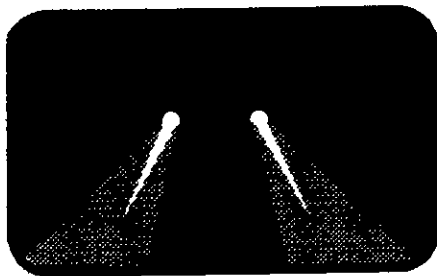


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Will There Be Pink Jobs and Blue Jobs in Canadian Mining?

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INTRODUCTION

Canada's mineral wealth, and the expertise and technology for exploring and developing that wealth, have been crucial to economic growth over this century. Canada's mining industry is now facing its toughest challenges in years. The industry has struggled through the recession. Corporate profits and employment levels have been hard hit by low metal prices. Canadian firms have cut their funding for exploration in Canada.

In this competitive context, a committee made up of representatives from the Mining Association of Canada, the Canadian Institute of Mining, Metallurgy and Petroleum, and the United Steelworkers of America requested Human Resources Development Canada to commission a study of human resources

in the mining industry. Price Waterhouse was selected to conduct the study. The primary objective of the study was to examine the current and future skill requirements of the mining workforce, and to find possible courses of action to ensure that the Canadian mining industry has the human resource capability to compete globally. The committee emphasized that the study should include consideration of demographic patterns of employment in mining.

EMPLOYMENT OF WOMEN IN MINING

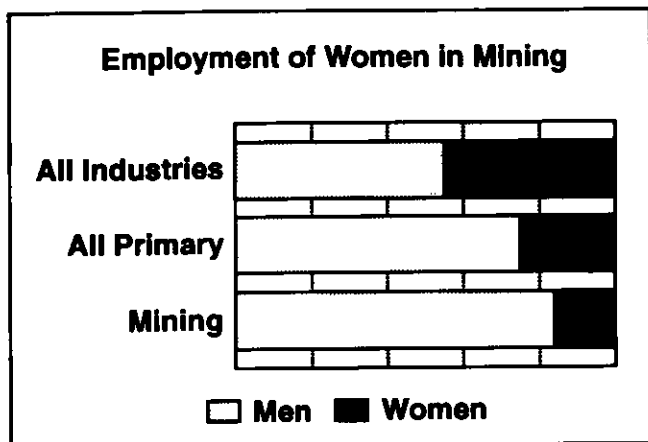
That the mining industry is male-dominated comes as no surprise. Women make up only about 13% of the mining industry's workforce, compared to about one-quarter of the employees in all primary industries (Fig. 1). One of the challenges in this study was to obtain valid, current and reliable data on women's employment status in the industry. Although there is a bill before the Ontario legislature that would mandate employment equity, only a small proportion of mining operations (those within federal jurisdiction) are currently affected by legislated employment equity. Table 1 compares the proportion of women in the workforce of metal mines to that of all employers covered under the Employment Equity Act and the Canadian labour force (1986 Census data; Human Resources Development Canada, 1991). Compared to all employers covered under the Act, the metal mines sector has significantly fewer women. The data also show that the representation of women has not changed from 1989 to 1991.

Table 2 shows the distribution of designated group members by occupation for metal mines, and compares the distribution to that of all employees and men in that sector (Human Resources Development Canada, 1989). The first characteristic is an over-representation of women in clerical occupations, compared to men. Furthermore, women are under-represented in non-traditional occupations, but well represented in professional and managerial occupations. The Price Waterhouse survey of employers confirms that women tend to be concentrated at the administrative and support staff levels; however, they are beginning to make inroads in technical and professional occupations.

We found that women in mining encounter many of the same career hurdles as women in other non-traditional areas: there are rarely more than a few women in any workplace; women are isolated, some are harassed; they have few role models, as yet; each woman finds her own ways of balancing career and family.

In the past, women were not likely to seek educational programs that would lead to occupations in the mining sector. However, more women are enrolling in and graduating from technology and engineering programs. For example, nearly 9% of graduates from mining engineering programs in Canada from 1985 to 1990 were women, and about 13% of students enrolled in undergraduate mining engineering programs in Canada in 1990 were women (Statistics Canada, 1992). While somewhat less than the proportion of women graduating from all undergraduate engineering programs, and significantly less in comparison to

Figure 1



Source: Statistics Canada, Census, 1986

Table 1 Designated Groups as a proportion of the workforce.

Sector	Women (%)
Metal mines (1991)	8
All employers covered under the Act (1991)	44
.....	
Metal mines (1989)	8
All employees covered under the Act (1989)	42
.....	
Canadian labour force (1986 Census)	44

Note: The metal mines referred to are only those covered under the Employment Equity Act.

the proportion of women who are graduating with undergraduate degrees from Canadian universities, the trend is positive. As the mining industry targets more female graduates, more women will be encouraged to enrol. Without education equity, there will not be employment equity. Women need role models in school as well as in the

workplace.

EMPLOYMENT TRENDS

Employment in the Canadian mining industry has decreased about 30% since the early 1980s. The decline in employment prompted a decline in enrollment in mining-related post-secondary programs and a general decline in training

activity by mining companies. The risk of this situation is an erosion of the resources required to support education and training.

Industry stakeholders do not expect employment growth over the decade. Indeed, the vast majority of respondents to the mining and exploration surveys predict that employment in all occupations either will remain about the same or will decrease over the next five years. Recruitment is anticipated to be more difficult in the future, due to enrolment declines, for trades people, mining engineers, metallurgical engineers, geological technicians, geologists, geophysicists and geochemists. The only occupation in which a demand pressure signals future recruiting problems is that of instrumentation technician. This demand pattern cuts across various sectors.

New technology, mining and work methods require changes in the skills and knowledge of the workforce. The mining workforce is aging. There will be few new hires, not enough to change the demographic and skill profile significantly. Many people who will be working in the industry in the year 2000 are working in the industry today. Consequently, the continued development of the existing workforce is a critical issue. To this end, eight human resource challenges were defined for the industry to consider. One of these issues is workforce diversity.

Table 2 Percentage distribution of women by occupation for metal mines.

Classification	All Employees (%)	Men (%)	Women (%)
.....			
Management	6	6	5
Professionals	4	4	6
Semi-professionals and technicians	7	6	12
Foremen/women	7	8	.2
Clerical workers	5	2	51
Skilled crafts/tradespeople	16	17	1
Semi-skilled manual workers	35	38	6
Other	20	19	19
Total (%)	100	100	100

Note: The metal mines referred to are only those covered under the Employment Equity Act.

WORKFORCE DIVERSITY

Business and labour leaders in the mining industry recognized that achieving employment equity is difficult due to downsizing. The two opportunities available to the industry to increase representation of target groups are when operations expand and when new operations open. Neither is occurring today. There is a risk that the mining workforce will become less diverse over the next five years. The culture of the mining industry generally has not been conducive to improving the representation of women in the workforce. Changing the employment patterns requires top-level support in individual operations for employment equity initiatives.

RECOMMENDATIONS

1. The sector council and industry associations should share information about employment equity strategies and initiatives. For example, a survey of women members of industry/professional associations may provide insight into what work is like for them, what needs to change, and how to make changes.
2. The sector council should encour-

age joint employer-employee groups at the establishment level to examine how their human resource systems and collective agreements affect the recruitment, selection and career development of women, and design systems to reflect a commitment to employment equity.

3. At the individual operation level, employers should try to give new female employees the opportunity to work with other women to ease the discomfort that some women experience when they work in a male-dominated environment.

Addressing these challenges requires the participation, involvement and commitment of all industry stakeholders, including industry/professional associations, governments, companies, educators, employees and unions. Every stakeholder has a role to play. The on-going development of technical and professional staff through professional associations is a key strength of the mining and exploration sector. Professional associations offer seminars and workshops across the country. The active involvement of associations in promoting equity and in supporting wo-

men is critical.

To get these issues on the agenda of governments, associations, employers, employees, unions and other stakeholders, the Committee recommended the formation of a joint human resource sector council. Business and labour leaders are now actively involved in the formation of such a council. Women in geoscience will find this sector council to be an important forum for influencing change. However, local action, in your communities, your colleges and universities, and your workplaces, is also vitally important.

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Job Sharing in Academia: Reconnaissance Map of the Terrane

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INTRODUCTION

As a group, women geoscientists are under-employed and over-represented in non-tenure track academic positions in the United States (Benditt, 1992) and,

as was illustrated at the Geological Association of Canada—Mineralogical Association of Canada 1993 Special Session "Women in Geoscience: The Next Decade," the situation is similar in Canada. Clearly, among the challenges facing women geoscientists considering an academic career (particularly if they have partners who are also geoscientists) are successful employment, and balancing child-rearing with career. Job sharing is a promising solution. While still a relatively new approach in the geosciences, shared faculty positions in a variety of disciplines are becoming more common. This paper aims to draw a reconnaissance map of the terrane as a practical guide to individuals and institutions considering job sharing. Most of the North American universities where shared faculty positions in the geosciences exist or have been negotiated are used as examples. These nine surveyed institutions are of two types: small, private, liberal arts institutions with undergraduate populations between 1 500 and 3 000 students (Albion College, Michigan; Colgate University,

New York; Franklin and Marshall College, Pennsylvania; Hamilton College, New York; and St. Lawrence University, New York) and larger, research institutions, both public and private, with undergraduate populations ranging between 5 500 and 170,000 (Vanderbilt University, Tennessee; Michigan Technological University; Cornell University, New York; and University of Massachusetts, Amherst).

It is undoubtedly helpful to those negotiating shared faculty appointments to be able to demonstrate precedence (that is, to be able to show that job sharing is successfully established at comparable institutions) and to be aware of the issues involved. Key issues related to job sharing in academia are: precise definition of the position, conditions of tenure/promotion/raises, benefits, in-house university support (grants, start-up funds, travel funds, office space, etc.), voting rights and the "release clause" (see below). Table 1 illustrates the variety of ways in which these issues have been resolved at the surveyed institutions.