



# Sectoral Profile

## Mining and Quarrying

### Region of Western Canada and Territories

2017-2019



#### EXECUTIVE SUMMARY

**Employment:** In 2016, the mining industry in the Western provinces directly employed 38,000 people or 48% of Canada's mining workforce.<sup>1</sup> Indigenous people comprise 6-12% of the mining workforce making it the single largest private sector employer of indigenous workers.<sup>2,3</sup> In the Western-Territories (W-T) region, British Columbia (BC) and Saskatchewan have the largest number of people working in the mining sector. BC accounts for 21% (16,600) of mining jobs in Canada and 44% of jobs within Western Canada, while Saskatchewan accounts for 16% (12,300) of mining workers in Canada and 32% of workers among the western provinces.<sup>4</sup>

**Export/Trade:** W-T region produces 100% of Canada's molybdenum, potash and uranium, and over 50% of Canada's copper, diamonds, silica, and sand and gravel.<sup>5</sup> Canada is the world's leading producer of potash and the world's second largest producer of uranium; both mined in Saskatchewan.<sup>6,7</sup> Roughly \$2.48B or 53% Saskatchewan's mining exports are destined for the US. BC contributes 20% towards Canada's mining trade, exporting copper, coal and aluminum to Japan (\$1.95B), China (\$1.5B) and South Korea (\$1.4B).

**Gross Domestic Product (GDP):** In 2016, W-T's mining industry contributed \$9.3B/year or .55% to national gross domestic product (GDP).<sup>8</sup> All told, W-T's 2016 capital expenditures on mining development were estimated at \$892M in W-T region or 55% of the total mining industry expenditures in Canada.<sup>9</sup>

**5 largest employers:** Teck Resources, PotashCorp, Goldcorp, Agrium, and Cameco. Teck Resources produces 85% of Canada's coal output.<sup>10</sup> PotashCorp and Agrium are set to merge to become Nutrien.

**Outlook:** In 2016, declining world commodity prices led to a decrease in exploration, mining output, and new projects. Over the past 18 months commodity prices have been volatile as a result of global economic uncertainty with Brexit (June 2016), the US election (November 2016) and interest rates.<sup>11</sup> Prices recovered to some degree in 2017, but are expected to face head winds in 2018 with tighter environmental constraints and slower global demand.<sup>12</sup>

## KEY DRIVERS

**Supply:** Western Canada and the Territories (W-T) account for the majority of Canada's mined coal, copper, diamonds, gemstones, molybdenum, potash, sand and gravel, silica, sulphur, and uranium production.<sup>13</sup> On the supply side there is generally a lag between production and demand which may result in either an over-supply during low points in the cycle or an under-supply during super-cycles.

**Demand:** Global growth from industrialization, urbanization and population is the key driver for mining sector since mining resources (minerals and metals) are inputs for many production processes. Global growth performance puts upward pressure on commodity prices. Commodity prices a relatively good indicator of the mining sector's performance and employment prospects.

**Market access:** Western Canada has a location advantage when it comes to demand from Asian markets. China has long been the world's biggest consumer of iron ore, coal and copper and is a major trade partner for the W-T region's mining industry. China's 2015 economic slow-down resulted in weakened demand for W-T's mined resources and only recently has the country begun a slow recovery.

**Competition:** Mines in W-T compete with China, Mexico, South Africa, Australia and the US to provide low cost production of minerals and metals.

**Geo-politics:** Mining companies rely heavily on foreign export and demand and are sensitive to the geopolitical landscape. Most commodity markets crave stability and W-T is considered a safe mining jurisdiction for investment

## BACKGROUND

Beginning with the economic debt crises in Europe (2009-2014), Japan's Fukushima nuclear disaster (2011) and a slowdown in China's economic growth (2014) there was a drop in demand and a world-wide oversupply for many of Canada's raw materials, particularly for potash, uranium, copper and coal. This resulted in mining production slow-downs and job loss between 2011 and 2016. As a result of the geographical location of specific mineral and metal mining clusters the impact on employment is uneven across the W-T region.

In Manitoba, the mining industry is primarily concentrated in the production of zinc and nickel. Employers are supported through a number of provincial government programs including the Mineral Exploration Assistance Program, financial assistance for mineral exploration in the province.<sup>14</sup>

Saskatchewan has the largest uranium deposits in the world and is also the top global potash producer.<sup>15,16</sup> In 2016 potash, after gold and copper, was Canada's third leading mined product by value at \$3.9B.<sup>17</sup> In 2016, Saskatchewan accounted for 16.4% (\$229.9M) of all Canadian exploration expenditures.<sup>18</sup> A review of Saskatchewan's royalty tax structure is underway; however, with potash prices still low, the review has slowed and no time line has been set for completion.<sup>19</sup>

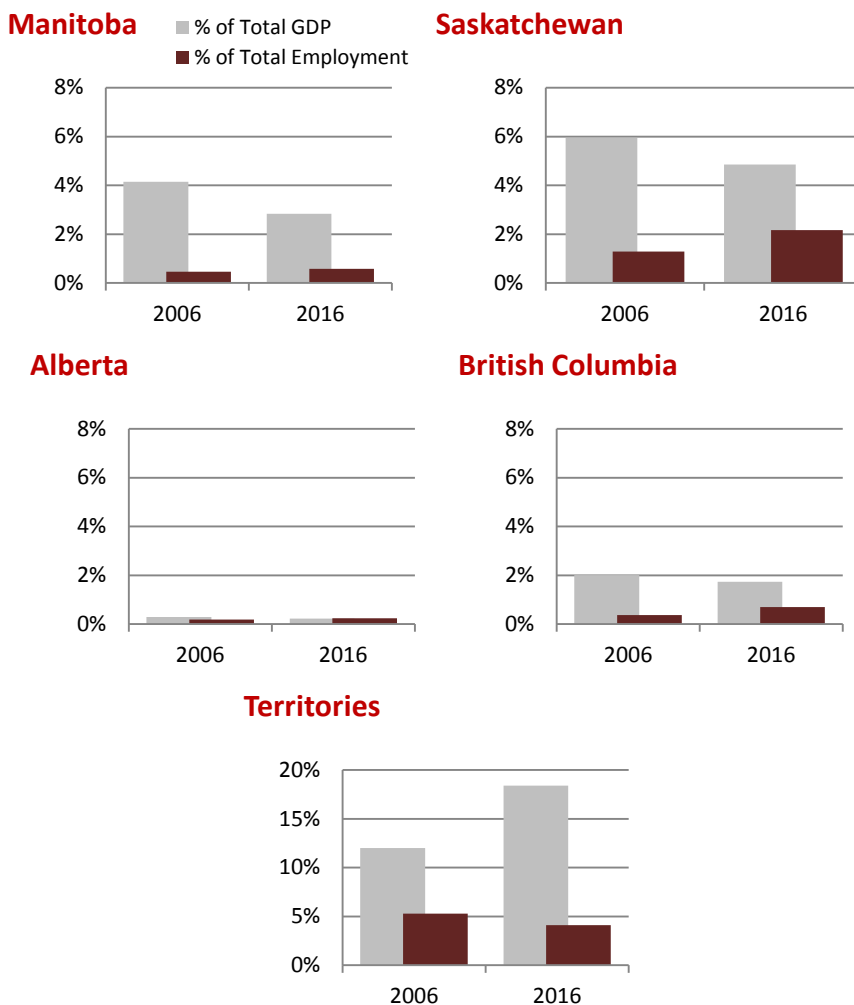
The primary mining commodity in Alberta is coal with 10 major mines in operation.<sup>20</sup> Over three quarters of Alberta's coal production is thermal coal; the remaining mines produce metallurgical (coking) coal.<sup>21</sup> Under the

Alberta government’s Climate Leadership Plan coal fired plants in the province will be phased out by 2030.<sup>22</sup> In addition to coal, Alberta has hundreds of small and medium-sized sand and gravel producers.

In BC, mining is centered on copper and coking coal, used for steel-making. Together these two commodities account for about 40% of BC’s mining revenue.<sup>23</sup> The province also has robust activity in gold, silver, copper and zinc mining. In 2016, BC mining companies spent 16.3% (\$228.7M) of all Canadian mining expenditures on mineral exploration.<sup>24</sup> In 2016 the Government of BC initiated a five-year program allowing mining employers to defer a portion of electricity payment until commodity prices recover.<sup>25</sup>

Diamond extraction in the Northwest Territories (NWT) has made Canada a top diamond producer in the world.<sup>26</sup> Currently there are five active mines in NWT and Nunavut, representing the largest private sector contribution to their respective territorial economies.<sup>27</sup> These mines produce diamonds, gold and iron. Minto copper mine is the only active producing mine in the Yukon.<sup>28</sup> Impact and Benefit Agreements (IBA) enable employers work with local communities in the North to develop mutually beneficial outcomes.

**Mining and Quarrying Provincial % of GDP and % of Employment in 2006 and 2016**



Sources : 1. Statistics Canada CANSIM Table 379-0030 - Gross domestic product (GDP) at basic prices, by North American Industry Classification System (NAICS), provinces and territories, annual (dollars) 2. Statistics Canada Labour force estimates by detailed industry, age, sex, class of worker.

## Employment

In 2016, mining employment in the Western provinces reached 38,000.<sup>29</sup>

- In Manitoba, mining employment grew by 15.6% year-over-year
- In Saskatchewan, mining employment grew by 2.5% year-over-year
- In Alberta, mining employment contracted by 12.9% year-over-year
- In BC, mining employment grew by 13.7% year-over-year

Occupations in the mining industry are primarily high-skilled requiring college education and/or apprenticeship training. Underground production and development miners (NOC 8231) make up the largest portion of high-skilled workers. Occupations that produce diamond and industrial minerals are generally among the highest paid.

## EMPLOYMENT OUTLOOK

Among the Western provinces, BC is expected to experience the most rapid growth in mining and quarrying between 2017-2019, with an estimated growth in employment of 1,300 workers. Projections for Saskatchewan also indicate an addition of 600 workers to the sector over the same period. And Nunavut may see a modest increase in workforce. However, mining workers in Manitoba, Alberta, Yukon and the Northwest Territories will likely see job loss from 2017-2019.

Regionally, Vancouver Island & Coast (+4.6%) is expected to experience the strongest employment growth between 2017 and 2019. Northern Manitoba and Northern Alberta and Banff will experience the declines of -1.8% and -1.0%, respectively.

The outlook for W-T's mining industry will depend on commodity prices. Gold advanced in 2017 with escalating tensions between the US and North Korea. However expected US interest rate hikes may lead to a modest decline.<sup>30</sup> Iron ore and metallurgic coal prices are expected to remain strong in 2018.<sup>31</sup> Base metals, such as aluminum, copper, nickel and zinc, are expected to rise in 2018 based on supply tightness in China, Australia and the US. Thermal coal prices are expected remain up from 2016-2018 due to China's reduction of domestic coal production and its consumption of half the world's coal output. Potash, on the other hand, continues to face weak global demand as fertilizer markets are well supplied and crop prices remain relatively low. Uranium markets also face headwinds following Fukushima (2011).<sup>32</sup> At the current low price most uranium production operations are not sustainable.<sup>33</sup> Even so, overall mineral exploration investment analyst sentiment is positive and is much more optimistic towards Chinese demand.<sup>34</sup>

### Projected employment change for the mining and quarrying sector during the 2017-2019 forecast period

Economic Region	Projected Change in Employment	Projected Annual Growth
<b>Manitoba</b>	<b>-200</b>	<b>-1.4%</b>
Southern Manitoba		0.0%
Winnipeg		-0.8%
Northern Manitoba		-1.8%
<b>Saskatchewan</b>	<b>600</b>	<b>1.5%</b>
Regina & Southern Saskatchewan		1.5%
Saskatoon & Northern Saskatchewan		1.4%
<b>Alberta</b>	<b>-100</b>	<b>-0.8%</b>
Calgary & Southern Alberta		-0.6%
Edmonton, Red Deer, Camrose, & Drumheller		-0.5%
Northern Alberta and Banff		-1.0%
<b>British Columbia</b>	<b>1,300</b>	<b>2.6%</b>
Vancouver Island & Coast		4.6%
Lower Mainland - Southwest		2.1%
Okanagan - Kootenay		2.8%
Northern BC		1.8%
<b>Yukon</b>	<b>-50</b>	<b>-5.3%</b>
<b>Northwest Territories</b>	<b>-30</b>	<b>-0.7%</b>
<b>Nunavut</b>	<b>70</b>	<b>5.4%</b>

Source: Service Canada Regional Occupational Outlooks in Canada, 2017-2019

*Note: Due to data limitations, the territorial forecast represents employment for the entire Mining, Oil & Gas sector. (According to the 2011 NHS, the share of employment in Mining and Quarrying within the larger sector represented about 38% in the Yukon, 80% in NWT, and 78% in Nunavut.)*

## REGIONAL OVERVIEW

**Northern Manitoba:** In 2017, Hudbay Minerals announced additional hiring for its Lalor gold mine (Snow Lake) as it ramps up production.<sup>35</sup> At the same time, Hudbay plans to reduce its Flin Flon zinc mine workforce by at least 500 positions, including 200 layoffs, by 2019. In October 2017, Vale began shutting down nickel smelting and refining activities in Thompson amid falling nickel prices.<sup>36</sup> The company expects to lay-off 700 workers by the end of 2018.<sup>37</sup> However, three exploration companies are reviewing Snow Lake for possible lithium, gold, zinc mining.<sup>38,39,40</sup> And Minnova Corporation will be re-opening a gold mine near Flin Flon.<sup>41</sup>

**Saskatoon and Northern Saskatchewan:** In 2017 Cameco announced a temporary shut-down of mining operations at McArthur River and Key Lake laying-off 845 employees citing persistently weak and oversupplied uranium market.<sup>42</sup> However, Mosaic re-started operations at Colonsay potash mine in early 2017 calling back 330 unionized workers who had been laid off in 2016 in anticipation of increased global demand.<sup>43</sup>

**Regina and Southern Saskatchewan:** The K+S Bethune potash mine opened in 2017 which is expected to create 400 permanent jobs.<sup>44</sup> However, PotashCorp halted production temporarily at its Allan and Lanigan mines, in spite of record potash sales and robust demand forecast for 2018.<sup>45</sup> Southern Saskatchewan holds nearly half of the world's potash reserves and produces one-third of the world's potash.<sup>46,47</sup>

**Northern Alberta and Banff:** In 2017, Altitude Resources Inc. began an exploration program for coking coal near Grande Cache.<sup>48</sup> Grande Cache is still recovering from the loss of jobs following a coal mine shut-down in 2015.

**Northern British Columbia (BC):** Northern BC is dominated by coking/metallurgic (met) coal and metal (primarily copper and gold) mines. Imperial Metal's new Red Chris copper/gold mine is in full production.<sup>49</sup> In 2017, Brule coal mine (Chetwynd) returned production putting 170 coal miners back to work after idling for two years under new Conuma Coal Resources ownership.<sup>50,51,52</sup> Conuma also hired back 220 miners for the Wolverine coal mine (Tumbler Ridge).<sup>53</sup> The opening of Conuma's third mine in Willow Creek (Chetwynd), purchased from Walter Energy, was pushed to 2018 due to market volatility.<sup>54</sup> Meanwhile, Teck's Quintette coal mine (Tumbler Ridge) has been on hold since 2014, awaiting favourable market conditions.<sup>55</sup> Taseko's Gibraltar copper-molybdenum mine (Williams Lake), the second-largest open-pit copper mine in Canada, idled for 4 days in July 2017 as a result of B.C.'s wildfires.<sup>56</sup> The drop in coal production in Northern BC between 2013-2016 also impacted Ridley Terminals (Prince Rupert) where coal is shipped for export. However, met coal recovery in 2017 has positively impacted export activity at the terminal.<sup>57</sup>

**Okanagan-Kootenay:** The Okanagan region is dominated by copper/gold/lead/zinc mining, while the Kootenay region is home to five Teck Resources met coal operations between Elkford, Sparwood and Fernie. Teck's Coal Mountain mine (Sparwood) is slated for closure in late 2017.<sup>58</sup> In December 2017, the BC government refused an environmental certificate for the proposed Ajax Copper Gold (Kamloops).<sup>59</sup> Meanwhile, Yellowhead Mining is keeping its Harper Creek copper mine (Vavenby) on hold until markets become more favourable.<sup>60</sup>

**Vancouver Island and Coast:** Nystar's Myra Falls zinc and copper mine (Campbell River), idling since 2015, reopened in August 2017 restoring almost 300 mining jobs as a result of recovering commodity

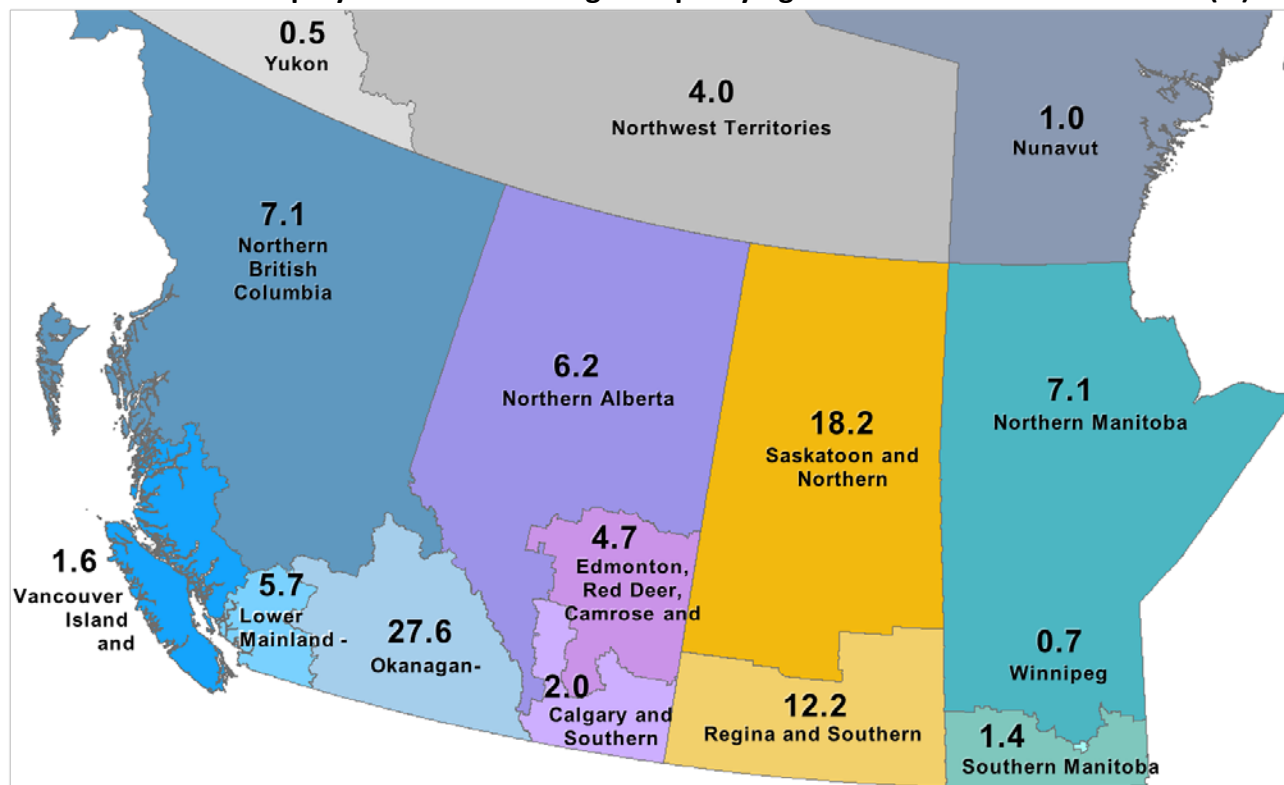
**Lower Mainland-Southwest:** The Lower-Mainland region is a global leader for mineral exploration expertise. About 700 exploration companies are headquartered in BC, with the majority located in Vancouver.<sup>61</sup> In 2017, Avino Silver and Gold Mines announced plans to reopen its Bralorne mine near Lillooet.<sup>62</sup>

**Nunavut:** There are three active mines in the territory: Meadowbank, Mary River and Doris North. Although Agnico Eagle's Meadowbank (Kivalliq) mine life was expected to end in 2018, a new deposit nearby (Amaruq) will provide workers with possibly another seven years of mining activity.<sup>63,64</sup> In April 2017 Agnico Eagle announced its plans to double its Inuit workforce to 700 people over the next two years.<sup>65</sup> The Mary River mine (Baffin Island), one of the world's richest and largest iron ore deposits, contains such high-grade ore that it can be shipped directly without processing that produces tailings.<sup>66</sup> Mary River site shipped a record amount of iron ore in 2017.<sup>67</sup> TMAC's Doris North gold mine (Hope Bay) began processing ore in May 2017 with revenue and job benefits for the Kitikmeot Inuit Association and Inuit in the region.<sup>68</sup>

**Yukon:** In April 2017, Capstone Mining announced that the Yukon's only active mine (Minto, near Pelly Crossing), employing 306 workers, will remain in operation until at least 2020 at current copper prices.<sup>69</sup>

**Northwest Territories:** There are three active diamond mines in NWT: Diavik, Ekati and Gahcho Kué.<sup>70</sup> The territory felt the effect of declining diamond prices in 2015-16. However, demand for low value diamonds has recently rebounded.<sup>71</sup> Mining contributes almost 18% of the Territories' gross domestic product (GDP).<sup>72</sup> While Rio Tinto's Diavik mine (Lac de Gras) is expected to close in 2025, an expansion Dominion Diamond's Ekati mine (Lac de Gras) could keep that mine active until 2042.<sup>73</sup> Gahcho Kué diamond mine (Kennady Lake), a fly-in/fly-out site began production in March 2017 and is expected to be in production for 12 years.<sup>74</sup>

### Distribution of employment in the mining and quarrying sector across Western Canada (%)



Source: Service Canada Regional Occupational Outlooks in Canada, 2017-2019

Note: Data for the Territories includes employment for the entire Mining, Oil & Gas sector. According to the 2011 National Household Survey, the share of employment in Mining and Quarrying within the larger sector represented about 38% in the Yukon, 80% in NWT, and 78% in Nunavut.

**Note:** In preparing this document, the authors have taken care to provide clients with labour market information that is timely and accurate at the time of publication. Since labour market conditions are dynamic, some of the information presented here may have changed since this document was published. Users are encouraged to also refer to other sources for additional information on the local economy and labour market. Information contained in this document does not necessarily reflect official policies of Employment and Social Development Canada.

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