

BECAUSE IT WAS HARDCORE AND IT WAS COOL

'BECAUSE IT WAS HARDCORE AND IT WAS COOL': MASCULINITY AS THE BASIS OF
CONSENT IN GEOCHEMICAL SAMPLING

By
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Abstract

Geochemical samplers carry out manual labour in difficult and dangerous conditions while largely unsupervised. This paper explores questions regarding the labour effort provided by these workers which often goes above and beyond the level necessary to maintain employment and at times endangers their personal safety. This extra effort is provided despite relatively high levels of worker autonomy, low levels of supervision, and little apparent economic incentive. Analysis of worker-level interviews using a number of possible theoretical frameworks indicates that more coercive factors such as direct managerial control and employment insecurity are unable to fully explain sampler behaviour and, instead, participant accounts indicate a form of active worker consent to increased labour effort and risk taking. This is a gendered worker consent based on a form of masculinity contingent upon the specific context of geochemical sampling. These specific contingent factors are: a working class masculinity derived from the hard manual labour of the work; the wilderness context that facilitates tropes of 'man versus nature' reinforcing the masculine workplace culture and obscuring the appropriation of surplus by more easily allowing the workplace to be interpreted as non-capitalist; and a fraternal masculinity resulting from the crew-based workplace organization and highly male dominated workforce composition, intensified by the conforming pressure of isolated camp life. This specific masculinity forms a basis of consent by which the autonomy afforded to workers by the labour process of geochemical sampling helps rather than hinders the imperative of management to encourage workers to exert the maximum effort.

Acknowledgments

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My friends and family back home in British Columbia need recognition as well for being there for me over the years, particularly for helping me to get back on my feet, both figuratively and literally, after an event that not only inspired this paper, but changed the way I think about workplace health and safety forever.

Finally, to my partner Colleen, my best friend and companion in all things, to her I owe my deepest and most sincere thanks. Her uncanny ability to know just when a hot cup of coffee was needed to help buckle down, or when it was time to take a break from my desk and go for a walk got me through this project even when it all seemed like too much. This is in addition to her fingerprints being all over this work as she selflessly agreed to read and reread section after section, making the final product vastly more readable. With love, I dedicate this thesis to her.

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I think it's just a risk that you would have to take. And a lot of the times I was pretty stressed out about that risk. I had, I don't know, it's kind of embarrassing, but I had a note written in my chest-pack saying: "In the event that anything has happened to me ... say this to that person, say this to that person, and say this to that person," right? You're out in the middle of nowhere, you're walking past bears ... and you don't know what's going to happen. So I did have a note in my chest-pack saying: "If you're reading this..." (Participant 3)

I. Introduction

Geochemical samplers spend months away from home, living in rustic camps often without running water. They work in all kinds of weather risking injury from rugged terrain, wild animal encounters, and helicopter accidents. They face all of these harsh working conditions in the search for valuable mineral deposits owned by people other than themselves, to be speculated upon in stock markets far away. Given that they spend most of their days free from any meaningful supervision, it would stand to reason that these workers would work cautiously and slowly to avoid injury or exhaustion in a wilderness setting that can turn deadly in an instant. The recognition by workers of these difficult and dangerous working conditions would at least justify some resentment of their employers who send them to work in the wilderness; however, this is not the case. As one worker emphatically stated when asked if he enjoyed the work: "I did actually. It was some of the best work of my life," (Participant 4). Instead of resistance to the hardships of the work, geochemical samplers appear highly motivated, to the

point of sometimes endangering themselves for the job, despite the absence of significant supervision or coercion from either management or market.

This paper explores the question of why a largely unsupervised and remote workforce with little apparent economic incentive to expend much effort actually embraces hard work to the point of endangering their safety in the name of getting the job done. Attempting to find a reason behind this seemingly self-exploitative behaviour draws many potential questions to the surface. Among them is how is this workforce managed by employers if it all? In other words, how is management able to ensure workers carry out the tasks it wants in the way that it wants them done if it is unable to monitor those workers? Similarly, how do managers ensure a high rate of conversion of labour power into effort, highlighted by the willingness of workers to risk their safety, given such a limited capacity to supervise or discipline workers? Also, do workers recognize the risks they take for the job? What are their rationales for such workplace behaviour?

Owing to a dearth of existing secondary literature on geochemical samplers, to answer these questions a variety of theoretical perspectives and analogous case studies are applied to empirical research collected from worker-level interviews. What is apparent is that rather than coercive forms of discipline, it is a form of consent that drives geochemical samplers. This consent is based on a particular masculinity contingent to the specific labour process of geochemical sampling and it informs the actions and beliefs of these workers in important ways.

II. Methods

Much of the analysis of this paper is based on data collected through worker-level interviews, and this interview-based research process received approval from the McMaster Research Ethics Board. A total of four¹ people were interviewed for this study, all of whom were male and active in mineral exploration within the last 7 years. Of the participants 3 had each previously worked two consecutive seasons as geochemical samplers before then leaving the industry. The fourth participant began as a geochemical sampler and after 7 years is still active in the industry having progressed on from a seasonally employed sampler to a full-time project geologist and camp supervisor. All participants were between the ages of 17 and 30 when they were active in the industry. Inclusion criteria for this study were that each participant had spent a majority of their time as geochemical samplers working away from home in remote camp-based worksites. A chain-referral or “snowball” sampling method was used to locate participants due to the target group being a rare population. A rare population in terms of sampling is one with a “low prevalence of its members [possessing] a specific trait in the general population and by the relatively easy access to its members,” (Spreen 1992, p. 37). In this context, what is meant by “easy access” is that unlike hidden populations, which are the other main group for which chain-referral sampling is most appropriate, the inclusion criteria does not stigmatize or otherwise threaten the safety or dignity of potential participants (Spreen 1992).

¹ Highlighting the dangers of the work, a fifth potential participant, identified by one of the study’s participants as part of the chain-referral process, was unable to be interviewed due to being in a non-lethal helicopter accident while working in the NWT. This accident was reported to me by the participant who made the referral.

Interviews lasted approximately 1.25 hours and were conducted over Skype, though only one included video-feed. All the interviews were audio-recorded with accompanying hand-written notation and were transcribed manually. Interviews were semi-structured and open ended and began by asking participants about their general work experience for context. Participants were then asked about the details of their experience focussing on the labour process and how managers achieved compliance from workers in such low supervision environments in terms of both production and safety. In an attempt to control for potential biases of over-reporting “good” behaviour and under-reporting “bad” behaviour, when asking participants specifically about misbehaviour regarding either labour process or safety policy, a “key informant” approach was applied. This is an interview technique whereby participants were asked to describe examples of misbehaviour of coworkers instead of themselves (Spreen 1992); however, participants often volunteered examples involving themselves as well.

Data was initially organized under the broad categories of context, process, and management before deeper analysis was undertaken. This more detailed analysis saw participant accounts divided between different explanations for worker motivation thematically based broadly around concepts of coercion and consent. From there subsequent analysis subdivided these themes further into issues of direct control, insecurity, and worker subjectivity, with this last category providing the richest data, particularly around issues of gender. It was through this process of analysis that it became apparent that workers did not see safety versus production as an economic trade-off between their own interests and those of their employers. Instead, workers saw the two issues as mutually constituting the normal, essential, and indeed rewarding nature of work life in the wilderness. Subsequently the focus of the paper

shifted from determining how workers come to choose between production and safety, to instead directly examining the workplace subjectivities that obscure this choice and motivates workers to uncritically embrace both labour intensity and workplace hazard.

An important note about the research process is that rather than approaching the subject matter as a complete outsider, this paper constitutes something akin to what Alvesson (2003) defines as an “insider-ethnography” (p. 174). This is because as the researcher I also meet all of the inclusion criteria for participants having previously worked as a geochemical sampler and in other remote wilderness work for 5 seasons. Being an insider not only formed the empirical starting point for my research, it also gave me some advantages during the interview process. First, it gave me easier access to this rare population by allowing me to opportunistically use my existing contacts in the mineral exploration industry to get the chain-referral process started. These initial contacts then led me to 3 out of the 4 eventual participants. The remaining participant was known to me from working together several years ago in the mineral exploration industry, though not doing geochemical sampling or camp work specifically. Other advantages of being an insider included sharing a common language, identity, and professional experience with participants (Asselin 2003). This allowed me to potentially be seen as more legitimate to participants than a complete outsider, thus making it easier for me to get them to open up during interviews providing greater depth to the data (Dwyer and Buckle 2009).

This level of closeness to the subject matter also comes with challenges. Perhaps the biggest issue is that insider researchers may not gain the necessary distance from the culture under study to recognize their pre-existing assumptions and therefore do not analyze issues that

appear to them to be self-evident (Alvesson 2003; Asselin 2003; Brannick & Coghlan 2007; Dwyer & Buckle 2009). It is possible that participants will also make assumptions of shared understanding with researchers and therefore fail to explain their individual experience fully if not prompted to do so (Dwyer & Buckle 2009, p. 58). To address these issues I emphasized my dual role as “insider-outsider” as defined by Dwyer and Buckle (2009). In this sense, although an insider due to shared traits with participants, my role as researcher also made me an outsider (Dwyer & Buckle 2009). This variation in perspectives as well as having had several years away from mineral exploration and having been seriously injured while working in the wilderness allowed me to more critically reflect on my experiences. Also, as Alvesson (2003) suggests in his work on insider research, by employing a theoretical lens with which I was not previously closely familiar, in this case gender analysis, I was able to challenge my potential “common sense” perceptions of the work. Although analysis is always filtered through one’s cultural position (Heath & Cowley 2004), it was through this variation in perspectives, detailed self-reflection, use of less familiar critical theory, and a conscious awareness of my own personal biases that I attempted to reduce issues associated with my membership in the population under study.

A key limitation to the research is the lack of women participants. A large part of this omission is the fact that women comprise a small percentage of the mineral exploration workforce. As such they constitute a rare population within a rare population making women geochemical samplers particularly difficult to find. This is exacerbated in the case of this study because the chain-referral method of sampling has built-in biases that tend to over-sample more popular and well connected individuals within a given population and under-sample those considered less popular (Spren 1992). This means that depending on how positively or

negatively women are viewed within the workplace culture, finding them may require significantly more participants and chain-referrals than is proportionate to the number of women in the industry. This may also hold for those considered to be “bad” workers by their peers, injured workers, or anyone else who does not sufficiently “fit in” to the dominant workplace culture for any number of reasons. However, noting the challenges of finding these even rarer populations, a more comprehensive study of the industry should certainly include these important perspectives.

III. Theories of Labour Effort

The theoretical analysis of the motivation of geochemical samplers in this paper can be broken down into four broad categories. The first category is centred on more classical and coercive forms of achieving worker discipline by management. The second category targets labour market insecurity as a disciplining force for this seasonal workforce. The third broad category is focussed on worker subjectivity as a source of labour effort. This category forms the bulk of the paper's analysis and looks to a gendered worker subjectivity based on a masculinity that is contingent to the specific conditions of mineral exploration as the basis for consent to self-exploitation by samplers. Finally, wrapping back around to questions pertaining to the role of management is the application of a gendered form of responsible autonomy afforded to workers as a key to management's successful appropriation of worker surplus in this unique and challenging workplace. It should be noted that these broad categories are not mutually exclusive in their domains and likely overlap, each playing some role and influencing the other. However, for analytical clarity within the scope of this paper, they are treated relatively independently.

Control

When considering theories of worker control and discipline by management, the work of Harry Braverman and labour process theory casts a long shadow. It does well to at least address his work if only, as in the case of mineral exploration workers, to examine why it does not fully explain the relationship between management and labour. For Braverman, the process of deskilling work is an immutable trend within capitalist economic relations. Pointing to Taylorist principles of scientific management, Braverman sees worker discipline through

disempowerment by separating the conception of work, to be the sole domain of management, from its execution, to be the sole role of workers (Braverman 1974). In Braverman's (1974) own words, workers are deskilled to the point where they are left doing only "...simplified job tasks, governed by simplified instructions, unthinkingly and without comprehension of the underlying technical reasoning or data," (p.118). Essentially, workers are controlled by removing their ability to exercise discretion over the method, pace, and quantity of work to be done. This process is best suited to highly centralized workplaces where direct supervision and monitoring allows management to maintain an ever vigilant eye on the workforce and automating technical capital can be marshalled to further remove worker discretion from the equation. The classic example is the assembly lines of the manufacturing factories so prevalent in Braverman's era. In the modern era the call centres of the 21st century, where workers too are centralized, closely monitored, and machine-paced by automatic call delivery systems exemplify this process well (Belt, Richardson & Webster 2002). These sophisticated processes are designed to take the variability out of variable capital and ensure that management gets as much effort out of their purchased labour power as possible.

However, geochemical sampling does not take place in a centralized and controlled environment; rather, the remoteness, variable worksites, and decentralized workforce mean that the direct control prescribed by scientific management is simply not feasible. Given the variability and unpredictability inherent to the work environment of mineral exploration, more general instructions and relatively significant amounts of autonomy are necessary for workers to accomplish their tasks. Rather than workers being alienated from all comprehension of underlying technical reasoning or data, samplers are sometimes given *more* information about

their work. This allows them to better handle the myriad of obstacles they may encounter while working to collect samples. As one worker states:

We received extensive training for a lot of quote-unquote 'laypeople' who weren't geology students ... I learned enough about geology, and why I was out there, and how to do my job ... I was dedicated to doing a good job, because of the knowledge I had received. It wasn't just like: "Here's a bag, put some dirt in it." I knew why I was doing it [and] how I had to do it better. (Participant 3)

This is not to say that methods of control such as deskilling do not occur within mineral exploration. For example, the use of equipment such as handheld GPS lowers the orienteering skills required to accomplish the work. Also, requiring photographic evidence of sample sites removes certain elements of worker discretion. However, as will be revealed, mineral exploration workers remain relatively free from the direct control, supervision, and mechanization that contribute to the deskilling and disempowering of workers in many other industries. Given this relative freedom, the potential for worker resistance, or "misbehaviour" as interpreted by Stephan Ackroyd (2013), is high and it certainly exists in some forms. However, contrary to what might be expected by more rational economic theories of worker behaviour, misbehaviour in geochemical sampling camps remains quite limited.

Insecurity

Another explanation for increased worker effort in lieu of direct coercive efforts by management relates to employment insecurity. As Bertaux and Queneau (2002) point out: "many neoclassical economic models presume perceived job insecurity acts as an incentive device to increase worker effort," (p. 5). The instrument of discipline here is the belief that by

proving themselves a hard worker an employee can separate themselves out from other workers and, assuming their employers recognize this, keep their job in the event of layoffs or downsizing. Another theoretical connection between insecure work and effort is the idea that insecure or temporary work can lead to more permanent work as a kind of “stepping stone,” (De Cuyper, Notelaers, & De Witte 2009, p.69) requiring workers again to demonstrate their value to employers through, among other things, hard work. Supporting these assumptions is a study conducted by Engellandt & Riphahn (2005) on European labour markets. Using unpaid overtime as a rough proxy for effort, they found that temporarily employed workers were approximately 60 percent more likely to provide unpaid overtime work than their permanently employed counterparts (Engellandt & Riphahn 2005). As for stepping stones, Engellandt and Riphahn (2005) agree that assuming permanent work is the objective, there is an incentive to provide more effort if there is a reasonably likely path from insecure to secure work.

Due to its seasonal contract-based nature and its exposure to the expansion and contraction of commodities markets, geochemical sampling is insecure work. Given this insecurity, the above theoretical perspectives on the role of insecurity on worker effort will be applied to the work. In some ways this insecurity will be seen to have an impact on worker effort, driving them to work harder than they may otherwise. In other ways, due to this insecurity being structural in nature, it will be argued that it is in many ways out of workers' control to influence job security regardless of how hard they work. This suggests that the insecurity of the work may push both ways, towards more worker commitment, but also potentially towards less. The result being that insecurity seems unlikely to be able to fully explain the levels of worker effort reported by participants.

Subjectivity

The next general category of theory is based on worker consent and it forms the bulk of the paper's analysis. More specifically, this worker consent is a gendered consent derived from a multifaceted form of masculine worker subjectivity and workplace culture contingent on the specific conditions of geochemical sampling. This gendered consent will be explored to explain why workers continue to exert themselves and strive to meet management's goals of output and quality, even putting themselves into harm's way, when they seem to have little to gain economically from doing so.

Concerning the manufacturing of consent in the workplace, the natural place to start is the work of Michael Burawoy. He argues that a combination of economic coercion and a form of consent derived from worker subjectivity must be generated in order to obscure and secure surplus (Burawoy 1979/1982). Of particular interest to the study of mineral exploration workers, Edwards and Nicoll argue that workers with more flexible or dynamic workplaces "may have more complex forms of subjectivity than those with clearly demarcated working practices and disciplined subjectivities," (Edwards & Nicoll 2004, p. 163-4). As Burawoy (1979/1982) argues, through the constituting of our lives as a series of games, or a set of limited choices that capitalism forces us to make, our subjectivities can be used to generate consent to exploitation. By the shaping of their subjectivities, knowledge, and identities workers become more than deskilled extensions of the machine, but active and willing participants in their own exploitation (Iedema, Rhodes & Sheeres 2006). It will be argued that geochemical samplers display this kind of manufactured consent by adapting their subjectivity to one specific to geochemical sampling thus constituting the workplace culture. In this sense, samplers play the "game" of taking on a

particular role that exists in this specific working context, a role contingent on both masculinity and temporarily working and living among other men in the wilderness.

There is certainly a multitude of factors and circumstances that each plays some part in creating the specific and unique workplace culture of exploration crews and the variations between crews and companies. However, there is an immediately apparent element shared by the workplaces of all interviewed workers: they were all heavily male dominated. Reported non-male compositions of camps were quite low with one worker claiming that after a year with no women co-workers at all “there was about 3 out of the 50-60,” the following year (Participant 3). However, more than simply being male-dominated, mineral exploration is heavily influenced by a masculine workplace culture, and so is a good example of how “gender as a social relationship is deeply implicated in both the design and the maintenance of control strategies,” (Smith 1994, p. 410). This means that strategies employed by managers to control workers are not gender neutral, but rather create and work with gender specific norms and ideologies for the purposes of securing worker compliance (Lewchuk 1993; Smith 1994). When this is considered in conjunction with the role of worker subjectivity in creating consent in contexts of low managerial supervision, the value of examining mineral exploration with a gender sensitive lens becomes apparent.

Stereotypical views of masculinity tend to value characteristics of strength, toughness, heterosexuality, authority, and success. However Hogan and Pursell (2008) point out that the prospect of any individual perfectly embodying all the tropes of masculinity would not only be unsustainable and highly constraining to the bearer, but also realistically unattainable. Nevertheless, even if the individual possession of all hegemonic masculine characteristics is

unrealistic, the cultural pursuit of these gendered ideals means that their pursuit comes “with real discourses, practices, embodiments, and materiality,” (Hogan & Pursell 2008, p. 67). The key to this view of masculinity is that, like all gender, it does not simply exist, but is created by cultural practices, beliefs, and discourses. Likewise, in the labour context, gender it is not just imported into the workplace; rather, it is produced and reproduced in specific ways through the practices and discourses of work (Collinson & Hearn 1994; Ness 2012).

A Foucauldian methodological awareness of the role of contingency in constituting the specifics of modern life (Kendall & Wickham 1999) is important to the analysis of masculinity in this paper. It helps in recognizing that rather than one monolithic gender identity, there is actually a diversity of masculinities (Collinson & Hearn 1994; Dunk 1991). These masculinities are each different sets of fluid relationally constructed social performances and practices that exist in various cultural, social, geographic, and historical contexts (Hogan & Pursell 2008). Or in other words, these different masculinities are contingent on many different specific contextual variables, and this applies to the specific masculinity of geochemical sampling.

The masculinity of geochemical sampling is thus described in this paper with contingency and specific context in mind. First, it is argued that geochemical sampling constitutes a working class job and that this has an important influence on the work’s specific masculinity. For this, the paper uses feminist case studies of working class masculinity in other contexts such as butchery (Simpson 2014) and construction (Ness 2012; Paap 2008) for purposes of comparison. This will help to identify similarities between how the workers of those studies and the participants of this study derive meaning, value, and interpret risk in working their jobs.

A second important factor influencing the specific shape of masculinity in geochemical sampling is the role of the wilderness. Such an extreme and symbolic setting as has significant impacts on how workers perceive both the challenges of the work and themselves. Hogan and Pursell's (2008) analysis of a specific form of Alaskan masculinity is relied upon here as an analogy for work in the rural North in general and serves as a starting point for developing a concept of a wilderness based masculinity. As well, the view of the wilderness as a natural danger existing outside of capitalism is also explored as part of the obscuring of exploitation in the context of geochemical sampling.

Finally, the concept of fraternalism and a collective sense of masculine unity and identity as elements of worker motivation (Collinson and Hearn 1994; Lewchuk 1993) are considered given the male-dominated workplace and emphasis on crew loyalty expressed by participants. Expanding on this is Stephan Jones' *The Economics of Conformism*. Jones (1984) argues that the level of effort employees put into their work is not a purely individual utility maximizing decision, but is instead the outcome of an interdependent and social process. Although Jones' model is not a perfect fit, as he studied a centralized factory setting governed by a piece-rate system, there are still similarities in that both Jones' factory workers and geochemical samplers appear to act in ways informed by conformist inclinations that are contrary to pure material self-interest. Given that samplers not only work, but also live in the company of other men for the duration of their deployment in the field, Jones' concept of the economics of conformism are used in concert with those of fraternalism and are seen as mutually reinforcing.

Autonomy

Even though worker discretion is relatively high and managerial direct control is low, mineral exploration workers are not modern day equivalents of 18th century craftspeople. Exploration workers are still managed in some way by their employers who still strive to convert samplers' labour power into effort. To examine how management actually directs these workers in the absence of significant amounts of direct control, Andrew Friedman's concept of responsible autonomy is applied. In its simplest form, responsible autonomy is the increased control by workers over both the pace of labour and over what specifically workers do at work at a particular moment (Friedman 1977). By granting responsible autonomy to the workforce, not only are workers' own adaptability and creativity for overcoming obstacles to productivity potentially harnessed, but workers can interpret this as a sign of trust from their employers fostering worker loyalty and reducing resistance (Friedman 1977). For responsible autonomy to work, it must be assumed by managers that workers' decisions are guided by subjectivities, not pure economic self-interest (Friedman 1977), an assumption that appears to be true for geochemical sampling.

A defining element of the specific responsible autonomy system of management that exists in geochemical sampling is the gendered subjectivity of the workforce. As Vicki Smith (1994) indicates, managers exploit and construct gender ideologies for the purposes of securing surplus. Although Friedman describes a system of management insensitive to gender, the reality is that the masculinity of geochemical sampling plays a crucial role in generating worker consent. This allows managers to confidently rely on management systems that allow for more worker autonomy; this is particularly useful given the difficulty in applying direct control methods in this

context. As Collinson and Hearn describe, in masculine oriented “management situations, men exercise power by emphasizing the moral basis of cooperation, the protective nature of their authority, the importance of personal trust relations and the need for employees both to invest voluntarily in their work task and to identify with the company,” (Collinson & Hearn 1994, p. 13). Finally, a fuller answer to the question of why these relatively autonomous workers self-exploit requires the application of the concept of governmentality whereby rather than “people [having] power exercised over them ... they ever more actively regulate their own conduct,” (Edwards & Nicoll 2004, p. 164). This suggests the inability of management to observe and monitor samplers is moot because workers will behave as if they are under constant managerial scrutiny whether or not they actually are. This idea closes out the theoretical analysis of geochemical sampler motivation.

Mineral exploration, thanks to the combination of low levels of both worker supervision and association between effort and income, forms a kind of laboratory for testing a number of different theories concerning the motivation and managing of labour at a distance. For geochemical sampling, the capitalist employment relations of surplus appropriation and exploitation are obscured through an informal, but complex network of forces pertaining to the labour process, worker consent and conformity to specific masculine subjectivities, and managerial use of responsible autonomy.

IV. The Process of Geochemical Sampling

I begin answering the question of how mineral exploration firms extract effort from their workforce by describing the organization of the industry and the labour process of geochemical sampling. By taking a careful look at the job itself and details of how the work is done, a clearer picture of the nuances of worker behaviour is possible. Addressed in this section are the general characteristics of exploration companies; where they fit into the mining industry as a whole; where, when, and by whom the work of exploration is done; and the actual physical process of geochemical sampling.

According to the Prospectors and Developers Association of Canada, the mineral exploration industry in Canada is populated by over a thousand small to medium sized companies with junior exploration companies contributing approximately half of annual spending in the industry in 2012 (“The Mineral Exploration tax Credit,” n.d.). These companies attempt to locate new mineral deposits and develop the understanding of known deposits, often in extremely remote and undeveloped areas (Mitchell & Mitchell n.d.). Under the National Occupation Classification Code 2212 for “Geological and Mineral Technologists and Technicians,” the geochemical samplers studied in this paper comprise one part of this broader workforce of just under 35,000² workers in Canada as of 2014 data (hrsdc.gc.ca)³.

² It should be noted that the mining and exploration industry as a whole includes the search for hydrocarbons such as oil and gas, but this work is relatively distinct from “hard-rock” exploration in important ways and the exploration described in this paper is of this latter hard-rock variety.

³ Direct link:

<http://www23.hrsdc.gc.ca/occupationdatadetail.jsp?sbmt=Search&QT=1&component=Emp&NOCC=2212&NOCT=-2&SKILLTYPEID=-2&SKILLLEVELID=-2&tid=221>

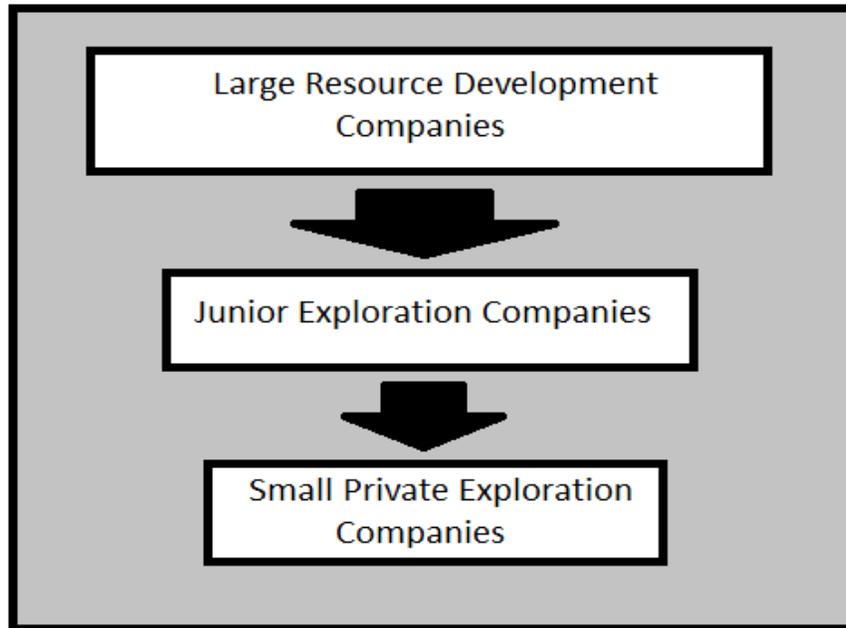
Targets for exploration can be any valuable mineral commodity from industrial minerals to precious metals, and the work takes place wherever these deposits are suspected. This means that geochemical samplers can find themselves working in highly variable terrain including anything from mountains, to coastal rainforest, to tundra. For the workers interviewed in this study gold was a common theme, taking the workers to the mountains and valleys of British Columbia, Yukon, and the Northwest Territories. Mineral exploration, in the broader sense of the term, includes activities such as exploratory drilling and geophysical magnetic surveying, and can occur on frozen ground in winter. However, the target job of this study is geochemical sampling (including rock, soil, and silt sampling) which typically takes place primarily in the summer months when the ground is relatively unfrozen and snow free.

Junior exploration companies will sometimes attempt to raise the capital necessary for developing a mining project on one of their claims by partnering with a larger firm who will provide much of the funding. An example of such as a partnership is that between the smaller Novagold Resources and much larger Teck Resources at Galore Creek, in northwestern British Columbia (“About Us,” 2014). However, the purpose of exploration by these junior exploration companies is most often to sell promising claims to larger resource development companies for future development.

To carry out the task of geochemical sampling, junior exploration companies, which are commonly publically traded, will often employ arms-length privately owned exploration companies created for the sole purpose of carrying out less specialized work such as geochemical sampling. The cascading nature of the relationship between resource development companies, junior exploration companies, and small private exploration companies is diagrammed

in Figure 1. It is these smaller privately owned exploration companies for which many geochemical samplers work including the workers interviewed for this study.

Figure 1.



These smaller private companies can range in size significantly, with one worker reporting a company with a staff in the single digits, while others reported companies that could grow to above 100 workers in peak periods. These companies also tend to have very flat hierarchies with as little as two or three levels of management. When asked to describe the hierarchy of the company he worked for, one interviewee described a limited company hierarchy:

The crew boss was in charge of all the soil samplers, so anywhere between 6 to 10 of us at a time. That varied depending on what we had going on at the time, how much work needed to get done in a set amount of time. And then he answered to the owner of [the

company], and that owner answered to the owner of [a larger mining company].
(Participant 4)

This is similar to the hierarchies described by the other participants, with those from larger companies describing the additional level of management of “project manager”.

The workforce demographic of the industry is heavily male dominated. According to the “BC HR Task Force: Exploration, Mining, Stone, Sand & Gravel,” women comprise only 16 percent of the mining and exploration industry workforce (“Diversity-Women,” n.d.). Also, in exploration the more physically demanding lower skilled jobs, such as geochemical sampling, tend to be done by younger workers. Illustrating this, the average age of participants when they worked as geochemical samplers was 24 years old and they indicated that their coworkers were of roughly similar ages.

The seasonality of the work results in a frenetic pace of activity when terrain becomes workable for exploration in the warmer months of the year (Mitchell & Mitchell n.d.). Shift lengths reported by participants were anywhere from 2 to 12 weeks straight, with an average length of 3.75 weeks. The length of these shifts, which can be thought of as periods of employment in isolated sites, are highly variable depending on contract requirements, weather, and numerous other factors. Work days tend to be in the 10-12 hour range. This includes travelling to and from camp to worksites and in-camp tasks at the end of the day. Samplers are paid on a daily basis typically in the \$150-250 range. This day rate is paid to workers whenever they are on shift regardless of their production totals, how many hours a day they spend in the

field away from camp, or whether they leave camp at all.⁴ This day rate is in addition to the company covering all costs of transportation, food, and accommodations. This system of remuneration differs markedly from tree-planting, another low-skilled wilderness based job, which uses a piece-rate system. However, tree planting firms are contracted by licensees to replant a certain number of trees into a certain amount of land; the quality with which those trees are planted is a condition of that contract, but not the primary purpose, which is to get the agreed number of trees into the ground. Geochemical sampling, on the other hand, is done for the purpose of building a compelling case for further exploration on a given claim, whereby high quality samples are more valuable than faulty samples. Although obviously both high quality and quantity would be ideal, given the greater importance of quality and the high cost of obtaining each sample, it appears rational for exploration managers to shy away from systems of remuneration that tend to incentivize workers to prioritize quantity over quality. Similarly to tree planting, hourly pay is an undesirable method of worker compensation from management's perspective as the length of time workers spend away from home and "at work" could balloon wages due to overtime pay.

Exploration generally takes place in remote and far flung places in Canada where there are still undiscovered or understudied mineral deposits. As such, it often occurs in places where infrastructure is extremely limited or non-existent. Workers may be based in small rural towns, but most often they are in remote bush camps. The account of this worker is generally representative of the experience of the other interviewees:

⁴ One participant indicated that on days when he had to remain in camp he received a modified lower day-rate, however no other participants described such an experience.

For the majority of it we were in camp. We were either at a campground, well, 80 percent of it was in a camp out in the bush, at a campground or something. When we were in ... town ... we were staying in a hotel for that. (Participant 4)

The camps are generally small, consisting of one or two crews of five to twelve workers depending on the company specifics.⁵ Camps are also typically temporary, existing only for the duration of the contract or project and thus are very rustic, consisting of a cluster of nylon or canvass tents for sleeping and a central tent for administration. Most include a generator to power lights and satellite uplinks for internet access to transmit collected data. They typically lack showers and provide only basic cooking facilities such as simple camp stoves.

Beginning from camp, workers prep for the day by preparing breakfast and packing their backpacks with lunches and gear. Workers are oriented by their crew boss as to their sampling routes and those of their coworkers and are provided maps of the working area. Workers then travel by helicopter⁶ or truck, depending on the remoteness of camp, to starting points for their sampling lines. Worksites are often within the general vicinity of camp, but one participant described working soil lines up to 200 kilometers from camp. One worker describes a typical morning:

We'd get picked [by the helicopter], well we'd make breakfast and lunch or whatever obviously and get ourselves ready. We didn't have a cook in these camps, so it was our own responsibility to that sort of stuff. So we'd get ready to go and we'd usually leave around 8 in the morning and we'd fly anywhere between 10 minutes and 45 minutes to

⁵ Participants reported crews of 5 to 12 workers in size, but the size of crews could theoretically be determined by any number of logistical factors.

⁶ Helicopters may be based in the camps themselves, or in larger camps or towns nearby.

our sites. Most often we'd be dropped off individually. So the helicopter would find a suitable relatively open area and set us down. (Participant 1)

Once at their starting locations, samplers work either alone or in pairs. Using maps, compass, and hand-held GPS, samplers walk pre-planned routes and typically take a sample once every 50 metres. Workers have a variety of different kinds of routes they may be required to walk. Examples include straight lines that cross all kinds of elevation and terrain as part of a sampling grid of the area, lines that follow topographical contours snaking along terrain features while maintaining a constant elevation, and lines that follow creek and stream beds for the purposes of sampling silt.

Beyond the aforementioned orienteering equipment, workers also carry with them a backpack for carrying collected samples, their food, water, and raingear for the day, and to serve as something of a mobile tool rack. Important safety gear carried by samplers are hand-held radios for communicating with each other and helicopter pilots, and wildlife counter-measures such as bear mace and bear bangers.⁷ To ensure they are stopping to take a sample every 50 meters workers use a hip chain.⁸ For the purposes of collecting a sample, workers often use a tool called a "GeoTul"⁹, which is similar in design to a mattock, which are also used by some exploration workers, but with a hammer instead of a pick. Some participants also described

⁷ The style of bear banger typically carried by exploration workers is a small cartridge about the size of a shotgun shell which is screwed into the tip of a spring loaded pen style centre-fire launcher. When the banger is launched into the air, it detonates overhead creating a sound like a gunshot meant to frighten bears away from the area. The pen launcher can also be used to fire flares screwed on in the same way as the bangers and are also carried by workers for emergencies.

⁸ Hip chains are a plastic box worn on the hip that contains a spool of string which is tied to a solid object at the beginning of a given run, and as the wearer moves away from the anchor point, the string unspools turning a counter which indicates how many meters have been travelled.

⁹ This is a hand tool with an approximately 60 cm long wooden handle leading to a steel head consisting of a hammer on one side and a grubber on the other.

using an approximately 1 meter long hand auger for boring into the ground to collect the sample. On top of this substantial list of equipment are machetes or hatchets used for clearing helipads of vegetation that might strike the rotor blades upon landing, or in extreme situations for building shelter should samplers be stranded overnight. All this equipment combined is no small burden for samplers to carry with them throughout the day, especially when the added weight of the samples themselves are considered. For those that work in pairs some of the weight can be shared, but those workers who worked alone reported particularly heavy loads:

I think we weighed it a few times. I think an empty pack with gear was probably about 35 pounds. And then with the soil samples, depending on the moisture content of the dirt and how big, some people had smaller samples than others, but on average I think it was about 90 to 100 pounds all that backpack at the end of the day (Participant 1).

Even when accounting for the possibility that subjective experience might mean the actual weights of packs were less than the maximum reported by participants, the fact that they *felt* very heavy to workers is without question.

Once workers get to a sample location, in order to collect a proper sample they must dig through any organic layer to the lower inorganic target layer of soil. In the words of two workers describing the specific soil they were after:

There's A horizon, B horizon, and C horizon, of different soil substrates ... and we always wanted to get into C horizon because that's broken up bedrock. The C horizon would be at different levels, but you'd just want to get as deep as possible. There was an average [sample depth] of around ... 50 centimetres. (Participant 3)

And:

We had to aim for a very particular type of soil, which is the C horizon, which is a kind of decomposed broken up bedrock, which would be either a coarse broken up rock or all the way to a finer sand, but was primarily particulate soil or rock and mineral rather than organic matter or clay. (Participant 1)

Once this mineral soil is reached, it is sifted by hand to remove larger rocks and organics, and then placed into a 10 by 15 centimetre tough brown paper bag. The bags are then labelled with a project code and sample number, and then placed in a larger polythene bag, which is then placed in the worker's backpack. However, filling the sample bags with C horizon comprises only part of the tasks that take place at the sample site. As one worker describes:

While the actual soil sampling was taking place, the navigator was noting geographic location, in terms of longitude, latitude, weather, slope of the hill, and noting it on a GPS as well on the map that the navigator carried as to where the sample happened. (Participant 4)

Another worker who worked without a partner describes a similar data collection procedure:

We had a technique ... which was to lay [the collected soil] out with a colour card and photograph it. And then we also had pretty significant data entry where we had to write the site situation, the vegetation in the area, other notable features, if there were outcrops or mineralization that was present and visible, and different specific geological identifiers. (Participant 1)

Once the sample is collected, the coordinates marked on the map, and the supporting data recorded, workers then move the whole operation 50 meters down their line and repeat the procedure. This whole process takes approximately 10 minutes per sample discounting extenuating circumstances such as tough terrain or particularly rocky or frozen soil. Participants reported a daily average of between 30 and 40 samples collected, which at 50 meter intervals

takes the total distance travelled in the process of sampling to around 1.5 to 2 kilometers. This whole process happens with very little supervision. As one worker explains, “from the time we left the trucks in the morning to well after the 10-12 hour day, all that time we were unsupervised. So I’d say a good 75-80% of the time,” (Participant 4). At the end of the day, usually between 4 and 6pm, helicopter-based samplers hike to pre-planned extraction points for pick-up. These extraction points may need to be cleared of brush by the workers themselves prior to pick-up if it is too thick or tall enough to damage a helicopter rotor. Samplers not deployed by helicopter will instead have to hike back to the trucks or camp if it is close enough.

Once back in camp workers have a number of other tasks to complete. Besides making dinner, workers must unload and sort samples, report their data, do routine maintenance on their tools, and prep for the next day. After all these maintenance and data management tasks are complete, workers then have a few hours of leisure time in camp before heading to bed, assuming around 8 hours of sleep, before waking up to do it all over again for weeks at a time. The variety of tasks that workers are required to perform in camp after returning from a full day in the field is described by one interviewee:

Usually it was up to each crew, there was no corporate protocol, but usually we had a schedule for who was going to make dinner each night, or who’s going to do the dishes and stuff like that. We also had to maintain our tools, so sharpening our axes and machetes, keeping the chainsaws in order fueled up with gas, chains sharp, etcetera. And there was also preparation of your sampling ... so you would have to get your bags and tags and all the kind of things that you would put soil in all prepared. And you would also have to download all your data, which the crew boss was primarily responsible for, but all the data you collected during the day would have to be verified

and checked over, and that was something that had to be done every night as well.

(Participant 1)

Of particular relevance to this paper is the checking by crew bosses of the data collected by workers. This represents an effort by management to control the quality of work done, and essentially the effort expended, by employees and is the topic of the next section.

V. Managerial Command and Control

Even though geochemical samplers often do their work in isolated and largely unsupervised conditions, this does not mean that they are *entirely* unsupervised. In this section the efforts of supervisors to manage samplers through traditional command and control processes of monitoring and discipline, despite unfavourable conditions for either process, are examined. Also, although geochemical samplers work hard despite little coercive presence by management, this does not mean that forms of worker misbehaviour do not exist in this context; however, as will be shown, the extent of this misbehaviour, despite a fertile environment for its development, appears quite minimal. As in most forms of work within capitalist employment relations, a kind of contest between management and labour in the workplace exists and this is true of geochemical sampling as well, though it is relatively muted.

Imperfect Worker Monitoring

For standard economic models, worker resistance is to be expected and controlled by increasing both the probability and the cost of detection (Rozen 1991). Thus, enforcement mechanisms often focus on identifying when a worker has misbehaved through monitoring and this holds in mineral exploration as well. One form of worker monitoring described by workers was crew bosses engaging in direct supervision:

Our supervisor did do hikes on the lines after we were through, so if there was a quality control aspect to that, our supervisor would go out and just randomly hike one of the lines to make sure ... samples were taken at the proper intervals, and to the proper depth. (Participant 4)

However, this practice is uncommon as crew bosses are often also samplers and are busy working their own sample lines. Even when they are not samplers, as in the case above, the distance between workers and the difficulty in finding a sample hole in rugged unfamiliar terrain means that these kinds of quality checks are infrequent and imprecise at best.

More commonly, monitoring by crew bosses is conducted by the checking of collected samples at the end of the day. All workers interviewed described a similar process:

We would lay out our samples to prepare them for shipping, random bags were selected to be opened and looked at to ensure there was the proper amount of dirt in the bag, to ensure it was in fact mineral dirt and not a big pile of ash or organic compound or anything that would cheat the results like that. (Participant 4)

And:

They would [check] by looking at the samples and making sure they were the right weight and they were packed properly ... When people unload you could just walk very quickly and you would just see how they packed each sample bag ... to know that it's right ... If stuff looked weird or wet and doesn't look good, then you go through it. (Participant 3)

Although less direct than patrolling the lines, this risk of random sample checks fulfills a similar role of presenting a constant threat for workers that they will be caught misbehaving. The idea being that it is not necessary for workers to be under constant surveillance, just that they know they may at any time be subject to scrutiny and so internalize the discipline mechanism (Ackroyd 2013; Iedema, Rhodes, & Sheeres 2006). However, some participants indicated that this double-checking was more common for newer workers and that workers more familiar with crew bosses may escape this scrutiny, suggesting that workers knew the threat of surveillance to be less than

constant. Also, although this sample checking method of worker management can potentially detect when samples are of the wrong soil type, it cannot detect if samples have been collected from the wrong location.

Verification of sample location is addressed with more sophisticated techniques of indirect worker monitoring. This can include the detailed notation, and in some cases even photographic documentation, that workers are required to take at each sample site. This documentation functions both as part of the production process of geochemical mapping, but also a control mechanism to ensure workers are collecting samples at proper depths and locations. One worker describes this process:

We had to make notes about the quality of our sample and about the depth of our sample, and about the micro-location of where we sampled from. We also had to photograph both the dirt itself, spread out on an ore bag in the order that it was taken in the auger usually, so you would have from shallower to deeper and you could actually see the change in the depth leading to the “C” horizon. And then we also had to take a picture of our auger ... in the hole. So you could actually see in the picture how deep the auger got, and that’s pretty hard to fake. You’d have to do as much work in order to get that in there if you were trying to fake the depth, so that was a pretty good one.

(Participant 1)

This worker also recognizes that this process serves a dual purpose:

Well it was kind of a ... dual purpose practice, because it was certainly about quality control and it was used for that, because every night the crew bosses would quickly go through all the pictures and if they saw a number of really shallow augers that were just barely in the ground, they would have to comment and say: “What’s going on? Why are you going so shallow?” But the other purpose for that was part of the actual product

that was being packaged and sold, along with the data from the soil samples, to the junior exploration company. (Participant 1)

This worker description also highlights how these data collection methods aid crew bosses in the evaluation of samples by speeding up the process. Compared to having to open up and pour out samples to check them, reviewing digital photos is much easier and quicker. The photos also theoretically allow managers to see the sample sites making locating them easier should they want to go back and check them and lessens the probability that all the samples came from the same hole. However, it is not entirely clear how often this site photography control method is used in the industry as it was not common to the experiences of all participants. It may be that larger more sophisticated companies may incorporate this kind of indirect electronic surveillance whereas smaller less sophisticated companies may not.

The most common form of indirect monitoring of workers is the much simpler process of checking data and notes recorded by the workers themselves at their sample sites. This process is described by another participant who was also a supervisor:

Basically at the end of the day, I review all their notes and all their data comes in, so a lot of the time you catch errors. And you see what they write, all their notes, so if [they are] good notes, then they're doing a pretty good job. I usually catch the guys who are slacking a bit, or not really caring what they're doing. It's an easy catch at the end of the day when you do go over all the stuff. (Participant 2)

This technique of indirect supervision through the checking of worker-written field notes combined with occasionally picking out samples to examine at the end of the day leaves numerous gaps in the monitoring of workers. When pressed on their perception of the effectiveness of these attempts at worker monitoring, participants revealed recognition of the

system's limitations. One worker indicated that due to his working "in such remote locations ... it would be logistically impossible to have anyone actually come and check [his] sample sites," (Participant 1). Another worker described similarly unsupervised conditions, stating that "for the most part, [supervisors] just have to have faith in the person that was taking the samples, that they were doing it to the best of their ability," (Participant 3). The difficulty managers face in accurately evaluating worker performance is perhaps best highlighted by a former supervisor's admission of the inability to verify misbehaviour even when given reason to suspect it:

With one sampling crew, we did have a problematic employee ... his samples were lacking and there was rumours that he was just grabbing samples from one locality. That one we really couldn't prove because we couldn't find where he was taking [samples].
(Participant 2)

As illustrated by these examples, whether it takes the form of crew bosses stalking their workers' lines, randomly checking samples back at camp, or reviewing data either in written or photographic form, the ability of managers to monitor their workers is quite limited. In the case of physically checking on workers, the distances between various samples lines can be several kilometres, with lines separated by challenging and unfamiliar terrain, making travelling from one line to another slow and difficult. Although helicopters are often used to get workers to the beginning of their lines, the high cost of renting these machines means that once workers are deployed, helicopters do not linger idle, but move on to other work making them unavailable for crew bosses. Also, when on foot, crew bosses often maintain regular radio contact for safety purposes making it unlikely they could misrepresent their location to their workers, making a truly surprise quality check unrealistic. Data checking back in camp is also clearly far from perfect, as much of it relies on the quality of data taken by the workers themselves, rather than

being independent of the workers' influence. Finally, from an economically rational perspective, detection of misbehaviour is best accomplished by making those responsible for detecting it residual claimants of the profit generating activity in question (Rozen 1991; Jones 1984); however, geochemical sampling crew bosses are not really residual claimants. They, like their crew, are paid on a day-rate system which is not directly tied to the productivity of the work they are supervising.

Discipline

As previously stated, following standard economic theory, after increasing the *probability* of detection, the second part of controlling for worker misbehaviour is centred on increasing the *costs* for workers of detection. In the event that misbehaviour is identified by supervisors, the standard method of discipline administered in geochemical sampling camps was reported by participants as rather informal. The responses of different participants from different companies paint a fairly uniform picture:

Well there was sort of like "micro" discipline where the crew bosses would just have to tell someone: "Look, you didn't get deep enough, you have to try harder." It wouldn't be so much discipline as a nudge in the right direction. (Participant 1)

And:

They start off with a verbal warning. Like: "Hey guys, what's going on here? Do we need to sit down and talk about this?" ... No one ever actually got actually past the verbal warning ... I've never seen any action taken past that. (Participant 4)

Finally, from a supervisory perspective:

The process always starts with just chatting with them, seeing what's going on ... usually we always give them a chance. Talk to them first, it's always talk to them first. If they do it again they get written up, and then the third strike they're out. (Participant 2)

In all cases, when asked about what sort of discipline workers faced if caught acting in violation of their employers' wishes, participants reported the kind of informal verbal corrections noted in the preceding excerpts. Highlighting the low intensity of discipline or punishment administered by supervisors, two participants were not aware of anyone actually ever being fired during their time with the company, and in fact, one participant was not aware of any disciplinary situations in which discipline ever even went beyond these informal talks. Part of this could be that supervisors may fear the negative feelings that might be generated by more heavy handed punishment (Grote 1995). Given that workers are largely unsupervised these negative feelings could easily result in more frequent and serious misbehaviour.

Limited Misbehaviour

Unsurprisingly, some forms of misbehaviour do exist in the highly unsupervised conditions of geochemical sampling camps. However, some forms of classic misbehaviour apply to mineral exploration better than others. Absenteeism, for example, is hardly a concern as both workers and crew bosses work and live in camp together. Another classic form of worker misbehaviour is pilfering which, again, is less relevant in the context of geochemical sampling. The samples produced by workers are without value to them, as they do not own the claim from which they were taken. However, forms of worker misbehaviour such as time-wasting and the limitation of effort can and do exist in mineral exploration camps. Examples described by

workers revolve around the implication that higher quality samples take more effort to produce, therefore collecting poor quality samples can be interpreted as the withdrawal of effort:

There were incidents where crews were caught sleeping in the bush or cheating samples by finding a layer of ash just above the mineral dirt there and filling the bag full of ash or something like that from a previous forest fire. (Participant 4)

And:

If you could go deeper, you wouldn't go deeper and say that you hit a rock. But you were just lazy because it was a little bit hard and you don't want to go further ... [or] you just throw in stuff that you know shouldn't throw in. That's what people mainly did. (Participant 3)

Another slightly different kind of worker misbehaviour can be seen as an example of what Burawoy calls "making out" (Burawoy 1979/1982, p. 51):

As a more experienced sampler you learn what they're looking for is this particular quality of C-horizon soil, more so than they're looking for the depth per se. So there would be occasions where people will say: "Okay! I got C-horizon! Good enough, I don't need to go deeper." And that's sort of a judgement call that starts to be made. (Participant 1)

Here workers are technically misbehaving by not going "as deep as possible" in their sample collection, but are instead only going as deep as is necessary to get a sample of C-horizon soil that would pass a quality inspection. Also of note is that the above participant worked for a company that required photographic documentation of sample sites. This suggests that even the more sophisticated photographic monitoring is either imperfectly effective or inconsistently utilized by crew bosses. It also lends some credence to Ackroyd's (2012) claim that no information technology system deployed for worker control is too sophisticated to be subverted.

Another way to withhold effort would be to collect fewer samples. One way to do this is to mark a sample as “no sample” which indicates that a sample could not be taken for some reason, be it terrain or soil quality, when in fact one could have been taken. One worker describes this process:

We were all guilty of it, of having bad days where not much got done. Maybe you had a longer hike in, or it was crappy weather, or you were stuck on a talus rock face for most of it, and you got nine or ten “no samples.” Stuff like that ... You were able to play that to a certain extent, and we were all guilty of it to a certain extent. It was when it became a prolonged thing that it became very obvious that someone is in fact trying to play everything there. (Participant 4)

This misbehaviour by means of fewer samples collected is much easier for supervisors to detect than variable quality of sample. This is especially true if it is a prolonged activity as indicated by the above excerpt, therefore it is not surprising that it was indicated by participants to be less common than variable sample quality. Like the tree-planting described by Scott Prudham (2005), quality rather than production appears to be the biggest monitoring issue for geochemical sampling managers.

For economic models based on the assumption of workers as rational utility maximizers, a high degree of shirking and other forms of the effort withdrawal within geochemical sampling should be expected. This is because while some forms of worker supervision exist, both the likelihood of detection and the consequences of misbehaviour are low. The incentive to misbehave is further increased by the separation of effort from income through the day-rate system of remuneration, and as has been demonstrated, some forms of misbehaviour certainly do exist. However, the proportion of resistant worker behaviour relative to the ability for

management to control it appears to be quite small. As a former supervisor indicates when asked about the prevalence of misbehaviour, there seems to be little sign of the production process breaking down: “Honestly, I have not run into [worker misbehaviour] much, maybe just one out of my four years as a [supervisor],” (Participant 2). The low prevalence of obvious misbehaving could just mean that samplers simply work to rule, doing just enough to keep their jobs, but this does not appear to be the case. Instead, samplers tend to drive themselves hard throughout the day to the point of putting themselves at risk of injury or even death in the process of accomplishing their daily tasks. As one participant explains:

Yeah there was a few cases where people would push themselves probably unreasonably to climb into very steep or cliffy terrain, and trying to get samples that they never should have got, ... because we didn't have repelling, or climbing gear, or helmets, or anything. So it was just inappropriate for them to be going in. I think I would even be included in that category sometimes. (Participant 1)

This indicates that there is some motivating factor other than simply the risk of being caught shirking that explains the incentive for workers to work hard. Why convert time into effort so enthusiastically, even to the point of risking life and limb on the edge of cliffs, when there is no apparent economic reason to do so? When the likelihood of being caught avoiding tough terrain is low and the consequences of being caught are superficial? To answer these questions requires moving beyond command and control explanations of worker behaviour.

VI. Insecurity and Labour Effort

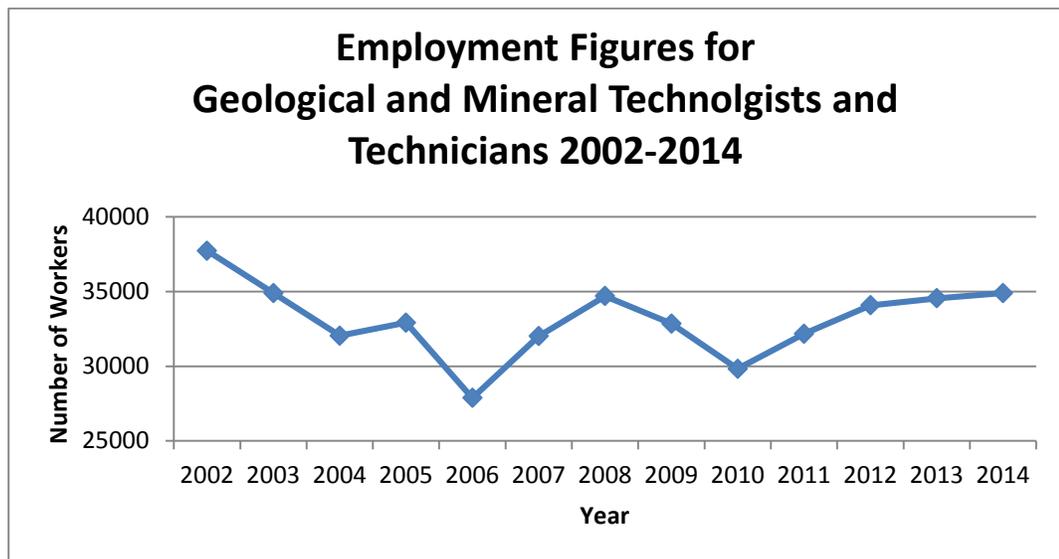
Since more coercive forms of command and control style management do not appear to sufficiently answer why geochemical samplers work hard and take risks, this section examines another potential explanation. Rather than managerial supervision, employment insecurity can be seen as an incentive for workers to put in more effort. The basic theory is that workers will work harder in an insecure employment situation in an effort to either keep their current job or use it to move on to more secure work in the future. On the other hand, insecurity can also lead to the withdrawal of effort if workers do not feel that working harder can improve their employment situation.

Insecurity as Incentive

Geochemical sampling is insecure work for several different reasons. First, it is typically seasonal work requiring workers to be rehired each season. In this sense, job security for workers only exists in any meaningful way for the duration of a single season. Second, mineral exploration as a whole is dependent on the value of the minerals for which companies are searching. This means that market fluctuations can have profound effects on the number of jobs in the sector (see figure 2). This particularly affects geochemical samplers as the companies they work for are typically employed as subcontractors, are seen as periphery to the core operations of the junior exploration companies that employ them, and are often the first to be issued layoff notices or contract terminations in the event of a market contraction (Friedman 1977). Third, any given claim may see limited sampling before it is either determined to be devoid of exploitable mineralization or the next phase of exploration begins, which may not employ the

same workers who sampled it. Finally, the work itself is unskilled labour requiring a few weeks of training at most, but generally less than that. As such, these workers typically fall into the category Friedman (1977) identifies as expendable workers.

Figure 2.¹⁰



In some ways, this employment insecurity does seem to have an impact on increased effort by samplers. As Bertaux and Queneau (2002) argue, the success of management strategies to increase worker effort based on fear of job loss require “at least that the relevant economic sector ... [experience] periodic layoffs or downsizings,” (p. 7). This holds for geochemical sampling as market fluctuations combined with seasonality can result in a significant reduction of available jobs from one season to the next, a fact not lost on workers:

¹⁰ Employment and Social Development Canada (2014).

In 2012 the company contracted, that meant that there were some people who were not hired back ... Often times the person who is a bad sampler is also the person who doesn't want to come back for another season, so that was sort of a convenient overlap. There were [also] people that I heard of who wanted to come back and just were not asked to come back. (Participant 1)

This excerpt indicates that workers were aware of a connection between access to a potentially smaller pool of jobs year to year due to seasonal variability and management perceptions about how hard someone works.

There are also indications that some workers view geochemical sampling as a “stepping stone” in two different ways. First, one participant worked as a sampler in what Clarke et al. (2007) identify as being an “on a path” worker (p. 315-6). In this case, the participant worked the less sustainable work of sampling as an early step on his path to becoming a full-time project geologist. He described how in his early years working as sampler, given his desire to start a career in the industry, he strived to impress his supervisors. The second way in which geochemical sampling can be seen as a stepping stone is not as a transition into a more permanent career, but as a way to secure more temporary exploration work. As one worker explains:

We knew that we were the spearhead for the initial exploration going on ... if the samples turned out good then there would be rock core sampling being ordered, which would then lead to possibly more work. No one likes the idea of running out of work and being laid off and having to find a new job. So we had to work as hard as we could to try and get more work, in order to work harder to get more work after that. (Participant 4)

This worker clearly perceives a connection between employment in subsequent future stages of the exploration process and working hard on the current stage as a geochemical sampler.

However, it is not entirely clear how this expectation of geochemical sampling as a stepping stone into the next phase of exploration would transpire; junior exploration companies that own the claims being geochemically mapped typically contract out rock core sample drilling to specialized drilling companies who possess their own drills and workforces. Also challenging this notion is that the above worker did not later transition into drilling, but rather left the industry entirely, partly in search of more secure employment.

Insecurity as Disincentive

The reasons why the previous worker eventually left the industry points to a key factor undermining the theory that insecurity drives samplers to work hard in that it is primarily a structural insecurity that plagues the industry. In response, many workers do not seem to feel their efforts can meaningfully affect their future employment prospects in the industry. Relating specifically to a surge in gold prices fuelling a wave of exploration in Yukon of which he was a part, another worker explains how he saw the work as inherently temporary:

There was a sense, at least among some of the more experienced people, that this came all of a sudden and could go away just as quickly. That it's a boom and bust economy and that there's a good chance this won't last, that it's kind of this little magic time that's temporary ... [and] I think it's definitely true that that was a moment in time and it's probably not ever going to be quite as big again. (Participant 1)

This worker's view of the industry as subject to the whims of the market suggests the he did not feel that working harder would provide him with employment security.

The idea that workers are disciplined through the insecurity of being easily replaced due to the unskilled nature of the work also has difficulty explaining effort in mineral exploration.

Although unskilled, the remoteness and isolation of the work and the difficult and dangerous conditions create a limited pool of potential workers to draw upon. In other words, unlike Braverman's deskilled factory workers, there is not an industrial reserve army pushing current employees to work harder in economic self-defence. This is illustrated by one participant's view of the challenges of finding an adequate replacement for a fired worker:

[Would a worker be] hard to replace with an actual body? Probably not. Hard to replace in terms of finding someone who has the same viewpoints as the rest of the crew, in terms of goals and quality of workmanship? I would imagine it'd be pretty tough.
(Participant 4)

As illustrated by this worker, finding someone technically qualified to work in exploration is relatively easy. However, finding someone who strives for high "quality workmanship", or in other words works hard and is also willing to work away from home in the wildness, becomes more of a challenge for employers. When asked directly about the role of insecurity, a former supervisor said he did not feel a slack labour market induced his employees to work any harder, but would rather just increase their willingness to stay in camp for longer periods at a time. Given that samplers are paid on a day rate, it makes sense that if work is scarce, they would want more days of work, but it does not necessarily suggest they work any harder during those days. A final complication for the theory of insecurity as a source of worker motivation is that the very lack of supervision that should make shirking so tempting for workers also makes it difficult for employers to identify harder workers in the first place.

Although there are signs that insecurity does motivate some workers in some contexts, for other workers it has little or no influence. Therefore the influence of insecurity on worker motivation for geochemical sampling as a whole appears inconclusive. As illustrated above,

employment insecurity can cut both ways depending on various circumstances and variables. Workers can either see hard work as a viable strategy for gaining security or a waste of effort if they feel no amount of hard work can protect them (Lewchuk 2014). Both of these attitudes seem to be present to some degree in exploration, but the tendency seems to lean towards structural forces leaving workers feeling more or less powerless to resist the insecurity of an inherently insecure industry.

VII. Worker Subjectivity and Labour Effort

So far it has been demonstrated that both managerial direct control and employment insecurity are both insufficient in explaining labour effort in geochemical sampling. In this section the argument will transition into the concept of worker subjectivity. Specifically, this section will explore the idea that samplers are compelled to work hard, and at times dangerously, due to manufactured consent derived from a masculine subjectivity contingent to the specific conditions of geochemical sampling.

Consent, Not Coercion

What compels samplers to eagerly carry 30 kilogram backpacks over unfamiliar and variable terrain risking injury from a host of potential dangers such as scaling cliffs, animal encounters, or helicopter accidents is something other than just economic self-interest. As stated earlier, there seems to be little economic incentive to push harder than is just necessary to maintain employment. Workers as rational utility maximizers should seek to increase their leisure by shirking at work as the likelihood of being caught is low and the consequences are generally superficial. Also, the actual and perceived effects of worker effort on the likelihood of maintaining long-term employment in an insecure boom and bust sector appear to be low, yet samplers work hard regardless of these factors. Instead of a form of coercive Taylorist direct control system wielded by management or the macro-disciplining force of labour market insecurity, it is the workers' own subjectivity that allows for the manufacture of consent from workers to self-exploit (Burawoy 1979/1982). That consent is the motivating force for

geochemical samplers cannot be made more apparent than by the words of one participant when asked if he felt it was something non-economic that motivated him and his coworkers:

Very much so, yeah. It was about getting everyone to feel that they were doing this because they wanted to do it. Because it was hard-core, and it was cool, and it was amazing, and that was special. That was the sense that people had, rather than they did it just for the money. (Participant 1)

Another participant when asked about how management ensured good quality work given that they could not directly supervise samplers also pointed to worker consent:

For the most part, you just have to have faith in the person that was taking the samples that they were doing it to the best of their ability. And that happens because of the people's belief in the work that they're doing and how they're being treated. We were being paid a decent wage, we were living well, we were enjoying our work, we liked our work. (Participant 3)

And finally, when asked to elaborate on how he approached the work in terms of motivation, this worker specifically pointed out that along with workers needing to display initiative, the crew boss did not play much of a coercive role:

It was a take pride in your work sort of deal. No one likes to say: "Hey I worked that, I did a crappy job on that, but hey yay me, I worked on that project there," kind of thing. It was really a worker's pride more so than a dictator needing to keep his thumb down on the workers sort of thing. (Participant 4)

These statements suggests that rather than being coerced, samplers consent to working hard in the absence of clear economic incentive to do so. They possess a subjectivity that they internalize and to which they conform that creates a workplace culture that embraces rather than resists the conversion of time into effort even in the face of danger. This subjectivity works

to obscure exploitative capitalist relations and convince workers to enthusiastically pursue their work, often above and beyond what is strictly required of them by management including putting themselves into dangerous situations, without apparent coercion from their supervisors.

Men's Work

Burawoy's (1979/1982) own analysis in *Manufacturing Consent* downplays the role of subjectivities exogenous to the labour process, particularly gender; however, consent in geochemical sampling is built on a gendered foundation. Most readily apparent when considering the work from a gender-sensitive perspective is that the work is heavily male dominated as relatively few women work in the industry. When asked about this trend, one participant who had worked as a full-time geologist and supervisor suggested that there was simply not much interest in the industry from women. He cited low female enrollment in the hard rock geology courses he had taken in university as evidence of this claim. However, when asked to elaborate, he was unable to think of a reason why women would not be interested in the first place. Some possible explanations are that women experience hostility as "outsiders" in a male dominated environment. Although none of the workers interviewed suggested that such hostility occurred it is possible that they espouse different beliefs about the place of women in the industry when outside of the workplace than they do when actually at work (Paap 2006). Another possible explanation for low rates of female participation in the industry is related to traditional patriarchal family organization whereby the male primary breadwinner model locks women into low paid unskilled "feminized" work as they must also shoulder the role of primary caregiver (Smith 1994). A consequence of this model is that the extended periods away from home required for remote work such as geochemical sampling segregates women out of the

industry (Ness 2012). The challenge of spending such long periods of time away for work is described by one worker:

You're working the entire summer, you're working working working working, working, working, working and then you did miss a lot. I guess I stopped because you just missed a lot ... It's hard on your families to be a travelling geologist because you're gone for so long, and you're gone for an extended amount of time. (participant 3)

Although the extended periods away from home likely limits the labour pool for both sexes, the gendered expectations of domestic responsibility means it almost certainly affects women more.

Though male dominated, the geochemical sampling workforce is not entirely devoid of women. All the interview participants reported at least some, if very few, female coworkers. However, a common theme was that the participants downplayed any perceived femininity of their women coworkers:

They were like, "tough." One of the people who worked for [my boss], she lived in West Dawson, which is where there's no power, there's no running water, there's nothing like that, so these were not... Just, the guys who worked there, you were expecting to do a hard job, so you got a hard job, so that's exactly the same way that the women were. They were expecting a hard job and they got a hard job ... yeah, they weren't stereotypically female. (Participant 3)

When another worker was asked if he felt the women in his company fit in, he responded that although they did, it was apparent they wanted to be perceived as part of the male "in-group":

They fit in. I mean, you know, guys are gross, [and] we were respectful of the gender differences, but they did behave almost as one of the guys. You know, the women didn't want to be seen as a minority, they wanted to be seen as part of the crew. (Participant 4)

This acceptance of a limited number of women by being redefined by their male coworkers as “one of the guys” is often used as a discursive mechanism by the male majority to ensure that the presence of women in the workplace does not threaten the masculinity-affirming interpretation of the work (Ness 2012; Paap 2006). That samplers report a similar masculinization of their female coworkers as that experienced by women in the building trades fortunate enough to gain acceptance rather than overt hostility suggests that the workplace culture of exploration has a similar masculine bias (Ness 2012; Paap 2006). This is supported by the response of a former camp supervisor when asked if he felt there was a perception that one gender was inherently better suited to the work:

I think, depending on who you talk to ... you definitely still see that with the older guys you work with that think girls don't belong in the field, right? The rationale is it's men's work ... I think it's dying down though, 'cause the old schoolers are all retiring. So it's definitely becoming less and less, but I think it does still exist for sure. (Participant 2)

While personally supportive of the participation of women in the industry and pointing to positive change in general attitudes, the above interviewee still reluctantly identified a bias against women held by some others.

A Working Class Masculinity

While the workplace is primarily male, more importantly, it is also a workplace permeated by a specifically masculine worker subjectivity and workplace culture. The specific masculinity of geochemical sampling is one that is bound up in the labour process itself: of what kind of work is done, where it is done, and how it is done. It is the amalgamation of these different contingent aspects of the work that creates a specific form of masculinity for this

specific form of work. First, this is a working class masculinity given the intense manual labour of the job. The identification of working class masculinity is often posed as being in opposition to not only the femininity in women, but also other less “tough”, though financially dominant, presumably middle-class men (Collinson & Hearn 1994; Ness 2006). For working class men it is the ability to work hard, despite difficult conditions, at a job that requires abnormal effort that defines the truly masculine (Lewchuk 1993). In fact, the tougher the job the better it is able to affirm the masculinity of the worker (Ness 2012). The particular capacity for hard manual work in isolated conditions required by geochemical samplers is recognized as unique by participants: “It takes a certain type of person to work in an environment like that. It takes a self-motivated driven person who’s honest to actually work like that,” (Participant 4). Another worker pointed to the mental toughness required to be a successful sampler, stating that “it’s a pretty general labour job,” and, with the physical hardship of the work established, what is also required is “a certain attitude and a willingness to endure some pretty difficult circumstances,” (Participant 1). The difficult conditions of the work which demand both bodily and mental strength and endurance are part of the key identifiers of working class masculinity (Simpson 2014). Interviewed workers seem to suggest that they possess more of the specific traits and capacities necessary to do the job than others. Given the male dominance of the workplace and the hard manual labour required of the work, which is often associated with masculine working class jobs in general, these “others” are conceivably the likes of most women and other less masculine men.

Besides being physically challenging, working class jobs often have limited potential for upward mobility, consists of routine tasks, and take place in relatively dangerous and dirty

environments (Simpson 2014). Geochemical sampling certainly meets these requirements as the job has very flat hierarchies, a generally repetitive set of daily tasks, and takes place in a wilderness environment that is by definition a constant source of dirtiness and danger. However, the reinterpretation of difficulty and danger as heroic and a test of masculinity rather than exploitation in capitalist relations is another important element of masculine working class identity (Dunk 1991; Paap 2006). When asked about why workers might put themselves into risky situations while working, one sampler responded:

I think there's a certain bravado or machismo, and a sense that people wanted to prove how tough and competent and brave they were. And also that was combined with ... loyalty to the company and to the management and wanting to make the project a success and wanting to be better than some of the others. So there would be some people who were the guys who would go on the cliffs, and that was sort of a position of pride. (Participant 1)

Rather than unfair hardships imposed upon workers by management, the dangers and difficulties of the job are embraced as reaffirming of the masculine value of the worker. This is reflected in geochemical sampling by the observation that none of the research participants cited the danger or the physicality of the work as a negative aspect of the job. The most common complaints was instead the long periods spent away from home. Even this frustration was not specifically targeted towards management, but seen as an unavoidable part of the job and was perhaps also part of the working class masculine valorization of the job. As Ruth Simpson points out in her study of the masculine identity of butchers, "sacrifice, endurance and fortitude [are] key resources in managing the physical demands of the ... job and a source of pride," (Simpson 2014, p. 766). In this sense, the sacrifice of spending months away *because* it is difficult further reaffirms the masculinity of the workers. As Kate Ness (2012) explains: "physical

labour, dirt, discomfort, and even danger are believed to be necessary concomitants of true manhood,” (p. 661). All of these are present in geochemical sampling and are seen by workers as rewarding challenges to overcome, rather than conditions of capitalist exploitation.

Kris Paap (2006) argues that the forms of masculinity seen as the purest are often associated with manual work and that proving one’s self as a man is to prove one’s self as a worker. Following this logic, if valued masculine identity is intrinsically tied to work, then the harder someone works, the more valuable they themselves become. The flipside to this is that workers who withhold effort are then seen as bad, of poor character, and of questionable masculinity (Quam-Wickham 1999), rather than class-conscious and self-interestedly resistant to exploitation. This is illustrated by some of the responses provided by workers when asked about why they felt workers may withhold effort or misbehave:

Sheer laziness. The fact that we’re getting paid on a daily salary basis, it can draw in the wrong type of people. People who think that they can skate on by and get a meaty paycheque and not have to work for it. And that’s really not the case, if anything you should be working harder for that. (Participant 4)

And:

It was pretty rare that I encountered that, that I’m aware of. Myself, I can say that I definitely sometimes was tired or lazy and didn’t go as deep as I probably could have had I put myself more energetically to the task. (Participant 1)

These excerpts indicate that samplers identify personal failings or a lack of character as reasons for workers not putting themselves “more energetically to the task,” rather than reasons based on employment relations such as poor working conditions. It becomes clear that in the mineral exploration setting, as with working class masculine ideology generally, the good worker is the

hard worker possessing personal merit where a less hard and, therefore bad worker, does not. When asked whether some people would quit due to the hardships of the job one worker confirmed this:

Yeah a couple people quit because it was just not the right job for them ... so, some people quickly learn that this wasn't for them, and they need to move on to greener pastures. (Participant 4)

This suggests a mentality of what Paap refers to as a "culture of no complaints," (Paap 2006, p. 147), or in other words, consent to exploitation based around the masculine ideology that real men work hard and "do not whine or gripe," (Dunk 1991, p. 100). Rather than fight for better or safer conditions, dissatisfied workers are expected to simply quit and make room for those who are tough enough to handle the job without complaint.

As stated earlier, masculinity as a gender identity does not just exist, but instead must be accomplished on an ongoing basis. To participate in a masculinized workplace culture, individual masculinity has to be proved (Collinson & Hearn 1994). Hogan and Pursell (2008) state that masculine identities are defined in opposition to anything seen as weakness or failure. Accordingly, failure to complete a job is seen as a failure to confirm one's masculinity. There is therefore an intrinsic value to workers in "getting the job done," (Paap 2006, p. 138). Often combined with this championing of workplace accomplishment is risk taking. As Barnes, Brown, and Tamborksi (2012) explain, "dangerous acts like ... mountain climbing without a partner represent [a] class of masculinity-confirming behaviours because their performance ... demonstrates one's strength and fearlessness," (p. 100). Thus, "getting the job done" narratives

and risk taking behaviour are often combined in geochemical sampling. When asked if workers recognize the danger into which they at times put themselves, one worker replied:

Yeah. I do believe that they would recognize there is a danger there and continue on. Again, that mentality of “get the job done.” While something might be dangerous, we sort of disregarded that sometimes. If it was possible but dangerous, then it was usually more possible than dangerous and we would continue on regardless. (Participant 4)

In another example, a worker described an accident where a worker fell about eight feet to the ground while attempting the particularly dangerous behaviour of entering a helicopter while it is hovering above the ground, an action he noted was technically prohibited, but frequently attempted. When asked to elaborate on the reasons for such obviously risky behavior, given that falling was only one of many dangers posed by climbing into a helicopter that is in flight¹¹, he described a rationale that suggested a priority of “getting the job done” quickly over personal safety:

[To avoid] the hover entry and exit thing ... It would require a lot of extra flight time and a lot of extra hiking. So there’s a double disincentive towards actually avoiding hover exits and entries because it would mean, for the company, it spends more money and more helicopter time. And [for] the individual sampler, they have to hike more to [find a place the helicopter can land]. So there was two reasons why we would just disregard that technicality and do the hover exits and entries. (Participant 1)

Telling is that although shirking also saves the individual sampler time and energy without imperilling them in the same way that hover entries and exits do, it is generally frowned upon by

¹¹ In this situation because the helicopter is still in flight, the sudden addition of a worker’s weight could cause the aircraft to pitch or yaw as the pilot attempts to adjust. Given how low to the ground the helicopter would have to be for a worker to jump onto the skid, the risk of a rotor strike in this case is significant and would result in the helicopter potentially disintegrating, an extremely dangerous proposition.

the workers themselves. However, hover entries and exits, while saving the worker time and energy are, unlike shirking, extremely risky, “get the job done” more quickly and cheaply for the company, and are generally accepted practice by samplers working for that company. As Kate Ness (2012) explains, “if men are willing to take risks with their health and safety ... in order to ‘get the job done’ and appear ‘masculine and tough’, that does not just happen to be ‘the culture of the industry’,” but serves the interest of employers to obscure exploitation behind a mask of masculine ideology (p. 666). This obscuring is illustrated by Kris Paap’s (2006) observation that construction workers do not often discuss or perhaps even recognize the appropriation of surplus derived through risk taking. Similarly, the samplers interviewed did not seem to associate their risk taking behaviour in the name of “getting the job done” as exploitative:

There are some times when you have to be a little unsafe to get something done. [An example is] ... we were called back into camp because it was ... below minus 30 with a wind chill of whatever the heck it was ... that was a bit unsafe because everyone else went in and I stayed out for my last two [tasks] in super cold temperatures. And that could have gone south, right? No one else is nearby to help you if something happened, if ... say ... my sled didn’t start, and I think I was 30k’s away from camp. So yeah stuff like that ... where you want to get the job done ... So in a way I guess that is yeah, proving yourself, but I didn’t think it was at the time. (participant 2)

While this worker recognized in hindsight that part of his risk taking to “get the job done” was proving himself as competent and brave, he admits that at the time it was unrecognized. This points to a hegemonic masculine working class identity that workers internalize (Collinson & Hearn 1994). It appears so self-evident and essential as to be invisible to its participants and effectively obscures the associated exploitation.

A Masculinity of the Wilderness

Part of geochemical sampling that cannot be overlooked when examining the culture of the workplace is the physical location of the work. Unlike most other jobs, including in the resource sector, geochemical samplers often work and live in extremely remote wilderness settings, and this intense proximity with the wilderness affects the specific character of masculinity of the job. Hogan and Pursell (2008) in their analysis of an Alaskan masculinity identify Alaska in the mainstream consciousness as “beautiful and big, yet cold and scary,” and seen as a “place for only the bravest and most rugged of souls,” (p. 63). Possessing similar characteristics to Alaska are its neighboring Canadian regions of Northern British Columbia and particularly Yukon and these places carry a similar mystique. Of course the North also has cities that possess many of the comforts of more southerly and urban locations, however, the association of the North with vast and unforgiving wilderness is persistent and not entirely inaccurate. The key here is that Northern rural masculinity is inextricably connected to this geography (Hogan & Pursell 2008).

These regional stereotypes affect the character of masculine working class cultures of the jobs that take place there, in that they are no longer just working class masculinities, but also a rural wilderness based masculinity. From this perspective urban lifestyles are seen as “too far from nature, too cultured, [and] too convenient,” (Hogan & Pursell 2008, p. 73). For this wilderness masculinity, the urban is reimagined as softer, more feminine, and therefore of less value. This does more than just underscore and intensify the masculine culture of work in the bush, as this particular narrative has its own characteristics. Whereas the over-arching working class masculinity champions hard work, toughness, and reliability, tropes from the masculinity of

the rural North include autonomy, self-reliance, ruggedness, adventurousness, and freedom (Hogan & Pursell 2008). Bearing these characteristics in mind, the autonomy provided to samplers is in one sense a logical necessity due to the geography of the job, but is also revealed as part of a specifically wilderness masculine identity that reinforces self-exploiting behaviour.

Working in the wilderness and thus embodying its perceived authentic masculinity continues to affirm the value of workers once they have left the wilderness as well. In this excerpt, the worker alludes to the youth and virility recognized in himself and his coworkers when they were in town between shifts:

There was at some points a lot of us in town, but you would recognize who was in the company. [We were] mostly young men ... and it was just ... the whole company had a certain reputation of being ... kids that like to party, or you know, whatever it was.
(Participant 1)

André Forget (2014) writing for *Whether Magazine* about his experiences working in the wilderness put it clearly:

Back in the city, I cultivated the idea that this experience had set me apart in some way, that it made me special to have gone to the mountains and lived in a tent for three months ... I was different. I was a *man*. I knew what it was like to face down a grizzly bear. I knew what it meant to do *real* work [emphasis in original]. (Forget 2014)

These reflections indicate that even after leaving the wilderness, workers still experience the masculinity affirming value of the experience.

Another aspect of masculinity in the wilderness setting is narratives surrounding the conquering or domination of Mother Nature. As Nancy Quam-Wickham (1999) writes, the masculine ideological narratives of the wilderness create men “able to overcome and dominate

a feminine nature,” (p. 135). She writes of Western resource extraction culture as profoundly gendered and populated with masculine heroes, images of men “conquering” the resources of nature, and epitomizing traditional physical working class masculine ideology (Quam-Wickham 1999). This conquering of nature and the concomitant abilities presumed necessary to survive in the wilderness are key signifiers of this specific masculinity (Hogan & Pursell 2008). This serves to further entrench and reinforce the gendered culture of mineral exploration and the associated self-exploitation.

A final element to this wilderness masculinity is a connection to nostalgic narratives about mastering and controlling nature in the wild frontier of a mythic past (Hogan & Pursell 2008). This is similar to the nostalgic connection made by butchers interviewed by Ruth Simpson (2014) with the pre-mechanized past of that trade. To Simpson’s butchers, the work of the past was seen as requiring more strength and skill and therefore more masculine and legitimate, thus connections with the past identity of butchery were prized. One worker made a similar connection with the gold rush past of Yukon where he had also worked:

I came across a mattock and a sledgehammer from the gold rush period. There was a little tiny placer mine. You could tell there was an “A” frame [and] there was all this stuff that had been cut and developed, but it had grown over. And there was a mattock and a sledgehammer leaning up against a tree that were from the 1800s, and I’m walking through it with a GPS, talking to a helicopter, walking through the guy’s old claim a century later. (Participant 3)

In this anecdote the participant is both deferring to the rural masculinity of the past by identifying his modern technological aids, but also associating himself with that past by illustrating how he is doing fundamentally the same work of prospecting for gold. For workers in

mineral exploration the allusions to an expansionary masculine past are right in the title of mineral “exploration”. This worker referred directly to this specific past exploration narrative while making a case against working in pairs for safety’s sake:

That’s paying two people to do a job for one person. And I think that is just the nature of the work, is that sometimes you’d just have to get out there and do it. I don’t think there’s really any other way. You’re exploring, right? People came over here from England to explore, they didn’t have safety procedures or what not. (Participant 3)

Although the worker at first makes an economic argument against working with a partner, he follows his initial economic argument with an allusion to the past conjuring up the image of European pioneers exploring the unknown wilderness of the North which has no bearing on the cost of two-person teams whatsoever. When later pressed about the dangers of working alone, this same worker relayed a story in which he admitted that no amount of economic rationality can justify working alone when being personally stalked by a bear:

I had a bear stalk me, but luckily the helicopter was close by, so it just flew down and picked me up. But in the event that the machine wasn’t there, I would have paid my entire summer’s wage for somebody else to be in that situation with me. (Participant 3)

These excerpts suggest that it is not economic sympathy for the company that allowed him to rationalize working alone in the wilderness. What the worker may have been referring to instead is that the explorers of a more “authentic” past did not require partners for safety, and to saddle him with one would erode the control, autonomy, and independence key to this specific masculinity. Nicole Power found similar reluctance towards safety policy “perceived as ‘over-regulation’,” as threatening to the autonomy of Newfoundland fish harvesters (Power 2008, p.

571-2). Perhaps not coincidentally these same traits were important in early the 20th century for defining working class masculinity in general (Lewchuk 1993).

Wilderness as Non-Capitalist Workplace

These culturally nostalgic masculine interpretations of the wilderness suggest that men can recapture primitive natural and authentic masculinity by going into the bush to match wits with the wilderness (Hogan & Pursell 2008). One worker said just as much:

Yeah I think the nature of it is that you're just going to go out there, and I think that's what attracts a lot of people. That's what attracted me: that it was so remote, and you had to rely on your own wits to get through situations. (Participant 3)

This interpretation of work in the remote wilderness as a self-affirming personal struggle against nature obscures the fact that the dangers faced by workers are done for the material benefit of their employers. As one worker reveals when talking about the challenges of the job, "you learn a lot about yourself when you're out in the middle of nowhere with nothing but a whistle and a stick kind of thing," (Participant 4). These workers display the view of the wilderness as a self-affirming environment and somewhere to go outside of capitalism (Hogan & Pursell 2008) which disguises the fact that samplers are placed in dangerous situations not as pioneers, but as employees of a sophisticated modern mining industry.

Hogan and Pursell (2008) argue that the constructions of Alaska as the location of man versus nature as the ultimate battle obscure the complexity of Alaska's sociocultural contexts. Similarly, the wilderness of the Canadian North is itself seen as a stage for a similar conflict and this obscures the complexity of employment relations of work that takes place there. When asked about the management of risk in the working environment, participants often suggested

that the work possessed an immutable danger that should be accepted by those who did the job: “Considering the nature of the work, it was inherently dangerous. People were aware of the risks that they were taking by doing that job,” (Participant 1). Specifically concerning wildlife, one worker told a harrowing story:

And then there’s [one worker] who had a bear stalking them for the whole day. They always knew the bear was there, and they ran out of bear spray, they would bluff charge each other, they were just vying back and forth. And they were out of contact with the helicopter, and they’re like: “I have got to get to my waypoint and watch my back, because the bear is going to jump out at me any second now.” (Participant 3)

Other than the horrific nature of this encounter there is something else that stands out in this excerpt. Despite relaying this life-threatening encounter and also later mentioning a well-known incident where a geochemical sampler was mauled to death by a bear in 2006,¹² the participant did not feel that being exposed to such danger was an unreasonable or exploitative request by his employers. Instead, much like the other participants, he saw it as just part of the job and an acceptable risk. It is possible that the construction of an “authentic” masculine narrative of the wilderness *requires* this immutable and specifically non-capitalist danger for validation. When another worker was asked about how he thought wildlife encounters could possibly be avoided he responded with some incredulity at the thought:

Yeah. If you just never went in the bush of the Yukon, you would not have any encounters with a bear. It’s pretty hard to predict where the bears are going to be and how that would happen. (Participant 1)

¹² Aurora Geosciences worker killed by a grizzly bear in 2006: <http://www.yukon-news.com/news/adventurer-dies-in-grizzly-attack>

What these comments suggest is that samplers see the working environment as something uncontrolled and uncontrollable by management. The wilderness, although it constitutes the workplace in which managers require their employees to work, is seen by workers as a force outside or compartmentalized from the relations of production. In some ways this is like the concept of “natural hazards,” or unavoidable risks of certain jobs as identified by Christopher Sellers (1997) in his history of the identification of occupational illness through lead poisoning. However, the connections between the actions of management and the danger of the work environment are potentially even less clear to workers when the danger is nature itself, rather than the invisible poisons of Sellers’ study.

In the mineral exploration context, the wilderness as the site of production is seen as separate and independent of management in a way that a factory, for instance, can never be. If a worker is asked to carry out a task in a factory that is clearly dangerous it might be quickly recognized as exploitative. The factory worker is being placed into a danger created by the artificial work environment built and owned by the employer. The wilderness, on the other hand, is not a creation of the employer and neither is the danger it possesses. Asking them to work in proximity to dangerous wild animals in the wilderness is seen as the natural risk of that environment pre-dating human intervention or employment relations, not a human construction of an alienating production process like a factory. This helps to obscure the appropriation of surplus and exploitation. That both workers are being put into danger at the request of their managers for the purpose of realizing profit is disguised by the different contexts in which it takes place. The wilderness worker sees an inherently dangerous nature in which they happen to work as natural and fundamentally unrelated to the capitalist relations for which they expose

themselves to that danger. This point is well illustrated by the comments of one participant when asked how effective he felt his company handled safety issues:

I think they had it pretty much covered ... I'm very safety minded, and I don't like certain things that are always happening around me. But nothing comes to mind ... I don't feel that there was anything that the employers were doing that would put us at risk, **other than throwing us out in the middle of nowhere with an axe and bears.** (Participant 3)

Only as an afterthought is the idea that the employers play some fundamental role in the exposing of workers to harm recognized and even then expressed only in a musing tone. Further illustrating this separation of workplace dangers from managerial responsibility, the same worker told the following story when asked about unsafe behavior at work:

I think ... the nature of our job was environmentally unsafe, like lightning strikes; a couple people got hit by lightning. It was an indirect shot and just knocked them on the ground, and there was nothing they could do. It was a jumper too, the storm had past and it was [a lightning bolt] that jumped a cloud and then came [down], so they thought they were in the clear, but they weren't. We were told to go into lightning position at times, you know? But people that were doing stuff that was known to be unsafe? I don't know. (participant 3)

In this case, hiking with heavy packs over rugged terrain, in bear country, exposed to inclement weather, alone or in pairs at best, and potentially hundreds of kilometers from the nearest hospital, are not "known to be unsafe" work practices. This is because the workplace being the uncontrollable and unpredictable "wilderness" is seen as separate from the work itself. To be considered specifically unsafe in this context would require acting in ways unsafe beyond just exposing one's self to these environmental dangers, the responsibility of which would fall on the shoulders of the workers for acting dangerously, not the company for putting them into a

dangerous situation. This begins to look something like the “responsibilization” described by Gray (2009) in regards to neoliberalism, only the wilderness harkens to a time before legislated safety regulations rather than the modern context of deregulation. The wilderness is the site of production, but from the worker perspective it exists and imperils outside of the relations of production. This interpretation of the working environment explains some of the reasons why workers do not actively resist the imperatives of management despite the dangerous circumstances of the work.

Fraternalism and Conformity

Rounding out the particular contingent influences on the masculine culture of mineral exploration is the fact that workers are often far from home and live together in close quarters. This has at least two effects. First, it creates a fraternal element to the masculinity of geochemical sampling. In the context of working class employment, fraternalism is, put simply, the act of working hard and being productive in the company of other men (Lewchuk 1993). More than just men working together, it is in one sense an apparently spontaneous phenomenon of camaraderie born of shared experience, and in another sense a gendered strategy of control based on making hard, monotonous, and dangerous work enjoyable by infusing it with positive notions of community, belonging, and teamwork (Lewchuk 1993). Although such an infusion of notions can also occur between women, in the context of a male dominated workplace these notions can become specifically associated with and perceived through a shared masculinity. Whether or not management works to create this culture in exploration camps is unclear, but the existence of such sentiments among the workers is readily

apparent. When one sampler was asked about how he and his partner divvied up the days tasks, he illustrated a relationship suggesting fraternalism:

It was very informal, and very just sort of ... like a trust-building exercise, knowing that if you're kind of lagging for a bit, your friends, or your coworkers are there to pick up the slack. (Participant 4)

Here the use of the slogan "help the other fellow," by the Ford Motor Company in the early 20th century as an element of their fraternal system of worker motivation comes to mind (Lewchuk 1993, p. 845). The above worker does not simply refer to his working partner as co-worker, but as a friend and this shows a sense of camaraderie perhaps more meaningful to the workers than just shared employment. As Simpson indicates, "working-class men often construct meaning around shared camaraderie," (Simpson 757). Another worker quite explicitly points to something akin to what Kate Ness identifies as a kind of "*esprit de corps*" arising among workers from the shared experience of exposure to "poor and dangerous working conditions," (Ness 2012, p. 663):

There was a loyalty to your crew, first and foremost ... your crew boss and your crew mates, because of the intense nature of the work and the difficulty of it that bred a certain camaraderie and a sense of togetherness. That you are in this ... shared experience that most people wouldn't be able to relate to. So there was that immediate loyalty to your own crew and there was a broader loyalty to the company because it was kind of like a fraternal feeling ... there was just a collective sense that we all were part of something and we would then own up to that thing that was bigger than ourselves. (Participant 1)

This worker makes a clear connection between shared hardships on the job and a fraternal feeling of unity with not only his coworkers, but also his employers. When asked to elaborate on

this camaraderie further, the same worker revealed the useful implications of this fraternalism for management:

I would just re-emphasize that the quality issue was driven by a sense of camaraderie and loyalty and a sense of belonging to a collectivity. That was really what characterized the job and the sort of, sense of responsibility that everyone who did the job had. That they felt that being part of this company was more like being part of a team or a fraternity of some kind, than being just a job. I think that was really what drove a lot of the production. (Participant 1)

Collinson and Hearn suggest that there is a masculine sense of unity through “shared economic and symbolic vested interests ... within patriarchal societies and organizations,” and that “men’s power in [those] organizations is maintained through unification and identification with each other,” (Collinson & Hearn 2004, p. 10-11). It is possible then that fraternalism works to reinforce the masculinity of the job, and has an impact on the low levels of women in the workplace. It is, however, quite clear that this fraternal workplace culture aids in management’s appropriation of surplus. The above worker also points to another effect of working and living with a small isolated group of predominantly male coworkers of a similar age: that of conformity.

Related to the fraternalism of exploration camps is the pressure for workers to conform. Although not necessarily a gendered phenomenon, the work of Stephan Jones on the economics of workplace conformity is applicable in the gendered workplace of mineral exploration. Jones (1984) argues that the level of worker effort is not a purely individual utility maximizing decision, but rather is also dependent on social factors in the workplace. He argues that workers will often exert an amount of effort in concert with their coworkers, even if that is not individually optimal

(Jones 1984). He claims that while workers, as economic agents, still engage in “calculating avarice,” they are not immune from social influences that may push them to act in ways contrary to pure material interest (Jones 1984, p. 103). Already this begins to ring true given what is known about the self-exploiting behaviour of exploration workers and their propensity to work harder and more dangerously than strictly required with no apparent economic incentive. Jones (1984) postulates that workplace culture and norms are upheld due to the perceived costs to reputation should an individual worker resist conforming, even when there are specific and apparent economic gains to be had from non-conformity. The key is that in the right circumstances it is how workers feel they are perceived by their peers, rather than the economic conditions, that matters most to workers and is the most important motivator (Edwards & Nicoll 2004; Jones 1984).

Applying this theory of workplace conformity specifically to the exploration camp setting means that the social forces pushing towards conformity are at least partially derived from working class masculine expectations. Masculine ideology is in itself, independent of the workplace, a conforming force in all men’s lives because other men are complicit in its constructs and men exist in hierarchical social relationships with one another (Hogan & Pursell 2008). Conformity with hegemonic masculinity promises status (Hogan & Pursell 2008) whereas men who do not conform to dominant models of masculinity are sanctioned and devalued (Paap 2006). Collinson and Hearn (1994) argue that men often try to build informal workplace relationships based on shared masculine interest and common values. Within these informal relationships men are often concerned with identifying with other men in the “in-group”

(Collinson & Hearn 1994). Illustrating this in mineral exploration camps is one worker's explanation of the pressure to perform derived from the judgement of coworkers:

Well I think there was just an awareness at some point throughout the company, or at least within the crews, of who was pulling their weight or not. And even though there was no actual structural incentive ... there was just a kind of culture of success or getting the job done according to our instructions. There was also a certain loyalty to the company and everyone sort of generally felt that they wanted to do well for the company, so there was a sense that doing a bad job was letting other people down and looked bad upon yourself, so there was a sense of shame ... if you did. (Participant 1)

This worker touches on a number of factors here including the working class masculine ideology of "getting the job done," the loyalty to the crew that characterizes fraternalism at work, and the social pressure to perform in the prescribed way or risk losing standing in the eyes of one's peers. The culture of exploration is one of extra effort and risk taking, and to do otherwise is to be seen as a "bad" worker and by extension, a bad person and shameful. In the Foucauldian sense, that the normalized subject is a subject that normalizes others (Barker 1998/2001) is apparent here. Jones (1984) also suggests that the workplace customs that exist today, such as the self-exploitation and willingness to face danger of samplers, can be accumulations of responses to past social and material circumstances. This theoretically could support the idea that linkages to the mythic frontier past of the mining industry could still influence the masculine culture today.

A relatively straightforward argument is that the rates of conformity are higher when workers are in social situations (Jones 1984). When this concept is brought to the context of remote camp-based work it suggests that the pressures to conform may be heightened compared to those of more standard workplaces as a result of the weeks or months spent away

from home almost exclusively in the company of their coworkers and completely isolated from any social influences outside of the workplace. Other than the occasional e-mail from satellite linked camps or phone calls from town on rare days off, workers have no access to non-work related social networks such as friends or family to provide an alternative to the culture of the workplace. The workplace identity is monolithic in a camp situation as the workplace is everywhere and exists at all times. Thus, the social and cultural costs of non-conformity to workplace norms are inescapable and the homogenizing effect of workplace culture arguably more powerful. An example of this power is shown by the remarks of one worker when asked if he felt the dangerous situations he put himself in while sampling were worth it in hindsight: “No. No, not really. But being out on that crew and being in that mentality, I could see myself slipping into that quite easily again,” (Participant 4). Another worker spoke of the shame in being unable to meet the group expectations of high production even in the face of insurmountable obstacles:

Some legitimate reasons [for not taking a sample] would be it was just impassible terrain: there was a cliff that you could just not have got the sample. Or another would be that the ground is utterly frozen and you can't even cut into it with your pickaxe. And so people, myself included, who sometimes had a lot of [missed samples] ... would look really bad, and you would feel bad, because you would be frowned upon for having had a bad day. (Participant 1)

The fraternal culture of pushing each other to perform and the over-arching working class masculine ideology of indifference to danger in the process of hard work create a conforming force pushing workers harder than would otherwise be in their own self-interest. Like the related factor of fraternalism, it is clear how management benefits from this pressure to conform to masculine ideals of hard work despite harsh conditions. When a participant who had worked as a camp supervisor was asked if he thought that there was workplace cultural buy-in

or conformity which created worker commitment to hard work despite low supervision he responded simply: “definitely.”

VIII. Worker Autonomy as a Managerial Strategy of Exploitation

In this section, questions about the role of management will be re-examined in light of what has been asserted about the nature of labour effort in geochemical sampling. With the working class wilderness based masculinity that motivates samplers in mind, how management helps to shape and sustain this workplace culture of self-exploitation through a form of responsible autonomy will be described. Taking the concept of responsible autonomy a step further, the section closes with the identification of governmentality in the geochemical sampling workplace and the internalization of managerial control by the workers.

Gendered Responsible Autonomy

The natural challenges that the labour process of mineral exploration presents for direct control methods of management mean that some form of responsible autonomy is a managerial necessity almost by default. However, regardless of the limited feasibility of direct control, a former camp supervisor states a preference for a management style that provides more autonomy to workers anyway:

I don't believe in running programs with an iron fist like some others. I think that's one aspect of running programs: you're not constantly trying to micro-manage and boss people around. I found that if I [do not] do that, people respect [me] right off the bat.
(Participant 2)

Perhaps related to the power afforded workers by the practical limitations against direct control methods inherent to geochemical sampling, this supervisor has, through experience, found a less coercive form of management works best. Indeed, Friedman (1977) argues that lowering

direct control can increase authority over workers given the nature of worker resistance to such methods. In a sense, the misbehaviour by Ackroyd's (2012) workers in the fight for autonomy is circumvented by providing that autonomy.

At its core, the management strategy employed in exploration camps requires the generation of worker consent. Responsible autonomy allows for consent to flourish where direct control strategies, which highlight the coercive elements of capitalist employment relations, can break it. As Burawoy (1979/1982) points out, the more tightly controlled the labour process, the more likely it is for consent to breakdown. As one former camp supervisor explains, beginning with his hiring process, he is searching for workers who do not need to be coerced into working hard:

I think with that is just making sure you're hiring the right people: people who want to be there. As well as setting up an atmosphere where people don't see this as: "Oh this is work, I don't really want to do it." So just having all your subordinates, I guess, just "stoked" to work and be on your program. (Participant 2)

Similarly to Burawoy's description of worker consent, Friedman explains that the goal of responsible autonomy "is to have workers behave *as though* they were participating in a process which reflects their own needs, abilities, and wills, rather than one of accumulation and profits [emphasis in original]," (Friedman 1977, p. 101). Although Friedman's own account of responsible autonomy is a non-gendered analysis, for geochemical sampling the masculine culture and subjectivities of the job inform the way samplers approach their autonomy resulting in behaviour that helps support and achieve management's desired outcomes. Though this workplace masculinity is highly self-sustaining and reinforcing by nature, employers still have an

impact on shaping its character and this is illustrated again by a description of a former supervisor's hiring process:

I would rather hire someone who seems to be really easy going and easy to get along with over someone who has a bit more experience. Because camp life is totally based on the atmosphere. If people get along it's usually a happy time. So I think personality plays a big role. (Participant 2)

Because the difficult conditions and remoteness of the work limits the potential pool of workers employers can draw from it makes sense for them to be careful to hire workers that will quickly and easily conform to the workplace culture. Such workers will theoretically be of lower risk to exploit their autonomy in resistance to management's demands. Here the participant identifies subjectivity over work experience as taking precedent in hiring. Stephan Jones' (1984) research on workplace conformity provides an analogy based on the hiring practices of a Tennessee based Nissan plant in the early 1980s. In this case the search for "good working tradition," caused Nissan to hire many less skilled workers over more skilled options because they appeared better suited to Nissan's desired workplace culture.

Related to a potential worker's likelihood of conformity to the workplace culture is also a perceived ability to handle the hardships of remote wilderness work. For all employers in jobs that contain poor or difficult conditions it is in their best interest to choose workers favourably disposed to seemingly adverse working conditions (Rozen 1991). This is even more crucial for jobs employing responsible autonomy style management systems, and attempts to identify potential workers' ability to cope are seen in this former supervisor's description of his worker selection process:

Usually the guys who have been out in the wilderness are good hires, because they have some sense of what could go wrong or they're aware of what the conditions will be like. Guys who've never done work, straight out of, say, school, or have only been working in the city, those guys usually tend to be the complainers I've found. Just 'cause they don't expect to be living in a canvas tent for six weeks, shitting in a hole. (Participant 2)

In this case the participant makes a clear distinction between those he perceives as able to handle the challenges of a wilderness work setting, and less tough and capable urbanites. This shows that beliefs about the uncommonness of being able to work in the wilderness and the value of having successfully had that experience are carried not only by workers, but management as well. In other words, there is a gendered element to worker selection as employers are looking for workers who show signs of possessing the wilderness masculine virtues also valued by workers in the industry.

The responsible autonomy of mineral exploration exists within a context of workplace consent founded on a specific wilderness based working class masculinity. Essentially, managers are able to maintain workers' relative autonomy with confidence that, due to the specific character of this workplace masculine culture, samplers will eagerly self-exploit without the need for coercion or surveillance. It is therefore, somewhat paradoxically, the very autonomy that workers are afforded (due to both the difficulty of direct control and the active choices of management policy) that allows workers to self-exploit in the quest for masculine affirmation. It is through the managerial exploitation of gender ideologies (Smith 1994), that they have found a "less coercive [way] of managing the 'internal' problems of labour and production," (Kerfoot & Knights 1993, p. 666) of resistance and misbehaviour. This is highlighted by the safety risks samplers take at work. On one hand they are informed formally of official safety expectations,

but when given the freedom to act without surveillance or direct control, they often choose to act in unsafe ways to accomplish their work as dictated by the masculine workplace culture. This phenomenon, also common to the building trades (Ness 2012; Paap 2006), is illustrated by the following account:

It wasn't an expectation from the crew boss that you would take [dangerous situations] on. It was sort of a personal expectation that: "Hey, I'm not supposed to do this, but I know I can physically tackle it anyways." Like river crossings, for instance, are kind of frowned upon if the river's fast moving. And gauging it, it's: "Well, I know physically I could ford that," and there were a few instances where we did. (Participant 4)

In this excerpt the worker admits to taking on dangerous terrain on his own initiative. This is in-line with the form of masculinity that exists in exploration. He also prefaces this by making specific note that it was not the expectation of the crew boss to take these risks. However, he also stated that if a sample was not collected due to what the worker deemed to be unsafe terrain, the crew boss would check that route the next day to make his own risk assessment. This suggests that although there may not have been an official expectation to take on dangerous terrain, refusing to do so brings down extra scrutiny upon the worker, calls the trust between worker and crew boss into question, and jeopardizes the worker's autonomy. Bearing this in mind, rather than a situation where risk taking is actively discouraged, the worker described an informal policy of "don't ask, don't tell," (Participant 4).

Further confusing the role of formal safety policy versus informal expectations are reported incidents of crew bosses themselves taking these same risks. As one worker reported:

The project manager who was also my crew boss would say: "We shouldn't even be going in there. If you don't feel comfortable, don't do it. It's not worth dying for a

sample.” And the same day that he gave us this speech he got cliffed out¹³ and had to be saved by someone descending a rope to him and was basically pulled out of the cliff, because he himself pushed himself way too far into a dangerous situation. (Participant 1)

This illustrates two important points: that there is a discord between official safety procedures and unofficial expectations, and also that crew bosses are complicit in the workplace culture of wilderness based masculinity. This risk-taking behavior of mineral exploration crew bosses, however, is not unexpected because like the foreman of early 20th century Ontario logging camps studied by Ian Radforth (1987), they are most often previous crew members promoted from the ranks after having gained the respect of both co-workers and management. This harkens to the fraternalism that makes up a key component of the particular masculinity of the work. Crew bosses, are the most direct representative of management and are also seen as part of the team by workers. In this sense there is a fraternal note in that management “engages in the pretence of equality for the purpose of securing instrumental gain,” (Kerfoot & Knights 1993, p. 670). This is illustrated well by the words of one worker describing his relationship with management:

We weren't out to, like, screw-over “the man” because we weren't really working for “the man”. We were working for a very small company. And everyone was trying to do their part to do good at their work because you didn't have to screw them over, it wasn't like working at McDonalds or a huge union job building a huge hospital and seeing who can go to work and not work. (Participant 3)

¹³ Being “cliffed out” is a workplace slang term in mineral exploration describing the situation in which someone has attempted to ascend or descend a cliff, but has become stuck part way, unable to get up or down.

That this worker characterizes his relationship with his employers as anything but adversarial indicates just how effectively the management strategy of gendered responsible autonomy works to foster worker consent in this context.

Governmentality

The diffusion of resistance through worker subjectivity and internalization of management imperatives suggests Foucauldian notions of power. It is often argued that in a Foucauldian sense “the dominant mode of power in modern institutions is one in where workers are placed under constant potential surveillance,” (Iedema, Rhodes, and Sheeres 2006, p. 1113). This creates self-disciplining behaviour because workers are made to believe that they are always at risk of being watched and thus act as though they always are. In Foucault’s own words, this system makes: “surveillance ... permanent in its effects, even if it is discontinuous in its action,” (Foucault 1975/1995, p. 201). In the modern context this type of management is often identified in call centres as in the work of Bain and Taylor (2000).

However, the vast array of controls and data collection in the work situations of intense surveillance of call centres is indicative of an ongoing struggle between management and workers (Bain & Taylor 2000). The obvious differences between this example and geochemical sampling is that not only is this kind of surveillance not feasible in sampling, the kind of resistance it is meant to manage is also absent. Despite this, disciplinary power in the geochemical sampling workplace still functions in the automatic way similar to that of workplaces under “the unverifiable probability of surveillance” (Barker 1998/2001, p. 59). There is a hint of this in exploration as described by a worker:

At the beginning, before trust was established among newer samplers, the crew boss would occasionally open samples and check the actual dirt itself and kind of corroborate what the notes said the dirt was versus what the dirt [really] was. (Participant 1)

There are clues here pointing to a more total kind of control going on here than in workplaces disciplined by a theoretically panoptic gaze. This worker recognizes that once trust is established, there is less scrutiny, that the risk of being caught misbehaving decreases. Therefore it does not seem to be the risk of surveillance that disciplines worker actions. As Foucault states, “the perfection of power should tend to render its actual exercise unnecessary,” (Foucault 1975/1995, p. 201). Through a management strategy that creates and fosters a workplace where a masculine culture of consent and self-exploitation can thrive, a kind of governmentality is established where workers “ever more actively regulate their own conduct,” (Edwards & Nicoll 2004, p. 164) negating the need for ongoing surveillance. In a most literal sense, samplers are “caught up in a power situation of which they themselves are the bearers,” (Foucault 1975/1995, p. 201). Even though workers *know* they are very poorly monitored they act as though they are, not through fear of a panoptic gaze from management, but due to a deeply internalized subjective discipline to the norms and expectations of a specific workplace culture. This system of worker discipline and control, due to its basis on worker subjectivity, is invisible to workers, in other words: it is hegemonic. With this in mind, scrutiny of new workers’ samples by managers reveals itself to be not just about ensuring competency or maintaining the continuous threat of surveillance. Instead it can be seen as actively managing a break-in period until the worker demonstrates sufficient conformity to and internalization of the cultural norms of the workplace or is identified as an outsider and someone who does not belong.

Through this system, management gets an enthusiastically self-exploitative workforce that requires very little monitoring or coercion while workers get the autonomy that forms a necessary part of the wilderness based masculinity. This autonomy allows workers to confront the dangers and challenges of the job as rugged and masculine individuals, thus providing workers with the affirmation of strength and value sought by working in the wilderness and reducing the requirement for monitoring and coercion under circumstances where they are impractical. Increasing management's control even for the purposes of ensuring safer work practices would erode this autonomy and threaten worker ability to affirm their masculinity against nature, and thus the basis of their consent.

IX. Conclusion and Discussion

This paper examined the question of what motivates geochemical samplers, as a workforce under little coercive pressure or economic incentive to perform, to work not only hard, but often dangerously. Explanations based on direct control and employment insecurity were both found to be insufficient in explaining the behaviour of these workers. In the former case it was demonstrated that the remote, decentralized, and variable workplace limited the effectiveness of both direct and indirect forms of supervision. Relatedly, discipline meted out by management was reported by participants to be relatively superficial. In the latter case, it was argued that the effects of insecurity on geochemical sampler labour effort are inconclusive. In some cases participants acknowledged an incentive to work harder based on either maintaining current employment or obtaining more in the future. In other cases, participants pointed to the structural nature of insecurity in mineral exploration, suggesting that increased labour effort would have little to no effect on job security. Instead, consent generated through the internalization of a working class masculine subjectivity contingent on specific circumstances of geochemical sampling was revealed as the key motivator for workers. This masculinity is composed of three primary elements: it is working class, it is based on a wilderness context, and it is fraternal. It is this amalgamation of being hard manual work, taking place in an environment seen as an ultimate test of masculinity, and being done among other men in isolation from the rest of society that forms this unique and seductive kind of masculinity.

It is due to this unique culture of hard work, wilderness, and fraternalism that the autonomy provided workers by the inherent challenges of supervision in this context results in more work, not less. Managers employ a form of responsible autonomy dependent on this

gendered identity held by samplers with confidence that their workers will work hard and enthusiastically. In this case, the suggestion by Vicki Smith (1994) that the bases of consent and cooperation may be gender specific ring true. Workers themselves embrace what might otherwise be seen as exploitative and undesirable working conditions as a source of masculine affirmation with a perceived authenticity seldom found in more urban settings. Paradoxically, it is the dangerous situations that samplers face that might cause an observer to question why they do the work at all that gives the work the intrinsic value samplers seek and thus manufactures their consent. The freedom from scrutiny these workers are afforded allows them also the freedom to self-exploit and challenge themselves in dangerous situations that in a more well monitored context might be challenged by management looking to avoid workplace injury. In a sense, samplers are given enough rope to hang themselves.

It should be noted that the findings and conclusions drawn about worker motivation and labour effort in this paper are context specific. It is the specific circumstances of largely unsupervised, male dominated, manual work that occurs in an isolated wilderness setting that produces the kind of workplace culture detailed in this paper. Although similar workplace cultures may certainly exist in other contexts, it is unclear what the effects of removing one of the key contingent elements that characterizes the workplace culture of geochemical sampling would be. For instance, would workers behave similarly if the work was done in a factory rather than a wilderness setting or if there were more women than men in the workplace? However, this is not to say that the findings of this paper apply *only* to geochemical sampling as there are other jobs within mineral exploration, and the resource sector in general, that theoretically occur under similar conditions; an example would be timber cruisers in the forestry sub-sector.

This study represents something of a beginning in exploring the workplace cultures of work under these particular conditions. Further research on the motivation of remote workers like geochemical samplers would likely find the perspectives of women samplers extremely useful in identifying issues that among only male participants may appear as “common sense”. However, the scope of the paper did not allow for the incorporation of this perspective, undoubtedly to its detriment. Another valuable perspective missing from this paper is that of injured workers. Given the indifference and even embracing of danger by some participants, it would be valuable to see if and how those views change after that danger has been realized as injury. Also missing from this paper are analyses of the impacts of worker youth and race on the workplace culture. How these different subjectivities affect the composition of the workplace culture remains unclear. Further study on this topic or similarly isolated workforces would be much improved by incorporating these different elements into their analyses.

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Appendix A Certificate of Ethics Clearance

 <small>Inspiring Innovation and Discovery</small>	McMaster University Research Ethics Board (MREB) <small>c/o Research Office for Administrative Development and Support, MREB Secretariat, GH-305, e-mail: ethicsoffice@mcmaster.ca</small> CERTIFICATE OF ETHICS CLEARANCE TO INVOLVE HUMAN PARTICIPANTS IN RESEARCH		
Application Status: New <input checked="" type="checkbox"/> Addendum <input type="checkbox"/> Project Number: <input type="text" value="2014 076"/>			
TITLE OF RESEARCH PROJECT: <div style="border: 1px solid black; padding: 5px; min-height: 40px;"> Remote Control: A Case Study of Mineral Exploration and Worker Autonomy </div>			
Faculty Investigator(s)/ Supervisor(s)	Dept./Address	Phone	E-Mail
W. Lewchuk	Labour Studies	27293	lewchuk@mcmaster.ca
Student Investigator(s)	Dept./Address	Phone	E-Mail
R. Claus	Labour Studies	905-379-435	clausrj@mcmaster.ca
The application in support of the above research project has been reviewed by the MREB to ensure compliance with the Tri-Council Policy Statement and the McMaster University Policies and Guidelines for Research Involving Human Participants. The following ethics certification is provided by the MREB: <input type="checkbox"/> The application protocol is cleared as presented without questions or requests for modification. <input checked="" type="checkbox"/> The application protocol is cleared as revised without questions or requests for modification. <input type="checkbox"/> The application protocol is cleared subject to clarification and/or modification as appended or identified below:			
COMMENTS AND CONDITIONS: Ongoing clearance is contingent on completing the annual completed/status report. A "Change Request" or amendment must be made and cleared before any alterations are made to the research.			
Reporting Frequency:		Annual: <input type="text" value="May-15-2015"/>	Other:
Date: <input type="text" value="May-15-2014"/>		Vice Chair, C. Anderson: 	

Appendix B

Email Recruitment Script: Initial Contacts

E-mail Subject line: McMaster Study - Remote Control: A Case Study of Mineral Exploration and Worker Autonomy.

I am inviting you to participate in an interview to be conducted either in-person or over Skype/telephone that will take approximately 45 minutes to 1 hour. As part of the graduate program in Work and Society at McMaster University, I am carrying out a study investigating workers that do their jobs under low levels of supervision in remote conditions, and mineral exploration workers form an ideal case study for these specific working conditions.

I'm interested in learning about the motivations and incentives experienced by workers as they go about accomplishing the various tasks that make up their work day including, issues of occupational health and safety, when they are under little or no managerial supervision, particularly workers that are not paid on a production basis (such as piece rates).

I have chosen to contact you because I am aware that you have work experience in mineral exploration and have spent some time working that job in remote, decentralized areas under conditions of low supervision. Whether you choose to participate or not, it would be useful if you could provide the contact information of other mineral exploration workers that have worked in remote areas and may be interested in participating. To protect the interests of all parties, only with your express consent will I use your name when communicating with the contacts you provide, and I will not disclose who of the contacts you provide choose to participate.

Participation is completely voluntary and it is expected that there will be minimal risks to you participating in this interview. You can stop at any time. Also, please do not feel pressured to participate just because we know each other; if you choose not to participate I will still have enough participants to complete the research, so do not feel obligated to participate for purposes of the success of myself or the project. I have attached a copy of a letter of information about the study that gives you full details for you to review. You can give your consent verbally prior to the beginning of the interview should you choose to participate. This study has been reviewed and cleared by the McMaster Research Ethics Board. If you any have concerns or questions about your rights as a participant or about the way the study is being conducted you can contact:

The McMaster Research Ethics Board Secretariat
Telephone: (905) 525-9140 ext. 23142
c/o Research Office for Administration, Development and Support (ROADS)
E-mail: ethicsoffice@mcmaster.ca

I would like to thank you in advance for your time and consideration.

If you would like to participate, after the proper consent has been established for your participation and any questions/concerns of yours have been addressed, we can arrange a date and time for an interview via my e-mail address: clausrj@mcmaster.ca

Appendix C

Email Recruitment Script: Subsequent Contacts

E-mail Subject line: McMaster Study - Remote Control: A Case Study of Mineral Exploration and Worker Autonomy.

I am inviting you to participate in an interview to be conducted in-person or over Skype/telephone that will take approximately 45 minutes to 1 hour. As part of the graduate program in Work and Society at McMaster University, I am carrying out a study investigating workers that do their jobs under low levels of supervision in remote conditions, and mineral exploration workers form an ideal case study for these specific working conditions.

I'm interested in learning about the motivations and incentives that workers experience they go about accomplishing the various tasks that make up their work day, including issues of occupational health and safety, when they are under little or no managerial supervision, particularly workers that are not paid on a production basis (such as piece rates).

I selected your name from a list of people provided to me by another participant (*I will name the provider if that initial respondent consents*) as part of a respondent driven sampling method helping to identify current or past mineral exploration workers to contact for the sole purposes of inviting them to participate in this study. It is important to note that in order to preserve your anonymity your participation will not be disclosed to the individual who identified you as a potential participant.

Participation is completely voluntary and it is expected that there will be minimal risks to you participating in this interview. You can stop at any time. Also, please do not feel pressured to participate just because we share a mutual acquaintance; if you choose not to participate I will still have enough participants to complete the research, so do not feel obligated to participate for purposes of the success of myself or the project. I have attached a copy of a letter of information about the study that gives you full details for you to review. You can give your consent verbally prior to the beginning of the interview should you choose to participate. This study has been reviewed and cleared by the McMaster Research Ethics Board. If you any have concerns or questions about your rights as a participant or about the way the study is being conducted you can contact:

The McMaster Research Ethics Board Secretariat
Telephone: (905) 525-9140 ext. 23142
c/o Research Office for Administration, Development and Support (ROADS)
E-mail: ethicsoffice@mcmaster.ca

I would like to thank you in advance for your time and consideration.

If you would like to participate, after the proper consent has been established for your participation and any questions/concerns of yours have been addressed, we can arrange a date and time for an interview via my e-mail address: clausrj@mcmaster.ca

Appendix D

Letter of Information/Consent

Principal Investigator:

Russell Claus, BA
Department of Labour Studies
McMaster University
Hamilton, Ontario, Canada
Email: clausrj@mcmaster.ca

Research Supervisor: Dr. Wayne Lewchuk

Purpose of the Study:

You are invited to take part in this study on workers that do their jobs under low levels of supervision in remote conditions, and I have chosen mineral exploration workers as a case study for these specific working conditions.

I am doing this research for an MA thesis and hope to learn about the motivations and incentives experienced by workers as they go about accomplishing the various tasks that make up their work day, including issues of occupational health and safety, when they are under little or no managerial supervision.

Procedures involved in the Research:

Your participation will consist of taking part in a single one-on-one interview to be conducted in-person or over Skype/telephone that will take up to approximately 45 minutes to 1 hour. With your permission I will audio-record the interview as well as take hand written notes.

I will be the person conducting the interview and I will be asking you questions about your experiences on the job and knowledge about the process of working in mineral exploration. For example I will ask you if there are any specific procedures that your employers required their workers to follow in accomplishing their assigned tasks and how employers ensured their directions were followed.

I will ask you for some demographic/background information like your age when you worked in mineral exploration and how many years of experience you have doing this kind of work.

Potential Harms, Risks or Discomforts:

The risks involved in participating in this study are minimal. You may be concerned about how others, such as employers, may react to what you say in the interview, however your

participation will be confidential and I describe below the ways in which I will protect your anonymity.

You may also feel uncomfortable or embarrassed discussing events or examples from your work such as those regarding unsafe practices. With this in mind, be aware that you do not need to answer any questions that you do not want to or that make you feel uncomfortable. You can also withdraw from participating at any time.

Potential Benefits:

The research will not benefit you directly. However, there may be indirect benefits for you and other workers if the results of the study lead to an improvement in working conditions.

Possible benefits community of the study to the academic is a better understanding of the relationship between workers and management in jobs where supervision is difficult or impossible.

Relatedly, there is also the potential to learn more about worker actions and incentives regarding occupational health and safety in conditions of low supervision. This may provide some guidance into formulating ways to keep remote workers safer on the job.

Confidentiality:

You are participating in this study confidentially. I will not use your name or any information that would allow you to be identified. When directly referencing something you have said in the interview a generic pseudonym will be used, such as “worker 1”. No one but me will know whether you participated unless you choose to tell them.

Also, to ensure that you cannot be identified based on the references you make concerning company or work project specifics, company names will also be removed and project details left general.

Every effort will be made to protect your confidentiality and privacy and as stated I will not use your name or any information that would allow you to be identified. However, we are often identifiable through the stories we tell. Please keep this in mind in deciding what to tell me.

The information you provide will be kept in a locked cabinet where only I will have access to it. Information kept on a computer will be protected by a password and, if necessary, transferred by a password protected portable USB drive. Once the study has been completed, the data will be maintained for a period of 6 months after my thesis defence, after which point it will be destroyed.

Participation and Withdrawal:

Your participation in this study is voluntary and if you decide to be part of the study, you can stop the interview for whatever reason, even after signing the consent form or part-way through the study. If you decide to withdraw, there will be no consequences to you. In cases of withdrawal, any data you have provided will be destroyed unless you indicate otherwise. If you do not want to answer some of the questions you do not have to, but you can still be in the study.

You can withdraw from this study up until approximately August, 2014, when I expect to be submitting my thesis.

Information about the Study Results:

I expect to have this study completed by approximately August, 2014. If you would like a brief summary of the results, please let me know how you would like it sent to you.

Questions about the Study:

If you have questions or need more information about the study itself, please contact me at: clausrj@mcmaster.ca.

This study has been reviewed by the McMaster University Research Ethics Board and received ethics clearance.

If you have concerns or questions about your rights as a participant or about the way the study is conducted, please contact:

McMaster Research Ethics Secretariat
Telephone: (905) 525-9140 ext. 23142
c/o Research Office for Administrative Development and Support
E-mail: ethicsoffice@mcmaster.ca

Appendix E

Oral Consent Script

Consent questions:

- First of all, have you read the information presented in the information letter you were sent about the study being conducted by myself of McMaster University?
[If yes, proceed to next question.]
[If no, inform the participant that they must read the Letter of Information/Consent to proceed]
- Next, do you have any questions about your involvement in this study or would you like any additional details?
[Answer questions.]
- Finally, do you agree to participate in this study knowing that you can withdraw at any point with no consequences to you?
[If yes, begin the interview.]
[If no, thank the participant for his/her time.]
- Next, do you agree that the interview can be audio recorded?
- Next, do you agree that I, the interviewer, can take handwritten notes?

Appendix F

Interview Questions Guideline

Information about these interview questions: This gives an idea what I would like to learn about the process of mineral exploration work. Interviews will be one-to-one and will be open-ended (not just “yes or no” answers). Because of this, the exact wording may change a little. Sometimes I will use other short questions to make sure I understand what is being said or if I need more information such as: “*So, you are saying that ...?*”, to get more information (“*Please tell me more?*”), or to learn what participants think or feel about something (“*Why do you think that is...?*”).

The following bullet-points are not necessarily an interview script for myself, but highlight the questions I would like to have answered. In some cases, I expect participants to offer the answers to some of these questions as part of answers to broader questions. However, in cases where participants’ own initial answers do not cover my specific items of interest, I will draw upon the lists below to get more detailed information.

1) Information about work experience:

- Can you tell me some of the general details of your work experience in mineral exploration?

Such as:

- How many seasons have/did you work in mineral exploration?
- How old were you when you worked the job?
- How did you get the job?
- How would you characterize the stability of the job, in terms of steadiness of work and employment?
- About how much of your time was spent working in remote worksites?
- What was/is the nature of your employment? (Full-time, part-time, contract, seasonal, etc)
- How were you paid for the work? For example, were you paid hourly, daily, by piece rate, or something else?
- What is/was your job title(s)? (Geo-tech? Geologist? GIS? Etc.)
- What kind of projects do/did you work on?

2) Workplace Organization:

- How would you characterize the size of the company(ies) you work(ed) for, relative to the rest of the industry?
- How was your company organized in terms of hierarchy?
- About how many workers are/were usually assigned to the projects you work(ed) on?
- What kind of shift rotation are/were you on during a field season?
- Is/was the company publically traded? Unionized? Co-operative?

3) The labour Process:

- Can you walk me through a typical workday when you were working in the field?

- How long is/was your typical work day?
- What sort of tasks did you need to accomplish during a day.
- Was there a specific way you were supposed to do your work? For example were there any specific procedures for collecting samples?
- What sort of equipment did you use and for what purposes?
- Are there any production goals you are required to meet in a given time period?
- Were/are you expected to do work when you are back in camp after doing field work during the day?

4) Worker Supervision and Discipline:

- When accomplishing your tasks either in camp or in the field, do/did you work alone or in groups?
 - If group, what size?
 - If group, what was your position within the group (eg. Supervisor/subordinate)
- How is/are workers supervised? In other words, how does management make sure work is done and done the way they want it?
 - Do you think these supervision methods are effective?
- Without using names, are there instances or examples you can recall where workers didn't do what was asked of them by management? (ie. Production targets, work procedures. Etc)
 - If yes, why do you think the workers did not do what was asked of them?
 - Did management become aware? Why or why not?
 - If no, why do you think management is so effective at getting workers to do what they want?

5) Health and Safety:

- What about health and safety?
- Did/does your company have written health and safety documents?
- How often were/are these documents reviewed?
- What sort of health and safety training did you receive?
 - Were there any special programs for new/young workers?
- What sort of practices or procedures are workers supposed to do to comply with health and safety policies at work?
- How is health and safety enforced?
- Again, without using names, can you recall any instances where workers didn't follow safety policy or otherwise did things that may be considered unsafe at work?
 - If yes, why do you think workers did this?
 - And as follow-up, what was the outcome of this unsafe work?
 - If no, why do you think workers were so committed to following safety procedures?
- Do you think the health and safety programs, including the policy itself and enforcement practices were sufficient? Why or why not?

6) Wrap Up:

- Is there something important I forgot? Is there anything else you think I need to know about working in mineral exploration, particularly about supervision?