

**Breaking Down Barriers:
Building a Gender Diverse Mining Workforce in the
Columbia Basin-Boundary Region**

by
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Abstract

In the Columbia Basin-Boundary region of British Columbia (BC), mining has historically been a male dominated sector. Resource communities, such as those found in the Columbia Basin-Boundary region, have traditionally lacked employment opportunities for women. Women choosing to pursue careers in the mining sector can face numerous challenges. This research focussed on ways to break down barriers and build a more gender diverse mining workforce in the Columbia Basin-Boundary region. It also investigated the opportunities available to women in rural resource communities and the challenges they faced if they wanted to work in the mining sector. The research methods included semi-structured interviews, a literature review, and a document analysis. Results showed that in the Kootenay region there may be a shift in mining company culture. More progressive policies and respectful workplace culture seem to be creating a more gender inclusive mining sector. The results also showed significant challenges associated with community supports for women who wanted to enter the Kootenay mining workforce. These community supports included the lack of child care spots, high rental and real estate prices, and the lack of opportunities for further education.

Keywords: Mining; Gender; Workforce Development; Kootenays; British Columbia; Rural

Dedication

This thesis is dedicated to Audrey Buchanan.

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Table of Contents

Approval.....	ii
Ethics Statement.....	iii
Abstract.....	iv
Dedication.....	v
Acknowledgements.....	vi
Table of Contents.....	vii
List of Tables.....	x
List of Figures.....	xi
List of Acronyms.....	xii
Glossary.....	xiii
Chapter 1. Introduction.....	1
Chapter 2. Literature Review.....	3
2.1. Rural and Small Town Dynamics.....	3
2.1.1. Resource Dependency.....	3
2.1.2. Resource Hinterlands and Urban Cores.....	4
2.1.3. Boom and Bust Cycles.....	5
2.2. Mining and Gender.....	6
2.2.1. Company Culture, Practices, and Policy.....	7
Sexual Harassment.....	7
Employer Bias.....	9
Tokenism and Gender Quotas.....	9
2.2.2. Community Supports.....	9
Child Care Services.....	9
Training and Education.....	10
Employment Help.....	11
2.2.3. Single Industry Rural Small Towns.....	11
Gender Dynamics and Bias.....	12
Family Structure.....	12
Job Opportunities.....	14
Chapter 3. Methods & Case Context.....	16
3.1. Qualitative Approach.....	16
3.2. Semi-structured Interviews.....	16
3.2.1. Selection of Participants.....	16
3.2.2. Interview Questions.....	17
3.3. Data Collection and Analysis.....	18
3.3.1. Thematic Analysis and Coding.....	18
3.4. Document Analysis.....	19
3.5. Limitations.....	20

3.5.1.	Limitations of Qualitative Data	20
3.5.2.	Time and Resource Constraints	20
3.5.3.	Selection of Participants	20
3.5.4.	Participant Member Checking.....	21
3.6.	Case Context: Profile of the Kootenay Region.....	21
3.6.1.	History of Mining in the Kootenays	22
3.6.2.	Present Day Mining Operations in the Kootenays	23
3.6.3.	The Kootenay Workforce	24
3.6.4.	Present Day Mining Workforce in the Kootenays	24
3.6.5.	Gender and Present-Day Mining in the Kootenays.....	25
3.6.6.	Interventions and Initiatives in the Kootenays for Women in Mining.....	26
	Mining and Refining for Women	26
	MiHR GEM Works Initiative	27
Chapter 4.	Results	28
4.1.	General Participant Demographics	28
4.2.	Rural Small Towns	29
4.2.1.	Attraction.....	29
4.2.2.	Retention.....	29
4.3.	Community Supports.....	30
4.3.1.	Child Care	30
4.3.2.	Housing Affordability and Stock	32
4.3.3.	Training	33
	Onsite Job Training	33
	Local College Education	33
	University Education	34
4.4.	Company Culture, Practices, and Policy.....	35
4.4.1.	General Company Culture	35
4.4.2.	Diversity in Recruitment	36
4.4.3.	Job Growth and Opportunity	37
4.5.	Participant Job Experiences.....	38
4.5.1.	Mining Job Evaluation	38
4.5.2.	Mining Job Trajectory.....	39
4.5.3.	Challenges with Mining Job	39
Chapter 5.	Discussion	41
5.1.	Rural and Small Town Dynamics	41
5.2.	Company Culture, Policies, and Practices	42
5.3.	Community Supports.....	47
5.3.1.	Child Care	47
5.3.2.	Education and Training	48
5.3.3.	Real Estate and Rental Stock	50
5.4.	Drivers of Change	51
5.4.1.	Mentorship	51
5.4.2.	Shifting Narratives and Public Perception.....	52

5.5. Barriers of Change	53
Chapter 6. Recommendations	54
6.1. Recommendations for Community Supports	54
6.1.1. Child Care	54
6.1.2. Promote Place-Based Education	55
6.1.3. Develop Strong Affordable Housing Policy	55
6.2. General Recommendations	55
6.2.1. Support Company Change	56
6.2.2. Increase Mentorship Opportunities	56
6.2.3. Support Public Perception through Shifting Narratives.....	56
Chapter 7. Conclusion.....	58
References.....	60
Appendix. Interview Questions.....	65

List of Tables

Table 1: Breakdown of Participants	17
Table 2: Participant Demographics	28
Table 3: Community Supports Summary of Results	30
Table 4: Company Culture, Practices, and Policy Summary of Results	35
Table 5: Participant Challenges with Mining Jobs	40
Table 6: Teck's Membership, Partnership and External Commitments to Best Practices for Company Culture (Teck, 2015)	45

List of Figures

Figure 1: Representation of Women in Selected Primary Industries (Canada)	26
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List of Acronyms

BC	British Columbia
IDP	Inclusion and Diversity Plan
MR4W	Mining and Refining for Women.
MiHR	Mining Industry Human Resources Council
Teck	Teck Resources Ltd.

Glossary

4100 Shovel	A very large electric rope shovel used to load in-pit crusher-conveyer systems or load coal onto haul trucks.
Columbia Basin-Boundary	A region in southeastern British Columbia that encompasses nearly 80,000 square kilometres in and has a population of approximately 155,345 people.
Haul Truck	A very large off-highway dump truck used to transport coal. They can often hold up to three hundred tons of material. Haul trucks are the first piece of equipment novices learn to operation (Rolston, 2014)
Seam	A large deposit of coal that is a horizontal layer in rock

Chapter 1. Introduction

Mining in British Columbia (BC) is a powerful economic driver for many rural communities across the province. In 1846 the Oregon treaty was signed opening boundary country, also known as the Kootenays, to exploration. As a result, BC's mining industry grew extensively. As new areas were explored, new mines were established, and small towns developed alongside the mines to house workers and provide services. As the mines grew so did the surrounding communities as new residents, including mine workers and their families, moved in. Alternatively, if mining operations failed or mineral deposits were exhausted, the community disappeared joining the long list of abandoned resource communities in BC.

Today, mining represents a large portion of BC's economy. Mining adds over \$8 billion to BC's economy and employs more than 30,000 people directly and indirectly in communities across the province (BC Government, 2018). Mining is a key employer in the province providing high paying, full time jobs. However, there are numerous challenges associated with the mining workforce. Some of these challenges include retaining workers in rural communities, adapting and incorporating new technology, accessing appropriate education, and creating a gender diverse workforce.

Building a gender diverse workforce is a major challenge facing BC's mining industry. The mining industry is a male dominated sector. In 2017, 85% of the mining workforce was male, while only 15% were female (WorkBC, 2017). Women are underrepresented in the mining workforce. This can create challenges for women who live and are seeking work in mining resource communities. Mining jobs are highly sought after because they pay well and provide job security. This raises two key questions. First, why are women underrepresented in the mining workforce? Second, what are the barriers that women face when trying to access mining jobs in resource communities? In order to build a more gender diverse workforce it is imperative to address the causes of under-representation and to identify the challenges and opportunities associated with having a more gender diverse mining workforce.

The purpose of this research is to identify some of the challenges and barriers associated with women accessing jobs within the mining sector. The goal of this

research is to contribute and expand on the research that has already been done on gender diversity in resource workforces. BC's mining sector is expansive. In order to focus this research, a case study approach was taken. This research focuses on the mining sector and communities of the Columbia Basin-Boundary Region in BC. Also referred to as the Kootenays, the Columbia Basin-Boundary Region in southeast BC is home to 5 major coal mine operations, as well as several smaller gold, gravel, gypsum, magnesium, and silica mines. Many communities, such as Elkford and Sparwood, rely heavily on the mining sector for employment opportunities. These factors, along with other conditions, make the Kootenay region a good place to explore the challenges and opportunities facing women wishing to enter the mining workforce.

In order to focus and guide this research, three key research objectives were adopted:

1. To identify and understand those factors relating to attracting, maintaining, and expanding gender diversity in the mining workforce in the Columbia Basin-Boundary region.
2. To understand the role a gender diverse workforce can have on the future of the mining industry in BC.
3. To contribute to a better understanding of workforce challenges and opportunities across the Columbia-Basin Boundary region.

To effectively address these research objectives, I will provide a detailed literature review of the relevant background information related to resource community dynamics, gender diversity and mining, and the contributing factors related to building a gender diverse workforce. Next, I will discuss the methodology used in this research including the use of semi-structured interviews and the qualitative approach used to analyze them. Following this, I will present the results of the interviews and then discuss these results in relation to the literature review and the Kootenay region. Last, I will present my recommendations and concluding thoughts.

Chapter 2. Literature Review

2.1. Rural and Small Town Dynamics

Rural and small-town communities across BC are diverse and complex. While it is often thought that all small towns are similar, the reality, rural communities in BC are incredibly diverse and unique. Often economically powered by their close proximity to natural resources, rural communities have their own history, culture, and sense of community which make them unique and diverse (Laycock & Caldwell, 2018; Petigara, Patriquin, & White, 2012). Rural and small town communities across the country are often significant economic drivers for Canada (Canadian Rural Revitalization Foundation, 2015). In addition to economic power, rural and small-towns also boast a high quality of life for their residents with excellent access to outdoor recreation and a strong sense of community (Barnes & Barnes, 1994). There can also be many challenges associated with rural communities including poor access to infrastructure, dependency on resource markets that can lead to job vulnerability, and aging demographics (Petigara et al., 2012).

For the purposes of this research, rural and small towns are defined in two ways. The first classification concerns the density of residents. Rural communities are characterized as having relatively low density in their communities (Canadian Rural Revitalization Foundation, 2015). The second classification concerns the distance between densities. In a rural community the distance between density is typically large (Canadian Rural Revitalization Foundation, 2015). In addition to the low density and long-distance classification, this research focused on rural and small-towns with populations under 10,000 (Statistics Canada, 2016). This classification is based on Statistics Canada (2016) naming and grouping of population sizes.

2.1.1. Resource Dependency

Traditionally, rural communities have been strongly linked to resource development and extraction (Hayter & Barnes, 1990). In BC, many rural communities were developed close to natural resource development projects (Hayter & Barnes, 1990). For example, Kaslo in the West Kootenays was designated as a sawmill site in 1889, and later expanded during the late 19th Century silver boom (Taylor, 1978).

Another example is Sparwood BC which is located in the East Kootenays. This town was originally a railway stop due to significant forestry activity in the area (Taylor, 1978). Currently, Sparwood is one of the largest coal mining hubs in BC (Teck, 2016). This relationship between resource development and rural communities is evident across BC.

Single resource towns are common in rural BC. A single resource town is classified as a community that is characterized by one primary resource activity that employs the majority of the working population (Lucas, 2008). For example, a community could be defined by agriculture, fishing, hunting, or mining (Lucas, 2008). While many of these communities may be small to begin with, as the resource extraction process increases more families move to the area and the community grows (Lucas, 2008). These communities are inextricably linked to the resource activity that employs the working population (Lucas, 2008).

While resource-based economies traditionally help sustain rural communities, they also put them at risk because of market changes (Bowles, Wilson, & Leinberger, 2016). When BC's export economy for natural resources is robust, rural communities and their economies are strong (Bowles et al., 2016). However, when the export market dips, the economic implications can be serious for communities that rely on a single industry (Bowles et al., 2016). This relationship puts BC's single-resource communities at the mercy of markets and can cause significant challenges with labour availability, cost of living, and community services and development (Larsen, 2008).

2.1.2. Resource Hinterlands and Urban Cores

The relationship between rural regions and urban cores is divided (Alasia, Magnusson, & Statistics Canada. Agriculture Division., 2005) . Rural communities are the gateways to resource extraction and as a result, are powerful economic drivers of Canada (Hayter & Barnes, 1990; Silva & Crowe, 2015). Historically, governments emphasized rural investment with the goal of supporting social infrastructure (Markey, Halseth, & Manson, 2008). However, overtime and with political and economic restructuring, rural communities began to experience lower levels of investment from senior governments (Markey et al., 2008). The economic power generated in rural resource communities was traditionally sent to the urban cores of Canada (Markey, Halseth, & Manson, 2012). Urban cores are often deemed to have political and

economic control over resource hinterland regions (Markey et al., 2012). This rural urban dynamic created a divide across Canada, where the wealth generated by the resource hinterlands drove the economic power of the core (Markey et al., 2012).

The relationship between resource hinterlands and urban cores is important because it defines Canada and its urban and rural populations (Ryan, 2013). Canadian cities, while powerful and globally recognized, are not the only economic drivers in the country (Markey et al., 2012). In 2017, 17% of Canada's GDP was generated through natural resources, with 3.6% of that being generated from mines and minerals (Natural Resources Canada, 2017). In BC, 6.9% of the GDP (2018) is generated through natural resources (Government of British Columbia, 2018). Resource markets are the economic engines that are nestled in the resource hinterlands of Canada (Markey et al., 2012).

Staples theory recognized the relationship that existed between resource production in rural regions and urban cores (Innis & Drache, 1995). The staples theory approach to economic growth suggested that Canada, and BC's growth, have been shaped by the export of raw or semi-processed resources (Innis & Drache, 1995; Storey & Hall, 2018). Staples theory helped shed light on Canada's relationship with resource development (Ryan, 2013). Harrold Innis theorized that there was a connection between a staple resource production and society and economy (Hayter & Barnes, 1990; Innis & Drache, 1995). Hayter & Barnes (1990) explored how staples theory is based on the idea that Canada, as a country, was developed as a source for staple exports for more metropolitan countries. Over time Canada has developed its own metropolitan areas, however, the need for support from staple resources has persisted and continued to shape Canada (Hayter & Barnes, 1990; Petigara et al., 2012).

2.1.3. Boom and Bust Cycles

A consequence of many Canadian rural communities having a strong relationship between resource development, economy and community growth, is vulnerability to boom and bust cycles. Boom and bust cycles refer to the vulnerability of resource dependent regions to global resource commodity markets (Markey et al., 2012). In their book, Markey, Helseth and Manson (2012) describe the repeated boom and bust pattern that occurred in BC during the postwar period. During boom times, when resource markets are strong, resource dependent areas can see an increase in social and

economic benefits (Markey et al., 2012). Following a boom time, a bust may occur. A bust time is characterized by large scale economic downturns or collapses (Ryan, 2013). Booms can involve the shrinking of services in resource dependent areas, layoffs, and loss of population (Markey et al., 2012). A challenge for resource dependent communities is to be resilient to boom and bust cycles (Ryan, 2013). This can be difficult, especially if the community relies on one resource industry.

Rural and small towns are unique and complex. Resource dependency, economic restructuring, and market trends can directly impact the livelihoods of those who live in rural communities. The key focus of this research is on the mining sector of BC. Specifically, the goal of this research is to explore the traditional rural communities by looking at gender in a major natural resource sector, mining. This research aims to look at how issues of resource dependency are associated with gender. Gender and the lived experiences of residence in rural small towns has a long and complex history. Similarly, mining communities across BC have long and complex histories that are interwoven with gender. The next section will begin to unpack the literature around mining and gender in rural regions of BC.

2.2. Mining and Gender

The focus of this research project was on the gender dynamics associated with the mining industry of the Columbia Basin-Boundary region. Mining has a long history in the Columbia Basin-Boundary region (Grieve, 2010). As explored in the previous section, communities that have developed around single industries, are often dependent on that industry for jobs, economic growth and security, and community prosperity (Ryan, 2013). In an effort to further explore the role of gender in rural resource dependent communities, the following section examines the role of gender in mining and the systemic barriers faced by women who wish to enter the mining workforce.

Traditionally, mining has been seen as a male dominated industry (Gier & Mercier, 2006). In many cases, the convention that mining was for men was legally enforced (Botha, 2016). Across Canada, there were numerous provincial mining acts, including BC, that prohibited females from being employed in mines (Mercier & Gier, 2007; Suzanne Veit Associates Inc., 1976). Prohibition was put in place for many reasons, including concerns regarding the physical labour involved, what women's

traditional roles were in the home, and the notion that women did not have the masculine characteristics to do the job (Wharton, 2012). During World War II, the prohibitions on women working in mining were lifted temporarily to address labor shortages (Wharton, 2012). However, at the end of WWII prohibition was re-established to ensure there would be jobs for the men returning from military service (Gier & Mercier, 2006). In the 1970s, the mining industry in Canada began to experience several changes. This included increased international competition and new technologies that eventually resulted in workforce expansion and lifting the prohibition of women working in the mining industry (Gier & Mercier, 2006). Following this change in provincial legislation, women began to enter into the mining workforce. However, the number of women in the mining workforce increased slowly due to a variety of barriers.

In a detailed review of the literature three themes regarding gender and the mining workforce in BC emerged. The first major theme that emerged concerns mining companies. This included company policy, diversity mandates, policies, and hiring processes. For the purposes of the research, this theme will be called "*Company Culture, Practices and Policy*". The second major theme that emerged addressed supports. These supports included training opportunities, childcare, and education. This theme will be referred to as "*Supports*". The third and final theme that emerged concerns rural small towns and the dynamics of rural communities. This theme will be referred to as "*Single Industry Rural Small Towns*". The following is an analysis of the literature associated with these three themes.

2.2.1. Company Culture, Practices, and Policy

Researchers have explored the workplace dynamics that presented challenges to women who worked in the mining sector (Botha, 2016; Gier & Mercier, 2006). The mining industry and mine sites were traditionally male-dominated spaces and as a result, the dynamics and workplace culture was masculine (Gier & Mercier, 2006; Tallichet, 2000; Yount, 1991).

Sexual Harassment

A major challenge associated with women entering the mining workplace is sexual harassment (Botha, 2016; Women in Mining Canada, 2010). The nature of mining work frequently puts workers in isolated situations, which can increase the risk of

sexual abuse and/or harassment (Botha, 2016). Although sexual harassment and/or abuse can affect both men and women, research has shown that women are more likely to experience it than men (Botha, 2016; Wharton, 2012). A strong predictor of sexual harassment in the workplace is a high ratio of male-to-female employees (Botha, 2016). Additionally, Botha (2016) explored how sexual harassment can be an abuse of power used to exploit subordinates in the workplace. The mining sector, which is a traditionally male dominated workforce, is an environment that is vulnerable to sexual harassment (Botha, 2016; Wharton, 2012).

Sexual harassment can be manifested in many different ways on a mining site. Harassment can range from dirty jokes, sexually suggestive acts (i.e. humping or stripping), to verbal and physical abuse (Yount, 1991). Dirty jokes, sexually suggestive acts, and verbal abuse are often thought of as “locker room talk” or “guys being guys” in the mining industry (Yount, 1991). By allowing these acts to continue, a hostile and uncomfortable work environment is created for women (Botha, 2016).

Sexual harassment in the mining workforce can have serious implications on the dynamics of the workforce. Botha (2016) explored how sexual harassment can change the power structure in a workforce and can be used as a tool by men to maintain masculine dominance in the workplace. This can cause women who experience sexual harassment in the workforce to underreport these events (Botha, 2016). Women can be afraid to report sexual harassment attempts due to the fear of losing their jobs, concerns about their male co-worker being put in a ‘bad’ position or being unsure if they are allowed to report it (Botha, 2016). This results in upper management not having a full understanding of the culture of the workforce and therefore unable to implement changes to address these behaviours (Botha, 2016; Yount, 1991).

Mines are mandated to have sexual harassment policies in place that outline the course of action that needs to take place after a sexual harassment incident is reported (Wharton, 2012). However, Botha’s (2016) research showed that these policies including lack of transparency of the policy guidelines, implementation gaps, and a lack of knowledge of the policies that are in place. Sexual harassment policies can be effective tools to decrease sexual harassment incidents and can effectively address those that occur. However, if they are not fully understood or utilized by staff or employers, they can be ineffective (Botha, 2016).

Employer Bias

Another challenge faced by women who wish to enter the mining workforce is employer bias. Gier and Mercier's (2006), research showed that there were assumptions made about women by employers, including their capabilities and sensibilities. Women in Gier and Mercier's (2006) study shared that they were told things like '[mining is] dirty work you wouldn't like it' and 'women don't like to drive big trucks'. These type of comments were often made during the interview process (Mercier & Gier, 2007). Other research showed that employers were hesitant to hire a women if there were men also applying for the job (Freudenburg, 1981). Employer bias in the hiring process can be challenging for a woman who is trying to enter the mining industry.

Tokenism and Gender Quotas

Another challenge faced by women entering the mining workforce is the concept of female tokenism. Tokens are defined as members of the numerical minority in skewed groups (Wharton, 2012). Tokenism in mining can be linked to the adoption of gender quotas (Wharton, 2012). Gender quotas are policies that are aimed at increasing the proportion of females in the workforce (Franceschet, Krook, & Piscopo, 2012). There are challenges related to gender quotas that include the feeling that quotas facilitate access for 'unqualified candidates' having access to jobs because of their gender, not their merit (Franceschet et al., 2012).

2.2.2. Community Supports

Understanding the role of supports is important when breaking down the role of gender in the mining industry. For the purposes of this research, supports are classified as those services, programs, or assistants provided by a community, local government, or organization. Supports assist members of the community with their day to day life. For example, child care is a support that assists families with care for their children.

Child Care Services

A primary barrier facing women who enter the mining workforce is a lack of child care services. Child care services that fit the needs of resource industry shift workers has been repeatedly identified as a significant barrier to women entering the mining

workforce (Bock & Morton, 2018; Henning-Smith & Kozhimannil, 2016; Kotarski & Baker, 1977). Resource work, such as mining, often requires shift work schedules that fall outside the hours of traditional daycare centres (Bock & Morton, 2018). This is a significant challenge for parents who work in the mining industry. Many families turn to extended family members, such as grandparents, for child care help (Bock & Morton, 2018). However, not all families have extended family in the area to help with child care during extended hour shifts. Child care that is affordable, reliable, and can accommodate non-traditional schedules is a needed in rural communities (Ames, Brosi, & Damiano-Teixeira, 2006).

Traditionally, child care responsibilities fall on women. Wharton (2012) showed that women typically spend more hours per day than their male counterparts on childcare. In a two-income family, if there are difficulties securing child care that meets the parents' schedule, it is typically the women who will stay home to provide child care, while the men will continue to work (Wharton, 2012). As a result, without substantial child care services that meet shift work schedule needs, child care may continue to be a barrier for women entering the mining workforce.

Training and Education

Researchers have pointed to a lack of training and education as a challenge for women entering the workforce in rural communities (Ames et al., 2006). Access to sufficient training opportunities has been a challenge highlighted by researchers (Ames et al., 2006; Organisation for Economic Co-operation and Development, 2010). The challenges associated with training and education are persistent issues and are found at various levels, ranging from high school to post-secondary (Ames et al., 2006).

Judith Walker's research (2018) examined the government of BC's desire to create post-secondary education opportunities in rural BC that focused on resource extraction. Walker used the term "education for extraction" to explain BC's JobsPlan, which focuses on priming students for resource extraction jobs (2018). One key element of BC's education for extraction was its focus on diversity and equity in opportunities (Walker, 2018). BC's education system has increased student aid for marginalized youth, women, people with disabilities, and Aboriginal people (Walker, 2018). These trends in training and education that focus on resource extraction and equity are key changes in BC's education and training supports.

Employment Help

One key area of supports is employment help. Literature shows that historically, rural communities generally have higher unemployment rates and higher percentages of women not working (Henning-Smith & Kozhimannil, 2016). Employment services are a key support in rural communities. In BC, WorkBC is a primary provincial employment centre that provides British Columbians with access to job boards, career services, skills assessments, and training opportunities (WorkBC, 2019). WorkBC has numerous centres across BC (WorkBC, 2019). Literature identifies employment help, such as WorkBC, as an important support in rural communities for women wishing to enter into the workforce, including mining (Organisation for Economic Co-operation and Development, 2010).

2.2.3. Single Industry Rural Small Towns

One characteristic of resource dependent rural small towns is that they are thought of as masculine environments. This gendered perception of resource dependent communities comes from the traditional view that men are the ones who work in resource extraction jobs (Freudenburg, 1981; Gill, 1990; Kotarski & Baker, 1977). The role of women in traditional resource communities has typically been cleaning, cooking, childcare, and maintaining the family home (Gill, 1990; Kotarski & Baker, 1977). The roles of men and women in resource communities created very traditional gender dynamics and concepts of femininity and masculinity (Reed, 2003).

In the early 1970s, as resource extraction was expanding across Canada and BC, men began to move to new resource towns to pursue jobs (Gill, 1990). Employers encouraged married men to move to these new resource towns because the presence of families helped stabilize the workforce and community (Borges & Torres, 2012; Gill, 1990). As a result, an increased number of women, typically with young children, moved to isolated communities across the province and country (Borges & Torres, 2012; Gill, 1990). Women's lives in resource communities were inextricably linked to their husbands' job. Men were seen as the providers and decision makers for the families (Borges & Torres, 2012; Gibson, 1992; Wharton, 2012). Women were seen as "homemakers" and had little opportunity to pursue employment outside of the home

(Gibson, 1992). These restrictive gender norms often left women feeling isolated in their community and as a result, they relied on their husbands for economic and psychological support (Gill, 1990; Wharton, 2012).

In a Women's Task Force study of three single industry resource communities in Northern BC (1977), the authors identified some of the limitations traditional gender dynamics imposed on women in single industry resource communities. The task force identified that women in resource communities had been taught that their involvement in the community was limited to their home and family, and that women should remain non-political and non-challenging (Kotarski & Baker, 1977). This task force was one of the first in BC to identify the experiences of women in single industry communities and to raise concerns about the traditional gender dynamics of single industry communities. The issues raised by this task force have been identified and reinforced in more recent literature, indicating that these issues are persistent and remain a challenge for women living in rural resource based communities (Borges & Torres, 2012; McLeod & Hovorka, 2008; Wharton, 2012).

The literature on rural industry communities clearly identified the gendered roles of men and women (Ali, 1986; Freudenburg, 1981; Gibson, 1992; Gill, 1990; Maureen Gail Reed, 2003). Gender dynamics played an important role in community development and the lives of those living in BC's rural industry communities.

Gender Dynamics and Bias

Gender has traditionally played a large role in determining an individual's life in a rural resource community. As previously stated, the concepts of masculinity and femininity created clear gendered perceptions of a community members' roles (Maureen Gail Reed, 2003). Women were determined to be nurturers, caregivers and keepers of the home (Gill, 1990; Maureen Gail Reed, 2003). Men were seen as the providers, protectors, and decision makers of the household (Gibson, 1992; Maureen Gail Reed, 2003). Below, the way traditional gender roles impacted gender bias and dynamics is explored.

Family Structure

An important aspect of gender in single industry resource communities is family structure. In general, resource communities adopted a traditional family structure

(Hughes, 1997). In traditional family structures, women typically had a domestic role (Hughes, 1997). Traditionally, families were supported by the single income brought in by the man (Hughes, 1997). Women were expected to stay home and provide for the family by cooking, cleaning, and maintaining the home and family (Hughes, 1997). In many cases, this way of living was seen as a necessity for rural living because of traditionally male dominated resource work opportunities (Hughes, 1997). Traditional gender roles in the family structure left little room for women to pursue paid work outside of the family home (Gill, 1990). The majority of household responsibilities were on women and as a result, they often had little spare time to dedicate to jobs outside of the home (Gill, 1990).

The concept of gender structure can be explored through gender role theory. Davidoff et al. (1976) theorized that the dominant ideology at the time was that men were the providers and head of the family and women were the domestic, subservient sustainers of the family and household. This dominant ideology played an important role in family structure and the differences between men and women (Litte & Panelli, 2010). Gender role theory emerged as an uncritical classification of the contributions of men and women (Litte & Panelli, 2010). However, over time the ideology has evolved to critique the inequalities that traditional gender roles present between men and women (Litte & Panelli, 2010).

A Northern British Columbia Women's Task Force Report from 1977, outlined the various challenges family structure imposed on women in remote communities including accessing jobs. The task force found that family structure created challenges for women in these communities when it came to socializing and accessing jobs (Kotarski & Baker, 1977). In these communities women were typically responsible for childcare and maintaining the home, while the men were seen as the primary financial providers (Kotarski & Baker, 1977). This is a trend that has been identified by more recent researchers and remains a persistent challenge for women in resource communities (McLeod & Hovorka, 2008; Wharton, 2012). Traditional family structure and a lack of community resources, such as childcare, can result in women feeling isolated and frustrated by their lives in industry towns (Little, 2002; McLeod & Hovorka, 2008; Sharma & Rees, 2007). Family structure is an important aspect of gender dynamics and bias in rural communities.

Job Opportunities

In resource communities, the type of jobs that were traditionally available were generally seen as masculine or male-dominated (Moen, 1981). This is key to understanding gender bias in rural resource communities. Women typically experienced more difficulties when trying to access job opportunities in these communities (Moen, 1981). This element of gender dynamics in rural resource towns can be discussed in terms of three themes. The first theme was traditional gender roles. As discussed above, women were expected to stay home and maintain the family household (cooking, cleaning, childcare) and not pursue jobs outside the home (Warner-Smith & Brown, 2002). Another theme for women in rural industry towns was the notion of gendered jobs. Typically resource extraction jobs were seen as masculine jobs and very few women worked in these positions (Gill, 1990; Maureen Gail Reed, 2003). The final theme that emerged was that there was an inherent gender bias in employers. Traditionally, employers were unwilling to hire women for traditionally male-dominated jobs (Freudenburg, 1981; McLeod & Hovorka, 2008).

The impact of family structure was explored in the section above, the two other themes will be broken down below to examine how they impact job opportunities for women in rural communities. Typically, the jobs available in rural resource communities were traditionally seen as male dominated work (Moen, 1981). In traditional resource community literature, little was said about employment opportunities for women (Freudenburg, 1981; Moen, 1981). It was generally assumed, in early research of gender dynamics in rural resource communities, that women were financially dependent on men (Gilmore & Duff, 1975; Moen, 1981). One of the main issues women faced if they wished to become economically independent or contribute to their family, was that the only work that was available was in male-dominated occupations (Moen, 1981). Women seeking work in traditionally male dominated jobs often faced social criticism and on-site harassment (Moen, 1981). Additionally, women who chose to work in male dominated jobs were typically still expected to continue traditional female duties such as child care and maintenance of the home while working (Gilmore & Duff, 1975; Moen, 1981).

The third theme that emerged when discussing the ability of women to access jobs in rural resource communities was gender bias of the employers. Freudenburg

(1981) found that employers were historically unwilling to “hire the wife of an able-bodied man if it’s going to take work away from a guy that has to support his family”. More recent research by McLeod and Hovarka (2008), found that while employers may not be as explicit about their reasoning, there remained a gender bias in hiring decisions for resource-based jobs. Many researchers have continued to highlighted employers’ gender bias and the barriers it creates for women accessing non-traditional jobs (Borges & Torres, 2012; McLeod & Hovorka, 2008; Wharton, 2012). This dimension of gender bias can be highly problematic in rural communities where there are a limited number of job opportunities. The lack of alternative job opportunities combined with the majority of available jobs being in male dominated sectors gave women few options for pursuing paid work in rural resource communities (Gier & Mercier, 2006).

Chapter 3. Methods & Case Context

This chapter outlines my research questions and the methodology used to collect and analyze the data. In addition, this chapter presents the case context and regional profile for the Kootenays.

3.1. Qualitative Approach

In order to conduct this study and address the key objectives of this project, I adopted a qualitative approach. This research lent itself well to a qualitative approach due to the range of experiences associated with non-traditional jobs and gender. A qualitative approach allows participants to inform and expand the range of the research with their experiences and knowledge (Berg, 2004). As a researcher, who had no experience in the mining industry, I relied heavily on the participants to guide and inform me about the barriers they faced and the opportunities that were available to them.

3.2. Semi-structured Interviews

I choose to do semi-structured interviews for a number of reasons. To begin with, my research was exploratory and the semi-structured interviews allowed me and the participant to explore themes and questions within the interview structure (Berg, 2004). I interviewed 13 participants, all with different backgrounds, experiences, and knowledge. The interview length ranged between 30-60 minutes. The semi-structured interviews allowed me to capture these differences because the participants were the experts during the interviews (Yin, 2018). The interviews were conducted on an individual basis, which allowed for the semi-structured process to be used.

3.2.1. Selection of Participants

Interview selection was primarily a collaborative process between members of the Selkirk College team and me. As an outsider to the region, I relied heavily on the Selkirk Rural Development Institute Team for guidance regarding who to interview. There is extensive mining and refining activity in the Kootenay region and as a result, we limited the candidate pool to those individuals who were directly related to the mining

and refining industry in the region. We hoped to target five elements of the mining and refining sector: current employees in mining and refining, human resources (HR) employees, upper management and hiring staff, education providers, and interventionists (Table 1).

Table 1: Breakdown of Participants

	Women in Mining Industry	Hiring/ Upper Mgmt	Education	Interventionists	Human Resources	Support Industry	Total
Number of Participants	4	2	1	2	3	1	13

In total, I sent out 20 email interview requests, and left phone interview request messages with 3 potential candidates. In one case, the email request resulted in 5 additional interviews being set up through the contact. In order to access hourly mine employees, I worked closely with the Manager of Human Resources for one of Teck's main coal mining operations in the Elk Valley. I was able to gain access to hourly employees at their job site, something I would not have been able to do without the help of the Manager of Human Resources.

3.2.2. Interview Questions

In preparation, I created two question templates to help guide the interviews (Appendix A). I decided to create two different templates to ensure the questions were appropriate depending on who I was interviewing. The first template was to be used when interviewing employees in the mining sector, those who were working in support industries, and were part of HR teams. The next template was to be used when interviewing interventionists, upper management, hiring staff, and education representatives. The goal of this approach was to ensure the questions were catered to the participant.

The specific interview questions mirrored various other interview questions that had been created for the Selkirk Regional Workforce Development Project. I used tourism and forestry sector questions to help guide the development of my mining sector questions. This allowed the study to be structured in a similar way to the previous studies done under the umbrella of the Selkirk Regional Workforce Development Project.

3.3. Data Collection and Analysis

Data collection consisted of thirteen one-on-one interviews. These interviews took place primarily in the Kootenay region, either at the participants' place of employment or at a coffee shop. In some cases, an in-person interview was not possible. In these instances, interviews were conducted over the phone. The interviews were conducted between June 14th, 2018 and September 21st, 2018.

Each interview was recorded on a digital recorder and then transcribed by a professional. Each transcription was verified by me. I did this by spot checking the transcription with the recordings. If any discrepancies were noted, I reviewed the interview in its entirety, and kept the original transcript as well as the updated version.

3.3.1. Thematic Analysis and Coding

In order to analyze the interviews, I had all 13 transcribed. My interviews were transcribed by a third party hired by Selkirk College. After transcription, quality assurance of all interviews was completed by re-listening to the audio file and comparing it to the transcript. This process allowed me to become more familiar with the transcripts and also ensured they correctly corresponded to the audio file. Once each interview was quality tested, I uploaded them into NVivo Qualitative Software. All of my data analysis was conducted within NVivo.

I analyzed the data through thematic coding. In order to structure my analysis, I created a Codebook. In my Codebook, I developed and created a "code" that I uploaded into NVivo to analyze the interview transcripts. To "code" the transcript I would tag certain excerpts from the interview with a specific code. This allowed me to sort and examine the coded excerpts across all interviews. The first version of my Codebook was formed based on the questions I had used during the interviews. My Codebook included the name of the code, a description of the code, a detailed outline of when to use the code and when not to use the code, and suggestions of alternative codes if the material fell outside the description. I coded my interviews over a span of 3 months and my Codebook allowed me to keep my coding consistent over that time period. I used my first Codebook version, based on the interview questions, for the first round of analysis. I coded all 13 interviews using the same code.

After completing the first round of analysis, I spent time reviewing the individual codes in order to tease out key themes. I used these key themes to develop my second code. The goal of this code was to tease out even more information regarding the key themes discovered during the first round of coding and in the literature. This approach allowed me to explore the concepts found in the literature and to dig deeper into the themes that emerged in the first round of coding.

I completed a third round of coding, which I considered to be a catch all round. I did not add any new codes to the third round of analysis, but rather ensured that all the data had been accurately captured in the first two rounds of analysis. This ensured that all the data had been reviewed and coded correctly, and that no data was missed between the first and second set of codes.

3.4. Document Analysis

In addition to coding the interviews, I examined outside evidence to support and corroborate the statements made in the interview. This included reviewing mining company policy, WorkBC programs, college programs, and intervention activities in the region. Corroborating interview data like this allowed me to strengthen the findings and develop a stronger understanding of the events participants were speaking about in their interviews.

I used themes from the literature review and topics that arose from the semi-structured interviews to focus on my document review. I would record which documents I had reviewed, the important information, links, and any other details on a spreadsheet. I updated this spreadsheet regularly and used it to ensure guide and focus my document review.

This methodology allowed me to supplement and support the information and themes I discovered in my semi-structured interviews. The purpose of this method was not to provide the main results for my research, rather support and expand on the results from the interview process.

3.5. Limitations

3.5.1. Limitations of Qualitative Data

The majority of data collected in this project was subjective. Participants were asked to recount their personal experiences and opinions about several subjects. Additionally, there was a limited sample size of participants. While the accounts provided by the limited number of participants provided insight, it is important to recognize the limitations associated with subjective data.

Additionally, I was the sole researcher who analyzed the data. While I tried to remain neutral and not analysis the data in a way that favored any particular opinion, I recognize my analysis is also subjective. My opinion has been shaped by extensive reading on women in mining and women in other non-traditional sectors. I recognize that my experience and research may have impacted my analysis. In an effort to reduce my influence on the analysis, I used the questions as a guide for my first round of coding. I felt that this helped to ensure that I captured all responses to each question, before digging deeper into specific themes.

3.5.2. Time and Resource Constraints

My data collection was limited by time and resources. The Kootenays are a large and expansive region. Although my longest research trip was three weeks, I recognize that this was not a significant amount of time. I would have liked more time to learn about the context of the region and the impacts mining and refining has had. The size of the region was also a challenge. During my time in the Kootenays, I was able to visit seven communities. This is a very small sample of the many communities that exist in the region.

3.5.3. Selection of Participants

The individuals who were selected to participate in this project were aware of the topic of the research. Participants were not randomly selected and therefore, were sought out because of their experiences with gender in mining and refining. This means that their answers may not accurately reflected the current situation. Additionally, in a

few cases participants were interviewed on their job site. As many questions pertained to their jobs, some participants may have tailored their answers to ensure their participation would not impact their employment.

As an outsider to the region, I relied heavily on my connection with Selkirk College to help identify potential participants. As a result, participant selection was largely at the discretion of Selkirk College.

3.5.4. Participant Member Checking

Due to time and resource constraints, I was unable to complete “member checking”. Member checking is a process whereby summaries of transcripts are provided to the individual participant (Guest et al., 2012). Participants are then invited to review the summary and provide corrections or additional information. Member checking is a verification process for qualitative data. Due to the lack of member checking, there may be limitations in the data since it hasn’t been verified or reviewed for accuracy by the participants.

While individual member checking will not happen, a final deliverable of this research project is a report for the Kootenay community. This final report will be delivered to Selkirk College for local feedback and distribution. As a result, there will be feedback and a review from locals on the results of this project. This will allow the community to verify to correct details and provide additional information.

3.6. Case Context: Profile of the Kootenay Region

The Kootenay-Boundary Region, also known as the Columbia-Boundary Basin, is located in Southeastern British Columbia, Canada. The region is comprised of three regional districts: Central Kootenay, East Kootenay, and Kootenay Boundary (WorkBC, 2018a). The region is mountainous and has four main ranges: The Rocky Mountains, The Purcell Mountains, The Selkirk Mountains, and The Monashee Mountains. The physical region has large deposits of mineral and metal.

The Kootenays have a rich history. The region’s history is closely tied to the numerous natural resources within its boundaries. Pre-contact, there were many First Nations who lived throughout the Kootenays. Notable nations included the Carrier

(Dekelhne), Secwepemc (Shuswap), Okanagan, the Lakes people (Castlegar), and the Ktunaxa (Kootenay) people (Cottingham, 1947). In the early 1800s, European explorers moved from the east into the Kootenay region. Both the West Trading Company and the Hudson Bay Company expanded their territories into the area. The sheer number of rich mineral deposits resulted in mining play a large role in the development of the region.

3.6.1. History of Mining in the Kootenays

The Kootenays have a long and rich history in mining. Early mining operations started in the region in the 1880's (Taylor, 1978). Along with early mining operations, the Canadian Pacific Railway expanded through the Rogers and Crow's Nest passes into the Kootenays during the 1880's. The development of rail lines throughout the region (east-west and north-south directions) aided in the extraction of minerals and the settlement of the region (Breen, 2012). Fueled by the Gold Rush in the second half of the 19th century, prospectors explored Southeastern BC to stake their claim in the many mineral deposits. Many of the communities in the region, such as Nelson and Kaslo, were started because of nearby mineral deposits and mining operations. Nine miles from Nelson, the well-known Silver King mine (silver deposits) helped shape the region and identified the Kootenays as a mineral rich region (Taylor, 1978). Another notable mine was the Blue Bell mine in Riondel, BC. Riondel is located on the East shore of Kootenay Lake and the Blue Bell mine areas was first discovered in 1825 as having large silver, lead, and zinc deposits (Taylor, 1978). One of the main challenges was the lack of transportation arteries available for mined goods to moved out of the Kootenays (Taylor, 1978). The Blue Bell mine deposits were discovered long before the mine began operation, due primarily to the fact that there was no way to transport the mined material to the coast (Taylor, 1978). However, the large mineral deposits were too much to resist and steamships, horses, and trains were all used to move materials out of the Kootenays to the coast (Taylor, 1978).

As the mining industry in the Kootenays evolved during the 1990's, the Consolidated Mining & Smelting Co (Cominco) became one of the biggest influences (Taylor, 1978). In 1891, Le Roi Mining and Smelting decided that the mines near Rossland, BC required a local smelter. Working with Fredrick Augustus Heinze, a U.S. visionary, Le Roi Mining and Smelting built a smelter in Trail, B.C. The smelter, called the Canadian Smelting Works, changed hands a few times before being purchased and

officially owned by the British Columbia Southern Railway. The British Columbia Southern Railway was a subsidiary of the Canadian Pacific Railway (CPR). Canadian Smelting Works eventually became the Consolidated Mining and Smelting Company of Canada and was then renamed Cominco Ltd in 1966.

Cominco Ltd continued to grow through the 1900's. In 1986 the Teck Corporation, a mining company with origins in the Ontario, began an industry partnership with Cominco Ltd, creating Teck Cominco. In July 2001, the companies merged together before rebranding in October 2008 and becoming Teck Resources Ltd. Teck Resources remains a cornerstone of the Kootenay mining region. Other notable mining companies in the region include Sultan Minerals Inc, Anglo Swiss Resources Inc, Merit Mining Corp, Klondike Gold Corp, Kootenay Gold Inc, CertainTeed Gypsum Canada, and Baymag Inc (Grieve, 2010).

3.6.2. Present Day Mining Operations in the Kootenays

Mining in the Kootenay region has changed a lot since the late 1800's and early 1900's. However, mining still remains the economic backbone of a number of communities in the region. There are numerous mining operations in the region. The region has five major coal operations and a number of smaller non-coal operations (Grieve, 2010). The main minerals mined in the region are: metals (Roca Mines Inc MAX operation), molybdenum and coal, industrial metals, and gold (Grieve, 2010).

The main mining activity in the Kootenay region is coal operations. Teck Resources Ltd. operates 5 open-pit coal mines in the Elk Valley area (Figure 1) (Grieve, 2010). The Coal Mountain, Elkview, Line Creek, Greenhills, and Fording River operations all produce seaborne metallurgical coal (Teck, 2015). As of 2015, the Kootenay-Boundary region accounts for approximately 70% of Canada's annual coal exports (Katay, 2015).

Another key mining operation in the region is the Teck Trail Operations. Located in Trail, Teck Trail is the world's largest fully integrated zinc and lead smelting and refining complex (Teck, 2015). The smelting and refining processes produce refined zinc and lead that are used in chemicals and fertilizer products. The site also includes the Waneta hydroelectric dam and transmission system (Teck, 2015).

The Kootenay-Boundary region is also home to a number of industrial mineral and gold operations. These operations focus on the extraction of gypsum, magnesite, silica sand, mineral wool, dolomite, limestone, tufa, flagstone, riprap, aggregate, and smelter slag (Grieve, 2010). In addition, there are a number of gold operations in the region. Notable operations include the Grizzly Discoveries Ltd's Greenwood Gold Project, the Jumping Josephine (operated by Astral Mining Corporation and the Kootenay Gold Inc.), and Wild Rose Property (operated by Golden Dawn Minerals Inc.) (Grieve, 2010).

3.6.3. The Kootenay Workforce

In 2018, the total population of the Kootenay region (age +15) was 123,200 (WorkBC, 2018a). The population accounts for just over three percent of B.C.'s total population (WorkBC, 2018a). The Kootenay region has the highest median age of all of BC's economic regions at 46.9 years (WorkBC, 2018a). The total regional employment is 73,500 and the regional unemployment rate is 7.3% (WorkBC, 2018a). The Kootenay regions' unemployment rate is higher than the provincial rate at 5.1% (WorkBC, 2018a).

The Kootenay workforce labour market is diverse and there are numerous sectors operating in the region. The top industry in the region is the goods sector, which includes agriculture, forestry, mining, oil and gas, fishing, hunting and trapping, utilities, construction and manufacturing (WorkBC, 2018a). Approximately 32% of the jobs in the Kootenays are within the goods sector, with the primary focus being on mining, particularly coal extraction (WorkBC, 2018a). Other notable sectors in the region include: tourism, accommodation and food services, and retail and wholesale (WorkBC, 2018a).

3.6.4. Present Day Mining Workforce in the Kootenays

As of 2017, the mineral and mines sector employs nearly 426,000 individuals across Canada (Natural Resources Canada, 2017). In British Columbia, the mining workforce employs 38,440 individuals both directly and indirectly (WorkBC, 2018b). The mining industry exports were valued at \$97 billion in 2017, accounting for 19% of Canada's total domestic exports (Natural Resources Canada, 2017). It is clear that the mining sector is a powerful force in Canada.

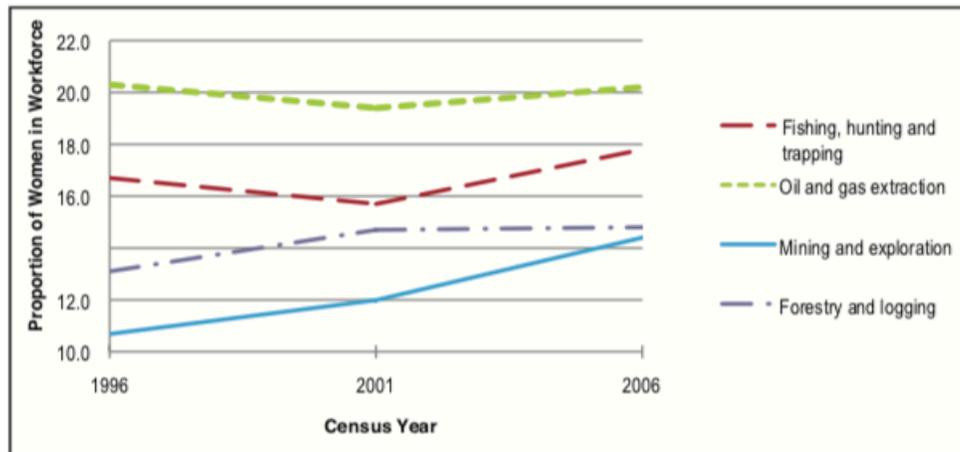
British Columbia (BC) is recognized as a central part of Canada's mining sector. In BC, the mining sector (including mineral refining and smelting and downstream mineral processing) accounts for approximately 30,720 jobs both directly and indirectly (Mining Industry Human Resources Council, 2017).

3.6.5. Gender and Present-Day Mining in the Kootenays

In the present day mining workforce of BC, men continue to make up the largest majority of the workforce (WorkBC, 2018b). According to the 2017 Labour Force Survey, conducted by WorkBC, only 15% of mining employees are women (WorkBC, 2018b). The majority of employment opportunities in the British Columbia mining industry are in the Kootenay region.

Currently, the Kootenay region offers 24.1% of the employment opportunities in the mining industry. In addition, there is an upward trend in the proportion of women in the mining workforce (Figure One), however overall, women continue to be under-represented in the mining and oil and gas extraction industries (Status of Women Canada, 2006).

Figure 1: Representation of Women in Selected Primary Industries (Canada)



Sources: The Conference Board of Canada; Statistics Canada

3.6.6. Interventions and Initiatives in the Kootenays for Women in Mining

In the past 10 years, there have been a number of initiatives and/or interventions taken by employers, government, and communities to promote and encourage women to enter the mining workforce in the Kootenays. These initiatives have had varying degrees of success. There are two primary initiatives that have shaped the Kootenay mining workforce: Mining and Refining for Women and the MiHR GEM Initiative.

Mining and Refining for Women

The Greater Trail Community Skills Centre (Skills Centre), along with Teck Metals Ltd and Bock and Associates, completed a 30 month mentorship project for the retention and advancement of women employed in mining roles by Teck Metals in Trail (Skills Centre, 2017). Funding for this mentorship project was provided by Status of Women Canada. The goal of the project was to enhance the retention and advancement of careers for women in non-traditional positions. Participants worked with assigned mentors and took part in a number of workshops (Skills Centre, 2017). In addition, the participants worked on an Affinity Project to address an issue related to women in non-traditional employment. In total, 34 women along with their mentors completed the project.

The Mining and Refining for Women project was successful in many ways. The project created greater transparency for career advancement. In addition, the project

also started a number of conversations around gender awareness and the accommodation of family needs (Skills Centre, 2017). Presently, the second stage of the project is being developed. It will utilize internal people to develop and drive a diversity plan at Teck, which will include establishing a Diversity Committee (Skills Centre, 2017).

MiHR GEM Works Initiative

The Mining Industry Human Resources Council (MiHR) Gender Equity in Mining Works (GEM Works) is an initiative that provides mining organizations with industry developed tools to help break down systemic barriers to gender inclusion in the mining workforce (Mining Industry Human Resources Council, 2017). The GEM Works program is a 12-month program that offers comprehensive training for employers and staff (Mining Industry Human Resources Council, 2018). The program was developed in 2014/15 to create change within the industry and eliminate barriers associated with gender in the sector.

GEM Works was used by Teck, a primary mining company in the Kootenay region (Trail & Elk Valley operations) (Mining Industry Human Resources Council, 2018). Teck nominated two “change agents”. The agents of change were staff members tasked with rolling out the GEM Works program across mining sites (Mining Industry Human Resources Council, 2018). These staff members took training programs through GEM Works before starting their role as change agents. The change agents made several changes to the succession policy in TECK to ensure vacancies were posted internally. Additionally, they implemented a practice where managers, who had females reporting to them, were required to assess how prepared they were for promotions (Mining Industry Human Resources Council, 2018). Another focus, was the creation of gender-balanced candidate lists from recruiters to ensure that more women were being represented in recruitment pools (Mining Industry Human Resources Council, 2018).

Chapter 4. Results

In this chapter I will present the results of the participants' interviews conducted for this research. The primary results have been categorized into three main themes: Rural Small Town, Community Supports, and Company Culture, Practices, and Policy.

4.1. General Participant Demographics

Thirteen participants were interviewed for this research project (Table 1). Participants were divided into two key groups. The first group included participants who actively worked in the mining industry. These participants were hourly workers, upper level management, and human resource personnel. The second group of participants included those who worked in mining support industries. These participants included interventionalists (those working on projects that had a goal to increase the number of women in the mining industry), educators, and support industries (i.e. restoration). The majority of the participants were female (12:1).

Table 2: Participant Demographics

Participant	Support or Mining Industry (S/MI)	Gender (F/M)
1	S	F
2	MI	F
3	S	F
4	S	F
5	MI	F
6	S	F
7	S	F
8	MI	F
9	MI	F
10	MI	F
11	MI	F
12	MI	F
13	MI	F
Totals	S: 4 (n=0.31) MI: 9 (n=0.69)	F: 12 (n=0.92) M: 1 (n=0.08)

4.2. Rural Small Towns

During the interviews the theme of rural small-town living arose as a factor, both positive and negative, for women entering and staying in the mining workforce.

Participants highlighted the positive aspects of living in rural towns, including having access to recreation opportunities, quality of life, community values, and connection to nature. In addition, participants emphasized the negative aspects of rural small-town living, including poor access to resources, distance from family, rural lifestyles, and access to jobs. In this section, I will break down these aspects of rural small-town communities and the impact they have on women entering and staying in the mining workforce in the Kootenay region.

4.2.1. Attraction

During the interviews, participants highlighted the positive aspects of living in rural small-towns. These positive aspects were typically characterized by recreation opportunities and access to nature. One participant emphasized the access to skiing areas, and another gave this quick ad for the Kootenays “*Hey it’s the Kootenays! It’s super attractive and you can ski!*” (Interviewee #3, 2018). Recreation was highlighted as being one of the key reasons why participants were attracted to the Kootenays. Another participant mentioned their immediate connection to the community saying “*I fell in love with it immediately. It was just a fun place and lots of good people.*” (Interviewee #4, 2018).” Participants (n=3) were also attracted by the sense of community and the family values that characterize rural small-towns in the Kootenays. One participant highlighted the sense of community in Sparwood and the strong connection locals have to their community.

4.2.2. Retention

Participants also highlighted the challenges associated with retention due to the limitations they faced in small towns. The primary retention issues identified can be classified as community supports. Child care (n=10), education opportunities (n=10), and housing (n=6), where the primary issues brought up by participants relating to retention. The following section will break down the various community supports that were raised by participant in greater detail.

4.3. Community Supports

Participants highlighted supports as a key challenge for women entering into the mining workforce. There were three main supports brought up by participants: child care, education and training opportunities, and employment support. All thirteen participants brought up one or more of these supports when discussing challenges associated with entering the mining workforce (Table 4).

Table 3: Community Supports Summary of Results

Challenges & Barriers in Community Supports	# of Participants (n=13)
Child Care	10
Gendered responsibility of child care	5
Lack of child care spots available	8
Lack of extended hour child care	9
Housing Stock and Affordability	6
High real estate prices	3
Low availability of rental units	3
Training and Education	13
Onsite Job Training	5
→ Onsite training is the most important for the hourly worker	4
<i>Local College Education</i>	6
→ Lack of skilled trade programs in the Kootenays	6
University Level Education	4
→ Lack of Mining University Level Programs in BC	1
→ Willingness to Relocate for University or Jobs	3
Future Needs for Training and Education	10
→ More emphasis on women accessing training	2
→ More spots for training and education in the Kootenays (regardless of gender)	8

4.3.1. Child Care

Child care and the responsibility of looking after children was a major barrier discussed by numerous participants. One participant summarized the challenge of child care as being a “*big issue for current employees and an even bigger issue for applicants (Interviewee #10, 2018)*”. In total, ten out of thirteen participants (77%) discussed child care as being a challenge for women entering the mining workforce. Three participants emphasized that a lack of child care in the region meant that they were unable to accept jobs because the current child care opportunities were not sufficient to cover their needs.

Based on the responses of participants there were three key elements to this issue: gendered responsibility of child care, lack of child care spots, and lack of extended hour child care.

The first element raised by participants was that child care has traditionally been the responsibility of women. One participant summarized this issue as “*If you have kids a lot of times traditionally it falls on the female’s responsibility to take care of the kids or management schedules* (Interviewee #11, 2018)”. Another participant expanded on this when discussing challenges for women entering the mining workforce saying,

We [hiring staff] might see it from a perspective of people declining an offer or not proceeding with an interview because [childcare] doesn’t fit but we don’t have a whole lot of insight on those women that aren’t even applying what is the perceived barriers from that standpoint (Interviewee #12, 2018)

The second element raised by participants was the general lack of child care spots available in the Columbia Basin-Boundary region. Participants (n=8) emphasized that there was a shortage of child care spots in the region and that this created a barrier for those hoping to access mining jobs. One participant said that “*Often your daycares are full up and if you want to [use the service] you can’t even* (Interviewee #10, 2018)”. Participants emphasized that this issue was caused by a lack of qualified child care workers in the region. One participant stated:

It’s a very complicated issue. You might get the seats, you might get [the] government to fund seats, but you don’t have workers. [If] you don’t have the workers, you can’t offer the seat. And then how much can you change (Interviewee #6, 2018).

Another participant expanded on this by emphasizing the challenges associated with attracting early childhood educators “Our early childhood educators make such a little amount of money and [they can] drive [haul] truck¹ for double so then how do you get early childhood educators in our community (Interviewee #5, 2018)”.

The third element raised by participants was that there is a shortage of child-care to meet the needs of shift workers (n=9). Traditionally, mining opportunities in the Kootenay region have shift work schedules. One participant described the shift work

¹ Haul Truck – refers to the Haul Truck Driver position at Teck Coal Ltd. Haul Truck is an entry level positions for hourly workers.

schedule of Teck Coal Ltd. as the following “*Generally speaking all of [TECKs] hourly employees work four on, four off. They do two 12-hour day shifts and depending on the site they work 7PM to 7AM or 8PM to 8AM (Interviewee #12, 2018)*”. Another, participants highlighted how this type of schedule can be challenging for finding child care supports saying that “*In this Valley there’s no [childcare] that can accommodate a 15-hour work day that we have to work [at Teck] (Interviewee #4, 2018)*”. Another participant emphasized this by saying,

It’s a challenge even for someone on a nine-hour shift in a Monday to Friday job to find daycare, let alone to have daycare day shift and night shift, especially if you’re a single parent. Daycare is a big challenge (Interviewee #2, 2018).

One participant said that “[childcare] is probably the biggest single problem for women in this valley for any type of work, but Teck is, you know, Teck with their shifts is pretty crazy (Interviewee #4, 2018)”.

4.3.2. Housing Affordability and Stock

Housing affordability and availability were major concerns brought up by numerous participants. Three participants highlighted the price of real estate and three participants emphasized the low availability of rentals. It is important to note that these concerns were mainly brought up in relation to the Elk Valley which includes the communities of Fernie, Sparwood, and Elkford. One participant summarized this support challenge by saying

Price of real estate, for example in Fernie is astronomical. Availability for accommodation is significantly reduced here in the area to the point where whenever we talk to someone [to hire them] we ask them if they have accommodation arrangements or [if] they thought about it, have they looked into rentals because it’s so hard to get a rental here (Interviewee #12, 2018).

Two participants also highlighted that this was a community challenge for both women and men and for all sectors, not just mining. Both participants expanded on this by explaining how rental shortages impacted current residents looking to upgrade or change locations, as well people moving into the community.

4.3.3. Training

Training and employment opportunities are another support highlighted by participants. Training opportunities are organized into three key areas: onsite job training, local college education, and university education.

Onsite Job Training

On site job training is very important in the mining sector, particularly for hourly workers. Participants highlighted the onsite training available for hourly workers at Teck Coal. All hourly workers, who are hired to do active mining, start as haul truck drivers at Teck Coal. One participant explained Teck Coal onsite training in this way “*Most sites have simulators. They do all their own site training. There’s a lot of education [onsite]* (Interviewee #12, 2018).” A participant further explained that:

Some colleges do have training programs for [haul truck driving] but you can’t simulate [the mine] environment. You can get in a truck and you can drive it around, you know, back roads or whatever. It’s still not as big a truck as [Teck has] and you’re not going to have a 4100 shovel² that is moving that you’re loading underneath, right? So, people will go and do that training, I’m not saying it’s a bad training, we do hire a lot of people with that, but they still need to be... Going through that training doesn’t mean they need any less training from us (Interviewee #10, 2018).

Another participant emphasized how onsite training is ongoing saying

There’s always coaching, mentoring. People look out for each other too. It could be other truck driver [who] might pop in and give you a friendly reminder like ‘Oh just a friendly reminder... Loaded trucks have the right of way.’ Or, you know, simple things. Because when you first come on, you forget because you’re overwhelmed, right? You might forget and it’s nice to get those friendly reminders (Interviewee #11, 2018).

In summary, participants indicated that there are significant on-site job training opportunities at the mine sites.

Local College Education

Local college education is a key support for women entering the mining field. There are two main colleges in the Kootenay region: Selkirk College and the College of

² A 4100 Shovel is an electric rope shovel used in mining. The 4100 Shovel is used to load the haul trucks and in-pit crusher conveyor belts with raw coal and rock.

the Rockies. Three participants emphasized that the local colleges are considered “pre-university” and students are only able to start their undergraduate degrees there before transferring to other institutions. The key issue brought up by six participants (46%), in relation to local college education, was the shortage of skilled trades people in the region. Skilled trades refer to plumbers, mechanics, plant operators, electricians, heavy duty mechanics, and welders. One participant emphasized that “trades are scarce” when we discussed finding qualified tradespeople for heavy duty mine trade positions. Teck in the Kootenay region has been recognized as offering apprenticeships and work experiences for new tradespeople. However, participants noted there can be challenges associated with finding skilled people to fill heavy duty mechanic positions and other skilled trade jobs in the region. One participant said they “*would love to see more trades courses provided [in the Kootenays]. There is sometimes a two-year waiting list for somebody who wants to go into heavy duty mechanics or welding or electrician* (Interviewee #1, 2018)”. When asked about the future needs of training in the Kootenay region for mining, a total of five participants (P= 0.384) indicated they would like to see more trade courses offered in the area to strengthen the workforce.

University Education

The third level of training is university education. There were two aspects of university education brought up by participants. The first aspect concerns the availability of mining programs in BC (n=1). One participant explained the situation in the context of co-op saying

Mining engineering co-op enrollment has dropped. When you sign up to go to engineering school you can decide if you want to apply to the co-op program and do the co-op as part of your thing. For example, this is just from the initial numbers that we have, we want to hire eight. There are only eight available students that are available for a co-op in January. There’s something like one at U of A, seven at UBC and one at some other school. We can almost guarantee that not all eight are going to be a perfect fit, nor want to work for Teck. We’re likely going to have positions that aren’t going to be filled with mining engineers and we’ll put civils in, or we’ll leave them vacant, whatever the hiring manager decides to do. Would increasing capacity in the area help in engineering? Probably, if the talent pool was small and, yeah, we need more. If it could increase at other schools as well that would help (Interviewee #12, 2018).

The second aspect, brought up by three participants, concerns the interest of university educated professions to relocate to the Kootenay mining region (n=3). One participant

said the following “*Specifically [professionals from] Vancouver there’s not a lot of people that have an appetite to relocate here. I think they simply just don’t apply* (Interviewee #4, 2018).” on the issue.

When asked about the future of training and education opportunities in the region participants gave mixed responses. Two participants emphasized that they would like to see education, focussed on women, be a priority. They suggested expanding training programs with designated seats for women or creating trade sampler programs orientated towards women. Another response from eight participants (62%) was the need to open up more programs and seats in both colleges to allow more students to pursue education in the Kootenays. Lastly, three participants stated that they would like to see more emphasis put on exposing female elementary and high school students to non-traditional jobs.

4.4. Company Culture, Practices, and Policy

A key theme that emerged during the analysis of the interviews was company culture, practices and policy with regard with workforce diversity. Within this theme, four key sub themes arose: general company culture, diversity in recruitment, job opportunities, and barriers to upper level management.

Table 4: Company Culture, Practices, and Policy Summary of Results

Attributes of Company Culture, Practices, & Policy	# of Participants (n=13)
Company Culture	10
→ Generally positive	6
→ Generally negative	4
Diversity in Recruitment	5
→ Diversity in recruitment has improved in the mining sector	5
Job Opportunities	7
→ Good opportunities for growth	7
→ Barriers to upper level management for women	3
→ Lack of diversity in management	5

4.4.1. General Company Culture

A key theme that emerged regarding mining companies was general company culture. General company culture, with regard to this research, refers to the general values, goals, and behaviours that contribute to the social and psychological

environment of a workplace. Out of thirteen participants, ten referred to company culture. Of the ten participants who mentioned company culture in their interviews, six gave generally positive reviews, while the remaining four referred to company culture in a negative way. Of the six participants who expressed positive feelings regarding company culture, five were currently employed in the mining sector. The other participant was part of the education sector.

There were four participants who felt that company culture was negative with regard to gender and female employees. Of the four employees who expressed negative feelings regarding company culture, three did not actively work in the mining sector. They were from a range of sectors, including interventionalists. This shows that those participants who were currently working in the mining sector, perceived company culture differently than those who were working in a support industry or in interventionalist roles.

The participants who highlighted a positive company culture emphasized a few key points in their responses. The presence of strong coaching and mentorship were mentioned as reasons for the development of a positive company culture. A participant stated that having closer to 50/50 gender split on site allowed for the company culture to become “sweeter”. This participant said that

Women are generally softer. Softer heated. You could have a grumpy old man say, “Okay go dump your load here” and if they hear a girl’s voice they’re like “Oh, okay” and their voice changes and they’re sweeter. It seems to sweeten the whole pot (Interviewee #9, 2018).

Outside of social interactions in the workplace, one participant highlighted that the “*corporate will to change mining site culture has promoted change* (Interviewee #2, 2018)”. Participants with negative views regarding company culture felt that the concept of the “old boys club” (n=2) and the general perception of mining being a masculine sector (n=4), was responsible.

4.4.2. Diversity in Recruitment

A key theme discussed by participants was diversity in recruitment. Generally, this referred to how new employees were recruited into the mining sector. In their responses, participants highlighted diversity in recruitment with mining companies. In total, five participants discussed diversity management in their interviews. All five stated

diversity management had improved in the mining sector. One participant said the following about diversity management in TECK “[TECK is] actively recruiting women and diverse groups. Women and Indigenous peoples are the ones that TECK are focusing on. I don’t think it’s slowing down any time soon (Interviewee #2, 2018)”. Another participant stated the following about diversity recruitment “[TECKs] main goal was to get half of their workforce as women or other diverse groups such as Indigenous peoples (Interviewee #5, 2018).” Overall, all five participants who discussed recruitment in diversity, emphasized the positive improvements that have taken place during their careers.

4.4.3. Job Growth and Opportunity

A key concept that arose regarding company culture, practice and policy was the idea of job growth and opportunity for those applying and currently working in the mining sector. In general, there was a very positive response from participants regarding the growth and job opportunities available to those working in the sector. Participants actively working at Teck (7) expressed that there were numerous opportunities for job growth. One participant said that they “*have a colleague that says every three years he can have a new career at Teck* (Interviewee #9, 2018)”. This participant followed up by saying that Teck is a large company and you can explore different opportunities if you have a strong work ethic and interest.

One main challenge that was brought up with regard to gender diversity and women in the mining sector was barriers to upper level management. Participants identified two key barriers with regard to barriers to upper level management. The first barrier was the process of succession. Succession refers to the process by which lower level employees are promoted and move up the workplace hierarchy. For example, one participant expressed confusion regarding succession by saying, “How is it done, are the people who are doing it sufficiently skilled to actually be respectful of the women they are evaluating (Interviewee #8, 2018)”. Another participant said the following about succession “I don’t know whether women are in a position to take advantage of the internal [promotional] structures. I just don’t know (Interviewee #11, 2018)”. Three participants identified succession as a challenge to accessing upper level management positions.

The second challenge to upper level management identified by participants was the lack of gender diversity in management teams. Participants were concerned that upper level management teams were not gender diverse. As a result, participants felt this was a barrier. One participant explained why they felt it was a barrier by saying *“If you have a male in a senior leadership role interviewing candidate, they might not knowingly gravitate towards someone that’s like them. And that might be indeed a male because that’s how they’re speaking, that’s how they’re interviewing and it’s hard (Interviewee #7, 2018).”* The challenge of a lack of gender diversity in management teams was discussed by five participants.

4.5. Participant Job Experiences

Part of the data collection process included participants explaining their personal experiences with the mining workforce. This section of results focuses on the participants who are currently employed within the mining sector. In total there were nine participants who worked actively within the mining sector. This section looks at three main components of participants’ job experiences in the mining workforce: general job evaluation, career trajectory, and challenges associated with mining jobs.

4.5.1. Mining Job Evaluation

Participants were asked what they liked most about their job. All nine participants stated that they liked their job. Their reasoning for liking their job included colleagues, teamwork, natural beauty of the mine site, the challenge of mining work, communities, and finding solutions to mining problems. One participant responded by saying *“I actually really love my job (Interviewee #5, 2018)”*, when asked about their favourite part of working on the mine site. Another participant responded by saying *“This is a dream job! (Interviewee #10, 2018)”*. One participant addressed the teamwork environment of the mining industry by saying *“Mining is really interesting because there are no solo miners. [Mining] is the ultimate team sport. You get to see people really work in cooperation to achieve big objectives (Interviewee #13, 2018)”*. One participant explained the enjoyment of solving problems by saying *“I like finding solutions. I like hearing the problems. I like interpreting the problems into something I can solve (Interviewee #9,*

2018)”. Overall, the general perception of mining jobs was positive, and participants highlighted several reasons why they enjoyed their positions.

4.5.2. Mining Job Trajectory

Job trajectory, in the context of this study, is defined as the path participants have taken to get to their current jobs. Participants were asked to describe their career trajectory and to identify any challenges they faced along the way. Each participant had taken a unique path to their current job, however, common features emerged. There were two common features that several participants shared. The first shared feature was that the participants had some form of post-secondary education. The second was that the participants had some sort of personal connection with an employee in the mining sector. It is important to note that in this study, no participant had both a post-secondary education and a personal connection to the mining industry. Participants either had one or the other.

The first common feature identified by participants was a form of post-secondary education. Of the nine participants directly connected to the mining industry, seven had post-secondary experience. The post-secondary programs participants had completed included engineering, human resources, and political science. The second common feature identified by two participants was a personal connection to the mining sector. These connections ranged from a family member, mentor, significant other, or friend who work in the mining sector. Participants referenced this connection as a reason for being interested in the mining sector and as being an important part of their job trajectory.

4.5.3. Challenges with Mining Job

Participants were also asked to identify the challenges they associated with their job in the mining industry. Of the nine participants currently employed in the mining industry, eight faced challenges in their position. The following table presents the main challenges that were raised and the number of participants who identified these challenges in their interviews.

Table 5: Participant Challenges with Mining Jobs

Challenges	Number of Participants (n=9)
General Structure of Mine Shift Work	2
→ Shift format (length, night shifts, etc.)	2
Mining Workforce Management	3
→ Female manager responsible for male subordinates	2
→ Other	1
Mining Industry	6
→ Attitudes in the mining industry	2
→ Lack of respect for female employees	1
→ Lack of confidence in women in the field	2
→ Lack of gender diversity	1
Safety in the Mining Industry	3
→ Mining can be a dangerous industry	2
→ Outdoor work – weather conditions, etc	1

Chapter 5. Discussion

The progress of women in mining workforces across rural British Columbia is tracked in the literature. Three key themes emerge regarding factors that impact gender diversity in the mining workforce: 1) rural small-town dynamics, 2) community supports, and 3) company culture, policy, and practice. The results of this research highlight these three themes as well. In addition, the research results show how these themes have changed and developed over time and are relevant to the specific case dynamics of the Kootenay region in BC. This section will discuss the three core themes and identify forces that are driving change within the themes.

5.1. Rural and Small Town Dynamics

A major theme that emerged in the literature was the idea of rural small-town dynamics and how those dynamics can shape workforce development, specifically gender diversity within workforce development. The themes of gender dynamics and bias, family structure, and job opportunities were widely discussed in the literature. The notion of the traditional family structure, where men are the primary breadwinners and women are responsible for child care and the home, were thought of as the common structure in rural small towns (Gill, 1990; Reed, 2003). Women who did seek jobs outside the home often faced gender bias and limited job opportunities, especially in the mining sector (Moen, 1981; Reed, 2003).

Traditional rural small-town dynamics found in the literature, such as single income household structure, were not prevalent in the results of this research. However, it is important to note that the interview questions did not prompt participants to discuss this. Participants did not highlight traditional family structures, gender bias, or limited job opportunities in their interviews. Instead, participants (n=5) focused on the many benefits of living in rural small towns, including access to recreation and there being a strong sense of community. When asked about job opportunities, the answers were very positive (n=7), and participants highlighted that there was considerable room for career growth and movement. One participant said the following about career growth at Teck Resources:

I have a colleague that says every three years [you] can have a new career at Teck and that's very true. If you want a new opportunity and you're a good performer there is opportunity to be had (Interviewee #9, 2018).

Another participant emphasized the room for growth by saying “*There's a lot of opportunities here and it opens doors to whatever you choose to do. Nothing holds you back* (Interviewee #10, 2018)”. This differs significantly from the literature which emphasized limited opportunities for women in the resource-based jobs sector. The difference between the literature and current experience in rural small towns indicates that the dynamics may be shifting within in the Kootenay region, specifically within the mining sector.

5.2. Company Culture, Policies, and Practices

Company culture, practices, and policy were major themes in the literature. The mining industry has traditionally been a male-dominated sector and as a result, the workplace has a masculine culture. The literature exposed major challenges associated with the masculine culture of the mining workplace, including sexual harassment, employer bias, and tokenism (Franceschet et al., 2012; Mercier & Gier, 2007). These challenges can create hurdles for women who wish to enter the mining workforce.

Participants in this research revealed that their experiences with company culture, practice, and policy was significantly different than how it was described in the literature. Generally, participants reported positive company culture that was open and inclusive to all genders. Participants reported opportunities for growth within their positions and strong recruitment diversity in the mining sector. One participant highlighted this by saying “*Teck [is] actively hiring a bunch of women and [they are] doing exceptionally well* (Interviewee #3, 2018)”. While this highlighted positive changes within the mining industry, participants did report challenges with company practices. These challenges were mainly associated with accessing positions in upper level management. Participants stated that that there was a lack of diversity in upper level management. One participant explained this by saying:

[They] promote from within. It is based on networking and all that kind of stuff. There's a perception of that, it is like a popularity contest. This guy's obviously popular even though everyone beneath him doesn't

think he's ever done anything, yet he seems to be the one that gets promoted over and over again (Interviewee #2, 2018).

Participants (n=3) stated that the lack of diversity in upper level management created a barrier to accessing upper level positions. These are very different challenges related to company culture, practice, and policy than those identified in the literature.

The results and literature reveal that culture may be shifting within the Kootenay mining sector. A key difference that arose between the literature and results was the emphasis on sexual harassment in the literature. The literature cites sexual harassment as one of the key challenges faced by women in the mining workforce. During the thirteen interviews, sexual harassment was not mentioned once by any participant. While there may be many reasons why participants did not wish to disclose this type of information during the interview, it is an interesting difference to highlight. Additionally, it is important to note that during the interviews, participants were not prompted to discuss or asked specific questions about sexual harassment.

Sexual harassment has traditionally been a challenge for women entering the mining workplace due to the nature of mining and the isolated situations (Botha, 2016). A strong predictor of sexual harassment in the workplace is a high ratio of male-to-female employees (Botha, 2016). Participants suggested that there were more women working in the mining sector in the region than in the past, and workplace statistics from Teck Resource Ltd back this up. In 2018, Teck reported a total of 1,591 female employees and 6,818 male employees in Canada (Teck, 2018). In total approximately 23% of the Teck workforce in Canada was female (Teck, 2018). In 2015, only 17% of the workforce was female (Teck, 2016). This trend can be seen across Teck's workplace reports and indicates that the unbalanced ratio of male-to-female employees may be decreasing, resulting in a decrease in the likelihood of sexual harassment incidents (Teck Resources Ltd., 2019). In addition to changing workforce demographics, Teck's Inclusion and Diversity Plan (IDP), Code of Ethics, and Code of Sustainable Conduct helps create a workplace free of sexual harassment (Teck Resources Ltd., 2019).

Another key difference between the literature and the results concerns company practice, policy, and job opportunities. In the literature, the key challenges regarding job opportunities were due to employer bias and the traditional view that mining was a masculine job (McDowell, 2015; Mercier & Gier, 2007). Resource extraction jobs have a

long history of being male-dominated careers with very few women working in the sectors (Gill, 1990; McDowell, 2015). Participants described having positive experiences with regard to getting jobs and accessing various opportunities to expand or enhance their careers. Seven participants felt there were good opportunities for growth in the mining sector. It is important to note that these seven participants were not referring to upper level management positions, but rather regular hourly mine operation jobs, such as haul truck drivers. This differed significantly from the literature.

The results of this research, when compared to the literature, suggests that there are changes occurring regarding job opportunities available to women in the Kootenay mining sector. A total of 5 participants stated that they felt there was an increase in gender diversity with regard to recruitment in the mining sector. In order to understand what is driving this change and creating more opportunities for women in a traditionally male dominated sector, it is important to look at company policy. One participant highlighted how important policy was by saying “There is better policy in place and [they are] really critically important policy. [There is] be more procedure around how you [are] treated (Interviewee #6, 2018). Teck Resource Ltd. publishes annual Sustainability Reports that track and highlight gender diversity in hires and diversity policy. In 2018, 31% of Teck’s global hires were women (Teck, 2018). Since 2015, there has been a trend towards more female staff members (Teck, 2018). This trend has been driven by Teck’s IDP. The goal of the IDP is to work towards building a diverse workforce that includes more women and Indigenous Peoples (Teck, 2018). One of the guiding principles of the IDP is to attract a broader range of candidates. The IDP is aligned with the company’s core values of integrity and respect and is reflected in the Code of Ethics and Code for Sustainable Conduct (Teck, 2018). Integrating the IDP into the foundational guiding principles of the company allows for maximum support and follow through with the plan. As a result, this company policy could be driving change and creating more job opportunities for women in the Kootenay mining sector.

Another key piece of data gathered during the interviews were the positive responses, regarding company culture, from six participants who were actively working in the mining sector. General company culture, in the context of this research, refers to the general values, goals, and behaviours that contribute to the social and psychological environment of a workplace. One participant said the following about the culture of a Teck mine site “*Everybody’s got your back. You work as a team* (Interviewee #9, 2018)”.

Another participant highlighted the culture by saying “*There’s always coaching [and] mentoring. People look out for each other* (Interviewee #11, 2018)”. The literature presented a much more negative view of mining company culture. The literature highlighted negative company culture characteristics including sexual harassment, “*locker room talk*”, and a hostile and uncomfortable work environment for women (Botha, 2016; Yount, 1991). To understand why these negative company culture characteristics did not arise during the interviews, it is important to look at the company culture Teck is working to create.

Teck Resource Ltd. has worked to develop an inclusive and respectful workforce. Policy such as the IDP and the Code of Sustainable Conduct all create frameworks for more respectful workplace environments. Additionally, the inclusion of external best practices and standards to inform human resources could be another reason for the change in workplace experiences for women. Teck is an active member of seven best practice organizations (Table 7) that inform their diversity and workplace conduct standards. These memberships and partnerships may be one of the reasons why Teck employees are experiencing a generally positive workplace culture and are not falling victim to concerns raised in the literature.

Table 6: Teck’s Membership, Partnership and External Commitments to Best Practices for Company Culture (Teck, 2015)

Membership, Partnership and External Commitments	Explanation
Mining Industry Human Resources Council (MiHR)	A recognized leader in the development and implementation of national human resources solutions.
International Labour Organization (ILO)	A tripartite UN agency uniting member governments, employers and workers in common pursuit of social justice and internationally recognized human and labour rights. Teck incorporates several ILO standards.
Gender Equity in Mining Works (GEM Works)	Helps companies create a mining and minerals industry where women and men have the best opportunities for making great contributions and having rewarding careers.

Membership, Partnership and External Commitments	Explanation
Women in Mining Canada National Action Plan	Facilitates the provision of assistance to women in mine impacted areas who are increasingly facing socio-economic problems caused by mining activities.
30% Club Canada	The aim of this organization is to encourage both board Chairs and CEOs to achieve better gender balance at board level as well as at senior management levels. Teck's President and CEO is a member of the 30% Club Canada.
UN Women	Teck and UN Women entered into a US\$1 million multi-year partnership in 2016 to promote the empowerment of Indigenous women in Chile. In 2018, the partnership was extended through an additional US\$1 million investment from Teck to develop a new training centre for this program.
The Minerva Foundation	An organization that supports women and girls in British Columbia, Canada, to gain the confidence and skills they need to reach their leadership potential. Teck's President and CEO is a signatory of the foundation's Diversity Pledge.

An area of company culture, practices, and policy where participants highlighted challenges was accessing upper level management positions. There were two key issues raised by participants. The first was the process of succession (n=3) and the second was the lack of diversity in upper level management teams (n=5). Gender diversity in workforce literature highlights the importance of diversity at all levels in a company (Wharton, 2012). According to a 2018 Sustainability Report, 29% of Teck's Board of Directors is made up of women, however, when it comes to gender diversity in lower level management, little information is available. Participants who worked at Teck in the Kootenays said there were few women in management roles and the process to succession was unclear. It is important to note that while there is a positive trend towards more women being hired at Teck and a strong policy for diversity in the company, there may be a disconnect with regard to management positions.

5.3. Community Supports

The results of this research show that there may be changes occurring with regard to rural small-town dynamics and mining company culture in the Kootenay region, specifically related to operations at Teck. These changes are making it easier for women to access and excel in mining jobs. However, it is still challenging for women to access upper level management positions in the mining sector.

There was one area in this research where there was very little discrepancy between the literature and participant responses. Community supports, including education, child care, and housing, were all flagged as key barriers to accessing the mining sector by participants. These barriers were also prevalent in the literature.

5.3.1. Child Care

Child care has proven to be a significant challenge for the Kootenay mining sector. Literature dating back to 1977 (Kotarski & Baker) identified the lack of child care that meets resource industry shift workers as a barrier to accessing jobs. During the interviews, ten participants identified child care as being a barrier to accessing mining jobs. One participant highlighted the challenge child care presented by saying “*Those young women who want to work for Teck need daycare desperately. That is probably the biggest single problem for a woman (Interviewee #11, 2018)*”. There were three key challenges raised by participants. The first challenge was that women have traditionally been responsible for child care and as a result, the burden of child care often falls on the mother. One participant explained this by saying

I think once you have children, there's a very strong drive for the woman to continue being a maternal, housekeeping, baby keeping and so there are not enough programs in the region to look after children (Interviewee #10, 2018).

The second challenge was the general lack of child care spots available for new parents or families who were moving into the region. The third challenge was a lack of spots that met the needs of shift workers, such as overnight child care. All three of these challenges were also prevalent in the literature on child care in resource communities.

It is clear, in both the literature and the results of this research, that child care is a major barrier and challenge for women wishing to enter into the mining workforce. It is important to mention that this research project is one of many that have highlighted this barrier. Numerous reports and studies have been done in the Kootenay region identifying the challenges associated with child care and the mining sector. (Bock & Morton, 2018; Halfon & Friendly, 2015). This research project adds another piece of evidence to the growing body of research on the need for child care in the Kootenay region.

In May 2018, the Greater Trail Skills Centre based in Trail, BC completed a feasibility study on extended hour child care in the region. The study concluded that there was a definite need for extended hour child care in the region (Bock & Morton, 2018). There were two main reasons for the heightened demand for child care in the region. The first reason was that the primary forms of employment in the region require shift work. Teck Resources Ltd. is an example of a primary employer in the region that uses shift work schedules (Bock & Morton, 2018). As a result, there was a demand from their employees to have access to child care that meets their needs. The second reason was that the lack of child care in the region has been a long-standing issue. Concerns around child care that fit the needs of two income families in shift work situations (and in other work conditions) have been an issue for decades (Guiora, 2014; Wharton, 2012). As more families move to the region, the increased demand for extended hour child care services will need to be addressed (Bock & Morton, 2018). The findings in Bock and Morton's (2018) report, mirrored the concerns raised by participants in this study.

Child care is a key barrier for women wishing to enter the mining industry as well as those currently employed in mining. Unfortunately, child care has been a long-standing barrier facing women in the region. Not having adequate or affordable care for children limits work opportunities for parents, particularly mothers (Wharton, 2012). By not addressing this barrier, women will continue to face challenges when trying to enter the mining industry.

5.3.2. Education and Training

Another key community support is education and training. Education and training are invaluable community supports that give women the skills and tools needed to

succeed in mining sector jobs. The literature highlighted how inadequate training and education creates challenges for women entering the workforce in rural resource-based communities (Ames, Brosi, & Damiano-Teixeira, 2006). Strong educational opportunities, including having enough seats available in programs, creates greater opportunity to build a strong workforce (Ames et al., 2006). Participants in this research project were asked what their opinions were regarding education related to mining in the Kootenay region. The results showed that onsite job training such as Teck's Truck School, were strong educational experiences and gave employees the exact skills they needed to master their jobs. One participant highlighted the importance of this in relation to Teck's Truck School saying:

Driving a haul truck, we train that. Some colleges do have training for that kind of thing but still you can't simulate this environment. You can get in a truck and you can drive it around back roads or whatever. It is still not as big a truck as we have and you're not going to have a 4100 shovel that is moving that you're loading underneath. People will go and do that training (Haul Truck Training at a college). I'm not saying it is bad training, we do hire a lot of people with that, but it doesn't mean they need any less training from us (Interviewee #12, 2018).

In total, five participants highlighted the importance of onsite job training during their interviews.

The weakness in education was at the local college and university level. There are two main colleges in the Kootenay region; Selkirk College and the College of the Rockies. These two colleges offer the majority of post-secondary coursework in the region (BC Government, 2016). Eight participants highlighted the need for more college level training and education programs in the Kootenays. These participants felt there was a need for more specialized programs, such as heavy-duty mechanics. Another challenge regarding education in the Kootenays is the lack of variety in university degree programs offered regionally. Four participants highlighted this as a challenge in their interviews. For example, those wishing to pursue engineering degrees must attend a major university such as the University of British Columbia or the University of Calgary. This can be a challenge for locals who have grown up in the Kootenay region and do not wish to relocate.

Creating a strong education network in the Kootenays can help break down barriers for women wishing to work in the mining sector. Onsite job training is a very

valuable tool for hourly workers entering the mining workforce. However, it is also important to provide training opportunities for trades and university level degrees to ensure that anyone who is interested in mining can access whatever training is necessary to help them obtain their desired position.

5.3.3. Real Estate and Rental Stock

A third challenge raised by participants with respect to community supports was the availability of real estate and rental stock. Six participants highlighted that the Kootenay region, specifically the Elk Valley, has very low rental stock and high real estate prices. One participant emphasized the challenge for prospective employees saying

Price of real estate, for example in Fernie, is astronomical. Availability for accommodation is significantly reduced here to the point where whenever we talk to [a prospective employee] we ask them if they have accommodation arrangements or have looked into rentals because it is so hard to get a rental here. I expect that there's going to be a point where people will start turning down job offers because they can't get accommodations. It's happened before, it happened years ago where every second job offer would get turned down because they couldn't find accommodation in the area. It's really tough (Interviewee #12, 2018).

As of 2017, the average cost of a home in Fernie, BC was \$451,000. A report conducted by the City of Fernie/West Fernie and CitySpaces Consulting showed that there was also limited housing choices for renters, especially single parent families, low income people, and those with disabilities (CitySpace Consulting, 2017). The report also highlighted that the lack of affordable housing impacts employee recruitment and retention (CitySpace Consulting, 2017). This was a theme supported by participants in this research (n=3).

Housing, as a barrier specifically for women wishing to access jobs in the mining sector, was not a prevalent theme in the literature reviewed for this research. However, it is important to note that housing access, affordability and suitability in resource regions are prominent themes in the rural development literature. Traditionally, rural areas have been thought to have lower real estate prices (Bencardino & Nestico, 2017). It is important to note that as housing markets change and concerns around real estate prices and rental stock rise, there is the possibility that this will create another barrier for women wishing to enter the mining workforce. The key concern surrounding real estate

prices and the availability of rental stock is that it impacts recruitment and retention of women in the mining sector.

5.4. Drivers of Change

The results of this research indicate that there is change occurring with respect to women accessing jobs in the mining sector of the Kootenays. Primarily these changes are occurring at the company level where they are working to create a more inclusive workplace culture with strong policies dedicated to promoting diversity. A strong company policy and mission to increase diversity in its workforce is a powerful driver of change. Throughout the interviews two additional drivers of change emerged. The first was the power of mentorship and the second was the shift in public perception and narratives regarding women in resource jobs.

5.4.1. Mentorship

Mentorship is a powerful way to create change in a workplace. Mentorship creates the opportunity for those currently working in the mining sector to guide, provide advice, and build relationships with those who are thinking about entering the industry. Mentorship can take place through structured programs such as the Mining and Refining for Women program run by the Skills Centre in Trail, BC. Mentorship can also be more informal, such as having a family member or significant other who works in the mining field discuss their experiences and provide advice (Gravelle, 2011). Ultimately, mentorship gives an insight into the mining sector and helps connect potential employees to the field by building a support system, breaking down misconceptions, and providing opportunities (Gravelle, 2011).

The results from this research identified mentorship as a driver of change. Two participants in this research referenced mentorship when discussing their career trajectories in the mining sector. In these cases, the participants were referring to personal connections, such as a family member or significant other who worked in the mining sector. These connections gave the participants an understanding of the field before applying. Two participants also highlighted the power of a more formal mentorship program, the Mining and Refining for Women Program (MR4W). The MR4W program was a joint partnership with Teck Metals Ltd. and the Greater Trail Community

Skills Centre, with funding provided by the Status of Women Canada (Community Skills Centre, 2017). The design involved a 30-month mentorship to support the retention and advancement of women employed in Teck Metals in Trail, BC (Community Skills Centre, 2017). The program was generally successful and helped break down barriers like the process to succession. A participant that was involved with MR4W said the following about the success of the program “[MR4W has] actually been pretty successful. This was a five-year effort and it’s resulted in a whole bunch of programs that are still going on (Interviewee #6, 2018)”.

Mentorship can be a powerful driver of change because it builds connections and support systems within the mining industry. Mining is still considered a non-traditional job for women. Mentorship programs help break down this perception by giving new employees and prospective employees an insight into the workplace. It is important to note that mentorship alone is not powerful enough to create significant change within a workforce. It can be one tool used to drive change, but it needs to be implemented along with other efforts such as a strong company policy.

5.4.2. Shifting Narratives and Public Perception

Another driver of change revealed by this research, was the shifting narratives or shifting public perception of the mining industry workforce. The literature emphasized the masculine nature of the mining sector and that the workforce was typically male dominated (Wharton, 2012; Mercier & Gier, 2007; and Botha, 2016). The perpetuation of stereotypes such as “mining is dirty work you wouldn’t like it” and “women don’t like driving big trucks” can be linked to the masculine nature of the job and the perception that mining is a “non-traditional job” (Mercier & Gier, 2007; Rolston, 2014). The literature states that due to the male-dominated nature of mining, there is a public perception, often enforced by narratives, that women do not enjoy mining (Rolston, 2014; Botha, 2016). It is considered dirty work, and the mine site is a difficult or uncomfortable place for women to be in (Rolston, 2014; Botha, 2016). However, based on this research, the actual experience of women working in active mine sites differs from this perspective. Of the nine participants who worked in an active mine site, nine stated that they liked their job. One participant said the following about their job on the mine site “*Mining is really interesting because there are no solo minors. This is the ultimate team sport. What you*

get to see is people really work in cooperation to achieve big objectives (Interviewee #13, 2018)."

While this research only represents a small sample, it does show that there is a difference between what the literature is saying about women in mining jobs and what is actually occurring on mine sites. If it is the case that the actual experience of women in mining is more positive than suggested in the literature, it is important that public perception be changed by changing the narrative around mining. Sharing positive stories about women working in mine sites with other women and communities can change the narrative around mining and shift the perception from "non-traditional job" to "job".

5.5. Barriers of Change

Company culture, mentorship, shifting narratives, and public perception are all powerful drivers of change that can help build a more diverse mining workforce in the Kootenays. However, there are still systemic barriers in place. These barriers primarily lie within community supports, specifically child care, education, and housing. In order to create real and significant change for women wishing to enter the mining workforce, these barriers must be addressed. Attraction and retention are two important areas to consider when looking at building strong workforces. The drivers of change mentioned above are powerful tools to increase attraction and retention within the mining sector. However, the barriers in place within community supports may impact both attraction and retention. Women who are unable to secure child care that meets their needs, training, and affordable housing will likely not be attracted or retained within the mining sector. Breaking down these barriers to change will allow the current drivers of change to continue to push the mining workforce toward greater diversity.

Chapter 6. Recommendations

Based on the results of this research and the literature surrounding women in rural resource-based workforces, there are recommendations that can be made to address the key barriers that women still face when trying to enter the Kootenay mining workforce. The recommendations presented below are based on the results of this research and are limited by the constraints of the research project.

Creating a more gender diverse mining workforce provides numerous opportunities for mining companies, employees, and communities. Encouraging and supporting gender diversity is paramount in developing strong workforces and management (Wharton, 2012). The results of this research showed major shifts in rural small-town dynamics and company culture, practice, and policy in the Kootenay region. Community supports are powerful tools needed for workforce strength, not only in the mining sector, but in all sectors in rural BC. The following recommendations are made to address the challenges associated with community supports. These recommendations can also serve as a guide for future areas of research in the Kootenay region and in other rural resource communities. The topics discussed in these recommendations need to be supported with additional research.

6.1. Recommendations for Community Supports

6.1.1. Child Care

The availability of extended hour child care in the Kootenay region is a key stressor for shift and casual workers (Bock & Morton, 2018; Halfon & Friendly, 2015). Lack of extended hour child care spaces directly impacts retention and recruitment of shift workers in the region (Bock & Morton, 2018). Participants in this research project emphasized the barriers and challenges child care presents. A lack of extended hour child care can also impact employer recruitment and retention of employees (Bock & Morton, 2018). As a result, the lack of extended hour child care requires policy action in order to address and mitigate the potential impacts it can have on families and workforce development in the region. This research identified two major gaps with regard to child care in the region. The first gap is a lack of child care spots available for families.

Participants highlighted that many child care facilities are at capacity. The second gap was the lack of extended hour child care spaces available for shift workers in the mining sector. To address these gaps and create a strong child care support network in the Kootenays, it is recommended that child care, specifically extended hour child care becomes a priority.

6.1.2. Promote Place-Based Education

Education is a powerful tool in workforce development. Participants in this research highlighted the importance of on-site job training for hourly workers. It was made clear by participants that very strong and effective on-site job training is taking place. However, it was also noted that there was a need for more gender prioritized training opportunities. For example, there is a need for trade sampler programs that are only open to women. These programs could give women an excellent opportunity to explore trades that they might not otherwise be exposed to. Creating more of these programs could allow more women to enter into the mining sector and address some of the trade gaps in the current workforce.

6.1.3. Develop Strong Affordable Housing Policy

Another key concern raised by participants was the challenges associated with finding affordable housing. Both the real estate and rental markets were flagged by participants as being expensive and having low stock. This creates challenges for families living in the community and for those who are hoping to relocate to work there. Creating more affordable housing options, such as rental housing, can allow families to relocate and grow in these communities.

6.2. General Recommendations

The following are general recommendations for continuing to support the current changes occurring in rural small-town dynamics and company culture, practice, and policy.

6.2.1. Support Company Change

The largest change revealed in this research was the change in company culture. Participants who actively worked within the mining sector, either as hourly or salaried employees, emphasized strong workplace culture that was open and inclusive of gender diversity. This differed greatly from the literature that emphasized poor workplace culture in the mining sector, with harassment being a key issue. While these changes are positive and in the context of this research show movement forward, it is important to support this change to ensure the mining sector continues to be open and inclusive. This change has been the result of a lot of hard work, both by mining companies and by women who have forged their way into the field and have shown others that there is a place for them in the sector.

6.2.2. Increase Mentorship Opportunities

The participants in this research emphasized the importance of mentorship in their career trajectories in the mining sector. Mentorship was provided by family members or significant others who worked in the mining industry, or from more formalized mentorship programs such as the Mining and Refining for Women program run by the Skills Centre in Trail, BC. Encouraging and developing strong mentorship programs can encourage more women to pursue careers in the mining industry by allowing them to talk to people like themselves who are currently working in the field.

6.2.3. Support Public Perception through Shifting Narratives

Another general recommendation with regard to promoting gender diversity in the mining sector is supporting positive public perception of the mining industry. For many decades, the public perception of mining was that it was a masculine and dirty place to work. Furthermore, there was a perception that women did not want to work in mines. Participants emphasized how these perceptions have continued as a result of narratives perpetuated by both men and women in the mining communities. A key way to address these negatives narratives and shift the public perception of mining is to create channels for different narratives to be shared. Creating spaces where positive narratives and stories about the mining sector can be shared can change public perception. Additionally, sharing alternative narratives about the mining sector in educational

settings such as schools can encourage young children to explore all the options available to them, not just the options that have historically been deemed masculine or feminine.

Chapter 7. Conclusion

The Columbia Basin-Boundary region mining industry is a significant economic driver for BC and Canada. The communities in the region provide the workforce to support the Kootenay mining industry. The purpose of this research was to explore the barriers facing women who wish to enter the mining workforce in the region. The goal of this research was to identify barriers, and to explore ways in which to remove them and create more opportunities for women who wish to enter into the mining workforce.

This research, with acknowledged limitations, highlights some key themes around women in the mining workforce. Participants identified what was driving positive change within the mining sector. Strong mining company practices and policy are creating frameworks and guidelines that ensure diversity and inclusion are at the forefront of company culture. Mentorship programs are helping current and prospective employees learn more about the industry. In addition, mentorship programs are sharing knowledge and creating networks. Public perception and the narratives about women in mining are changing. The stereotypes of women not liking mining because it is “dirty” or “dangerous” are being eroded and replaced by positive stories of women working and thriving in the mining sector. However, there are still major systemic barriers that impact the attraction and retention of women in the mining workforce.

The major barrier to greater gender diversity in mining is caused by poor community supports. To begin with, there is a lack of child care spots that meet the needs of shift workers. Additionally, limited spots available in training and education programs causes a barrier for those wishing to develop a trade. Finally, a lack of affordable real estate and rental stock creates housing challenges for those needing to relocate to enter the mining workforce. These barriers are well documented in this research and in numerous other research projects. In addition, these barriers are not just evident in the mining sector. Women may also face these barriers in other resource industries like forestry, agriculture, and fisheries. Ultimately, these barriers erode the workforce in all resource based or shift work jobs.

Looking forward, it is imperative that the communities and companies in the Kootenay region work to address these community support barriers. There are powerful drivers of change at work in the region and it is important to remove the barriers. Mining

does not need to be classified as a “non-traditional” job for women. Mining is simply a job and there are many women in the Kootenay region who are eager to work in the sector. Breaking down these barriers is imperative to building a diverse and strong workforce in the Kootenay region.

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Appendix.

Interview Questions

PROJECT TITLE: Breaking Down Barriers:
Building a Gender Diverse Mining Workforce in the Columbia Basin-Boundary Region

Introduction

1. Interviewer and interviewee introduce themselves
2. Review of consent form
3. Interviewer responds to any questions the interviewee may have

Understanding participants' current job role

1. Would you tell me what your current job?
 - *Probe for work location, working hours, colleagues, seasonal changes, tasks and duties*
 - *How long have you worked in this position?*
2. What aspects of your jobs, if any, deal with gender in the workforce?
 - *Probe for details*

Understanding the Mining Sector (Skip for Intervention Interviews)

3. How would you describe the mining sector today?
 - *Historic context (initiation of mining sector, phases of mining, policy development)*
 - *State of mining sector – economy (upstream and downstream)*
 - *Mining workforce – diversity, strengths and weaknesses*
 - *Public perceptions of the mining industry*
4. What are the main challenges facing the mining sector today?
 - *Probe for reasons*
5. Can you describe any changes you have seen in mining sector during the past 10 years?
 - *Probe for reasons*
6. Has the public perception of mining sector changed in the past 10 years? How?
 - *Probe for reasons*
7. What changes do you anticipate in the mining sector in the next 10 years?
 - *Probe for reasons – gender diversity in the workforce, reduction of barriers they may have faced when entering into the sector*
8. What do you think the main opportunities will be in the mining sector in the next 10 years?
 - *Probe for reasons*
9. Has the way you think about mining changed compared to when you started your career?
 - *Follow up: If yes, how did it change and why? If no, why not?*

Understanding Pervious Industry Intervention (Skip for HR/Owner Interviews)

10. What interventions/initiatives have you been involved in, in the past 5 years, that focused on getting more women into the mining workforce?
11. What were the success of these interventions/initiatives?
 - *Did they see a rise in female employment? Where the popular among women employees? Did they address the goals they were set out to achieve?*
12. What were the limitations of these interventions/initiatives?
 - *In what ways did they not work out/not reach their intended goals? How could they have been improved? What would you change about their design if they were to be tried again?*
13. Did the intervention work to attract and retain women in the workforce?
 - If yes, what elements of the intervention plan contributed to attraction and retention?
 - If no, what are the reasons?

Understanding Related Policy

14. Can you describe current, relevant mining legislation and policy?
15. What are the main policy challenges in the mining sector today?
 - *Probe for reasons*
17. Have you seen or experienced policy changes in the last 10 years?
 - *Probe for reasons*
18. What do you think will change with mining policy in the next 10 years?

Education & Training

19. Can you describe current training and education related to mining?
20. What are the main education and training needs in the mining sector today?
 - *Are there a lack of programs, curriculum design, accreditation, recruitment issues, mining in K-12, mining portrayed as a profession for all genders?*
21. Have you seen or experienced changes to mining education and training in the last 10 years?
 - *Probe for reasons*
22. What do you think will be the education and training needs in the mining sector in the next 10 years?

Gender Diversity in the Mining Workforce

23. Can you describe what gender diversity in the mining sector looks like to you?
 - *Probe for reasons*
24. What major barriers do you see to a gender diverse mining workforce?
 - *What barriers have they experienced or know others have experienced?*
 - *Probe for an explanation of barrier*
 - *Why do they think these barriers exist (personal feelings)?*
25. What major changes do you think are necessary in order for there to be a more gender diverse workforce?

26. How do you think a more gender diverse workforce would change the mining sector?

- *Probe for reasons*

Closing

27. Is there anything you feel I have missed or anything you would like to add?