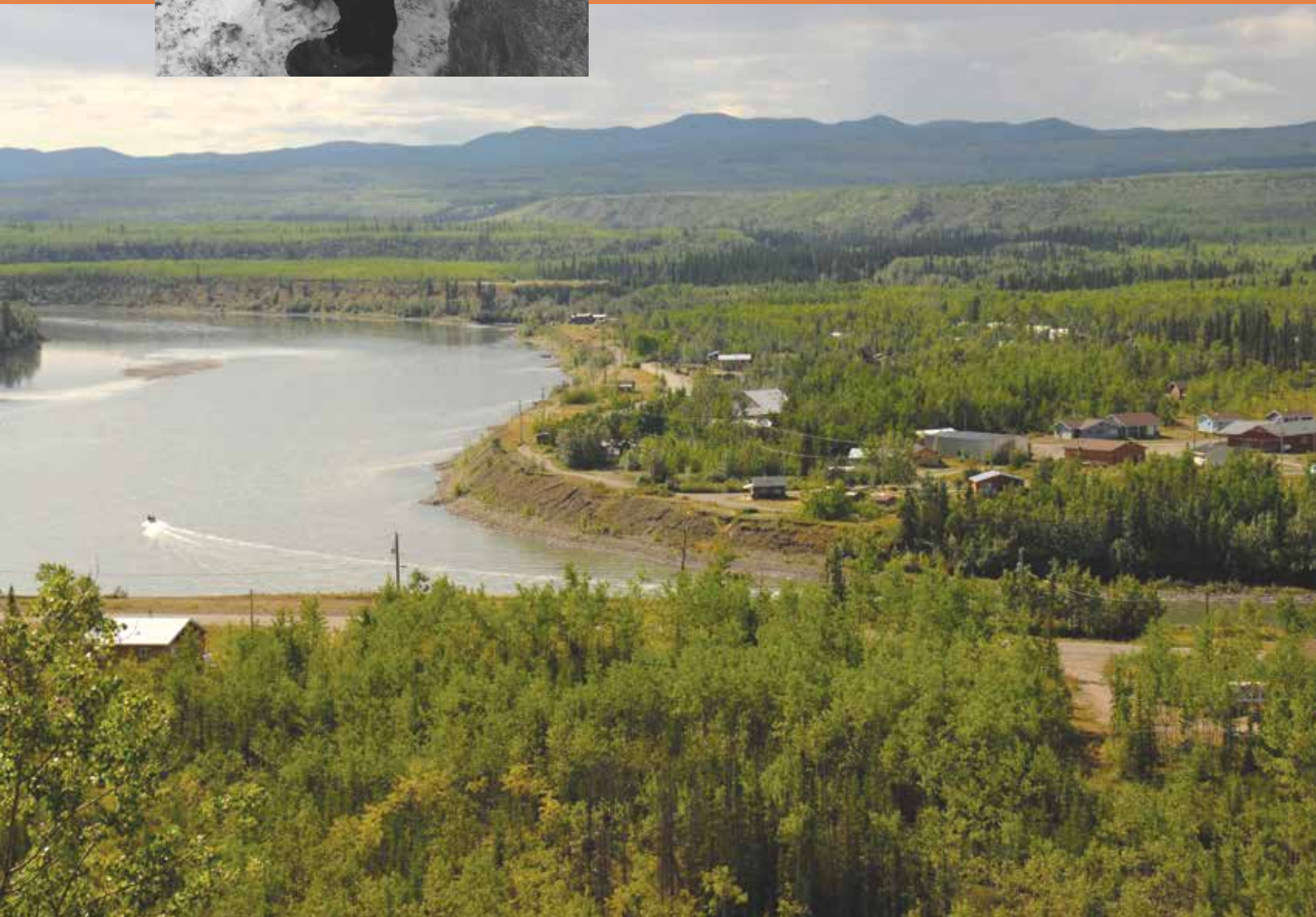




Socio-economic Monitoring Program: Minto Mine

2014 ANNUAL REPORT



Prepared in collaboration by Selkirk First Nation, Government of Yukon, and Minto Explorations Ltd.

November 2016

Front cover: View of Pelly Crossing. Photo: Government of Yukon. Inset: Worker at Minto Mine. Photo: Minto Explorations Ltd.

Back cover: Minto Mine. Photo: Minto Explorations Ltd.

Preface

Minto Explorations Ltd. (Minto), the Government of Yukon (YG) and Selkirk First Nation (SFN) — the “Parties” — have worked collaboratively to develop the Minto Mine Socio-economic Monitoring Program, the first program of its kind in Yukon. The Parties developed the program in recognition of their respective roles in protecting and promoting the economic, social and cultural well-being of peoples and communities affected by the development of the Minto Mine. A Letter of Agreement signed by all Parties in summer 2014 formalized the commitment to establish this program. The commitment arose out of YG and SFN *Yukon Environmental and Socio-economic Assessment Act* (YESAA) Decision Documents associated with expansion of the Minto Mine.

The program includes monitoring of community socio-economic conditions that could be affected by Minto Mine. Through the mine’s operation and closure phases, the program will evaluate the effectiveness of mitigation and enhancement measures to manage socio-economic effects of the mine and, where warranted, will identify alternative management actions. The Minto Mine Socio-economic Monitoring Program: Components, Information and Program Requirements (www.emr.gov.yk.ca/mining/pdf/mml_minto_socioeconomic_monitoring_program.pdf), created collaboratively by the Parties, outlines specific program components and data requirements.

Data in this first annual report has been contributed by Minto, YG and SFN. Although the 2014 Annual Report is limited in content due to data constraints, the Parties agreed that starting the annual reporting cycle and building on it in subsequent reports would lead to a better understanding of community conditions and to more accurately assessing the effects of the Minto Mine.

In order to understand and effectively monitor the socio-economic effects of the Minto Mine, knowledge of the people and community most affected by the mine is required. In recognition of this need, the Parties supported a community-level survey led by Selkirk First Nation of SFN households and of citizens residing in Pelly Crossing and elsewhere in Yukon. The first SFN household survey was completed in spring 2015; additional surveys will be undertaken every five years.

The 2014 Annual Report is the first of a series of annual reports that will be released as part of the Minto Mine Socio-economic Monitoring Program. The results of the first household survey will be incorporated into the 2015 report. The success of the program to date has been due to collaboration among the Parties; this collaboration will continue to ensure that future milestones are achieved. The Parties expect that this program may serve as a blueprint for effects-monitoring programs in other communities across Yukon.

Given this report is the first of its kind, requiring input from several different parties, the review and approval process has been necessarily lengthy and therefore resulted in the delayed publication in November 2016.

Please note that all monetary amounts are in Canadian dollars.

Disclaimer:

This report is for information purposes only and is made available to you for your lawful and non-commercial use only. Each of Capstone Mining Corp (“Capstone”), Minto, YG and SFN will not accept any liability for your use of this report. Your use of this report is at your own risk. This annual report was published in 2016 with data current to 2014. Considerable changes have occurred at the Minto Mine since the data collection in 2014 and those changes are not reflected in this report. Nothing in this report shall be used as a substitute for independent research or investigations.

Acknowledgements

The Tri-Partite Working Group (TPWG) acknowledges several contributors who made possible this first annual report of the Minto Mine Socio-economic Monitoring Program. Malcolm Taggart of Research Northwest secured additional data from existing sources, compiled data, prepared graphics, and drafted content. Patricia Halladay completed the final editing and layout of the report for publication.

Most data were supplied by Minto Explorations Ltd. and the Yukon Bureau of Statistics. In particular, the work of Jane-Marie Glynn and Jennie Gjertsen of Minto Explorations Ltd. and Gary Brown of the Yukon Bureau of Statistics in securing and compiling data was essential to report preparation. Additional data were provided by the Selkirk First Nation and the Government of Yukon.

The report was finalised with substantive contribution and significant collaboration by all the parties.

The Tri-Partite Working Group

The TPWG oversaw the preparation of this report. These are the members of the working group:

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Acronyms

CANSIM	Canadian Socio-economic Information Management System
CRA	Canada Revenue Agency
CWB	Community Well Being
FN	First Nation
LSA	Local Study Area
Minto	Minto Explorations Ltd.
NHS	National Household Survey
RCMP	Royal Canadian Mounted Police
RSA	Regional Study Area
SFN	Selkirk First Nation
TPWG	Tri-Partite Working Group
YBS	Yukon Bureau of Statistics
YESAA	<i>Yukon Environmental and Socio-economic Assessment Act</i>
YESAB	Yukon Environmental and Socio-economic Assessment Board
YG	Government of Yukon
YMTA	Yukon Mine Training Association

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1. Introduction

This report is a product of the Tri-Partite Working Group (TPWG), which is made up of representatives from Selkirk First Nation (SFN), the Government of Yukon (YG) and Minto Explorations Ltd. (Minto), a subsidiary of Capstone Mining Corp.

The Minto Mine was permitted in the late 1990s under the *Canadian Environmental Assessment Act*. Since commencing production in 2007, the mine has had its licences amended to allow the mining of new ore bodies. Those amendments have been assessed under the *Yukon Environmental and Socio-economic Assessment Act* (YESAA).

Conditions for project expansions approvals included the requirement by YG and SFN to establish a systematic socio-economic monitoring program for the mine.^{1, 2}

Minto, SFN and YG have established a socio-economic monitoring framework and program for the Minto Mine through the collaborative efforts of the working group. The framework and program are outlined in the document, *Minto Mine Socio-economic Monitoring Program: Components, Information and Program Requirements*.³

The Minto Mine is located on SFN settlement land, and Pelly Crossing is the closest community to the mine. This report, therefore, has a strong focus on Pelly Crossing, Selkirk First Nation and Yukon.

1.1 Purpose of the Socio-economic Monitoring Program

The purpose of the program is to monitor the socio-economic effects of the Minto Mine's construction, operations and closure.⁴ To meet this primary purpose the program requires two things: a socio-economic baseline and ongoing measurements against that baseline.

In a socio-economic effects assessment, the baseline provides a benchmark of social and economic conditions at a given point or points in time. Changes in those conditions can be compared and measured against the benchmark. This information helps to determine the direction (positive or negative) and degree of changes (i.e., significance of change) in conditions. It also increases the accuracy of predictions about the effects of a development on those conditions.

It is important to note that trends — whether positive or negative — are not necessarily directly connected to the operation of the Minto Mine. Other factors may have a contributing or overriding influence on certain socio-economic conditions described in this report.

1. YESAA 2010-0198 Minto Mine Expansion Phase IV, YG Decision Document 2010-0198-141-1. March 18, 2011, pp. 6–7.

2. YESAA 2010-0198 Minto Mine Expansion Phase IV, Selkirk First Nation Decision Document 2010-0198-143-1. March 21, 2011, p.11.

3. Selkirk First Nation, Government of Yukon and Minto Explorations Ltd. September 10, 2013. *Minto Mine Socio-economic Monitoring Program: Components, Information and Program Requirements*. www.emr.gov.yk.ca/mining/pdf/mml_minto_socioeconomic_monitoring_program.pdf.

4. Selkirk First Nation, Government of Yukon and Minto Explorations Ltd. September 10, 2013. *Minto Mine Socio-economic Monitoring Program: Components, Information and Program Requirements*, p.2.

1.1.1 Program Timeline

The three parties — Minto, SFN and YG — created the basis for the Socio-economic Monitoring Program through the formation of the Tri-Partite Working Group in 2011.

In July of 2013, Minto submitted its project proposal for Phase V/VI mine expansion to the Yukon Environmental and Socio-economic Assessment Board (YESAB). In that proposal, the company reaffirmed their commitment to the Socio-economic Monitoring Program, as did SFN and YG in their YESAA decision documents.

The working group continued to develop the program framework, which was formally approved by the parties in the summer of 2014. A household survey of Living Conditions by SFN forms a critical part of the efforts to collect relevant and current data at the community level. The survey was designed and approved in the fall of 2014. The results will be incorporated into the 2015 Annual Report (see Figure 1-1).

Minto's amended Quartz Mining Licence (QML-001), issued in December 2014, includes the first socio-economic requirement attached to a mining licence in Yukon. It requires Minto to implement the socio-economic monitoring framework and to report on monitoring progress annually.

1.1.2 Project Setting

The Minto Mine is an open pit and underground copper mine. Construction began in 2005 and the mine has been in commercial production since 2007. The mine is located approximately 240 km northwest of Whitehorse, in central Yukon. It lies within SFN Category A Settlement Lands (SFN R-6A), on the west side of the Yukon River (see Figure 1-2).⁵

On July 21, 1997, SFN signed the Selkirk First Nation Final Agreement and the Selkirk First Nation Self Government Agreement with the Governments of Canada and Yukon. SFN has ownership and control of 4,740 square kilometres of land. This includes Category A Settlement Land, where SFN has ownership of both the surface and the subsurface (including minerals and oil and gas), and exclusive fish and wildlife harvesting rights; Category B Settlement Land, where SFN has ownership of the surface; and a small amount of land in the form of site-specific parcels.

5. Section sources:

www.selkirkfn.ca.; Selkirk First Nation/Pelly Crossing Integrated Community Sustainability Plan 2007, Inukshuk Planning and Development, May, 2007; Minto Explorations Ltd. Minto Mine Yukon Territory, Minto Mine Expansion-Phase IV, Section 4.11 Socio-economic Conditions, August 2010.

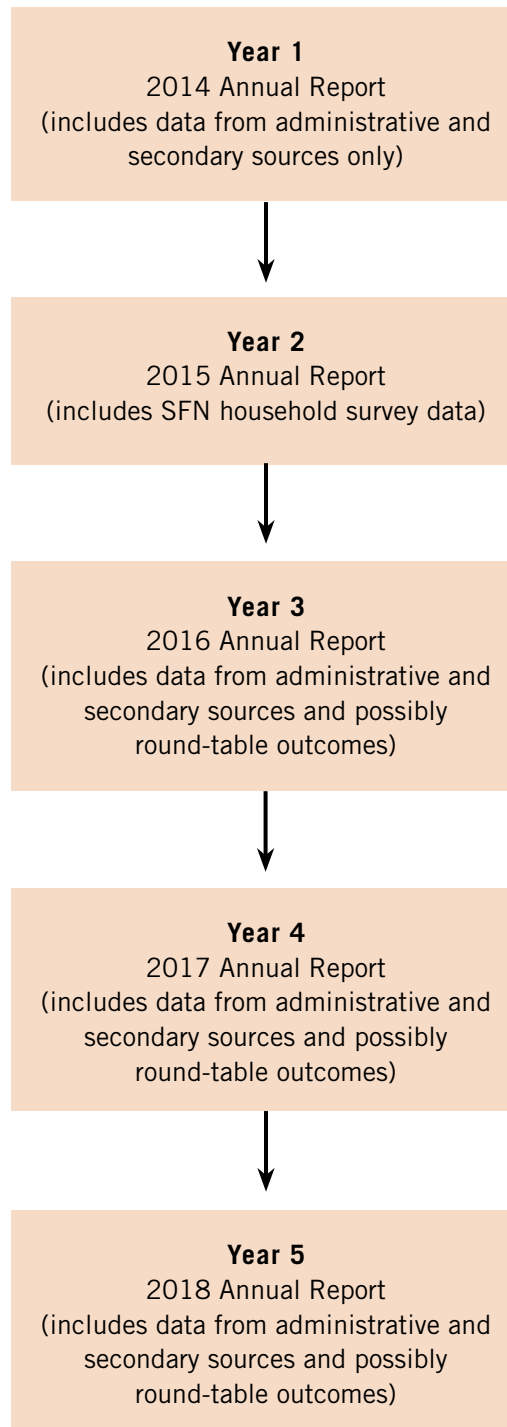
Figure 1-1. Five-year Reporting Cycle

Figure 1-2. Location of Minto Mine



Source: Minto Explorations Ltd

The legislative powers of the SFN government include making laws with respect to the administration of the First Nation and the provision of programs regarding spiritual and cultural beliefs, language, health care and services, social and welfare services, training programs, adoptions, First Nation children, education, wills and intestacy, citizenship and all subordinate matters.

SFN is governed by a Chief and Council who serve three-year terms. The Chief, two Wolf Councillors, two Crow Councillors, one Elder Councillor and one Youth Councillor are elected by SFN citizens. The responsibility and authority of Chief and Council is defined in a constitution, and Chief and Council report annually to the SFN General Assembly, where decisions and discussions guide the First Nation.

In 2014 the population of SFN residents inside and outside the Yukon was 672. According to the Yukon Bureau of Statistics (YBS), Pelly Crossing had a population of 397 in 2014 and it is the community where the majority of Yukon-based SFN citizens reside. Many citizens participate in traditional activities (such as trapping, hunting, fishing and gathering) and contemporary economic pursuits. Efforts continue and teachings are practised to maintain the traditional culture.

SFN is the major land-owner within Pelly Crossing, which is an unincorporated community with no formal local government structure. SFN and YG share responsibility for service delivery. Pelly Crossing has a past that is rich in Northern Tutchone history, heritage and culture. The natural environment around Pelly Crossing supports many recreational activities.

Pelly Crossing. Photo: Government of Yukon



1.2 Living Conditions, Valued Conditions and Indicators

The Living Conditions, Valued Conditions⁶ and indicators that the three parties agreed to form the basis for assessing the socio-economic effects of the Minto Mine. They are described in detail in *Minto Mine Socio-economic Monitoring Program: Components, Information and Program Requirements* (www.emr.gov.yk.ca/mining/pdf/mml_minto_socioeconomic_monitoring_program.pdf). They have been developed from a wide variety of programs and studies that monitor socio-economic Living Conditions in communities around the circumpolar North, and modified and validated by SFN, YG and Minto.

The Living Conditions, Valued Conditions and indicators and other details can be found in Appendix 1. A total of sixteen Valued Conditions are grouped under five Living Conditions (Table 1-1). A total of 69 indicators measure changes in the Valued Conditions, which could be affected by the mine's operations and closure. These indicators form the core of this report (*see Appendix 1*).

Table 1-1. Living Conditions and Valued Conditions

Living Conditions	Valued Conditions
Population and Health	Community Stability and Well-being
	Family Stability and Well-being
	Health
	Housing
Material Well-being	Income and Income Distribution
	Employment
	Business
	SFN Traditional Economy
Capacity, Training and Education	Employment and Workforce Development
	Education and Training
Cultural Well-being	Connection to Land and Water
	Cultural Vitality
	Social Cohesion
Sustainability and Legacy	Fate Control and Preparedness
	Boom/Bust Management
	Costs and Benefits for Future Generations

6. In this report the term “Valued Condition” is equivalent to the term “valued socio-economic component” as used by YESAB. Valued socio-economic components, or VSECs, are defined by YESAB as those parts of the socio-economic fabric that are valued because of their importance to a community, specifically because of their: integral connection to, or reflection of, the socio-economic system; commercial or economic value; and/or, their role in maintaining quality of life in a community.

Some VSECs are specific to a particular community or interest, but many overlap among communities and interests (Source: Yukon Environmental and Socio-economic Assessment Board. 2006. *Guide to Socio-economic Effects Assessments*, p.36.) A more recent discussion can be found online at www.eao.gov.bc.ca/pdf/EA0_Valued_Components_Guideline_2013_09_09.pdf.

1.3 Data Sources: strengths and limitations

There are three major sources of data for the Minto Mine socio-economic monitoring program:

- statistical data collected and published by Statistics Canada (www.statcan.gc.ca/start-debut-eng.html) and the Yukon Bureau of Statistics (www.eco.gov.yk.ca/stats);
- internal corporate data assembled by Minto; and
- community data, either from the household survey undertaken by SFN of its citizens or from community round-tables or workshops. The community information is not available for this report, but will be available for subsequent reports.

The overall quality of statistical data from Statistics Canada and the Yukon Bureau of Statistics is generally high; both agencies collect and treat data with rigour. However, rural Yukon communities — with their very small populations — always present challenges to collecting sufficient data to be statistically valid while maintaining confidentiality.

At the community level, researchers and others have long relied on the data from the national census that is conducted every five years. Prior to 2011 the census included a Part B (the long form) that provided a very detailed look at many key socio-economic factors in the lives of Canadians. The long form was generally applied to a sample of 20% of Canadians. But in Yukon (and elsewhere in the North), Statistics Canada applied it to 100% of the residents of rural communities to ensure that the data for those communities was statistically valid. Respondents were legally required to complete the long form; generally, this resulted in a very high completion rate and helped ensure statistical validity.

For the 2011 Census the federal government replaced the mandatory long-form census with the voluntary National Household Survey. The completion rates for this now-voluntary survey plunged, making much of the data suspect and difficult to compare accurately against prior census data, especially for small communities. The 2016 national census will reinstate the mandatory long-form survey.

The SFN survey conducted in 2015 will address some of the limitations in the data.

Minto's corporate data may be limited by certain factors, including without limitation the fact that the monitoring framework and its indicators were not developed and adopted until well into the mine's operation, and by changes in corporate ownership and staff.

2. The Minto Mine: A summary timeline

The development of mineral properties rarely follows a straight and simple path from discovery through mining and then to closure and reclamation. Minto Mine is no exception. It has experienced changes of ownership, starts and stops in mine development, and the ongoing expansion of ore reserves on the property, which have extended the expected mine life. Table 2-1 provides key milestones in the progress of the Minto property from discovery through to 2014. A more detailed timeline can be found in Appendix 2. The information in Table 2-1 is drawn from the Yukon Geological Survey,⁷ Capstone Mining Corp.'s history summary⁸ and Capstone's news releases.⁹

Table 2-1. A Summary Timeline of the Minto Mine

Date	Event
1970s	The Minto claim group is staked by Asarco and Silver Standard Mines A group managed by United Keno Hill Mines (UKHM) stakes the adjoining DEF claim group to the north of Minto
Early 1990s	UKHM holdings in the DEF claim group acquired by Falconbridge Teck and Asarco each sell their interest in the Minto claims to Minto Explorations Ltd.
1996	Minto Explorations Ltd. begins development of the mine
1997	SFN signs final land claim agreement that includes much of the Minto Mine area as Category A settlement land (surface and subsurface rights) SFN and Minto Explorations Ltd. sign a comprehensive cooperation agreement
1998	Type A water licence issued
1999	Mineral production licence issued and construction started
2000	Before construction is suspended due to low mineral prices, the access road is complete, sites are prepared for the camp and mill, and some mill equipment is purchased
2005	Sherwood Mining Corporation acquires Minto Explorations Ltd.
2006	Mine development begins
2007	Commercial production is achieved
2008	Sherwood merges with Capstone Mining Corp.
2009	Revised cooperation agreement between Minto Explorations Ltd. and the SFN is signed; it includes a net sales royalty of between 1.0% and 1.5% on production, plus various commitments in respect of employment, contracting, training, scholarship opportunities and other matters
2010	Phase IV expansion project proposal submitted to YESAB
2011	Decision Documents from YG and SFN issued on Phase IV expansion
2012	Underground development commenced
2013	Phase V/VI expansion project proposal submitted to YESAB
2014	Open-pit mining suspended; as milling continues using blended ore from underground and stockpiles YESAB issued recommendations for Phase V/VI expansion, YG and SFN issued YESAA Decision Documents on Phase V/VI expansion and YG issued an amended Quartz Mining Licence

7. Yukon Geological Survey. November 2008. Yukon Mineral Property Update 2008.

8. See <http://capstonemining.com/operations/minto/history/default.aspx> (accessed February 5, 2015).

9. See <http://capstonemining.com/news/default.aspx> (accessed February 5, 2015).

3. Predicted Socio-economic Effects

The monitoring program is intended to assess the socio-economic effects of the Minto Mine by comparing socio-economic conditions pre-project and during the project, and by comparing predicted and actual socio-economic effects. The socio-economic effects predicted for the Phase V/VI mine expansion are consistent with predictions associated with earlier mine phases. For the practical purposes of this report, the predictions cited here are derived from the *Minto Phase V/VI Socio-economic Study Report* that was submitted to YESAB by Minto in 2013.¹⁰ Table 3-1 summarises its predictions, which are grouped by Valued Condition.

Table 3-1. Predicted Socio-economic effects, according to the Phase V/VI Socio-economic Study

#	Valued Condition	Prediction, Phase V/VI Socio-economic Study
1	Community stability and well-being	p.63: Minto is working with SFN through the Tripartite Socio-economic Working Group to further define wellness, so that this VSEC [valued socio economic component] can be monitored and assessed in the future. Furthermore, Minto and SFN are working to determine how Minto may contribute to SFN community wellness. p.91: The effects of the Project on population in the RSA [regional study area] and LSA are expected to be minimal. p.99: Project operations will have positive effects on the well-being of communities in the LSA [local study area], as assessed according to the CWB [community well-being] Index evaluation by increasing employment opportunities, providing sources of income to residents, and supporting education initiatives... However, as with health, community well-being will be monitored as part of the Project effects monitoring program being led by the tripartite Socio-economic Working Group given the number of factors that come together to define community well-being and the fact that the factors affecting community well-being can change over time.
3	Health	p.94: Project operations are not expected to have a measurable effect on the health conditions of either RSA or LSA residents, based on Minto's current experience, since operations began.
4	Housing	p.93: Project operations are not expected to have a notable effect on housing in the LSA or RSA given the small incremental number of employees and the fact that Minto will expand the capacity of the mine camp to accommodate all employees on-site during their shifts.
5	Income	p.86: ...the Project will result in the generation of approximately \$150 million of Minto direct site employment income along with an undetermined amount of contractor employment income. Assuming that the Phase IV distribution of workers is maintained in Phase V/VI, approximately 35% of the direct income could accrue to the RSA and LSA; however, the actual percentage will depend on the nature of the employment secured by RSA and LSA residents and the associated salary.
6	Employment	p.34: Minto is currently working with the SFN to develop initiatives to increase SFN employment at the mine including the creation of a SFN-Minto Mine Employment Liaison position. p.37: Minto is committed to increasing SFN employment at the mine and with its contractors.

Note: Not all indicators are listed in Table 3-1; hence, the discontinuous numbering. A number of indicators do not measure trends in socio-economic conditions.

10. YESAA 2013-0100 Minto Mine Expansion Phase V/VI, July 5, 2013.

#	Valued Condition	Prediction, Phase V/VI Socio-economic Study
6	Employment (continued)	p.82: During project operations, employment opportunities are expected to range between 125 positions in year 2022 and 450 positions in year 2016 and 2017. Compared to the peak Phase IV employment levels (400 positions), this amounts to a maximum increase at peak project operations of approximately 50 positions. p.83: Based on the current breakdown of staff location (i.e., 35% Yukon based), 18 of the additional 50 positions would be filled by Yukon based (i.e., RSA and/or LSA residents) Minto or contractor employees at peak operations. p.84: Approximately four to five SFN citizens will be employed to assist with reclamation projects annually. p.84: Minto will continue to offer a summer student program which employs five SFN students for the summer months. p.84: Minto anticipates bringing in three apprentice positions in the near future in the maintenance department with the expectation that the program could grow as the mine develops. p.85: Employment opportunities will continue throughout decommissioning and closure. The number of employment opportunities is expected to range between 25 positions and 63 positions, including part-time and seasonal positions... It is anticipated that a greater proportion of workers will come from the LSA and RSA during the decommissioning and closure phases....
7	Business	p.79: SFN will also benefit from ongoing payments during mine operations and the LSA and RSA will benefit from ad hoc donations from Minto throughout the mine life. p.80: Minto currently works with approximately 475 suppliers and has a number of initiatives in place to enhance the participation of RSA and LSA based businesses at the mine. In 2012, approximately \$81 million of Minto's \$277.3 million in total expenditures were in Yukon. The demand for goods and services is anticipated to continue at a similar level to that experienced during Phase IV until 2018, when demands will change with respect to changing activities at the mine. Although overall opportunities will decrease as the Project progresses through operations, Minto anticipates that a similar or larger portion of its expenditures will continue to be spent on Yukon based goods and services. p.80: The project will provide an opportunity for the Selkirk Development Corporation joint ventures serving the mine as well as other existing and new LSA businesses to increase their involvement in the Project given that approximately 70% of goods and services are currently sourced from outside Yukon. p.81: It is anticipated that new opportunities related to reclamation, monitoring, and site maintenance will arise for LSA and RSA businesses during decommissioning and closure. This will provide the opportunity for businesses currently not involved in the Project to become involved and, for certain businesses will provide the opportunity for long-term involvement through closure. p.88: Minto has paid \$12.6 million in royalties to the SFN since 2008 (Government of Yukon, 2012), and payments are expected to continue at similar levels provided that there are no major changes in the market for products from the mine.

#	Valued Condition	Prediction, Phase V/VI Socio-economic Study
8	Traditional Economy	p.89: Effects [on traditional use activities] currently being experienced as a result of Phase IV will be extended as a result of the Project but increased effects over those currently experienced are not anticipated.
9	Employment and Workforce Development	p.56: Minto is working with the SFN Education Department, local educational institutions, and the YG to develop and support opportunities for SFN citizens. p.57: The Eliza Van Bibber School and Minto are working together to expand opportunities such as class trips to the mine site and credited work experience programs for senior students that provide students opportunities to observe and learn about the variety of careers available at the mine. p.58: Minto is currently working in partnership with the Yukon College and the Yukon Mine Training Association to develop apprenticeship and internship opportunities. p.59: Minto is committed to providing training opportunities that facilitate the development of skills and careers with Minto and/or its contractors. Minto contractors are committed to hiring, training, and advancing the careers of local residents, wherever possible. p.85: Employment opportunities will continue throughout decommissioning and closure. The number of employment opportunities is expected to range between 25 positions and 63 positions, including part-time and seasonal positions... It is anticipated that a greater proportion of workers will come from the LSA and RSA during the decommissioning and closure phases....
10	Education and Training	p.61: With a view to furthering opportunities for LSA and RSA residents and other employees, Minto and its contractors are developing training opportunities in partnership with the Yukon College, the Yukon Mine Training Association, Mile 918 Driver's School, and the Northern Safety Network for delivery of industry training. p.84: Minto will be putting on a training program in conjunction with SFN and the underground contractor at the mine. This will be provided to ten community members who will be qualified to work at the mine once they successfully complete the program. p.97: Education and training will be positively affected during project operations. The Project will result in the enhancement of the skill and education levels of LSA and RSA residents directly through on-the-job training and community based programs, and indirectly through training provided by Minto contractors. Furthermore, the Project will facilitate the continuation of the Minto-SFN scholarship program for advanced education, which was established for SFN citizens as part of the Minto-SFN Cooperation Agreement.
12	Cultural Vitality	p.100: Project operations will have indirect positive and negative influences on SFN cultural well-being through effects on such VSECs as business, employment, income, royalties, and donations.

4. Summary of Observed Trends

Table 4-1 summarizes the observed direction of some of the trends and associated changes in socio-economic conditions that are detailed in Section 5. The table utilises a model developed by the Government of Northwest Territories for monitoring the socio-economic effects of diamond mines on communities.¹¹

Green arrows up or down (↑ or ↓) show trends or changes viewed as positive. Increasing employment is a positive indicator and would be shown with an up arrow (↑). A declining crime rate would also be positive and be shown with a green down arrow (↓).

Red arrows up or down (↑ or ↓) show trends or changes viewed as negative. An increasing crime rate is negative and would be shown as (↑). A decreasing employment rate is negative and would be shown with a red down arrow (↓).

Where there is no observed trend, or the trend is neutral, a long dash (—) is shown.

It is important to note that not all indicators can be summarized as having a trend. Those indicators that consist of qualitative descriptions do not often lend themselves to being summarized by an up or down arrow. For some indicators, there are insufficient data available to establish a trend. It is also important to stress that these trends — positive or negative — are not necessarily directly connected to the operation of the Minto Mine. Other factors may be a contributing or overriding influence on some of the socio-economic conditions described in this report.

Table 4-1 groups selected indicators under the five Living Conditions: Population and Health; Material Well-being; Capacity, Training and Education; Cultural Well-being; and Sustainability and Legacy (see Table 1-1). Table 4-1 shows only indicators for which data are available and where it makes sense to present them in this form. All indicators are discussed in Section 5.

In cases where the Phase V/VI Socio-economic Study predicted how the mine would affect a particular indicator (see Table 3-1), that prediction is included in Table 4-1. Table 4-1 also provides an explanatory comment for each indicator. Where data is not available for an indicator or the data cannot be analyzed for trends, the indicator is not listed in the table.

11. See Government of Northwest Territories. *Communities and Diamonds*. www.assembly.gov.nt.ca/sites/default/files/td227-175.pdf.

Table 4-1. Summary of Observed Trends, Pelly Crossing and Yukon

Indicator #	Indicator	Trend in Pelly Crossing	Trend in Yukon	Predicted Trend	Comment
Population and Health: Indicators #1–15 (see pages 16–22)					
Indicator #2	Duration of residency (five years)	↑	—	—	The percentage of people living in Pelly Crossing for at least five years is increasing, indicating greater community stability.
Indicator #5	Crime severity	↑	—	—	The rates of reported criminal incidents (all forms) and violent crime in Pelly Crossing show a slight increasing tendency, with a high degree of variability.
Indicator #6	Family structure (lone-parent families)	↑	—	np	In Pelly Crossing, the proportion of lone-parent families has risen significantly between 2001 and 2011.
Indicator #10	Minto and contractor safety	—	—	np	There are no clear trends for either incidents or days lost to injury for 2007–2014.
Indicator #15	Housing condition (need for major repair)	↑	—	—	In Pelly Crossing, the trend on occupant-reported need for major repairs on dwellings is up significantly, which may be a sign that the overall condition of the housing stock is deteriorating.
Income and Income Distribution: Indicators #16–21 (see pages 23–30)					
Indicator #16	Average employment income by residency, Minto	↑	—	↑	Average employment income for Minto employees increased, with the most significant increase in Pelly Crossing between 2001 and 2006.
Indicator #17	Average employment income by residency, contractors	↑	↑	↑	Taken together, the major contractors at the Minto Mine show a general upward trend in average employment income for both Pelly Crossing and Yukon, as predicted.
Indicator #19	Average household income	↑	↑	np	Average household income rose in both Yukon and Pelly Crossing.
Indicator #20	Average personal income	↑	↑	↑	Average personal income rose in both Yukon and Pelly Crossing.

Please note: The 2011 National Household Survey (NHS) data for small communities is highly unreliable. Although the 2011 data for Pelly Crossing is listed in a number of figures in the report, in this table and elsewhere, the analysis of trends in Pelly Crossing is often limited to the period between 2001 and 2006. The year 2006 coincides with the commencement of mine development. Caution about the reliability of the 2011 NHS data is noted where applicable throughout the report.

Also please note that a long dash (—) means no observed trend, or neutral; np = no prediction

Indicator #	Indicator	Trend in Pelly Crossing	Trend in Yukon	Predicted Trend	Comment
Employment: Indicators #23–32 (see pages 31–37)					
Indicator #23	Minto employment by group	↑	↑	↑	SFN employment has shown modest growth from 2012 on, from a very low base. Non-First Nations Yukon employee numbers have grown more quickly, but numbers of workers from outside Yukon have grown most.
Indicator #24	Minto employment by residency	—	↑	↑	Approximately 35–40% of Minto employees live in Yukon. Pelly Crossing residents make up approximately 5–9% of the company's employees.
Indicator #25	Employment by contractors	—	—	↑	There are no clear trends in Pelly Crossing and Yukon employment by contractors.
Indicator #26	New hires by group	—	↑	↑	SFN new hires increased sharply from late 2011 through to early 2013 before declining again. Non-First Nations new hires have shown a general upward trend.
Indicator #28	Employment rate	—	—	np	The trend in the Pelly Crossing employment rate between 2001 and 2006 was flat and the Yukon employment rate remained largely unchanged between 2001 and 2011.
Indicator #29	Unemployment rate	↓	↓	np	The unemployment rate for Yukon and Pelly Crossing decreased between 2001 and 2006.

Indicator #	Indicator	Trend in Pelly Crossing	Trend in Yukon	Predicted Trend	Comment
Indicator #30	Participation rate	↓	↓	np	The labour force participation rate for Yukon and Pelly Crossing has been relatively high, with a slight downward trend between 2001 and 2006.

Business: Indicators #33–38 (see pages 38–40)

Indicator #33	Operations and capital spending	—	—	↑	Capital expenditures rose significantly in 2012 and 2013 as a result of the underground development at the site, but then dropped again. The drop in operating expenditures in 2014 is a result of the slowing of the rate of open-pit mining and the resulting layoffs.
Indicator #36	Royalty payments	—	—	—	The trend of royalty payments at Minto was clearly up from 2008 to 2009, followed by a decline from 2010 to 2013. In 2014 payments rebounded.
Indicator #37	Property tax payments	—	↑	np	Property tax payments show an upward trend in Yukon from 2009 to 2014.

Education and Training: Indicators #46–48 (see pages 43–44)

Indicator #48	School absenteeism	↑	—	np	Yukon school absenteeism has been steady over the three years: no trend up or down. School absenteeism in Pelly Crossing is significantly higher than for Yukon as a whole and is on a clear upward trend.
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5. Observed Socio-economic Conditions and Effects

The Valued Conditions for the Minto Mine are described in Sections 5.1 to 5.16. Each Valued Condition has two or more indicators associated with it. The text for the Valued Conditions describes each of those indicators, provides the rationale for why each indicator was selected, and provides its associated data (if any). All those indicators for which there are data are included in this section.

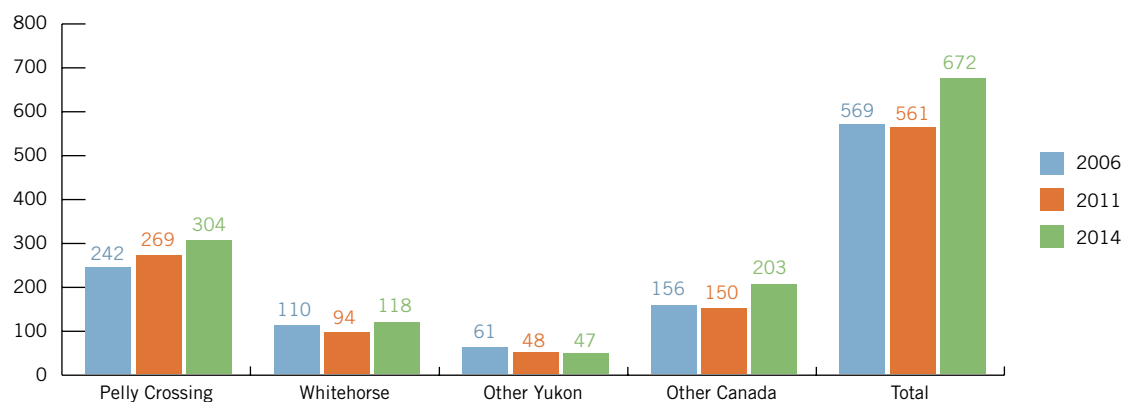
5.1 Community Stability and Well-being

Community stability and well-being is one of the 16 selected Valued Conditions of the monitoring program. This section presents the available data for Indicator #1 (SFN citizens by residency); Indicator #2 (Duration of residency); Indicator #3 (Net migration); and Indicator #5 (Crime severity).

Indicator #1 Selkirk First Nation citizens by residency

The choice of where to live reflects local and non-local conditions, opportunities and life choices. Figure 5-1 shows the number of SFN citizens, as counted by the SFN government.

Figure 5-1. Population of Selkirk First Nation citizens by place of residence: 2006, 2011 and 2014



Source: Selkirk First Nation

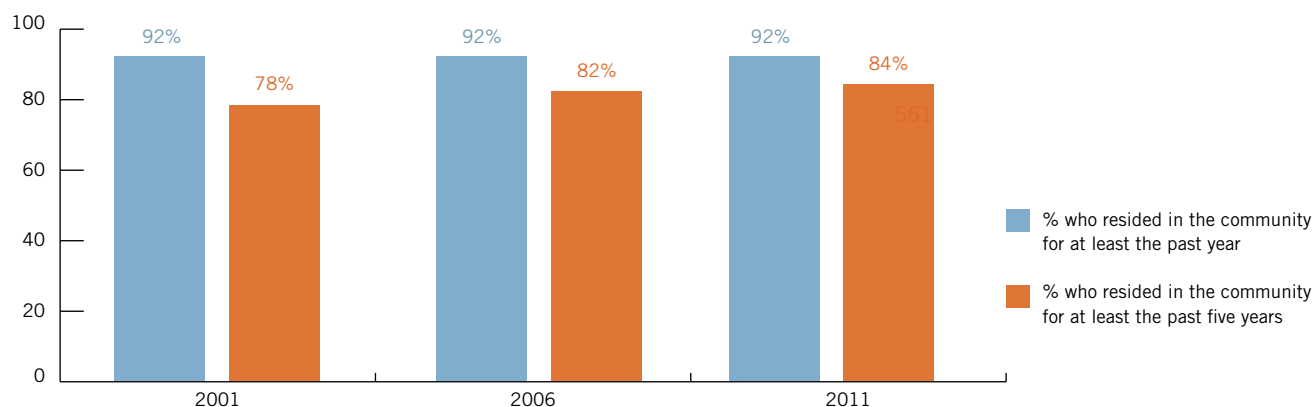
Notes on Figure 5-1

- The total number of SFN citizens declined slightly between 2006 and 2011 before growing significantly from 2011 to 2014.
- The number of SFN citizens living in Pelly Crossing has increased from 242 to 304 between 2006 and 2014.
- Overall, just under half of SFN citizens live in Pelly Crossing; approximately 20% live in Whitehorse.
- Approximately 70% of SFN citizens live in Yukon and 30% live elsewhere in Canada.

Indicator #2 Duration of residency

The duration or length of residency is an indicator of the strength of individual and family ties to the community. Figure 5-2 shows the percentage of Pelly Crossing residents who had reported living in the community for at least one year and for at least five years at the time of the Census in 2001 and 2006 and the National Household Survey (NHS) in 2011.

Figure 5-2. Percentage of Pelly Crossing residents who resided in the community for at least one year and at least five years before the Census/NHS: 2001, 2006 and 2011



Source: Census 2001, Cumulative Profile; Statistics Canada; 2006 Census Catalogue no. 94-578-XCB2006002; 2011 NHS Semi-custom profile NHS2011_Cyan_PR_CD_CSD_DA

Notes on Figure 5-2:

- The percentages shown include both those who reported living at the same address one year or five years prior (non-movers) and those who reported having changed addresses but still lived in the community (non-migrant movers).
- The one-year stability rate in Pelly Crossing has remained consistent, with 92% of residents not having moved into or out of the community in the year prior to the Census or National Household Survey.
- There is a clear upward trend in the five-year stability rate, with a higher percentage of residents reporting living in the community for at least five years. This indicates a more stable population in the community.
- For 2011, the Yukon's one-year stability rate (93%) was almost identical to that of Pelly Crossing (92%). The Yukon's five-year stability rate (78%) was lower than that of Pelly Crossing (84%).

Pelly Crossing. Photo: C. Rodgers, Selkirk First Nation



Indicator #3 Net migration

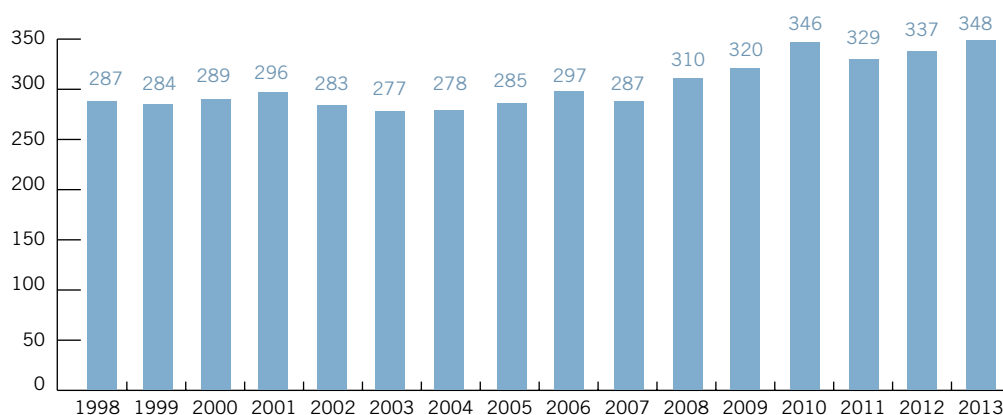
The rate of net migration to Pelly Crossing potentially affects institutional and family stability within the community. There is no regularly published data to assess net migration. However, the Yukon Bureau of Statistics carried out a one-time Yukon Migration Pattern study in 2010¹² and found the following for the period between 2005 and 2010:

- 114 people migrated into Pelly Crossing; and
- 70 people migrated out of Pelly Crossing.

Therefore, there was a net in-migration of 44 people, or approximately nine people per year over the period.

The Yukon Bureau of Statistics keeps estimates of Yukon community populations by the number of people who report a permanent address in that community on their health care cards (see Figure 5-3).

Figure 5-3. Population of Pelly Crossing: 1998–2013



Source: Yukon Bureau of Statistics Annual Reports, Health Care population statistics

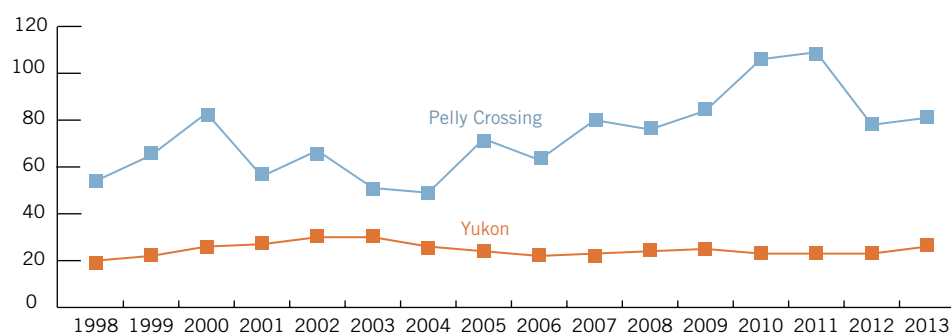
Notes on Figure 5-3:

- The population of Pelly Crossing has increased by 21% since 1998, with annual variability.
- For the ten-year period between 1998 and 2007, the population is relatively flat, with little variability about a mean of 286. Then from 2008, with the exception of 2010, there is a general upward trend to 2013.

Indicator #5 Crime severity

The rates of both violent and non-violent crime are indicators of a community's overall well-being. A high crime rate — or even the perception that there is a lot of crime — reduces feelings of safety and well-being. Figure 5-4 shows the rate of all reported criminal incidents for Pelly Crossing and Yukon per 100 people over the 16-year period from 1998 through 2013. Figure 5-5 shows the rate of all reported violent criminal incidents for Pelly Crossing and Yukon per 100 people over the same period.

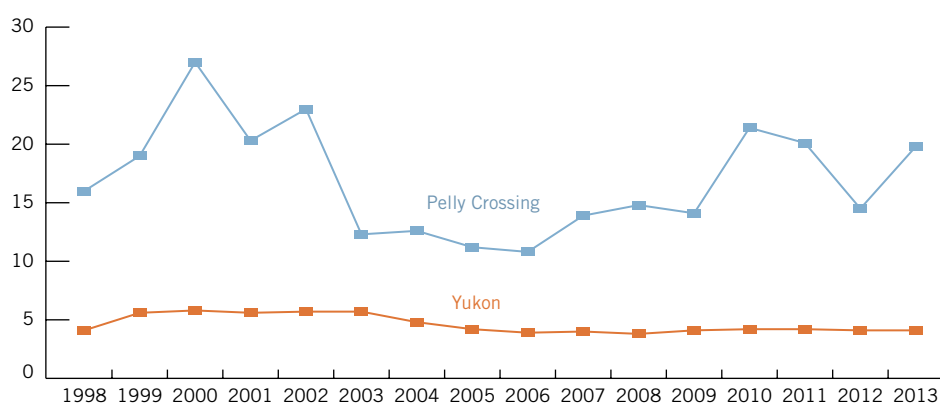
12. See www.eco.gov.yk.ca/stats/pdf/MigrationPatterns2010.pdf.

Figure 5-4. Rate of all criminal incidents per 100 people, Pelly Crossing and Yukon: 1998–2013

Source: Statistics Canada CANSIM Table 252-0082 for all criminal incidents recorded by RCMP, adjusted by annual population from Yukon Bureau of Statistics Annual Reports

Notes on Figure 5-4:

- The data shown includes Criminal Code traffic violations, federal statute violations, property crime, violent crime and other Criminal Code violations.
- The rates of reported criminal incidents (all forms) and violent crime in Pelly Crossing show an overall increasing tendency over this time period with the exception of 2012 and 2013.
- On average, the rate of reported criminal incidents per 100 people in Pelly Crossing has been three times higher than for Yukon as a whole.
- Caution: Because of their low population numbers, small communities can show large changes in per-capita crime rates from the behaviour of a small number of individuals. For example, in Pelly Crossing in 2013 there were 80 reported incidents of mischief, for which three individuals were charged. These 80 incidents were 28% of all reported criminal incidents that year in the community.
- Another factor that can significantly influence reported crime rates in small communities is the relationship between the community and the police officers stationed there.

Figure 5-5. Rate of violent crime incidents per 100 people, Pelly Crossing and Yukon: 1998–2013

Source: Statistics Canada CANSIM Table 252-0082 for all violent criminal incidents recorded by RCMP, adjusted by annual population from Yukon Bureau of Statistics Annual Reports.

Notes on Figure 5-5:

- According to Statistics Canada, a violent offence generally indicates a violation of the law that has included the use of aggressive action (with the intent to do harm) or threat of such action by one person against another.
- The overall trend for the rate of reported violent criminal incidents in Pelly Crossing has been both positive and negative over the period from 1998 to 2013, with large swings in the rate over those 16 years.
- The overall trend in Yukon has been largely flat.
- On average, the rate of reported violent criminal incidents in Pelly Crossing has been approximately four times higher than the rate for Yukon as a whole.
- Caution: Because of the low population, small communities can show large changes in per-capita crime rates from the behaviour of a small number of individuals.

5.2 Family Stability and Well-being

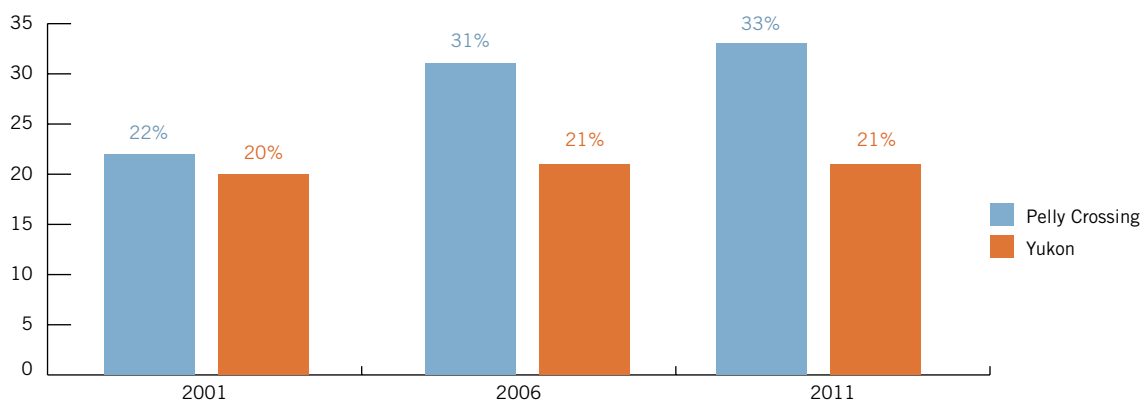
Family stability and well-being is one of the sixteen selected Valued Conditions of the monitoring program. This section presents the available data for Indicator #6 (Family structure) and Indicator #8 (Family violence).

Indicator #6 Family structure

Family membership and frequency of time spent together reflects relative cohesion and therefore, stability and well-being. Cohesive families can come in many forms. An increasing proportion of lone-parent families may indicate declining cohesion and less internal support in family structure.

Figure 5-6 shows the proportion of lone-parent families (defined by Statistics Canada as a lone parent with at least one child living at home) to all families (couples with or without children living at home) for Pelly Crossing and Yukon in the census years of 2001 and 2006 and the National Household Survey year of 2011.

Figure 5-6. Proportion of lone-parent families, Pelly Crossing and Yukon: 2001, 2006 and 2011



Source: Statistics Canada 2001 Census Catalogue no. 95F0181XDB96001; 2006 Census Catalogue no. 94-578-XCB2006002; 2011 NHS Semi-custom profile NHS2011_Can_PR_CD_CSD_DA

Notes on Figure 5-6:

- The proportion of lone-parent families as a subset of all families has changed only slightly between 2001 and 2011.
- In Pelly Crossing, the proportion of lone-parent families was higher in 2006 and 2011 than 2001. It is expected that the 2015 SFN household survey will shed more light on the family structure indicator and that its data will be available for the 2015 annual report.

Indicator #8 Family violence

The level of family violence has great effects on family stability and well-being. No data are available on the prevalence of family violence as distinct from all assaults and sexual assaults at the community level. The rate of all reported violent crime for Pelly Crossing and Yukon is shown in Figure 5-5.

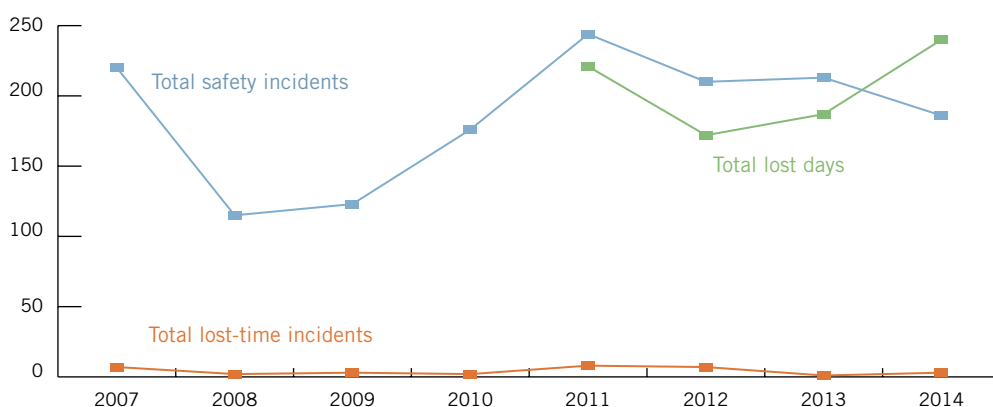
5.3 Health

Health is one of the sixteen selected Valued Conditions of the monitoring program. This section presents the available data for Indicator #10 (Minto and contractor safety).

Indicator #10 Minto and contractor safety

Work-related injuries have high costs — in both health and financial terms — for workers and their families, for the employer and for society as a whole. Figure 5-7 shows the total number of Minto Mine safety incidents and the number of lost-time incidents from 2007 to 2014.

Figure 5-7. Total Minto Mine safety incidents and lost days due to injury, company and contractors, 2007–2014*



Source: Minto Explorations Ltd. *The numbers of days lost to injury are available only for 2011–2014.

Notes on Figure 5-7:

- Lost-time incidents are those that result in a worker missing work beyond the day of the incident as the result of a workplace accident.
- There are no stable trends for either incidents or days lost to injury.
- Note that the vast majority of safety incidents do not result in any lost time.
- Total safety incidents include all forms of incidents, including those that require medical aid (on- or off-site) and those that do not. Near-miss incidents — a potential hazard or incident that did not result in injury — are also included in the total.

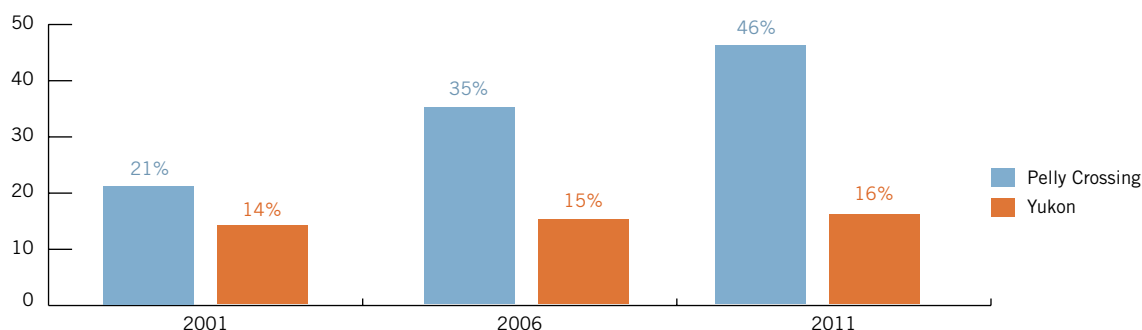
5.4 Housing

Housing is one of the sixteen selected Valued Conditions of the monitoring program. This section presents the available data for Indicator #15 (Housing condition).

Indicator #15 Housing condition

This indicator reflects the quality of community housing stock and its state of repair. Figure 5-8 shows the percentage of dwellings requiring major repair as reported by occupants to the 2001 and 2006 Census and the 2011 National Household Survey.

Figure 5-8. Percentage of dwellings needing major repair as reported by occupants, Pelly Crossing and Yukon: 2001, 2006 and 2011



Source: Statistics Canada 2001 Census Catalogue no. 95F0181XDB96001; 2006 Census Catalogue no. 94-578-XCB2006002; 2011 NHS Semi-custom profile NHS2011_Can_PR_CD_CSD_DA

Notes on Figure 5-8:

- The trend on occupant-reported need for major repairs on dwellings was almost flat for Yukon as a whole between 2001 and 2011, indicating that the overall condition of the housing stock was neither improving nor deteriorating.
- In Pelly Crossing the trend of occupant-reported need for major repairs on dwellings has risen significantly, a sign that the overall condition of the housing stock may be deteriorating.
- It is expected that the SFN household survey will provide more information on the housing condition indicator and that its data will be available for the 2015 annual report.
- The apparent increase in the number of dwellings needing repair may be a result of data quality issues in the 2011 National Household Survey.

5.5 Income and Income Distribution

Income and income distribution comprise one of the sixteen selected Valued Conditions of the monitoring program. This section presents the available data for Indicator #16 (Average employment income by residency); Indicator #17 (Average employment income by Minto contractors); Indicator #18 (Minto and contractors annual and cumulative total employee income by residency); Indicator #19 (Average and distributed household income, average and distributed personal income); and Indicator #21 (Income by source).

Note that the data categories available (from Minto and its contractors) for indicators #16, 17 and 18 are not consistent across the various firms.

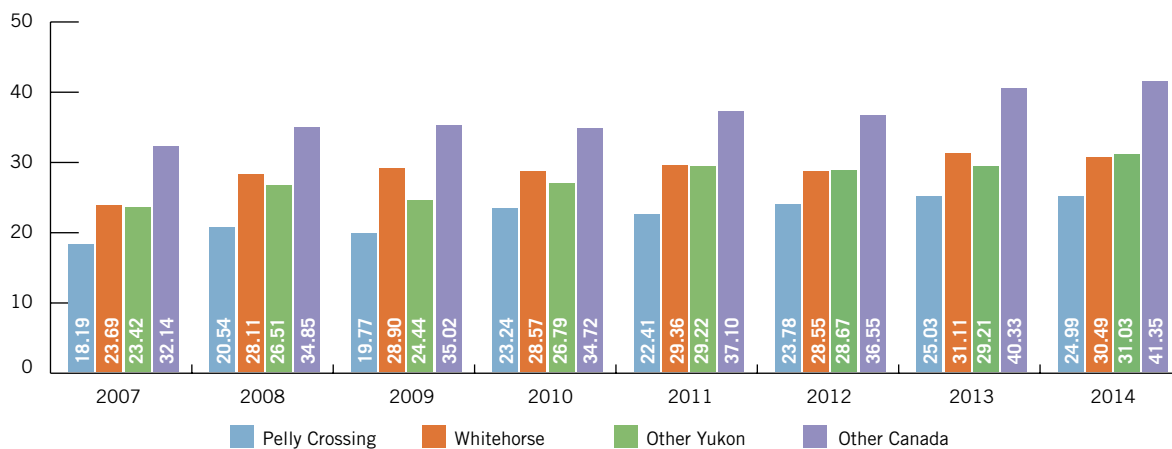
Note that the place of residence for employees for indicators #16, 17 and 18 are exclusive; in other words, residents of Pelly Crossing are not included as residents of Yukon, and residents of Yukon are not included as residents of Canada.

Indicator #16 Average employment income by residency

This indicator measures direct income impacts, and any differentials of those impacts, on those people employed directly by Minto Explorations Ltd. residing in various places. Figure 5-9 compares average hourly earnings for Minto Explorations Ltd. employees by the place of residence of those employees.

Selkirk First Nation student tour. Photo: Minto Explorations Ltd.



Figure 5-9. Average hourly earnings (\$) of Minto employees by residency, per employee: 2007–2014

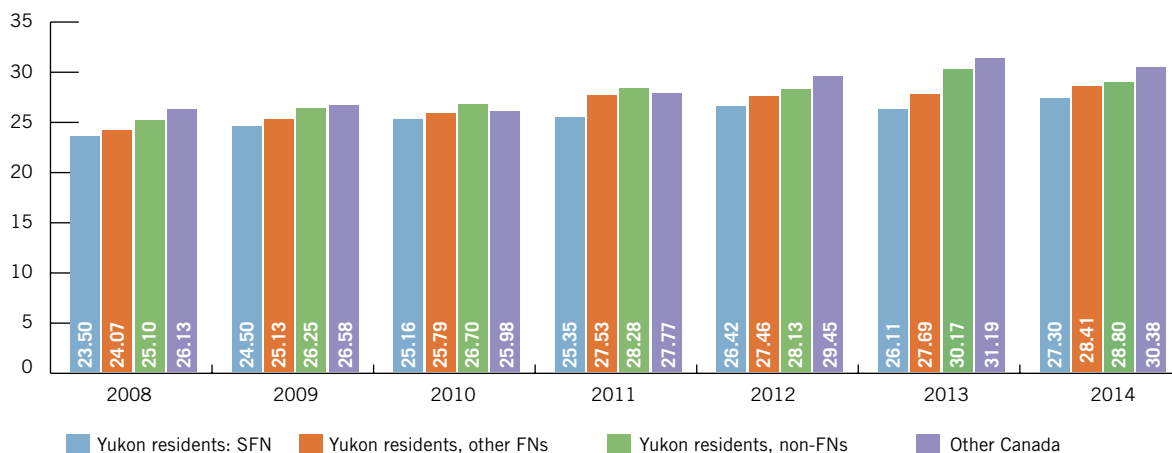
Source: Minto Explorations Ltd.

Notes on Figure 5-9:

- Amounts are unadjusted for seasonal or temporary employment.
- These numbers are influenced by the duration and nature of employment; they do not necessarily reflect the average earnings for a full-time full-year equivalent employee.
- Employees who reside outside Yukon have higher average hourly earnings than those in Yukon; this is likely driven in part by the number of permanent and professional employees who reside outside Yukon.
- Average hourly earnings by Pelly Crossing residents has risen from \$18.19 to \$24.99, an increase of 37% over the period. Other employees have seen smaller percentage increases (approximately 30%), but from higher starting points.

Indicator #17 Average employment income by Minto contractors

This indicator measures direct income impacts of the major contractors of the Minto Mine.

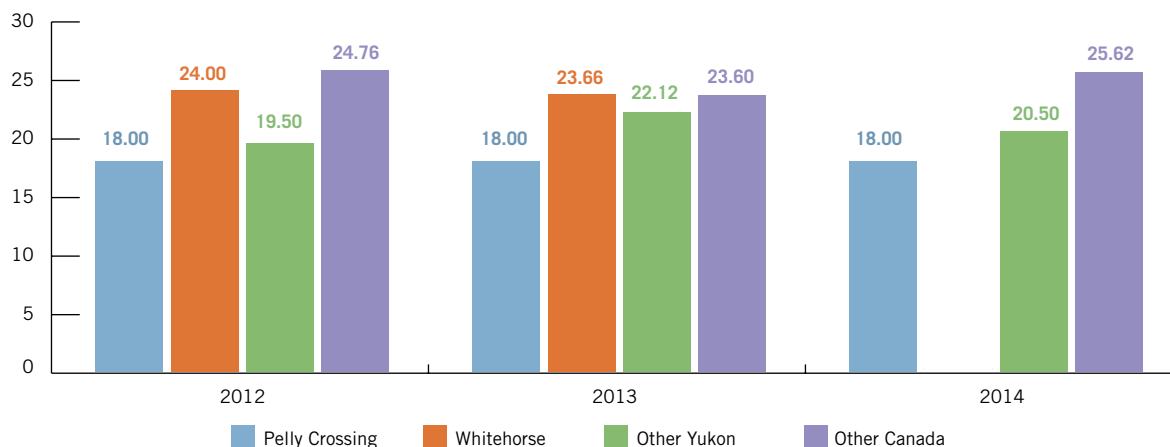
Figure 5-10. Average hourly earnings (\$) of employees of surface-mining contractor at the Minto Mine, by group and residency: 2008–2014

Source: Minto Explorations Ltd.

Notes on Figure 5-10:

- The surface-mining contractor is a Yukon-based company that is responsible for the open-pit mining at the site.
- The average hourly incomes of SFN Yukon residents have averaged 93% of the average of all others over the period shown.
- All categories of employees have seen approximately the same average increase in hourly wages (15–18%) from 2008–2014.

Figure 5-11. Average hourly earnings (\$) of employees of the underground mining contractor at the Minto Mine by residency: 2012–2014

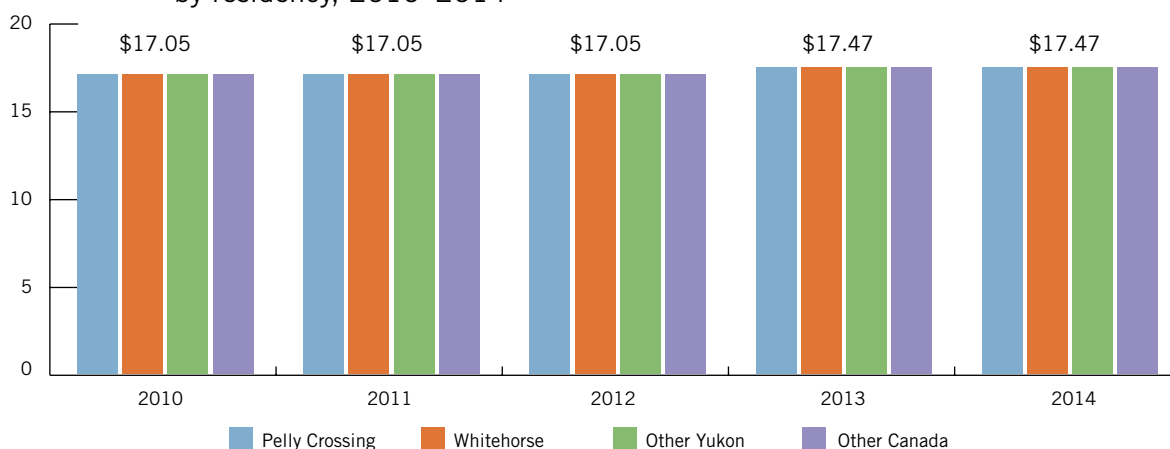


Source: Minto Explorations Ltd.

Notes on Figure 5-11:

- In 2014 there were no employees residing in Whitehorse.
- Employees residing elsewhere in Canada have generally had higher hourly wages than those residing in the Yukon, likely due to having more specialized underground experience.
- Some care must be used in comparing the hourly wages of underground workers with surface or other workers at the mine. Underground workers tend to work more overtime and are usually eligible to earn significant production bonuses. Given these factors, an hourly wage of \$25 can mean an annual gross income of \$125,000.

Figure 5-12. Average hourly earnings (\$) of employees of the camp contractor at the Minto Mine by residency, 2010–2014



Source: Minto Explorations Ltd.

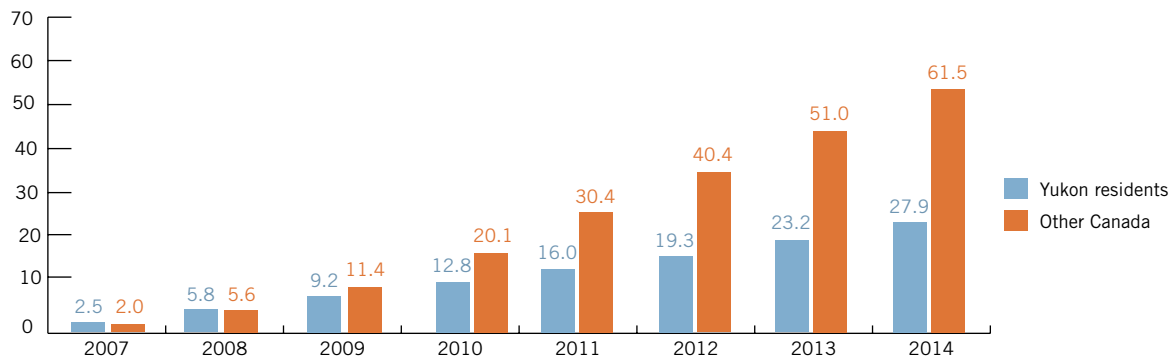
Notes on Figure 5-12:

- The camp contractor supplies the food and cleaning services for the camp at the Minto Mine.
- There is no difference in average hourly wages by residency, indicating that the required skills and experience are being provided by all employees regardless of residency.
- Camp contractor employees have seen their wages rise by 2.5% from 2010 to 2014.

Indicator #18 Minto and contractors cumulative total annual employee income by residency

Indicator #18 is intended to measure both the direct and cumulative impacts of employment income by residency — Yukon and non-Yukon, with some details on residents of Pelly Crossing and/or SFN — for Minto and its major contractors.

Figure 5-13. Cumulative earnings (millions \$) by employees of Minto, by Yukon and other Canada residency, 2007–2014



Source: Minto Explorations Ltd.

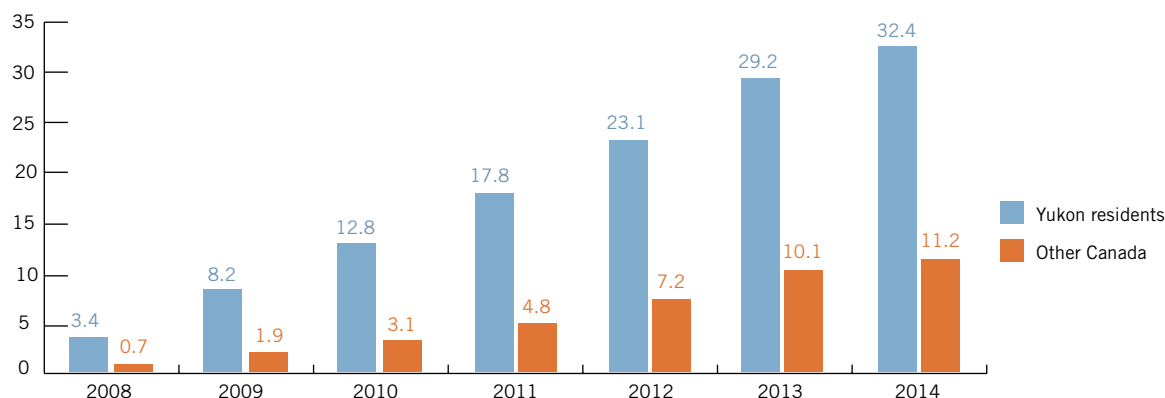
Notes on Figure 5-13:

- Employees living outside Yukon account for the majority of the cumulative earnings from Minto, with a total of \$61.5 million from 2007 to 2014.
- Employees who reside outside Yukon have higher cumulative earnings than those in Yukon, likely driven in part by the number of permanent and professional employees who reside outside Yukon.
- Source data not reflected in the figure show that Whitehorse residents earned a total of \$18.9 million from 2007 to 2014, while Yukon residents (apart from Whitehorse and Pelly Crossing) earned \$6.6 million over the same period.
- Source data also show that Pelly Crossing residents earned a total of \$2.4 million directly from Minto from 2007 to 2014.

Photo: Minto Explorations Ltd.



Figure 5-14. Cumulative earnings (millions \$) of employees of surface-mining contractor at Minto Mine, by Yukon and other Canada residency: 2008–2014

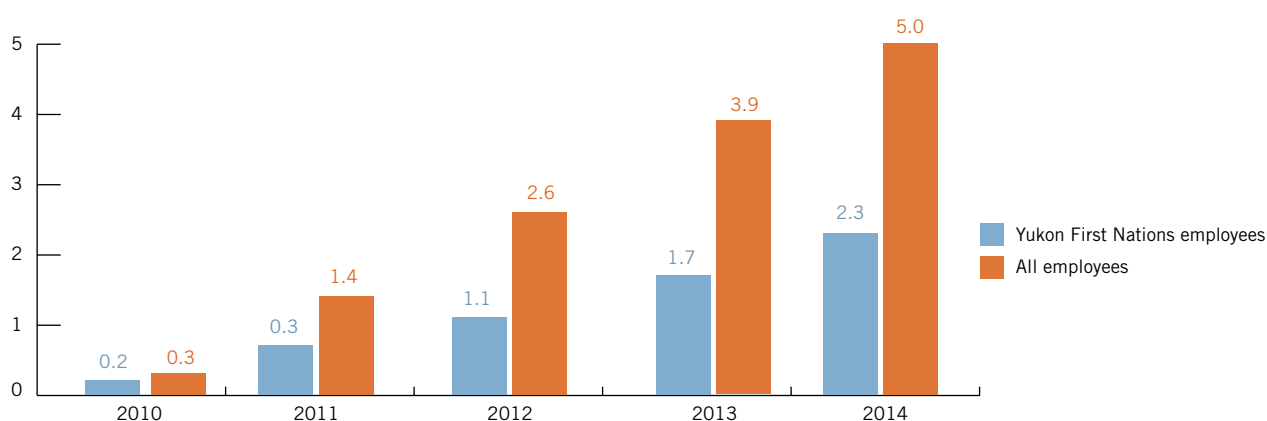


Source: Minto Explorations Ltd.

Notes on Figure 5-14:

- The surface-mining contractor is a Yukon-based company and the skills required for surface mining are readily available in Yukon. This is reflected in the large majority of its payroll flowing to Yukon residents throughout the 2008–2014 period.
- By the end of 2014 Yukon residents had earned a cumulative \$32.4 million from the surface mining contractor.
- Source data not reflected in the figure show that SFN citizens had earned a cumulative \$2.1 million working for the surface-mining contractor from 2008 to 2014.

Figure 5-15. Cumulative earnings (millions \$) of the camp contractor employees at Minto Mine, Yukon First Nations and all employees: 2008–2014

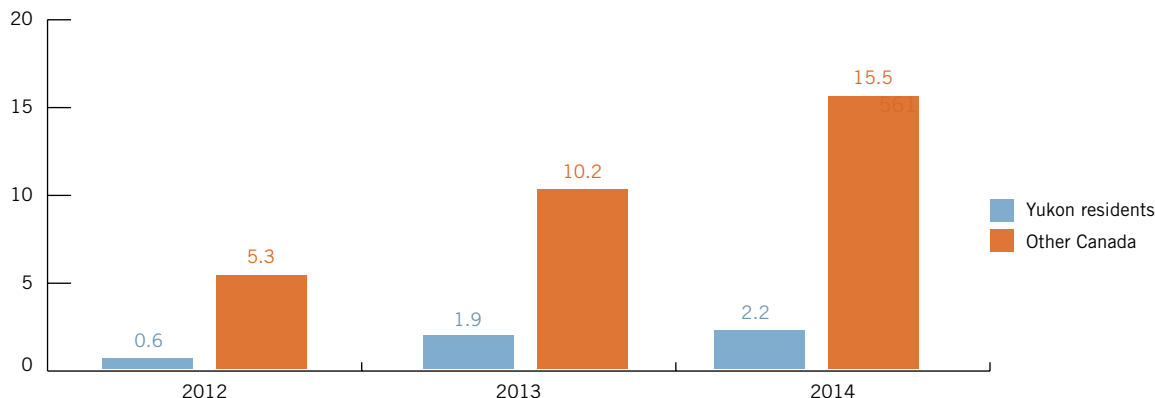


Source: Minto Explorations Ltd.

Notes on Figure 5-15:

- For this indicator, the data will be presented by more detailed residency in future reports.
- Yukon First Nations employees of the camp contractor at the Minto Mine have received approximately one half of the total cumulative payroll since 2010.

Figure 5-16. Cumulative earnings (millions \$) of employees of underground mining contractor at Minto Mine, by Yukon and other Canada residency: 2012–2014



Source: Minto Explorations Ltd.

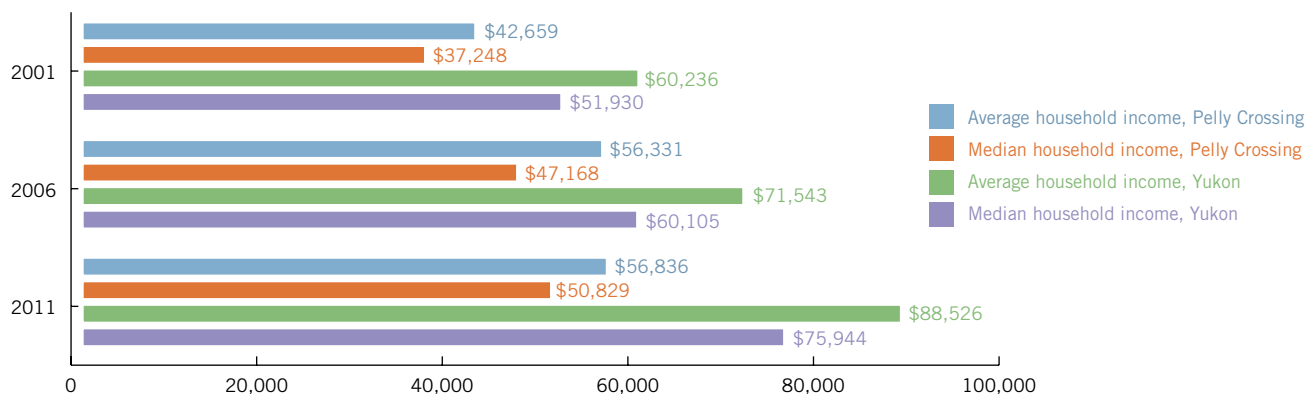
Notes on Figure 5-16:

- Almost 90% of the underground contractor's payroll went to employees who live outside Yukon in 2012 and 2014; in 2013 that dropped to 84%.
- The underground mining contractor relies heavily on underground workers from elsewhere in Canada due to the lack of necessary skills and experience in the Yukon workforce.

Indicator #19 Average and distributed household income

Average household incomes and the distribution of household incomes reflect relative material wealth within the community. Figure 5-17 compares the average and median household incomes in Pelly Crossing with Yukon as a whole.

Figure 5-17. Average and median household income (\$), Pelly Crossing and Yukon: 2001, 2006 and 2011



Source: Statistics Canada 2001 Census Catalogue no. 95F0181XDB96001; 2006 Census Catalogue no. 94-578-XCB2006002; 2011 NHS Semi-custom profile NHS2011_Can_PR_CD_CSD_DA

Notes on Figure 5-17:

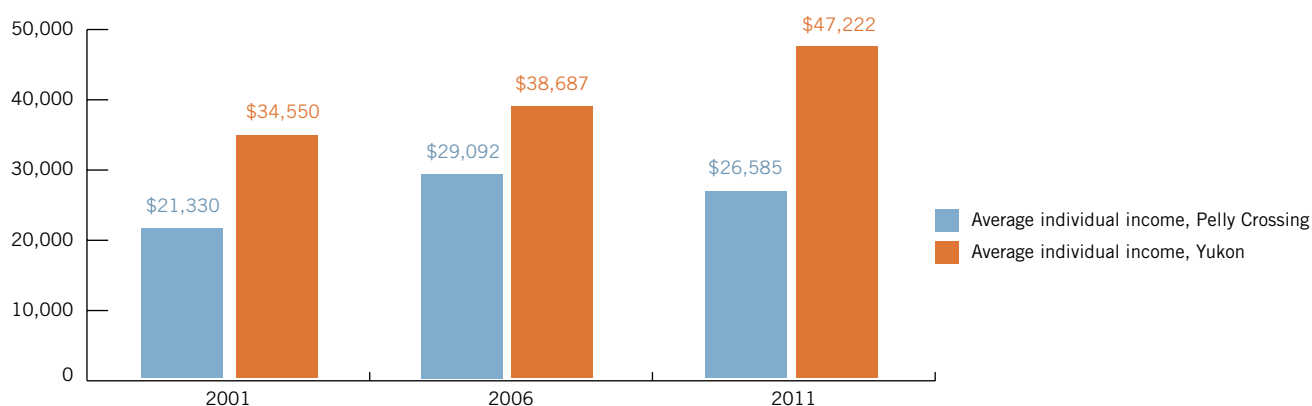
- Both average and median household incomes are lower in Pelly Crossing than in Yukon as a whole.
- The Pelly Crossing median household income for 2011 must be treated with caution. Pelly Crossing had a much lower response rate to the 2011 National Household Survey than Yukon as a whole (see Section 1.3). It is unlikely that median household income in Pelly Crossing remained flat over five years while median household income grew by 26% in Yukon as a whole.
- Although average household income in Pelly Crossing was lower than that of Yukon, it grew faster than the Yukon average household income between 2001 and 2006 (32% versus 19%).

One way of looking at the distribution of household income in a community is to examine the difference between average and median household income. The median is the midpoint: exactly half of all households make more than that amount and half make less. In most communities, average income is higher than median income. A large gap between average income and median income generally indicates a less equal distribution of income. It means that a small number of high-income households are pulling the average income higher.

Indicator #20 Average and distributed personal income

Indicator #20 reflects relative material wealth within the community, but at the individual rather than the household level. Figure 5-18 shows the average individual incomes for Yukon and Pelly Crossing as reported by the Census in 2001 and 2006 and the National Household Survey in 2011.

Figure 5-18. Average individual incomes, Pelly Crossing and Yukon: 2001, 2006 and 2011



Source: Statistics Canada 2001 Census Catalogue no. 95F0181XDB96001; 2006 Census Catalogue no. 94-578-XCB2006002; 2011 NHS Semi-custom profile NHS2011_Can_PR_CD_CSD_DA

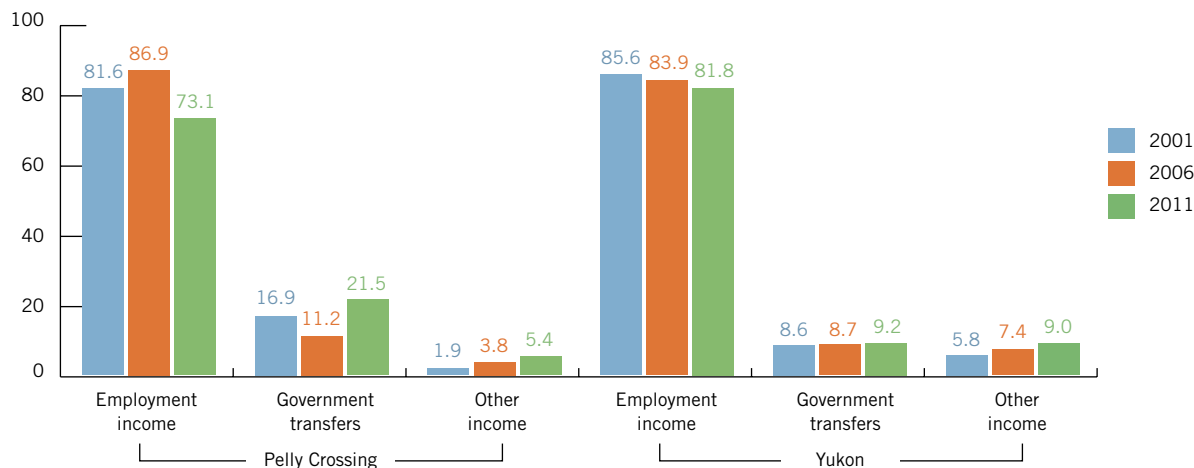
Notes on Figure 5-18:

- Average individual Yukon income increased by 12% between 2001 and 2006 and then by 22% from 2006 to 2011.
- Average individual income in Pelly Crossing was consistently lower than the Yukon average.
- The 2011 National Household Survey shows average personal income declining in Pelly Crossing in 2011 compared to 2006. The decrease is likely to be the result of a low response rate in Pelly Crossing, rather than an actual decline in income, and is suspect (see Section 1.3 for details).

Indicator #21 Income by source

This indicator reflects levels of dependency on various income sources within the community. Figure 5-19 shows the breakdown of income by source: employment (including self-employment), government transfers of all kinds (including Canada Pension Plan and Employment Insurance), and all other income (mostly investment income).

Figure 5-19. Sources of income, Pelly Crossing and Yukon: 2001, 2006 and 2011



Source: Statistics Canada 2001 Census Catalogue no. 95F0181XDB96001; 2006 Census Catalogue no. 94-578-XCB2006002; 2011 NHS Semi-custom profile NHS2011_Can_PR_CD_CSD_DA

Notes on Figure 5-19:

- There has been a general downward trend in employment income as a percentage of total income in Yukon, along with a general upward trend in other income. This overall trend may reflect an aging population.
- There is a general upward trend in other income for Pelly Crossing.

Photo: Minto Explorations Ltd.



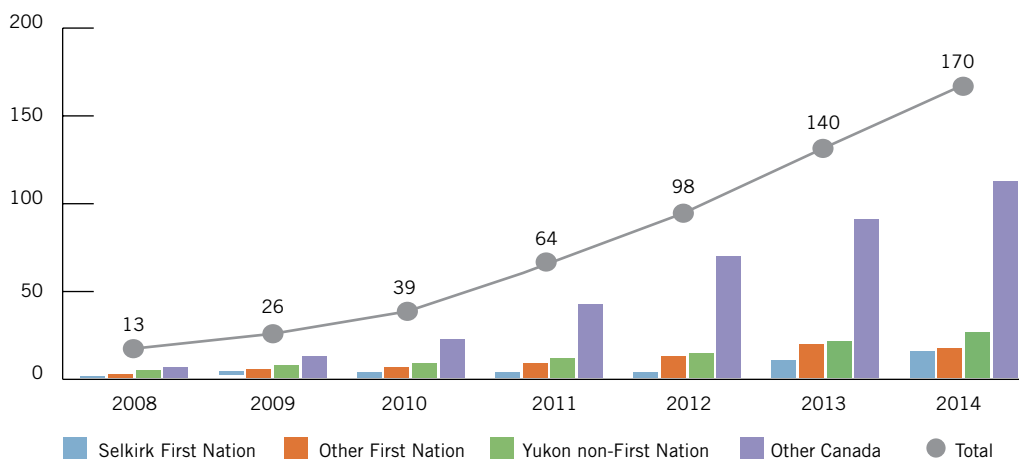
5.6 Employment

Employment is one of the sixteen selected Valued Conditions of the monitoring program. This section presents the available data for Indicator #23 (Minto's northern employment by group); Indicator #24 (Minto's northern employment by residency); Indicator #25 (Employment by contractors), Indicator #26 (Minto new hires for operations by group); Indicator #27 (Minto employment by job category and group); Indicator #28 (Employment rate); Indicator #29 (Unemployment rate); Indicator #30 (Participation rate); and Indicator #31 (Employment by sector).

Indicator #23 Minto employment by group

This indicator is intended to measure Minto employment by group: Selkirk First Nation, other First Nation, Yukon non-First Nation, and other (Canada).

Figure 5-20. Minto employee counts by group: 2008–2014



Source: Minto Explorations Ltd.

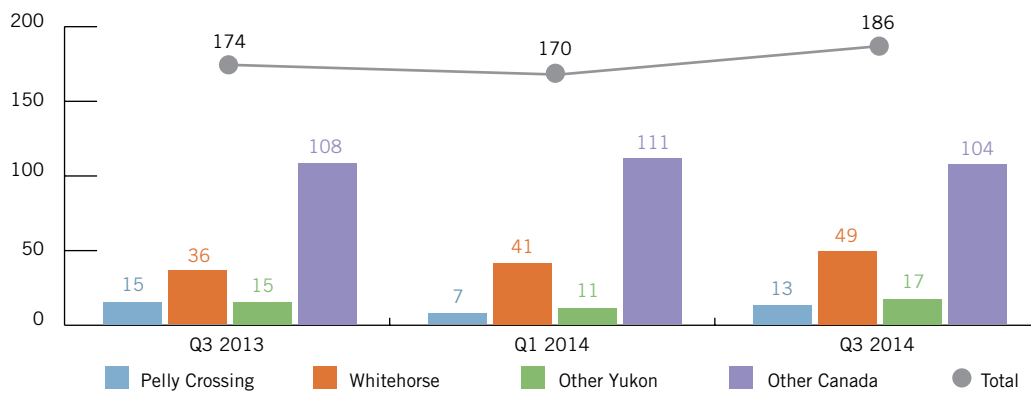
Notes on Figure 5-20

- Employment counts shown are for January of each year and include only direct hires by Minto.
- The numbers of SFN citizens, other First Nation citizens and non-First Nation Yukon employees show rising trends, but the majority of employees continue to be people from outside the territory.

Indicator #24 Minto employment by residency

This indicator is intended to measure Minto employment by residency: Pelly Crossing, Whitehorse, Yukon and Canada.

Figure 5-21. Minto employee counts by residency: Q3 2013–Q3 2014



Source: Minto Explorations Ltd.

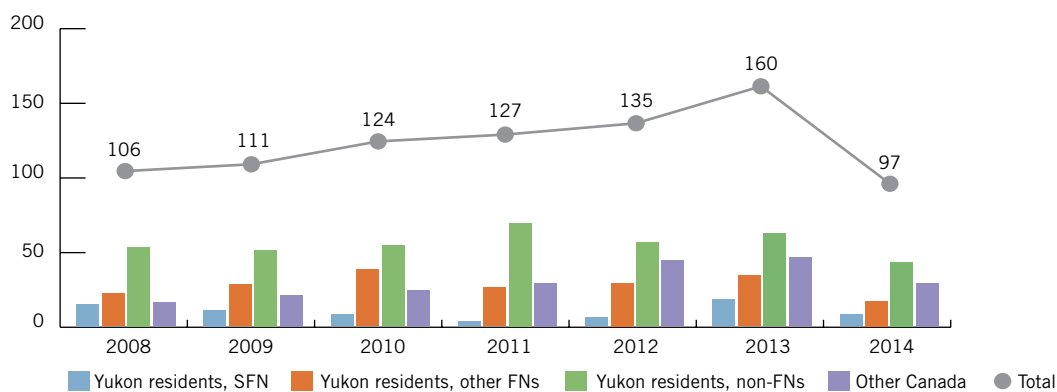
Notes on Figure 5-21:

- Approximately 35–40% of Minto Explorations Ltd. employees live in Yukon.
- Pelly Crossing residents make up approximately 4.1% to 8.6% of the company's employees.
- Whitehorse residents have varied between 21% and 28% of the company's employees.
- In 2014 a total of 20 SFN citizens living in any location were employed by Minto Explorations Ltd.

Indicator #25 Employment by contractors

This indicator measures employment by residency of the mine's major contractors.

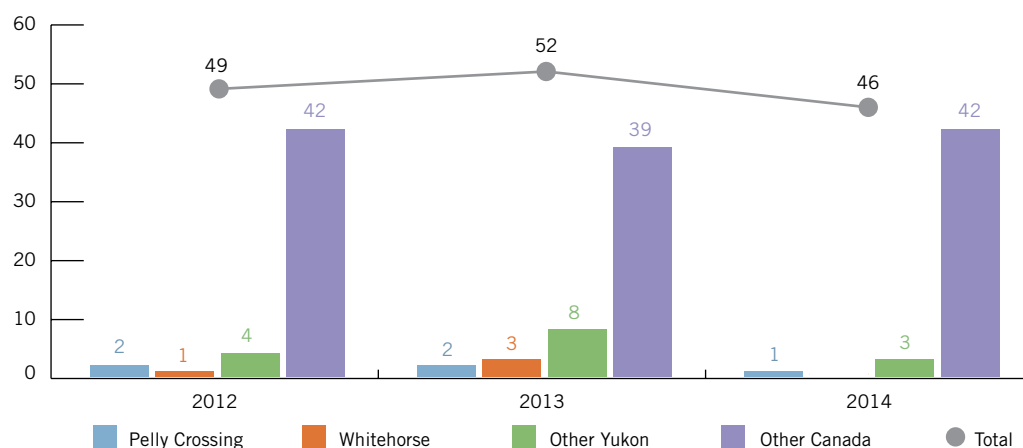
Figure 5-22. Surface mining contractor employee counts by group and residency: 2008–2014



Source: Minto Explorations Ltd.

Notes on Figure 5-22:

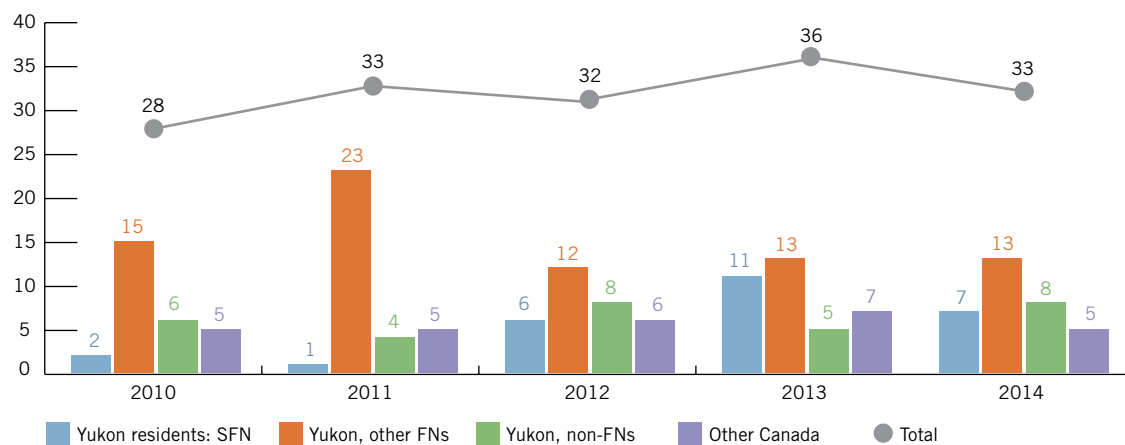
- The sharp drop in employment in 2014 reflects the partial suspension of surface mining.
- Selkirk First Nation citizens have made up between 2% and 14% of the surface mining contractor's employees at the Minto Mine over the past seven years, with 8% being the average.
- Overall, First Nation employees have made up 32% of the company's Minto Mine workforce on average from 2008–2014.
- Yukon residents have made up 75% of the company's employees on average.

Figure 5-23. Underground mining contractor employee counts by residency: 2012–2014

Source: Minto Explorations Ltd.

Note on Figure 5-23:

- From 75 to 91% of the underground contractor's employees live outside Yukon. The underground contractor relies heavily on underground workers from elsewhere in Canada due to the lack of necessary skills and experience of the Yukon workforce.

Figure 5-24. Camp contractor employee counts by group and residency: 2010–2014

Source: Minto Explorations Ltd.

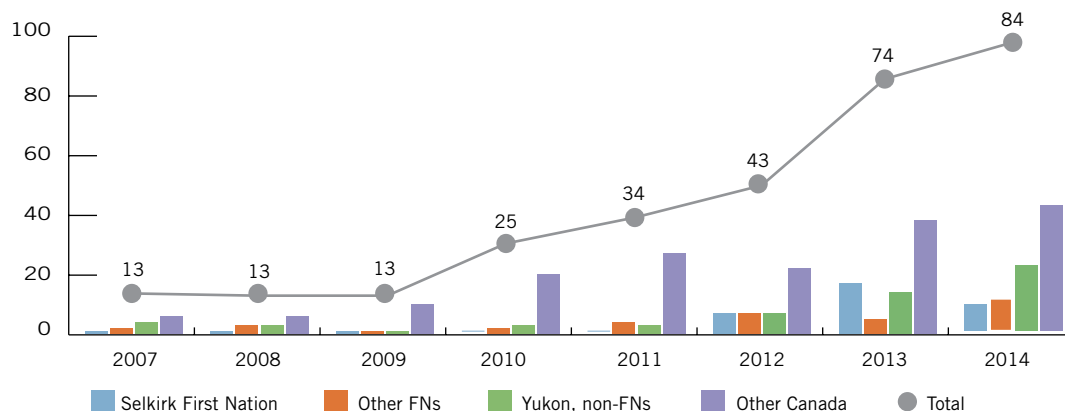
Notes on Figure 5-24:

- On average, more than 80% of the camp contractor's employees have been Yukon residents over the past five years in each year.
- Yukon First Nation citizens have made up the majority of employees in each of the five years.

Indicator #26 Minto new hires for operations by group

This indicator measures new hires by group — SFN, other First Nations, Yukon non-First Nations, and all other (Canada). Hiring decisions are driven by the balance between a number of factors such as the availability of the skills and experience required; the ability and willingness of the employer to take on trainee employees; the costs associated with the hire (e.g., fly-in employees versus local); and the ability of new hires to pass the industry-standard employment screening.

Figure 5-25. Minto new hires by group: 2007–2014



Source: Minto Explorations Ltd.

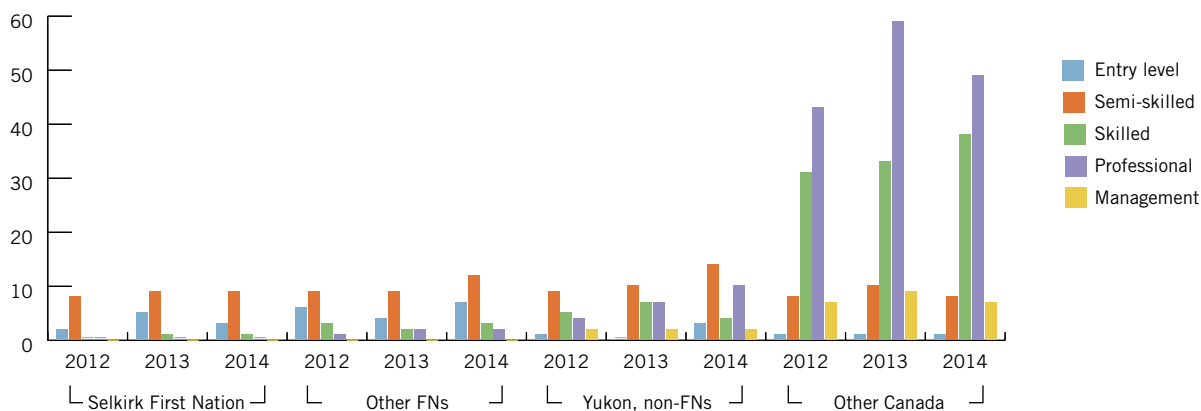
Note on Figure 5-25:

- SFN new hires occurred primarily from 2012 on.

Indicator #27 Minto employment by job category and group

This indicator measures employment by Minto according to job category: entry level, semi-skilled, skilled, professional and management.

Figure 5-26. Minto employment by group and job category: 2012–2014



Source: Minto Explorations Ltd.

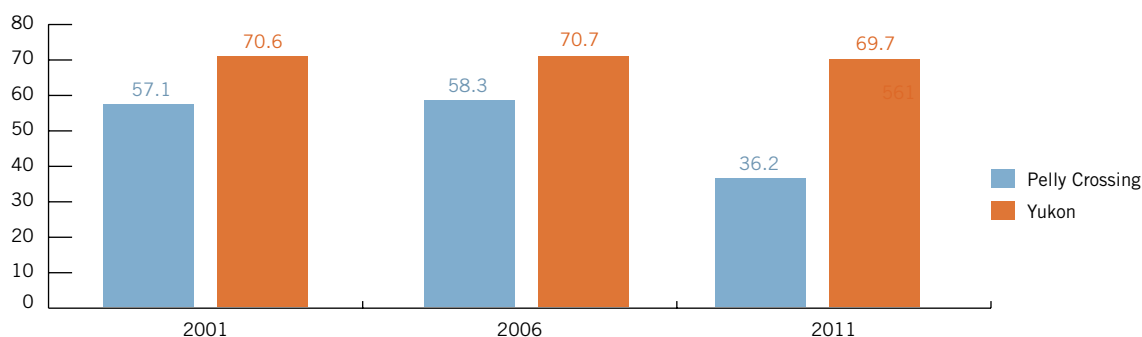
Notes on Figure 5-26:

- Selkirk First Nation and other First Nations employees are primarily in entry-level and semi-skilled positions.
- Yukon non-First Nations employees are represented in all categories of employment.
- The skilled, professional and management job categories are primarily held by employees from outside Yukon.

Indicator #28 Employment rate

The employment rate is the percentage of the labour force that is employed. The labour force is defined as those aged 15 years and over who are either working or actively looking for work. Figure 5-27 compares the employment rates for Pelly Crossing to the Yukon rates for the Census years 2001 and 2006 and the National Household Survey year of 2011.

Figure 5-27. Labour force employment rate (%), Pelly Crossing and Yukon: 2001, 2006 and 2011



Source: Statistics Canada 2001 Census Catalogue no. 95F0181XDB96001; 2006 Census Catalogue no. 94-578-XCB2006002; 2011 NHS Semi-custom profile NHS2011_Can_PR_CD_CSD_DA

Notes on Figure 5-27:

- The Yukon employment rate has remained largely unchanged between 2001 and 2011.
- The employment rate for Pelly Crossing was significantly lower than Yukon in 2001 and 2006, but was also largely unchanged over that period.
- The apparent sharp decline in the employment rate in Pelly Crossing as found in the 2011 National Household Survey is unlikely to have actually occurred as shown. It may be a result of data quality issues in the 2011 survey (see Section 1.3).

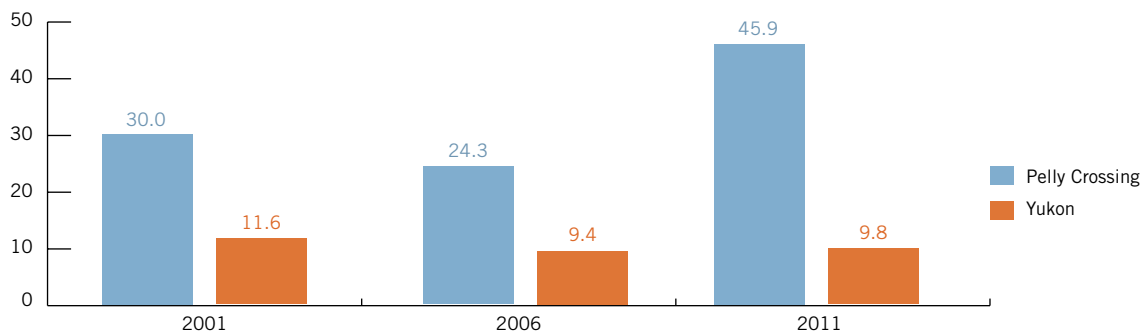
Minto Mine site. Photo: Minto Explorations Ltd.



Indicator #29 Unemployment rate

The unemployment rate is the percentage of the labour force that is not employed but is actively looking for work. Figure 5-28 compares the unemployment rates for Pelly Crossing to the Yukon rates for the Census years 2001 and 2006 and the National Household Survey year of 2011.

Figure 5-28. Unemployment rate (%), Pelly Crossing and Yukon: 2001, 2006 and 2011



Source: Statistics Canada 2001 Census Catalogue no. 95F0181XDB96001; 2006 Census Catalogue no. 94-578-XCB2006002; 2011 NHS Semi-custom profile NHS2011_Can_PR_CD_CSD_DA

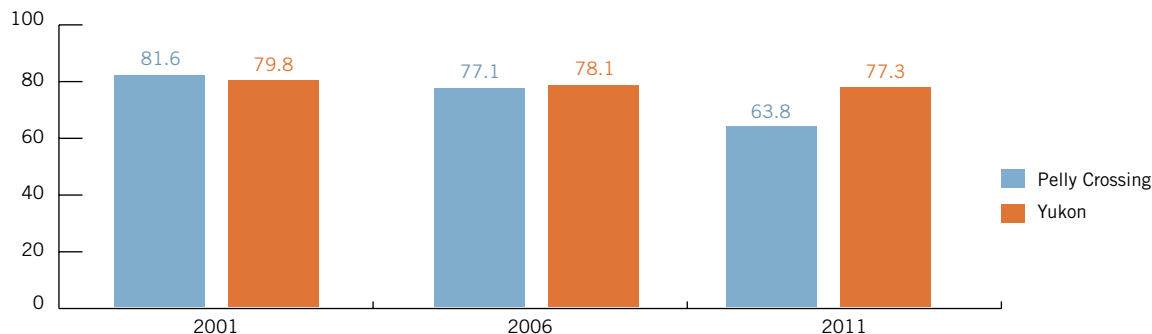
Notes on Figure 5-28:

- The Yukon unemployment rate decreased between 2001 and 2011.
- The unemployment rate for Pelly Crossing was considerably higher than the Yukon rate in 2001 and 2006, but showed a drop between those years.
- The apparent increase in the unemployment rate in Pelly Crossing as found in the 2011 National Household Survey is unlikely to have actually occurred as shown. It may be a result of data quality issues in the 2011 survey (see Section 1.3).

Indicator #30 Participation rate

The labour force participation rate is defined as the proportion of the population aged 15 years and over who are either employed or are unemployed but actively looking for work. These people make up the labour force. Figure 5-29 compares the labour force participation rates for Pelly Crossing to the Yukon rates for the Census years 2001 and 2006 and the National Household Survey year of 2011.

Figure 5-29. Labour force participation rate (%), Pelly Crossing and Yukon: 2001, 2006 and 2011



Source: Statistics Canada 2001 Census Catalogue no. 95F0181XDB96001; 2006 Census Catalogue no. 94-578-XCB2006002; 2011 NHS Semi-custom profile NHS2011_Can_PR_CD_CSD_DA

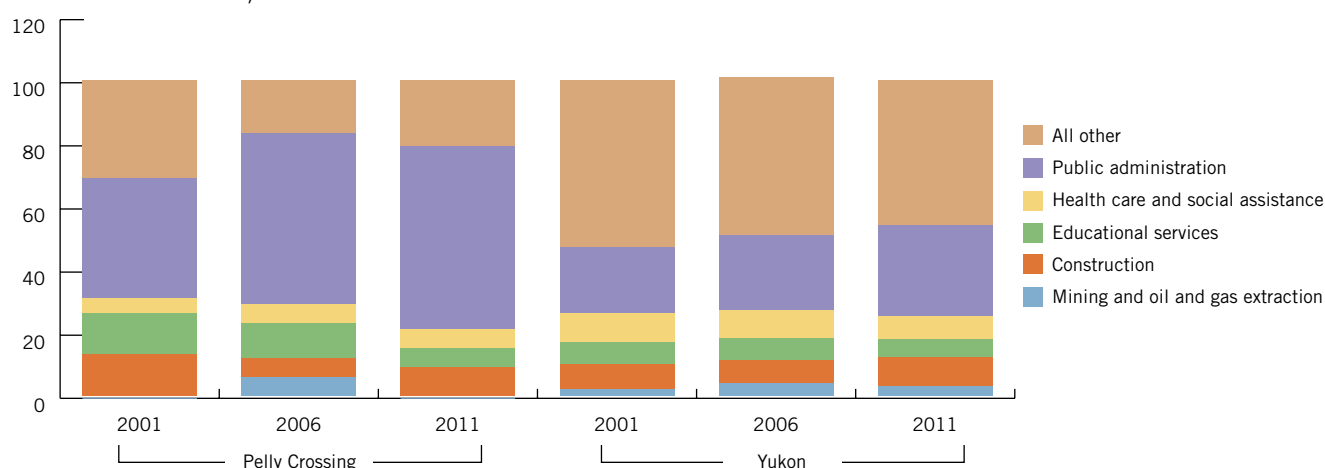
Note on Figure 5-29:

- Pelly Crossing's participation rate was effectively equal to the Yukon's in 2001 and 2006 before apparently declining in 2011. This apparent decline, as found in the 2011 National Household Survey, is unlikely to have actually occurred as shown. It may be a result of data quality issues in the 2011 National Household Survey (see Section 1.3 for details).

Indicator #32 Employment by sector

This indicator tracks employment preferences and capacity within the overall level of economic participation of the community. Figure 5-30 shows the employment by selected industries for Pelly Crossing and Yukon, as found by the 2001 and 2006 Census and the 2011 National Household Survey.

Figure 5-30. Percentage of the active labour force in selected industries, Pelly Crossing and Yukon: 2001, 2006 and 2011



Source: Statistics Canada 2001 Census Catalogue no. 95F0181XDB96001; 2006 Census Catalogue no. 94-578-XCB2006002; 2011 NHS Semi-custom profile NHS2011_Can_PR_CD_CSD_DA

Notes on Figure 5-30:

- Public administration is the single largest industry for Yukon as a whole. It is especially dominant in Pelly Crossing, where its share has been growing to the extent that it now employs over half of the active labour force. This may be due in part to the evolution of SFN self-government.
- Labour force participation in the mining sector in Pelly Crossing coincides with the commencement of Mine mine operations.
- Although 2001 and 2006 census data are comparable, the 2011 estimates for Pelly Crossing are less reliable due to data quality issues in the 2011 National Household Survey (see Section 1.3 for details).

5.7 Business

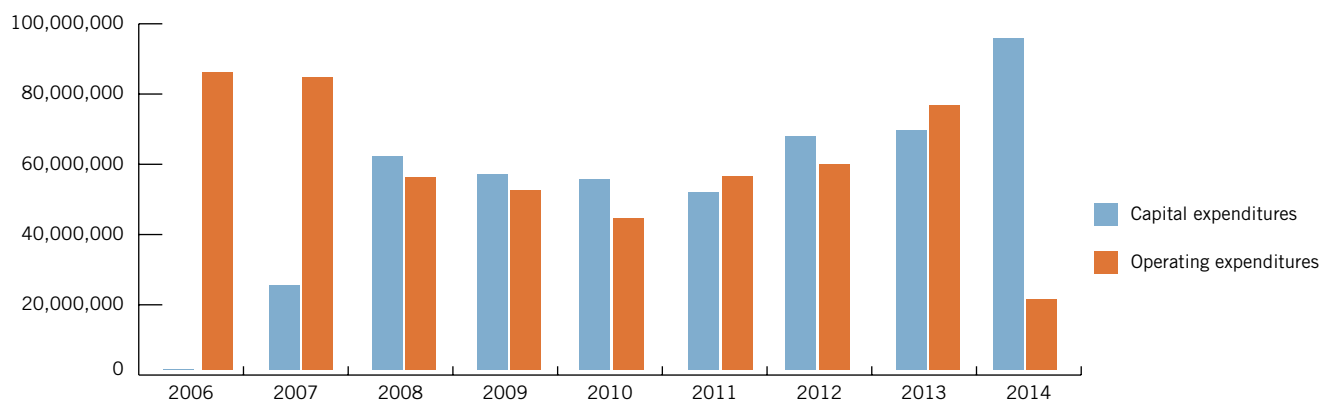
Business is one of the sixteen selected Valued Conditions of the monitoring program. This section presents the available data for Indicator #33 (Minto Mine operations and capital expenditures by group); Indicator #34 (Minto annual and cumulative capital and operations expenditures by group); Indicator #35 (Minto spending on Yukon vendors); Indicator #36 (Minto royalty payments); Indicator #37 (Minto property tax payments and other fees); and Indicator #38 (Minto and contractors safety statistics).

As part of Minto and Selkirk First Nation's cooperation agreement, the company is required to provide preferred opportunity notification to SFN to negotiate and potentially be awarded a contract to satisfy the requirement. SFN has developed partnerships with a number of Minto's vendors; Minto is not privy to the details of those financial benefits. Therefore, this section does not present expenditures that result from those partnerships.

Indicator #33 Minto operations and capital expenditures by group

This indicator helps measure direct expenditure impacts. Minto could not provide these data broken out by group, but annual total capital and operating expenditures are shown in Figure 5-31.

Figure 5-31. Minto Mine operating and capital expenditures (\$): 2006–2014



Source: Minto Explorations Ltd.

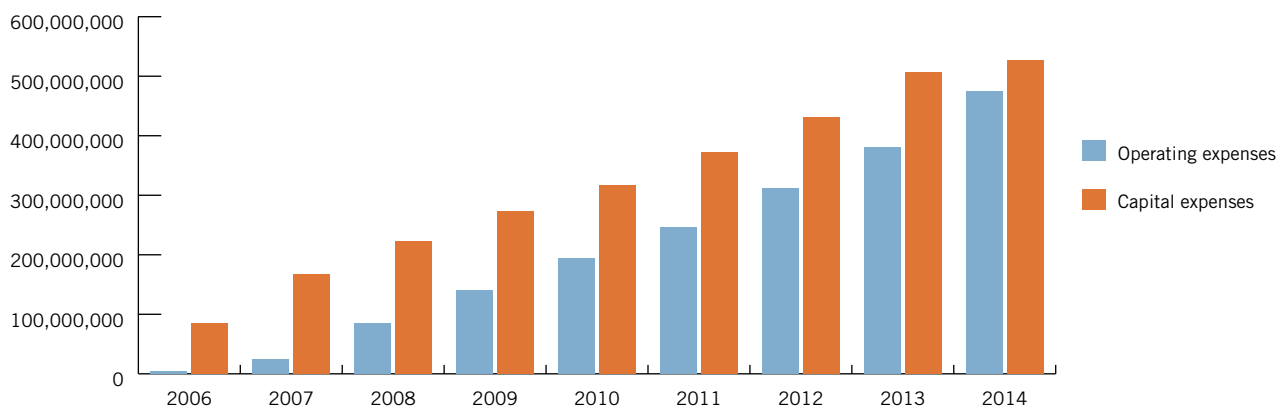
Notes on Figure 5-31:

- Capital expenditures rose from 2011 to 2013 as a result of the underground and open-pit development at the site and camp expansion, and decreased significantly in 2014.
- Higher operating expenditures are typically associated with periods of higher mining rates. Operating expenditures rose from 2011 to 2013 and decreased in 2014.

Indicator #34 Minto annual and cumulative capital and operations expenditures by group

This indicator helps measure direct expenditure impacts. Minto could not provide these data broken out by group, but the cumulative totals of capital and operating expenditures (including payments to all contractors by Minto) are shown in Figure 5-32.

Figure 5-32. Minto Mine cumulative operating and capital expenses (\$): 2006–2014



Source: Minto Explorations Ltd.

Notes on Figure 5-32:

- Operating expenses for 2006 were \$186,650.
- Combined capital and operating expenses between 2006 and 2014 totalled \$1,000,651,811.

Indicator #35 Minto spending on Yukon vendors

This indicator measures direct expenditure impacts on Yukon businesses, broken out between Pelly Crossing and Yukon as a whole.

Figure 5-33. Minto Mine payments to business vendors (\$), Pelly Crossing and Yukon: 2013 and 2014

	2013	2014	Total
Pelly Crossing	66,391	34,563	100,954
Other Yukon	74,942,535	55,763,720	130,706,255
Total	75,008,926	55,798,283	130,807,209

Source: Minto Explorations Ltd.

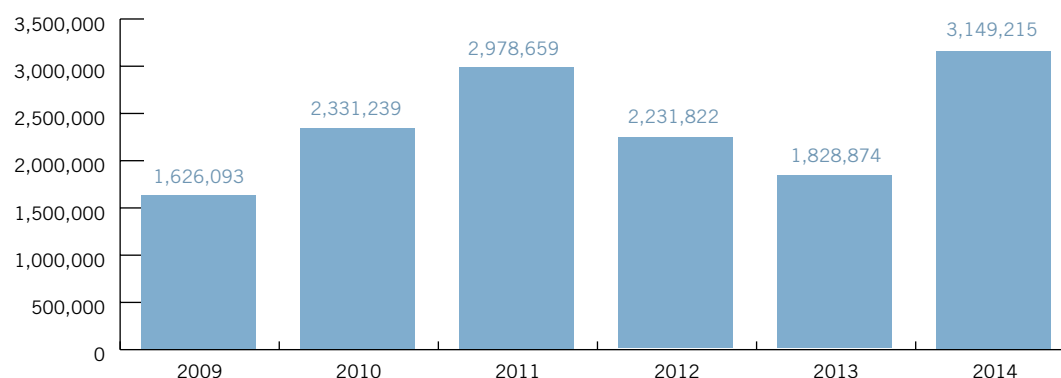
Notes on Figure 5-33:

- This figure includes payments only to business vendors (including Crown and development corporations); it does not include payments to any level of government.
- Payments to Selkirk Development Corporation have been captured in the “Other Yukon” category because of where the business is registered.
- Only 0.1% of payments are to Pelly Crossing vendors, likely due to the very small business sector in Pelly Crossing.

Indicator #36 Minto royalty payments

Royalty payments are often a significant source of revenue to governments. This is especially true for Selkirk First Nation; it receives the mineral royalties paid by Minto since the mine is located on Category A settlement land (where the First Nation holds both surface and subsurface rights). YG has a profit-based, sliding-scale royalty regime. This results in highly variable payments depending on a mine’s size, profitability and the amount in eligible expenses the mine operator can deduct against royalties in a given year. SFN received two types of royalties: a net sales royalty (see Figure 5-34, below) and the royalty associated with the *Quartz Mining Act* Royalty Regulation (see Figure 5-36, page 40). Figure 34 shows Minto’s net sales royalty expense from 2009 to 2014.

Figure 5-34. Net sales royalty expense, Minto Mine (\$): 2009–2014



Source: Minto Explorations Ltd.

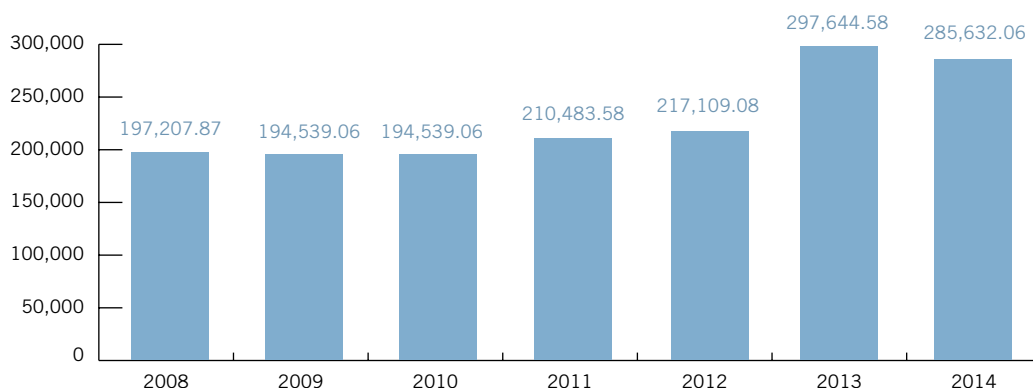
Note on Figure 5-34:

- Royalty expense is recorded in accordance with international financial reporting standards.

Indicator #37 Minto property tax payments and other fees

Minto pays property taxes to YG, and these form one part of government revenue gained from the operation. Figure 5-35 shows the annual property taxes paid by Minto to YG. Figure 5-36 shows the annual *Quartz Mining Act* (QMA) royalty payments made by Minto from 2008 to 2014. Other fees exist that have not been presented in this report.

Figure 5-35. Property taxes paid by the Minto Mine (\$): 2008–2014

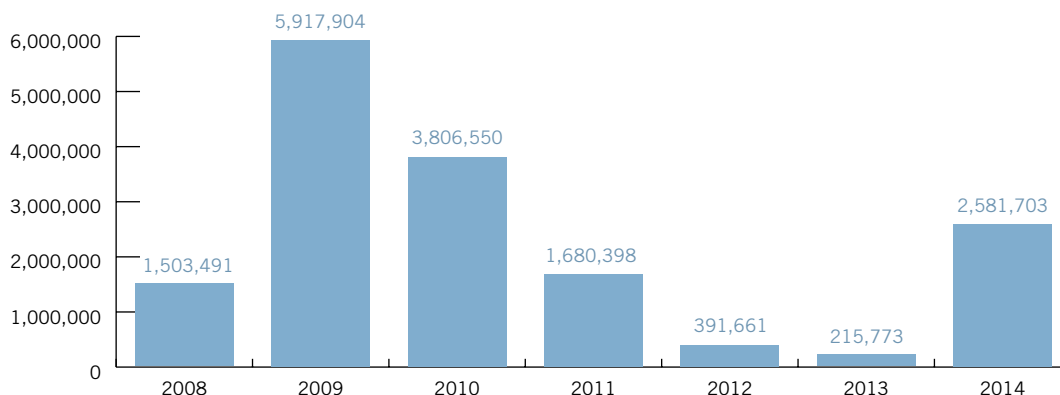


Source: Minto Explorations Ltd.

Note on Figure 5-35:

- A total of \$1,597,155.29 in property taxes was paid over the seven-year period.

Figure 5-36. *Quartz Mining Act* (QMA) royalty payments, Minto Mine (\$): 2008–2014



Source: Minto Explorations Ltd.

Notes on Figure 5-36:

- Net sales royalty expense for 2009 to 2014 is shown in Figure 5-34 (page 39).
- The total QMA royalty paid from 2008 to 2014 was \$16,097,480.

Indicator #38 Minto and contractors safety

Note that this is the same as Indicator #10. It is included here to complete the business-valued component set of indicators. Work-related injuries come with high costs in both health and financial terms for workers and their families, for the employer and for society as a whole (see Figure 5-7).

5.8 Selkirk First Nation Traditional Economy

Traditional economic activities — hunting, fishing, gathering and trapping — are an important part of life for Selkirk First Nation citizens. Published data on these activities is sparse at best and usually nonexistent. All of the indicators (#39–#41) for this Valued Condition depend on data from the SFN household survey, which will be provided in the 2015 annual report. The list of Valued Conditions and Socio-economic Indicators can be found in Appendix 1.

Whenever practical, Minto accommodates employees' requests for time off to pursue traditional activities. In addition, Minto works with SFN to accommodate requests to use the mine access road and the barge for hunting, trapping, berry picking and wood cutting.

5.9 Employment and Workforce Development

This Valued Condition employment and workforce development describes commitments to employment and labour force development.

Indicator #42 High-level description of initiatives to enhance skills and labour force development

Since 2007 Minto has steadily expanded its training to enhance the skills of its workforce. Much of this skills training is transferable to other mining operations and more broadly to other industries as well. Safety training ranges from working with hazardous materials and working in confined spaces to Red Cross first aid courses and First Line Supervisor Certification by the Yukon Workers' Compensation Health and Safety Board. The Emergency Response Team collectively trains for thousands of hours annually.

Indicator #43 Detailed description of initiatives to enhance skills and labour force development

Minto undertakes several initiatives to enhance skills and labour-force development. These initiatives include formal and informal approaches that are well suited to meet a range of needs and that reflect the requirements of a local work force. They are largely tracked in an informal way. In the absence of formal tracking and agreements, the general strategy is for management to review various initiatives, receive input from the community and from SFN's Minto Employment Liaison, and use management discretion to make decisions regarding skill development.

Minto's Human Resources Department works with the SFN Minto Employment Liaison, based in Pelly Crossing, regarding matters as established in the Cooperation Agreement pertaining to preferential hiring for citizens of SFN, Little Salmon Carmacks First Nation and First Nation of Na-Cho Nyak Dun.

Minto funds the SFN Minto Employment Liaison position through the Selkirk Development Corp. All position vacancies are sent to the Employee Liaison, who advertises them in the community and sends resumes and applications to Minto Human Resources and hiring departments of contractors. Minto, together with its contractors, conducts job fairs in the community throughout the year and to meet hiring needs.

Minto works with Yukon College and local schools and high schools to facilitate mine site tours for students. It has various partnerships with the Yukon College to support the Underground Mine Training, Introduction to Mining, Surface Mine Training and First Line Supervisor training programs.

Heavy equipment operator training

In 2014, Minto partnered with SFN, Pelly Construction and Yukon College to offer a Heavy Equipment Operator course at Minto Mine. Ten SFN students from Pelly Crossing entered the program and received the training; all ten graduated. Several of the students received positions with Pelly Construction as heavy equipment operators at the Minto Mine.

This pilot program is the result of an effort spearheaded by SFN Chief Kevin McGinty in collaboration with Pelly Construction, the Centre for Northern Innovation and Mining and the Northern Adult Basic Education (NABE) program at Yukon College, and the Yukon Mine Training Association. The goal is to help SFN citizens gain employment in the mine or in the construction industry.

Following several weeks of theory in the classroom, the ten students split their time between hands-on training in the mine simulators stationed at the Pelly Crossing Campus and training at the Minto Mine site. The program included classroom instruction in theory and life skills by Yukon College instructors, complemented by several hours operating equipment in the mine training simulator with instructors from the University of Alaska on secondment to Yukon College. It also included work experience at the Minto Mine site under the guidance of Pelly Construction's Superintendent.

Pre-apprenticeship training

Minto has partnered with Yukon College to offer upgrading training and skills for SFN employees who are interested in apprenticeship programs but need further education in science and math.

Apprenticeship training

Minto currently has four apprenticeship positions: warehouse staff, two millwrights, and an electrician. Other apprenticeship programs are available and Minto works with the Employee Liaison to identify interested candidates. It has been challenging for Minto to find interested candidates with the skills needed.

Cross-training and job rotation

Minto offers opportunities for on-the-job training; employees rotate among various jobs within the organization, performing a range of tasks. This program offers opportunities for cross-training and skill enhancement. The benefits include increased skills, which create new opportunities for employees and hone in on employee interests.

Programs for SFN students and summer students

Minto supports and encourages education in the community, offers bursaries to all SFN graduates, attends the graduation ceremony and offers summer employment to SFN students. The summer student program has been active since 2007; more than forty students have participated. The intent of the summer student program is to offer employment to interested students that showcases mining-related jobs and encourage education within the community.

In an effort to make the school a welcoming place for students, Minto has also supported the renovation of the Eliza Van Bibber school senior student lounge to offer high school students a place to study. The renovations included furniture, small appliances and painting.

Business partnerships

Minto has a commitment to approach SFN before engaging with any suppliers to ensure that SFN bidders are considered first. The majority of third-party contracts are with SFN Preferred Vendors

(drilling, site services, etc.). SFN also has agreements with other companies that result in economic benefits. The contracts with suppliers include opportunities for employment and training for qualified SFN candidates.

In summary, Minto will continue to offer pre-apprenticeship, apprenticeships and on-the-job cross-training programs that provide lasting benefits to the community. Minto supports training opportunities for local residents to enhance skills and labour-force development, and supports health-care programs and investment in the community.

Indicator #44 Description of partnership arrangements to enhance skills and labour force development

Although Minto has no formal partnerships in place to enhance skills and the labour force, it is working with other organisations (as described in Indicator #43) to enhance skills and employment. These organisations include SFN, the Yukon Mine Training Association, and Yukon College.

5.10 Education and Training

This Valued Condition measures level of education, which indicates work-force capacity.

Indicator #46 Highest level of education, individuals of work-force age

The highest level of schooling obtained by adults of work-force age (i.e., 15 and older) is an indicator of the community's work force capacity. The data available for this indicator is not sufficiently reliable to establish a trend and is not presented. The SFN household survey may shed more light on the level of education indicator; that data will be available for the 2015 annual report.

Yukon Learn class in Pelly Crossing. Photo: Selkirk First Nation



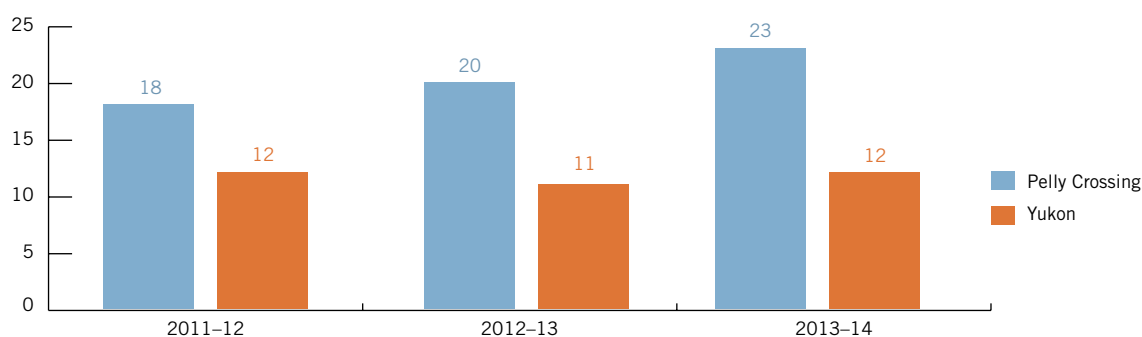
Indicator #47 High school diploma, individuals of work-force age

The number of individuals of work-force age with high school diplomas is an indicator of labour force capacity. The data available for this indicator is not sufficiently reliable to establish a trend and is not presented. The SFN household survey may reveal more information about the high school diploma indicator; that data will be available for the 2015 annual report.

Indicator #48 School absenteeism

School absenteeism rates are an indicator of the value placed on formal education by individuals and the community. School absenteeism in Pelly Crossing is significantly higher than for Yukon as a whole and shows an upward three-year trend through to the 2013–14 school year. Figure 5-37 compares the school absenteeism rate for the Eliza Van Bibber School in Pelly Crossing with the rate for Yukon as a whole. Rates were calculated using the total number of absence days supplied by Yukon Education as a percentage of total student-instructional days (the number of students enrolled in June of each school year multiplied by the number of instructional days).

Figure 5-37. School absenteeism rate (%), Pelly Crossing and Yukon, 2011–12 to 2013–14



Source: Yukon Department of Education

Note on Figure 5-37:

- Yukon school absenteeism has been steady over the three periods.
- School absenteeism in Pelly Crossing is higher than for Yukon as a whole and shows an upward trend.

5.11 Connection to Land and Water

This Valued Condition is central to Selkirk First Nation culture and to the maintenance of traditional knowledge. All of the indicators (#50–#52) for this Valued Condition depend on data from the SFN household survey, which will be presented in the 2015 annual report.

5.12 Cultural Vitality

This Valued Condition includes information related to traditional food use and language. The Indicators (#53–#55) for this Valued Condition depend on data from the SFN household survey, which will be presented in the 2015 annual report.

5.13 Social Cohesion

This Valued Condition includes initiatives by Minto to protect Selkirk First Nation cultural and community well-being. The indicators for the social cohesion Valued Condition (#57–#59) depend on data from the SFN household survey, which will be presented in the 2015 annual report.

Indicator #56 Description of initiatives by Minto to protect SFN cultural and community well-being

This indicator describes the commitments of the Minto Mine to the maintenance of social cohesion within Selkirk First Nation. As described in Section 5.8, Minto works with SFN to support traditional activities. In addition, Minto makes contributions to SFN's cultural and community well-being, primarily through donations to the community and community events.

These are some of the initiatives carried out in 2014:

- **Tent Revival Meeting:** As requested by the community, Minto contributed to covering costs for meals and gas mileage for the ministry team travelling from Pincher Creek, Alberta to Pelly Crossing.
- **Native Spiritual Voices:** This non-profit organization teaches and promotes traditional knowledge and healing practices.
- **Fish Contribution:** Minto partnered with Casino Mining Corp. to provide sockeye salmon to SFN citizens in order to maintain traditional foods, in response to the closure of the local fishery.

Minto recognizes the value of sports and regularly visits Pelly Crossing during the season to play hockey, provides contributions to hockey tournaments, and sponsors sporting events and activities.

5.14 Fate Control and Preparedness

This Valued Condition reflects the ability and capacity of Minto, SFN and YG to manage and control project-induced changes and impacts. These include both positive effects (employment, business opportunities, cash management, etc.) and negative effects (loss of harvest areas, substance abuse, cash management, etc.). This is an important condition, since it affects long-term project outcomes. Information on Indicators #60 and #61 for this Valued Condition is expected to be gathered during round-table discussions and in the 2015 SFN household survey. Results will be included in future reports.

5.15 Boom/Bust Management

This Valued Condition refers to the ability of Minto, SFN and YG to manage the socio-economic effects of unexpected long-term shutdowns of the mine's operations as well as permanent closure. Boom/bust refers to socio-economic conditions of sudden growth and equally sudden downturns; these are characteristic of many resource sectors and commodity-based economies.

Indicator #62 Adjustment measures to manage the socio-economic effects of mine closure

This indicator will identify opportunities, transition plans and commitments to mitigate the socio-economic effects of mine closure. Further information on this indicator is expected to be gathered in future discussions between the parties and included in future reports.

Indicator #63 Relative occupational and industry diversity and strengths in economic activity

This indicator refers to the relative sectoral diversity in the Pelly Crossing and Yukon economies. More sectoral diversity is an indication of a greater ability of the economy to weather boom/bust events by avoiding a narrow and singular reliance on one sector for economic activity. Information on this indicator is provided with Indicator #32 (Employment by sector); see Figure 5-30.

5.16 Costs and Benefits for Future Generations

The Valued Condition costs and benefits for future generations describes mine-related legacy issues, long-term effects, and sustainability.

Indicator #64 Description of matters addressed in Minto-SFN agreements

This indicator highlights several benefits identified in various agreements and arrangements between SFN and Minto. Generally these agreements are not public and therefore details cannot be disclosed; however where information is public it has been included in this annual report (e.g., royalty payments).

Commitments outlined in the cooperation agreement between Minto and SFN include:

- royalty payments;
- communication and meetings between the parties;
- preservation of artefacts;
- company shares distribution;
- community development projects identified as those that have a tangible ongoing benefit, such as a water treatment plant in Pelly Crossing;
- preferred opportunity for vendors and surface providers; and
- employment opportunities.

There are also a number of commitments made in the Minto Landing permit and the surface lease agreements. These include communication commitments, lease/permit fees, and environmental protection standards. Further information on this Valued Condition is expected to be gathered in future discussions between the parties. Results will be included in future reports.

Pelly Crossing artist Eugene Alfred at work. Photo: Selkirk First Nation



6. Recommendations

Based on analysis of the information presented in this report, the TPWG recommends several actions to achieve the following:

1. enhance the overall management of positive and negative socio-economic effects that may result from the mine; and
2. improve the collection of information to enhance the monitoring program.

A low level of confidence in the 2011 NHS data for Pelly Crossing has seriously compromised the analysis of positive and negative trends for a number of local social and economic conditions. It is anticipated that this shortcoming will be addressed with the federal government's announcement to reinstate the mandatory long-form census in 2016.

6.1 Recommendations: Mine Management

The recommendations that follow address initiatives to enhance the overall management of positive and negative socio-economic effects that result from or may result from the mine's operations.

1. Round-table Discussions – As identified in the socio-economic monitoring framework, outlined in the *Minto Mine Socio-economic Monitoring Program: Components, Information and Program Requirements*, round-table discussions (such as focus groups) are a mechanism for addressing Valued Conditions where data do not exist or were deficient, causal factors and findings were inconclusive or further dialogue is needed to understand certain positive or negative effects. Depending on the area of discussion, round-tables may be SFN-specific or joint discussions amongst the Parties.

The 2014 Annual Report suggests several areas where round-table discussions could prove helpful in directly influencing management approaches in a timely manner. The results of round-table discussions would be included in future reports. It should also be noted that the 2015 SFN household survey may also give rise to future round-table discussions.

It is recommended that the TPWG or SFN develop terms of reference for round-tables, with outcomes identified in future reports:

- a. *SFN to convene a round-table discussion on housing during 2016; and*
- b. *SFN to convene a round-table discussion on barriers to employment for SFN citizens wanting to work at the Minto Mine.*

For future consideration, round-tables could also be convened on the following topics:

- Sustainability and legacy round-tables related to:
 - i. resilience of households to manage stresses arising from the Minto Mine and legacy benefits; and
 - ii. preparedness of the Parties to manage project socio-economic:
 - commitments, impacts and risks, and
 - effects of closure.
- Review of key sections in the report to analyze Pelly Crossing data.
- Income, education and employment conditions and trends.
- Matters associated with reclamation and closure planning.

2. Yukon Labour Force Participation – Data in the 2014 Annual Report indicates a heavy reliance on the employment of Outside workers for underground mining operations. This is in marked contrast to the employment of Yukon-based workers for above-ground operations.

It is recommended that YG, working with the appropriate partners, identify measures that would enhance the participation of Yukon's resident workforce in underground mining operations at the Minto Mine. Lead: YG

6.2 Recommendations: Technical Program

The recommendations that follow address areas of improvement for the collection of information that could enhance the overall monitoring program and the achievement of its purposes.

1. Standardized reporting — Operations of the Minto Mine have clearly made a major contribution to Yukon's economy: employment opportunities, the service sector (through direct and indirect expenditures) and both Yukon's and SFN's wealth since mine start-up in 2007. Consistent with the Minto Mine Socio-economic Effects Monitoring Framework, efforts should be made in the next year to improve Minto-related data reporting to better capture the distribution of economic benefits and related impacts. Comparability of employment, income and expenditure data; for example, by Minto and its major subcontractors should give special attention to employment and income by group: aboriginal (SFN; other Yukon FNs; non-Yukon FNs), Yukon non-aboriginal, total Yukon, other Canadian, total); geographic location and residency (e.g., Pelly/Whitehorse/other Yukon/other Canada).

It is recommended that Minto identify requirements for data reporting by existing and new major contractors and communicate these accordingly so that 2015 data and any historical data can be reported appropriately and are available for the 2015 Annual Report. Lead: Minto

2. Training — Training is central to building the capacity and skills of those interested in mine-related employment opportunities. Evaluating the participation of SFN citizens and other Yukoners in training programs that can enhance Minto Mine-related employment can contribute to improvements in program delivery and participation.

It is recommended that Minto attempt to obtain training information and related data undertaken by SFN citizens associated with direct or indirect mine-related work and Yukon data for others working at the Minto Mine since 2007 from available sources such as YG, Yukon College, Yukon Mine Training Association, SFN and any other known partners and incorporated into the 2015 Annual Report. Lead: Minto

It is recommended that SFN contributes any summaries of skills-related inventories, relevant training or education completed/in progress or job readiness surveys since 2007. Lead: SFN

3. Population Health — The 2015 Annual Report will include information on the health status of SFN citizens that is derived from the 2015 SFN community household survey.

It is recommended that SFN provide descriptions of existing health and well-being initiatives to supplement health status information in the 2015 Annual Report. Lead: SFN

4. Mine Benefits — There are mine benefits that flow to SFN that are not documented in the 2014 Annual Report as a result of information that is unavailable for reasons of commercial or contractual confidentiality between Minto and SFN. For example, information about summary values and the types of services associated with vendor contracts with SFN firms could contribute to a more complete benefits picture.

It is recommended that Minto and SFN review and provide any additional information on benefits flowing from the mine to SFN that could be included in the 2015 Annual Report. Lead: Minto + SFN

Appendix 1

Valued Conditions and Socio-economic Indicators

This appendix was adapted from Appendix A of the *Minto Mine Socio-economic Effects Monitoring Program: Program Elements and Information Requirements*.¹³ It contains all of the Valued Conditions, indicators, and expected information sources for those indicators and the rationale for each indicator as they were originally developed by the Tri-Partite Working Group.

Table A-1. Socio-economic conditions monitored in Pelly Crossing and Yukon

Valued Condition	Ind.#	Indicator	Scale and frequency	Data source	Rationale
Living Condition: Population and Health					
Community Stability and Well-being	1	SFN citizens by residency	Pelly/Whse/Yukon: 5 yr	Census; SFN Survey	Reflects life choices affected by local and non-local conditions and proximity to Minto-related opportunities
	2	Duration of residency	Pelly: annual	YBS	Indicative of strength of ties to community
	3	Net migration	Pelly/Whse/Yukon: annual	YG Health	Affects institutional/family stability
	4	SFN reasons for mobility	Pelly/Whse: 5 yr	SFN Survey	Factors affecting mobility: leaving and returning
	5	Crime severity	Pelly/Yukon: annual	Cdn Centre for Justice	Incidence of violent/non-violent crime reflects +/- conditions
Family Stability and Well-being	6	Family structure	Pelly/Whse: 5 yr	Census; SFN Survey	Family membership and frequency of time together reflects relative cohesion
	7	Children in care	Pelly/Whse: 5 yr	SFN administrative data	Reflects family cohesion and capacity
	8	Family violence	Pelly/Whse: annual	Cdn Centre for Justice	Reflects +/- conditions
	9	Frequency of household moves in the last 5 years	Pelly/Whse: 5 yr	SFN Survey	Reflects ties to community, and family stability/stress
Health	10	Minto and contractors safety statistics	Site-wide	Minto Mine	Work-related injury
	11	Mental health and stress	Pelly: 5 yr Pelly: periodic	SFN Survey; SFN Round-table	Reflects core health condition and associated complex conditions based on self-assessment
	12	Addictions	Pelly: 5 yr Pelly: periodic	SFN Survey; SFN Round-table	Reflects conditions of addiction based on perception
	13	Change in health status	Pelly: 5 yr Pelly: periodic	SFN Survey; SFN Round-table	Reflects current general conditions relative to five years earlier based on perception
Housing	14	Core need	Pelly: 5 yr Pelly: periodic	SFN Survey; SFN Round-table	Reflects suitability, adequacy and availability of housing
	15	Condition	Pelly: periodic	SFN Round-table	Reflects quality of stock and state of repairs

Source: Consolidated Minto/SFN/YG information

13. Selkirk First Nation, Government of Yukon and Minto Explorations Ltd. September 10, 2013. *Minto Mine Socio-economic Monitoring Program: Components, Information and Program Requirements*, pp. 14–23.

Valued Condition	Ind.#	Indicator	Scale and frequency	Data source	Rationale
Living Condition: Material Well-being					
Income and Distribution	16	Average employment income by residency	Pelly/Whse/Yukon/Canada: annual	Minto Mine	Direct income impacts
	17	Average employment income by Minto and Contractors	Pelly/Whse/Yukon/Canada: annual	Minto Mine	Direct income impacts
	18	Minto and contractors annual and cumu-lative total employee income by group	Pelly/Yukon/Canada: annual	Minto Mine	Direct and cumulative income impacts
	19	Average and distributed household income	Pelly/Whse/Yukon: 5 yr	Census SFN Survey	Reflects relative material wealth
	20	Average and distributed personal income	Pelly/Whse/Yukon: 5 yr	Census SFN Survey	Reflects relative material wealth
	21	Income by source	Pelly/Whse/Yukon: 5 yr	Census SFN Survey	Reflects dependency/self-reliance from earned and unearned income sources
	22	Number of social assistance cases	Pelly/Whse/Yukon: annual	SFN/YG	Reflects dependency/self-reliance
Employment	23	Minto northern employment by group	Pelly/Yukon/Canada: biannual	Minto Mine	Direct employment impacts
	24	Minto northern employment by residency	Pelly/Whse/Yukon/Canada: biannual	Minto Mine	Direct employment impacts
	25	Employment by contractors	Pelly/Yukon/Canada: biannual	Minto Mine	Direct employment impacts
	26	Minto new hires for operations by group	SFN/Other FN/Yukon/Canada (6 mos)	Minto Mine	Direct employment impacts
	27	Minto employment by job category and group	Management (aboriginal (SFN; others), Yukon non-aboriginal, total Yukon, other Canadian, total): biannual	Minto Mine	Direct employment impacts
			Professional (aboriginal (SFN; others), Yukon non-aboriginal, total Yukon, other Canadian, total): biannual	Minto Mine	Direct employment impacts
			Skilled (aboriginal (SFN; others), Yukon non-aboriginal, total Yukon, other Canadian, total): biannual	Minto Mine	Direct employment impacts
			Semi-skilled (aboriginal (SFN; others), Yukon non-aboriginal, total Yukon, other Canadian, total): biannual	Minto Mine	Direct employment impacts
			Entry-level (aboriginal (SFN; others), Yukon non-aboriginal, total Yukon, other Canadian, total): biannual	Minto Mine	Direct employment impacts
	28	Employment rate	Pelly/Whse/Yukon: annual	YBS	Wage economy participation
	29	Unemployment rate	Pelly/Whse/Yukon: annual	YBS	Wage economy non-participation
	30	Participation rate	Pelly/Whse/Yukon: annual	YBS	Labour force participation and willingness to work
	31	Employment by location and residency	Pelly/Whse: 5 yr	SFN survey	Work site and travel work-travel factors: Pelly, Minto and Whse
	32	Employment by sector	Pelly: 5 yr	Census	Preference and capacity re: economic participation

Valued Condition	Ind.#	Indicator	Scale and frequency	Data source	Rationale
Business	33	Minto Mine operations and capital expenditures by group	Pelly/Yukon/Canada: annual	Minto Mine	Direct expenditure impacts
	34	Minto annual and cumulative capital and operations expenditures by group	Pelly/Yukon/Canada: annual	Minto Mine	Direct expenditure impacts
	35	Yukon business names by group	Pelly/Yukon: annual	Minto Mine	Direct expenditure impacts on a number of Yukon businesses
	36	Minto royalty payments	SFN/Yukon	Minto Mine	Revenues to governments
	37	Minto property tax payments and other fees	SFN/Yukon	Minto Mine	Revenues to governments
	38	Minto and Contractors safety statistics	Site-wide	Minto Mine	Costs for workers, employers and society
SFN Traditional Economy	39	% of workforce aged group engaged in harvesting activities	Pelly/Whse: 5 yr	SFN Survey	Participation, opportunity and preference re: hunting, trapping and fishing
	40	% amount of traditional foods consumed	Pelly/Whse: 5 yr	SFN Survey	Economic contribution to household domestic needs
	41	Satisfaction with availability of traditional foods	Pelly/Whse: 5 yr	SFN Survey	Sufficiency of wildlife resources to meet domestic needs, and harvest access (e.g., time, equipment, money) and sharing arrangements to these resources

Valued Condition	Ind.#	Indicator	Scale and frequency	Data source	Rationale
Living Condition: Capacity, Training and Education					
Employment and Workforce Development	42	High level description of programs, events and initiatives to facilitate and enhance skills development and labour force development through employment and pre-employment undertakings (including SFN-specific information)	Pelly/Yukon: annual	Minto Mine	Commitments to employment and labour force development
	43	Details of programs, events and initiatives to facilitate and enhance skills development and labour force development through employment and pre-employment undertakings (including SFN-specific information)	Pelly/Yukon: annual	Minto Mine	Commitments to employment and labour force development
	44	Description of partnership arrangements with governments to accomplish the above (including SFN-specific information)	Pelly/Yukon: annual	Minto Mine	Commitments to employment and labour force development
Education and Training	45	Level of literacy and numeracy	Pelly: periodic	SFN Round-table	Labour force capacity
	46	Highest grade completed by individuals of work-force age	Pelly: 5 yr	Census	Labour force capacity
	47	Number of individuals of work-force age with high school diploma	Pelly: 5 yr	Census	Labour force capacity
	48	School absenteeism	Pelly: annual	YG Education	Barriers to individual capacity building and deterrents
	49	Highest diplomas, certificates obtained by individuals of work-force age	Pelly/Whse: 5 yr	SFN Survey	Labour force capacity

Valued Condition	Ind.#	Indicator	Scale and frequency	Data source	Rationale
Living Condition: Cultural Well-being					
Connection to Land and Water	50	% of workforce aged group engaged in harvesting activities	Pelly/Whse: 5 yr	SFN Survey	Participation in land/water-based activities is central to SFN culture and the maintenance of traditional knowledge
	51	Frequency of participation in harvesting activities	Pelly/Whse: 5 yr	SFN Survey	Participation in land/water-based activities is central to SFN culture and the maintenance of traditional knowledge
	52	Perception of likely level of participation in harvesting activities in 5 years; time and reasons	Pelly/Whse: 5 yr	SFN Survey	Future trend re: participation in land/water-based activities and potential cultural impacts
Cultural Vitality	53	% amount of traditional foods consumed	Pelly/Whse: 5 yr	SFN Survey	Consumption of traditional foods is central to SFN cultural continuity
	54	Level of participation in processing or preparing traditional foods	Pelly/Whse: 5 yr	SFN Survey	Consumption of traditional foods is central to SFN cultural continuity
	55	% of citizens speaking Northern Tutchone	Pelly/Whse: 5 yr	SFN Survey	Language as a reflection of cultural continuity.
Social Cohesion	56	Description of activities, events, initiatives, programs and expenditures by Minto to protect SFN cultural and community well-being, including educational assistance and scholarships, cultural awareness programs for non-aboriginal employees, support for traditional and cultural activities, language programs, employee assistance programs (for cash management, alcohol and drug counseling, stress management), and family and community healthy living initiatives, etc.	Pelly: annual	Minto Mine	Commitments to maintenance of social cohesion
	57	Level of participation in sharing or exchanging traditional food	Pelly/Whse: 5 yr	SFN Survey	Inter-household and intra-family sharing and social capital support
	58	Frequency of participation in sharing or exchanging traditional food	Pelly/Whse: 5 yr	SFN Survey	Inter-household and intra-family sharing and social capital support
	59	Knowledge of Dooli laws and custom	Pelly/Whse: 5 yr	SFN Survey	Traditional laws and customs are culturally significant instruments of social organization and cohesion

Valued Condition	Ind.#	Indicator	Scale and frequency	Data source	Rationale
Living Condition: Sustainability and Legacy					
Fate Control and Preparedness	60	Ability of Minto/SFN/ YG to manage Project-related socio-economic commitments, impacts and risks	Pelly/Minto/Yukon: annual	Minto/YG/SFN Round-tables	Capacity, ability and preparedness of Minto, YG and SFN to manage predicted impacts and surprises
	61	Resilience of households to manage stresses resulting from project-specific and cumulative effects	Pelly: periodic	SFN Round-table	Relative capacity of households to manage change
Boom/Bust Mgmt	62	Adjustment measures to manage the socio-economic effects of mine closure	Pelly/Yukon: annual	Minto/YG/SFN Round-tables	Identified opportunities, transition plans and commitments to mitigate the socio-economic effects of closure
	63	Relative occupational and sectoral diversity and strengths in economic activity	Pelly/Yukon: 5 yr	Census	Contribution of project economic impacts to diversify local and regional economies
Costs and Benefits for Future Generations	64	General description of matters addressed in Minto-SFN agreements	Pelly: biannual	Minto Mine	Project contributions to sustainability
	65	Description of socio-economic effects and initiatives that will contribute to a net positive legacy beyond the life of the mine	Pelly/Yukon: annual	Minto Mine	Project contributions to sustainability
	66	Displacement of costs and transfer of benefits to future generations	Pelly/Yukon: annual	Minto/YG/SFN Round-tables	Identified gains, losses and net benefits for future generations
	67	Legacy socio-economic benefits	Pelly/Yukon: annual	Minto/YG/SFN Round-tables	Identified net positive gains for future generations
	68	Perceived availability of resources to meet the needs of future generations	Pelly/Yukon: annual	Minto/YG/SFN Round-tables	Effects on sustainability
	69	Perceived state of the environment to maintain socio-ecological systems	Pelly/Yukon: annual	Minto/YG/SFN Round-tables	Effects on sustainability

Appendix 2:

Minto Mine, Detailed Timeline

Date	Event
1970	Stream sediment sampling finds anomalous copper concentrations in the area
1971	The Minto claim group is staked by Asarco and Silver Standard Mines A group managed by United Keno Hill Mines (UKHM) stakes the adjoining DEF claim group to the north of Minto
1972–1974	Exploration continues on both Minto and DEF properties
1976	A feasibility study for both properties completed but shows poor financial returns
1984 – 1985	UKHM conducts drilling program
Early 1990s	UKHM holdings in the DEF claim group acquired by Falconbridge Teck and Asarco each sell their interest in the Minto claims to Minto Explorations Ltd
June 1993	Minto Explorations Ltd. acquires DEF claim group, but Falconbridge retains the right to buy back the claims
1995	Detailed feasibility study completed
1996	Minto Explorations Ltd. begins development of the mine
July 1997	Selkirk First Nation signs final land claim agreement that includes much of the Minto Mineral property area as Category A settlement land (surface and subsurface rights)
September 1997	Selkirk First Nation and Minto Explorations Ltd. sign a comprehensive cooperation agreement
1998	Type A water licence issued
1999	Mineral production licence issued and construction started
2000	Before construction is suspended due to low mineral prices, the access road is complete, sites are prepared for the camp and mill, and some mill equipment is purchased; approximately \$10 million spent
2001–2002	Limited care and maintenance work is carried out
October 2004	Minto Explorations Ltd. agrees to acquire remaining rights on the Minto and DEF properties from Asarco and Falconbridge
March 2005	Sherwood Mining Corporation acquires Minto Explorations Ltd. and acquires 100% of the now-consolidated Minto property
August 2005	Sherwood begins drilling program
September 2005	A 10-year extension of the Type A water licence is granted
February 2006	Mine development begins
March 2006	Discovery of Area 2: 300 metres southeast of Minto Main
April 2006	Pre-stripping of Minto Main begins
July 2006	A revised feasibility study is completed showing robust returns Mill construction begins
October 2006	Debt financing and forward sales agreements reached
February 2007	Power purchase agreement signed with Yukon Energy
May 2007	The first copper-gold concentrates are produced
July 2007	Two new copper-gold deposits are identified
October 2007	Commercial production is achieved
2007	Total 2007 production in concentrate at Minto: • 9.62 million pounds copper • 45,890 ounces silver
March 2008	Phase II mill expansion complete and throughput increases from 1,600 to 2,400 tonnes per day
April 2008	Project proposal for mining/milling increase submitted to YESAB
November 2008	Minto connects to the Yukon electrical grid Sherwood merges with Capstone Mining Corp.
2008	Total 2008 production in concentrate at Minto: • 47.69 million pounds copper • 30,758 ounces gold • 259,824 ounces silver
February 2009	Minto North, the fifth deposit on the property, is discovered
March 2009	Phase III mill expansion complete, throughput increases to 3,200 tonnes per day
July 2009	High water run-off exceeds capacity of water storage ponds and is diverted into main pit; Yukon Water Board approves discharge of 300,000 cubic metres of excess water into the Yukon River under the emergency provisions of the water licence.
August 2009	Yukon Water Board approve the discharge of an additional 705,000 cubic metres of excess water into the Yukon River

Date	Event
October 2009	Revised cooperation agreement between Minto Explorations Ltd. and the Selkirk First Nation is signed; includes a net sales royalty of between 1.0% and 1.5% on production plus various commitments in respect of employment, contracting, training and scholarship opportunities
November 2009	Minto East, the sixth deposit on the property, is discovered
December 2009	Preliminary feasibility study on Phase IV expansion (Area 2/118 open pit and underground) completed
2009	Total 2009 production in concentrate at Minto: • 53.66 million pounds copper • 28,579 ounces gold • 299,767 ounces silver
June 2010	Significant wildfire burns near mine temporarily halting production
July 2010	Wildfire deposit discovered
August 2010	Phase IV expansion project proposal submitted to YESAB
December 2010	Inferno deposit discovered
2010	Total 2010 production in concentrate at Minto: • 40.45 million pounds copper • 22,284 ounces gold • 206,838 ounces silver
March 2011	Preliminary feasibility study on Phase V expansion (Minto North open pit and Minto East underground) completed
June 2011	Mining completed at the Minto Main deposit (Phases I through III)
December 2011	Fireweed deposit discovered
2011	Total 2011 production in concentrate at Minto: • 37.12 million pounds copper • 18,439 ounces gold • 196,098 ounces silver
June 2012	Preliminary feasibility study on Phase VI expansion (Wildfire and Copper Keel underground) completed
September 2012	Underground development begins in Area 2/118
October 2012	Problems with Area 2 pit wall result in lower production in late 2012 and in 2013 Yukon Water Board approves Phase IV expansion
2012	Total 2012 production in concentrate at Minto: • 35.93 million pounds copper • 18,599 ounces gold • 183,536 ounces silver
July 2013	Phase V/VI expansion project proposal submitted to YESAB
September 2013	Underground production begins
2013	Total 2013 production in concentrate at Minto: • 37.24 million pounds copper • 18,361 ounces gold • 162,310 ounces silver
January 2014	Open pit mining rate is slowed to better align with anticipated delivery of permits, resulting in 44 people laid off from surface mining crew
April-June 2014	YESAB review of Phase V/VI expansion proposal completed and Decision Documents under YESAA issued by Governments of Yukon and Selkirk First Nation
July 2014	Minto applies to Yukon Water Board for amended water licence for Phase V/VI activities
September 2014	Open pit mining suspended and 50 workers were laid off
December 2014	Amended Quartz Mining Licence issued and stripping of Minto North deposit commenced
2014	Total 2014 production in concentrate at Minto: • 40.58 million pounds copper • 19,909 ounces gold • 170,946 ounces silver

