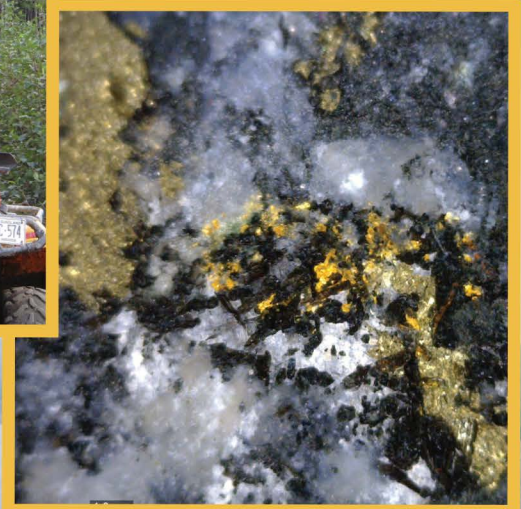


MARATHON GOLD

Valentine Gold Project Baseline Study Appendix 9: Community Health, Services and Infrastructure / Employment and Economy

September 2020



**Valentine Gold Project
Environmental Impact Statement**

Final Report

Baseline Study Appendix 9: Community
Health, Services and Infrastructure /
Employment and Economy (BSA.9)



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Abbreviations and Acronyms

ARD/ML	Acid Rock Drainage / Metal Leaching
BSA	Baseline Study Appendix
CAD	Canadian dollars
CAN	Canada
CAS	Comprehensive Arts & Science
CHRP	Certified Human Resources Professional
CFA	Chartered Financial Analyst
CNA	College of the North Atlantic
EIS	Environmental Impact Statement
FTE	Full-time Equivalent
LEED	Leadership in Energy and Environmental Design
Marathon	Marathon Gold Corporation
MBA	Master's Degree in Business Administration
MIHRC	Mining Industry Human Resources Council
MUN	Memorial University of Newfoundland
NL	Newfoundland and Labrador
NLDECCM	NL Department of Environment, Climate Change and Municipalities
NLEPA	NL <i>Environmental Protection Act</i>
NOC	National Occupational Classification
PY	Person Years
ROC	Rest of Canada
SAR	species at risk
SOCC	species of conservation concern
Stantec	Stantec Consulting Inc.
TDG	Transportation of Dangerous Goods
TMF	Tailings Management Facility
VC	Valued Component



VALENTINE GOLD PROJECT ENVIRONMENTAL IMPACT STATEMENT

Introduction
September 25, 2020

1.0 INTRODUCTION

Marathon Gold Corporation (Marathon) is planning to develop an open pit gold mine south of Valentine Lake, located in the Central Region of the Island of Newfoundland, approximately 60 kilometres (km) southwest of the town of Millertown, Newfoundland and Labrador (NL) (Figure 1-1). The Valentine Gold Project (the Project) will consist primarily of open pits, waste rock piles, crushing and stockpiling areas, conventional milling and processing facilities (the mill), a tailings management facility, personnel accommodations, and supporting infrastructure including roads, on-site power lines, buildings, and water and effluent management facilities. The mine site is accessed by an existing public access road that extends south from Millertown approximately 88 km to Marathon's existing exploration camp. Marathon will upgrade and maintain the access road from a turnoff approximately 8 km southwest of Millertown to the mine site, a distance of approximately 76 km.

The Minister of the NL Department of Environment, Climate Change and Municipalities (NLDECCM) has determined that the Project will require preparation of an Environmental Impact Statement (EIS) under the provincial *Environmental Protection Act* (NLEPA). The Provincial EIS Guidelines require the preparation of a number of baseline studies to describe and provide data on specific components of the environment; to address baseline data requirements to support the assessment of one or more Valued Components (VCs); and to support the development of mitigation measures and follow-up monitoring programs. Each has been prepared as a stand-alone Baseline Study Appendix (BSA) to the EIS:

- BSA.1: Dam Safety
- BSA.2: Woodland Caribou
- BSA.3: Water Resources
- BSA.4: Fish, Fish Habitat and Fisheries
- BSA.5: Acid Rock Drainage / Metal Leaching (ARD/ML)
- BSA.6: Atmospheric Environment
- BSA.7: Avifauna, Other Wildlife and Their Habitats
- BSA.8: Species at Risk / Species of Conservation Concern (SAR / SOCC)
- BSA.9: Community Health, Services and Infrastructure / Employment and Economy
- BSA.10: Historic Resources

Table 1.1 outlines the organization for BSA.9: Community Health, Services and Infrastructure / Employment and Economy.

Table 1.1 BSA.9: Community Health, Services and Infrastructure / Employment and Economy

Number	Baseline Study Appendix	Attachment Number	Attachment Name
BSA.9	Community Health, Services and Infrastructure /	9-A	An Analysis of the Economic Impacts Associated with Marathon Gold's Valentine Gold Project (2020)
		9-B	Estimate of Quarterly Direct Employment by Project Phase and National Occupational Classification (NOC)



VALENTINE GOLD PROJECT ENVIRONMENTAL IMPACT STATEMENT

Introduction
September 25, 2020

Table 1.1 BSA.9: Community Health, Services and Infrastructure / Employment and Economy

Number	Baseline Study Appendix	Attachment Number	Attachment Name
	Employment and Economy	9-C	Educational Requirements by National Occupational Classification (NOC) and Availability of Training Programs within NL

Note that the BSAs consist of data reports that have been prepared for Marathon over a number of years (i.e., 2011 to 2020), during which the Project has undergone a series of refinements. The study areas and Project references in these data reports reflect the Project description at the time of preparation of these reports. The current Project description for the purposes of environmental assessment is found in Section 2 of the EIS.



VALENTINE GOLD PROJECT ENVIRONMENTAL IMPACT STATEMENT

Introduction
September 25, 2020

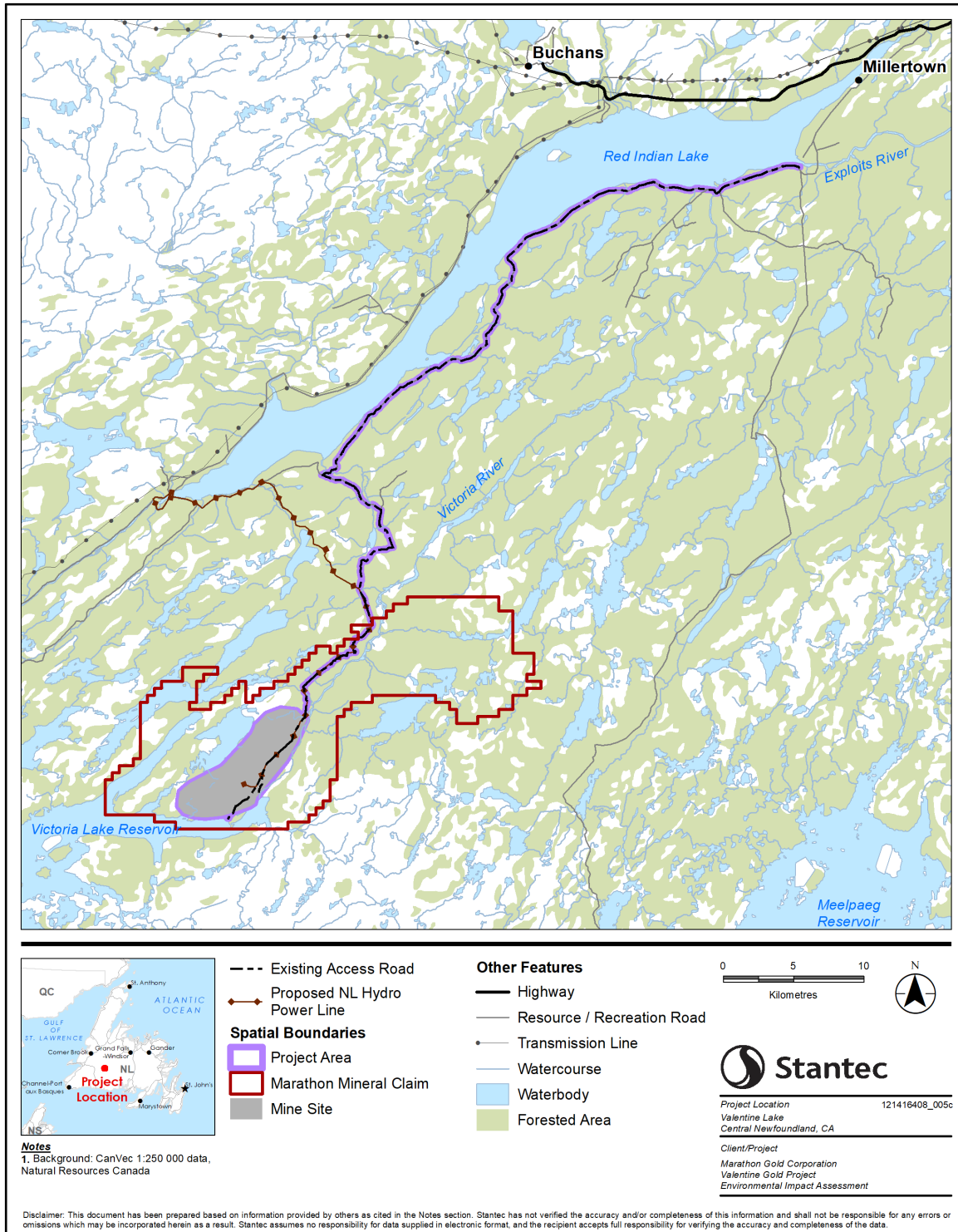


Figure 1-1 Project Area



2.0 SUMMARY OF COMMUNITY HEALTH, SERVICES AND INFRASTRUCTURE / EMPLOYMENT AND ECONOMY BSA ATTACHMENTS

The description of existing conditions for community services and infrastructure, and community health, relied on a review of publicly available information and email and phone communications with local communities. This information is fully presented in Chapters 13 and 14 of the EIS, respectively. Additional information related to employment and economy used to support the environmental assessment is summarized in Table 2.1.

Table 2.1 Summary of Community Health, Services and Infrastructure / Employment and Economy BSA Attachments

Rationale / Objectives and Study Area ^A	Methods	Results
Attachment 9-A - An Analysis of the Economic Impacts Associated with Marathon Gold’s Valentine Gold Project (2020)		
<p>Objectives – to evaluate the economic impacts expected from the development and operation of the Project.</p> <p>Study Area – The economic impacts are analyzed for the economies of Newfoundland and Labrador (NL), the Rest of Canada (ROC) and the country as a whole (CAN).</p>	<p>The economic impacts associated with the Project were analyzed from four perspectives:</p> <ul style="list-style-type: none"> • A cash-flow perspective, utilizing a ring-fenced assumption for the operating and capital cost projections and the production profile that were provided by Marathon. • An economic impact perspective, which considered direct, indirect and induced impacts on employment, income and GDP. • A taxation and treasury perspective, which measured direct, indirect and induced taxation impacts for the NL treasury and the federal treasury. • A sensitivity perspective, whereby the economic impacts associated with changes in commodity prices, and capital and operating costs were analyzed. 	<p>The Project will yield substantial economic benefits for both CAN and NL. The mine will generate significant effects on both the federal and provincial treasuries. The Project will expend approximately \$2.0 billion Canadian dollars (CAD) to develop and operate the gold mine over its planned 15-year life. This expenditure is comprised of \$272 million in pre-production capital expenditures, \$288 million in post-production capital expenditures and \$1.4 billion in operating expenditures.</p> <p>The key economic impacts on the economy and the treasury are:</p> <ul style="list-style-type: none"> • Creation of 19,300 person-years (PY) of total employment (direct, indirect and induced) in Canada, including approximately 10,900 PYs in NL • Average annual employment exceeding 1,280 PYs of employment annually across CAN, including an average of 725 PYs annually within NL • Generation of approximately \$1.3 billion in income to workers and businesses within CAN, including \$750 million to workers and businesses located within NL • Contribution of \$3.6 billion to Canada’s GDP, which includes \$2.9 billion in the GDP of NL • Generation of \$292 million in federal government revenues • Contribution of almost \$400 million (\$27 million on an average annual basis) in incremental revenues to the treasury of NL



VALENTINE GOLD PROJECT ENVIRONMENTAL IMPACT STATEMENT

Summary of Community Health, Services and Infrastructure / Employment and Economy BSA Attachments
 September 25, 2020

Table 2.1 Summary of Community Health, Services and Infrastructure / Employment and Economy BSA Attachments

Rationale / Objectives and Study Area ^A	Methods	Results
Attachment 9-B - Estimate of Quarterly Direct Employment by Project Phase and National Occupational Classification (NOC)		
<p>Objectives – Section 4.1.4.4.3 (Labour Force Requirements) of the Provincial EIS Guidelines require that approximate time lines of each of the positions during the construction and operations phase of the Project be provided, including the number of positions for each 4-digit NOC code throughout the Project at specified time intervals (monthly or at least quarterly) which would show levels of employment throughout the Project timeline.</p>	<p>Direct Project employment estimates (full-time equivalents or FTEs) were taken from Strategic Concepts Inc. (SC 2020) and classified against NOC by applying national mining labour force employment ratios adopted from the Mining Industry Human Resources Council (MIHRC 2015). Employment ratios (by NOC) and quarterly workforce loading projections were adjusted using pre-front-end engineering and design (pre-FEED) workforce estimates developed by Ausenco and Marathon.</p>	<p>Tables 2-2 through 2-6 provide estimates of average quarterly direct employment by Project phase and NOC. Table 2-2 provides estimates of average quarterly direct employment for the pre-construction phase of the Project (i.e., Years Y-2 and Y-1). Tables 2-3, 2-4 and 2-5 provide estimates of average quarterly direct employment for the operations phase (phase two expansion labour included is in labour estimates provided in Tables 2-3 and 2-4 for Years 1 through 6). Table 2-6 provides estimates of average quarterly direct employment for the decommissioning, rehabilitation and closure phase (Year 13).</p>
Attachment 9-B – Typical Employment Requirements by NOC and Availability of Formal Training Programs within NL		
<p>Objectives – Section 4.1.4.4.3 (Labour Force Requirements) of the Provincial EIS Guidelines require that qualifications, certifications and other requirements, including the need for, location and availability of related training opportunities associated with key positions for all phases of the project be provided.</p>	<p>Typical employment requirements by NOC (NOCs having been identified through the methods described above for Attachment 9-B) were obtained through a custom query of Statistics Canada’s NOC 2016 Version 1.0 interactive database (Employment Requirements). Program offerings for the 2020-2021 academic year (used as a reference case) at Memorial University of Newfoundland (MUN) and the College of the North Atlantic (CNA) were obtained from publicly available information published on each institution’s website.</p>	<p>Table 2-7 provides a summary of typical educational requirements, by NOC, for direct employment positions with the Project. Tables 2-8 and 2-9 list educational programs available at MUN and CNA for the 2020-2021 academic year, respectively.</p> <p>Based on the employment requirements (qualifications, certifications and other requirements) identified in Table 2-7 (by NOC), and in in consideration of the availability of formal educational programs identified in Tables 2-8 and 2-9, sufficient formal training appears to be available within NL for key direct employment positions with the Project.</p> <p>It is important to note that while Tables 2-8 and 2-9 provide an overview of available training programs (for the 2020-2021 academic year), many positions require additional training/certification than that identified in Tables 2-8 and 2-9 (e.g., professional training/designations, completion of Red Seal examinations, and relevant job experience may be required). In some cases, positions identified in Table 2-7 may only require the completion of secondary school and/or formal/informal on-the-job training.</p>
<p>Notes: Study area does not apply to Attachments 9-B and 9-C</p>		



ATTACHMENT 9-A

**An Analysis of the Economic Impacts Associated with
Marathon Gold's Valentine Gold Project (2020)**

An Analysis of the Economic Impacts Associated with Marathon Gold's Valentine Gold Project - Revised



Prepared for:
Marathon Gold Corp.

Prepared by:
Strategic Concepts, Inc.

September 2020

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Executive Summary

This report, prepared by Strategic Concepts, Inc. (SCI) on behalf of Marathon Gold Corp. (Marathon), evaluates the economic impacts expected from the development and operation of the Valentine Gold Project (the Project) in central Newfoundland. The economic impacts are analyzed for the economies of Newfoundland and Labrador (NL), the Rest of Canada (ROC) and the country as a whole (CAN).

The Project will yield substantial economic impacts for both CAN and NL. The mine will generate significant impacts on both the federal and provincial treasuries. The Project will expend approximately \$2.0 billion Canadian dollars (CAD) to develop and operate the gold mine over its planned 15-year life (two years of construction, twelve years of operations, and one year of closure/decommissioning). This expenditure is comprised of \$272 million in pre-production capital expenditures, \$288 million in post-production capital expenditures and \$1.4 billion in operating expenditures. The key economic impacts on the economy and the treasury are¹:

- Creation of 19,300 person-years² (PY) of total employment (direct, indirect and induced) in Canada, including approximately 10,900 PYs in NL;
- Average annual employment in excess of 1,280 PYs of employment annually across CAN, including an average of 725 PYs annually within NL;
- Generation of approximately \$1.3 billion in income to workers and business within CAN, including \$750 million to workers and businesses located within NL;
- Contribution of \$3.6 billion to Canada's GDP, which includes \$2.9 billion to NL's GDP;
- The generation of \$292 million in federal government revenues; and
- The contribution of almost \$400 million (\$27 million on an average annual basis) in incremental revenues to the treasury of NL.

Overview

Marathon is planning to develop a gold mine, located in the west-central region of the Island of Newfoundland, southwest of the town of Millertown. The Project consists primarily of two open pits, crushing and stockpiling areas, milling and processing facilities with supporting infrastructure. The Project is comprised of two mining areas, the Leprechaun and Marathon Deposits. Ore will initially be mined and processed at a nominal rate of 6,800 tonnes per day, increasing to 11,000 tonnes per day in year 4. The pre-production phase of the Project is expected to take approximately 16 to 20 months to complete, followed by a planned mine operating life of 13 years (including one year of closure/decommissioning). The Project is expected to operate 24 hours a day, seven days a week on a 12-hour shift basis.

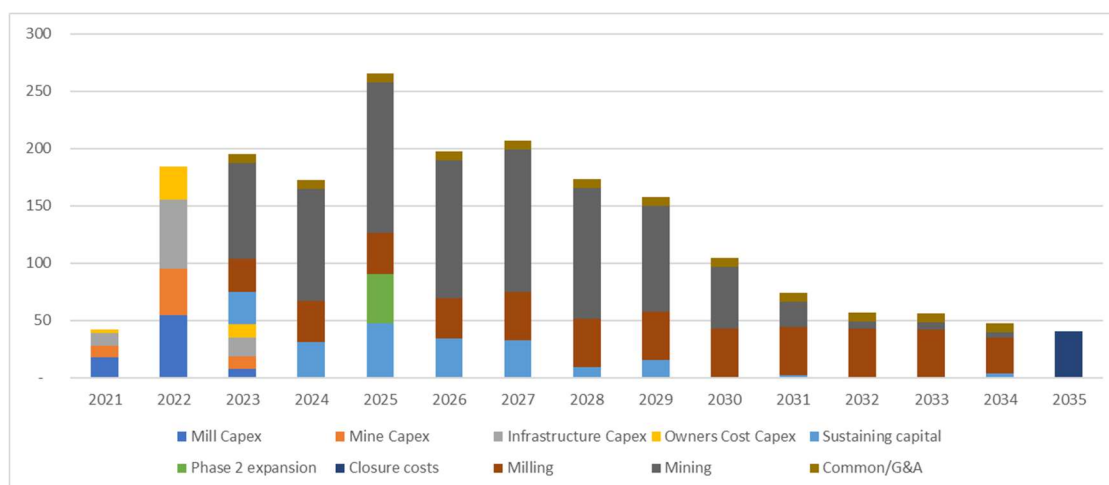
Estimated Costs

The Project has an estimated cost of approximately \$2.0 billion CAD to construct and operate over a 15-year period. The annual cost breakdown by category of expenditure is illustrated in Figure ES1.

¹ Treasury impacts based on \$1,350 USD per ounce of gold and an exchange rate of \$.75 USD.

² A person-year of employment is typically equivalent to approximately 2,000 hours of work. For this model, 2,000 hours was used to measure person-years of employment from capital expenditures and 2,190 hours per year for operation jobs. The latter is based on the planned work schedule of a 24-hour operation with two 12-hour shifts.

Figure ES 1: Annual Cost Profile (\$M CAD)

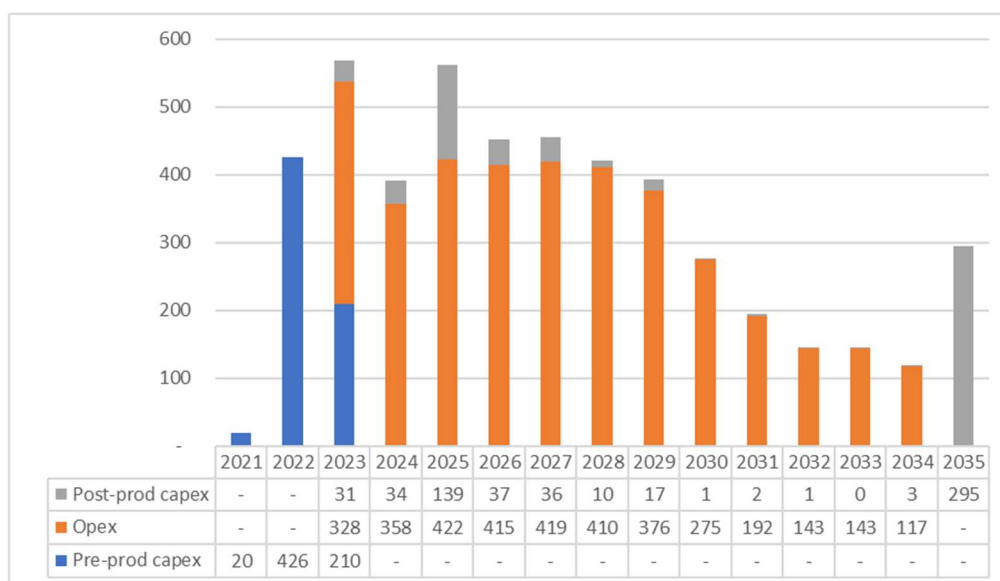


A breakdown of expenditures by labour, materials and equipment was undertaken to estimate economic impacts anticipated to be generated by the project. Approximately 46% of the pre-production construction costs are accounted for by labour, 29% of expenditures are for by equipment, and the remaining 25% is anticipated to be expended on materials. Likewise, the post-production capital costs were estimated to be 26% for labour, 20% for materials and 54% for equipment. During the operations phase, labour accounts for 22% of the expenditures, with materials representing 70%, and the remaining 9% is for equipment.

Impacts on Employment and Income

Over the 15-year life of the Project, construction and operational expenditures associated with the Project are expected to create approximately 4,860 PYs of direct employment and generate approximately \$434 million in direct labour incomes. The annual profile of direct employment is shown in Figure ES2.

Figure ES 2: Direct Employment by Cost Category (Person- Years)



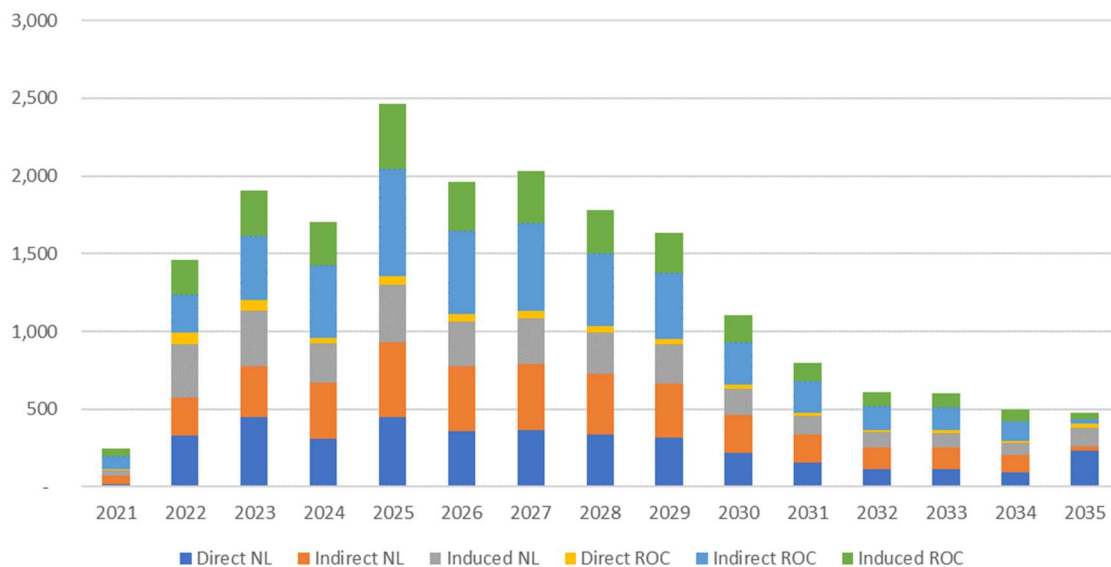
Pre-production capital expenditures are expected to require 656 direct PYs of employment and generate \$100 million in direct incomes to labour, with approximately 77% of the direct employment (505 PYs) accruing to NL workers.

An additional 4,200 direct PYs of employment and \$275 million of direct labour incomes are expected to be created during the operations phase (3,600 from operating costs and 600 from post-production capital expenditures). Residents of NL are expected to account for 80% of the direct operating employment. On an average annual basis, over the 13-year operating/decommissioning life of the mine, 320 PYs of direct employment and \$23 million in labour income per annum will be generated from operating expenditures and post-production capital expenditures.

Employment and incomes anticipated to be generated by the Project increase significantly when indirect and induced impacts from expenditures are considered. Total income to persons and businesses in Canada, arising from the construction and operation of the Project, are estimated at \$1.3 billion. Regionally, labour and businesses in NL will receive approximately 58% of the estimated income benefits, with the remaining 42% going to other Canadian jurisdictions. This distribution of income and employment benefits reflects the significant indirect and induced economic impacts accruing to the provinces in the rest of Canada that have more diversified economies, particularly Ontario and Quebec.

Total employment arising from the construction and operation of the Project is estimated to be approximately 19,300 PYs of employment across Canada, of which 10,900 are expected to be filled by residents of NL. The annual profile of employment benefits is shown in Figure ES3.

Figure ES 3: Annual Employment Benefits by Source and Jurisdiction (Person Years)



Impacts on Gross Domestic Production (GDP)

Economic activity, as reflected in GDP, will be manifested through the value of production at the mine site and through direct and spin-off (i.e. indirect and induced) employment and incomes that accrue to workers and to companies that supply goods and services to the Project. At the national

level, the Project is expected to generate \$3.64 billion in GDP, including \$1.93 billion in incomes and \$1.7 billion from the value of production.

Local factors of production (i.e. NL workers and businesses) will receive approximately \$1.2 billion in labour incomes and profits. When the net value of production, estimated at \$1.7 billion, is added to the local factor incomes, NL's GDP is expected to increase by \$2.9 billion dollars over the life of the Project. Figure ES4 profiles annual GDP associated with the Project.

Figure ES 4: GDP by Type and Jurisdiction (M\$ CAD)

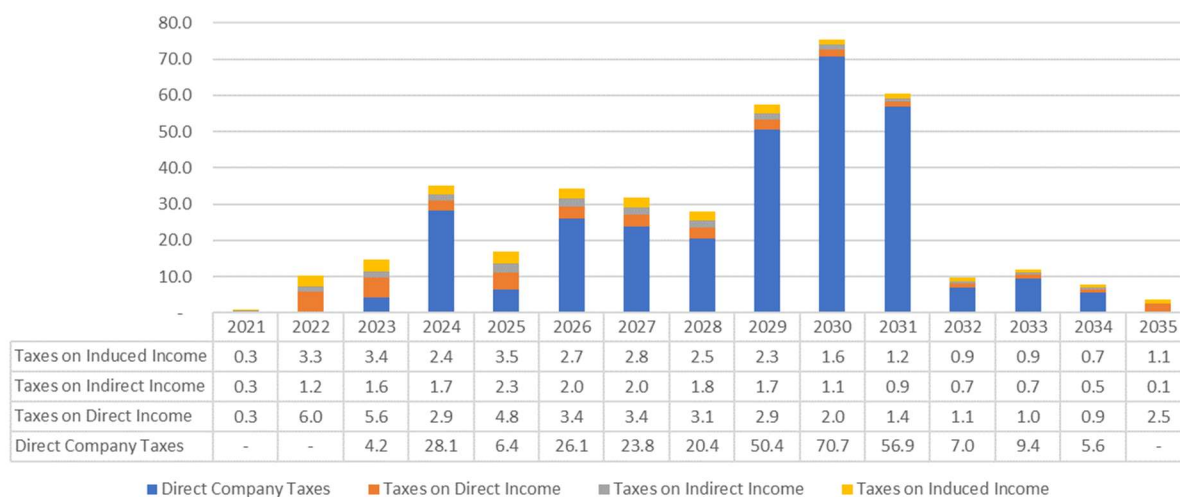


Government Revenues

The federal and provincial governments collect a variety of taxes on mining operations within Canada, including direct and indirect taxes, such as corporate income and sales taxes.

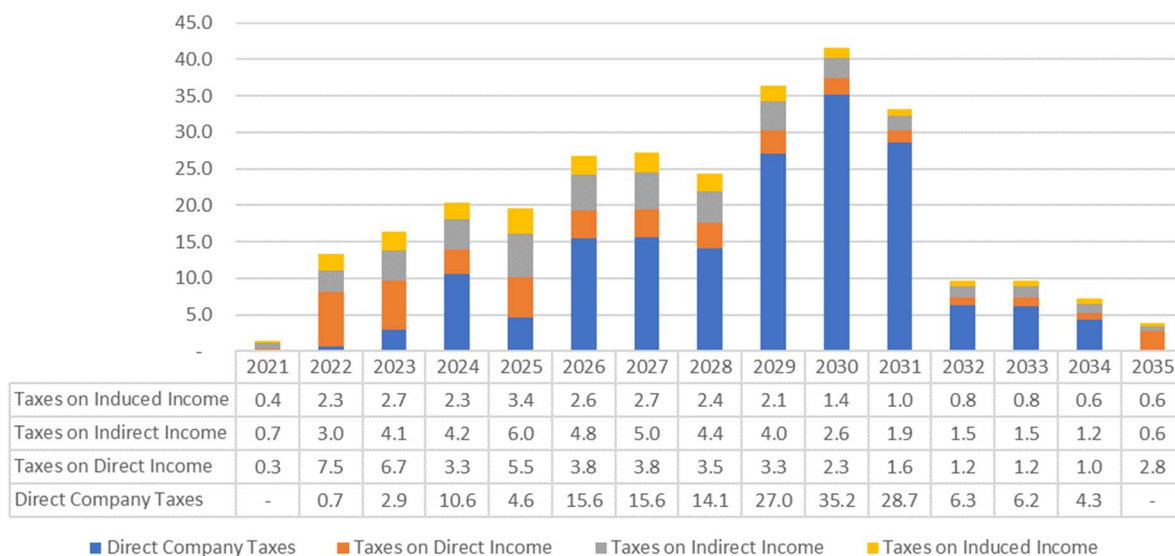
Including mining taxes, the Project is expected to yield almost \$400 million in direct, indirect and induced taxes for the Government of Newfoundland and Labrador (GNL) over the life of the Project. Figure ES5 illustrates the taxes expected to flow to the NL treasury on an annual basis.

Figure ES 5: NL Taxation Revenues by Type (M\$ CAD)



In addition, the federal Government of Canada (GC) is estimated to receive \$292 million in direct, indirect and induced taxes.

Figure ES 6: Canada Taxation Revenues by Type (M\$ CAD)



A sensitivity analysis was undertaken to illustrate the potential economic impacts associated with variations in commodity prices, and capital costs. A 25% increase in price improves revenues flowing to the GNL by over \$200 million. The impact on government revenues from varying capital costs only marginally affects government revenues. The reduction in direct corporate income taxes and mining taxes from higher capital costs is offset by the additional taxes that flow from employment and spin-off impacts which are associated with the increased capital costs.

Relative Impacts

The Project will have considerable impacts on the NL mining industry, particularly on the island portion of the province. In 2019, the mining industry employed 5,746 people, 4,100 of whom were in Labrador and only approximately 1,600 were on the island portion of the Province. With an average labour force of approximately 325 during the operational phase, the Project has the potential to increase mining industry employment on the Island by over 20%. From a regional economy perspective, Marathon's employment will also be significant. In the local catchment area of Buchans, Buchans Junction, Millertown, Badger, Grand Falls-Windsor and Bishop's Falls, the total labour force was 8,635 in the 2016 Census. Four-hundred additional direct jobs in the area represents approximately 5% of the area's labour force. This represents a significant boost to the local economic opportunities.

1.0 Introduction

This report, prepared by Strategic Concepts, Inc. (SCI) on behalf of Marathon Gold Corp. (Marathon), evaluates the economic impacts expected to be generated by the development and operation of the Valentine Gold Project (the Project) in central Newfoundland. The economic impacts are analyzed for the economies of Newfoundland and Labrador (NL), the Rest of Canada (ROC) and the country as a whole (CAN).

The economic impacts associated with the project were analyzed from four perspectives:

1. A cash-flow perspective, utilizing a ring-fenced assumption for the operating and capital cost projections and the production profile that were provided by Marathon.
2. An economic impact perspective, which considered direct, indirect and induced impacts on employment, income and GDP.
3. A taxation and treasury perspective, which measured direct, indirect and induced taxation impacts for the NL treasury and the federal treasury.
4. A sensitivity perspective, whereby the economic impacts associated with changes in commodity prices, and capital and operating costs were analyzed.

1.1 Project Description

Marathon is planning to develop a gold mine at Valentine Lake, located in the west-central region of the Island of Newfoundland, southwest of the town of Millertown. The Project will consist primarily of two open pits, waste rock piles, crushing and stockpiling areas, conventional milling and processing facilities, a tailings management facility, personnel accommodations, and supporting infrastructure, including roads, on-site power lines, buildings, and water and effluent management facilities. Other Project components and activities that are associated with the primary mining, milling, and processing activities include:

- site & haul road construction and maintenance
- electrical power supply and distribution
- fuel storage and fueling stations
- administrative office
- site-wide stormwater and effluent management, treatment, and discharge
- waste rock management
- process and potable water supply and distribution
- mine and plant workshops and services
- personnel accommodations and lunchrooms
- security

A power line from Star Lake to the mine site will be required for the Project and will be constructed and operated by NL Hydro. It will be subject to separate environmental approvals with NL Hydro as the proponent. The economic impacts generated by the construction of this power line have not been included in this analysis but could be significant.

The proposed Project is located approximately 60 kilometres (km) southwest of Millertown, NL (see Figure 1). The mine site is accessed by an existing gravel road, approximately 82 km in length, which extends south from Millertown. Approximately 73 km of this existing access road will be upgraded and maintained by Marathon as part of the Project. The Project is in a rural region, with a history of mining exploration and development activities and other land and resource uses, including commercial forestry, hydroelectric developments, outfitting and recreational land use.

Figure 1 : Valentine Gold Project Location Map



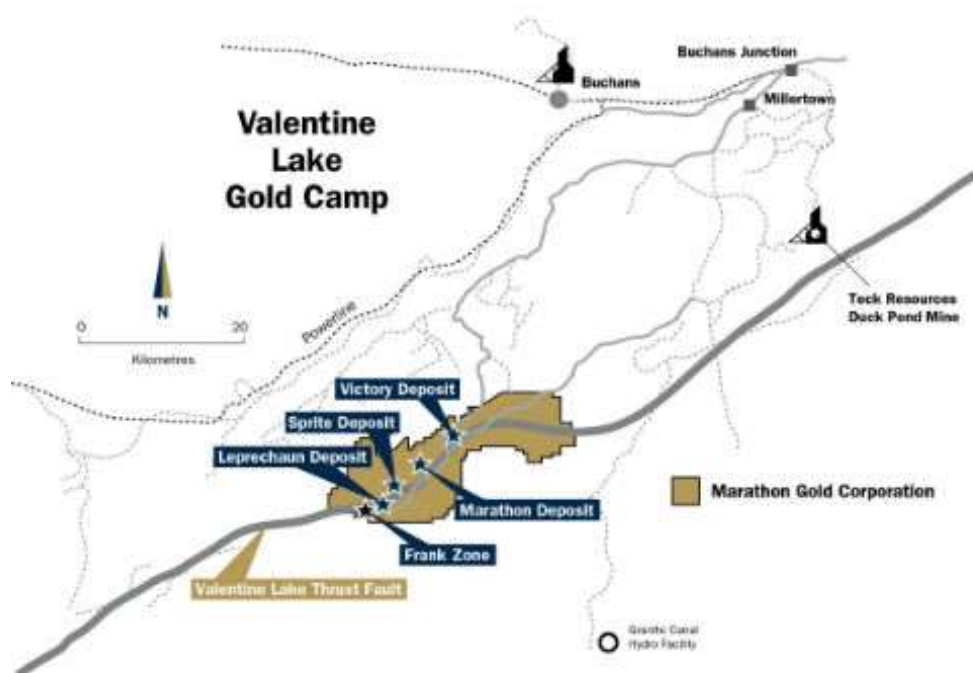
Source: <https://www.marathon-gold.com/projects/flagship-project/valentine-lake/location/>

The Project is comprised of two mining areas, the Leprechaun and Marathon Deposits. Standard surface mining techniques will be used to mine gold ore from two open pits. Ore material will initially be mined and processed at a nominal rate of 6,800 tonnes per day, increasing to 11,000 tonnes per day in year 4. All ore will be processed through the mill, where it will be crushed, milled and put through floatation and cyanidation processes to recover the gold. High-grade ore will be prioritized for processing early in the mine life while low-grade ore will be stockpiled for processing later in the mine life. Tailings will be treated in the process plant area to remove the cyanide and they will be subsequently deposited in an engineered tailings management facility. Gold will be formed into doré bars, which will be shipped from site to market in secured trucks.

The pre-production phase of the Project has an execution phase of approximately 16 to 20 months. This is to be followed by a planned mine operating life of 13 years, which includes one year for closure/decommissioning. The Project will operate 24 hours a day, seven days a week on a 12-hour shift basis. Upon cessation of mining, the operation will be closed, and the site components will be rehabilitated in accordance with applicable regulations at the time of closure.

Figure 2 below illustrates the proposed layout of the Project.

Figure 2 : Valentine Gold Project



Source: <https://www.franco-nevada.com/our-assets/assets-list/canada/valentine-lake/default.aspx>

1.2 Scope of Work

This report contains the findings of an economic impact analysis which was based on the capital and operating cost estimates provided by Marathon and its engineering and mining consultants. Additional information on the scope of work is provided in Section 2.0 Methodology.

1.3 Report Structure

This report consists of six sections. The introduction and project description are contained in Section 1. The methodology utilized in this analysis is described in Section 2 and the summary economic results for income, employment and GDP are provided in Section 3. This is followed, in Section 4, by estimates of provincial and federal tax revenues. Section 5 presents sensitivity analyses of project scenarios, whereby the commodity prices, development scenarios, and capital and operating costs are varied.

2.0 Methodology

The SCI economic impact model was developed specifically for undertaking economic impact analyses of resource projects. This model has been used to measure the economic impacts for a number of resource projects being proposed or already in operations throughout Canada.³

The economic impact model is based upon the principal of tracking expenditures through the economy by applying appropriate coefficients to determine direct, indirect and induced impacts on employment, incomes, gross domestic product (GDP), and taxation. The economic impact parameters used in the analysis were derived from data obtained from a number of sources including Statistics Canada, the Canada Revenue Agency, various provincial government departments and agencies and from economic impact assessments on other mining projects.

The primary sources of information used in the economic impact analysis were annual capital expenditure profiles and the ongoing operating costs that were provided by Marathon. These cost profiles, in addition to Marathon-provided estimates of the types of expenditures and the expected source of supply, form the basis of the economic impact analysis undertaken and presented in this report.

Core cost components that drive the economic impact analysis are costs associated with labour, materials and equipment. The breakdown of expenditures into these cost types allows for the calculation of employment and incomes generated by the capital and operating phases of the project.

Direct Impacts

Direct impacts are those associated directly with the project. For example, direct operating employment is composed of people who operate the facilities or are engaged in maintenance activities. On the other hand, direct capital phase employment is composed of individuals directly involved in construction activities, most of whom are directly employed with contractors, such as building the mill facilities or operating heavy equipment used to construct the mine. From Marathon's expenditure profile, the direct employment and income impacts were calculated by applying an estimate of labour cost per person-year of employment⁴ to the direct expenditures allocated to labour as indicated in Marathon's engineering analysis.

Indirect Impacts

Indirect impacts are those impacts associated with materials, services and equipment purchased by the project during its operating and construction phases. This would include, for instance, the extra workers needed by the contractor to meet the project's needs for concrete or the extra employees needed by the contractor who supplies services to Marathon during the operations phase of the project.

³ A sample list of the projects analyzed with this model include Vale's mining open pit and underground mine, Aurora's proposed uranium project, Baffinland Iron Mines Mary River Project, Nunavut, Search Minerals proposed rare earths project, IOC's iron ore operations and expansion projects, New Millennium Capital's proposed iron ore developments (Labmag) and Quebec (Kemag), Tata Steel's DSO iron ore project in Labrador and Labrador Iron Mines operations as well as numerous other resource projects.

⁴ In this analysis, a person-year of employment has been defined as 2,000 – 2,190 hours per annum, worked by one or more individuals within the calendar year considered.

Indirect impacts are estimated by applying supply or capture rates⁵ for materials and equipment. The expected proportions of each type of expenditure to be purchased by jurisdiction (e.g. NL, ROC and CAN) were provided by Marathon and are detailed in this report. Within each jurisdiction, the SCI model applies value-added parameters to the estimated amount supplied by each jurisdiction to reflect the import content of each type of expenditure. More specifically, the value-added parameters utilized are contingent on both the type of goods and services required and the ability of the business communities in the jurisdiction to supply and/or add value to the particular type of good or service required by the Project. From this detail, it is possible to estimate the indirect employment and incomes that flow from the business opportunities associated with the project. By way of illustration, indirect income impacts are calculated as the product of the direct expenditure impacts, the assumed capture rate and the estimated valued added factors. From this income, employment estimates are obtained by dividing indirect income by an average representative income associated with indirect employment.

Induced Impacts

Induced impacts are those occur in the services sector throughout the economy as direct and indirect incomes get spent throughout the economy. This would include extra employment in restaurants, hotels and the retail sector that is supported by the project.

Induced economic impacts that result from construction and operations expenditures are estimated by applying income multipliers to the direct and indirect incomes generated within each jurisdiction. This multiplier reflects the expenditures of direct and indirect incomes in the economy as they are spent and recirculated through the economy. Induced employment is estimated by applying an average amount of induced income per person-year of employment

Taxation Impacts

The final step for this economic analysis involved calculating taxation impacts for the provincial and federal treasuries utilizing taxation scalars. The direct and indirect personal income tax parameters were obtained from the most recent taxation statistics available through the Canada Revenue Agency's website. They were estimated based on the implied average tax rates and federal/provincial government split of taxes for income ranges that correspond to the direct and indirect labour incomes earned by workers associated with the project. The indirect corporation income taxes were taken to be the current tax rate in each jurisdiction applied to the estimate of corporate profits associated with the indirect income estimate for the project.⁶ The induced tax parameters for personal income and corporate income tax parameters were derived by using Ordinary Least Squares regression to each of the taxes and GDP calculation within each jurisdiction. Induced HST revenues were calculated by applying the statutory rates to induced GDP in each jurisdiction.

⁵ A supply rate is the proportion of an expenditure which is sourced from a particular region such as a province. A value-added factor is the proportion of that expenditure which is locally-based as opposed to imported in to that region. For example, a vehicle purchased from a dealership within the province will have been manufactured elsewhere and transported from elsewhere so that the value-added component would deduct these expenditures, leaving local wages and profits at the dealership as the local content of that expenditure.

⁶ The proportion of indirect income allocated to corporate profits were derived as the average proportion of corporate income profits as a share of GDP, which was derived from the most recent input-output models for Canada and the provinces.

3.0 Employment and Income Impacts

This section of the report presents the results of the economic impact analysis starting with a review of the cost estimates provided by Marathon. This is followed by the presentation of the direct, indirect and induced employment and income impacts, GDP impacts and treasury impacts.

3.1 Capital and Operating Expenditure Profiles

The starting point for SCI's model was Marathon's capital and operating cost estimates taken from the April 2020 Preliminary Feasibility Study of the Valentine Gold Project. The estimates cover annual expenditures during construction and operations by type and project component. The study also included breakdowns by labour, materials, equipment with estimates of where the expenditures are expected to be sourced.

Table 1 and Table 2 summarize, respectively, the direct capital and operating costs used in the economic impact analysis.

Table 1: Capital Cost Estimates (M\$ CAD 2020)*

Cost Category	Economic Impact Model Category**	Cost (M\$ CAD)
Marathon Category		
Pre-strip Mining Capex	Mine capex	25
Mining Capex	Mine capex	23
Construction Indirects	***	7
Treatment Plant Costs - Milling Circuit	Mill capex	61
Reagents & Plant Services - Milling Circuit	Mill capex	12
Infrastructure	Infrastructure capex	73
Management Costs	Owners capex	16
Owners Cost	Owners capex	19
Contingency	***	35
Total Pre-Production Capital Costs		272
Categories for Economic Impact Model		
Mill	Mill capex	80
Mine	Mine capex	62
Infrastructure	Infrastructure capex	87
Owners Cost	Owners capex	44
Total Pre-Production Capital Costs		272
Post-Production Capital Costs		
Sustaining capital	Sustaining	205
Phase 2 expansion	Phase 2	42
Closure costs	Closure	41
Total Post-Production Capital Costs		288

* Unless otherwise stated, all costs in this report are presented in millions of 2020 CAD\$

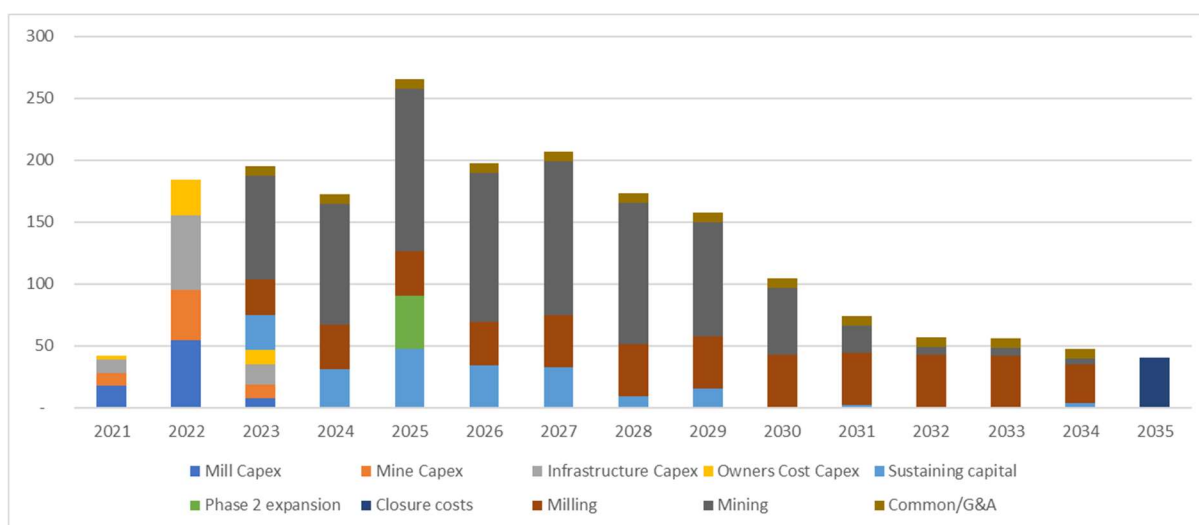
** For the purposes of SCI's economic impact model, the cost categories provided by Marathon were rolled up into the categories listed in the 2nd section of this table.

*** The Construction Indirects and Contingency estimates were allocated proportionately to the other pre-production capital cost categories

Table 2: Operating Cost Estimates (M\$ CAD 2020)

Operating Costs	Total	Annual Avg
Milling	462	39
Mining	857	71
Common/G&A	93	8
Total Operating Costs	1,412	118

The annual profile for the capital and operating costs is illustrated in Figure 3 below.

Figure 3 : Annual Cost Profile (\$M CAD)

The Project analyzed in this report has a total estimated cost of almost \$2.0 billion CAD to construct, operate and decommission over a 15-year period. This includes \$272 million in pre-production capital costs, \$288 in post-production capital costs and \$1.4 billion in operating costs.

3.2 Cost Breakdown

In this step, the costs associated with each of the project's major categories of expenditures were broken down into cost types consistent with Marathon's engineering analysis and cost estimates. These categories included the following:

- Labour
- Materials
- Equipment

The breakdown by cost type enables the SCI model to achieve a level of analysis of how different types of expenditures flow through the economy. Table 3 summarizes the cost breakdowns by category and type for both the capital and operating costs. Cost estimates were developed by

Marathon's lead consultant Ausenco. The estimates included detailed breakdowns by item and the expected shares of each cost component to be sourced by NL and Canadian suppliers.

Table 3: Direct Costs by Project Category and Cost Type (2020 CAD\$, Millions)

Cost Category	Labour	Materials	Equipment	Total
Pre-Production Capital Costs				
Mill	16.1	25.5	38.1	79.7
Mine	29.4	8.3	23.8	61.6
Infrastructure	44.0	29.7	13.3	87.1
Owners Cost	35.0	4.4	4.1	43.5
Total Pre-Production Capital Costs	124.6	68.0	79.3	271.9
Post-Production Capital Costs				
Sustaining capital	24.7	40.0	140.1	204.8
Phase 2 expansion	16.5	9.4	16.4	42.3
Closure costs	32.4	8.1	-	40.5
Total Post-Production Capital Costs	73.7	57.5	156.4	287.6
Totals – Operating Costs				
Milling	61.5	396.5	4.1	462.1
Mining	199.6	560.7	96.7	857.0
Common/G&A	44.7	27.5	20.7	93.0
Total Operating Costs	305.8	984.8	121.4	1,412.1
Annual Averages – Operating Costs				
Milling	5.1	33.0	0.3	38.5
Mining	16.6	46.7	8.1	71.4
Common/G&A	3.7	2.3	1.7	7.7
Total Operating Costs	25.5	82.1	10.1	117.7

Approximately 46% of the pre-production construction costs are accounted for by labour, 29% of expenditures are for equipment and the remaining 25% expended on materials. Likewise, the post-production capital costs were estimated to be 26% for labour, 20% for materials and 54% for equipment. During the operation phase, labour accounts for 22% of the expenditures, with materials representing 70% and the remaining 9% is for equipment.

3.3 Total Direct Employment and Labour Income

The next step was to determine the labour costs and incomes generated for various project components. This was achieved by first determining, in consultation with Marathon officials, employment estimates and the costs per person-year of employment for each Project component. The labour cost for employment during the capital phase was based on recent construction trades rates which were available from the provincial collective agreements for the construction industry. Costs and labour income per person-year of employment during operations was based on the labour cost schedule provided by Marathon and the proposed 24-hour mine operating schedule.

This was followed by a breakdown of the costs per person-year of employment into the income received by the workers and the associated labour benefits, such as pensions, payroll taxes, vacation pay, etc. This decomposition enabled SCI to estimate the incomes earned by labour for each of the functional categories. SCI's model then divided the total labour income by the total cost of one person-year of employment to calculate the total number of person-years of employment generated by expenditures. The direct Project employment and labour by Project component is illustrated in

Table 4, while the corresponding average and peak employment are shown in Table 5. It should be noted that during construction the actual number of individual workers, employed at various points over the course of the construction period, typically exceeds the corresponding person-years estimate by 25-50%. This is reflective of typical construction projects as workers employed by different contractors move in and out of the Project and often work on their assigned task for less than a year at a time. Tables 4 and 5 contain total labour costs by Project component as well as annual averages. The Project is anticipated to generate approximately 4,860 direct person years of direct employment including 3,600 persons years from operational expenditures or 300 person years on average.

Table 4: Total Labour Cost, Direct Labour Income (M\$ CAD) and Direct Employment (PY)

	Total Labour Cost	Cost per PY (\$)	Direct Employment (PYs)	Direct Labour Income
Pre-Production Capital Costs				
Mill	16.1	190,000	85	12.9
Mine	29.4	190,000	155	23.6
Infrastructure	44.0	190,000	232	35.2
Owners Cost	35.0	190,000	184	28.0
Total from Pre-Production Capital Costs	124.6		656	99.7
Post-Production Capital Costs				
Sustaining capital	24.7	110,000	225	19.8
Phase 2 expansion	16.5	190,000	87	13.2
Closure costs	32.4	110,000	295	25.9
Total from Post-Production Capital Costs	73.7		607	58.9
Operating Costs				
Milling	61.5	85,000	723	55.3
Mining	199.6	85,000	2,348	179.6
Common/G&A	44.7	85,000	526	40.3
Total from Operating Costs	305.8		3,598	275.2

Table 5: Average Annual and Peak Operations Labour Cost, Direct Labour Income (M\$ CAD) and Direct Employment (PY)

Operating Costs	Annual Averages			Peak
	Labour Cost	Direct Labour Income	Direct Employment (PYs)	Direct Employment (PYs)
Milling	5.1	4.6	60	64
Mining	16.6	15.0	196	318
Common/G&A	3.7	3.4	44	44
Total Operating Costs	25.5	22.9	300	426

3.4 Direct Employment and Income by Region

Following the calculation of total project employment, the next step involves the estimation of the shares of direct employment and income by the expected geographic residency of workers. The estimated labour shares for NL and CAN were provided by Marathon. Their estimates were based on their internal review of labour supply requirements, availability issues and the types of skill sets required during both construction and operations.

Direct Employment and Income - Capital

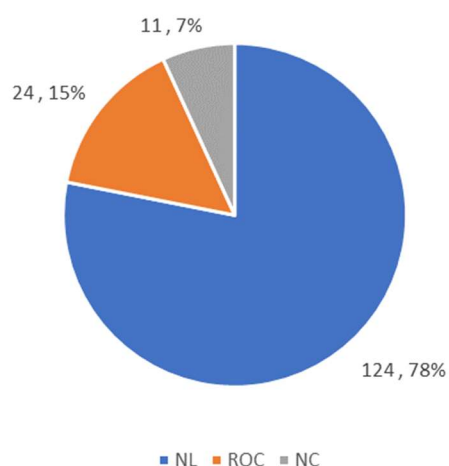
Table 6 lists the breakdown of direct employment, labour cost and labour income by region and by functional category for Marathon's capital costs. Figure 4 illustrates the direct employment by region for capital expenditure.

**Table 6: Direct Income and Employment by Project Category, Area and Region:
Capital Expenditures (2020\$, Millions CAD and PY)**

	NL	ROC	CAN	Non-CAN	Total
Pre-production Capital					
Milling Capex					
Labour cost (\$M CAD)	13.5	1.8	15.3	0.8	16.1
Direct employment (PYs)	71	10	81	4	85
Direct labour income (\$M CAD)	10.8	1.5	12.2	0.6	13
Mining Capex					
Labour cost (\$M CAD)	22.4	5.6	28.0	1.5	29.4
Direct employment (PYs)	118	30	147	8	155
Direct labour income (\$M CAD)	17.9	4.5	22.4	1.2	24
Infrastructure Capex					
Labour cost (\$M CAD)	33.8	8.0	41.8	2.2	44.0
Direct employment (PYs)	178	42	220	12	232
Direct labour income (\$M CAD)	27.1	6.4	33.5	1.8	35
Owners Costs Capex					
Labour cost (\$M CAD)	26.3	7.0	33.3	1.8	35.0
Direct employment (PYs)	138	37	175	9	184
Direct labour income (\$M CAD)	21.0	5.6	26.6	1.4	28
Total Pre-Production Capex					
Labour cost (\$M CAD)	95.9	22.5	118.4	6.2	124.6
Direct employment (PYs)	505	118	623	33	656
Direct labour income (\$M CAD)	76.7	18.0	94.7	5.0	99.7
Post-production Capital					
Sustaining Capital					
Labour cost (\$M CAD)	19.8	2.5	22.3	2.5	24.7
Direct employment (PYs)	180	22	202	22	225
Direct labour income (\$M CAD)	15.8	2.0	17.8	2.0	20
Phase 2 Expansion					
Labour cost (\$M CAD)	13.2	1.7	14.9	1.7	16.5
Direct employment (PYs)	70	9	78	9	87
Direct labour income (\$M CAD)	10.6	1.3	11.9	1.3	13
Closure Costs					
Labour cost (\$M CAD)	25.9	3.2	29.2	3.2	32.4
Direct employment (PYs)	236	29	265	29	295
Direct labour income (\$M CAD)	20.7	2.6	23.3	2.6	26

	NL	ROC	CAN	Non-CAN	Total
Total Post-Production Capex					
Labour cost (\$M CAD)	58.9	7.4	66.3	7.4	73.7
Direct employment (PYs)	485	61	546	61	606
Direct labour income (\$M CAD)	47.1	5.9	53.0	5.9	58.9
Total Capex					
Labour cost (\$M CAD)	154.8	29.8	184.7	13.6	198.3
Direct employment (PYs)	990	179	1,169	93	1,262
Direct labour income (\$M CAD)	123.9	23.9	147.7	10.9	158.6

Figure 4: Total Capex Direct Employment Income by Region (\$M CAD)



As illustrated above, pre-production capital expenditures are expected to generate 656 direct PYs of employment and \$100 million in direct incomes to labour. During the pre-production phase, approximately 77% of the direct employment (505 PYs), with a direct labour income of \$77 million, is expected to accrue to workers in NL. Post-production capital expenditures are expected to add an additional 606 PYs of direct employment, including 485 person-years expected to be worked by residents of NL, and generate an additional \$47 million in direct labour income for NL residents.

Direct Employment and Income - Operations

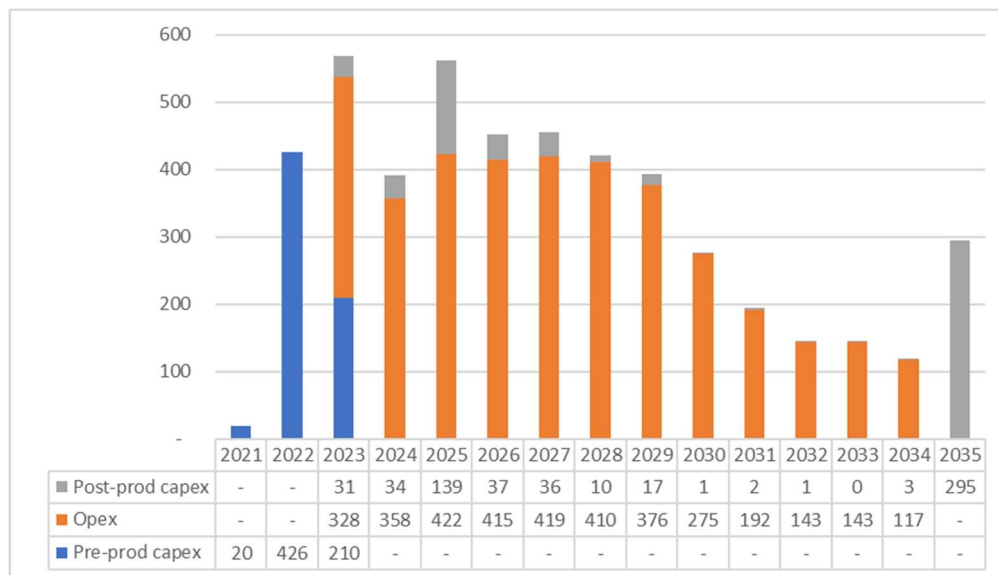
In addition to the employment and income impacts from construction, another 3,600 direct PYs of employment and \$275 million of direct labour income are expected to be generated during operations. It is estimated that residents of NL will account for 80% of the direct employment during operations. On an average annual basis for the 12-year operational life of the mine, 300 PYs of direct employment will be created from operating expenditures, generating \$23 million in labour income per annum. The geographical distribution of direct labour and incomes earned from operational expenditures are provided in Table 7. Figure 5 contains an illustration of annual direct employment by cost category.

**Table 7: Direct Income and Employment by Project Category, Area and Region: Operations
(2020\$ Million CAD and PY)**

Total					
	NL	ROC	CAN	NC	Total
Milling Opex					
Labour cost (\$M CAD)	49.2	6.1	55.3	6.1	61.5
Direct employment (PYs)	579	72	651	72	723
Direct labour income (\$M CAD)	44.3	5.5	49.8	5.5	55
Mining Opex					
Labour cost (\$M CAD)	35.8	4.5	40.3	4.5	44.7
Direct employment (PYs)	421	53	474	53	526
Direct labour income (\$M CAD)	32.2	4.0	36.2	4.0	40
Common/G&A Opex					
Labour cost (\$M CAD)	159.7	20.0	179.6	20.0	199.6
Direct employment (PYs)	1,878	235	2,113	235	2,348
Direct labour income (\$M CAD)	143.7	18.0	161.7	18.0	180
Total Opex					
Labour cost (\$M CAD)	244.6	30.6	275.2	30.6	305.8
Direct employment (PYs)	2,878	360	3,238	360	3,598
Direct labour income (\$M CAD)	220.2	27.5	247.7	27.5	275.2
Annual Averages (over 12 years)					
	NL	ROC	CAN	NC	Total
Milling Opex					
Labour cost (\$M CAD)	4.1	0.5	4.6	0.5	5.1
Direct employment (PYs)	48	6	54	6	60
Direct labour income (\$M CAD)	3.7	0.5	4.1	0.5	4.6
Mining Opex					
Labour cost (\$M CAD)	3.0	0.4	3.4	0.4	3.7
Direct employment (PYs)	35	4	39	4	44
Direct labour income (\$M CAD)	2.7	0.3	3.0	0.3	3.4
Common/G&A Opex					
Labour cost (\$M CAD)	13.3	1.7	15.0	1.7	16.6
Direct employment (PYs)	157	20	176	20	196
Direct labour income (\$M CAD)	12.0	1.5	13.5	1.5	15.0
Total Opex					
Labour cost (\$M CAD)	20.4	2.5	22.9	2.5	25.5
Direct employment (PYs)	240	30	270	30	300
Direct labour income (\$M CAD)	18.3	2.3	20.6	2.3	22.9

Figure 5 below illustrates the total direct employment expected over the life of the Project.

Figure 5: Direct Employment by Cost Category (person-years)

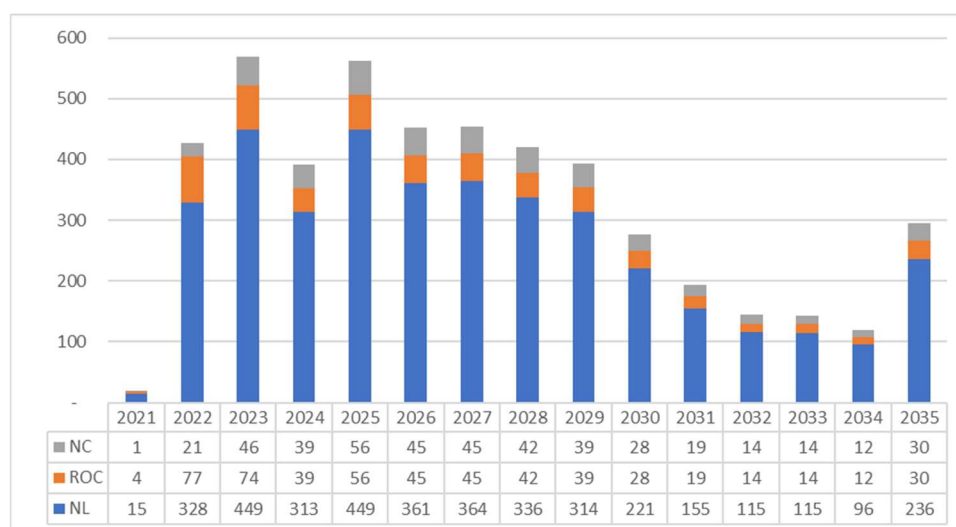


In total, over the 15-year life of the Project, construction and operational expenditures associated with the Project are expected to create approximately 4,860 PYs of total direct employment and generate approximately \$430 million in direct labour incomes.

While Project employment during operations is typically steady, the mining costs and labour requirements decrease during the last half of the Project. This is explained by the mining plan, which involves stockpiling higher grade ore in the early years to ensure consistent ore grades over the life of the mill.

Figure 6 summarizes the anticipated geographical distribution of direct income and employment impacts anticipated over the life of the Project.

Figure 6: Direct Employment by Residency (person-years)



3.5 Indirect Income and Employment

For the non-labour components of project expenditures, the amount supplied by firms in each region (i.e. the capture rate or supply factor) and the expected value-added component (i.e., net of imports) were estimated. As well, an additional check on the local content profile was developed utilizing representative data generated in an input-output model for Canada. This supplementary analysis allowed SCI to confirm that the assumed capture rates and value-added factors were consistent with the range of known inter-firm linkages established within this input-output framework.

The results of the indirect employment and income estimates are summarized below in Table 8 and Table 9, respectively. Indirect income by jurisdiction is presented in Figure 7. The results indicate that while the Project is based in NL and significant indirect employment and income impacts are expected to NL workers and businesses, there will also be significant indirect impacts felt throughout the ROC.

Table 8: Total Indirect Employment by Project Category and Region (PY)

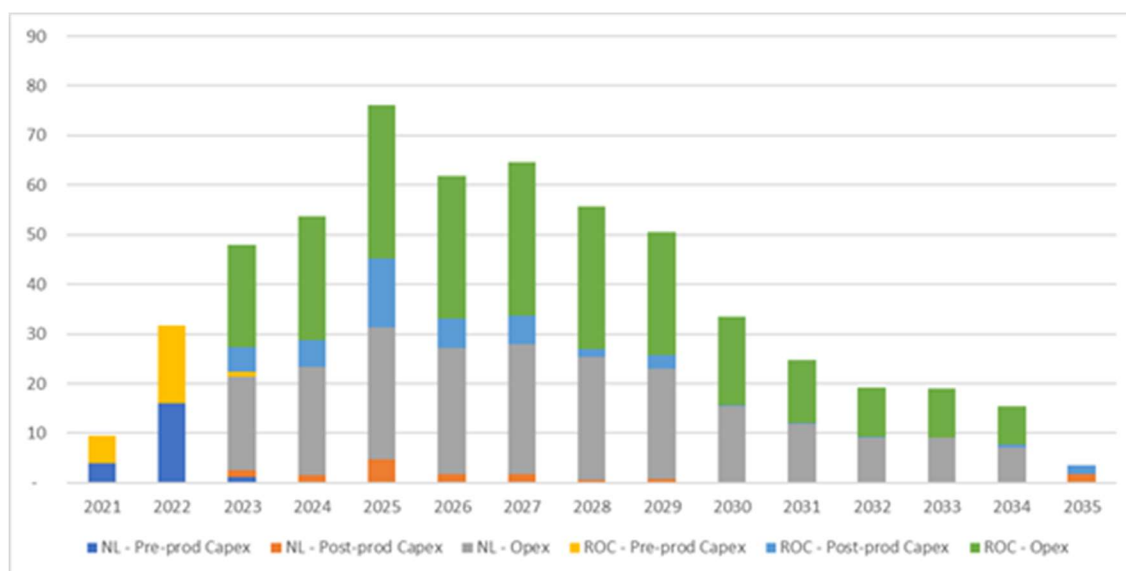
	NL	ROC	CAN
Indirect Employment from Pre-Production Capital Costs			
Mill	116	174	291
Mine	39	34	73
Infrastructure	143	115	257
Owners Cost	26	19	45
Total from Pre-Production Capital Costs	324	342	666
Indirect Employment from Post-Production Capital Costs			
Sustaining capital	162	560	723
Phase 2 expansion	35	82	117
Closure costs	27	28	56
Total from Post-Production Capital Costs	225	671	895
Indirect Employment from Total Operating Costs			
Milling	1,343	1,400	2,743

	NL	ROC	CAN
Mining	1,917	2,253	4,169
Common/G&A	97	158	256
Total from Operating Costs	3,357	3,811	7,168
Annual Average Indirect Employment from Operating Costs			
Milling	112	117	229
Mining	160	188	347
Common/G&A	8	13	21
Total Operating Costs	280	318	597

These results illustrate that although a significant level of benefits would be expected to accrue to both NL and the ROC, the ROC would be the main supplier of many of the non-labour inputs required by Marathon. By way of illustration, the primary types of goods and services required and expected to be supplied by Canadian suppliers are mining equipment, mill equipment and consumables such as mill liners and chemicals used in the milling and flotation processes. These consumable items are not manufactured within NL.

Table 9: Total Indirect Income by Project Category and Region (2020\$, Millions)

	NL	ROC	CAN
Indirect Income from Pre-Production Capital Costs			
Mill	7.6	11.3	18.9
Mine	2.5	2.2	4.8
Infrastructure	9.3	7.4	16.7
Owners Cost	1.7	1.3	2.9
Total from Pre-Production Capital Costs	21.0	22.3	43.3
Indirect Income from Post-Production Capital Costs			
Sustaining capital	10.6	36.4	47.0
Phase 2 expansion	2.3	5.3	7.6
Closure costs	1.8	1.8	3.6
Total from Post-Production Capital Costs	14.6	43.6	58.2
Indirect Income from Total Operating Costs			
Milling	87.3	91.0	178.3
Mining	124.6	146.4	271.0
Common/G&A	6.3	10.3	16.6
Total from Operating Costs	218.2	247.7	465.9
Annual Average Indirect Income from Operating Costs			
Milling	7.3	7.6	14.9
Mining	10.4	12.2	22.6
Common/G&A	0.5	0.9	1.4
Total Operating Costs	18.2	20.6	38.8

Figure 7: Project Indirect Income by Region and Expenditure Source (\$M CAD)

3.6 Induced Income and Employment

Induced income was calculated by applying an income multiplier to the direct and indirect incomes generated by the company's capital and operating expenditures in NL and the ROC. Income multipliers are derived by estimating the marginal propensities to consume, to tax and to import within each jurisdiction from data available in the most recent provincial economic data. Induced employment was calculated from the induced income by applying an average income per induced person-year of employment depending on geographic location).⁷

Table 10 presents the induced income multipliers and applicable incomes used to derive the induced economic impacts for the project.

Table 10: Induced Income and Employment Parameters

	Induced Income Multiplier	Induced Income per PY	Implied Employment Multiplier
NL	1.26	50,000	2.81
ROC	1.50	60,000	15.60
CAN*			4.38

* The total for Canada was derived by adding up the NL and ROC totals. As such there was no income multiplier specifically used for Canada; nor was there an induced income per PY cost. The implied employment multiplier for Canada is calculated by dividing total Canadian employment by direct Canadian employment.

The calculation of induced employment is not done through the use of an explicit employment multiplier in the SCI model. Rather, induced employment was calculated after dividing induced income by using the average cost per person-year of employment in the broader economy.

⁷ The induced income parameters were estimated from the most recent Statistics Canada data on service sector wage rates in each jurisdiction. Each wage rate was adjusted for non-wage costs and profits and overhead to derive the value utilized in this analysis.

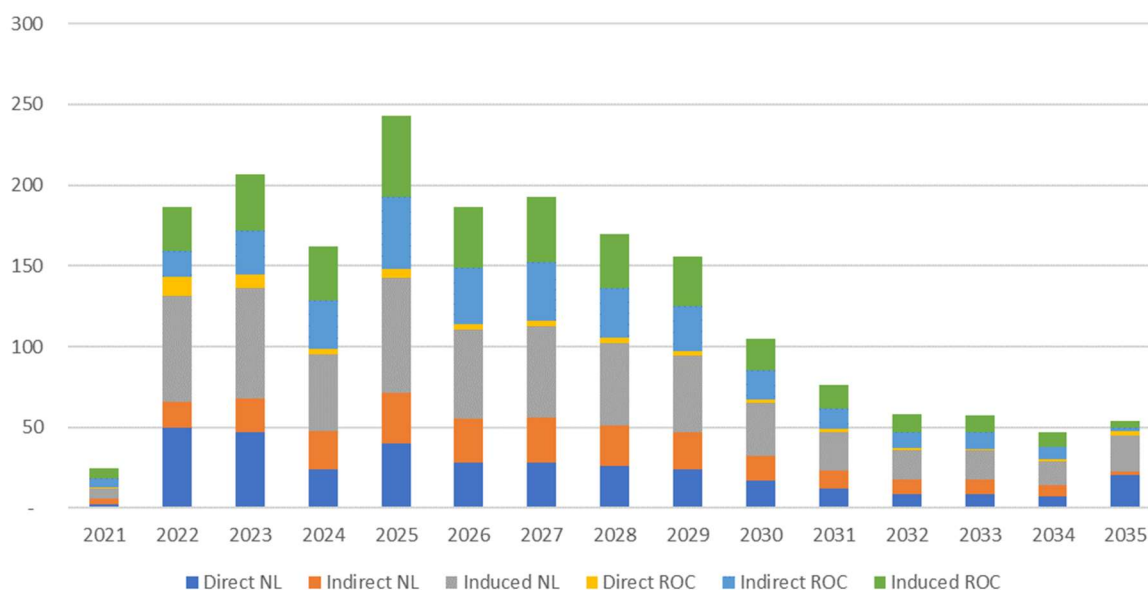
Following the calculation of induced income and employment, it is then possible to calculate the implied employment multiplier for each jurisdiction by taking the ratio of total employment to direct employment. That is, the employment multiplier was solved implicitly as a benchmark indicator of the reasonableness of the modeling approach, but it was not utilized explicitly in any of the calculations that generated economic impacts within the model. The implicit employment multiplier calculated for the project was 2.81 for NL and 4.38 for CAN.

Total direct, indirect and induced impacts on income and employment from combined capital and operation expenditures by geographical distribution are summarized in Tables 11 and 12.

Table 11: Direct, Indirect and Induced Income Summary (2020\$, Millions)

	NL	ROC	CAN
Pre-Production Capex Income			
Direct	77	18	95
Indirect	21	22	43
Post-Production Capex Income			
Direct	47	6	53
Indirect	15	44	58
Opex Income			
Direct	220	28	248
Indirect	218	248	466
Total Income			
Direct	344	51	395
Indirect	254	314	567
Induced	155	182	338
Total Income	753	547	1,301

Total income to persons and businesses in Canada arising from the construction and operation of the Project is estimated to be \$1.3 billion. Regionally, labour and businesses in NL will receive approximately 58% of the estimated income benefits, while ROC will receive the remaining 42% of the Project's income benefits. This distribution of benefits reflects the significant indirect and induced economic impacts accruing to the provinces in the ROC that have more diversified economies relative to NL. Figure 8 illustrates the total income by region generated by capital and operating expenditures.

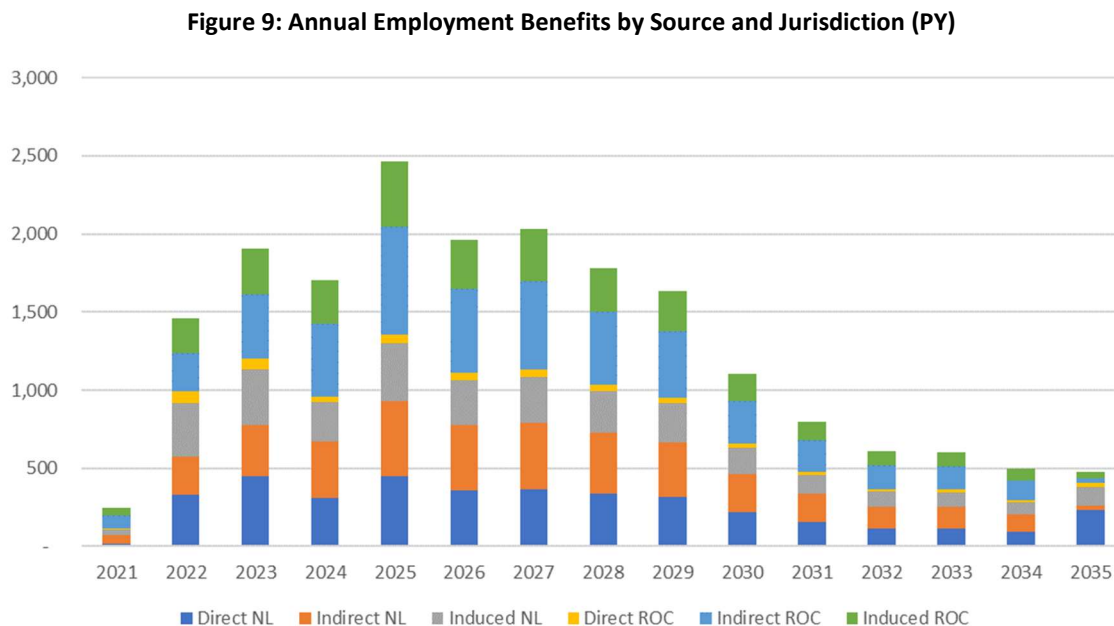
Figure 8: Income Benefits to the Canadian Economy (2020 CAD\$, Millions)

Total employment arising from the construction and operation of the Project is estimated to be almost 19,300 PYs of employment across Canada, 10,900 of which are expected to be filled by residents of NL.

Table 12: Direct, Indirect and Induced Employment Summary (PY)

	NL	ROC	CAN
Pre-Production Capex Employment			
Direct	505	118	623
Indirect	324	342	666
Post-Production Capex Employment			
Direct	485	61	546
Indirect	225	671	895
Opex Employment			
Direct	2,878	360	3,238
Indirect	3,357	3,811	7,168
Total Employment			
Direct	3,868	539	4,407
Indirect	3,905	4,824	8,729
Induced	3,109	3,041	6,150
Total Employment	10,882	8,404	19,287

Figure 9 illustrates the annual employment profile NL and the ROC.



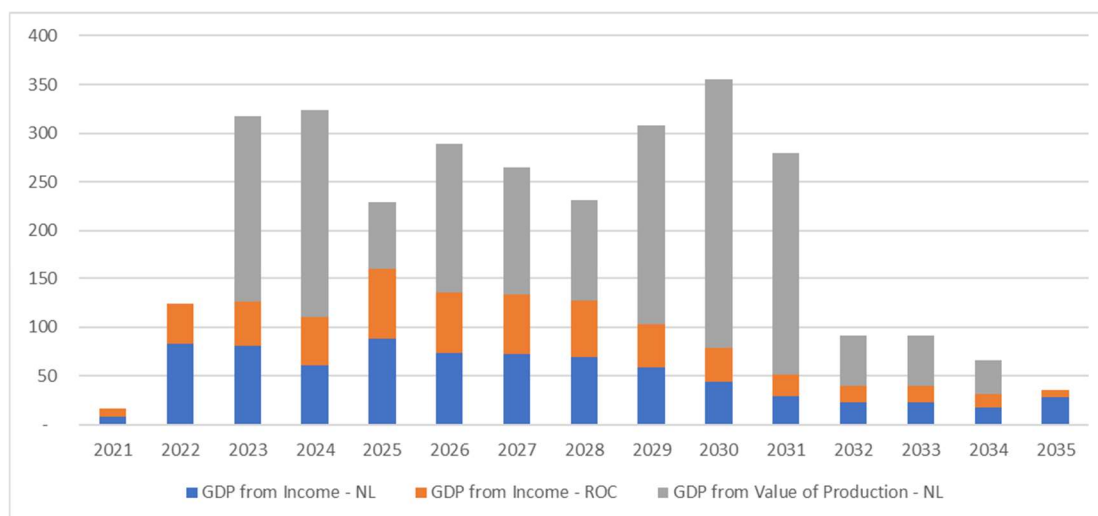
3.7 Gross Domestic Product

GDP will be generated from the project through the value of production at the mine site as well as through direct employment and income and through spin-off (that is, indirect and induced) employment and incomes generated by companies that supply goods and services to the project. A summary of the total income impacts and GDP from production is summarized in Table 13 and displayed in Figure 10. At the national level, the Project is expected to generate \$3.64 billion in GDP, including \$1.93 billion in incomes and \$1.71 billion in GDP from production.

Local NL factors of production are estimated to receive approximately \$1.19 billion in labour incomes and profits. When the net value of production, estimated at \$1.71 billion, is added to the local factor incomes, NL's GDP is expected to increase by \$2.9 billion dollars over the life of the Project.

Table 13: GDP from Capital and Operating Expenditures (2020\$, Millions)

	NL	ROC	CAN
GDP From Income			
Direct	344	51	395
Indirect	254	314	567
Induced	598	365	963
Total GDP From Income	1,196	730	1,926
GDP from Production			
Revenues	3,122	-	3,122
Less: Cost of production	(1,412)	-	(1,412)
Total GDP from Production	1,710	-	1,710
Total GDP	2,906	730	3,636

Figure 10: GDP by Type and Jurisdiction (M\$ CAD)

4.0 Taxation

The federal and provincial governments impose a range of taxes on mining operations in CAN, including direct and indirect taxes, such as corporate income and sales taxes. In NL, the government imposes the following taxes on mining operations:

- corporate income taxes;
- mining taxes and royalties;
- payroll taxes and Workers' Compensation premiums;
- value-added taxes (HST); and
- excise taxes (particularly on fuel).

4.1 Direct, Indirect and Induced Taxes

Direct taxes include the payroll and personal income taxes paid to both levels of government by Marathon's direct employees during construction and operations. The tax parameter data was gathered from a number of sources including Statistics Canada, Canada Revenue Agency, various provincial Departments of Finance, other government departments and agencies and from economic impact assessments on other natural resource projects. Indirect taxes were calculated by first breaking indirect and induced income into labour and business income and then by taking the share of personal income tax and corporate income tax that stems from this income. Induced taxes were derived by applying tax parameters to induced income. The induced and indirect tax parameters are based on econometric analysis of the broader economy and parameter values obtained from input-output modelling.

Table 14 summarizes the tax parameter inputs that were used in this analysis.

Table 14: Tax Parameter Input Summary

	NL	CAN
Direct Tax Parameters		
Income tax	10.0%	12.2%
Diesel tax (c/l)	16.5	4.0
Carbon tax (c/l)	4.4	11.1
HAPSET (% of direct labour income)	2.0%	N/A
Indirect Tax Parameters		
Income Tax	3.66%	5.38%
HST & other Indirect taxes	1.48%	0.55%
Tax on Profits	1.00%	1.46%
HAPSET (% of indirect income)	1.16%	N/A
Induced Tax Parameters		
Income Tax	2.02%	2.91%
HST & other Indirect taxes	15.51%	5.77%
Tax on Profits	0.42%	0.62%
HAPSET (% of induced income)	1.04%	N/A

NL Taxation Revenue

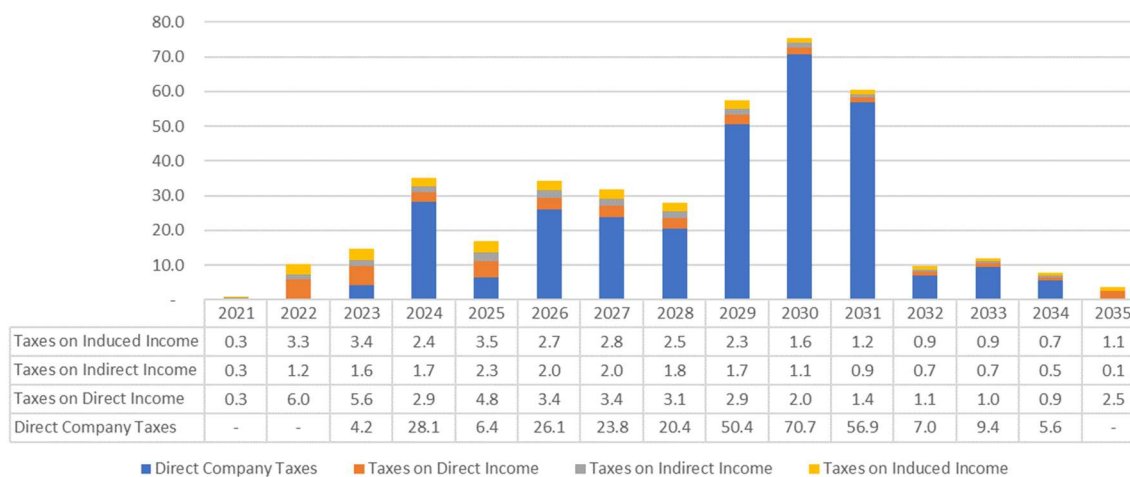
The direct, indirect and induced taxes for NL are presented in Table 15. The Project is expected to generate almost \$400 million in direct, indirect and induced taxes for the Government of Newfoundland and Labrador (GNL).

Table 15: Direct, Indirect and Induced Taxes NL – Total Project (2020\$, Millions)

	Totals	Annual Avg
Direct Company Taxes		
Corporate Income Tax	139	9.3
Mining tax	126	8.4
Direct fuel tax	35	2.3
Direct carbon tax	9	0.6
Taxes on Direct Income		
Direct PIT	34	2.3
Direct HAPSET	7	0.5
Taxes on Indirect Income		
Provincial Income Tax	9	0.6
PST & other Indirect taxes	4	0.3
Provincial tax on Profits	3	0.2
Indirect HAPSET	3	0.2
Taxes on Induced Income		
Provincial Income Tax	3	0.2
PST & other Indirect taxes	24	1.6
Provincial tax on Profits	1	0.0
Induced HAPSET	2	0.1
Total Taxes – NL	398	26.6

Figure 11 illustrates the time profile of the taxes expected to be generated to the GNL over the life of the Project. Direct mining taxes and corporate income taxes are expected to be the most significant source of revenue for the provincial treasury.

Figure 11: NL Taxation Revenues by Type (M\$ CAD)



Canada Taxation Revenue

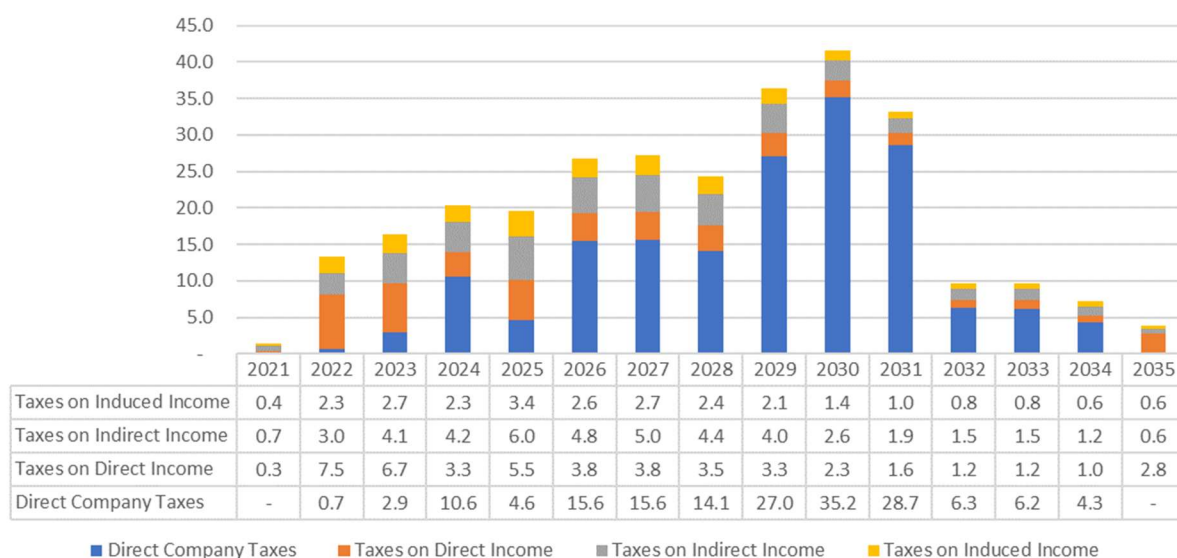
The direct, indirect and induced taxes for the federal treasury are provided in Table 16. The Government of Canada (GC) is estimated to receive \$292 million in direct, indirect and induced taxes.

Table 16: Direct, Indirect and Induced Taxes GC – Total Project (2020\$, Millions)

	Totals	Annual Avg
Direct Company Taxes		
Corporate Income Tax	139	11.6
Direct fuel tax	8	0.6
Direct carbon tax	24	1.8
Taxes on Direct Income		
Direct PIT	48	2.8
Taxes on Indirect Income		
Provincial Income Tax	31	2.1
PST & other Indirect taxes	2	0.1
Provincial tax on Profits	13	0.9
Taxes on Induced Income		
Provincial Income Tax	10	0.6
PST & other Indirect taxes	11	0.7
Provincial tax on Profits	6	0.4
Total Taxes – Canada	292	21.7

Figure 12 illustrates the time profile of the taxes expected to be generated by the Government of Canada over the life of the Project. Direct corporate income taxes are expected to be the most significant source of revenue for the federal treasury. Taxation payments to the Federal government are anticipated to peak in 2030 at more than \$40 million.

Figure 12: Canada Taxation Revenues by Type (M\$ CAD)



5.0 Sensitivity Analysis

A sensitivity analysis was undertaken to illustrate the potential economic impacts under various changes to commodity prices, and capital costs.

5.1 Sensitivity to Price Changes

From an economic impact perspective, the only change in impacts related to changes in the underlying price for gold are corporate income tax changes and mining tax changes. Table 17 illustrates how changes in the price of gold will affect the tax revenues accruing to the provincial and federal treasuries.

Table 17: Gold Price Sensitivity Analysis to Government Revenues (2020\$, Millions)

	Base Case	Price +25%	Price - 25%
Taxes - NL			
Direct Company Taxes			
Corporate Income Tax	139.5	246.3	58.7
Mining tax	125.8	237.7	51.1
Direct fuel tax	34.6	34.6	34.6
Direct carbon tax	9.3	9.3	9.3
Taxes on Direct Income			
Direct PIT	34.3	34.3	34.3
Direct HAPSET	6.9	6.9	6.9
Taxes on Indirect Income			
Provincial Income Tax	9.3	9.3	9.3
PST & other Indirect taxes	3.8	3.8	3.8
Provincial tax on Profits	2.5	2.5	2.5
Indirect HAPSET	2.9	2.9	2.9
Taxes on Induced Income			
Provincial Income Tax	3.1	3.1	3.1
PST & other Indirect taxes	24.1	24.1	24.1
Provincial tax on Profits	0.6	0.6	0.6
Induced HAPSET	1.6	1.6	1.6
Total Taxes - NL	398.4	617.1	243.0
Taxes - CAN			
Direct Company Taxes			
Corporate Income Tax	139.5	246.3	58.7
Mining tax - CAN	-	-	-
Direct fuel tax - CAN	8.4	8.4	8.4
Direct carbon tax - CAN	23.8	23.8	23.8
Taxes on Direct Income			
Direct PIT	48.1	48.1	48.1
Taxes on Indirect Income			
Federal Income Tax	30.5	30.5	30.5
HST & other Indirect taxes	1.7	1.7	1.7
Federal tax on Profits	13.3	13.3	13.3
Taxes on Induced Income			
Federal Income Tax	9.8	9.8	9.8
HST & other Indirect taxes	10.5	10.5	10.5
Federal tax on Profits	5.8	5.8	5.8
Induced HST	-	-	-
Total Taxes - CAN	291.5	398.3	210.7

As shown in Table 16, the impact on government revenues from changes in the price of gold is significant, particularly for the provincial treasury. A 25% increase in price increases revenue to the GNL by over \$200 million. Similarly, a 25% lower gold price will reduce revenues to the provincial treasury by almost \$160 million. The impacts on the federal treasury are significant, but they are not as pronounced.

5.2 Sensitivity to Capital Cost Changes

From an economic impact perspective, changes to the Project's capital costs affect overall employment and incomes as well as revenues flowing to treasuries for both levels of government. Table 18 shows how variations in the capital costs affect employment and tax revenues accruing to the provincial and federal treasuries.

Table 18: Capital Cost Sensitivity Analysis to Employment and Government Revenues (2020\$, Millions)

	Base Case	Capex + 25%	Price +25% Capex + 25%	Price -25% Capex + 25%
Taxes - NL				
Direct Company Taxes				
Corporate Income Tax	139.5	132.1	239.6	57.6
Mining tax	125.8	116.2	220.1	45.4
Direct fuel tax	34.6	34.6	34.6	34.6
Direct carbon tax	9.3	9.3	9.3	9.3
Taxes on Direct Income				
Direct PIT	34.3	37.4	37.4	37.4
Direct HAPSET	6.9	7.5	7.5	7.5
Taxes on Indirect Income				
Provincial Income Tax	9.3	9.6	9.6	9.6
PST & other Indirect taxes	3.8	3.9	3.9	3.9
Provincial tax on Profits	2.5	2.6	2.6	2.6
Indirect HAPSET	2.9	3.0	3.0	3.0
Taxes on Induced Income				
Provincial Income Tax	3.1	3.4	3.4	3.4
PST & other Indirect taxes	24.1	25.7	25.7	25.7
Provincial tax on Profits	0.6	0.7	0.7	0.7
Induced HAPSET	1.6	1.7	1.7	1.7
Total Taxes - NL	398.4	387.8	599.2	242.5
Taxes - CAN				
Direct Company Taxes				
Corporate Income Tax	139.5	132.1	239.6	57.6
Mining tax - CAN	-	-	-	-
Direct fuel tax - CAN	8.4	8.4	8.4	8.4
Direct carbon tax - CAN	23.8	23.8	23.8	23.8
Taxes on Direct Income				
Direct PIT	48.1	52.5	52.5	52.5
Taxes on Indirect Income				
Federal Income Tax	30.5	31.9	31.9	31.9
HST & other Indirect taxes	1.7	1.8	1.8	1.8
Federal tax on Profits	13.3	14.1	14.1	14.1
Taxes on Induced Income				
Federal Income Tax	9.8	10.5	10.5	10.5
HST & other Indirect taxes	10.5	11.2	11.2	11.2
Federal tax on Profits	5.8	6.2	6.2	6.2
Induced HST	-	-	-	-

	Base Case	Capex + 25%	Price +25% Capex + 25%	Price -25% Capex + 25%
Total Taxes - CAN	291.5	292.5	400.0	218.1
Employment - NL				
Direct	3,868	4,115	4,115	4,115
Indirect	3,905	4,042	4,042	4,042
Induced	3,109	3,316	3,316	3,316
Total Employment - NL	10,882	11,474	11,474	11,474

Under this sensitivity analysis, it is assumed that the capital cost increases occur proportionately across all cost types, resulting in an additional 590 person-years of employment for NL residents. In reality, however, it would be expected that a larger proportionate share of cost increases would be attributable to labour costs, given that much of the equipment costs are based on vendor quotes. As such, a 25% increase in capital costs could result in upwards of 900 additional PYs of employment for NL residents.

As shown in Table 17, the impact on government revenues from capital costs variations only marginally affect government revenues. The reduction in direct corporate income taxes and mining taxes from higher capital costs is offset by the additional employment and spin-off impacts from the increased capital costs.

6.0 Conclusion

The Project will have significant economic implications for the Canadian economy and, in particular, the economy of NL. The mine will also have significant federal and provincial Treasury impacts.

The development, operation and decommissioning of Marathon's gold mine will involve an expenditure of approximately \$2.0 billion to develop and operate over its planned 15-year life (two years of construction, twelve years of operations, and one year of closure/decommissioning). This expenditure includes an estimated \$272 million in pre-production capital expenditures, \$288 million in post-production capital expenditures and over \$1.4 billion in operating expenditures.

These combined expenditures are projected to create approximately 19,300 PYs of total employment in CAN, including approximately 10,900 PYs in NL. The project will also generate approximately \$1.3 billion in income to workers and businesses in CAN and contribute \$3.6 billion to Canada's GDP, including \$2.9 billion to the GDP of NL.

The province of NL is expected to receive almost 3,900 PYs of direct employment and an additional 7,000 PYs in indirect and induced employment. The total income expected to be earned by workers and business in NL is estimated to total over \$750 million.

Over the 15-year life of the Project an average of 725 jobs annually in NL, including approximately 260 direct jobs. At the national level, the Project is expected to generate an average of 1,290 jobs annually across CAN, including 300 direct jobs.

From a treasury perspective, the GNL is expected to receive almost \$400 million in incremental revenues over the life of the Project. The majority of this revenue is expected to be generated from direct corporate income taxes and mining taxes.

The Project will have considerable impacts on the NL mining industry, particularly on the island portion of the Province. In 2019, the mining industry employed 5,746 people, of whom 4,100 were in Labrador and only approximately 1,600 were on the island portion of the province. With an average labour force of approximately 325 during the operational phase, the Project has the potential to increase mining industry employment on the Island by over 20%. From a regional economy perspective, Marathon's employment will also be significant. In the local catchment area of Buchans, Buchans Junction, Millertown, Badger, Grand Falls-Windsor and Bishop's Falls, the total labour force was 8,635 in the 2016 Census. Four-hundred additional direct jobs in the area represents approximately 5% of the area's labour force.

In addition, the Project has the potential to be extended as additional exploration is conducted by Marathon Gold Corp. The overall development in the area may open up the region to additional mineral exploration and investments by other junior mining companies, which could potentially lead to additional projects in the future.

ATTACHMENT 9-B

**Estimate of Quarterly Direct Employment (FTEs) by Project
Phase and National Occupational Classification (NOC)**

VALENTINE GOLD PROJECT ENVIRONMENTAL IMPACT STATEMENT

Table 9-B.1 Estimate of Average Quarterly Direct Employment (FTEs) during Pre-Construction, by NOC for years Y-2 and Y-1

NOC	Description	Y-2				Y-1			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
0111	Financial managers	-	-	0.2	0.2	3.6	3.6	3.6	3.6
0112	Human resources managers	-	-	0.2	0.2	3.6	3.6	3.6	3.6
0211	Engineering managers	-	-	0.3	0.3	6.4	6.4	6.4	6.4
0711	Construction managers	-	-	0.3	0.3	5.4	5.4	5.4	5.4
0811	Primary production managers (except agriculture)	-	-	0.5	0.5	15.0	15.0	15.0	15.0
1111	Financial auditors and accountants	-	-	0.5	0.5	9.0	9.0	9.0	9.0
1112	Financial and investment analysts	-	-	0.1	0.1	1.8	1.8	1.8	1.8
1121	Human resource professionals	-	-	0.1	0.1	1.8	1.8	1.8	1.8
1241	Administrative clerks	-	-	0.1	0.1	1.8	1.8	1.8	1.8
1414	Secretaries (except legal and medical)	-	-	0.5	0.5	9.0	9.0	9.0	9.0
1523	Production clerks	-	-	0.2	0.2	4.6	4.6	4.6	4.6
1525	Dispatchers and radio operators	-	-	0.2	0.2	2.7	2.7	2.7	2.7
2113	Geologists, geochemists and geophysicists	-	-	0.9	0.9	18.2	18.2	18.2	18.2
9231	Central control and process operators, mineral and metal processing	-	-	-	-	-	-	-	-
2121	Biologists and related scientists	-	-	0.1	0.1	1.8	1.8	1.8	1.8
2131	Civil engineers	-	-	0.1	0.1	1.8	1.8	1.8	1.8
2143	Mining engineers	-	-	0.6	0.6	11.8	11.8	11.8	11.8
2154	Land surveyors	-	-	0.4	0.4	9.2	9.2	9.2	9.2
2171	Information systems analysts and consultants	-	-	0.2	0.2	2.7	2.7	2.7	2.7
2211	Chemical technologists and technicians	-	-	0.2	0.2	3.6	3.6	3.6	3.6
2212	Geological and mineral technologists and technicians	-	-	0.2	0.2	3.6	3.6	3.6	3.6
2132	Mechanical engineers	-	-	-	-	-	-	-	-
2133	Electrical and electronics engineers	-	-	-	-	-	-	-	-
2134	Chemical engineers	-	-	-	-	-	-	-	-
2141	Industrial and manufacturing engineers	-	-	-	-	-	-	-	-
2112	Chemists	-	-	-	-	-	-	-	-
2142	Metallurgical and materials engineers	-	-	-	-	-	-	-	-
2148	Other professional engineers, N.E.C.	-	-	-	-	-	-	-	-
2115	Other professional occupations in physical sciences	-	-	-	-	-	-	-	-
2144	Geological engineers	-	-	-	-	-	-	-	-
2221	Biological technologists and technicians	-	-	0.2	0.2	3.6	3.6	3.6	3.6
2231	Civil engineering technologists and technicians	-	-	0.2	0.2	3.6	3.6	3.6	3.6
2232	Mechanical engineering technologists and technicians	-	-	0.3	0.3	5.4	5.4	5.4	5.4
2233	Industrial engineering and manufacturing technologists and technicians	-	-	0.1	0.1	1.8	1.8	1.8	1.8
2234	Construction estimators	-	-	0.1	0.1	0.9	0.9	0.9	0.9
2241	Electrical and electronics engineering technologists and technicians	-	-	0.2	0.2	3.6	3.6	3.6	3.6
2243	Industrial instrument technicians and mechanics	-	-	0.3	0.3	5.4	5.4	5.4	5.4



VALENTINE GOLD PROJECT ENVIRONMENTAL IMPACT STATEMENT

Table 9-B.1 Estimate of Average Quarterly Direct Employment (FTEs) during Pre-Construction, by NOC for years Y-2 and Y-1

NOC	Description	Y-2				Y-1			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
2253	Drafting technologists and technicians	-	-	0.2	0.2	3.6	3.6	3.6	3.6
2254	Land survey technologists and technicians	-	-	0.2	0.2	2.7	2.7	2.7	2.7
2255	Mapping and related technologists and technicians	-	-	0.2	0.2	2.7	2.7	2.7	2.7
2261	Non-destructive testers and inspection technicians	-	-	0.3	0.3	5.4	5.4	5.4	5.4
2262	Engineering inspectors and regulatory officers	-	-	0.1	0.1	0.9	0.9	0.9	0.9
2263	Inspectors in public and environmental health/occupational health & safety	-	-	0.5	0.5	12.0	12.0	12.0	12.0
6322	Cooks	-	-	0.4	0.4	7.2	7.2	7.2	7.2
6541	Security guards and related security service occupations	-	-	-	-	-	-	-	-
7203	Contractors and supervisors, pipefitting trades	-	-	0.2	0.2	3.6	3.6	3.6	3.6
7237	Welders and related machine operators	-	-	1.5	1.5	30.0	30.0	30.0	30.0
7242	Industrial electricians	-	-	1.2	1.2	23.6	23.6	23.6	23.6
1526	Transportation route and crew schedulers	-	-	-	-	-	-	-	-
7251	Plumbers	-	-	0.1	0.1	0.9	0.9	0.9	0.9
7252	Steamfitters, pipefitters and sprinkler system installers	-	-	0.5	0.5	9.0	9.0	9.0	9.0
7271	Carpenters	-	-	0.1	0.1	1.8	1.8	1.8	1.8
7301	Contractors and supervisors, mechanic trades	-	-	0.2	0.2	4.6	4.6	4.6	4.6
7311	Construction millwrights and industrial mechanics (except textile)	-	-	2.4	2.4	44.3	44.3	44.3	44.3
7312	Heavy-duty equipment mechanics	-	-	1.2	1.2	27.6	27.6	27.6	27.6
7371	Crane operators	-	-	0.6	0.6	10.8	10.8	10.8	10.8
7372	Drillers and blasters - Surface mining, quarrying and construction	-	-	0.3	0.3	39.4	39.4	39.4	39.4
7452	Material handlers	-	-	0.8	0.8	13.5	13.5	13.5	13.5
7511	Truck drivers	-	-	2.2	2.2	43.6	43.6	43.6	43.6
7521	Heavy equipment operators (except crane)	-	-	2.8	2.8	93.5	93.5	93.5	93.5
7611	Construction trades helpers and labourers	-	-	0.6	0.6	9.9	9.9	9.9	9.9
7612	Other trades helpers and labourers	-	-	0.2	0.2	2.7	2.7	2.7	2.7
8221	Supervisors, mining and quarrying	-	-	0.5	0.5	9.0	9.0	9.0	9.0
8614	Mine labourers	0.6	0.6	1.4	1.4	16.4	16.4	16.4	16.4
9211	Supervisors, mineral and metal processing	-	-	0.2	0.2	4.6	4.6	4.6	4.6
9241	Power engineers and power systems operators	-	-	0.5	0.5	8.1	8.1	8.1	8.1
9411	Machine operators, mineral and metal processing	-	-	1.3	1.3	24.4	24.4	24.4	24.4
9415	Inspectors and testers, mineral and metal processing	-	-	0.2	0.2	5.6	5.6	5.6	5.6
9611	Labourers in mineral and metal processing	-	-	1.0	1.0	23.1	23.1	23.1	23.1
Total		-	-	27.9	27.9	626.2	626.2	626.2	626.2

Notes:
 - Not applicable
 Totals may not align with those shown in Chapter 15 (i.e., Tables 15.13 and 15.17) due to rounding.
 Source: Adopted from SC 2020; Ausenco 2020; Mining Industry Human Resources Council 2015



VALENTINE GOLD PROJECT ENVIRONMENTAL IMPACT STATEMENT

Table 9-B.2 Estimate of Average Quarterly Direct Employment (FTEs) during Operation (Includes Sustaining Capital) and Phase 2 Expansion (Included in Years 1 to 5), by NOC for Years 1 to 5

NOC	Description	Y1				Y2				Y3				Y4				Y5			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
0111	Financial managers	1.5	1.5	1.5	1.5	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.3	1.3	1.3	1.3	1.4	1.4	1.4	1.4
0112	Human resources managers	1.5	1.5	1.5	1.5	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.3	1.3	1.3	1.3	1.4	1.4	1.4	1.4
0211	Engineering managers	2.6	2.6	2.6	2.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.4
0711	Construction managers	0.6	0.6	0.6	0.6	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2
0811	Primary production managers (except agriculture)	7.1	7.1	7.1	7.1	6.7	6.7	6.7	6.7	7.7	7.7	7.7	7.7	6.6	6.6	6.6	6.6	6.8	6.8	6.8	6.8
1111	Financial auditors and accountants	1.1	1.1	1.1	1.1	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.5
1112	Financial and investment analysts	0.7	0.7	0.7	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1121	Human resource professionals	0.7	0.7	0.7	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1241	Administrative clerks	1.7	1.7	1.7	1.7	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.3	1.3	1.3	1.3	1.4	1.4	1.4	1.4
1414	Secretaries (except legal and medical)	2.1	2.1	2.1	2.1	1.7	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.6	1.6	1.6	1.6	1.8	1.8	1.8	1.8
1523	Production clerks	1.8	1.8	1.8	1.8	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.3	1.3	1.3	1.3	1.4	1.4	1.4	1.4
1525	Dispatchers and radio operators	0.8	0.8	0.8	0.8	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2
2113	Geologists, geochemists and geophysicists	6.5	6.5	6.5	6.5	6.3	6.3	6.3	6.3	6.5	6.5	6.5	6.5	6.2	6.2	6.2	6.2	6.6	6.6	6.6	6.6
9231	Central control and process operators, mineral and metal processing	0.6	0.6	0.6	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2121	Biologists and related scientists	1.7	1.7	1.7	1.7	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.3	1.3	1.3	1.3	1.4	1.4	1.4	1.4
2131	Civil engineers	0.7	0.7	0.7	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2143	Mining engineers	3.2	3.2	3.2	3.2	3.0	3.0	3.0	3.0	3.1	3.1	3.1	3.1	2.9	2.9	2.9	2.9	3.1	3.1	3.1	3.1
2154	Land surveyors	3.0	3.0	3.0	3.0	2.7	2.7	2.7	2.7	2.8	2.8	2.8	2.8	2.6	2.6	2.6	2.6	2.8	2.8	2.8	2.8
2171	Information systems analysts and consultants	0.8	0.8	0.8	0.8	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2
2211	Chemical technologists and technicians	0.8	0.8	0.8	0.8	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2
2212	Geological and mineral technologists and technicians	8.8	8.8	8.8	8.8	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.3	8.3	8.3	8.3	8.4	8.4	8.4	8.4
2132	Mechanical engineers	2.6	2.6	2.6	2.6	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
2133	Electrical and electronics engineers	0.6	0.6	0.6	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2134	Chemical engineers	0.6	0.6	0.6	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2141	Industrial and manufacturing engineers	0.6	0.6	0.6	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2112	Chemists	0.6	0.6	0.6	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2142	Metallurgical and materials engineers	0.6	0.6	0.6	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2148	Other professional engineers, N.E.C.	0.6	0.6	0.6	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2115	Other professional occupations in physical sciences	0.6	0.6	0.6	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2144	Geological engineers	0.6	0.6	0.6	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2221	Biological technologists and technicians	1.8	1.8	1.8	1.8	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.3	1.3	1.3	1.3	1.4	1.4	1.4	1.4
2231	Civil engineering technologists and technicians	0.8	0.8	0.8	0.8	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2
2232	Mechanical engineering technologists and technicians	1.9	1.9	1.9	1.9	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.3	1.3	1.3	1.3	1.4	1.4	1.4	1.4
2233	Industrial engineering and manufacturing technologists and technicians	1.7	1.7	1.7	1.7	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
2234	Construction estimators	0.7	0.7	0.7	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2241	Electrical and electronics engineering technologists and technicians	4.8	4.8	4.8	4.8	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.3	4.3	4.3	4.3	4.4	4.4	4.4	4.4
2243	Industrial instrument technicians and mechanics	4.9	4.9	4.9	4.9	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.3	4.3	4.3	4.3	4.4	4.4	4.4	4.4



VALENTINE GOLD PROJECT ENVIRONMENTAL IMPACT STATEMENT

Table 9-B.2 Estimate of Average Quarterly Direct Employment (FTEs) during Operation (Includes Sustaining Capital) and Phase 2 Expansion (Included in Years 1 to 5), by NOC for Years 1 to 5

NOC	Description	Y1				Y2				Y3				Y4				Y5			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
2253	Drafting technologists and technicians	0.8	0.8	0.8	0.8	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4
2254	Land survey technologists and technicians	0.8	0.8	0.8	0.8	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4
2255	Mapping and related technologists and technicians	0.8	0.8	0.8	0.8	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4
2261	Non-destructive testers and inspection technicians	0.9	0.9	0.9	0.9	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4
2262	Engineering inspectors and regulatory officers	0.7	0.7	0.7	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2263	Inspectors in public and environmental health/occupational health & safety	5.1	5.1	5.1	5.1	4.7	4.7	4.7	4.7	3.8	3.8	3.8	3.8	3.6	3.6	3.6	3.6	3.8	3.8	3.8	3.8
6322	Cooks	1.0	1.0	1.0	1.0	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.6	0.6	0.6	0.6	0.8	0.8	0.8	0.8
6541	Security guards and related security service occupations	4.6	4.6	4.6	4.6	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
7203	Contractors and supervisors, pipefitting trades	0.8	0.8	0.8	0.8	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4
7237	Welders and related machine operators	10.1	10.1	10.1	10.1	10.3	10.3	10.3	10.3	14.7	14.7	14.7	14.7	13.1	13.1	13.1	13.1	13.7	13.7	13.7	13.7
7242	Industrial electricians	7.8	7.8	7.8	7.8	7.7	7.7	7.7	7.7	10.0	10.0	10.0	10.0	9.5	9.5	9.5	9.5	10.0	10.0	10.0	10.0
1526	Transportation route and crew schedulers	0.6	0.6	0.6	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7251	Plumbers	0.7	0.7	0.7	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7252	Steamfitters, pipefitters and sprinkler system installers	1.1	1.1	1.1	1.1	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.6	0.6	0.6	0.6	0.8	0.8	0.8	0.8
7271	Carpenters	0.7	0.7	0.7	0.7	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4
7301	Contractors and supervisors, mechanic trades	2.8	2.8	2.8	2.8	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.4
7311	Construction millwrights and industrial mechanics (except textile)	15.0	15.0	15.0	15.0	15.6	15.6	15.6	15.6	16.2	16.2	16.2	16.2	16.3	16.3	16.3	16.3	17.2	17.2	17.2	17.2
7312	Heavy-duty equipment mechanics	17.8	17.8	17.8	17.8	22.0	22.0	22.0	22.0	28.4	28.4	28.4	28.4	26.9	26.9	26.9	26.9	27.4	27.4	27.4	27.4
7371	Crane operators	1.2	1.2	1.2	1.2	1.0	1.0	1.0	1.0	1.1	1.1	1.1	1.1	0.9	0.9	0.9	0.9	1.1	1.1	1.1	1.1
7372	Drillers and blasters - Surface mining, quarrying and construction	50.9	50.9	50.9	50.9	50.4	50.4	50.4	50.4	54.4	54.4	54.4	54.4	54.3	54.3	54.3	54.3	54.4	54.4	54.4	54.4
7452	Material handlers	1.4	1.4	1.4	1.4	1.0	1.0	1.0	1.0	1.1	1.1	1.1	1.1	0.9	0.9	0.9	0.9	1.1	1.1	1.1	1.1
7511	Truck drivers	16.8	16.8	16.8	16.8	21.3	21.3	21.3	21.3	25.9	25.9	25.9	25.9	25.1	25.1	25.1	25.1	25.9	25.9	25.9	25.9
7521	Heavy equipment operators (except crane)	127.4	127.4	127.4	127.4	140.3	140.3	140.3	140.3	189.0	189.0	189.0	189.0	184.0	184.0	184.0	184.0	185.1	185.1	185.1	185.1
7611	Construction trades helpers and labourers	4.2	4.2	4.2	4.2	4.0	4.0	4.0	4.0	4.1	4.1	4.1	4.1	3.9	3.9	3.9	3.9	4.1	4.1	4.1	4.1
7612	Other trades helpers and labourers	4.8	4.8	4.8	4.8	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.3	4.3	4.3	4.3	4.4	4.4	4.4	4.4
8221	Supervisors, mining and quarrying	7.1	7.1	7.1	7.1	6.7	6.7	6.7	6.7	6.8	6.8	6.8	6.8	6.6	6.6	6.6	6.6	6.8	6.8	6.8	6.8
8614	Mine labourers	7.4	7.4	7.4	7.4	9.3	9.3	9.3	9.3	11.5	11.5	11.5	11.5	11.2	11.2	11.2	11.2	11.6	11.6	11.6	11.6
9211	Supervisors, mineral and metal processing	2.8	2.8	2.8	2.8	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.4
9241	Power engineers and power systems operators	1.1	1.1	1.1	1.1	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.6	0.6	0.6	0.6	0.8	0.8	0.8	0.8
9411	Machine operators, mineral and metal processing	17.9	17.9	17.9	17.9	18.0	18.0	18.0	18.0	20.4	20.4	20.4	20.4	18.9	18.9	18.9	18.9	19.4	19.4	19.4	19.4
9415	Inspectors and testers, mineral and metal processing	2.8	2.8	2.8	2.8	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.4
9611	Labourers in mineral and metal processing	11.6	11.6	11.6	11.6	11.3	11.3	11.3	11.3	11.5	11.5	11.5	11.5	11.2	11.2	11.2	11.2	11.6	11.6	11.6	11.6
Total		404.4	404.4	404.4	404.4	398.0	398.0	398.0	398.0	477.1	477.1	477.1	477.1	459.4	459.4	459.4	459.4	469.3	469.3	469.3	469.3

Notes: - Not applicable; Totals may not align with those shown in Chapter 15 (i.e., Tables 15.13 and 15.17) due to rounding.
Source: Adopted from SC 2020; Ausenco 2020; Mining Industry Human Resources Council 2015



VALENTINE GOLD PROJECT ENVIRONMENTAL IMPACT STATEMENT

Table 9-B.3 Estimate of Average Quarterly Direct Employment (FTEs) during Operation (Includes Sustaining Capital) and Phase 2 Expansion (Included in Year 6 Only), by NOC for Years 6 to 10

NOC	Description	Y6				Y7				Y8				Y9				Y10			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
0111	Financial managers	1.3	1.3	1.3	1.3	1.2	1.2	1.2	1.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
0112	Human resources managers	1.3	1.3	1.3	1.3	1.2	1.2	1.2	1.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
0211	Engineering managers	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
0711	Construction managers	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
0811	Primary production managers (except agriculture)	6.6	6.6	6.6	6.6	6.4	6.4	6.4	6.4	6.3	6.3	6.3	6.3	2.3	2.3	2.3	2.3	1.3	1.3	1.3	1.3
1111	Financial auditors and accountants	0.6	0.6	0.6	0.6	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
1112	Financial and investment analysts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1121	Human resource professionals	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1241	Administrative clerks	1.3	1.3	1.3	1.3	1.2	1.2	1.2	1.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.1	0.1	0.1	0.1
1414	Secretaries (except legal and medical)	1.6	1.6	1.6	1.6	1.4	1.4	1.4	1.4	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
1523	Production clerks	1.3	1.3	1.3	1.3	1.2	1.2	1.2	1.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
1525	Dispatchers and radio operators	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
2113	Geologists, geochemists and geophysicists	6.2	6.2	6.2	6.2	5.7	5.7	5.7	5.7	5.5	5.5	5.5	5.5	4.5	4.5	4.5	4.5	3.5	3.5	3.5	3.5
9231	Central control and process operators, mineral and metal processing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2121	Biologists and related scientists	1.3	1.3	1.3	1.3	1.2	1.2	1.2	1.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
2131	Civil engineers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2143	Mining engineers	2.9	2.9	2.9	2.9	2.5	2.5	2.5	2.5	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	0.3	0.3	0.3	0.3
2154	Land surveyors	2.6	2.6	2.6	2.6	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
2171	Information systems analysts and consultants	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
2211	Chemical technologists and technicians	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
2212	Geological and mineral technologists and technicians	8.3	8.3	8.3	8.3	8.2	8.2	8.2	8.2	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1
2132	Mechanical engineers	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
2133	Electrical and electronics engineers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2134	Chemical engineers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2141	Industrial and manufacturing engineers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2112	Chemists	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2142	Metallurgical and materials engineers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2148	Other professional engineers, N.E.C.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2115	Other professional occupations in physical sciences	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2144	Geological engineers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2221	Biological technologists and technicians	1.3	1.3	1.3	1.3	1.2	1.2	1.2	1.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
2231	Civil engineering technologists and technicians	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
2232	Mechanical engineering technologists and technicians	1.3	1.3	1.3	1.3	1.2	1.2	1.2	1.2	1.1	1.1	1.1	1.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
2233	Industrial engineering and manufacturing technologists and technicians	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
2234	Construction estimators	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2241	Electrical and electronics engineering technologists and technicians	4.3	4.3	4.3	4.3	4.2	4.2	4.2	4.2	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
2243	Industrial instrument technicians and mechanics	4.3	4.3	4.3	4.3	4.2	4.2	4.2	4.2	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1



VALENTINE GOLD PROJECT ENVIRONMENTAL IMPACT STATEMENT

Table 9-B.3 Estimate of Average Quarterly Direct Employment (FTEs) during Operation (Includes Sustaining Capital) and Phase 2 Expansion (Included in Year 6 Only), by NOC for Years 6 to 10

NOC	Description	Y6				Y7				Y8				Y9				Y10				
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
2253	Drafting technologists and technicians	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
2254	Land survey technologists and technicians	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
2255	Mapping and related technologists and technicians	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
2261	Non-destructive testers and inspection technicians	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
2262	Engineering inspectors and regulatory officers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2263	Inspectors in public and environmental health/occupational health & safety	3.6	3.6	3.6	3.6	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
6322	Cooks	0.6	0.6	0.6	0.6	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
6541	Security guards and related security service occupations	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
7203	Contractors and supervisors, pipefitting trades	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
7237	Welders and related machine operators	13.1	13.1	13.1	13.1	10.3	10.3	10.3	10.3	5.8	5.8	5.8	5.8	3.8	3.8	3.8	3.8	1.8	1.8	1.8	1.8	1.8
7242	Industrial electricians	7.5	7.5	7.5	7.5	6.9	6.9	6.9	6.9	4.6	4.6	4.6	4.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
1526	Transportation route and crew schedulers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7251	Plumbers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7252	Steamfitters, pipefitters and sprinkler system installers	0.6	0.6	0.6	0.6	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
7271	Carpenters	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
7301	Contractors and supervisors, mechanic trades	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	1.1	1.1	1.1	1.1	1.1
7311	Construction millwrights and industrial mechanics (except textile)	15.3	15.3	15.3	15.3	14.0	14.0	14.0	14.0	13.2	13.2	13.2	13.2	12.2	12.2	12.2	12.2	11.2	11.2	11.2	11.2	11.2
7312	Heavy-duty equipment mechanics	25.9	25.9	25.9	25.9	23.1	23.1	23.1	23.1	12.7	12.7	12.7	12.7	5.7	5.7	5.7	5.7	2.7	2.7	2.7	2.7	2.7
7371	Crane operators	0.9	0.9	0.9	0.9	0.5	0.5	0.5	0.5	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
7372	Drillers and blasters - Surface mining, quarrying and construction	50.3	50.3	50.3	50.3	46.2	46.2	46.2	46.2	38.1	38.1	38.1	38.1	34.1	34.1	34.1	34.1	0.1	0.1	0.1	0.1	0.1
7452	Material handlers	0.9	0.9	0.9	0.9	0.5	0.5	0.5	0.5	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
7511	Truck drivers	21.1	21.1	21.1	21.1	19.9	19.9	19.9	19.9	11.2	11.2	11.2	11.2	7.2	7.2	7.2	7.2	5.2	5.2	5.2	5.2	5.2
7521	Heavy equipment operators (except crane)	188.0	188.0	188.0	188.0	158.4	158.4	158.4	158.4	85.5	85.5	85.5	85.5	41.5	41.5	41.5	41.5	15.5	15.5	15.5	15.5	15.5
7611	Construction trades helpers and labourers	3.9	3.9	3.9	3.9	3.5	3.5	3.5	3.5	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
7612	Other trades helpers and labourers	4.3	4.3	4.3	4.3	4.2	4.2	4.2	4.2	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
8221	Supervisors, mining and quarrying	6.6	6.6	6.6	6.6	6.4	6.4	6.4	6.4	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	5.3	5.3	5.3	5.3	5.3
8614	Mine labourers	11.2	11.2	11.2	11.2	8.7	8.7	8.7	8.7	4.5	4.5	4.5	4.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
9211	Supervisors, mineral and metal processing	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
9241	Power engineers and power systems operators	0.6	0.6	0.6	0.6	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
9411	Machine operators, mineral and metal processing	18.9	18.9	18.9	18.9	18.1	18.1	18.1	18.1	15.7	15.7	15.7	15.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7
9415	Inspectors and testers, mineral and metal processing	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	1.1	1.1	1.1	1.1	1.1
9611	Labourers in mineral and metal processing	11.2	11.2	11.2	11.2	10.7	10.7	10.7	10.7	10.5	10.5	10.5	10.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Total		451.4	451.4	451.4	451.4	398.4	398.4	398.4	398.4	279.2	279.2	279.2	279.2	196.2	196.2	196.2	196.2	120.2	120.2	120.2	120.2	120.2

Notes: - Not applicable; Totals may not align with those shown in Chapter 15 (i.e., Tables 15.13 and 15.17) due to rounding.

Source: Adopted from SC 2020; Ausenco 2020; Mining Industry Human Resources Council 2015



VALENTINE GOLD PROJECT ENVIRONMENTAL IMPACT STATEMENT

Table 9-B.4 Estimate of Average Quarterly Direct Employment (FTEs) during Operation (Includes Sustaining Capital), by NOC for Years 11 and 12

NOC	Description	Y11				Y12			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
0111	Financial managers	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
0112	Human resources managers	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
0211	Engineering managers	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
0711	Construction managers	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
0811	Primary production managers (except agriculture)	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
1111	Financial auditors and accountants	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
1112	Financial and investment analysts	-	-	-	-	-	-	-	-
1121	Human resource professionals	-	-	-	-	-	-	-	-
1241	Administrative clerks	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
1414	Secretaries (except legal and medical)	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
1523	Production clerks	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
1525	Dispatchers and radio operators	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
2113	Geologists, geochemists and geophysicists	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
9231	Central control and process operators, mineral and metal processing	-	-	-	-	-	-	-	-
2121	Biologists and related scientists	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
2131	Civil engineers	-	-	-	-	-	-	-	-
2143	Mining engineers	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
2154	Land surveyors	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
2171	Information systems analysts and consultants	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
2211	Chemical technologists and technicians	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
2212	Geological and mineral technologists and technicians	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1
2132	Mechanical engineers	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
2133	Electrical and electronics engineers	-	-	-	-	-	-	-	-
2134	Chemical engineers	-	-	-	-	-	-	-	-
2141	Industrial and manufacturing engineers	-	-	-	-	-	-	-	-
2112	Chemists	-	-	-	-	-	-	-	-
2142	Metallurgical and materials engineers	-	-	-	-	-	-	-	-
2148	Other professional engineers, N.E.C.	-	-	-	-	-	-	-	-
2115	Other professional occupations in physical sciences	-	-	-	-	-	-	-	-
2144	Geological engineers	-	-	-	-	-	-	-	-
2221	Biological technologists and technicians	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
2231	Civil engineering technologists and technicians	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
2232	Mechanical engineering technologists and technicians	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
2233	Industrial engineering and manufacturing technologists and technicians	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
2234	Construction estimators	-	-	-	-	-	-	-	-
2241	Electrical and electronics engineering technologists and technicians	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
2243	Industrial instrument technicians and mechanics	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1



VALENTINE GOLD PROJECT ENVIRONMENTAL IMPACT STATEMENT

Table 9-B.4 Estimate of Average Quarterly Direct Employment (FTEs) during Operation (Includes Sustaining Capital), by NOC for Years 11 and 12

NOC	Description	Y11				Y12			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
2253	Drafting technologists and technicians	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
2254	Land survey technologists and technicians	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
2255	Mapping and related technologists and technicians	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
2261	Non-destructive testers and inspection technicians	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
2262	Engineering inspectors and regulatory officers	-	-	-	-	-	-	-	-
2263	Inspectors in public and environmental health/occupational health & safety	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
6322	Cooks	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
6541	Security guards and related security service occupations	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
7203	Contractors and supervisors, pipefitting trades	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
7237	Welders and related machine operators	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
7242	Industrial electricians	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
1526	Transportation route and crew schedulers	-	-	-	-	-	-	-	-
7251	Plumbers	-	-	-	-	-	-	-	-
7252	Steamfitters, pipefitters and sprinkler system installers	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
7271	Carpenters	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
7301	Contractors and supervisors, mechanic trades	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
7311	Construction millwrights and industrial mechanics (except textile)	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2
7312	Heavy-duty equipment mechanics	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
7371	Crane operators	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
7372	Drillers and blasters - Surface mining, quarrying and construction	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
7452	Material handlers	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
7511	Truck drivers	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
7521	Heavy equipment operators (except crane)	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5
7611	Construction trades helpers and labourers	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
7612	Other trades helpers and labourers	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
8221	Supervisors, mining and quarrying	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3
8614	Mine labourers	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
9211	Supervisors, mineral and metal processing	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
9241	Power engineers and power systems operators	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
9411	Machine operators, mineral and metal processing	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7
9415	Inspectors and testers, mineral and metal processing	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
9611	Labourers in mineral and metal processing	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Total		120.2	120.2	120.2	120.2	120.2	120.2	120.2	120.2

Notes: - Not applicable; Totals may not align with those shown in Chapter 15 (i.e., Tables 15.13 and 15.17) due to rounding.
Source: Adopted from SC 2020; Ausenco 2020; Mining Industry Human Resources Council 2015



VALENTINE GOLD PROJECT ENVIRONMENTAL IMPACT STATEMENT

Table 9-B.5 Estimate of Average Quarterly Direct Employment (FTEs) during Decommissioning, Rehabilitation and Closure, by NOC for Year 13

NOC	Description	Y13			
		Q1	Q2	Q3	Q4
0111	Financial managers	2.0	2.0	2.0	2.0
0112	Human resources managers	2.0	2.0	2.0	2.0
0211	Engineering managers	3.0	3.0	3.0	3.0
0711	Construction managers	3.0	3.0	3.0	3.0
0811	Primary production managers (except agriculture)	5.0	5.0	5.0	5.0
1111	Financial auditors and accountants	5.0	5.0	5.0	5.0
1112	Financial and investment analysts	1.0	1.0	1.0	1.0
1121	Human resource professionals	1.0	1.0	1.0	1.0
1241	Administrative clerks	1.0	1.0	1.0	1.0
1414	Secretaries (except legal and medical)	5.0	5.0	5.0	5.0
1523	Production clerks	2.0	2.0	2.0	2.0
1525	Dispatchers and radio operators	2.0	2.0	2.0	2.0
2113	Geologists, geochemists and geophysicists	10.0	10.0	10.0	10.0
9231	Central control and process operators, mineral and metal processing	-	-	-	-
2121	Biologists and related scientists	1.0	1.0	1.0	1.0
2131	Civil engineers	1.0	1.0	1.0	1.0
2143	Mining engineers	6.0	6.0	6.0	6.0
2154	Land surveyors	4.0	4.0	4.0	4.0
2171	Information systems analysts and consultants	2.0	2.0	2.0	2.0
2211	Chemical technologists and technicians	2.0	2.0	2.0	2.0
2212	Geological and mineral technologists and technicians	2.0	2.0	2.0	2.0
2132	Mechanical engineers	-	-	-	-
2133	Electrical and electronics engineers	-	-	-	-
2134	Chemical engineers	-	-	-	-
2141	Industrial and manufacturing engineers	-	-	-	-
2112	Chemists	-	-	-	-
2142	Metallurgical and materials engineers	-	-	-	-
2148	Other professional engineers, N.E.C.	-	-	-	-
2115	Other professional occupations in physical sciences	-	-	-	-
2144	Geological engineers	-	-	-	-
2221	Biological technologists and technicians	2.0	2.0	2.0	2.0
2231	Civil engineering technologists and technicians	2.0	2.0	2.0	2.0
2232	Mechanical engineering technologists and technicians	3.0	3.0	3.0	3.0
2233	Industrial engineering and manufacturing technologists and technicians	1.0	1.0	1.0	1.0
2234	Construction estimators	1.0	1.0	1.0	1.0
2241	Electrical and electronics engineering technologists and technicians	2.0	2.0	2.0	2.0



VALENTINE GOLD PROJECT ENVIRONMENTAL IMPACT STATEMENT

Table 9-B.5 Estimate of Average Quarterly Direct Employment (FTEs) during Decommissioning, Rehabilitation and Closure, by NOC for Year 13

NOC	Description	Y13			
		Q1	Q2	Q3	Q4
2243	Industrial instrument technicians and mechanics	3.0	3.0	3.0	3.0
2253	Drafting technologists and technicians	2.0	2.0	2.0	2.0
2254	Land survey technologists and technicians	2.0	2.0	2.0	2.0
2255	Mapping and related technologists and technicians	2.0	2.0	2.0	2.0
2261	Non-destructive testers and inspection technicians	3.0	3.0	3.0	3.0
2262	Engineering inspectors and regulatory officers	1.0	1.0	1.0	1.0
2263	Inspectors in public and environmental health/occupational health & safety	5.0	5.0	5.0	5.0
6322	Cooks	4.0	4.0	4.0	4.0
6541	Security guards and related security service occupations	-	-	-	-
7203	Contractors and supervisors, pipefitting trades	2.0	2.0	2.0	2.0
7237	Welders and related machine operators	16.0	16.0	16.0	16.0
7242	Industrial electricians	13.0	13.0	13.0	13.0
1526	Transportation route and crew schedulers	-	-	-	-
7251	Plumbers	1.0	1.0	1.0	1.0
7252	Steamfitters, pipefitters and sprinkler system installers	5.0	5.0	5.0	5.0
7271	Carpenters	1.0	1.0	1.0	1.0
7301	Contractors and supervisors, mechanic trades	2.0	2.0	2.0	2.0
7311	Construction millwrights and industrial mechanics (except textile)	25.0	25.0	25.0	25.0
7312	Heavy-duty equipment mechanics	13.0	13.0	13.0	13.0
7371	Crane operators	6.0	6.0	6.0	6.0
7372	Drillers and blasters - Surface mining, quarrying and construction	3.0	3.0	3.0	3.0
7452	Material handlers	8.0	8.0	8.0	8.0
7511	Truck drivers	23.0	23.0	23.0	23.0
7521	Heavy equipment operators (except crane)	29.0	29.0	29.0	29.0
7611	Construction trades helpers and labourers	6.0	6.0	6.0	6.0
7612	Other trades helpers and labourers	2.0	2.0	2.0	2.0
8221	Supervisors, mining and quarrying	5.0	5.0	5.0	5.0
8614	Mine labourers	8.0	8.0	8.0	8.0
9211	Supervisors, mineral and metal processing	2.0	2.0	2.0	2.0
9241	Power engineers and power systems operators	5.0	5.0	5.0	5.0
9411	Machine operators, mineral and metal processing	14.0	14.0	14.0	14.0
9415	Inspectors and testers, mineral and metal processing	2.0	2.0	2.0	2.0
9611	Labourers in mineral and metal processing	10.0	10.0	10.0	10.0
Total		294.0	294.0	294.0	294.0

Notes:
 - Not applicable
 Totals may not align with those shown in Chapter 15 (i.e., Tables 15.13 and 15.17) due to rounding.
 Source: Adopted from SC 2020; Ausenco 2020; Mining Industry Human Resources Council 2015



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ATTACHMENT 9-C

**Typical Employment requirements by National Occupational
Classification (NOC) and Availability of Training Programs
Within NL**

VALENTINE GOLD PROJECT ENVIRONMENTAL IMPACT STATEMENT

Table 9-C.1 Typical Employment Requirements for Direct Employment Positions with the Project, by NOC

NOC	Description	Typical Employment Requirements ^A
0111	Financial managers	<ul style="list-style-type: none"> • A bachelor's degree in business administration, economics, commerce or a related field is required. • A master's degree in business administration (concentration in finance), or another master's level management program may be required. • Several years of experience in accounting, auditing, budgeting, financial planning and analysis or other financial activities are required. • Accounting and audit managers may require a recognized accounting designation (CPA, CA, CPA, CMA or CPA, CGA).
0112	Human resources managers	<ul style="list-style-type: none"> • A bachelor's degree in a field related to personnel management, such as business administration, industrial relations, commerce or psychology or completion of a professional development program in personnel administration is required. • Several years of experience as a personnel officer or human resource specialist are required. • Some employers may require human resources managers to hold a Certified Human Resources Professional (CHRP) designation.
0211	Engineering managers	<ul style="list-style-type: none"> • A bachelor's degree in engineering is usually required. • Extensive experience in an engineering discipline, including supervisory experience, is required. • Registration as a Professional Engineer (P. Eng.) by a provincial or territorial association of professional engineers is usually required.
0711	Construction managers	<ul style="list-style-type: none"> • A university degree in civil engineering or a college diploma in construction technology is usually required. • A master's degree in project management may be required. • Several years of experience in the construction industry, including experience as a construction supervisor or field superintendent, are usually required. • Extensive experience in the construction industry may substitute for post-secondary education requirements. • Professional engineering status or construction trade certification may be required by some employers.
0811	Primary production managers (except agriculture)	<ul style="list-style-type: none"> • Mining and quarrying managers usually require a bachelor's degree in mining engineering or earth sciences. • Several years of experience in a supervisory occupation in the particular industry are usually required and may substitute for formal education requirements.
1111	Financial auditors and accountants	<ul style="list-style-type: none"> • Chartered professional accountants, chartered accountants require a university degree and completion of a professional training program approved by a provincial institute of chartered accountants and, depending on the province, either two years or 30 months of on-the-job training. Membership in a provincial Institute of Chartered Accountants upon successful completion of the Uniform Evaluation (UFE). • Chartered professional accountants, certified general accountants and Chartered professional accountants, certified management accountants require a university degree and completion of an approved training program and several years of on-the-job training and certification with a regulatory body is required in all provinces and territories. • Auditors require education, training and recognition as indicated for Chartered professional accountants, chartered accountants, Chartered professional accountants, certified general accountants or Chartered professional accountants, certified management accountants



VALENTINE GOLD PROJECT ENVIRONMENTAL IMPACT STATEMENT

Table 9-C.1 Typical Employment Requirements for Direct Employment Positions with the Project, by NOC

NOC	Description	Typical Employment Requirements ^A
		and Some experience as an accountant. Auditors may require recognition by the Institute of Internal Auditors.
1112	Financial and investment analysts	<ul style="list-style-type: none"> • A bachelor's degree in commerce, business administration or economics and on-the-job training and industry courses and programs are usually required. • A master's degree in business administration (MBA) (concentration in finance) or in finance may be required. • The Chartered Financial Analyst (CFA) designation, available through a program conducted by the Institute of Chartered Financial Analysts in the United States, may be required by some employers.
1121	Human resource professionals	<ul style="list-style-type: none"> • A university degree or college diploma in human resources management or a related field, such as business administration, industrial relations, commerce or psychology or Completion of a professional development program in human resources administration is required. • Some employers may require human resources professionals to hold a Certified Human Resources Professional (CHRP) designation.
1241	Administrative clerks	<ul style="list-style-type: none"> • Completion of secondary school is usually required. • Completion of a one- or two-year college or other program for administrative assistants or secretaries or previous clerical experience is required.
1414	Secretaries (except legal and medical)	<ul style="list-style-type: none"> • Completion of secondary school is usually required. • On-the-job training may be provided.
1523	Production clerks	<ul style="list-style-type: none"> • Completion of secondary school is usually required and college may be required. • Previous clerical experience or experience as a production worker may be required.
1525	Dispatchers and radio operators	<ul style="list-style-type: none"> • Completion of secondary school is required. • Informal on-the-job training.
2113	Geologists, geochemists and geophysicists	<ul style="list-style-type: none"> • Geoscientists require a university degree in geology, geochemistry, geophysics or a related discipline. • Registration with a provincial or territorial association of professional engineers, geologists, geophysicists or geoscientists is usually required for employment and is mandatory to practice in all provinces and territories except Prince Edward Island and the Yukon. • Geologists and geophysicists are eligible for registration following graduation from an accredited educational program and after several years of supervised work experience and, in some provinces, after passing a professional practice examination.
9231	Central control and process operators, mineral and metal processing	<ul style="list-style-type: none"> • Completion of secondary school is required. • A college diploma may be required for some positions in this group. • On-the-job training is provided. • Several years of experience as a machine or process operator, usually in the same company or production department, are required.



VALENTINE GOLD PROJECT ENVIRONMENTAL IMPACT STATEMENT

Table 9-C.1 Typical Employment Requirements for Direct Employment Positions with the Project, by NOC

NOC	Description	Typical Employment Requirements ^A
2121	Biologists and related scientists	<ul style="list-style-type: none"> • A bachelor's degree in biology or in a related discipline is required for biologists. • A master's or doctoral degree in biology or a related discipline is required for employment as a research scientist in biology. • Post-doctoral research experience is usually required before employment in academic departments or research institutions.
2131	Civil engineers	<ul style="list-style-type: none"> • A bachelor's degree in civil engineering or in a related engineering discipline is required. • A master's degree or doctorate in a related engineering discipline may be required. • Licensing by a provincial or territorial association of professional engineers is required to approve engineering drawings and reports and to practice as a Professional Engineer (P.Eng.). • Engineers are eligible for registration following graduation from an accredited educational program, and after three or four years of supervised work experience in engineering and passing a professional practice examination. • Leadership in Energy and Environmental Design (LEED) certification is offered by the Canada Green Building Council and may be required by some employers.
2143	Mining engineers	<ul style="list-style-type: none"> • A bachelor's degree in mining engineering or in a related engineering discipline is required. • A master's degree or doctorate in a related engineering discipline may be required. • Licensing by a provincial or territorial association of professional engineers is required to approve engineering drawings and reports and to practice as a Professional Engineer (P.Eng.). • Engineers are eligible for registration following graduation from an accredited educational program, and after three or four years of supervised work experience in engineering and passing a professional practice examination.
2154	Land surveyors	<ul style="list-style-type: none"> • A bachelor's degree in geomatics engineering or survey engineering or • A college diploma in survey science or geomatics technology with additional academic credits and successful completion of equivalent examinations set by a regional board of examiners for land surveyors is required. • A one- to three-year articling period is required. • Successful completion of professional land surveyor examinations is required. • A federal or provincial land surveyor's licence is required.
2171	Information systems analysts and consultants	<ul style="list-style-type: none"> • A bachelor's degree in computer science, computer systems engineering, software engineering, business administration or a related discipline or • Completion of a college program in computer science is usually required. • Experience as a computer programmer is usually required. • Certification or training provided by software vendors may be required by some employers.



VALENTINE GOLD PROJECT ENVIRONMENTAL IMPACT STATEMENT

Table 9-C.1 Typical Employment Requirements for Direct Employment Positions with the Project, by NOC

NOC	Description	Typical Employment Requirements ^A
2211	Chemical technologists and technicians	<ul style="list-style-type: none"> • Chemical technologists usually require completion of a two- or three-year college program in chemical, biochemical or chemical engineering technology or a closely related discipline. • Chemical technicians usually require completion of a one- or two-year college program in chemical, biochemical or chemical engineering technology. • National certification for chemical technologists and technicians is available through the Canadian Society for Chemical Technology. • Certification in chemical engineering technology or in a related field is available through provincial associations of engineering/applied science technologists and technicians and may be required by employers. • A period of supervised work experience, usually two years, is required before certification.
2212	Geological and mineral technologists and technicians	<ul style="list-style-type: none"> • Geological and mineral technologists usually require completion of a two- to three-year college program in geological technology, petroleum technology, petroleum engineering technology, hydrogeology or groundwater technology, mining technology, mining engineering technology, mineralogy, metallurgical technology, or welding technology. • Geophysics technologists usually require completion of a two- to three-year college program in electronics technology. • Geological and mineral technicians usually require completion of a one- to two-year college program in a related field. • Certification in geological and mineral technology or in a related field is available through provincial associations of engineering/applied science technologists and technicians and may be required by employers. • A period of supervised work experience, usually two years, is required before certification.
2132	Mechanical engineers	<ul style="list-style-type: none"> • A bachelor's degree in mechanical engineering or in a related engineering discipline is required. • A master's degree or doctorate in a related engineering discipline may be required. • Licensing by a provincial or territorial association of professional engineers is required to approve engineering drawings and reports and to practice as a Professional Engineer (P.Eng.). • Engineers are eligible for registration following graduation from an accredited educational program, and after three or four years of supervised work experience in engineering and passing a professional practice examination.
2133	Electrical and electronics engineers	<ul style="list-style-type: none"> • A bachelor's degree in electrical or electronics engineering or in an appropriate related engineering discipline is required. • A master's or doctoral degree in a related engineering discipline may be required. • Licensing by a provincial or territorial association of professional engineers is required to approve engineering drawings and reports and to practice as a Professional Engineer (P.Eng.). • Engineers are eligible for registration following graduation from an accredited educational program, and after three or four years of supervised work experience in engineering and passing a professional practice examination. • Leadership in Energy and Environmental Design (LEED) certification is offered by the Canada Green Building Council and may be required by some employers.



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Table 9-C.1 Typical Employment Requirements for Direct Employment Positions with the Project, by NOC

NOC	Description	Typical Employment Requirements ^A
2134	Chemical engineers	<ul style="list-style-type: none"> • A bachelor's degree in chemical engineering or in a related engineering discipline is required. • A master's degree or doctorate in a related engineering discipline may be required. • Licensing by a provincial or territorial association of professional engineers is required to approve engineering drawings and reports and to practice as a Professional Engineer (P.Eng.). • Engineers are eligible for registration following graduation from an accredited educational program, and after three or four years of supervised work experience in engineering and passing a professional practice examination.
2141	Industrial and manufacturing engineers	<ul style="list-style-type: none"> • A bachelor's degree in industrial engineering or in a related engineering discipline is required. • A master's degree or doctorate in a related engineering discipline may be required. • Licensing by a provincial or territorial association of professional engineers is required to approve engineering drawings and reports and to practice as a Professional Engineer (P.Eng.). • Engineers are eligible for registration following graduation from an accredited educational program, and after three or four years of supervised work experience in engineering and passing a professional practice examination.
2112	Chemists	<ul style="list-style-type: none"> • A bachelor's degree in chemistry, biochemistry or a related discipline is required. • A master's or doctoral degree is usually required for employment as a research chemist.
2142	Metallurgical and materials engineers	<ul style="list-style-type: none"> • A bachelor's degree in metallurgical, materials, ceramic or chemical engineering or in a related engineering discipline is required. • A master's degree or doctorate in a related engineering discipline may be required. • Licensing by a provincial or territorial association of professional engineers is required to approve engineering drawings and reports and to practice as a Professional Engineer (P.Eng.). • Engineers are eligible for registration following graduation from an accredited educational program, and after three or four years of supervised work experience in engineering and passing a professional practice examination.
2148	Other professional engineers, N.E.C.	<ul style="list-style-type: none"> • A bachelor's degree in an appropriate engineering discipline is required. • A master's degree or doctorate in a related engineering discipline may be required. • Licensing by a provincial or territorial association of professional engineers is required to approve engineering drawings and reports, and to practice as a Professional Engineer (P.Eng.). • Engineers are eligible for registration following graduation from an accredited educational program, and after three or four years of supervised work experience in engineering and passing a professional practice examination.
2115	Other professional occupations in physical sciences	<ul style="list-style-type: none"> • A bachelor's degree in metallurgy, physics, chemistry, or a related physical science discipline is required. • A master's or doctoral degree is usually required for employment as a research scientist. • Advanced degrees in a broad range of applied science areas



VALENTINE GOLD PROJECT ENVIRONMENTAL IMPACT STATEMENT

Table 9-C.1 Typical Employment Requirements for Direct Employment Positions with the Project, by NOC

NOC	Description	Typical Employment Requirements ^A
2144	Geological engineers	<ul style="list-style-type: none"> • A bachelor's degree in geological engineering or in a related discipline is required. • A master's degree or doctorate in a related engineering discipline may be required. • Licensing by a provincial or territorial association of professional engineers is required to approve engineering drawings and reports and to practice as a Professional Engineer (P.Eng.). • Engineers are eligible for registration following graduation from an accredited educational program, three or four years of supervised work experience in engineering and passing a professional practice examination.
2221	Biological technologists and technicians	<ul style="list-style-type: none"> • Completion of a two- to three-year college program in a field related to agriculture, biology, microbiology, wildlife or resource management is usually required for employment as a biological technologist. • Completion of a one- to two-year college program in a related field is required for employment as a biological technician. • Certification with provincial associations is available, but voluntary.
2231	Civil engineering technologists and technicians	<ul style="list-style-type: none"> • Completion of a two- or three-year college program in civil engineering technology or a closely related discipline is usually required for civil engineering technologists. • Completion of a one- or two-year college program in civil engineering technology is usually required for civil engineering technicians. • Certification in civil engineering technology or in a related field is available through provincial associations of engineering/applied science technologists and technicians and may be required for some positions. • A period of supervised work experience, usually two years, is required before certification.
2232	Mechanical engineering technologists and technicians	<ul style="list-style-type: none"> • Completion of a two- or three-year college program in mechanical engineering technology is usually required for mechanical engineering technologists. • Completion of a one- or two-year college program in mechanical engineering technology is usually required for mechanical engineering technicians. • Certification in mechanical engineering technology or in a related field is available through provincial associations of engineering/applied science technologists and technicians and may be required for some positions. • A period of supervised work experience, usually two years, is required before certification.
2233	Industrial engineering and manufacturing technologists and technicians	<ul style="list-style-type: none"> • Completion of a two- or three-year college program or equivalent in industrial engineering technology, pulp and paper technology, plastics technology, textile technology, manufacturing technology or a related discipline is usually required for industrial engineering or manufacturing technologists. • Completion of a one- or two-year college program in industrial engineering technology or in a related discipline is usually required for industrial engineering or manufacturing technicians. • Certification in industrial engineering or manufacturing technology or in a related field is available through provincial or territorial associations of engineering/applied science technologists and technicians and may be required for some positions. • A period of supervised work experience, usually two years, is required before certification. • A college diploma in manufacturing technology and/or trade certification and experience in machining and tooling or metalworking is required for CAD-CAM/CNC programmers.



VALENTINE GOLD PROJECT ENVIRONMENTAL IMPACT STATEMENT

Table 9-C.1 Typical Employment Requirements for Direct Employment Positions with the Project, by NOC

NOC	Description	Typical Employment Requirements ^A
2234	Construction estimators	<ul style="list-style-type: none"> • Completion of secondary school is required. • Completion of a three-year college program in civil or construction engineering technology or Several years of experience as a qualified tradesperson in a construction trade such as plumbing, carpentry or electrical, are required. • Certification by the Canadian Institute of Quantity Surveyors is usually required.
2241	Electrical and electronics engineering technologists and technicians	<ul style="list-style-type: none"> • Completion of a two- or three-year college program in electrical or electronics engineering technology, computer engineering technology, telecommunications technology or an equivalent is usually required for electrical or electronics engineering technologists. • Completion of a one- or two-year college program in electrical or electronics engineering technology is usually required for electrical or electronics engineering technicians. • Certification in electrical or electronics engineering technology or in a related field is available through provincial associations of engineering/applied science technologists and technicians and may be required for some positions. • A period of supervised work experience, usually two years, is required before certification.
2243	Industrial instrument technicians and mechanics	<ul style="list-style-type: none"> • Completion of secondary school is usually required. • Completion of a four- or five-year apprenticeship program in industrial instrument repair or Completion of a two-year college program in industrial instrumentation technology and several years of work experience are usually required for trade certification. • Instrumentation and control technician trade certification is available, but voluntary, in all provinces and territories, except in Quebec. • Red Seal endorsement is also available to qualified instrumentation and control technicians upon successful completion of the interprovincial Red Seal examination.
2253	Drafting technologists and technicians	<ul style="list-style-type: none"> • Completion of secondary school is usually required. • Completion of a two- to three-year college program in engineering design and drafting technology or in a related field is usually required for drafting and design technologists. • Completion of a one- to two-year college program in drafting or completion of a three- to four-year apprenticeship program <u>or</u> four to five years of related experience plus completion of college or industry courses in drafting are usually required for drafting technicians. • Trade certification for draftspersons is available, but voluntary in Ontario. • Certification in engineering design and drafting technology or in a related field through provincial associations of engineering/applied science technologists and technicians may be required by employers. • A period of supervised work experience, usually two years, is required before certification.
2254	Land survey technologists and technicians	<ul style="list-style-type: none"> • Completion of secondary school is usually required. • Completion of a two- to three-year college program in geomatics or land survey technology is usually required for land survey technologists. • Completion of a one- to two-year college program in geomatics or land survey technology is usually required for land survey technicians. • Certification by provincial associations of technicians and technologists may be required by some employers.



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Table 9-C.1 Typical Employment Requirements for Direct Employment Positions with the Project, by NOC

NOC	Description	Typical Employment Requirements ^A
2255	Mapping and related technologists and technicians	<ul style="list-style-type: none"> • Completion of secondary school is required. • Geomatics technologists require completion of a two- to three-year college program in cartography, photogrammetry, aerial survey, remote sensing, geographic information system or geomatics. • Geomatics technicians require completion of a one- to two-year college program in cartography, photogrammetry, aerial survey, remote sensing, geographic information system or geomatics.
2261	Non-destructive testers and inspection technicians	<ul style="list-style-type: none"> • Completion of secondary school is required. • Completion of two years of an approved post-secondary science or engineering program may be required. • Additional classroom and on-the-job training is required for certification in non-destructive testing. • Non-destructive testing certification by Natural Resources Canada is available in three levels and is usually required by employers. • Industrial radiographers using a radioactive isotope must pass an examination to be recognized as a certified exposure device operator by the Canadian Nuclear Safety Commission. • Welding inspector certification by the Canadian Welding Bureau is available in three levels and may be required by employers. • Boiler and pressure vessel, process pipeline and above-ground storage tank inspector certification is available from the American Petroleum Institute.
2262	Engineering inspectors and regulatory officers	<ul style="list-style-type: none"> • University degree or college diploma in an appropriate engineering field or • Trade qualifications and extensive related work experience are required. • Appropriate professional engineering or engineering technology certification and licences may be required.
2263	Inspectors in public and environmental health and occupational health and safety	<ul style="list-style-type: none"> • A bachelor's degree or college diploma in a discipline such as food science, environmental studies, chemistry or health and safety is usually required. • In some establishments, several years of related work experience and the completion of in-house training courses may substitute for formal education. • Occupational health and safety officers may require certification with the Board of Canadian Registered Safety Professionals (BCRSP).
6322	Cooks	<ul style="list-style-type: none"> • Completion of secondary school is usually required. • Completion of a three-year apprenticeship program for cooks or completion of college or other program in cooking or food safety or several years of commercial cooking experience may be required. • Trade certification is available, but voluntary, in all provinces and territories. • Red Seal endorsement is also available to qualified cooks upon successful completion of the interprovincial Red Seal examination.
6541	Security guards and related security service occupations	<ul style="list-style-type: none"> • Completion of secondary school is usually required. • A college diploma in law and security or police technology may be required. • Private investigators require provincial licensure.



Table 9-C.1 Typical Employment Requirements for Direct Employment Positions with the Project, by NOC

NOC	Description	Typical Employment Requirements ^A
7203	Contractors and supervisors, pipefitting trades	<ul style="list-style-type: none"> • Completion of secondary school is usually required. • Several years of experience as a qualified tradesperson in a relevant trade are required. • Journeyman/woman trade certification in a relevant trade is required.
7237	Welders and related machine operators	<p>Welders:</p> <ul style="list-style-type: none"> • Completion of secondary school is usually required. • Completion of a three-year apprenticeship program or a combination of over three years of work experience in the trade and some college or industry courses in welding is usually required to be eligible for trade certification. • Trade certification is compulsory in Alberta and available, but voluntary, in all other provinces and the territories. • Red Seal endorsement is also available to qualified welders upon successful completion of the interprovincial Red Seal examination. <p>Welding, brazing and soldering machine operators:</p> <ul style="list-style-type: none"> • Some secondary school education is required. • Several months of on-the-job training are usually provided. • Experience as a machine operator helper may be required. • Experience with robotics may be required.
7242	Industrial electricians	<ul style="list-style-type: none"> • Completion of secondary school is usually required. • Completion of a four- or five-year industrial electrician apprenticeship program or a combination of over five years of work experience in the trade and some high school, college or industry courses in industrial electrical equipment is usually required to be eligible for trade certification. • Trade certification for industrial electricians is compulsory in Prince Edward Island, Quebec and Manitoba and available, but voluntary, in Newfoundland and Labrador, Nova Scotia, New Brunswick, Ontario, British Columbia and the Yukon. • Additional construction electrician certification may be required for industrial electricians when the employers are not owners of the industrial electrical equipment. • Red Seal endorsement is also available to qualified industrial electricians upon successful completion of the interprovincial Red Seal examination.
1526	Transportation route and crew schedulers	<ul style="list-style-type: none"> • Completion of secondary school is required. • Several years of experience in an appropriate transportation sector are usually required. • On-the-job training may be provided.
7251	Plumbers	<ul style="list-style-type: none"> • Completion of secondary school is usually required. • Completion of a four- to five-year apprenticeship program or a combination of over five years of work experience in the trade and some high school, college or industry courses in plumbing is usually required to be eligible for trade certification. • Trade certification is compulsory in Nova Scotia, Prince Edward Island, New Brunswick, Quebec, Ontario, Saskatchewan and Alberta and available, but voluntary, in Newfoundland and Labrador, Manitoba, British Columbia, the Yukon, the Northwest Territories and Nunavut. • Red Seal endorsement is also available to qualified plumbers upon successful completion of the interprovincial Red Seal examination.



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Table 9-C.1 Typical Employment Requirements for Direct Employment Positions with the Project, by NOC

NOC	Description	Typical Employment Requirements ^A
7252	Steamfitters, pipefitters and sprinkler system installers	<ul style="list-style-type: none"> • Completion of secondary school is usually required. • Completion of a four- to five-year apprenticeship program or a combination of over five years of work experience in the trade and some high school, college or industry courses in steam fitting, pipefitting or sprinkler system installation is usually required to be eligible for trade certification. • Steamfitter-pipefitter trade certification is compulsory in Nova Scotia, Prince Edward Island, New Brunswick, Quebec, Ontario, Manitoba and Alberta and available, but voluntary, in all other provinces and the territories. • Sprinkler system installer trade certification is compulsory in Nova Scotia, New Brunswick, Quebec and Manitoba and available, but voluntary, in all other provinces and the territories. • Sprinkler system installer (no construction) trade certification is compulsory in Quebec. • Red Seal endorsement is also available to qualified steamfitters-pipefitters and sprinkler system installers upon successful completion of the interprovincial Red Seal examination.
7271	Carpenters	<ul style="list-style-type: none"> • Completion of secondary school is usually required. • Completion of a three- to four-year apprenticeship program or a combination of over four years of work experience in the trade and some high school, college or industry courses in carpentry is usually required to be eligible for trade certification. • Red Seal endorsement is also available to qualified carpenters upon successful completion of the interprovincial Red Seal examination.
7301	Contractors and supervisors, mechanic trades	<ul style="list-style-type: none"> • Completion of secondary school is usually required. • Several years of experience as a qualified tradesperson in a relevant trade are usually required. • Journeyman/woman trade certification in a relevant trade is required.
7311	Construction millwrights and industrial mechanics (except textile)	<ul style="list-style-type: none"> • Completion of secondary school and training courses or a vocational program is usually required. • Completion of a three- to four-year apprenticeship program or a combination of over five years of work experience and industry courses in industrial machinery repair or millwrighting is usually required to be eligible for trade certification. • Textile machinery mechanics hired from other industries may require additional training in textile processes and experience as a textile manufacturing machinery operator. • Industrial mechanic (millwright) trade certification is available, but voluntary, in all provinces and territories. • Red Seal endorsement is also available to qualified industrial mechanics or millwrights upon successful completion of the interprovincial Red Seal examination.
7312	Heavy-duty equipment mechanics	<ul style="list-style-type: none"> • Completion of secondary school and training courses or a vocational program is usually required. • Completion of a three- to five-year apprenticeship program or a combination of over four years of work experience and industry courses in heavy equipment repair is usually required to be eligible for trade certification. • Heavy-duty equipment technician trade certification is compulsory in Quebec and Alberta and available, but voluntary, in all other provinces and the territories. • Red Seal endorsement is also available to qualified heavy duty equipment technicians and agricultural equipment technicians upon successful completion of the interprovincial Red Seal examination.



Table 9-C.1 Typical Employment Requirements for Direct Employment Positions with the Project, by NOC

NOC	Description	Typical Employment Requirements ^A
7371	Crane operators	<ul style="list-style-type: none"> • Completion of secondary school is usually required. • Completion of a one- to three-year apprenticeship program <u>or</u> industry courses in crane operating are usually required. • Mobile crane operator trade certification, for specified types of cranes, is compulsory in Nova Scotia, New Brunswick, Quebec, Ontario, Manitoba, Alberta and British Columbia and available, but voluntary, in all other provinces and the Northwest Territories. • Tower crane operator trade certification is compulsory in Newfoundland and Labrador, Nova Scotia, Quebec, Ontario, Manitoba, Alberta and British Columbia and available, but voluntary, in Prince Edward Island. • Hoist operator trade certification, for specified types of cranes, is compulsory in Quebec, Ontario, Manitoba, Alberta and British Columbia and is available, but voluntary, in New Brunswick, Saskatchewan, the Northwest Territories and Nunavut. • Mobile crane operators may require a provincial licence to drive mobile cranes on public roads. • Internal company certification as a crane operator may be required by some employers. • Red Seal endorsement is also available to qualified mobile crane, tower crane and mobile crane (hydraulic) operators upon successful completion of the interprovincial Red Seal examination.
7372	Drillers and blasters - Surface mining, quarrying and construction	<ul style="list-style-type: none"> • Completion of secondary school is usually required. • On-the-job training is provided. • Experience as a heavy equipment operator may be required for drillers. • Experience as a blaster helper in surface mining and quarrying or construction may be required for blasters. • Provincial blasting licence is usually required for blasters.
7452	Material handlers	<ul style="list-style-type: none"> • Some secondary school education may be required. • Physical strength is required for manual material handlers who work with heavy materials.
7511	Truck drivers	<ul style="list-style-type: none"> • Completion of secondary school is usually required. • On-the-job-training is provided. • Completion of an accredited driver training course of up to five months duration, through a vocational school or community college, may be required. • A Class 3 or D licence is required to drive straight-body trucks. • A Class 1 or A licence is required to drive long combination vehicles. • Air brake endorsement (Z) is required for drivers who operate vehicles equipped with air brakes. • Transportation of dangerous goods (TDG) certification is required for drivers who transport hazardous products or dangerous goods. • Additional licensing endorsement or certification may be required to drive articulated trucks.



Table 9-C.1 Typical Employment Requirements for Direct Employment Positions with the Project, by NOC

NOC	Description	Typical Employment Requirements ^A
7521	Heavy equipment operators (except crane)	<ul style="list-style-type: none"> • Some secondary school education is required. • Completion of a one- to two-year apprenticeship program or some high school, college or industry courses in heavy equipment operating combined with on-the-job training are required. • Trade certification for heavy equipment operator (dozer, excavator, tractor-loader-backhoe) is compulsory in Quebec and available, but voluntary, in Newfoundland and Labrador, Nova Scotia, Prince Edward Island and Ontario. • Internal company certification may be required by some employers. • Red Seal endorsement is also available to qualified heavy equipment operators upon successful completion of the interprovincial Red Seal examination.
7611	Construction trades helpers and labourers	<ul style="list-style-type: none"> • Some experience as a general construction labourer may be required for construction trade helpers. • Some pipeline workers, such as stabbers, mandrel operators and pre-heater tenders, usually require one season of experience in oil and gas pipeline construction. • Flagmen/women may require a traffic control certificate. • Trade certification for construction craft worker is available, but voluntary, in Newfoundland and Labrador, Nova Scotia, Prince Edward Island, Quebec, Ontario, Manitoba, Saskatchewan, and Alberta. • Red Seal endorsement is also available to qualified construction craft workers upon successful completion of the interprovincial Red Seal examination.
7612	Other trades helpers and labourers	<ul style="list-style-type: none"> • Some secondary school education may be required. • On-the-job training is provided.
8221	Supervisors, mining and quarrying	<ul style="list-style-type: none"> • Completion of secondary school is required. • Completion of a college or university program in mining technology or engineering may be required for some positions in this group. • Several years of experience in the occupations supervised are usually required. • Provincial certification as a shift boss, or coal mining supervisor may be required.
8614	Mine labourers	<ul style="list-style-type: none"> • Completion of secondary school is usually required. • A short period of introductory training is provided.
9211	Supervisors, mineral and metal processing	<ul style="list-style-type: none"> • Completion of secondary school is usually required. • Post-secondary education in metallurgy, sciences or a related field may be required for some occupations in this unit group. • Several years of experience in metal manufacturing or mineral/metal processing environment are usually required.
9241	Power engineers and power systems operators	<ul style="list-style-type: none"> • Completion of secondary school is usually required. • Power engineers require a college training program in power engineering and several years of work experience. • Power engineers require a provincial or territorial power engineering certificate according to class. • Power systems operators require completion of a three- to five-year power system operator apprenticeship program or over three years of work experience in the trade and some college or industry courses in electrical and electronic technology. • Trade certification is available, but voluntary for power systems operators in Newfoundland and Labrador. • Control room operators at nuclear power plants require licensing from the Canadian Nuclear Safety Commission.



VALENTINE GOLD PROJECT ENVIRONMENTAL IMPACT STATEMENT

Table 9-C.1 Typical Employment Requirements for Direct Employment Positions with the Project, by NOC

NOC	Description	Typical Employment Requirements ^A
9411	Machine operators, mineral and metal processing	<ul style="list-style-type: none"> • Completion of secondary school is usually required. • On-the-job training is provided. • Experience as a labourer in mineral and metal processing is usually required for machine operators.
9415	Inspectors and testers, mineral and metal processing	<ul style="list-style-type: none"> • Completion of secondary school is usually required. • Experience as a machine or process operator in mineral and metal processing is usually required.
9611	Labourers in mineral and metal processing	<ul style="list-style-type: none"> • Completion of secondary school may be required for some positions in this group.
<p>Notes: Source: Statistics Canada 2020.</p>		



VALENTINE GOLD PROJECT ENVIRONMENTAL IMPACT STATEMENT

Table 9-C.2 MUN Program Offering, 2020-2021 Academic Year

Program Name	Credential	Campus	School / Faculty
Business administration	Bachelor's	Grenfell Campus	Arts and Social Science
English	Bachelor's	Grenfell Campus	Arts and Social Science
Historical studies	Bachelor's	Grenfell Campus	Arts and Social Science
Humanities	Bachelor's	Grenfell Campus	Arts and Social Science
Psychology	Bachelor's	Grenfell Campus	Arts and Social Science
Social cultural studies	Bachelor's	Grenfell Campus	Arts and Social Science
Fine arts	Master's	Grenfell Campus	Arts and Social Science
Business administration	Bachelor's	Online	Business Administration
Business administration	Bachelor's	St. John's Campus	Business Administration
Commerce	Bachelor's	St. John's Campus	Business Administration
International business administration	Bachelor's	St. John's Campus	Business Administration
Business administration	Diploma	Online	Business Administration
Business administration	Graduate Diploma	St. John's Campus	Business Administration
Business administration	Master's	St. John's Campus	Business Administration
Business administration in social enterprise and entrepreneurship	Master's	St. John's Campus	Business Administration
Management	Master's	St. John's Campus	Business Administration
Management	PhD	St. John's Campus	Business Administration
Education	Bachelor's	St. John's Campus	Education
Education	Graduate Diploma	St. John's Campus	Education
Education	Master's	Online	Education
Education	Master's	St. John's Campus	Education
Education	PhD	St. John's Campus	Education
Civil engineering	Bachelor's	St. John's Campus	Engineering and Applied Science
Computer engineering	Bachelor's	St. John's Campus	Engineering and Applied Science
Electrical engineering	Bachelor's	St. John's Campus	Engineering and Applied Science
Mechanical engineering	Bachelor's	St. John's Campus	Engineering and Applied Science
Ocean and naval architectural engineering	Bachelor's	St. John's Campus	Engineering and Applied Science
Process Engineering	Bachelor's	St. John's Campus	Engineering and Applied Science
Communications engineering	Graduate Diploma	St. John's Campus	Engineering and Applied Science



VALENTINE GOLD PROJECT ENVIRONMENTAL IMPACT STATEMENT

Table 9-C.2 MUN Program Offering, 2020-2021 Academic Year

Program Name	Credential	Campus	School / Faculty
Safety and risk engineering	Graduate Diploma	St. John's Campus	Engineering and Applied Science
Civil engineering	Master's	St. John's Campus	Engineering and Applied Science
Computer engineering	Master's	St. John's Campus	Engineering and Applied Science
Electrical engineering	Master's	St. John's Campus	Engineering and Applied Science
Energy systems	Master's	St. John's Campus	Engineering and Applied Science
Environmental systems engineering and management	Master's	St. John's Campus	Engineering and Applied Science
Mechanical engineering	Master's	St. John's Campus	Engineering and Applied Science
Ocean and naval architectural engineering	Master's	St. John's Campus	Engineering and Applied Science
Oil and gas engineering	Master's	St. John's Campus	Engineering and Applied Science
Process Engineering	Master's	St. John's Campus	Engineering and Applied Science
Safety and risk engineering	Master's	St. John's Campus	Engineering and Applied Science
Civil engineering	PhD	St. John's Campus	Engineering and Applied Science
Computer engineering	PhD	St. John's Campus	Engineering and Applied Science
Electrical engineering	PhD	St. John's Campus	Engineering and Applied Science
Mechanical engineering	PhD	St. John's Campus	Engineering and Applied Science
Ocean and naval architectural engineering	PhD	St. John's Campus	Engineering and Applied Science
Oil and gas engineering	PhD	St. John's Campus	Engineering and Applied Science
Process Engineering	PhD	St. John's Campus	Engineering and Applied Science
Theatre	Bachelor's	Grenfell Campus	Fine Arts
Visual arts	Bachelor's	Grenfell Campus	Fine Arts
Food safety	Advanced Diploma	Marine Institute	Fisheries
Sustainable aquaculture	Advanced Diploma	Marine Institute	Fisheries
Water quality	Advanced Diploma	Marine Institute	Fisheries



VALENTINE GOLD PROJECT ENVIRONMENTAL IMPACT STATEMENT

Table 9-C.2 MUN Program Offering, 2020-2021 Academic Year

Program Name	Credential	Campus	School / Faculty
Marine environmental technology	Diploma/Bachelor's	Marine Institute	Fisheries
Fisheries Science (fisheries science and technology)	Master's	Marine Institute	Fisheries
Fisheries Science (stock assessment)	Master's	Marine Institute	Fisheries
Marine studies (fisheries resource management)	Master's	Marine Institute	Fisheries
Marine studies (fisheries resource management)	Master's	Online	Fisheries
Marine studies (marine spatial planning and management)	Master's	Marine Institute	Fisheries
Technology management (aquaculture technology)	Master's	Online	Fisheries
Fisheries science	PhD	Marine Institute	Fisheries
Quality management	Post-graduate certificate	Marine Institute	Fisheries
Quality management	Post-graduate certificate	Online	Fisheries
Human Kinetics and Recreation (Co-op)	Bachelor's	St. John's Campus	Human Kinetics and Recreation
Kinesiology	Bachelor's	St. John's Campus	Human Kinetics and Recreation
Physical education	Bachelor's	St. John's Campus	Human Kinetics and Recreation
Recreation	Bachelor's	St. John's Campus	Human Kinetics and Recreation
Human Kinetics and Recreation	Master's	St. John's Campus	Human Kinetics and Recreation
Kinesiology	Master's	St. John's Campus	Human Kinetics and Recreation
Physical education	Master's	Online	Human Kinetics and Recreation
Anthropology	Bachelor's	St. John's Campus	Humanities and Social Sciences
Archaeology	Bachelor's	St. John's Campus	Humanities and Social Sciences
Classics	Bachelor's	St. John's Campus	Humanities and Social Sciences
Communication studies	Bachelor's	St. John's Campus	Humanities and Social Sciences
Computer science	Bachelor's	St. John's Campus	Humanities and Social Sciences
Economics	Bachelor's	St. John's Campus	Humanities and Social Sciences
English	Bachelor's	St. John's Campus	Humanities and Social Sciences
Folklore	Bachelor's	St. John's Campus	Humanities and Social Sciences
French	Bachelor's	St. John's Campus	Humanities and Social Sciences
Gender studies	Bachelor's	St. John's Campus	Humanities and Social Sciences
Geography	Bachelor's	St. John's Campus	Humanities and Social Sciences



VALENTINE GOLD PROJECT ENVIRONMENTAL IMPACT STATEMENT

Table 9-C.2 MUN Program Offering, 2020-2021 Academic Year

Program Name	Credential	Campus	School / Faculty
German	Bachelor's	St. John's Campus	Humanities and Social Sciences
History	Bachelor's	St. John's Campus	Humanities and Social Sciences
Law and society	Bachelor's	St. John's Campus	Humanities and Social Sciences
Linguistics	Bachelor's	St. John's Campus	Humanities and Social Sciences
Medieval studies	Bachelor's	St. John's Campus	Humanities and Social Sciences
Philosophy	Bachelor's	St. John's Campus	Humanities and Social Sciences
Police studies	Bachelor's	St. John's Campus	Humanities and Social Sciences
Political science	Bachelor's	St. John's Campus	Humanities and Social Sciences
Psychology	Bachelor's	St. John's Campus	Humanities and Social Sciences
Pure mathematics	Bachelor's	St. John's Campus	Humanities and Social Sciences
Religious studies	Bachelor's	St. John's Campus	Humanities and Social Sciences
Russian	Bachelor's	St. John's Campus	Humanities and Social Sciences
Sociology	Bachelor's	St. John's Campus	Humanities and Social Sciences
Spanish	Bachelor's	St. John's Campus	Humanities and Social Sciences
Statistics	Bachelor's	St. John's Campus	Humanities and Social Sciences
Ancient languages	Certificate	St. John's Campus	Humanities and Social Sciences
Criminology	Certificate	Online	Humanities and Social Sciences
Criminology	Certificate	St. John's Campus	Humanities and Social Sciences
Film studies	Certificate	St. John's Campus	Humanities and Social Sciences
Food studies	Certificate	St. John's Campus	Humanities and Social Sciences
Indigenous Studies	Certificate	St. John's Campus	Humanities and Social Sciences
Newfoundland and Labrador Studies	Certificate	St. John's Campus	Humanities and Social Sciences
Public policy	Certificate	St. John's Campus	Humanities and Social Sciences
Ancient worlds	Diploma	St. John's Campus	Humanities and Social Sciences
Creative writing	Diploma	St. John's Campus	Humanities and Social Sciences
Environmental humanities	Diploma	St. John's Campus	Humanities and Social Sciences
Geographic information sciences	Diploma	St. John's Campus	Humanities and Social Sciences
Humanities	Diploma	St. John's Campus	Humanities and Social Sciences
Police studies	Diploma	St. John's Campus	Humanities and Social Sciences
Stage and screen technique	Diploma	St. John's Campus	Humanities and Social Sciences
Anthropology	Graduate Diploma	St. John's Campus	Humanities and Social Sciences
Classics	Graduate Diploma	St. John's Campus	Humanities and Social Sciences
Economics	Graduate Diploma	St. John's Campus	Humanities and Social Sciences
English	Graduate Diploma	St. John's Campus	Humanities and Social Sciences



VALENTINE GOLD PROJECT ENVIRONMENTAL IMPACT STATEMENT

Table 9-C.2 MUN Program Offering, 2020-2021 Academic Year

Program Name	Credential	Campus	School / Faculty
Folklore	Graduate Diploma	St. John's Campus	Humanities and Social Sciences
History	Graduate Diploma	St. John's Campus	Humanities and Social Sciences
Linguistics	Graduate Diploma	St. John's Campus	Humanities and Social Sciences
Philosophy	Graduate Diploma	St. John's Campus	Humanities and Social Sciences
Political science	Graduate Diploma	St. John's Campus	Humanities and Social Sciences
Religious studies	Graduate Diploma	St. John's Campus	Humanities and Social Sciences
Anthropology	Master's	St. John's Campus	Humanities and Social Sciences
Archaeology	Master's	St. John's Campus	Humanities and Social Sciences
Classics	Master's	St. John's Campus	Humanities and Social Sciences
Economics	Master's	St. John's Campus	Humanities and Social Sciences
English	Master's	St. John's Campus	Humanities and Social Sciences
Folklore	Master's	St. John's Campus	Humanities and Social Sciences
French studies	Master's	St. John's Campus	Humanities and Social Sciences
Gender studies	Master's	St. John's Campus	Humanities and Social Sciences
Geography	Master's	St. John's Campus	Humanities and Social Sciences
German	Master's	St. John's Campus	Humanities and Social Sciences
History	Master's	St. John's Campus	Humanities and Social Sciences
Humanities	Master's	St. John's Campus	Humanities and Social Sciences
Linguistics	Master's	St. John's Campus	Humanities and Social Sciences
Philosophy	Master's	St. John's Campus	Humanities and Social Sciences
Political science	Master's	St. John's Campus	Humanities and Social Sciences
Religious studies	Master's	St. John's Campus	Humanities and Social Sciences
Sociology	Master's	St. John's Campus	Humanities and Social Sciences
Anthropology	PhD	St. John's Campus	Humanities and Social Sciences
Archaeology	PhD	St. John's Campus	Humanities and Social Sciences
English	PhD	St. John's Campus	Humanities and Social Sciences
Folklore	PhD	St. John's Campus	Humanities and Social Sciences
Geography	PhD	St. John's Campus	Humanities and Social Sciences
History	PhD	St. John's Campus	Humanities and Social Sciences
Linguistics	PhD	St. John's Campus	Humanities and Social Sciences
Philosophy	PhD	St. John's Campus	Humanities and Social Sciences
Sociology	PhD	St. John's Campus	Humanities and Social Sciences
Arts and education	Master's	St. John's Campus	Interdisciplinary
Computer engineering	Master's	St. John's Campus	Interdisciplinary
Employment relations	Master's	St. John's Campus	Interdisciplinary



VALENTINE GOLD PROJECT ENVIRONMENTAL IMPACT STATEMENT

Table 9-C.2 MUN Program Offering, 2020-2021 Academic Year

Program Name	Credential	Campus	School / Faculty
Environmental systems engineering and management	Master's	St. John's Campus	Interdisciplinary
Ethnomusicology	Master's	St. John's Campus	Interdisciplinary
Occupational health and safety	Master's	St. John's Campus	Interdisciplinary
Oil and gas engineering	Master's	St. John's Campus	Interdisciplinary
Ethnomusicology	PhD	St. John's Campus	Interdisciplinary
Interdisciplinary PhD	PhD	St. John's Campus	Interdisciplinary
Theoretical physics	PhD	St. John's Campus	Interdisciplinary
Maritime studies	Bachelor's	Online	Maritime Studies
Maritime studies (maritime management)	Bachelor's	Marine Institute	Maritime Studies
Maritime studies (safety management)	Bachelor's	Marine Institute	Maritime Studies
Bridge watch	Certificate	Marine Institute	Maritime Studies
Fire rescue	Certificate	Marine Institute	Maritime Studies
Marine diesel mechanics	Certificate	Marine Institute	Maritime Studies
Marine engineering	Diploma	Marine Institute	Maritime Studies
Marine engineering systems design	Diploma	Marine Institute	Maritime Studies
Nautical science	Diploma	Marine Institute	Maritime Studies
Naval architecture	Diploma	Marine Institute	Maritime Studies
Maritime management	Master's	Marine Institute	Maritime Studies
Maritime management	Master's	Online	Maritime Studies
Maritime Studies (Safety: The Human Element)	Master's	Marine Institute/Online	Maritime Studies
Maritime Studies	PhD	Marine Institute	Maritime Studies
Medicine	Graduate Diploma	St. John's Campus	Medicine
Health ethics	Master's	St. John's Campus	Medicine
Medicine	Master's	St. John's Campus	Medicine
Public health	Master's	St. John's Campus	Medicine
Medicine	MD	St. John's Campus	Medicine
Medicine	PhD	St. John's Campus	Medicine
Music	Bachelor's	St. John's Campus	Music
Music	Master's	St. John's Campus	Music
Nursing	Bachelor's	Corner Brook	Nursing
Nursing	Bachelor's	St. John's	Nursing



VALENTINE GOLD PROJECT ENVIRONMENTAL IMPACT STATEMENT

Table 9-C.2 MUN Program Offering, 2020-2021 Academic Year

Program Name	Credential	Campus	School / Faculty
Nursing	Graduate Diploma	St. John's	Nursing
Nursing	Master's	Online	Nursing
Nursing	Master's	St. John's	Nursing
Nursing	PhD	St. John's	Nursing
Engineering technology and applied science major	Bachelor's	Marine Institute	Ocean Technology
Health sciences technology major	Bachelor's	Marine Institute	Ocean Technology
Technology	Bachelor's	Online	Ocean Technology
Remotely operated vehicles	Diploma	Marine Institute	Ocean Technology
Ocean mapping	Diploma/Bachelor's	Marine Institute	Ocean Technology
Underwater vehicles	Diploma/Bachelor's	Marine Institute	Ocean Technology
Applied Ocean Technology (Ocean Mapping)	Graduate Diploma	Marine Institute/St. John's	Ocean Technology
Applied Ocean Technology (Ocean Mapping)	Master's	Marine Institute/St. John's	Ocean Technology
Technology management (engineering and applied science technology)	Master's	Marine Institute	Ocean Technology
Technology management (engineering and applied science technology)	Master's	Online	Ocean Technology
Pharmacy	Master's	St. John's Campus	Pharmacy
Pharmacy	PharmD	St. John's Campus	Pharmacy
Pharmacy (for working professionals)	PharmD	Online	Pharmacy
Pharmacy	PhD	St. John's Campus	Pharmacy
Applied mathematics	Bachelor's	St. John's Campus	Science
Behavioral neuroscience	Bachelor's	St. John's Campus	Science
Biochemistry	Bachelor's	St. John's Campus	Science
Biology	Bachelor's	St. John's Campus	Science
Chemistry	Bachelor's	St. John's Campus	Science
Computer science	Bachelor's	St. John's Campus	Science
Earth sciences	Bachelor's	St. John's Campus	Science
Economics	Bachelor's	St. John's Campus	Science
Geography	Bachelor's	St. John's Campus	Science
Marine biology	Bachelor's	St. John's Campus	Science



VALENTINE GOLD PROJECT ENVIRONMENTAL IMPACT STATEMENT

Table 9-C.2 MUN Program Offering, 2020-2021 Academic Year

Program Name	Credential	Campus	School / Faculty
Nutrition	Bachelor's	St. John's Campus	Science
Ocean sciences	Bachelor's	St. John's Campus	Science
Ocean sciences (environmental systems)	Bachelor's	St. John's Campus	Science
Physics	Bachelor's	St. John's Campus	Science
Psychology	Bachelor's	Grenfell Campus	Science
Psychology	Bachelor's	St. John's Campus	Science
Pure mathematics	Bachelor's	St. John's Campus	Science
Statistics	Bachelor's	St. John's Campus	Science
Aquaculture	Master's	St. John's Campus	Science
Biochemistry	Master's	St. John's Campus	Science
Biology	Master's	St. John's Campus	Science
Chemistry	Master's	St. John's Campus	Science
Cognitive and behavioural ecology	Master's	St. John's Campus	Science
Computer science	Master's	St. John's Campus	Science
Earth sciences	Master's	St. John's Campus	Science
Environmental science	Master's	St. John's Campus	Science
Food science	Master's	St. John's Campus	Science
Geography	Master's	St. John's Campus	Science
Marine biology	Master's	St. John's Campus	Science
Mathematics and Statistics	Master's	St. John's Campus	Science
Physical oceanography	Master's	St. John's Campus	Science
Physics	Master's	St. John's Campus	Science
Psychology	Master's	St. John's Campus	Science
Scientific computing	Master's	St. John's Campus	Science
Statistics	Master's	St. John's Campus	Science
Biochemistry	PhD	St. John's Campus	Science
Biology	PhD	St. John's Campus	Science
Chemistry	PhD	St. John's Campus	Science
Cognitive and behavioural ecology	PhD	St. John's Campus	Science
Computer science	PhD	St. John's Campus	Science
Earth sciences	PhD	St. John's Campus	Science
Environmental science	PhD	St. John's Campus	Science
Food science	PhD	St. John's Campus	Science



VALENTINE GOLD PROJECT ENVIRONMENTAL IMPACT STATEMENT

Table 9-C.2 MUN Program Offering, 2020-2021 Academic Year

Program Name	Credential	Campus	School / Faculty
Geography	PhD	St. John's Campus	Science
Marine biology	PhD	St. John's Campus	Science
Mathematics and Statistics	PhD	St. John's Campus	Science
Physical oceanography	PhD	St. John's Campus	Science
Physics	PhD	St. John's Campus	Science
Psychology	PhD	St. John's Campus	Science
Scientific computing	PhD	St. John's Campus	Science
Statistics	PhD	St. John's Campus	Science
Computational mathematics	Bachelor's	Grenfell Campus	Science and the Environment
Environment and Sustainability	Bachelor's	Grenfell Campus	Science and the Environment
Environmental science	Bachelor's	Grenfell Campus	Science and the Environment
Environmental studies	Bachelor's	Grenfell Campus	Science and the Environment
General science	Bachelor's	Grenfell Campus	Science and the Environment
Physics	Bachelor's	Grenfell Campus	Science and the Environment
Boreal ecosystems and agricultural sciences	Master's	Grenfell Campus	Science and the Environment
Environmental policy	Master's	Grenfell Campus	Science and the Environment
Social work	Bachelor's	St. John's Campus	Social Work
Social work	Master's	St. John's Campus	Social Work
Social work	PhD	St. John's Campus	Social Work
SOURCE: MUN 2020			



VALENTINE GOLD PROJECT ENVIRONMENTAL IMPACT STATEMENT

Table 9-C.3 CNA Program Offering, 2020-2021 Academic Year

Program Name	Credential	Campus	Area of Study
Aboriginal Bridging Program	Certificate	Happy Valley-Goose Bay	Academics
Comprehensive Arts & Science (CAS) Transfer: College-University	Certificate	Burin, Carbonear, Grand Falls-Windsor, Happy Valley-Goose Bay, Labrador West	Academics
Comprehensive Arts & Science (CAS) Transition	Certificate	Bay St. George, Carbonear, Clarenville, Corner Brook, Distributed Learning, gander, Grand Falls-Windsor, Happy Valley-Goose Bay, Labrador West, Prince Philip Drive, Seal Cove	Academics
Art & Design Essentials	Courses Only	Distributed Learning	Applied Arts
Community Leadership Development	Diploma	Bay St. George, Carbonear, Grand Falls-Windsor	Applied Arts
Community Recreation Leadership	Diploma	Prince Philip Drive	Applied Arts
Digital Animation	Diploma	Bay St. George	Applied Arts
Digital Filmmaking	Diploma	Bay St. George	Applied Arts
Early Childhood Education	Certificate/Diploma	Corner Brook, Prince Philip Drive	Applied Arts
Early Childhood Education - Distributed Learning	Certificate/Diploma	Distributed Learning	Applied Arts
Graphic Communications	Diploma	Prince Philip Drive	Applied Arts
Graphic Design	Diploma	Prince Philip Drive	Applied Arts
Journalism	Diploma	Prince Philip Drive	Applied Arts
Journalism (Post Diploma)	Post Diploma	Distributed Learning	Applied Arts
Music: Performance, Business & Technology	Diploma	Prince Philip Drive	Applied Arts
Sound Recording & Production	Diploma	Prince Philip Drive	Applied Arts
Textile & Apparel Design	Diploma	Prince Philip Drive	Applied Arts
Video Game Art & Design	Diploma	Distributed Learning	Applied Arts
Atlantic Trades Business Seal	Certificate	Distributed Learning	Business
Business Administration	Certificate	Baie Verte, Bonavista, Burin, St. Anthony	Business
Business Administration (Accounting)	Diploma	Bay St. George, Carbonear, Clarenville, Corner Brook, Distributed Learning	Business
Business Administration (General)	Diploma	Distributed Learning, Port aux Basques	Business



VALENTINE GOLD PROJECT ENVIRONMENTAL IMPACT STATEMENT

Table 9-C.3 CNA Program Offering, 2020-2021 Academic Year

Program Name	Credential	Campus	Area of Study
Business Administration (Human Resource Management)	Diploma	Bay St. George, Carbonear, Clarenville, Distributed Learning	Business
Business Administration (Marketing)	Diploma	Distributed Learning	Business
Business Management (Accounting)	Diploma	Grand Falls-Windsor, Prince Philip Drive	Business
Business Management (Human Resource Management)	Diploma	Distributed Learning, Grand Falls-Windsor, Prince Philip Drive	Business
Business management (Marketing)	Diploma	Prince Philip Drive	Business
Executive Office management	Diploma	Bay St. George, Burin, Clarenville, Corner Brook, Distributed Learning, Grand Falls-Windsor, Labrador West, Port aux Basques, Prince Philip Drive, St. Anthony	Business
Office Administration	Certificate	Baie Verte	Business
Office Administration (Legal)	Diploma	Prince Philip Drive	Business
Office Administration (Medical)	Diploma	Distributed Learning, Prince Philip Drive	Business
Office Administration (Records and Information Management)	Diploma	Distributed Learning, Prince Philip Drive	Business
Architectural Engineering Technology	Diploma	Ridge Road	Engineering Technology
Chemical Process Engineering technology (Co-op)	Diploma	Ridge Road	Engineering Technology
Civil Engineering Technology (Co-op)	Diploma	Corner Brook, Ridge Road	Engineering Technology
Computing Systems Engineering Technology (Co-op)	Diploma	Ridge Road	Engineering Technology
Electrical Engineering Technology (Power & Controls) Co-op	Diploma	Ridge Road	Engineering Technology
Electronic Systems Engineering Technology (Co-op)	Diploma	Corner Brook	Engineering Technology
Electronics Engineering Technology (Biomedical)	Diploma	Ridge Road	Engineering Technology
Engineering Technology (First Year)	Diploma	Burin, Carbonear, Corner Brook, Gander, Ridge Road	Engineering Technology
Geomatics/Surveying Engineering Technology (Co-op)	Diploma	Ridge Road	Engineering Technology
Industrial Engineering Technology (Co-op)	Diploma	Ridge Road	Engineering Technology



VALENTINE GOLD PROJECT ENVIRONMENTAL IMPACT STATEMENT

Table 9-C.3 CNA Program Offering, 2020-2021 Academic Year

Program Name	Credential	Campus	Area of Study
Instrumentation and Controls Engineering Technology	Diploma	Ridge Road	Engineering Technology
Mechanical Engineering Technology	Diploma	Ridge Road	Engineering Technology
Mechanical Engineering Technology (Manufacturing) Co-op	Diploma	Ridge Road	Engineering Technology
Petroleum Engineering Technology (Co-op)	Diploma	Ridge Road	Engineering Technology
Power Engineering Technology	Diploma	Corner Brook	Engineering Technology
Welding Engineering Technician	Diploma	Burin	Engineering Technology
Advanced Care Paramedicine	Post Diploma	Prince Philip Drive	Health Sciences
Diagnostic Ultrasonography	Post Diploma	Prince Philip Drive	Health Sciences
Medical Laboratory Assistant	Certificate	Grand Falls-Windsor	Health Sciences
Medical Laboratory Technology	Diploma	Prince Philip Drive	Health Sciences
Medical Radiography	Diploma	Prince Philip Drive	Health Sciences
Personal Care Attendant (PCA)	Certificate	Baie Verte, Bonavista, Carbonear, Clarenville, Corner Brook, Grand Falls-Windsor, Happy Valley-Goose Bay, Port Saunders Site, Prince Philip Drive, St. Anthony	Health Sciences
Practical Nursing	Diploma	Bay St. George, Burin, Carbonear, Clarenville, Corner Brook, Gander, Grand Falls-Windsor, Happy Valley-Goose Bay, St. Anthony	Health Sciences
Primary Care Paramedicine	Diploma	Bay St. George, Prince Philip Drive	Health Sciences
Rehabilitation Assistant (OTA & PTA)(DL)	Diploma	Distributed Learning	Health Sciences
Respiratory Therapy	Diploma	Prince Philip Drive	Health Sciences
X-Ray Skills for Medical Laboratory Technologists	Post Diploma	Prince Philip Drive	Health Sciences
Aircraft Maintenance Engineering Technician		Gander	Industrial Trades
Aircraft Maintenance Engineering Technician - Advanced Diploma (EASA)		Gander	Industrial Trades
Aircraft Structural Repair Technician	Diploma	Gander	Industrial Trades
Auto Body and Collision Technician	Advanced Diploma	Prince Philip Drive	Industrial Trades



VALENTINE GOLD PROJECT ENVIRONMENTAL IMPACT STATEMENT

Table 9-C.3 CNA Program Offering, 2020-2021 Academic Year

Program Name	Credential	Campus	Area of Study
Automotive Service Technician	Certificate	Bay St. George, Gander, Prince Philip Drive	Industrial Trades
Baking and Pastry Arts	Certificate	Bay St. George	Industrial Trades
Cabinetmaker	Certificate	Port aux Basques	Industrial Trades
Carpenter	Certificate	Carbonear, Clarenville	Industrial Trades
Commercial Driver	Certificate	Bay St. George	Industrial Trades
Construction/Industrial electrician	Certificate	Burin, Carbonear, Corner Brook, Happy Valley-Goose Bay, Labrador West, Seal Cove	Industrial Trades
Cook	Certificate	Bay St. George, Burin, Prince Philip Drive	Industrial Trades
Hairstylist	Certificate	Bay St. George, Gander	Industrial Trades
Heavy Duty Equipment Technician/Truck and Transport Mechanic	Certificate	Bay St. George, Happy Valley-Goose Bay, Placentia	Industrial Trades
Heavy Equipment Operator	Certificate	Bay St. George, Bonavista, Placentia, St. Anthony	Industrial Trades
Industrial Mechanic (Millwright)	Certificate	Corner Brook, Labrador West, Placentia	Industrial Trades
Instrumentation and Control Technician	Certificate	Gander, Seal Cove	Industrial Trades
Machinist	Certificate	Placentia, Prince Philip Drive	Industrial Trades
Metal Fabricator (Fitter)	Certificate	Burin	Industrial Trades
Mobile Crane Operator	Certificate	Bay St. George	Industrial Trades
Non-Destructive Testing Technician	Certificate	Port aux Basques	Industrial Trades
Plumber	Certificate	Bonavista	Industrial Trades
Powerline Technician	Certificate	Happy Valley-Goose Bay, Seal Cove, St. Anthony	Industrial Trades
Refrigeration & Air Conditioning Mechanic	Certificate	Ridge Road	Industrial Trades
Steamfitter/Pipefitter	Certificate	Clarenville	Industrial Trades
Welder	Certificate	Burin, Corner Brook, Happy Valley-Goose bay, Labrador West, Prince Philip Drive	Industrial Trades
Welder/Metal Fabricator (Fitter)	Certificate	Port aux Basques	Industrial Trades



VALENTINE GOLD PROJECT ENVIRONMENTAL IMPACT STATEMENT

Table 9-C.3 CNA Program Offering, 2020-2021 Academic Year

Program Name	Credential	Campus	Area of Study
Accelerated Software Development	Diploma	Distributed Learning	Information Technology
Computer Systems and Networking	Diploma	Corner Brook, Prince Philip Drive	Information Technology
Information Management (Post Diploma)	Post Diploma	Distributed Learning	Information Technology
Software Development (Co-op)	Diploma	Corner Brook, Prince Philip Drive	Information Technology
Agriculture Technician Co-op	Diploma	Corner Brook	Natural Resources
Fish and Wildlife Technician	Diploma	Corner Brook	Natural Resources
Forest Resources Technician	Diploma	Corner Brook	Natural Resources
GIS Applications Specialist (Post Diploma)	Post Diploma	Corner Brook	Natural Resources
Tourism & Hospitality	Certificate/Diploma	Prince Philip Drive	Tourism
Tourism & Hospitality Services	Courses Only	Distributed Learning	Tourism
Source: CAN 2020			



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