suggestions to reduce any residual impacts from the proposed development. The information on the public record was the evidence that the Review Board referenced over the course of the environmental assessment to come to a decision.

This report does not discuss issues which the Review Board has decided are fully resolved by the material on the public record. The only issues discussed in detail in this *Report of Environmental Assessment* are those that the Review Board decided warranted further consideration.

1.2 Regulatory history

Sahtu Secretariat Incorporated referred the Land Use Permit application for Selwyn’s (changed from Pacifica Resources May 2007) mineral exploration activities on the Yukon and Northwest Territories border on June 12, 2007. The Tulita District Land Corporation, a member organization of the Sahtu Secretariat Incorporated, requested the referral according to ss. 126(2)(b) of the *Mackenzie Valley Resource Management Act*. Public concern over potential conflicting land use priorities in the proposed area prompted the referral. Parks Canada identified the area as an area of interest for the creation of a National Park Reserve. The ecological integrity of the region and the future protection from industrial development was the Tulita District Land Corporation’s primary concern.

The proposed development is related to a project in the Yukon that is fully permitted and in operation. Selwyn’s Yukon operation currently has a Class IV Mining Land Use Permit, an Air Emissions Permit, a commercial Dump Permit and a Special Waste Permit. The development is located near Don Creek which is within the Peel River watershed. The principal activity of the Yukon project is similar to the proposed Northwest Territories project to conduct mining exploration on the Selwyn mineral claims and leases. The activities of the Yukon project involve drilling including helicopter and bulldozer supported drill pads, mechanized trenching, line cutting, trail and road upgrading, and airstrip maintenance. It also includes the operation and maintenance of a 50-person camp.

1.3 Requirements of the *Mackenzie Valley Resource Management Act*

The Review Board administers Part 5 of the *Mackenzie Valley Resource Management Act* (the Act) and therefore has decision-making responsibilities in relation to the proposed development. The Review Board is responsible for conducting an environmental assessment, which considers the proposed development's biophysical, social, economic and cultural impacts on the environment in accordance with s.114 and s.115 of the Act. The Review Board conducted this environmental assessment based on its *Rules of Procedure* and *Environmental Impact Assessment Guidelines*.

Under s.s.117 (1) of the Act, the Review Board must decide the scope of the development. The Review Board also considers the factors set out in s.s.117 (2), which is further described in section 2 of this document. The Review Board is required to determine whether the proposed development is likely to cause significant adverse impact on the environment or to be a cause of significant public concern, as described under s.s.128(1). The Review Board must then prepare a *Report of Environmental Assessment*, as described under s.s.128 (2).

Sections 62 and subsection 130(5) of the Act states that once the federal and responsible Ministers accept the Review Board's *Report of Environmental Assessment*, the developer, government and regulatory authorities must ensure that any approved measure is carried out. If, as in this case, the Review Board determines the development is not likely to have any significant adverse impact on the environment or be a cause of significant public concern (a s.s.128(1)(a) decision), the Act identifies the following:

- under s. 129(a), no regulatory authority can issue a license, permit or other authorization before the expiration of ten days after receiving the report of the Review Board; and
- under s.s. 130(1) (a), the federal Minister and responsible ministers may order an environmental impact review of the proposal, notwithstanding the Review Board's determination.

1.4 Environmental setting

In the project area, the watershed divide between the Yukon River and the Mackenzie River defines the Northwest Territories and Yukon border. The project area in the Northwest Territories generally drains

eastward through the Silver, Placer, Canex, and Steel Creeks to the South Nahanni River and eventually into the Mackenzie River. As illustrated in Figure 1 below, the development is in the Sahtu region of the Northwest Territories.

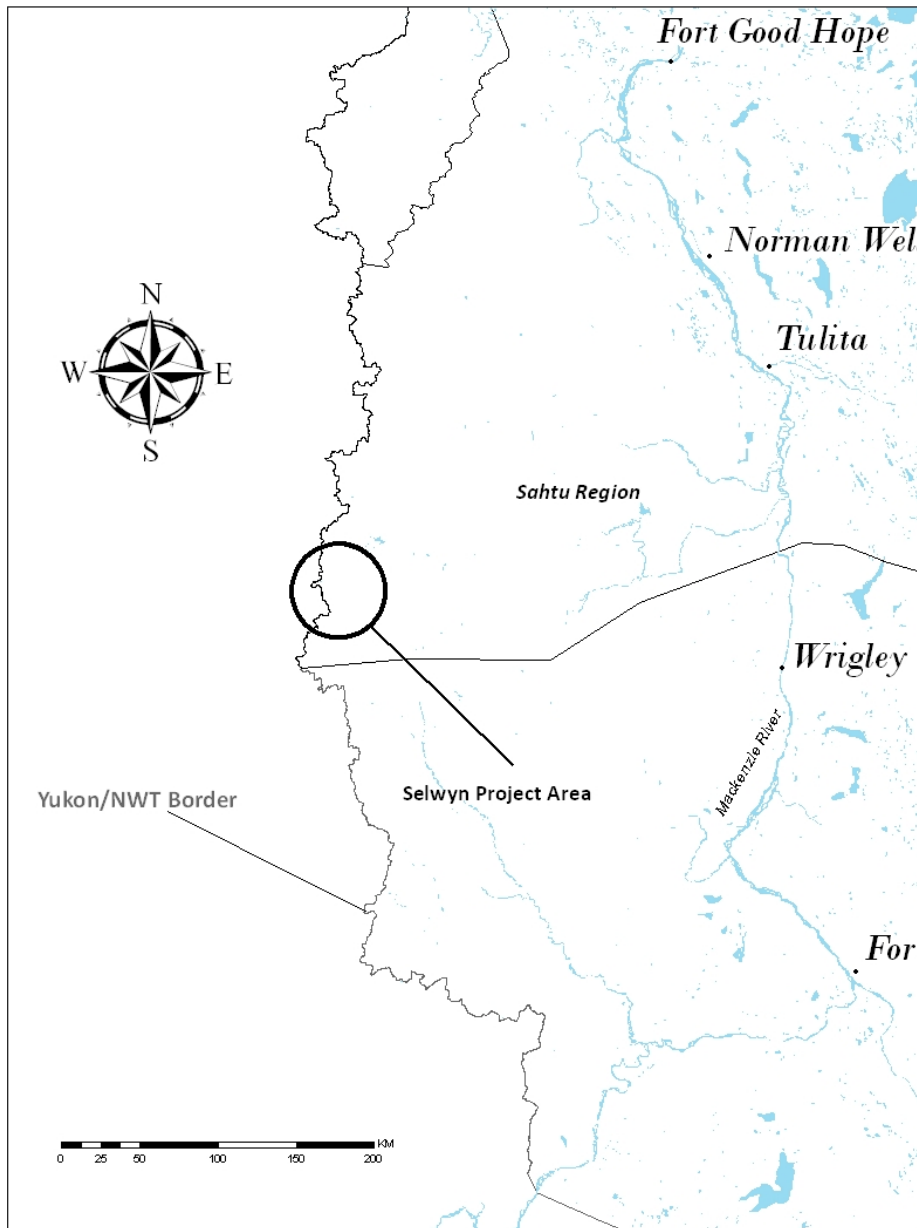
Selwyn's property is located in the Selwyn Mountain Ecoregion of the Taiga Cordillera Ecozone. The climate is typical of high mountain valleys and passes with warm, wet summers and cold, dry winters. The mean annual temperature ranges from -5°C to -8°C. The monthly ranges are between -20°C in January to 10°C in July. Permafrost is discontinuous but present throughout the region.

The area experiences moderate to heavy precipitation, with annual amounts between 600 -700mm. June to mid September is the snow free time. The driest periods of the year in this region are January to April while July, August and September are the wettest months. Snow and ice breakup occurs between May and June. The immediate area of the drilling operation consists of ephemeral or temporary channels, which are streams that only have water in the spring, and these channels drain the melt water to lower elevations. These alpine melt water channels are sufficient for water needed in the drilling process but are not considered fish habitat (PR#11-17).

The proposed development includes two claims areas known as the "Anniv" and the "XY Nose". These claim areas are in the upland portion of the region. Large slightly hilly alpine plateaus with alpine tundra vegetation dominate the area. Forbs-grass meadows (broad leaved plants) are typical on the moist sites. Irregular open mixed subalpine fir and spruce stands grow at some mid-to lower slope locations and at the base of valleys. These species cover about 10% of the XY Nose and 60% of the Anniv (PR#11-17).

The wildlife that inhabit the Selwyn Mountain Ecoregion, particularly in the vicinity of the Northwest Territories Anniv and XY Nose areas, include wolverine, grey wolf, woodland caribou, moose, grizzly bear, red fox and golden eagle. The Shuht'a Got'ine and the Kah'sho Got'ine have traditionally used this region for hunting, fishing and harvesting (PR#11-17).

Figure 1 Location map of the Selwyn Project at Howard's Pass in Sahtu Region



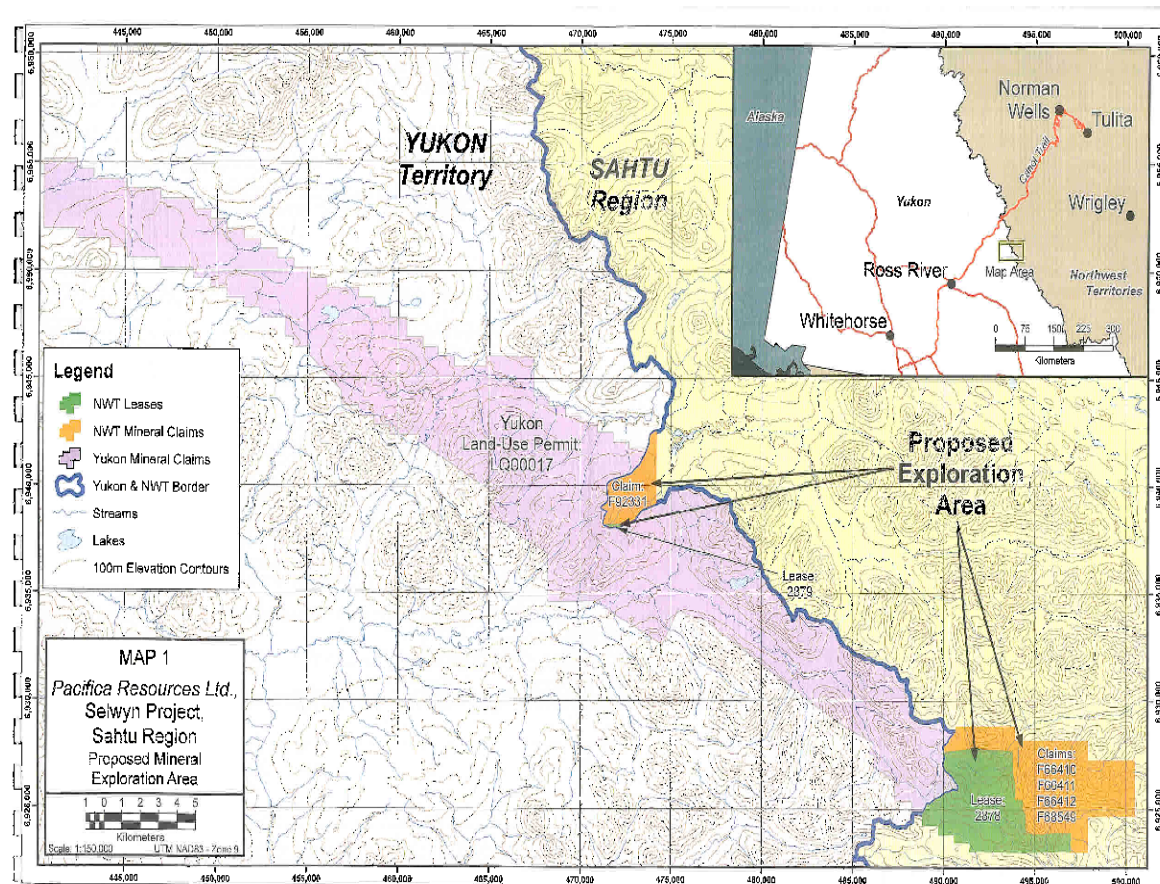
1.5 Description of development

Selwyn's proposed activities are an extension of an exploration program that has been operating on the Yukon Territories portion of the project site since 2005. All development support for this project in the

Northwest Territories will be from the infrastructure on the Yukon side. The Selwyn project on the Yukon side has all the permits it requires. The specific purpose of this development is to further explore and define sub-surface zinc and lead resources on the Selwyn mineral claims and leases on the Northwest Territories portion of the project property for the duration of 5 years (PR#11-17).

Selwyn's mineral claims and leases encompasses 32,130 hectares and is located on the Yukon and Northwest Territories border approximately 350 km northeast of Whitehorse, Yukon and 320 km southwest of Tulita, Northwest Territories. The Northwest Territories area is 17% of this total area or 5535 hectares. Figure 2 below indicates where the claims are located. Situated midway up the property on the north side is the Anniv claim while the XY Nose claim is located at the southeast end.

Figure 2 Location map of the Selwyn claims and lease areas.



Source: Developer's Assessment Report –Selwyn Project Mineral Exploration (PR#11-17)

The primary development activity will be drilling from June to November. The developer anticipates making up to 100 drill holes. There are two categories of drilling work planned; exploration and definition. Exploration drilling tends to be more widely spread across the terrain and utilizes helicopter for support. Field surveys, sampling, mapping and geochemistry work preceded this proposed exploration activity. One quarter of the total drill holes will be exploration (five at the Anniv claim and 20 at the XY Nose claim). The remaining drill holes will be definition-type drilling. The developer will identify the locations of definition drilling sites by the results of exploration drilling and the mineral deposits found. These clustered sites will be ground-supported operations. All of the definition drill sites will be at the XY Nose. The developer plans to use existing roads and trails where possible, although some new construction will take place to access the drill sites. The total length of new trails will be between nine and ten kilometres over the five year permit.

The development proposes four portable drills operating 24 hours a day. Each drill will require a two-person crew per shift to operate and each shift is 12 hours. Helicopter will transport equipment and personnel from the Yukon camps.

2 Environmental assessment process

2.1 Parties to the environmental assessment

There were six parties registered in this environmental assessment. According to the Review Board's *Rules of Procedure*, the developer is considered a directly affected party. The remaining five registered parties were:

- Parks Canada
- Department of Fisheries & Oceans (DFO)
- Government of the Northwest Territories (GNWT)
- Indian and Northern Affairs (INAC)
- Tulita District Land Corp. (TDLC) represented by Sahtu Secretariat Incorporation (SSI)

During the environmental assessment process, representatives of government departments had the opportunity to identify their interests and to notify the Review Board of their intent to participate in the proceeding as an interested party. Parties to the environmental assessment had the opportunity to attend and actively participate in the process. Though some parties did not actively participate through information requests or hearings, information exchange between the developer and parties can be found on the public registry. Table 1 below illustrates the involvement of the parties throughout this environmental assessment process, including information request responses and the community hearing.

Table 1 Role of the parties

| Party | Information Request Responses | Community Hearing |
|--------------|-------------------------------|-------------------|
| Parks Canada | | ✓ |
| DFO | | |
| GNWT | ✓ | ✓ |
| INAC | | ✓ |
| TDLC and SSI | | ✓ |

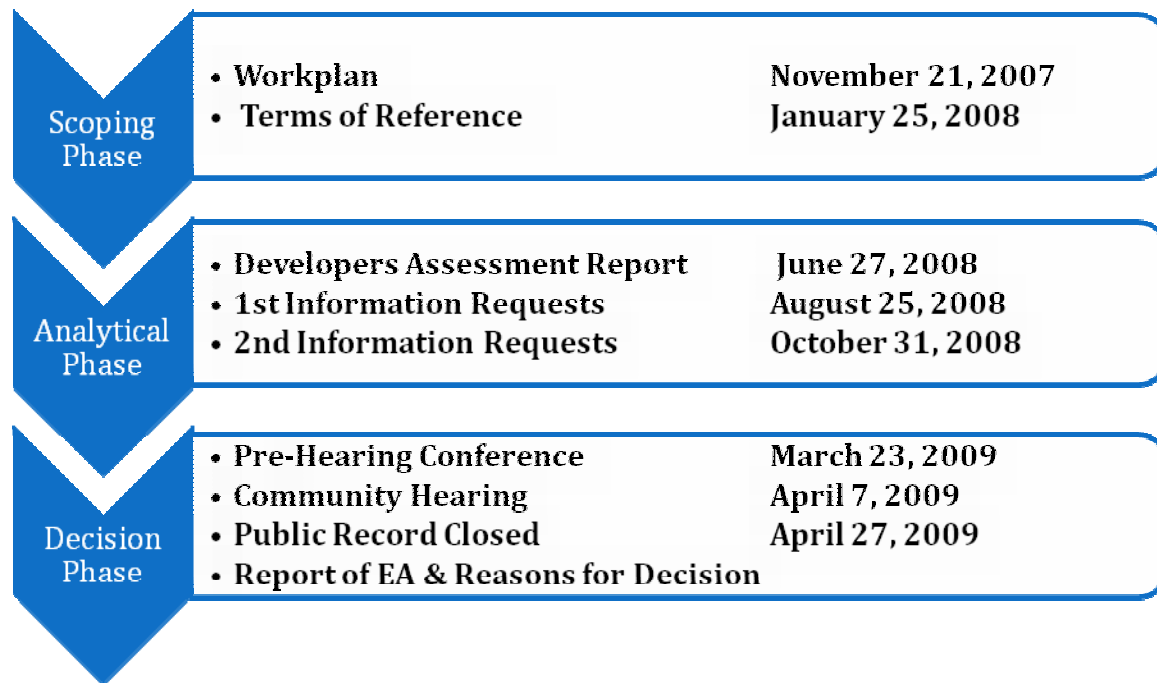
✓ = actively participated in this phase of the environmental assessment

The *Terms of Reference* for the Developer's Assessment Report outlined the parties' roles and responsibilities. The developer was responsible for producing the information necessary for the Review Board and the parties, including the developer, were responsible for evaluating the potential impacts that the proposed Selwyn mineral exploration project might have on the environment.

2.2 Environmental assessment phases

After the referral of June 12, 2007 and the initial start up functions such as creating a distribution list, the Review Board ran this environmental assessment in three phases: a scoping phase, an analytical phase, and a decision phase. See Figure 3 for tasks associated with each phase of the environmental assessment.

Figure 3 Selwyn mineral exploration environmental assessment process



Development of Workplan and Terms of Reference

The Review Board issued a draft workplan and comments were received from both the developer and INAC in November 2007. After considering the comments on the draft workplan, the Review Board issued the final workplan at the end of the November. This document established the milestones and identified the Review Board's timelines and expectations for the completion of the environmental assessment.

In December 2007, the Review Board issued the Terms of Reference to the same distribution list for the workplan. Comments came back from the developer, Parks Canada and INAC in January 2008. The Review Board considered all of these comments and issued the final Terms of Reference, January 2008. The Terms of Reference defined the scope of development and scope of assessment and provided direction to Selwyn and the parties about their roles, responsibilities and deliverables in the environmental assessment process.

Developer's Assessment Report

Selwyn prepared its Developer's Assessment Report according to the Terms of Reference. After receiving the completed Developer's Assessment Report (PR# 11to 17) the Review Board deemed the report was in conformity on June 27, 2008.

Information requests

The Review Board authorized two rounds of information requests. The Review Board issued eight information requests to the developer in its first round of information requests (PR#22). The Review Board then put out a call for Party Status and Information Requests (PR#24). The deadline for party registration applications was September 10, 2008 and the information request submissions were due by September 30, 2008. The Review Board approved and issued twenty-one information requests to the developer on October 31, 2008 (PR#5). The Review Board granted a request for extension for suggesting information requests to the TDLC for December 31, 2008. The TDLC submitted ten issues of concern, but did not suggest any additional information requests (PR#44).

Pre-hearing conference

Review Board staff hosted a pre-hearing conference on March 23, 2009 to discuss the procedures for the upcoming public hearing and to set the agenda for the hearing.

Community hearing

On April 7, 2009, the Review Board held a community hearing in Tulita, Northwest Territories. Radio, posters and newspapers notified the public prior to the hearing. The main purpose of the community hearing was to allow the public an opportunity to hear and participate in a discussion of the unresolved issues related to the proposed development during the environmental assessment. The community hearing was an opportunity for the community members to bring up important concerns directly to the Review Board.

The developer and several other parties gave presentations to the Review Board. All parties had the opportunity to question both the developer and the other parties involved. The parties highlighted direct and indirect impacts of the proposed development.

Environmental assessment decision

After the closing of the public record, the Review Board deliberated on all evidence. The Review Board considered all submissions in its decision. The Review Board has prepared this *Report of Environmental Assessment & Reasons for Decision* for submission to the Minister of Indian Affairs and Northern Development as required by s.s. 128(2) of the Act.

2.3 Decisions on significance

Section 128 of the *Mackenzie Valley Resource Management Act* requires the Review Board to decide, based on all the evidence on the public record, whether or not, in its opinion, the proposed development will likely have a significant adverse impact on the environment or be a cause for significant public concern.

The Review Board asked the registered parties to assist by providing their own views of the likelihood and significance of potential impacts. The Review Board considered the following characteristics of all environmental impacts identified:

- magnitude
- nature of the impact
- geographic extent
- reversibility of the impact
- timing
- probability of occurrence
- duration
- predictive confidence level
- frequency

Section 3 of this document describes the Review Board's analysis and the reasons for its decisions on the significance of adverse impacts and public concerns that are likely to result from the proposed development. In addition, the *Mackenzie Valley Resource Management Act* s.s.128 (1)(c) requires the

Review Board to identify whether the proposed development is likely to be cause of significant public concern. Section 4 provides the details of the Review Board's analysis of public concern.

2.4 Scope of development

The scope of development describes the elements of the proposed development that the Review Board considers in the environmental assessment. The scope of the development takes into account both principal and accessory development activities. It also outlines any future activities under the land use permit, water license or other regulatory instruments.

Based on the developer's evidence, the Review Board identified the principal development components to include:

- drilling of up to 100 drill holes in alpine and sub-alpine terrain using drill rigs (some heli-portable, some land-based) within identified mineral claim and lease blocks;
- clearing of vegetation for new CAT trails for access to drill sites at a rate of up to two kilometres per year for five years;
- helicopter transportation of personnel and equipment from the Yukon to work sites in the Northwest Territories;
- off site waste disposal from work sites in the Northwest Territories to disposal facilities in the Yukon, as well as on-site waste disposal in the Northwest Territories; and
- reclamation and closure activities for drill sites and trails.

2.5 Scope of environmental assessment

The scope of the environmental assessment identifies which issues and items the Review Board will examine during the process. The Review Board recognized that public concern prompted this environmental assessment, and therefore the Review Board developed the scope of assessment with public concern in mind as well as factors listed under subsection 117(2) of the *Mackenzie Valley Resource Management Act*.

After considering the relevant information available on the public record, the Review Board made decisions on the scope of the assessment. When assessing social and cultural impacts the geographical scope of this assessment included Northwest Territories communities that have traditionally used the area. Although the development activities occur on the Selwyn mineral claim and lease blocks, the Review Board had to consider a larger area to assess the project-specific and public concern issues. The geographic scope of the assessment included the subject area. The Review Board established the temporal scope to include all phases of the mineral exploration program, from mobilization to post-operation; until such time that no potential significant adverse impacts would be attributable to the development.

Valued components

The Review Board identified the following potentially impacted valued components after examining the public record:

- woodland caribou
- environmental monitoring
- reclamation
- air quality
- community culture
- socio-economic wellbeing

Traditional knowledge

The Review Board recognizes the important role that Aboriginal cultures, values and knowledge play in its decision-making. In accordance with the requirements of s.s.115(1) of the *Mackenzie Valley Resource Management Act*, the Review Board considered all traditional knowledge made available during the environmental assessment.

3 Impact on the environment

3.1 Biophysical environment

3.1.1 Caribou

There were several biophysical issues, which the Review Board considered during this environmental assessment. The main valued component the Review Board examined was woodland caribou. Parties presented concerns over the possible decline of the Finlayson and South Nahanni woodland caribou herds. These herds are present in the development area during various times of their life-cycle.

Issues

The scoping sessions and community hearing for this environmental assessment highlighted the following questions related to identifying potential impacts on the woodland caribou herds:

- Will there be impacts on the caribou in the project area from the increased air traffic and the drilling exploration?
- If caribou venture into the development area during sensitive time-periods, such as calving, post-calving and the fall rut, what is the developers' course of action to mitigate impacts?
- How will the developer monitor the caribou in the development area?

Analysis

Background

The proposed development is within the range of the Finlayson and Nahanni woodland caribou herds. Woodland caribou are listed on Schedule 1, special concern of the *Species at Risk Act* (SARA). This specific type of caribou use the habitat within the Anniv and XY Nose of the project area during various stages of its life cycle. Both herds inhabit the project area during calving, post-calving and fall rut.

Caribou move continuously through this area in June and peak in July, which is the post-calving period for the herds. As noted by the GNWT, the use of the area is “primarily associated with movement to and

from other habitats” (PR#35). As reported by Parks Canada, the northern mountain woodland caribou herd is in decline because of insufficient birthing survival of calves in recent years (PR#59). A decline in woodland caribou populations affects the ecological integrity of the Nahanni and Naats’ihch’oh Park Reserves (see Figure 3). Caribou cows with calves use the development area during the critical post-calving season of July.

Numerous studies indicate that there are adverse impacts on wildlife after exposure to disturbance from aircraft, specifically during post-calving. *Flying in Caribou Country: How to Minimize Disturbance from Aircraft* states “Post calving is a life history period when woodland caribou are at high sensitivity to disturbance” (PR#70). Furthermore, as acknowledged by the developer’s wildlife biology expert at the Tulita community hearing presentation, “The post-calving period is when caribou make extensive use of the area” (PR#63). To disturb, according to the Oxford Dictionary is to “break the rest, calm, order, or quiet of” in this case caribou. In response to this disturbance, an animal may stop eating, break into a run or possibly leave the area long after the disturbance has occurred. Some consequences are physical injury, increased energy expenditure and long term behavioural changes. The potential danger regarding post-calving is the potential of trampling newborn calves, desertion or being unprotected from predators (PR#70). Drilling in a mineral exploration project can potentially be a disturbance and therefore could affect caribou that are in the area.

The drilling operations are proposed to occur continuously during June, July, August and September over a 24 week period. Workers who are operating the drills are flown to a drill site every 12 hours for a shift (PR#11-17). There will be up to four drill rigs in operation at any given time. The sites use helicopter support. The document *Flying in Caribou Country: How to Minimize Disturbance from Aircraft* indicates that the helicopter is less favourable than fixed wing aircraft and causes more noise (PR#70). These potential impacts on caribou may occur in these drilling areas. Selwyn will use wildlife monitors to watch out for and report any wildlife in the project.

Because of the sensitivity of caribou to disturbances like those from the activities proposed in the proposed Selwyn project, it is important for people working in the area to know when and where the animals are during critical times of the year and to learn their migrating patterns, numbers, and

recruitment information to better understand the populations. Knowing where the animals are and when is relevant to the drilling activities and to the flight routes that the pilots working for Selwyn will use. Furthermore, it is imperative for workers to know what to do when an animal is sighted.

Developer's submission

The developer responded to the Review Board's information requests (PR#41) issued on October 31, 2007 outlining its proposed mitigation measures. The developer does not know if caribou calve in the area. There have been observations by the developer of woodland caribou in the area during post-calving when snow levels have receded in sub-alpine and alpine habitats. In addition, the developer noted that the rut occurs in September and the herds have mostly moved out of the area by that time. In the developer's opinion the concern would be the post-calving season in July. The post-calving period is critical for the survival of the caribou population. The developer recognized that low recruitment (calves born and surviving) can be detrimental to the herd. Consequently, Selwyn made a commitment that pilots operating in the area would follow best practices identified in *Flying in Caribou Country: How to Minimize Disturbance from Aircraft* (PR#70). These guidelines include the following:

- maintaining over-flight altitudes to greater than 300 m at all times of the year;
- maintaining over-flight altitude to greater than 600 m during sensitive times of year;
- avoiding flying over area where caribou have been seen in the past; and,
- avoiding flights or altering flights to avoid areas especially during sensitive periods.

Additionally, aircraft operating on behalf of Selwyn Resources will operate according to its *Standard Operating Procedures for Preserving Wildlife and Wildlife Habitat during Project Activities* (September 16, 2008-ref). The developer will select the flight corridors based on mitigations to wildlife, crew safety and efficiency of flight fuel consumption (PR#41). The developer states, "to the extent possible Selwyn will ensure that aircraft will operate in a responsible and safe manner that minimizes potential impacts to caribou from aircraft over-flights" (PR#41).

The developer has made the following commitments pertaining to drilling activity as they relate to the life cycle of the woodland caribou in the project area. Selwyn referred to the company's document called

Standard Operating Procedure for Preserving Wildlife and Wildlife Habitat during Project Activities.

To reduce potential effects on various species and ecosystems, the company requires that all personnel working on behalf of Selwyn to follow the protocols outlined in this document. The document is included in Selwyn's Developer's Assessment Report (PR#11-17). The relevant protocols relating to woodland caribou near the project area are as follows:

- If sensitive habitats or features are encountered during field operations, stop work and consult the on-site environmental staff for further guidance.
- If wildlife is visible within 500 m, stop and wait until animal has left the area before proceeding.

Regarding Species of Interest:

- If a species of interest such as woodland caribou, grizzly bear, wolverine, peregrine falcon or rusty blackbird are observed in area of work, cease work immediately and consult the on-site environmental specialist.
- Work can resume once the animal has left the area. Do not encourage the animal to leave the area.

All staff and contractors are required to adhere to the *Standard Operating Procedure* and best practices of the company. At the Tulita community hearing, Selwyn stated that compliance is audited by senior staff and there are weekly briefings regarding any issues that may come up in the project.

According to the developer, as submitted in its information request responses on December 5, 2008, a two-tiered approach including routine reporting of wildlife observations and wildlife surveys, will monitor woodland caribou. If staff observes caribou near an active drill site or along the flight path of the support helicopters, it will be reported to the Site Management, which is to be subsequently documented in Selwyn's Wildlife Log. Selwyn will make operational modifications for each Selwyn *Standard Operating Procedure* (PR#41). The developer also assures that it will perform studies and surveys in the area to help better understand and document information on the woodland caribou. This information can help both territorial and federal governments make future plans for development in the area. This can ultimately

influence the conservation efforts of the northern mountain populations of the woodland caribou which have been in decline since the early 1990's (PR#63).

Selwyn has its own monitors (called Environmental Compliance Coordinators) on staff that are experienced in the field. The developer is also in negotiations with the TDLC regarding various issues that includes monitoring in the area of the project and how the SSI and TDLC will be involved.

Parties' submissions

GNWT (PR#35), TDLC (PR#44) and Parks Canada (community hearing presentation, PR#59) described concerns over the timing of the project and the post-calving season of the caribou. Their concerns focused on the drilling and fly-over influences on the Nahanni and Finlayson woodland caribou herds. The groups stated that these herds are in decline.

At the Tulita scoping session, in October 2007, the same parties highlighted the issue of adverse impacts on woodland caribou. The concern was about potential impacts on caribou at sensitive times and how the project could influence the herd as a whole and the individual animals' health (PR#5). The concern was over both the fly-over and drilling aspects of the project.

TDLC noted its concerns over the monitoring of wildlife which includes caribou, stating that "Wildlife Monitors should be employees of the TDLC and not Selwyn" and "all sightings should be reported to the Sahtu Environmental and Wildlife Monitors as well as the Selwyn Environmental staff" (PR#61, #44). INAC in its presentation at the community hearing encouraged the developer to work with TDLC with regard to wildlife monitoring (PR#58).

In its presentation at the community hearing in Tulita on April 7, 2009, Parks Canada stated that it was satisfied that the mitigations the developer proposed for caribou impacts were adequate (PR#59).

GNWT recommended a commitment to cease all drilling activities when caribou are within 500 m. It also recommended ceasing activities during critical time for northern mountain caribou (PR#54) and that Selwyn should commit to keeping a Wildlife Log.

Conclusions

The Review Board understands the importance of caribou to Aboriginal peoples and the ecosystem. It also is aware of the uncertainty relating to caribou populations, especially the northern mountain populations and the sensitive periods in their life-cycle. However, the size of the proposed development is very small, and so is the degree of potential sensory disturbance. The potential project-specific biophysical impacts of helicopter fly-overs and post-calving of the woodland caribou in the development area of the XY Nose and Anniv sites at critical times can be effectively mitigated through the developer's commitments, particularly commitments to ceasing work immediately when potentially sensitive species are in the area and flight practices that avoid wildlife disturbance. It is relevant that Parks Canada has stated that it is satisfied with Selwyn's mitigation measures, particularly because it is the party that raised the issue initially. The Review Board notes that there is little evidence on the record to suggest that, unlike other caribou herds in the Northwest Territories, these herds are experiencing significant cumulative pressures from other human activities.

The Review Board therefore concludes that the proposed development is not likely to have significant adverse impacts on woodland caribou in the area. Although some parties indicated that these herds are in decline, there is not sufficient evidence on the record to demand a precautionary approach with this small development at Howard's Pass, especially considering the mitigation measures to which the developer has committed.

Considering monitoring in the development area, the Review Board accepts that Selwyn has educated and qualified field monitors on staff that can effectively do the job of monitoring caribou and all wildlife. The Review Board also recognizes the collaborative efforts the developer has taken and is willing to continue to have with the Yukon Government regarding caribou surveys and monitoring. The Yukon Government has carried out many surveys in the past on caribou ranges, fall rut counts, survival and population estimates and continues to monitor the herds in the area. They have a history of research dating back to the early 1980's (PR#63).

Suggestion 1. To minimize any effects on the Finlayson and Nahanni caribou herds from the proposed development, the Review Board suggests that Selwyn Resources Ltd. communicate with and involve the TDLC in the monitoring efforts during the proposed project activity.

Suggestion 2. To minimize any effects on the Finlayson and Nahanni caribou herds from the proposed development, the Review Board suggests that Selwyn Resources Ltd. continue to talk with Parks Canada, SSI and the GNWT regarding caribou observation and research. In addition the Review Board suggests Selwyn Resources Ltd. continue participating in transboundary caribou herd surveys and monitoring with the Yukon environmental staff as a way to minimize any effects on the area woodland caribou herds.

Figure 4. Post-calving aggregate of Nahanni caribou.



Source: Developer's Assessment Report –Selwyn Project Mineral Exploration (PR#11-17)

3.1.2 Wildlife monitoring

The Review Board considered potential impacts on wildlife other than woodland caribou during this environmental assessment. Acceptable wildlife monitoring in the Selwyn claims area was the concern.

Issue

The scoping sessions and community hearing for this environmental assessment identified the following wildlife monitoring issue:

- Mitigation and monitoring of impacts relating to wildlife and wildlife habitat in the development area, including SARA species, is a concern.

Analysis

Background

Since 2006, environmental monitoring has been an occupational standard in the Northwest Territories (PR#61). The definition for environmental monitoring is a continuous or regular periodic check to determine if there are environmental impacts and to evaluate environmental exposure and possible damage to living organisms (Dunster, 1996). For the Selwyn environmental assessment, wildlife, wildlife habitat and SARA species in the area were a concern to TDLC and GNWT. The listed SARA species in the development area are as follows:

- woodland caribou (Schedule 1 Special Concern)
- peregrine falcon (Schedule 1 Threatened)

The following species have been assessed by the *Committee on the Status of Endangered Wildlife in Canada* (COSEWIC) and should be treated similarly as the SARA species as they are being considered for Schedule 1 designation pursuant to SARA:

- grizzly bear (assessed as Special Concern)
- wolverine (assessed as Special Concern)
- short-eared Owl (assessed as Special Concern)
- rusty blackbird (assessed as Special Concern) (PR#46).

Subsection 79(1) of the *Species at Risk Act* (SARA) requires that adverse effects on listed species must be identified and assessed and, regardless of significance, mitigated and monitored according to Environment Canada. For that reason, species listed as endangered, threatened and of special concern by COSEWIC are the same as those listed on Schedule 1 of SARA (PR#45 and #46).

Other animals in the area include red fox, gray wolf, hoary marmot, golden eagle, beaver and trumpeter swan.

Developer's submission

In response to information requests the Review Board issued in October 31, 2008, the developer addressed the concerns and information gaps on impacts to wildlife in the Selwyn claims area including species of special interest. For the grizzly bear and wolverine, the developer stated that direct and indirect impact might occur from the project activities. Direct impacts would include mortality of any animals put down when posing a threat to personnel. Indirect impacts from helicopters and drill rigs include temporality disturbing animal behavioural and energetic responses. The animals would likely avoid the area temporarily until the workers are no longer present.

To mitigate impacts on grizzly bear and wolverine, Selwyn will conduct project activities according to its *Standard Operating Procedure for Preserving Wildlife and Wildlife Habitat during Project Activities*. The *Standard Operating Procedure* also acknowledges the protection of birds under the *Migratory Bird Act*. The *Standard Operating Procedure* is specific on what personnel are to do when they encounter a species of interest in their work area; "cease work immediately and consult onsite environmental specialist".

In addition, project personnel are required to follow a guidance document the GNWT called *Safety in Grizzly Bear & Black Bear Country*. The developer will mitigate disturbance of wildlife from the air by following the guidelines in the documents *Flying in Caribou Country: How to Minimize Disturbance from Aircraft* (PR#70) and *Flying in Sheep Country* (PR#76). Following these two guidelines will minimize potential impacts to wildlife from aircraft operations in the proposed Selwyn project area (PR#41).

Selwyn did not produce a Wildlife Protection Plan for this project; because it suggested the current *Standard Operating Procedures* were sufficient. The purpose of the *Standard Operating Procedure* is to protect natural features, wildlife and habitat. The Wildlife Protection Plan for the access road (Application MV25F0028) would not be appropriate, because the activities of the two projects (transportation and drilling) are not similar.

Selwyn has stated that the amount of wildlife habitat affected is minimal. It will not build any new roads but Selwyn will clear a total of 9 to 11 km of new trails over the five-year permit period. The width of these trails will not exceed 2.5 m. The developer will need to remove some vegetation for the helicopter and drill pads as well. Because the majority of these areas are in the alpine and sub-alpine region, there are mostly leafy plants and grasses (90% in XY Nose claim and 40% in the Anniv claim). The developer will compile and reclaim any material removed for pad construction after the drill site is no longer being used (PR#11-17). Environmental Compliance Coordinators will be on location at all times when active exploration is taking place to oversee the project and they will exercise their authority if any incident should occur (PR#25).

Selwyn's response to information requests reiterates its commitment to monitoring by stating;

“For the duration of the development period, routine monitoring will be undertaken by Selwyn. This will involve reporting of all wildlife observations to the Site Management, which will be documented in Selwyn's Wildlife Log. When it is reasonably possible to do so, Selwyn will conduct and or collaborate on aerial surveys for wildlife during key seasonal periods. The wildlife log and wildlife survey data will be reviewed regularly to determine any trends or issues associated with wildlife and the development. Mitigation measures will be adapted as needed to address any adverse monitoring trends” (PR#41).

Parties' submissions

The GNWT indicated concerns with potential impact on wildlife and wildlife habitat specifically recommending a Wildlife Protection Plan for the exploration program (PR#54 & #35). The developer has a Wildlife Protection Plan for the project access road (LUP MV2005F0028). However, the GNWT

wanted clarification if this Wildlife Protection Plan applied to the exploration project and if not would Selwyn be developing one. In addition, GNWT stated at the Tulita community hearing, that it had concerns with “mitigative measures aimed at minimizing the effects of the project on wildlife and wildlife habitat”. Specifically GNWT mentioned direct and indirect adverse impacts on grizzly bears and wolverines in its information request (PR#41).

In its submission to the public record (PR# 59), Parks Canada conveyed concern over the timing of the post-calving within the Nahanni region. It was also concerned with the conservation values including grizzly bear habitat, South Nahanni and Redstone caribou herds, Dall’s sheep range and the Trumpeter swan habitat which falls within the Naats’ihcho’oh Park Reserve. However, Parks Canada’s conclusion was that it was satisfied with the developer’s commitments and mitigation strategies from *Flying in Caribou Country Guidelines* and the *Standard Operating Procedure*.

TDLC submitted concerns over the monitoring of wildlife stating that “ Wildlife Monitors should be employees of the TDLC and not Selwyn” and “ all sightings should be reported to the Sahtu Environmental and Wildlife Monitors as well as the Selwyn Environmental staff” (PR#61 and #44). INAC also in its presentation at the community hearing encouraged the developer to work with TDLC in regards to wildlife monitoring (PR#58). The traditional knowledge of the Sahtu Dene and Métis would be invaluable to the monitoring aspect of the project.

Conclusion

Based on the submitted evidence and the community hearing, the Review Board concludes that the developer’s commitments for wildlife and wildlife habitat in general will mitigate the few specific issues the parties raised during the environmental assessment about species at risk. The Review Board notes the particular importance of the species of interest but accepts the company *Standard Operating Procedure* and other guidelines used by Selwyn as proactive and sufficient in protecting these species in the project area. The Review Board also notes that there were non-specific concerns regarding wildlife and wildlife habitat other than grizzly bear and wolverine. The developer addressed these two species and the Review Board accepts the mitigation commitments. The evidence did not indicate particular impacts on

particular species or habitat other than the two mentioned. The Review Board therefore concludes that adverse impacts on wildlife and wildlife habitat are unlikely.

The Review Board accepts the developer's evidence regarding the monitoring of wildlife and wildlife habitat. Selwyn's Environmental Compliance Coordinators, in the Review Board's opinion, are capable of effectively overseeing the environmental responsibilities of the project. The Review Board acknowledges and accepts Selwyn's commitment to monitor and keep a Wildlife Log. Suggestion 1 encourages Selwyn to communicate with and involve TDLC in monitoring at the proposed Selwyn mineral exploration project. Accordingly please refer to section 3.1.1 for more effective monitoring of wildlife and wildlife habitat.

3.1.3 Reclamation

Reclamation is an important stage in any development and sound environmental management requires adequate reclamation and restoration efforts by a developer.

Issue

The scoping sessions and community hearing for the environmental assessment identified the following reclamation issue:

- The reclamation plans for the proposed Selwyn exploration drilling activities in the area was questioned as to whether it would be acceptable.

Analysis

Background

Environmental reclamation is the process of restoring an ecosystem or habitat back to its original state prior to development activities or as close to it as possible. It is an attempt to recreate the biophysical capability of the area using similar soils, vegetation and land composition (Dunster 1996). The goal is to allow the natural functions of the habitat to continue as it had before industry was present.

The project will produce 100 holes from the drilling and construct approximately ten kilometres of new trails and the usage of older trails. There will be drill pads that will be both bulldozed or hand built depending on how the area is accessed (by helicopter or trail). These activities will result in the physical disturbances of vegetation clearing and holes being drilled into the ground. These types of disturbances to the environment can affect feeding habitat for caribou and other wildlife, reduce shelter for wildlife causing increase in predation, and may be a hazard to wildlife. Since the development is in an area adjacent to a proposed national park, the Review Board considered aesthetic impacts as well.

Developer's submission

The developer declared that progressive reclamation activities would continue throughout the field season to keep cumulative effects on the area to a minimum (PR#11-17, community hearing). The Developer's Assessment Report states,

“In keeping with our commitment to environmental responsibility, Selwyn will carry out reclamation work on the Northwest Territories sites disturbed by exploration activity once the company is confident that it has no further need for them.” (PR# 11-17)

This approach is comparable to the work the company is undertaking on the claims area in the Yukon.

Selwyn states in its Developer's Assessment Report that it plans to implement the following reclamation principles, process and resources:

- Selwyn employs a qualified environmental technician who will take a lead role in implementation reclamation work. The technician will assess disturbed areas and determine suitable reclamation treatments.
- Best practices guidance – Selwyn will use the publication “Handbook of Reclamation Techniques in the Yukon” (1999, Indian and Northern Affairs Mineral Resources Directorate) as general guidance for reclamation activity.
- Local expertise – Selwyn will use the services of local reclamation experts Arctic Alpine Seed as needed for prescribing site-specific treatments.

- Selwyn will use native seed mixes and local plant cuttings to re-vegetate disturbed areas.
- The on-site environmental technician will monitor reclamation success in the Yukon and Northwest Territories, and will use the information to guide future reclamation planning and activities.

The developer has committed that “any new or existing trails built or used as part of the development will be reclaimed”, this includes re-contouring and scarification as necessary followed by seeding. It plans to restore drainage patterns to what they were before the project activities (PR#11-17).

Drill pad reclamation will occur in the following sequence. The developer will:

- demobilize the drill from the pad. As part of demobilization, the drill crew will conduct an initial clean up of site. The developer will take waste disposal facilities at Selwyn’s Yukon Camps;
- collect salvageable lumber for reuse at other drill sites;
- burn remnant lumber scraps and packaging wastes on site;
- re-contour the drill pad if necessary, and redistribute displaced organic soils over cleared areas; and
- apply seed to exposed mineral soil where appropriate. The application of seed will be carried out under favourable moisture conditions (late fall) to maximize seed germination (PR#11-17).

Parties’ submissions

Parties voiced their concerns over reclamation at the scoping session held on October 10, 2007. They were particularly concerned about re-vegetation, back filling holes, and removal of any materials from the drilling activities and operation of the project in the Northwest Territories (PR#5).

As illustrated by the SSI presentation at the Tulita community hearing in April 2009, TDLC was also concerned and it provided the following suggestions:

- Reclamation funds should be put aside to ensure for future restoration is implemented;
- A reclamation plan should be in place and TDLC consulted.

- All abandoned roads and trails from the previous land claim owners should be reclaimed by Selwyn.
- Site inspections should be made to determine if the reclamation is sufficient. Inspections should include a GNWT representative as well as a TDLC representative.
- Final inspection should not be made after only one year but after several.

INAC, in responding to the SSIs submission of December 30, 2008 (PR#44), encouraged “the developer to work with TDLC in using appropriate reclamation species” (PR#58). In response to the concern of sufficient security deposit being set, INAC stated in the community hearing “the Sahtu Land and Water Board sets the amount of securities for land use permits and water licenses. INAC can provide a reclamation cost estimate during the regulatory phase, if requested”. In addition, INAC is responsible for administering the security deposit (PR#58).

Conclusion

The Review Board recognizes the importance of site reclamation following exploration activities. However, based on the evidence on the public record the Review Board does not foresee significant adverse impacts related to a failure to reclaim from this mineral exploration. The developer has committed to sound reclamation of the claims areas. Selwyn has a proven record of accomplishment that satisfies the Review Board. The Review Board notes that in 2007 Selwyn received the Robert E. Lecke Award for practicing reclamation well beyond legal requirements (PR#11-17). The Review Board also understands that it is the responsibility of the Sahtu Land and Water Board to determine the amount of the security deposit required and of INAC to administer the deposit.

The Review Board also notes that because the exploration activities are adjacent to proposed parklands, the developer recognizes the scrutiny it will be under from various agencies that will be monitoring the area.

Suggestion 3. To minimize any effects from the proposed development and to promote acceptable site reclamation, the Review Board suggests that Selwyn Resources Ltd. consult with Parks Canada when designing the reclamation plan.

Suggestion 4. To minimize any effects from the proposed development and to promote acceptable site reclamation, the Review Board suggests that Selwyn Resources Ltd. include the TDLC in identifying reclamation procedures and involve both the GNWT and the TDLC in reclamation inspections during and after the project is complete.

3.1.4 Air quality

A consequence of industrial development is air pollution. Burning waste may release contaminants and particulates, and may have the potential to cause impacts on the soil, water, vegetation and animals in surrounding areas. The developer has acknowledged that open burning of solid waste will occur in the Selwyn Yukon camps that support the Northwest Territories activities near the territorial border.

Issue

The scoping sessions and community hearing identified the following air quality issue in this environmental assessment:

- The burning of solid waste in the Yukon camps could transport potentially toxic contaminants across the border into the Northwest Territories and affect the air, soils and water and land.

Analysis

Background

The developer holds an Air Emissions Permit authorization issued by the Yukon Environment that permits the burning of solid waste. The burning will take place on the Yukon side of the border at the Don Valley and XY Camps. These camps are in close proximity to the Northwest Territories border and therefore the emissions could transfer by air into the Northwest Territories.

Burning waste can produce persistent, bio-accumulative and toxic contaminants such as dioxins, furans and heavy metals. The toxins make their way to animals and people through the vegetation and soils. Contaminated soils can run off or erode into water bodies causing contaminants to enter the food chain.

There are Canada Wide Standards for mercury emissions and for dioxins and furans. The governments of Canada, Northwest Territories and Yukon are signatories to these Canada Wide Standards. During the community hearing in Tulita, the Review Board issued an undertaking to the developer to submit the Air Emissions Permit in order to understand the conditions and requirements being applied to its associated development in the Yukon.

Developer's submission

The developer submitted a response during the environmental assessment that it burns its solid waste in the Don and XY Camps within the jurisdiction of the Yukon and is authorized under the *Yukon Environment Act*. The facilities are outside the watershed of the Mackenzie Valley (PR#41).

The developer's submission relating to Undertaking#1 included the *Air Emission Act* authorization granted to the developer by Yukon Department of Environment. The following list is a few conditions in the permit that related to the Review Board's concerns.

- The permittee shall comply with any applicable requirements in all federal, territorial and municipal legislation, including the *Environment Act*, the *Air Emissions Regulations*, the *Solid Waste Regulations*, the *Special Waste Regulations*, and the *Yukon Environmental and Social-Economic Assessment Act*.
- The permittee shall not allow the release of any air contaminant to such extent or degree as may:
 - cause or be likely to cause irreparable damage to the natural environment; or;
 - in the opinion of a health officer, cause actual or imminent harm to public health or safety.
- Burning of solid waste shall take place only when wind conditions will disperse the smoke away from nearby populated areas.
- Every reasonable effort shall be made to ensure a quick, hot and complete burn by turning or aerating smoldering materials.
- The permittee shall not use waste oil, tires or aviation gas to assist with the incineration of solid waste.

- The permittee is authorized to use specific waste petroleum products or other special waster combustion enhancers to assist with the incineration of solid waste, as approved in writing by the Branch.
- The permittee must contact either an environmental protection officer, or the 24-hour Yukon Spill Report Centre as soon as possible under the circumstances in the event of an unauthorized release or emission (PR#69).

As noted in the response to information request#2 the developer stated;

“In the Yukon, open burning of over 5kg of waste per day triggers the need for an Air Emissions Permit. Burning more than 50kg a day triggers an environmental assessment under the Yukon Environmental and Social-economic Assessment Act”. (PR# 11-17)

Parties' submissions

On October 31, 2008, the Review Board issued an information request to the developer for more information on open burning of solid waste from the project (PR#35). The request was for the developer to demonstrate how the open burning of solid waste at the XY and Don Camps would not transport toxic contaminants across the territorial border.

At the community hearing, the GNWT presented its concerns regarding open burning as part of the waste management strategy of the project, particularly the transport of contaminants through the air and deposited to the land and water (PR#54). GNWT recommended, “the proponent commit to meeting the Canada Wide Standards.” It also reiterated that the materials “suitable for open burning are paper products, paperboard packing, and untreated wood wastes”.

Conclusion

The Review Board recognizes the importance of clean air and notes the concern of the parties. It accepts the submission of the developer citing the Air Emissions Permit issued by the Yukon Department of Environment which authorizes the open burning of solid waste under strict guidelines and the Air Emissions Regulations. The Review Board notes that there are no enforceable air quality guidelines

specific to the Northwest Territories, although it has suggested in the past that appropriate regulatory and other government agencies work together to finalize these¹. The Review Board also recognizes that the facilities are outside the Mackenzie Valley and therefore outside the jurisdiction of the Act or the GNWT. The Review Board feels that the permit issued by the Yukon Department of Environment is adequate and that the activities of the development will be satisfactorily regulated by the governing body in that territory.

Although the burning of the proposed project's garbage consists of a portion of the total refuse, and it may blow into the Northwest Territories, there is no evidence on the public record that this is likely, or that the emissions attributable to the proposed Selwyn mineral exploration project would cause significant adverse effects on the Northwest Territories. Based on the evidence on the public record, the Review Board does not believe that the open burning of waste from this development, as regulated by the Yukon Environment permit, is likely to have a significant impact on the lands, water and wildlife of the Northwest Territories.

Suggestion 5. The Review Board suggests that the GNWT and Environment Canada along with other regulators work together to finalize enforceable air quality standards specific to the Northwest Territories.

Suggestion 6. The Review Board suggests that the GNWT and Environment Canada in the Northwest Territories work with relevant Yukon agencies to ensure a coordinated approach to monitoring and managing air quality as it relates to Selwyn's proposed and future activities at Howard's Pass.

¹ For details, please see *Final Mitigation Measures as Modified and Approved by the Responsible Ministers for the Paramount Resources Ltd. Cameron Hills Extension Project*, July 5th, 2005, Suggestion Seven.

3.2 Human environment

The Review Board considers the assessment of the human environment and the identification of impacts that influence social, economic and cultural well-being to be important during this environmental assessment. Section 115(b) of the *Mackenzie Valley Resource Management Act* requires the Review Board to consider the cultural and social well-being of the residents and communities of the Mackenzie Valley.

3.2.1 Cultural impacts

There was a concern of cultural impacts raised during the scoping phase of this environmental assessment. Included in the culture of the Sahtu people are heritage sites that consist of burial grounds and spiritual locations as well as traditional harvest areas. The area of concern in this environmental assessment was the possible presence of heritage resources or archaeological sites near the project.

Issue

Identified during the scoping sessions and community hearing was the following cultural issue:

- Are there any known archaeological sites in the project area? Will there be an assessment done?

Analysis

Background

Little information on heritage resources in the project area is available. The local Sahtu people spent more time in that area pursuing traditional activities in the past but in more recent times traditional activities have occurred closer to the communities in the Northwest Territories. The scoping session in October 2007 indicated there were some concerns about the traditional use of the area, specifically availability of animals and quality of meat, but it was unclear what level of traditional use is still occurring, if any (PR#5).

Developer's submission

Evidence from the developer indicated that the project is in a remote setting in alpine and sub-alpine locations. There is little information on possible historic use of the Howard's Pass area (PR#41). There are no recorded archaeological sites on either side of the border in this area. In 2008, there was an Archaeological Overview Assessment for the Yukon portion of the project. The area holds a low archaeological potential (PR#41).

In addition to this information, the developer submitted that the "(t)raditional knowledge studies conducted in Tulita in 2006 indicated no traditional use of the area in the memory of community elders." The Sahtu Atlas indicated no historic access and transport routes near Howard's Pass (PR#41).

Though evidence suggests that there are no known past land use sites in the area of the project, the developer has agreed to a long-term management commitment with the Prince of Wales Northern Heritage Centre (PWNHC) (PR#55). This agreement would ensure that appropriate research and assessment completion before any further expansion of the proposed project. The agreement between the PWNHC and the developer also included an update of Selwyn's *Standard Operating Procedure* on Heritage Preservation (PR#55).

Parties' submissions

GNWT submitted an information request for the developer to conduct an impact assessment of its project area for heritage resources (PR#35). The developer in PR#41 stated there would be no assessment. However, the GNWT presentation at the community hearing included a letter from PWNHC (PR#55) which stated the following:

"Based on our review of the Proponent's response to IR0708-001-01 and related information, the PWNHC predicts that the mineral exploration project proposed by Selwyn Resources is not likely to have significant impacts on unrecorded archaeological sites in the Howard's Pass, Northwest Territories area." (PR#55)

In the GNWT recommendation portion of the letter, it stated, “The PWNHC has no outstanding issues with the Selwyn Project” (PR#55).

Conclusion

It is relevant to the Review Board that recent traditional knowledge studies indicate no historical use in the memory of Elders. The Review Board notes that the expert evidence of the PWNHC further supports this. Based on these considerations, the Review Board concludes that significant impact on the heritage resources in the Howard’s Pass area is unlikely. The Review Board has confidence that the long-term management agreement between the PWNHC and the developer is sufficient to ensure that Selwyn will complete appropriate research and heritage resource assessment before any expansion of the project in the future.

3.2.2 Socio-economic impacts and traditional knowledge

Community engagement is an essential part of early development planning. An important aspect of socio-economic assessment is the consideration of equitable distribution of impacts and benefits, such as positive opportunities the development can offer the local people. It is also important for both the developer to utilize the relevant traditional knowledge in the design and implementation of the proposed project.

Issue

The scoping sessions and community hearing highlighted the following socio-economic concerns:

- Has there been adequate community engagement with the Sahtu for this development?
- Will Sahtu communities have equitable access to economic benefits from a project that may have a direct affect on their community?
- Has Selwyn Resources utilized traditional knowledge of this region for the betterment of the area and proposed project?

Analysis

Background

Since November 2005, Selwyn has been in communication with the TDLC concerning the Land Use Permit of the project. As evident in the Developer's Assessment Report (PR #11-17) the developer made several attempts at engaging the communities by initiating public meetings and discussions with TDLC. The TDLC cancelled or postponed many of these meetings. Various groups attended a developer's open house scheduled on October 2006 that provided feedback from attendees by using comment sheets. In March of 2007 after the addition of a full traditional knowledge report, the Land Use Permit was complete. Since that time, the developer planned meetings in July 2007 but the actual meeting took place in October between TDLC and developer. Scoping sessions took place that same month. The community hearing in Tulita was in April 2009.

Currently all workers and supplies for the development are drawn largely from the Yukon. The TDLC and SSI are hoping that local people from the Sahtu region will benefit from the future activities in the area.

Developer's submissions

In the Developer's Assessment Report, the developer detailed all attempts and meetings with respect to community engagement on the Howard's Pass project (PR#11-17). The Sahtu Land and Water Board accepted the project preliminary screening application only when a traditional knowledge report accompanied it. In the scoping sessions and community hearing, the developer committed to involving Sahtu workers in the project when it receives the necessary approvals. A statement from the developer says, "(i)f we have permits to do the work in the NWT it opens up the opportunity for us to start drawing people and resources from the NWT" (PR#7). The developer did not divulge much information officially at the community hearing about TDLC's involvement with monitoring in the project, but both parties are engaged in talks towards an agreement on various participation efforts and interests.

Parties' submissions

At the scoping sessions in October of 2007, parties expressed concern and interest over whether employment opportunities and social benefits would be available to the people of the Sahtu from this project (PR#5). Employment of local people as wildlife monitors from the local communities was the main interest.

The SSI on behalf of the TDLC in its presentation at the community hearing in Tulita on April 7, 2009 and as well in a submission on the public record (PR#44) strongly recommended that local monitors would be employed as observers and as a source of traditional information for the developer during the project operations (PR#61).

Conclusion

The Review Board recognizes and understands the importance for community engagement and traditional knowledge throughout the entire environmental assessment process. Selwyn submitted a traditional knowledge report with the application and the Sahtu Land and Water Board accepted it. Based on documents the developer submitted and the general knowledge of preliminary proceedings, Selwyn initiated community engagement on several occasions, though very few meetings actually occurred. The Review Board characterizes the developer's efforts to engage the Sahtu communities as adequate or better.

The developer has committed to involving Sahtu workers in the project including people and resources. The Review Board notes that the TDLC and the developer are in talks on how Sahtu residents will be involved in the project. The Review Board accepts Selwyn's commitments to involve the people of the Sahtu in the project and so concludes that the outcome of the developer and TDLC talks will result in socio-economical benefits to the region.

Considering the mitigations identified for the potential impacts described earlier in this report, along with the benefits that have been indicated on the public registry, the Review Board is of the opinion that the distribution of potential impacts and benefits is fair. Accordingly, Review Board concludes there are not likely to be any significant adverse socio-economic impacts to the communities in the Sahtu region.

4 Public concern

Subsection 128(1)(c) requires the Review Board to determine whether the proposed development is likely to be cause of significant public concern. In past environmental assessments, the Review Board has used various criteria to gauge the level of public concern, including how many people have expressed concern, how geographically widespread the concern is, and how directly the concern relates to the development activities proposed.

Issue

The reason for this environmental assessment was public concern by the TDLC. The concern arose from the following question:

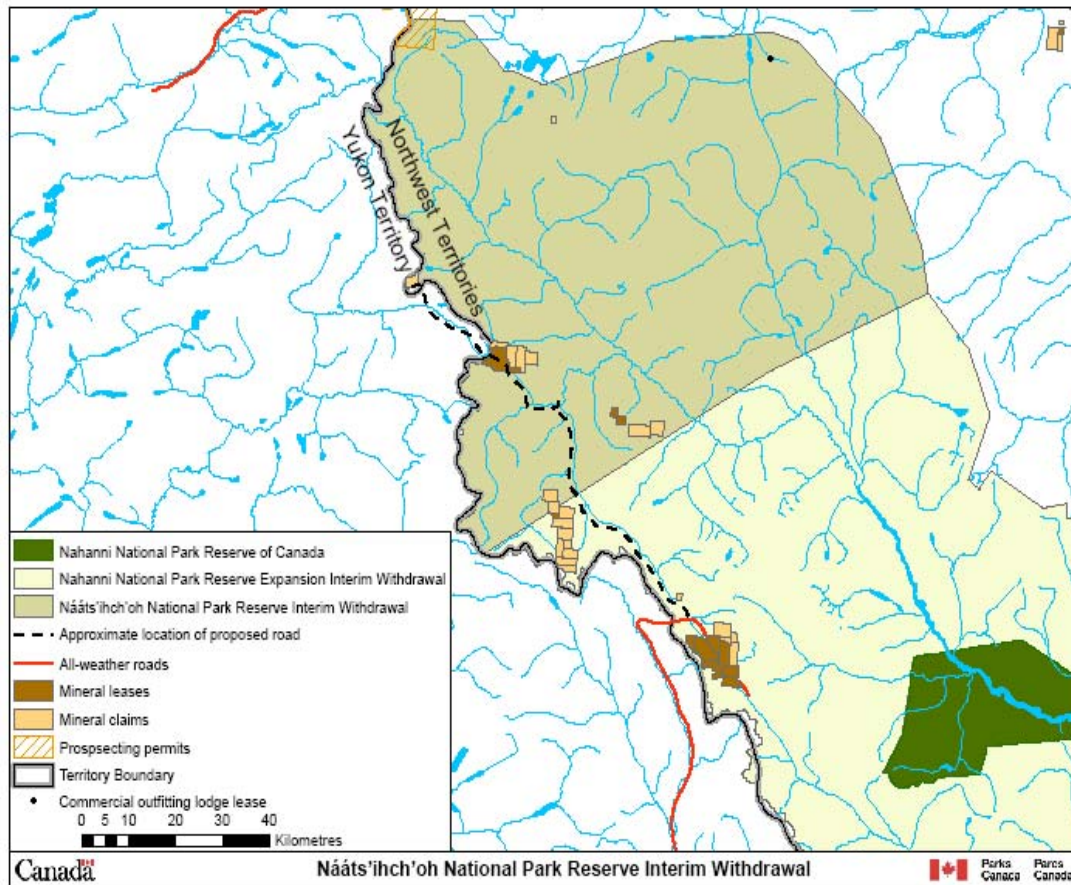
- Will the proposed development threaten the ecological integrity of the region and will it prevent the protection of lands in the future?

Analysis

Background

The SSI on behalf of the TDLC referred the proposed development to environmental assessment based on public concern over potential conflicting land use priorities in the proposed area (PR#21). The proposed project area has been identified by Parks Canada as an area of interest for the creation of the Naats'ihch'oh National Park Reserve, a northward extension of the Nahanni National Park Reserve (Figure 4).

Figure 4 Naats'ihch'oh National Park Interim Withdrawal



Developer's submissions

The developer states in the Developer's Assessment Report that the impacts on the land will be similar to that undertaken in the XY Nose claims area in previous years; physical disturbances from new trails and drill pads, and no impact on water resources (PR#11-17). The new trail construction will be less visible and used for a shorter duration than those trails used by previous development in the area. The developer states that this is due to the developer's reclamation planning efforts.

Additionally, the park will expand to include lands adjacent to the proposed development and therefore any industrial development will be under more scrutiny. According to Selwyn, this will make the regulatory risk higher and the area less attractive to future development (PR#11-17).

Parties' submissions

In its request for full support and leadership from the SSI, the TDLC reasoned, “(t)he mining interest is in the Northward Extension of the Nahanni Park Reserve which will be proposed in the very near future” (PR#21). The TDLC had taken steps out of concern regarding the lack of effective consultation and because it required more information about the proposed exploration activity.

Though Parks Canada conveyed concern with the conservation values of grizzly habitat, South Nahanni and Redstone caribou, Dall’s Sheep range and Trumpeter Swan habitat which falls within the Naats’ihcho’oh Park reserve, (PR#59) it was satisfied with the developer’s commitments and mitigation strategies.

DFO communicated with the developer during the environmental assessment process (PR#26, #34) regarding fish and fish habitat in the project area. It concluded that “DFO does not have any concerns from fish and fish habitat perspective with the mineral exploration project” (PR#62).

Conclusion

In the Review Board’s opinion, the evidence on the public record does not indicate widespread concern or a high degree of public concern. Of the concerns that were raised, the Review Board accepts the position of Selwyn that this small development, taken on its own, does little to threaten the ecological integrity of the region or of any parklands that are expected to be adjacent in the future. In the Review Board’s view, the proposed development is not likely to be a cause of significant public concern.

TDLC expressed some concern regarding the potential for future developments, indirectly related to the proposed development, to affect adjacent parklands in the future. This is addressed in the suggestion below.

Suggestion 7. The Review Board suggests that Selwyn Resources Ltd. consult with Parks Canada during the early planning stages of any future proposed projects to ensure that activities are designed to avoid or minimize concerns about potential impacts on adjacent parklands.

5 Assessment decision

Having reviewed the relevant evidence and keeping to the discussion in Sections 3 and 4 the Review Board makes the following determinations:

- The small scale and types of activities involved in the proposed exploration project are not likely to have significant adverse impacts on the woodland caribou in the area, if the developer carries out its stated commitments. The practices described in the developers' commitments should mitigate any potential significant impacts to the Finlayson and South Nahanni herds.
- Wildlife and environmental monitoring within the proposed Selwyn mineral exploration project are, in the Review Board's opinion, not cause for concern. Selwyn has capable and sufficient monitors to do the job. Having local participation in the monitoring efforts through the TDLC increases the Review Board's confidence that Selwyn can meet the monitoring needs of local communities.
- Based on the evidence on the public registry, the Review Board does not anticipate significant impacts related to Selwyn's reclamation plan. The Review Board notes the recent award received by the developer based on past restoration and reclamation demonstrations.
- The Review Board concludes that Selwyn's Yukon Air Emissions Permit will be sufficient in mitigating air pollution. Based on evidence presented on the public registry the Review Board concludes that there will not be significant adverse impacts on the lands, water and wildlife in the Northwest Territories.
- The Review Board accepts that Elders identified no heritage resources in the area, and notes that the PWNHC states that the project is not likely to cause significant adverse impacts to heritage resources in the area. In addition, the Review Board accepts that the Sahtu region will benefit socio-economically from the proposed project as the developer has indicated. The Review Board

also accepts that the developer adequately used traditional knowledge in the environmental assessment process and is satisfied with the effort put forth in community engagement.

- The Review Board is of the opinion that the proposed development is not likely to cause a significant adverse impact on the ecological integrity of the proposed lands of Naats'ihch'oh Park Reserve and that the proposed project will not cause significant public concern.

Throughout this environmental assessment, the Review Board collected and evaluated information from the developer, aboriginal land users, traditional knowledge holders, and technical experts from government and communities.

The Review Board has considered the small scale and type of project, the mitigation and monitoring of potential impacts on wildlife, and the reclamation commitments record of the developer. It has considered the low likelihood of significant impacts on air as well as heritage resources, and the mitigations related to avoiding impacts on adjacent parklands in the future. Based on these considerations and the commitments of the developer, the Review Board concludes that the proposed Selwyn mineral exploration project is not likely to be a cause of significant adverse environmental impacts or significant public concern (under subsection 128(1)(a) of the Act). Therefore, subject to s. 129(a) requiring a ten day waiting period prior to issuance, this development may proceed to permitting.

Appendix A: Summary of suggestions

| # | Issue to be addressed | Lead Organization | Review Board's suggestion |
|---|---|-----------------------|--|
| 1 | Minimizing the effects on the Finlayson and Nahanni woodland caribou herds in project area. Section 3.1.1 | Selwyn Resources Ltd. | To minimize any effects on the Finlayson and Nahanni caribou herds from the proposed development, the Review Board suggests that Selwyn Resources Ltd. communicate with and involve the TDLC in the monitoring efforts during the proposed project activity. |
| 2 | Minimizing the effects on the Finlayson and Nahanni woodland caribou herds in project area. Section 3.1.1 | Selwyn Resources Ltd. | To minimize any effects on the Finlayson and Nahanni caribou herds from the proposed development, the Review Board suggests that Selwyn Resources Ltd. continue to talk with Parks Canada, SSI and the GNWT regarding caribou observation and research. In addition the Review Board suggests Selwyn Resources Ltd. continue participating in transboundary caribou herd surveys and monitoring with the Yukon Government environmental staff as a way to minimize any effects on the area woodland caribou herds. |
| 3 | Minimizing the effects from proposed development through site reclamation. Section 3.1.3 | Selwyn Resources Ltd. | To minimize any effects from the proposed development and to promote acceptable site reclamation, the Review Board suggests that Selwyn Resources Ltd. consult with Parks Canada when designing the |

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| | | | reclamation plan. |
| 4 | Minimizing the effects from proposed development through site reclamation. Section 3.1.3 | Selwyn Resources Ltd. | To minimize any effects from the proposed development and to promote acceptable site reclamation, the Review Board suggests that Selwyn Resources Ltd. include the TDLC in identifying reclamation procedures and involve both the GNWT and the TDLC in reclamation inspections during and after the project is complete. |
| 5 | Minimizing the effects from air pollution. Section 3.1.4 | GNWT and Environment Canada | The Review Board suggests that the GNWT and Environment Canada along with other regulators work together to finalize enforceable air quality standards specific to the Northwest Territories. |
| 6 | Minimizing the effects from air pollution. Section 3.1.4 | GNWT and Environment Canada | The Review Board suggests that the GNWT and Environment Canada in the Northwest Territories work with relevant Yukon agencies to ensure a coordinated approach to monitoring and managing air quality as it relates to Selwyn's proposed and future activities at Howard's Pass. |
| 7 | Minimizing the possibility of concern related to proposed project on future adjacent parklands. Section 4 | Selwyn Resources Ltd. | The Review Board suggests that Selwyn Resources Ltd. consult with Parks Canada during the early planning stages of any future proposed projects to ensure that activities are designed to avoid or minimize concerns about potential impacts on adjacent parklands. |

Appendix B: Public Record index - EA0708-001

| Public Registry No. | Document Description | Originator |
|---------------------|--|-------------------------------|
| 1 | Correspondence to Review Board | Selwyn Resources |
| 2 | Postponement of EA | Selwyn Resources |
| 3 | Scoping Invitation | Review Board |
| 4 | Draft Workplan | Review Board |
| 5 | Scoping Issues List | Review Board |
| 6 | Notification of EA to DFN | Review Board |
| 7 | Comments to Draft Workplan | Selwyn Resources |
| 8 | Comments from INAC | INAC |
| 9 | Letter from Parks Canada | Parks Canada |
| 10 | Selwyn comments to Terms of Reference | Selwyn Resources |
| 11 | NWT Exploration DAR -CD | Selwyn Resources |
| 12 | Appendix I -SOPs | Selwyn Resources |
| 13 | Appendix II - MSDs | Selwyn Resources |
| 14 | Appendix III – Yukon Waste Management Plans & Permits | Selwyn Resources |
| 15 | Appendix IV – Native Seed Mix | Selwyn Resources |
| 16 | Appendix V - Consultation | Selwyn Resources |
| 17 | Appendix VI TK Study | Selwyn Resources |
| 18 | Conformity of the DAR-Letter | Review Board |
| 19 | Appendix VII – Issue Tracking and Responses | Selwyn Resources |
| 20 | Land Use Permit Application | Pacifica Resources |
| 21 | Referral Letter from SSI | Sahtu Secretariat Incorporate |
| 22 | Information Request for Selwyn Resources | Review Board |
| 23 | Map of Project Area | Selwyn Resources |
| 24 | Call for Party Status & Information Requests | Review Board |
| 25 | Response to IR issued to Selwyn | Selwyn Resources |
| 26 | Correspondence between DFO and Selwyn | DFO |

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| 27 | Streams in NWT Image-11 | Selwyn Resources |
| 28 | Streams in NWT Image-1 | Selwyn Resources |
| 29 | Streams in NWT Image- 2 | Selwyn Resources |
| 30 | Streams in NWT Image-3 | Selwyn Resources |
| 31 | Streams in NWT Image-4 | Selwyn Resources |
| 32 | Streams in NWT Image-5 | Selwyn Resources |
| 33 | Streams in NWT Image-10 | Selwyn Resources |
| 34 | Correspondence b/t DFO and Selwyn on Stream Images | Selwyn Resources |
| 35 | Second Round of Information Requests | Review Board |
| 36 | Party Status Applications Letter | Review Board |
| 37 | TDLC Extension Letter | Review Board |
| 38 | Selwyn Intervener Extension Letter | Review Board |
| 39 | Notice of Change of Address & Contact Information | Selwyn Resources |
| 40 | Richard Hardy Letter to Review Board | Richard Hardy-Lawyer TDLC |
| 41 | Second and Final IR Response | Selwyn Resources |
| 42 | YESAB Letter to Review Board re: Notification of Assessment | YESAB |
| 43 | Letter from Review Board to EC re: SARA | Review Board |
| 44 | Letter from SSI to the Review Board re: comments on the DAR | SSI |
| 45 | Letter from EC re: SARA | Environment Canada |
| 46 | Letter to Review Board re: SARA | GNWT |
| 47 | Notification of Tulita Community Hearing | Review Board |
| 48 | Invitation to YESAB to Tulita Hearing | Review Board |
| 49 | Pre-hearing Teleconference Notification | Review Board |
| 50 | Change in date for PHC | Review Board |
| 51 | Additional Information for PHC | Review Board |
| 52 | Naats'ihch'oh National Park Reserve Interim Withdrawal Map | Parks Canada |

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| 53 | Note to File- PHC | Review Board |
| 54 | GNWT Presentation for Tulita Community Hearing | GNWT |
| 55 | Prince of Wales Northern Heritage Centre Evidence for Tulita Community Hearing | GNWT |
| 56 | YESAB Designated Office Evaluation Report | GNWT |
| 57 | Cover Letter for Presentation | Parks Canada |
| 58 | INAC Presentation for Tulita Community Hearing | INAC |
| 59 | Parks Canada Presentation for Tulita Community Hearing | Parks Canada |
| 60 | Selwyn Resources Presentation for Tulita Community Hearing | Selwyn Resources |
| 61 | SSI Presentation for Tulita Community Hearing | Sahtu Secretariat Incorporation |
| 62 | DFO statement for Tulita Community Hearing | DFO |
| 63 | Caribou Assessments Presentation –Selwyn Resources Wildlife Biologist | Selwyn Resources |
| 64 | Acceptance of Late Submissions Letter from Review Board | Review Board |
| 65 | Agenda for Tulita Community Hearing April 7, 2009 | Review Board |
| 66 | Tulita Hearing Transcripts | Wendy Warnock |
| 67 | Note to File –Audio Recording for Tulita Hearing | Review Board |
| 68 | Response to Undertaking #2 –Tulita Hearing | INAC |
| 69 | Response to Undertaking #1- Tulita Hearing | Selwyn Resources |
| 70 | Flying In Caribou Country-Reference Document | Review Board |
| 71 | Note to File-Closure of Public Record | Review Board |
| 72 | Letter to GNWT – Clarification Request | Review Board |
| 73 | GNWT Request for Extension Letter | GNWT |
| 74 | Letter to GNWT re: Extension | Review Board |

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| 75 | Letter of Clarification | GNWT |
| 76 | Flying in Sheep Country- Reference Document | Review Board |

Appendix C: Commitment table - EA0708-001

| Commitment number | Public registry number | Related issue | Description of commitment made by developer |
|-------------------|------------------------|---|---|
| 1 | 41 | Noise and air traffic paths and problems | Flight paths will be selected on the basis of mitigation to wildlife, safety to crews and pilots and efficiency. Ensure operation in a responsible and safe manner that minimizes impacts to caribou. |
| 2 | 41 | Garbage and sewage on site | Only two workers at a given time, carry bagged lunches and keep garbage in nap sacks later bringing everything back out at shift end. No garbage to be left. |
| 3 | 26 | Wildlife getting into sumps – attraction to site. | All sumps will be capped. No evidence on YT side of negative impacts on any animals |
| 4 | 41 | Caribou at sensitive times in area. | Caribou not known to calve in area and are usually absent between November and April due to snow levels. Commit to using best practices identified in "Flying in Caribou Country." Caribou are known to be in area <u>during post-calving</u> . Stop drilling when within |

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| | | | 500m. |
| 5 | 41 | Wildlife impacts from drilling activity | Will adhere to Standard Operating Procedure for Preserving Wildlife and Wildlife Habitat during Project Activities. |
| 6 | 41 | Wildlife and human interactions-training for employees. Safety issues-bear encounters. | All staff is briefed on Selwyn s. This is required under employment agreements. Compliance is audited by senior staff. All staff undergoes training and bear awareness. |
| 7 | 41 | Wildlife interactions-Wildlife Management Plan as with Access Road | Management Plan from Access road does not apply for exploration site, however will use SOP-"Preserving Wildlife and Wildlife Habitat during Project Activities" |
| 8 | 41 | Cumulative effect in Northwest Territories and Yukon. | Standard Operating Procedure to be adhered to regardless of jurisdiction. |
| 9 | 41 | Drilling schedule regarding flight disturbance and frequency. | 2 at shift change every 12 hours, plus occasional fuel delivery (once every few days) None for definition drilling. |
| 10 | 41 | Caribou wandering into exploration area during sensitive times | As Standard Operating Procedure states, cease to work temporarily If any caribou are within 500m. |
| 11 | 41 | How are caribou monitored? | 2 tiered approach to monitoring (observation on site and past data from |

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| | | | research).Work collaboratively with Yukon. Good baseline data. |
| 12 | 41 | Species at Risk monitoring and mitigation in project area. | Standard Operating Procedure –cease work immediately and report consult onsite specialist. |
| 13 | DAR-1-17 | Activities in/ around water specifically at lower altitudes. | No development will occur within 30m of watercourses. There are no stream-crossings anticipated. Very little water to be used. |
| 14 | DAR-1-17 | Uncertainty surrounding the location and number of drill sites in the area | By the nature of exploration drilling exact locations of each drill site cannot be known. There will be 25 exploration site(widely dispersed across the landscape) and 75 definition holes (are clustered at known deposits). |
| 15 | DAR-1-17 | Distance of setbacks from riparian zones | not within 30 m. |
| 16 | 7 | Community Engagement with Sahtu Region. Employment, monitoring and consultation. | Fully intend to involve Sahtu workers if the permit is given for the exploration. In talk currently with TDLC. |
| 17 | 25 | Current environmental staff onsite- Including drill sites? How often are they there? What authority do they have if issues | Environmental staff is continually present on the worksite as well as available specialist resource to the physical works and development team. The environmental staff complete |

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| | | arise? | audits of operation, including active drilling sites, on a weekly basis for most aspects of operations. |
| 18 | DAR -1-17 & Tulita Hearin | Reclamation-re-vegetation, closing any holes, removal of material. Security Deposit issue. | Reclamation activities will be undertaken throughout the field season in an effort to keep cumulative amount of disturbed areas to a minimum and when Selwyn has no further need of the sites. Any new or existing roads will be reclaimed. |
| 19 | 26 | Fish and Fish habitat concern | Fish Screens Guidelines will be used if needed however there are no water ways with fish inhabiting them in exploration area. |
| 20 | 41 | Burning of solid wastes. | Burning is done on YT side not on Northwest Territories. It falls under YT jurisdiction and has a Air Emissions Permit. Outside the Scope of Development for this EA. |