

Selwyn Mine Project

Economic Impact

Analysis Report

Submitted to:

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January 31, 2008

1.0 Introduction

This report presents the results of a local economic impact analysis of the proposed Selwyn mine project in Yukon Territory undertaken on behalf of Yukon Economic Development. Selwyn Resources Ltd. is the Selwyn mine project proponent.

The analysis focused on two economic impacts resulting from the proposed development and operation of the mine:

- 1) The net change in expenditures on labour, goods and services in Yukon Territory.
- 2) The net change in employment in Yukon Territory, expressed in person-years of employment created.

The scope of work of the analysis engagement included:

1. Adapting an Excel-based economic impact analysis model, originally developed by Informetrica Ltd., for use in analyzing mine development projects.
2. Gathering and analyzing data, interpreting results and reporting on the local (Yukon) economic impact of the proposed Selwyn lead-zinc mine.
3. Presenting the analysis results and findings to Yukon Economic Development.

Section 2.0 of this report presents the economic impacts calculated by the economic impact analysis model and summarizes the data entered into the model.

Section 3.0 of this report provides the key elements and aspects of the proposed Selwyn mine project scenario upon which the economic impact analysis is based. Section 4.0 presents our assumptions and findings from the analysis of this scenario and section 5.0 identifies potential limitations on the results of the impact analysis.

Section 6.0 describes our methodology for gathering and analyzing data used in the local impact model.

We wish to thank and acknowledge the cooperation and assistance we received from Selwyn Resources Ltd. personnel in Vancouver.

2.0 Analysis Summary

This section presents the economic impacts calculated by the model and summarizes the key data entered into the economic impact analysis model.

Calculated Impacts^[1]

	Direct Effect	Indirect Effect	Induced Effect	Total Impact
Local Expenditure Impact				
Net Contribution to YT Economy	\$491,422,527	\$1,587,950,478	\$582,224,441	\$2,661,597,446
Local Employment Impact				
(Person-Yrs)				
Net Contribution to YT Economy	6,984	31,886	11,691	50,562

[1] For the construction and operating phases of the Selwyn mine.

Key Data

- 20,000 tonne per day mill feed rate.
- Capital expenditures of about \$883 million during the two-year mine and site construction phase.
- 13-year mine operating life.
- 1,130 people employed by the proponent organization and contractors during operation.
- Gross labour expenditures of about \$1.36 billion over the life of the mine.
- Operating expenditures over the life of the mine:

	\$ millions
Process Plant - Operating supplies	488
Process Plant - Maintenance supplies	76
Environmental activities (excluding labour)	46
Closure cost allowance	70
Other sustaining costs	16
Electrical power	747
Airline Service (excluding labour)	65
Catering (excluding labour)	98
Freight Services (excluding labour)	912
Open Pit Mining Operating Costs (excluding labour)	432
General and Administrative Costs (excluding labour)	111
Tailings and Water Management (excluding labour)	40
Total	\$3,106

3.0 Selwyn Mine Project Scenario

- .1 Information entered into the economic impact analysis model was taken directly from Selwyn Resources Ltd.'s *Preliminary Assessment Report* document, dated February 27, 2007, that was provided to us during our visit to the Selwyn Resources Ltd. office in Vancouver.
- .2 Selwyn Resources Ltd. has been progressively elaborating on the information contained in the *Preliminary Assessment Report* document since it was publicly issued. Selected additional and revised information was provided to us verbally by Selwyn Resources Ltd. personnel.
- .3 The local economic impact analysis is based on a mine project with the following elements and aspects:
 - a) 20,000 tonne per day mill feed rate.
 - b) Capital assets are established during a two year mine and site construction phase.
 - c) 13-year open pit mine operating life; open pits are developed over life of mine.
 - d) Electrical power purchased from others.
 - e) Mill plant.
 - f) Water distribution system using local water supply.
 - g) Waste and water treatment systems.
 - h) Tailings storage at mine site.
 - i) 520 bed camp.
 - j) 14 days in, 14 days out rotation; 12 hours per day.
 - k) Personnel and visitors will be flown to and from an airstrip near the mine site and transferred to and from the mine site by ground transport. Although there are two existing airstrips, one near the XY deposit and one near the ANNIV Central deposit, a new airstrip is proposed near the ANNIV Central deposit to avoid weather-related disruptions.
 - l) Lead and zinc concentrate will be transported by truck (in the range of 40-50 trucks per day) to a railhead or seaport (e.g., Stewart, BC; Skagway, AK) for massed transport to a concentrate processing facility. A new 147 km road to the mine site from the Robert Campbell Highway, starting about 80 km south of Ross River, is proposed by Selwyn Resources.
 - m) Regional infrastructure upgrades and maintenance will be provided by others.

4.0 Assumptions and Findings

- .1 The Local Impact Model (LIM) requires the analyst to define the boundaries of the "local" area of interest. For this analysis, Yukon Territory is defined as the local area.
- .2 The LIM Handbook notes that “the economic impact model is tailored mainly for assessing the impacts of a single organization for a single year”. For this analysis, the "period of interest" is defined as the estimated duration of the mine construction phase (2 years) plus the estimated duration of the mine operating or production phase (13 years).
- .3 All operating revenues from the Selwyn mine will be derived from the sale of two products: zinc concentrate and lead concentrate. These sales represent non-local sources of revenue. For the period of interest, total revenue from concentrate sales is estimated to be about \$12 billion — about \$9 billion for the zinc concentrate and about \$3 billion for the lead concentrate.
- .4 The net local income impact over the period of interest was calculated to be about \$2.66 billion. Of this, about \$491 million was calculated to be an expenditure on local labour (direct effect); about \$1.58 billion was calculated to be a local non-labour expenditure (indirect effect); and about \$582 million was calculated to be an induced effect from the expenditures on local labour, goods and services.
- .5 The net local employment impact over the period of interest was calculated to be about 50,560 person-years of employment. Of this, about 6,980 person-years was calculated to be a direct effect; about 31,890 person-years was calculated to be an indirect effect; and about 11,690 person-years was calculated to be an induced effect.
- .6 The Local Impact Model requires that labour and non-labour expenditures be separately stated. The LIM Handbook notes that “non-labour expenditures include all payments to businesses for goods and services, and capital expenditures (i.e., construction and machinery and equipment)”. Anticipated capital expenditures by Selwyn Resources during the construction phase of about \$883 million were included in the economic impact analysis.
- .7 A key assumption used to calculate net local employment impact is the percentage of local workers employed directly by the project proponent. The percentage of Yukon Territory workers at an operating mine in the same region (about 27%) was assumed to reasonably represent the percentage of local workers that could be expected at the Selwyn mine site for analysis purposes.

- .8 The Local Impact Model requires that information about the number of contractors, the gross wages and salaries paid to contractors and the total number of paid hours worked by contractors be identified. However, the term "contractor" is not formally defined, or used consistently, in the LIM Handbook.

To differentiate between "contractor" labour expenditures and non-labour expenditures (which the LIM Handbook defines to include all payments to businesses for goods and services and which may have a labour component) the following criteria were established:

- a) Contractors are directly involved in the proponent organization's operations on an ongoing basis.
- b) Contractors include persons engaged by the proponent organization under a business-to-person contractual arrangement whether fulltime, seasonal or part time.
- c) Contractors include persons who are owners or employees of a business that is engaged by the proponent organization under a business-to-business contractual arrangement whether fulltime, seasonal or part time.

Using this criteria, the following activities were considered to be performed by contractors:

- a) Camp catering, i.e., provision of food services.
- b) Trucking, i.e., transport of lead and zinc concentrate from the mine site to the railhead or seaport; transport of materials from Watson Lake or Whitehorse to the mine site.
- c) Airline services, e.g., flying personnel and visitors to and from the mine's airstrip.

The wage and salary components of the total expenditures on these contractors was estimated and included as contractor fees in the economic impact model. It was assumed that, on average, 65% of contractor wages and salaries would be earned by Yukon-based workers.

- .9 Businesses and individuals involved in capital projects or other infrequent activities were not considered to be contractors for purposes of this economic analysis. Thus, the total expenditure (labour and non-labour) on legal, engineering, consulting, audit or other professional services and on support services such as specialized laboratory services and equipment or machinery replacement or repair were treated as non-labour expenditures.
- .10 The LIM Handbook notes that "Many construction projects likely generate additional infrastructure development, such as building and upgrading of roads and electricity and other utilities. If these additional infrastructure requirements are not paid for by the project, they are considered ancillary expenditures. These expenditures serve to make the local economic impact even greater."

Selwyn Resources advised that they may seek assistance from Yukon Government for construction of a new access road to the mine site from the Robert Campbell Highway. About \$22 million is included in the capital expenditure amount noted above for construction of this new road. The cost of establishing expanded rail service in Yukon is another potential non-project infrastructure cost.

- .11 The Local Impact Model requires that the local percentage of non-labour expenditures be estimated using the criteria of: “If payment is made to an office located in the community, it counts as a local expenditure.” The percentages selected and used in the analysis were based on the type of expenditure and on assumptions about the potential expansion of existing local businesses (e.g., trucking, airline) and start-up of new local businesses (e.g., catering).
- .12 The following table presents the retained expenditure share factors developed for the analysis based on information provided by Selwyn Resources Ltd. and industry practice. The expenditure share factors are listed by type of non-labour expenditure. Local expenditure shares represent the portion of spending transactions that occur within the Yukon. The import leakage factors account for the reality that even if project inputs are purchased within the Yukon, local suppliers have themselves imported the inputs into the territory for sale to the project proponent. Local expenditures shares are multiplied by the import leakage factors to arrive at the retained expenditure shares which indicate the portion of project expenditures that are ultimately retained in the Yukon economy.

Non-Labour Expenditure Type	Local Expenditure Share (%)	Import Leakage Factor (%)	Retained Expenditure Share (%)
Process Plant - Operating supplies	50	80	10
Process Plant - Maintenance supplies	50	80	10
Environmental activities **	80	20	64
Closure cost allowance	80	70	24
Other sustaining costs	80	80	16
Electrical power	95	20	76
Airline Service **	80	60	32
Catering **	95	60	38
Freight Services **	85	20	68
Open Pit Mining Operating Costs **	80	80	16
General and Administrative Costs **	80	20	64
Tailings and Water Management **	80	80	16
Capital	50	80	10

Note: ** excludes labour expenditures

- .13 The Local Impact Model requires that an Income Multiplier be selected and applied to enable calculation of induced expenditures. The LIM Handbook includes a set of income multipliers that correspond to ranges of community populations. The Handbook, however, also cautions that “as the income multipliers provided with the model are designed to estimate economic impacts at the community level, the model is less well suited for applications involving larger geographic regions.”

An Income Multiplier of 1.28 was selected and used for the economic impact analysis. This multiplier corresponds to a community population range of 10,000 to 25,000. Although the population of the local analysis area, Yukon Territory, is somewhat greater than 25,000 it was reasoned that the population outside of Whitehorse is sufficiently dispersed to warrant using a more conservative income multiplier value.

5.0 Limitations

Readers of this report should note the following potential limitations or constraints on the results of the analysis:

- .1 The analysis was based on Selwyn Resources Ltd.’s development and operational scenario that it currently considers most likely to occur. Additional technical and economic analysis by Selwyn Resources Ltd. may result in actual mine development based on a revised or alternative scenario.
- .2 Information provided by Selwyn Resources Ltd. is considered preliminary and is subject to revision.
- .3 Disclosure of information by Selwyn Resources Ltd. for this analysis is constrained by National Instrument 43-101 disclosure requirements.
- .4 Cost information obtained from Selwyn Resources Ltd. was not adjusted for inflation, price escalations or other factors.

6.0 Analysis Methodology

Our methodology for gathering and analyzing data included:

- .1 Development of an Information Breakdown Structure that graphically shows the information required to be gathered from the proponent organization.
- .2 A teleconference with Selwyn Resources Ltd. representatives to explain the Local Impact Model, to review the Information Breakdown Structure, to determine the availability of the requested information and to establish an approach for gathering data.
- .3 Visiting the Selwyn Resources Ltd. office in Vancouver to review project documents and identify relevant information, to discuss project details and to enter data into the economic impact analysis model.
- .4 Completing and verifying entry of data into the economic impact analysis model.
- .5 Reviewing with Selwyn Resources Ltd. representatives the data entered into the economic impact analysis model and any assumptions made to determine if the information entered fairly represents the currently proposed project scope, operating scenario and costs.