The Social Construction of the Metallic Mining Industry:
The Divergent Cases of the Mining Moratorium Bill (Wisconsin) and the Permit Streamlining Bill (Minnesota).

by
A. Greer Harewood

A WRPM Project Paper

submitted to

Oregon State University

in partial fulfillment of
the requirements for the
degree of
Master of Water Resource Policy and Management

Abstract

Hardrock mining is associated with severe environmental and economic costs. Of particular concern is acid mine drainage which has contaminated several thousand kilometers of streams across the United States representing a formidable danger to watershed health. Given the high risks of this activity, ensuring high regulatory standards may be an important quality control measure to protect areas vulnerable to mining impacts. With this in mind, this study sought to understand the factors that led to two different policy approaches toward mining permits - the Mining Moratorium bill in Wisconsin and the Permit Streamlining Bill in Minnesota. Schneider & Ingram's Social Construction of Target Populations framework argues that a group's social construction and political power help determine what public policy approach is used to modify its behavior. In line with the framework, it was hypothesized that the mining industry enjoyed a more positive social construction in Minnesota than in Wisconsin. Content analysis was used to determine whether or not there was a difference between 1) the social construction of the mining industry in Wisconsin during the 1997-1998 legislative biennium that passed the Mining Moratorium bill and 2) the social construction of the mining industry in Minnesota during the 2011 legislative session that (introduced and) passed the Permit Streamlining Bill (HF1). Content analysis of newspaper articles collected from both time periods revealed that the social construction of the mining industry was indeed more positive in the Minnesota dataset than in the Wisconsin dataset.

Master of Water Resource Policy & Management Essay of Alessandra Greer Harewood presented on June 15th, 2012

APPROVED:

Denise Lach, representing Sociology

Dwaine Plaza, representing Sociology

Lori Cramer, representing Sociology

Alessandra Greer Harewood, Author

Acknowledgements

There are so many people to thank for helping me complete this research and essay. Some of you have been written into Schneider and Ingram's (1993) framework in the diagram below. For those of you cast in categories other than advantaged, I trust that your individual senses of humor will allow you to appreciate the (good-natured) joke as it was intended. Jokes aside, I hold you all in high esteem.

Thank you, Dr. Lach and Dr. Plaza, for serving as major advisors and Dr. Cramer for serving on my committee. I would like to offer a special thanks to Dr. Lach, who helped me to fine tune my arguments as well as my grammar. The word "data" will forever be recognized as the plural noun it is and I shall remember to write out numbers from one to twelve in formal documents forevermore. Also – a word to anyone who should stumble upon this document - if you wish to understand the practical value of public policy theory, immediately go and speak with Dr. Lach.

Sincere thanks go to Mary Santelmann, Director of the Water Resources Graduate Program, who is an advocate for both the program as well as the individual students within it.

Last but not least, deepest appreciation go to my family and friends who love me despite my obsession with the Mining Law of 1872, acid mine drainage, and social constructions. Matthew Dupre, my husband as of April of this year, is an especially patient and kind addition to my family. He fed me gourmet meals and took me fishing – two key elements contributing to the successful completion of this program.

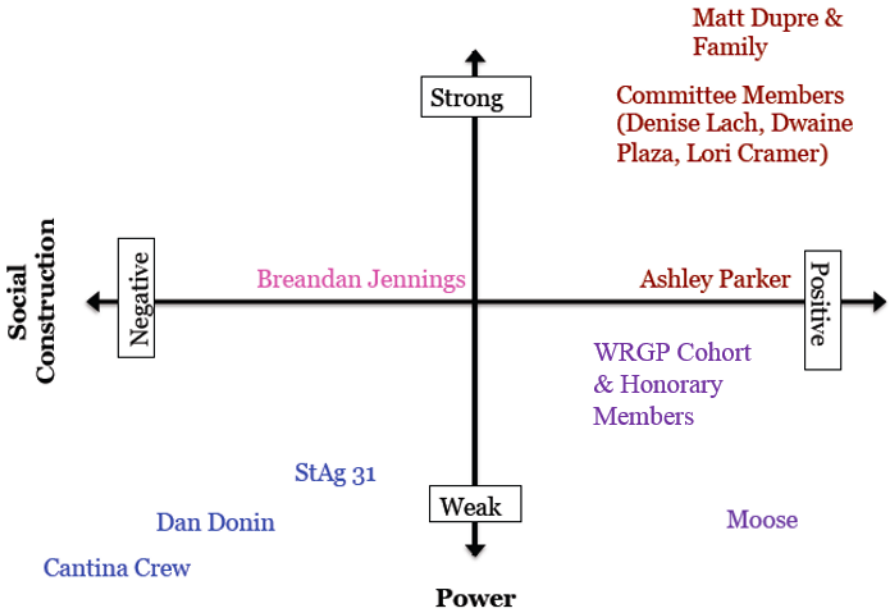

Table of Contents

1 Problem Statement: Sulfide Mining – A Water Resources Policy Problem 1

2 Literature Review 7

2.1 Theoretical Discussion: The Social Construction of Target Population 7

2.1.1 Overview – policy design theory 7

2.1.2 Social Construction – a closer look 8

2.1.3 Political Power – a closer look. 9

2.1.4 Target Population Typology 10

2.2 Demonstrated Corporate Political Power 15

2.3 Hardrock Mining 17

2.3.1 Overview 17

2.3.2 Sulfide Mining, Environmental Effects, and Other Externalities 18

2.4 National policies – legal structure 21

3 Background: A brief history of the NorthMet Mine and House Bill HF1 27

4 Methodology 32

4.1 Detecting Social Construction of the Mining Industry in Wisconsin and Minnesota 32

4.1.1 Data Collection and Sample Selection: Corpus of Texts 33

4.1.2 Unit of Analysis & Content Analysis 35

4.1.3 Themes and Codebook development 36

4.1.4 Software 37

4.1.5 Intercoder Reliability 38

4.1.6 Limitations 40

4.2 Assessing Political Power 40

4.3 Other Considerations – a note about the lack of an analysis of legislative record 42

5 Results 43

5.1 Power 43

5.1.1 Size and Wealth 43

5.1.2 Lobbyist Expenditures 45

5.2 Social Construction & Themes 47

5.2.1 Coding Overview and A Note About Data Reference Conventions 47

5.2.2 Themes - Wisconsin 47

5.2.3 Themes – Similarities and Differences in Minnesota 56
5.2.4 Comparing Documents by Code – Minnesota and Wisconsin 59
6 Discussion 62
6.1 Political resources 62
6.2 Comparing Social Constructions 63
7 Conclusion 64
8 Policy Recommendations 65
Bibliography 69
Appendix A: List of Articles Used in Content Analysis 78
Appendix B: Codebook 89
Appendix C: Positive, Negative, and Neutral code application by document. 100

List of Figures

FIGURE 1: TARGET POPULATIONS ALONG POWER AND SOCIAL CONSTRUCTION AXIS 11

FIGURE 2: ARTICLES BY CODE REPRESENTATION SEPARATED BY DATASET 60

FIGURE 3: WISCONSIN OPINION ARTICLES BY CODE REPRESENTATION 61

1 Problem Statement: Sulfide Mining – A Water Resources Policy Problem

…the rate of extraction of many geochemically scarce metals from the lithosphere has increased in excess of 3% per year through the last half century or longer and continues to do so. Because these are finite resources, it is instructive to ponder how long these extraction rates can be sustained.

- (Gordon et al, 2006, p1209)

The mining industry is not going away any time soon. Increased demand is raising the value of nonfuel minerals for uses from the built environment to batteries. In 2008, the prices of aluminum, cadmium, copper, iron, lead, nickel, and zinc reached all-time highs (Papp, et al., 2008). While global market prices dropped later that year due to the 2008-2009 recession, prices are once again on the rise. Both 2010 and 2011 showed an increase in precious metal prices, a trend that is expected to continue through 2012 (U.S. Geological Survey, 2012). The U.S. Congressional Research Service (2008) suggests that at least one driver is the rapid industrialization of China, whose Gross Domestic Product (GDP) growth rate was more than twice that of the global average. China's increase in demand has meant importing $54 billion in mineral ore, which is more than 25 times (not correcting for inflation) the amount China imported in 1995 (CRS 2008). Papp et al (2008) argue that the demand for metals will be further spurred by India's projected development needs, which in 2011 had a GDP growth rate of 7.8%, the 4th largest GDP

in the world[1], trailing the EU (first), the USA (second), and China (third) (Central Intelligence Agency, 2012).

This is not to undermine the United States' consumption habits. Based on 2008 data from the National Environmental Accounting Database, the U.S. was the largest consumer of nonrenewable energy (Lei & Zhou, 2012). As Gordon et al. (2006, p. 1214) point out, energy is tied to metal demand:

> The demand for metal resides in the services that people receive from metal and metal-containing products, e.g., housing, transportation, and electrical power. The amount of metal in use therefore depends on the level of services and the efficiency with which metal is used in providing those services. For example, attaining a specified level of illumination in a home depends on a stock of copper in power station equipment and in transmission lines; this stock can increase if more illumination is wanted and decrease if new techniques permit the same amount of power to be generated and transmitted with less copper.

Based on current technologies, if the entire world's population were to receive the same level "services" similar to those enjoyed in the United States, "the entire copper and zinc ore resources in the lithosphere and perhaps that of platinum," would be required.

---

1 This ranking is based on Purchasing Power Parity. According to the Central Intelligence Agency's Worldfact Book, "A nation's GDP at purchasing power parity (PPP) exchange rates is the sum value of all goods and services produced in the country valued at prices prevailing in the United States in the year noted. This is the measure most economists prefer when looking at per-capita welfare and when comparing living conditions or use of resources across countries."

Meeting the demand for metals is more complicated now than in the pick and shovel days; much of the high quality, surface-level ore bodies have already been depleted (Cutter & Renwick, 1999). As a result of this depletion, mining companies are turning to riskier, more costly, and more difficult methods of mineral extraction (Gedicks, 1993, p. 15; Cutter & Renwick, 1999, p. 296; Bridge, 2000; Sampat, 2006; Bertossi, 2008). At the same time, higher prices and new processing technology has made the mining (and processing) of low quality ore, a newly lucrative endeavor. In the case of copper, for example, technological innovation has made it possible to mine ores with less than 0.5% copper content for a profit. Bridge (2000) argues, however, that technological innovation is only a part of the equation. U.S. corporate law allows "transfer-pricing", which "made it possible to keep prices high enough to guarantee profits at relatively high-cost US operations, while reaping super profits from low cost mines overseas." The reason for doing this, Bridge explains, was initially to deal with higher costs related to delays in receiving a development permit (e.g. caused by environmental lawsuits). US Copper producers, for example, subsidize low-grade (and costly) operations in the United States with the surplus made from their high-grade, low cost mines located overseas through a mechanism called transfer pricing. Areas rich in even low-grade ore deposits– such as the Iron Range of Minnesota – are experiencing renewed interest in the form of increased exploration and permit submissions by mining companies (Power, 2007).

This new pressure to mine, however, has not been welcomed by everyone in the state. Environmental groups in Minnesota have been particularly alarmed by the threat sulfide mining poses to water resources (Myers, 2008; Palcich, 2011; Duluth News Tribune 2011; Shaw, 2011a; Shaw, 2011b). Sulfide mining refers not to a specific process, but the type

of ore being mined: sulfide-bearing ore. One of the primary hazards of sulfide mining is that the waste rock produces sulfuric acid when exposed to air and water (USEPA, 1994). The acid, a pollutant on its own, may also leach out heavy metals (e.g. arsenic, cadmium, silver, etc.) from surrounding rock, further contaminating surface and groundwater as it drains into the watershed (U.S. Forest Service, 1993). This phenomenon, frequently called acid mine drainage (AMD), has been estimated to have contaminated several thousand kilometers of streams across the United States representing a formidable danger to watershed ecosystems (U.S. Forest Service, 1993; Kim, Heisey, & Duel, 1982).

Despite these concerns, the Minnesota state governor signed a controversial bill into law that weakened environmental protections in March of 2011. This "Permit Streamlining Bill" (HF1) benefited industry broadly by making the permitting process more convenient for applicants. It also directly benefited the Northmet Mine, a proposed 600 million dollar copper mine to be located in the Lake Superior National Forest of Northeastern Minnesota. HF1 did so by clearing away a restrictive section of the Minnesota Environmental Policy Act (MEPA) that had required a company to have an approved environmental impact statement for any given proposed project before the state government could grant a loan or permit to help fund it. The Northmet Mine, whose EIS received an "unsatisfactory" from the United States Environmental Protection due to risk of AMD, received an illegal $4 million loan by a state agency. In addition to making the permitting process more convenient for industry, HF1 retroactively made the illegal loan to Northmet legal. Considering this policy change, and others like it, sulfide mining appears to be a physical threat to water resources that is actively being facilitated

by politics and the policy process. In other words, water pollution caused by sulfide mining is a physical consequence of a policy problem.

The Permit Streamlining Bill (HF1) is in stark contrast to another piece of legislation, aptly named the "Mining Moratorium Bill" that passed more than a decade prior in the neighboring state of Wisconsin. This regulation effectively stopped metallic mining in Wisconsin by raising the standards for permit approval. Knowing what caused the different policy approaches that led to one permissive law in Minnesota and a restrictive one in Wisconsin may be of interest to groups hoping to increase regulatory standards for mineral extraction. The social construction of target populations is a framework well suited to examining and explaining differences in policy approach and design. It will, therefore, be used in this comparative analysis of HF1 and the Mining Moratorium Bill.

The progenitors of this framework, Schneider and Ingram (1993), argue that for any group, there are two variables that strongly influence the public policy targeting it: the group's political power and social construction – where a positive social construction paired with political strength yields the most policy-allocated benefits and the least burdens. The theorists argue that differing combinations of the target population's - in this case the mining industry - political power or social construction will help explain the diverging paths of the Minnesotan legislation and the earlier Mining Moratorium Law in Wisconsin.

The mining companies investing in Wisconsin (when the moratorium law passed) and in Minnesota (when HF1 passed) are large, multi million-dollar entities. As such, they can be reasonably expected to have access to significant political resources. One might predict, then, that the mining industry enjoyed a more positive construction in

Minnesota in 2011 than it did in the late 1990's in Wisconsin. In an effort to explore this issue, this paper will evaluate and compare 1) the social construction of the mining industry in Minnesota during the 2011 legislative session that passed the permit streamlining legislation and 2) the social construction of the mining industry in Wisconsin during the 1998 that passed the moratorium bill.

.

2 Literature Review

2.1 Theoretical Discussion: The Social Construction of Target Population

2.1.1 Overview – policy design theory

The social construction of target populations is a framework that has emerged from policy design theory. Policy design refers to the content or elements of policy, which Schneider and Ingram (1997) have identified as the problem definition and stated goals of the policy, the policy tools (e.g. the incentives, regulations, or symbolic gestures) intended to change behavior, the benefits and burdens to be distributed, rules and structure for policy implementation, the rationales or the implied or explicit causal link between problem statement and policy solutions, the implied or explicit assumptions about the rationales, and finally, the target population and its social construction. The theory suggests that policy is both a product and shaper of social and political processes (Ingram, Schneider, deLeon 2007). The theory considers the effect past and current policy designs have on institutions, culture, society, and especially on the groups (i.e. target populations) who receive whatever burdens or benefits the policy distributes (Schneider & Sidney 2009). As such, the policy design approach is broad and examines the context of policy as well as its content.

The social construction of target populations (SCTP) framework places target populations at the center of policy design theory analysis. "Target populations" are specifically those groups consciously chosen by policy makers to receive the benefits or burdens distributed by a given policy (Schneider & Ingram, 1997). While there may be

unintended groups affected by the policy, only the intended policy targets qualify as the "target population" by this definition. By making target populations the focus of analysis, the framework emphasizes the observation that policy seeks to reach its goals through the modification of people's behavior (Schneider & Sidney, 2009). Whether or not this modification is through enablement or coercion depends upon the political power and social construction of the target population. (Ingram H. S., 1991; Schneider & Ingram, 1993). By simplifying the target population as a two dimensional group defined by its political power and social construction, the framework is intended to explain differences in policy approaches (e.g. incentive-based or regulatory, substantive or symbolic) left unexplained when considering "traditional notions of political power" alone (Schneider & Ingram, 1993; Ingram, Schneider, & deLeon, 2007).

2.1.2 Social Construction – a closer look

The concept of social construction has its disciplinary roots in Sociology with close ties to Blumer's (1969) symbolic interactionism. Like symbolic interactionism, the constructivist approach places special emphasis on the meaning associated with labels and the creation of those associated meanings, where people's shared understandings of the world create a set of "rules, norms, identities, concepts, and institutions" that are both created by and reflected in "politics, culture, socialization, history, the media, literature, religion, and the like" (Schneider & Sidney, 2009, p. 106). The social construction of any group is essentially an ideal type (i.e. stereotype) that attributes a normative value that is recognizable by evaluating the attributes and images typically associated with that group (Schneider & Ingram, 1993). For example, a positively constructed group may be

considered intelligent, responsible, kind, honest, and, above all, deserving of whatever benefits are bestowed upon them. A group with a negative construction might be associated with opposite descriptors (irresponsible, unkind, dishonest, and undeserving) (Schneider & Ingram, 1993).

2.1.3 Political Power – a closer look.

The SCTP describes political power in terms of political resources, where political resources include the group's size, wealth, propensity to mobilize for action, skill, group cohesiveness, and whether or not the group is "accustomed to voting, contacting public officials, and so on" (Ingram H. S., 1991; Ingram, Schneider, & deLeon, 2007, p. 101). Subsumed within Schneider and Ingram's list is the concept of political capital. Political capital "shares with other forms of capital the quality of being productive insofar as it makes possible the realization of interests, which would not be achieved otherwise," and is, "similar to social capital in that these forms of capital accumulate in relational ties" (Nee & Opper, 2010, p. 2107). The exchange of political capital involves the exchange of political favors such as votes, lobbying subsidies, campaign donations, investments, or some other form of influence or support (Shepsle & Weingast, 1987; Quinn & Shapiro 1991; Akard 1992; Hall & Deardor, 2006; Nee & Opper, 2010; Eggers & Hainmueller 2011).

2.1.4 Target Population Typology

The SCTP framework pairs the extreme values (strong or weak; positive or negative) of the two dimensions of target populations (political power and social construction) to make four basic typologies of the target population: advantaged, contenders, dependents, and deviants. The advantaged group enjoys both power (i.e. political resources & influence) and the benefits of a positive social construction (i.e. public support/political will); contenders are negatively viewed, but are nevertheless powerful; dependents are positively viewed, but have little power; and deviants have little power and are negatively constructed (Schneider & Ingram, 1993). Together, these two dimensions influence the content of a given policy - what policy tools are used, the rationale behind the policy, who receives what and when, the clarity or opacity of the language in the policy, and so on (Schneider & Ingram, 1993). While there are four basic categories, the framework recognizes that in reality, a social group will fall somewhere along a continuum of these four categories (Schneider & Ingram, 1993). Figure 1 provides a visual example of where target groups may fall along a continuum based upon Schneider & Ingram's perception of their social construction and political power. As will be discussed in Section 2.2, previous research has shown that corporations tend to enjoy several political resources (e.g. wealth, lobbyists, relational ties to elected officials, etc.). This places large mining corporations in either the advantaged or the contender category depending upon its social construction.

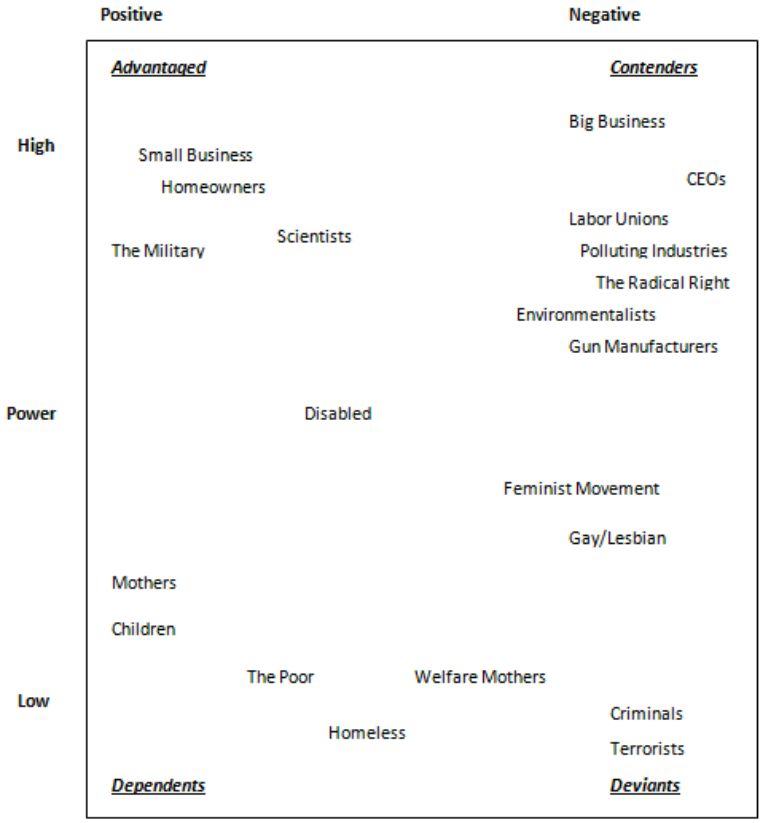

Figure 1: Target Populations along Power and Social Construction Axis (Ingram, Schneider, & deLeon 2007)

Advantaged groups tend to receive a disproportionate share of policy benefits. Policy tools used to distribute burdens to advantaged groups are rarely punitive, but tend to be incentive-based or voluntary. Their power allows them greater influence in the policy making process, while their positive public image also incentivizes politicians to act in their favor (Ingram H. S., 1991; Schneider & Ingram, 1993; Schneider & Ingram, 1997; Schneider & Ingram, 2005; Ingram, Schneider, & deLeon, 2007; Schneider & Sidney, 2009). Policies delivering benefits to advantaged groups are frequently justified as providing a universal good, which translates into public will and approval for the

policymaker (Ingram, Schneider, & deLeon, 2007; Schneider & Sidney, 2009). Ingram et al (2007) also suggest that the implementation guidelines in the policy will instruct agencies to reach out to advantaged target populations and inform them of their benefits, encourage participation and feedback from target populations, and lay the responsibility of achieving results on implementing agencies. On the other hand, burdens are difficult to prescribe to advantaged groups. When they are prescribed, the results tend to be unpredictable and more likely to be rejected or changed. (Schneider & Ingram, 1993).

Groups in the contender category have to work harder and with cunning to achieve beneficial policy. Unlike the advantaged group, contenders have a negative public image. Thus, policy makers cannot be expected to gain political capital from openly bestowing benefits to this undeserving group. This is particularly true, Schneider & Ingram (1993) point out, for elected officials needing public support to maintain office. Rather than openly praise contenders, policymakers are expected to openly criticize negatively constructed groups. Yet, policy makers are frequently beholden to contender groups because of their political power. Thus, burdens are more likely to be hard to enforce, easily challenged, or symbolic rather than substantive for contenders and policies distributing benefits to contender groups may be written in complicated language, fail to openly identify the target population, or otherwise hide the true intention of the legislation.

Because of what Schneider and Ingram (1993) coin as the "sub rosa" or secretive distribution of benefits, it is unlikely for contenders to receive the visible benefits available to advantaged groups. Ironically, open distribution of benefits to a contender

may have negative ramifications for the target group as well as the policymaker. As Schneider & Ingram (1993, p338) explain:

> During times of low public attention and high levels of [contending] group activity, policy will tend to be beneficial, although relatively low in visibility and still undersubscribed in terms of what might be needed to actually solve particular problems. When public attention increases (as it is likely to do when an unpopular group is cohesive and active), then policy may shift more toward the burdensome side.

This negative feedback cycle makes "sub rosa" behavior in the best interest of contenders because by keeping their political doings secret, they avoid public opposition that may force the hand of otherwise compliant legislators to act.

Without question, in terms of amassing policy benefits and avoiding burdens, it is in the contender's best interest to achieve advantaged standing by obtaining a positive public image. The SCTP posits that this characterization upgrade is possible because social constructions are subject to change. Social constructions have been, however, contradictorily described as both "inherently unstable" and "inherently resistant to change" (Ingram et al 2007, p. 108; Schneider & Sidney 2009, p. 106). The theory presents several points that speak to their instability. A dramatic precipitating event may, for example, alter public opinion and push a group into a different social construction (Schneider & Ingram 1993). In pursuit of a policy goal social constructions may change as groups, advocates, or policy actors vie for more positive public images. Policymakers may also reframe a subset of a previously constructed group in order to build public

support and pass legislation. This "specification" of target populations may produce a more positive or negative social construction dependent upon the result of public political debate (Schneider & Ingram 1993).

The possibility of change is more likely for groups that have a contested, weak, or previously undefined social construction (Ingram, Schneider, & deLeon, 2007; Schneider & Sidney, 2009). Normative values associated with a group may become so ubiquitous and widely shared that they are considered natural and are left unquestioned, despite evidence to the contrary (Schneider & Ingram, 1997, p. 75; Schneider & Ingram, 1993). While a new scientific finding may move a previously socially neutral group to a negative or positive construction, Schneider and Ingram (1997) have argued that scientific evidence rarely alters the status quo when faced with a strong social construction. When science agrees with the status quo, it tends to reinforce the established social construction. When it disagrees, however, it tends to be ignored (Ingram, Schneider, & deLeon, 2007).

No published study to date has applied Schneider and Ingram's framework to the mining industry. Several studies, however, have implicitly or explicitly examined the expressed power of mining companies. Several of these studies have connected political power to public image. Because this mining literature falls within the larger body of research examining corporate power in sectors other than mining, political power of sectors outside of mining are also reviewed in the following section.

2.2 Demonstrated Corporate Political Power

Corporate influence on policy development is well documented. Akard (1992) and others, for example, found that business leaders and interest groups created a "unified, class conscious policy offensive" to influence U.S. economic policy in the 70's and 80's, clearly demonstrating an ability to mobilize (Cohen, 1980; Edsall, 1984; Levitan & Cooper, 1984; Himmelstein, 1990). Political capital, particularly in the form of exchange of money from corporation to policymaker (e.g. campaign contributions, stock dividends) and from policymaker to corporation (e.g. investment), has similarly been documented (Eggers & Hainmueller, 2011; Schuler, 2008), and has been shown to be a factor in the creation of industry-friendly national tax policy (Quinn & Shapiro, 1991).

Existing research typically discusses the power of mining companies in the context of this conflict, where power manifests as the strategies mining companies employ to manage opposition to their projects (Bell & York, 2010; Horowitz, 2010; Bertossi, 2008; Churchill & Furtman, 2007; Gedicks, 2001; Gedicks & Grossman, 2001; Martinez-Alier, 2001; Gedicks, 1993). Mumford (1934) argues that, as an extractive industry, mining generates frequent opposition for a variety of reasons. Bridge (2000) summarizes:

> … the basis for opposition to mineral development is diverse and extends beyond the physical impacts of mining on the environment to include: aesthetic impacts on communities (and associated changes in property values); socioeconomic impacts induced in those communities affected by mining; the obliteration of historic features from the landscape; and a deep-seated spiritual and psychological

> resistance to the "animus of mining", a set of relationships among people, and between people and nature, which permeates industrial capitalism but which mining seems to exemplify (Mumford, 1934 in Bridge, 2000, p. 245).

Manipulating public opinion through publicity campaigns and outreach has been important in counteracting this opposition (Bell & York, 2010; Horowitz, 2010; Bertossi, 2008; Churchill & Furtman, 2007; Gedicks, 2001; Gedicks & Grossman, 2001; Gedicks, 1993). For example, in a study examining the opposition to the Goro nickel mine project in New Caledonia, scientific research was used to justify both the pro-mine and anti-mine coalitions. The Brazilian company financing the Goro mine was able to hire a research team to counteract opposing independent scientific findings. Furthermore, the company had the means to both advertise their favorable findings and to promote a positive public image with a prolonged media campaign (Horowitz 2010). Similarly in a study of a coal mine in West Virginia, the West Virginia Coal Association created a faux grassroots organization to create a narrative that placed coal production in the center of West Virginia's economy and cultural identity (Bell & York, 2010). In both cases, it was argued that promoting this positive image was an important tactic to legitimate a destructive practice that could harm both the natural environment and human health (Bell & York 2010; Horowitz 2010).–While these studies did not directly apply Schneider & Ingram's framework, they indicate that mining companies use their political resources (e.g. money, ability to mobilize, media presence) to push a more positive social construction.

If a positive social construction may be used to legitimate risks associated with mining, it is important to understand what the risks actually are. The following section

will discuss in more detail some of the environmental as well as economic impacts metallic mining has been shown to cause.

2.3 Hardrock Mining

2.3.1 Overview

Hardrock metal mining entails the extraction, separation, and processing of metals (e.g. iron, copper, nickel, gold, platinum, etc.) from hard rock formations in the earth. Extraction is the actual removal of ore from surface (e.g. open pit) or underground mines. Separation processes, known as beneficiation, are to separate minerals or metals from the extracted materials. Beneficiation may include, "crushing; grinding; washing; dissolution; crystallization; filtration; sorting; sizing; drying; sintering; pelletizing; briquetting; calcining; roasting in preparation for leaching; gravity concentration; magnetic separation; electrostatic separation; flotation; ion exchange; solvent extraction; electrowinning; precipitation; amalgamation; and heap, dump, vat, tank, and in situ leaching (USEPA, 2012b)." Processing refers to techniques that change the chemical makeup of the ore or mineral, like roasting or smelting, which are needed to produce metal from the ore (USEPA, 2004). Waste rock, tailings (spent ore), and wastewater are the largest byproducts of these activities. (USEPA, 1994b) Open pit mines, which Bridge (2000, p237) argues ,"made possible the profitable development of low-grade copper and gold ores in the US," produce far more waste rock than underground mines. For every ton of metal produced, one to two tons of waste rock may be produced (Hudson, Fox, &

Plumlee, 1999). Unsurprisingly, hardrock mining is destructive, and, as one researcher put it, has an "inevitably heavy footprint"(Bertossi, 2008, p. 10). The consequences of hardrock mining will be discussed in further detail below.

2.3.2 Sulfide Mining, Environmental Effects, and Other Externalities

In 2000, the USEPA reported the hardrock mining industry as having released the greatest amount of toxic chemicals into the environment of all U.S. industries (USEPA, 2012c). Despite occupying only 0.02 % of U.S. land, the hardrock mining industry accounted for 3.4 billion pounds of toxics polluted, 47% of the total toxics reported in the Toxic Release Inventory in 2000. (USEPA, 2004; Hudson, Fox, & Plumlee, 1999). Though this reported estimate has since dropped by approximately half (USEPA, 2012c), Earthworks[2] (2012) argues this is due to a change in reporting standards rather than any significant change in actual pollutants.

Sulfide mining, a category of hardrock mining, is the focus of this paper. Sulfide mining refers to the extraction of minerals from sulfur-bearing rock (USEPA, 1994; USEPA, 2004). When sulfide ore is exposed to oxygen and water, a chemical reaction occurs to create sulfuric acid, which is 20 to 30 times more acidic than acid rain (U.S. Forest Service, 1993) (USEPA, 1994). The acid, a pollutant on its own, may leach out heavy metals (e.g. arsenic, cadmium, silver, etc.) from surrounding rock, further contaminating surface and groundwater as it drains into the watershed. (U.S. Forest Service, 1993). Leached copper, zinc, aluminum, iron, and manganese exacerbate the

[2] A non profit advocacy organization previously known as the Mineral Policy Center and the Oil & Gas Accountability Project. See earthworksaction.org for more information.

damage by lowering the pH, (acidity) of the solution. (Jennings, Neuman, & Blicker, 2008) In undistrubed systems, this process is referred to as Acid Rock Drainage (ARD), but occurs at a much slower rate (i.e. geologic time) than in unnatural systems.

Any sort of development where sulfide rock is exposed can cause ARD. The mining process creates larger problems because it can quickly expose large amounts of sulfur bearing rock, creating more surface area for the weathering process and chemical reactions. This, in turn, dramatcally increases the speed and amount of acid produced (USEPA, 2004) (Jennings, Neuman, & Blicker, 2008) (Hudson, Fox, & Plumlee, 1999). Heap leach operations, tailings, waste rock units, pit walls (of open pit mines), underground workings and subgrade ore piles have all been shown to generate Acid Mine Drainage (AMD), all of which are common aspects of mining and mineral processing (USEPA, 1994).

AMD is a large and deadly problem. It has been reported to have contaminated as much as 16,000 kilometers of streams from an estimated 20,000 to 50,000 mines on U.S. Forest Service lands in the Western United States alone (U.S. Forest Service 1993) and more than 7,000 kilometers of streams are affected by acid mine drainage in the Eastern United States (Kim, Heisey, & Duel, 1982). It is difficult to predict, hard to control, and nearly impossible to stop once started (USEPA, 1994; U.S. Forest Service, 1993; Mahmoud, Leduc, & Ferroni, 2004). Jennings et al (2008, p4) point out that AMD, "continues to emanate from mines in Europe established during the Roman Empire prior to 467 AD." The low pH and elevated levels of heavy metals associated with AMD have been cited as the cause of damage to infrastructure; contamination of drinking water with hazardous pollutants; fishkills; and disruption of plant and animal lifecycles (Jennings,

Neuman, & Blicker, 2008; U.S. Forest Service, 1993; USEPA, 1994; Hudson, Fox, & Plumlee, 1999; Kimmel, 1983; USEPA, 2004).

In addition to hazards to human and ecosystem health, environmetnal devestation in the United States from mines has also been costly. Abandoned Mine Lands (AML) are the "abandoned hardrock mines and mineral processing sites listed in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS). This includes sites on the National Priorities List (NPL), often referred to as "Superfund" sites (USEPA, 2012a)." Though many of the AML sites still polluting streams today were built before modern day regulations, other more recent large-scale mining operations have been abandoned by bankrupt mining companies, leaving taxpayers in a state of perpetual clean-up (Jenning et al 2008; USEPA, 2004; Kuipers 2006). The USEPA (2004) identified 156 hardrock mining sites nationwide that could cost between $7 and $24 billion to clean up with an estimated maximum total cost of $15 billion to the USEPA. Forty-two percent of those sites have medium to high risks to human health; 59% will require perpetual maintenance. Twenty-one of the 156 hardrock mining sites were still active at the time of the study. In one example, the USEPA (2000) reported to "spend $30,000 per day to treat contaminated mine drainage at the Summitville Mine in Colorado, which will cost an estimated $170 million to clean up." This Summitville Mine was abandoned in 1994 when its company declared bankruptsy (Woody, et al., 2010). The absorbtion by the government of these substantial financial burdens was made possible, at least in part, by federal hardrock mining policy and exacerbated by failures to enforce environmental standards or implement environmental regulations.

2.4 National policies – legal structure

The General Mining Law of 1872 ("Hardrock Act"), although a statutory senior citizen at 130 years old, is not only very much alive, but in remarkably good health.

- (Knight, 2002)

The mining law of 1872[3] is the preeminent law governing hardrock mining in the United States (Richardson, 2003; Bakken, 2008; Schultz, 2006). The law was in part a codification of already existing self-governing structures developed by Californian gold-rush mining settlements – completely different from the large-scale, corporate mineral extraction efforts of today[4] (Richardson, 2003; Bakken, 2008). Though developed 140 years ago, the law has not significantly changed[5], despite the end of the frontier era, change in societal values, and a vastly improved understanding of geology and ecosystem science (Woody, et al., 2010). Another motivation for the law was to provide incentives for western colonization and economic growth by transferring public lands to private owners (Richardson, 2003; Bakken, 2008). Since then, the law has been criticized widely as anachronistic and poorly suited to regulate the era of modern day mining (Woody, et al., 2010; Boulanger & Gorman, 2004; Knight, 2002; Bakken, 2008; Richardson, 2003; Schultz, 2006; United States General Accounting Office, 1989).

Under the Mining Law, any individual citizen or corporation may freely prospect

[3] General Mining Law of 1872, 30 U.S.C. §§ 22–39 (1872).

[4] Bakken (2008) argues, however, that while the mining law of 1872 was justified as protecting independent prospectors, in actuality many small prospectors quickly sold mineral rights to larger companies. This suggests that even at the turn of the 19th century, corporate interests were benefiting from a positive social construction of the independent miner.

[5] The Mineral Leasing Act of 1920, did remove "fuel" (coal, oil, and gas) from the General Mining Law and allowed the federal government to collect royalties. (Richardson, 2003)(United States General Accounting Office, 1989)

for hardrock minerals on federal lands. If an economic or valuable deposit is found, the individual or corporation obtains an unpatented mining claim that is valid as long as the miner meets annual reporting requirements. This mining claim may be converted to a vested (patented) right for only $2.50 or $5.00 an acre of federal land. At this point the miner has an unlimited right to sell what is found without reimbursing the government. Furthermore, the patent holder owns the land in perpetuity regardless of mining activity (United States General Accounting Office, 1989; Congressional Budget Office, 2000; USEPA, 2004; General Mining Law of 1872).

Because the patent process effectively transfers public property and resources to private ownership, the federal government loses the right to collect compensation that otherwise would be warranted under the Federal Land Policy and Management Act of 1976[6] (United States General Accounting Office, 1989; FLPMA, 2000). In land value alone, this has meant considerable losses in potential revenue to the federal government. As the United States Government Accountability Office (GAO) reported in a 1989 report:

> GAO reviewed 20 patents issued since 1970 for which the government received less than $4,500 but which in 1988 were estimated to be worth between $13.8 million and $47.9 million. Included in these patents was an inactive 160-acre claim near the Keystone, Colorado, ski resort that was patented in 1983 for $400 ($2.50 an acre); 44 acres were offered for sale in 1988 for about $484,000 (about $11,000 an acre).

[6] Federal Land Policy Management Act of 1976, 43 **U.S.C. §§ 1701-1785** (2000)

Providing such generous subsidies can be seen as an unnecessary policy benefit when given to multi-million dollar companies. It may also be seen as a missed opportunity to recover the previously discussed costs paid by governmental agencies, for example, to manage environmental impacts associated with some hardrock mining activities.

The loss in revenue is even higher when considering income that could have been acquired through imposing mineral royalties. In 1990, for example, the GAO estimated the value of extracted minerals from federal lands to be $1.3 billion dollars. (GAO, 1992) If the 12.5% royalty[7] on oil and gas were applied to hardrock minerals extracted only in 1990, the revenue for the federal government would be over $160 million. Knight (2002), reports a much higher per annum revenue – as high as $400 million.

The Mining Law alone does not provide authority to any agency to deny a mining claim based on environmental concerns. Other federal statutes have tried to fill this role, one of which is the aforementioned FLPMA. More than a hundred years after the passing of the Mining Law, the FLPMA endowed the Department of the Interior (DOI) with the authority to deny mining permits based on an undefined "unnecessary or undue degradation standard." It also required the agency to weigh the economic benefits against environmental damage in its decision to approve a permit (Richardson, 2003; Knight, 2002). Despite this, the first mine to be denied a permit for environmental as well as cultural damage was not until 2001 when the Secretary of the DOI denied Glamis Gold, Ltd. a mining permit based upon a DOI legal opinion that strengthened the unnecessary

[7] (Congressional Budget Office, 2000)

or undue degradation standard[8] (Schill & Bederman, 2010; Knight, 2002; Richardson, 2003). This stricter interpretation of the standard, however, was overturned later in 2001 shortly after the Bush Administration took office (Knight, 2002; Schill & Bederman, 2010).

The National Environmental Policy Act (NEPA)[9] is another crucial statute regulating mining. It requires all federal agencies to create Environmental Assessments (EA) for federal actions with "the potential to significantly [affect] the quality of the human environment" and mandates a more detailed Environmental Impact Statement (EIS) if significant impacts are found (42 U.S.C. §§ 4321). Knight (2002) points out that even if the reporting organization identifies significant environmental impacts, NEPA does not require the agency or organization to mitigate impacts. The NEPA process is also only initiated for mining lots over 5 acres, where mine sites under five acres only need to provide notice of their activities (USEPA, 1994b).

Another central aspect of NEPA is its requirement for some form of public participation to review proposed action. Though each agency may have different NEPA processes, Predmore et al (2011) outline the Forest Services NEPA as typically including public notice of an agency action, a formal request for public comment, development of a draft EA or EIS, public comment period, public comment period for the final EA or EIS, followed by an agency decision. While public comment may influence the development of the EA or EIS, public comment does not determine the result. NEPA

8 The standard promulgated by the Glamis Gold, Ltd. V. United States of America DOI tribunal decision was "substantial, irreparable harm".

9 The National Environmental Policy Act of 1969, Pub. L. 91-190, 83 Stat. 852 (codified as amended at 42 U.S.C. §§ 4321-4347 (2000)).

does not require the agency to base its decision upon public approval of the action or the lack thereof (Council on Environmental Quality, 2007). Furthermore, because of its "significant and substantive" nexus for consideration of public comment, the NEPA process has been found to exclude value-based concerns (as opposed to technical comments), alienating some members of the public (Predmore, Stern, & Mortimer, 2011).

Given the limits of NEPA and the FLPMA as well as the leniency of the 1872 Mining Law, the regulatory structure surrounding the mining industry is not strong enough to adequately address the inherent risks of hardrock mining. Boulanger and Gorman (2004, p. 9) have even argued that "hardrock minerals are the most loosely regulated natural resources in U.S. mining." Critics of this statement may assert that the mining industry, like any industry, is also regulated by a slew of other national environmental regulations (e.g. Clean Water Act, Safe Drinking Water Act, Endangered Species Act, and CERCLA). While this may be true, the existence of these regulations and associated standards have not meant that these standard are being met - as was illustrated plainly by Kuipers et al's (2006) study comparing predicted (determined from mine sites' Environmental Impact Statements) and actual water quality at 25 mines in the United States. Failed mitigation efforts contributed to the failure of 15 mine sites to meet surface water quality standards for metals and pH, more than a third developing AMD, and 13 exceeding drinking water standards all after permitting. All 25 mines predicted compliance with water quality standards in their EISs. Current environmental regulatory efforts, thus, do not eliminate the environmental and public health hazards related to hardrock mining in the United States.

In order to address the weaknesses of this regulatory structure, several pieces of

legislation have been introduced to directly reform the Mining Law of 1872. As Knight (2002) points out, Representative Rahall (D-West Virginia) introduced legislation, "to devise a more socially, fiscally and environmentally responsible regime to govern the use of public domain lands for the exploration and development of those minerals," in 1993 (H.R. 322), 1997 (H.R. 253), and again in 1999 (H.R. 410). All three attempts failed to pass along with several other bills also aimed at reforming the 1872 Mining Law (H.R. 394, 1999; H.R. 397, 1999; H.R. 2262, 2007; H.R. 699, 2009).

In sum, the 1872 Mining Law and other federal laws regulating the mining industry are not sufficient – or, in some cases, are not sufficiently implemented - to address the economic, environmental, and public health hazards proven to be associated with hardrock mining. Schultz (2006) goes as far as to argue that the federal government is abdicating its responsibility[10] to regulate hazardous wastes and environmental damage, ultimately leaving local citizens vulnerable. At the very least, the limitations of current federal regulations mean that the onus is upon the states to decide how to govern the mining industry. In the case of Minnesota, this has recently meant a relaxation of regulations. Using the case of the Permit Streamlining Bill (HF1) and the Northmet mine as points of reference, the following section provides a succinct history of the recent policy experience of mining in Minnesota.

[10] pursuant of the Commerce Clause, U.S. CONST . art. I, § 8, cl. 3. "The Congress shall have the Power . . . [t]o regulate Commerce with foreign Nations, and among the several States, and with Indian Tribes." Id.

3 Background: A brief history of the NorthMet Mine and House Bill HF1

The Iron Range has experienced at least 2 major booms and busts coinciding with the development and collapse of the iron mining industry in the late 1970s, and most recently, the taconite mining industry bust in 2000 (Kelleher, 1999; Power, 2007). These cycles are reflective of the unsustainable nature of mineral extraction: the Iron Range turned to the mining of taconite, mined for its iron content, when they depleted the rich iron ore in the 1970s (Kelleher, 1999). In the recession of 2000, there was talk by the Iron Range Resources and Rehabilitation Board (IRRRB – a bipartisan economic development agency consisting of six representatives, four senators, and three appointed citizens) of diversifying the economy to break the boom and bust cycle associated with its dependency on the mining industry (Bloomquist, 2000a). In May of that year, the discussion shifted when a taconite mine in the small Iron Range town of Hoyt Lakes announced it would be closing. This closure meant the loss of 1,400 jobs to Hoyt Lakes. The IRRRB quickly moved from talk about diversifying the economy to actively attracting nonferrous mining to the area, including a project by Polymet Mining Corporation, a metal developer based in British Columbia (Bloomquist, 2000b-e; Passi, 2000). As IRRRB Commissioner John Swift put it, "Finding alternative employment to match the wages and benefits offered by mining jobs is pretty daunting (Passi, 2000)." Mining jobs are well-paid jobs with benefits, with a frequently reported annual salary of $60,000 to $65,000, where Polymet has repeatedly been emphasized as a bringer of those "good jobs" (Bloomquist, 2000a-e; Passi, 2000; Bloomquist, 2004; Depass ,2006).

By June of 2000, Polymet's NorthMet mine no longer represented a solely

Polymet project, but a joint effort with financial backing from Northern Mining Company[11], an international mining company based in Australia. By 2004, millions of dollars had been pumped into the NorthMet project to access the 638 million tons of copper & nickel ore - estimated to be worth $7 million USD per ton - at the Superior National Forest site (Bloomquist, 2004a-c; Marketwire, 2007). This progress, however, has been slowed by controversy. Although still a mining operation, NorthMet represents a break from the Iron Range's mining tradition. –The NorthMet mine is to be a nonferrous, copper-nickel open pit mine with plans to harvest sulfide ore. The USEPA, however, has criticized the plans for the mine. Some of the USEPA's concerns regarding the NorthMet project were recently highlighted in its assessment of Polymet's Draft Environmental Impact Statement (DEIS):

> "According to the Draft Environmental Impact Statement (DEIS), all waste rock at the site is acid generating, and acidic water moving through the waste rock and tailings will mobilize metals and sulfates, leaching them into groundwater and surface water... ... we believe that the DEIS likely underestimates water quality impacts and that the project is likely to have additional unmitigated long-term discharges. USEPA has identified information gaps relating to groundwater impacts, groundwater-surface water interaction, tailings basin stability and containment, and groundwater discharges to surface water (USEPA, 2010)."

[11]The result of the partnership between Northern Mining Company and Polymet is unclear. In 2008, Polymet entered into "marketing and financing agreements with Glencore AG" a subsidiary of Switzerlan-based, Glencore International that, according to Polymet's (2012) website, owns 20% of the company. There is no mention of Northern Mining Company referred to in Bloomquist's (2000b) article.

As might be guessed from the above excerpt, the USEPA gave Polymet's DEIS for the NorthMet mine the lowest possible rating – a fact that led, temporarily, to an obstacle in securing the national forest land desired for the project site.

The planned site for the NorthMet mine is on 6,700 acres of undeveloped land in the Superior National Forest, 1,200 acres of which are considered by the USEPA to be Aquatic Resources of National Forest (Myers, 2008; Palcich, 2011). In 2010, the IRRRB granted a $4 million loan to fund Polymet's purchase of private land to be used as part of a land exchange deal with the USFS (USDA Forest Service, 2010; Marketwire, 2010; Northland News, 2010) to acquire the mine site. In doing so, the IRRRB was making an investment that promised to provide a return through 1) job creation 2) interest revenue from the loan and shares in the company, and 3) put recreationally valuable private land into the government's in exchange for mineral-rich Superior National Forest property. At that point, the lengthy permitting process and the USEPA-deemed unsatisfactory draft environmental impact statement were the only remaining barriers to the NorthMet Mine.

In 2011, a coalition of environmental groups sued the IRRRB, claiming the $4 million loan to be illegal. The loan violated the section of the Minnesota Environmental Policy Act (MEPA) requiring entities receiving funds for building to have an approved environmental impact statement before the state government grants a loan or permit. Before the case reached a conclusion, HF1, a bill hailed by the industry and elected officials - including Governor Dayton (R) - as a means to streamline the environmental assessment process, effectively made the case moot by retroactively legalizing the loan (BusinessNorth, 2011). Critics of the law, however, argue that HF1 "streamlines

pollution" because it:

1) restricts the time the MDNR and Minnesota Pollutant Control Agency (MPCA) to 150 days from receipt of a complete permit application to accept or deny it;
2) allows the corporation submitting the application to also conduct the EIS;
3) reroutes permit appeals to the Court of Appeals rather than the district courts – a change that some argue raises the cost of the appealing process for plaintiffs; and
4) exempts the IRRRB from requiring a completed and acceptable EIS before approving a loan to resource development projects. (e.g. see FBWW, 2011)

In short, HF1 appeared to roll back environmental protections and benefited Polymet by removing barriers to the development of their NorthMet mine.

The legislature's treatment of sulfide mining in Minnesota is very different from the strict standards passed in Wisconsin. On May 7, 1998, Wisconsin Governor Thompson (R) signed into law the 1997 Wisconsin Act 171, also known as the "Mining Moratorium Law." The Wisconsin Legislative Reference Bureau summarizes the language of the bill:

> Under the law, before a mine permit can be granted to applicants planning to mine this type of ore, [Department of Natural Resources] must verify that a mine operated in a sulfide ore body in the United States or Canada has been operated for 10 years without polluting groundwater or surface water. The applicant must also demonstrate that a similar operation in the United States or Canada has been closed for 10 years without causing groundwater or surface water pollution. (Keane, 2000, p. 4)

As can be imagined, the new standards the Moratorium mandated have been a significant barrier to sulfide mining within the state and has been recognized as hostile to the industry.[12] The Moratorium Bill was part of an opposition movement against the Crandon copper mine jointly owned by Rio Algom and Exxon, which, like Polymet, sought to mine metal in a sulfur-bearing deposit (Bertossi, 2008; Churchill & Furtman, 2007; Gedicks, 1993). As of 1997, the Crandon mine still had a submitted permit to the DNR (Wisconsin Department of Natural Resources, 1997), but the project went nowhere after the bill passed in 1998. Furthermore, no new permit applications for metallic mines have been submitted in Wisconsin for more than a decade after the Moratorium standards were put in place[13] (Wisconsin Department of Natural Resources, 2012).

The question that remains to be answered is, "Why?" What caused the different policy approaches? Why did the Wisconsin legislature treat the mining industry so differently in 1998 than the Minnesota legislature in 2011? Because the mining companies involved in Wisconsin (e.g. Exxon Coal and Mining Company and Rio Algom) and later in Minnesota (e.g. Polymet Mining Co. and Glencore International,

---

[12] A "policy attractiveness" score, based on survey responses from mining corporations, has consistently rated Wisconsin as the worst place to mine in the United States since the passage of the Moratorium Bill (Frasier Institute 2001 – 2010). The methods of this survey, however, suggest that the sample of mining companies was not representative. Furthermore, the Frasier Institute is an openly conservative think tank whose "vision is a free and prosperous world where individuals benefit from greater choice, competitive markets, and personal responsibility." Nonetheless, the survey supports the notion that the Moratorium Law was understood by some as an obstacle to the mining industry.

[13] Recently there has been a flurry of recent exploration activity. Gogebic Taconite, a subsidiary of the Cline Resource and Development Group, recently began exploring a deposit in June, 2011. See Wisconsin Department of Natural Resources (2012) website for more details.

PLC) were all large, multi million dollar entities, one might expect that the social construction of the mining industry was more positive in Minnesota than it was in Wisconsin. In other words, the mining industry took on traits of an advantaged population in Minnesota, but did not in Wisconsin. To explore this issue, the social construction of the mining industry in Minnesota during the 2011 legislative session that passed the permit streamlining legislation and the social construction of the mining industry in Wisconsin during the 1998 that passed the moratorium bill will be assessed and compared. The methodology used to detect the social constructions of the mining industry in these two time periods is discussed in Chapter 4.

-

4 Methodology

4.1 Detecting Social Construction of the Mining Industry in Wisconsin and Minnesota

Schneider & Ingram (1993, p.335) plainly state that social constructions of target populations are measurable phenomena where, "data can be generated by the study of texts, such as legislative histories, statutes, guidelines, speeches, media coverage, and analysis of the symbols contained therein." They leave the precise method of ascertaining the social construction, however, up to the discretion of the researcher. In the case of this study, newspaper articles were chosen as the source of data to undergo content analysis. Content analysis is a type of deductive coding, where coding is the process of identifying themes in texts, "turning free flowing texts into a set of nominal variables"

(Bernard, 2006, p. 492).

4.1.1 Data Collection and Sample Selection: Corpus of Texts

Bernard (2006, p. 509) states that sampling in content analysis is comprised of two separate components. The first step is to decide upon the "corpus of texts" from which to draw. In this case, there are two separate bodies of texts for each piece of legislation: newspaper articles related to the Mining Moratorium law and a second set for the Permit Streamlining Law. These articles were collected through the Lexis Nexis search engine utilizing the "Newspapers and Wires" search function. Lexis Nexis does not have complete access to all archives for all newspapers. It does, however, have access to several major publications including the Wisconsin State Journal and, its sister newspaper, the Capital Times (south central Wisconsin); the St. Paul Pioneer Press, which primarily serves western Wisconsin and eastern Minnesota; the Star Tribune, which serves the twin cities and has statewide publications distributed in both Wisconsin and Minnesota; the Legal Ledger (also known as the Capitol Report) which covers politics and policy in Minnesota; and finally national news wire services like the Associated Press. All of these newspapers also publish their articles on their websites providing additional coverage through the internet. Thus, while Lexis Nexis does not allow for a complete census of all newsprint coverage of the topics of interest, it does cover the major providers of mainstream newspapers for both states. One notable exception is the Milwaukee Journal Sentinel. The Sentinel has the largest circulation in Wisconsin, followed by the Wisconsin State Journal and the Capital Times, according to the Audit Bureau of Circulations (2012).

To address this gap, Sentinel articles were separately collected by searching the archives hosted on Journal Sentinel Online, the journal's website (Milwaukee Wisconsin Journal Sentinel, 2012).

The selection of documents was further narrowed by the time period of interest and search terms. In the case of Wisconsin and the Mining Moratorium, the time period of interest was between 1995 (when the bill was first introduced) and 1998 (the year the bill finally passed) covering both legislative sessions that featured the mining moratorium bill. Within this time period, an iterative search was used to yield all news articles that mentioned the bill. Key search terms included: mining, moratorium, Crandon mine (the mine in question in 1997), legislation, Assembly bill 758 or AB 758 (the bill number in 1995), Senate Bill 3 or SB3 (the bill number in 1997). This iterative search yielded more than 200 articles, all of which were read for context. Of those articles, however, only those that were published between January of 1997 (the second time the bill was introduced to congress) and April of 1998 (when the governor signed the bill into law) were included in the content analysis. This selection was limited to only include the legislative biennium that successfully passed the legislation. This reduced the sample size to 112 newspaper articles.

A similar search was used for the Permit Streamlining Bill (HF1) in Minnesota, though there were some significant differences. Two factors altered the approach. First, unlike the legislation of interest in Wisconsin, the language of HF1 never mentions mining explicitly. Because the provision in HF1 that made legal a $4 million loan to the Northmet mine that delivered a policy benefit specifically to a mining company (the

target population of interest), articles related to the Northmet mine's permit process, even if they did not explicitly mention the permit streamlining bill, were also included in the content analysis. Key search terms included mining, permit, permit streamlining, House File 1 (and variations such as "HF1", "H.F. 1" etc.), legislation, Northmet, and Polymet. The second factor was the shortened window of time. Since HF1 was successful in the first session it was introduced, there was a much smaller time frame of interest. All documents meeting the key word search criteria published from the month it was introduced (January 2011) through the month it was signed into law (March 2011) were used in the content analysis. Within this time period, an iterative search was used to yield all articles distributed within Minnesota that mentioned the bill, or the Northmet Mine. This process yielded 28 articles. Articles from as early as 2009, however, were read for context. To see a list of the articles used in the content analysis, refer to Appendix A.

4.1.2 Unit of Analysis & Content Analysis

If sampling the corpus of texts is the first step, Bernard (2006) suggests that the second step in sampling for content analysis is to identify the unit of analysis. Two units of analysis were chosen for two different categories of texts. Units of meaning (Elo & Kynga, 2008) were used as the units of analysis for story columns. Units of meaning can overlap, can be varying lengths (typically a phrase to a paragraph) and can contain more than one meaning (Woods & Catanzaro, 1988, Elo & Kynga, 2008). This was important to do for story columns because articles contain multiple, often conflicting, perspectives.

It would be misleading, as Steenland (2008) points out, to describe an article as holding a single dominant point of view. In the case of opinion pieces and press releases the entire article was treated as the unit of analysis because they expressed one person's or one entity's (e.g. organization or company in the case of a press release) point of view.

4.1.3 Themes and Codebook development

Drawing from Schneider & Ingram's descriptions of advantaged and contending groups, very simple categories were initially used for coding. Table 1 provides examples of the initial coding scheme. Refer to Appendix B for final codebook. This scheme was later specified based upon emergent themes from the text. As such, the methods used were both deductive and inductive. Once all the codes were developed, the documents were reviewed and recoded.

Table 1: Initial Primary Codes

Primary codes	Examples
Positive descriptors **Positive words used to describe mining sector/industry/company.**	Responsible, generous, deserving, intelligent, honest
Praise by policymaker **Anytime a policymaker is quoted praising, applauding, complementing, or otherwise using a positive code to describe the mining industry/company. Anytime a policymaker links the mining industry to a universal good see code below).**	"Representative X stated, 'Polymet has been responsible business….'"

Universal good **Mining industry is linked to a public service or said to deliver a public good (e.g. jobs, good for the economy, supplying needed metals, etc.)**	"Metal mining provides the copper needed for a green economy."
Negative descriptors **Negative words used to describe mining sector/industry/company**	e.g. polluter, irresponsible, undeserving, dishonest, etc.
Criticism by policymaker **Anytime a policymaker is quoted publicly criticizing, accusing the mining industry/company of some wrong doing, or otherwise using a negative code to describe the target population**	"Representative XX stated, 'The proposed Northmet mine poses risks to the environment and human health.'"

4.1.4 Software

Dedoose (hosted on www.dedoose.com), a web-based qualitative software system was used to digitally organize documents, apply codes to excerpts, and analyze themes. The software was a convenient place to store data, it allowed the user to quickly review and group excerpts by code and see codes applied to documents, it also allowed the user to see where codes overlapped (i.e. if one code is applied to an entire document, but holds another excerpt which has a separate code, both of those codes would be visible when looking at the excerpt)– all attributes which were helpful to detect patterns. The software, however, was primarily an organization tool with very limited ability for automation (e.g. automatically coding a sentence according to search terms contained within the sentence). Similarly, interpretation decisions were left solely to the researcher.

4.1.5 Intercoder Reliability

According to Bernard (2006), intercoder reliability tests the reliability of the codes in the codebook by checking shared agreement (or disagreement) between two or more coders. Strong agreement is considered if all coders code the same text the same way 70-90% of the time (Bernard, 2006). Intercoder reliability was conducted twice: once early in the code application process (documents read, but not all coded), and once after all documents were coded and the codebook was complete. In all cases, three documents were coded: a training document where the training coder and the trainee coded the same document together, a simple document (containing only a few well defined themes) to be coded by the trainee alone, and a complex document (a longer document containing more subtle themes).

In both trials, the positive, negative, and universal good primary codes achieved 100% agreement in all documents. In the first trial, however, secondary codes proved to be poorly defined and had poor inter-coder agreement. The lawmaker praise and lawmaker criticism primary codes were also under 70%. In response, definitions for secondary codes under positive, negative, and universal good codes were clarified. For example, in the case of the 'SLY' code, more instructions were included regarding when to code and key search words were also included. See Table 2 for a trial one and trial two version of the "SLY" code.

Inter-coder agreement for the praise or criticism by a policymaker was also poor in the first trial. In order to correct this, the codebook definition was further specified so that only direct quotes or paraphrases attributed to specific policymakers, elected officials, or political candidates were coded as "policymaker." If positive or negative codes were also

applied to the same text coded as "policymaker," the researcher would later recode that as praise by (if coded with positive) or criticism by (if a negative codes was applied). This same method was later used to identify quotes with positive and negative depictions of the mining industry made by environmentalists, government agency representatives, tribal members, and unaffiliated individuals (See Appendix B for details). After making these changes, all documents were recoded by the researcher before the second trial.

Table 2: Code Versions - Inter-coder Reliability Trials 1 and Trial 2

Version 1 - SLY code	
The mining industry is politically sly, finds legislative loopholes, and has secret meetings with lawmakers.	
Version 2 - SLY code	**Examples & document search terms**
The mining industry is politically sly, finds legislative loopholes, and has secret meetings with lawmakers. Note about loopholes: Must indicate the mining industry is (or will) intentionally seek loopholes, not merely that legislation contains potential loopholes that will benefit the mining industry.	political influence, tactic, strategy, loopholes, sneaky, suspicious, secret meetings, behind closed doors, subversive, secretive, hiding, obfuscates, etc.

In addition to the clarified original codes, the codebook used in the second trial included new codes derived from a closer reading of the text. The second intercoder-reliability trial followed the same format as the first. This time, the documents received high agreement for both Primary and Secondary Codes, with the exception of one code UNLAWFUL (the mining industry breaks the law, intentionally does not meet standards), which was removed from the dataset.

4.1.6 Limitations

Using traditional news media as a dataset, whether or not the news stories are also available on the web, ignores other media outlets, namely television, radio, and alternative web sources like blogs and social networking media (e.g. Facebook, twitter, etc.) that have become available and increasingly popular since 1997. Thus, even if the newspaper publications included in the content analysis enjoy a relatively broad exposure when compared to other newspaper providers, it may be a relatively small source of news when considering alternative media sources. While a broader media analysis would certainly provide a more representative media sample, it is outside the scope of this study. Newspapers, hardcopy and online, are also appropriate sources to use for this study as they were being circulated to a wide geographic audience during both time periods of interest according to Audit Bureau of Circulation (2012) estimates. It is not known, however, whether or not the readership of the newspapers is representative of the entire population. Nonetheless, these papers are mainstream outlets and the messages contained within them are likely to be shared by other mainstream sources for news.

4.2 Assessing Political Power

Schneider and Ingram's framework provides examples of political resources (see Section 2.1). As Schroedel & Jordan (1998) point out, however, the framework does not indicate how much or what combination of resources a group needs to be deemed politically powerful. Furthermore, many of the resources are hard to measure, particularly for contenders who, by definition, do much of their political maneuvering secretly.

Wealth and size, political resources Schneider and Ingram (1993) specifically list, are relatively simple to assess. Forbes Fortune Global 500[14] rank was used as an indicator of wealth and size for Polymet Mining Co. (Polymet) and Glencore International, PLC (Glencore) - two of the leading companies involved in the Northmet Mining project during 2011 in Minnesota. 1997 Global 500 rankings were not available, but 1997 Fortune 500 rankings (US companies only) were available and were used for Exxon Coal and Mining Company (Exxon) – one of the two companies backing the Crandon Mine project during 1997 in Wisconsin. Rankings for Rio Algom, a subsidiary of Rio Tinto in London and joint owner of the Crandon Mine project (until it took over the project in January of 1998), were not available.

Total reported assets and equity (equity = assets -liabilities) were also used as indicators of wealth. These data were found by searching the New York Stock Exchange (for Polymet) and the London Stock Exchange (Glencore International, PLC) for financial data. The 1997 records for Exxon, however, were not available on either of the exchanges. The value of Exxon's total assets in 1997 was listed under archival Fortune 500 rankings, but not total equity or liability. Number of listed employees served as an additional measure of company size. This information was found by reviewing company websites (for Polymet and Glencore), and the 1997 Fortune 500 listing for Exxon.

The number of lobby groups representing a target population has also been used as a measure of political power. Neshkova et al (2011) and others (Gray & Lowery, 1996;

[14] According to the CNN Money website (cnn.money.com), which hosts the ranking, the Forbes Global Fortune 500 is an annual list of "the world's largest companies" based on revenue from the preceding year. While it is not required that the companies be publicly traded, they must publish their financial data to be included in the ranking.

Gray, Lowery, Fellowes, & McAtee, 2004) have used the number of lobbyists representing a sector as an indicator of their ability to mobilize and affect policy outcomes. While this study will record the number of lobbyists representing metal mining interests registered at the state level, the assessment will focus on the amount of money these groups have reported to have spent on lobbying activities. This in turn was compared to the amount other registered lobbyists reported to have spent during the legislative sessions of interest. Any registered lobbying organization listed as specifically representing metallic mining interests was included. Entities representing business interests generally that were not registered as specifically interested in metallic mining, but were reported to have made pro-metal mine statements (or anti-moratorium statements) in the corpus of texts, were also included in this assessment. Data for this analysis were collected from the State of Minnesota Campaign Finance and Public Disclosure Board website (www.cfboard.state.mn.us/lobby) and the State of Wisconsin Ethics and Accountability Board website (http://ethics.state. (Cline, 2011)wi.us).

4.3 Other Considerations – a note about the lack of an analysis of legislative record

One limitation of this research design is that there is no analysis of legislative history. Examination of legislative history has been a useful way to characterize a target population (Schroedel & Jordan, 1998; Cline, 2011; Lantz, Weisman, & Itani, 2003). An analysis of legislative history was included in the original research design. Wisconsin,

however, does not keep a detailed legislative record[15] meaning very little of the type of data that were used in previous studies is available for the Mining Moratorium bill. Though Minnesota keeps a robust legislative record, mining HF1's legislative record for indicators of social construction was not done since a comparison was not possible.

5 Results

5.1 Power

5.1.1 Size and Wealth

Table 3 displays the worth of Polymet's and Glencore's assets and equity in 2011 (when House File 1 was introduced in Minnesota) and the assets of Exxon in 1997 (when the Mining Moratorium was introduced in Wisconsin), the number of employees for each company, and Fortune Global 500 rank in 1997 and in 2011. Exxon and Glencore both qualified for the Fortune Global 500; Exxon ranked as the 7th largest company in the world in 1997 and Glencore ranked as the 18th largest company in the world in 2011. Both companies also employed over 50,000 people, with Exxon employing 79,000 in 1997 and Glencore employing over 57,000 people in 2011.

[15] "Many of the resources commonly associated with legislative intent research with respect to the United States Congress have no counterpart in the Wisconsin Legislature. There is no verbatim record of floor debates. There are no formal reports of standing committees indicating the reasons why legislation should be enacted. There is no transcript of committee proceedings. Without those resources, documentation of legislative intent must rely on other resources which are not necessarily relevant to intent, are often not useful, and usually must be interpreted in order to be helpful to the researcher at all (Wisconsin Legislative Reference Bureau, 2006)."

Polymet was not listed in the Forbes Global Fortune 500. However, the company's equity was valued above 100 million. Polymet's website and annual reports did not indicate the number of people it employed in 2011, though it did suggest that it expects to hire 360 people in the case that the Northmet Project become operational. The company lists no other current projects. According to Polymet's website, Glencore owns 20% of Polymet's common stocks and has committed to invest another $80 million in the Northmet project (Polymet Mining Corporation, 2012).

Table 3: Comparison of Wealth (Total Assets and Equity) and Size (Number of Employees) of Three Mining Companies[1]

	Company (Year)		
	Polymet (2011)	Glencore (2011)	Exxon (1997)
Assets[2]	156.7	86,165	95,527
Equity[2]	102.4	32,335	Not available
Employees	not available	57,656	79,000
1997 Fortune 500[3]	---	---	3rd
2011 Global Fortune 500	>500	18th	3rd,4

[1]Data compiled from the New York Stock Exchange, the London Stock Exchange, Glencore International website, and Fortune 500 and Fortune Global 500 archives hosted on CNNMoney.com.
[2]Data presented in millions.
[3]Glencore and Polymet are not U.S. companies.
[4]This is actually the global ranking of Exxon-Mobile, the company resulting from Exxon and Mobile's merger in 1999.

5.1.2 Lobbyist Expenditures

Table 4 and Table 5 show the total reported money spent lobbying and the number of lobbyists employed by a pro-mining entity in Wisconsin during the 1997 legislative session and in Minnesota in 2011, respectively. In Wisconsin, Nicolet Minerals Co. (formerly Crandon Mining Co.[16]) outspent all other lobbying groups registered in the state, with the total amount being more than $1.5 million and employing 12 lobbyists. This is more than twice the second highest spender for that year, Philip Morris Inc., which spent just under $700,000. Combined, the 4 companies listed spent $1.7 million on lobbying in Wisconsin during the 1997-1998 legislative session.

Table 4: Total Reported Money Spent Lobbying and Number of Lobbyists by Mining Industry in Wisconsin during the 1997-1998 biennium (1/97-12/98).[1]

Mining Industry or Interest Group	Total Money Reported	Lobbyists Employed[2]
Nicolet Minerals Company*[16]	$1,515,490.00	12
Flambeau Mining Co*	$104,264.00	3
P&H Mining Equipment	$91,051.64	3
Total Spent	$1,710,805.64	

[1]Data collected from State of Wisconsin Ethic and Accountability Board website.
[2]A single lobbyists may be employed by several companies.

16 Crandon Mining Company became Nicolet Minerals in January of 1998 when Exxon sold its shares to its Canadian-based partner, Rio Algom (Appendix A, Wisconsin 56).

For organizations with registered lobbyists in Minnesota, the Minnesota Chamber of Commerce (MCC) spent the second highest amount on lobbying.[17] The MCC was likely not solely focused on mining issues as it represents business interests generally. According to the MCC's website, a Polymet representative sat on the MCC's board at the time of this study and in 2011. At least one news article in the Minnesota dataset featured the MCC speaking in favor of metallic mining, which also justifies its inclusion (Minnesota 2.58). Twin Metals Company - a joint venture of Duluth Metals Limited and Chile-based Antofagasta PLC proposing a copper nickel and platinum mine outside of Ely, Minnesota – spent the most of the strictly mining lobbying groups with $240,000. All of the companies listed spent over $30,000, the median amount spent lobbying per interest group in 2011, with selected metal mining companies spending a total of $480,000 in 2011.

Table 5: Total Reported Money Spent Lobbying and Number of Lobbyists by Mining Industry in Minnesota in 2011

Mining Industry or Interest Group	Total Money Reported	Lobbyists Employed
MN Chamber of Commerce	$2,060,000.00	11
Twin Metals Minnesota LLC	$240,000.00	10
Iron Mining Assn. of Minnesota	$80,000.00	3
Kennecott Eagle Minerals Co, A Div. of Rio Tinto	$60,000.00	6
Polymet Mining Co	$60,000.00	4
Mining Minnesota	$40,000.00	4

[17] The highest lobbying expenditure was by Xcel Energy Services, Inc., which outspent the MCC by $300,000.

Total Spent	$2,540,000.00

Data collected from State of Minnesota Campaign Finance and Public Disclosure Board website.

5.2 Social Construction & Themes

5.2.1 Coding Overview and A Note About Data Reference Conventions

Codes will be both explicitly mentioned (e.g. "coded as XXX" or "XXX code") or indicated by words enclosed by brackets after a quotation (e.g. [POLLUTE]). Reference Appendix B to see more details about the code's definition and rules for its application. Documents for each dataset were given an identification number. Documents will be referenced in the following text by dataset name followed by this identification number (e.g. Wisconsin 103). Reference Appendix A to see bibliographic information associated with each coded document.

A total of 112 articles (82 news columns and 30 opinion pieces) were coded in the Mining Moratorium dataset and a total of 28 articles (24 news columns and four opinion pieces). The following section will discuss themes that emerged. Refer to Appendix C to view code application (positive and negative codes) by document.

5.2.2 Themes - Wisconsin

5.2.2.1 Negative Codes

5.2.2.1.1 Mining Companies Pose a Physical Threat

The most prevalent theme recurring throughout the Wisconsin dataset was the association of mining to pollution, degradation, or otherwise harming of the environment. Fifty-four of all of the articles included statements that associated mining with pollution [POLLUTE]. The POLLUTE code did not apply to simple restatements of the Mining Moratorium Bill's language, though the language of the bill itself does directly associate mining with pollution. While the Moratorium statements were coded, they were coded as neutral statements. Other statements that suggested the mining industry pollutes, has polluted, or will or may degrade or will otherwise harm the environment satisfied the POLLUTE code.

In several cases, this code applied to justifications or defenses of the mining moratorium bill. For example, Rep. Spencer Black (D), the progenitor of the Mining Moratorium bill, argued:

> The bill is a common sense approach to prevent mining operations from polluting our drinking water and rivers and lakes. After all, our greatest wealth in Wisconsin is not copper or zinc -- it is our plentiful supply of clean water (Wisconsin 108). [H2O] [DH2O]

The above quote's specification of polluted water resources as an impact of mining activities (H20) was repeated throughout the text. Forty news articles included statements that identified water as either a resource that needed protection from mining or as something that has been or will be polluted. Water resources were much more commonly mentioned as a natural body of water (river, lake, stream, etc.) rather than for a specific use (fishing, drinking water, recreation, irrigation, etc.). Tourism, American

Indian culture, and recreation (paddling, fishing, etc.), also mentioned but less frequently than water resources, were similarly described as at risk or damaged by the physical externalities of mining.

Concerns for public or personal health were not a focus of these arguments. Concern for drinking water, a concern that surfaced in six documents, though mentioned, was not dwelled upon. Concerns for social welfare issues (workers health, employee working conditions, environmental justice) were also noticeably absent from this dataset. Only one Letter to the Editor (LTE) identified human health as a specific impact:

> According to the National Association of Manufacturers, Exxon is also a member of the Air Standards Coalition -- a group opposed to the Environmental Protection Agency's proposed amendments to the Clean Air Act, which includes a ban on dust particle emissions. As an administrator in the area of health care management, I find CFR's business tactics not only offensive and distasteful, but unethical. The health risks associated with metallic sulfide mining are dangerous and long-term. The chemistry of milled tailings from sulfide mining contains elements that can be extremely toxic -- such as lead, arsenic, sulfur, zinc, uranium, cadmium, cobalt, etc. Prevention is the key to lower costs -- and that means being in compliance with and supporting laws that protect human health and our ecosystems (Wisconsin 111). [UNETHICAL] [SLY] [PUBHEALTH][NATURE]

This excerpt introduces a broader category of images associated with the mining industry. Exxon is identified here as "unethical" for its roll in lobbying against a ban on dust particle emissions. It appears that it is not only the physical effects of mining that the

author identifies as negative in this excerpt, but she also judges the mining industry's "business tactics" as immoral. Several of these statements that attach negative connotations to the industry's behavior, rather than or in addition to the outcomes of their behavior, represented another common theme and were grouped into a broader theme: the mining industry as manipulator.

5.2.2.1.2 Mining Industry as Manipulator

A total of 26 documents featured negative statements suggesting the mining industry lies [LIAR], is motivated primarily by profit [PROFIT HUNGRY], and craftily influences policy generally [SLY] or specifically with money [CORPORATE MONEY] in the Wisconsin dataset. These behaviors were frequently cited as a means to continue the status quo (i.e. avoid passing the Mining Moratorium Bill) or subvert existing environmental standards. For example an article in the Wisconsin State Journal quotes Rep. Black (D):

> 'In the past,' Black said, '[bills like the Mining Moratorium bill] were stonewalled. … But I think the vote in the Senate changed the dynamics of the situation. The strategy has changed. Opponents have switched from stonewalling to subversion. I've heard the Crandon lobbyists on TV saying now that instead of trying to stop the bill, they're going to improve it. Are they going to improve it the same way the Exxon Valdez improved the Alaskan coastline? We're going to see efforts to pass a bill with no teeth and no meaning (Wisconsin 123).' [EXXON OIL SPILL] [SLY] [LAWMAKER]

In another example, a hydrogeologist is quoted as criticizing an environmental impact report prepared by Crandon Mining Co. as "misleading, internally inconsistent and contradictory" (Wisconsin 72). The article goes on to say:

> The new criticism was issued today by Charles Norris of Denver, who had been retained by critics of the proposed mine. Norris said while the firm's impact report should reflect its bias, 'it should be a legitimate attempt to assess the likely impacts of the project. It is not. It is a promotional vehicle that shuns critical investigations, obfuscates the assessment of data that is available, and stretches credulity in its conclusions. It is also frequently wrong,' said Norris. [LIAR]

Finally, the profit motivation theme is readily recognizable in this quote from Jan Olson's LTE:

> We know the environmental track record of [Crandon Mining Co.]… and the attitude of the entire mining industry which puts profit ahead of everything else and has handled the problems it caused 'less than honorably" in the past (Wisconsin 80). [PROFIT HUNGRY]

5.2.2.1.3 Support for Mining and Effect on Political Capital

The above negative themes were frequently used in conjunction with a criticism of a politician or political party. In an LTE in February of 1998, when the Mining

Moratorium bill had already been passed by both houses, the author questions why the governor has yet to sign the legislation into law:

> The more cynical among us might suggest he's waiting for the mining company to make suggestions or perhaps contributions to his campaign fund (Wisconsin 32). [CORPORATE MONEY].

Similarly, in an earlier LTE urging the legislature to vote the bill out of committee, the author writes:

> So where's the bill? Rep. Duff has buried it in committee. What an injustice that he and Speaker Ben Brancel can prevent a bill from reaching the floor when it already passed the Senate by a strong bipartisan 29-3 vote. It looks like Exxon's million-dollar campaign has influenced our top officials (Wisconsin 113). [CORPORATE MONEY]

While the focus of the criticism is on the politician, both excerpts connect negative connotations to mining entities' use of corporate money to influence political decisions. This negative viewpoint is particularly clear in examples that praise legislators for resisting influence from mining money:

> Wisconsin's mining moratorium bill has been so lobbied, debated, amended, reamended (sic) and voted on that everyone is a little dizzy. But, despite the worst efforts of special interests from near and far, it has survived relatively intact. State Rep. Spencer Black, D-Madison, the bill's primary proponent, deserves credit for refusing to blink in the face of a withering assault on the proposal by lobbyists for

Exxon, Wisconsin Manufacturers & Commerce and just about every other group with a checkbook and an expensive pen (Wisconsin 46). [CORPORATE MONEY] [SPECIAL INTERESTS]

5.2.2.1.4 Other Negative Themes

Several other negative themes were present in the text, but not as pervasive as the previously mentioned codes. One less common, but still worth mentioning theme included statements that identified the mining industry as an outsider [SPECIAL INTEREST and ELITE]. Six documents included statements that either specifically identified the mining industry as a "special interest group" or "elite" in a context similar to the quote above.

Another theme that was less common, but still noteworthy, was the Exxon oil spill. Five documents specifically referenced Exxon's bad environmental record (i.e. invoking Exxon's 1989 oil spill in Valdez, Alaska. See code EXXON_SPILL, EXXON_BAD). When Exxon sold its share of the Crandon Mine project to Rio Algom, in January of 1998, some politicians, like then gubernatorial candidate Ed Garvey (D), suggested Exxon's bad reputation pushed it to leave the Crandon Mine Project (Wisconsin 60).

5.2.2.2 Positive Codes

5.2.2.2.1 Universal Good: Mining Industry as the Job Creator

The most prevalent positive theme emerged from statements citing the mining industry as a source of employment [JOBS] or necessary for a strong economy

[GOODECON]. These statements were generally written as a reaction to the possibility of a moratorium of mining in the state. In one example, a Senator justifies delaying a vote on the moratorium due to the potential of job loss, "The likelihood of the loss of at least 1,000 good-paying jobs in the Milwaukee metro area warrants further public hearings (Wisconsin 127)."

In another example, an individual criticizes a recent Editorial supporting the Mining Moratorium:

> How can any state -- let alone a news organization like The Capital Times that calls itself progressive -- want to ban the very business that is responsible for nearly 90 percent of the things we take for granted on a daily basis. That's what the mining moratorium would do. It seeks to tear off the roof from over our heads, return our mode of transportation back to horses (no bit though, because that's made of metal) and throw good jobs away for a stale economic climate in northern Wisconsin (Wisconsin 86). [JOBS][DEMAND] [GOODECON] [VICTIM]

The above excerpt also suggests that mining is fulfilling another societal need in addition to employment and the economy: meeting consumption demands and needs for metals, from the metal horse bit to metal roofing. While this code only occurred in three separate documents in Wisconsin it was more prevalent in the Minnesota dataset.

5.2.2.2.2 Mine As a Victim

The excerpt above introduces another theme, the mining industry as a victim where unrealistic standards or environmentalist agendas resulted in unfair treatment to the industry. To illustrate, the editor of the Wisconsin State Journal wrote, "It's the

equivalent of setting the high jump bar two feet higher than the world record -- and still insisting it's a fair test for all the competitors" (Wisconsin 128). [VICTIM] This theme, which was identified in 17 different articles, frequently emerged from quotes by representatives of the mining industry, but also statements made by lawmakers, Governor Tommy Thompson (R), and others.

5.2.2.2.3 Safe, Responsible, and Environmentally Friendly

In direct disagreement with several of the above negative themes, the next most prevalent suite of themes describe mining activities as safe, having minimal environmental impact, and compliant with regulatory standards. For example, one newspaper reported:

> The president of the new Nicolet Mining Co. and a former vice president of mining for Rio Algom was quoted as saying that he wanted to listen and talk to 'our neighbors' to 'build and operate a mine that will be a model of environmental stewardship' (Wisconsin 56).[ENVIR_FRIEND]

In another example, Exxon's primary lobbyist proclaims, "Can we coexist with the environment? Yes! I say unequivocally, Yes (Wisconsin 129)!" [ENVIR_FRIEND]. Similar statements were identified in ten documents, including the following suite of codes: RESPONSIBLE, MEETS STANDARDS, ENVIR_FRIEND.

Though different in prevalence, many of the themes in Minnesota mirrored the themes present in the Wisconsin dataset. As such, the following section will review the themes in the Minnesota set, emphasizing themes and patterns different from the Wisconsin section.

5.2.3 Themes – Similarities and Differences in Minnesota

5.2.3.1 Physical Threats of Mining – A New Twist on an Old Theme

Pollution was a frequent theme and occurred in ten different documents. Threats to natural water bodies, again, were the most frequently cited concern under the POLLUTE code, occurring in eight of the ten documents that mentioned pollution, degradation, or environmental harm as a consequence of mining. Concern for public health and drinking water only occurred in one document: an opinion piece submitted to the St. Pioneer Press by members of a naturalist group:

> All Minnesotans support the development of new jobs as we struggle out of the recession. But many Minnesotans believe that this new mining can't be done without terrible damage to our lakes and streams. While the mining industry and its allies are racing to ease environmental hurdles to begin new sulfide mining, we should insist that these new mines and the jobs they bring don't ruin our clean water and public health with toxic pollution (Minnesota 2.58). [H20] [PUBHEALTH] [DH20] [RECESSION] [OP-NEG] [JOBS]

What is notably different about this excerpt from POLLUTE excerpts from the Wisconsin dataset, is the authors of the above excerpt begin by acknowledging mining as a potential source of new jobs in the recession.[18]

[18] According to the U.S. Bureau of Labor Statistics, unemployment rates in Wisconsin were 3.2% in January 1998 and 6.8% in Minnesota in January of 2011. Other articles in the Minnesota dataset referenced financial woes. For example, one article states, "On the week in which he was officially sworn into office, Dayton continued to add to the roster of top agency officials who will help him govern alongside the GOP-controlled

5.2.3.2 Universal Goods Revisited

Eleven documents, more than a third of the Minnesota dataset, identified mining as a job creator. While themes of pollution were countered by positive themes identifying mines as environmentally safe (e.g. five documents included statements coded with "MEET STANDARDS", and "TECH"), most positive statements were related to universal goods (e.g. job creation, the economy, and meeting public demand). For example, a press release from Polymet stated, "The NorthMet project is expected to require approximately one and a half million hours of construction labor and create 400 long-term jobs, a level of activity that will have a significant multiplier effect in the local economy" (Minnesota 47). Rep. Tom Rukavina (DFL), a vocal supporter of the bill, emphasized the roll of the mining in supplying commonly used goods:

> Rep. Tom Rukavina delivered a wide-ranging pitch in support of mining to the House Higher Ed Policy and Finance Committee. When the loquacious legislator paused to peek at his cell, Committee Chair Bud Nornes quipped: "Did you get all that from that phone?" Never one to let a sales pitch pass by, Rukavina retorted, "By the way, there are 27 different minerals in the phone -- and most of them would be mined in Minnesota" (Minnesota 50). [DEMAND]

In a separate article he was also quoted as linking mining to concepts of sustainability by saying, "You can't have a green economy without copper and nickel" (Wisconsin 25). [GOODECON] [DEMAND]

Legislature in confronting the state's $6.2 billion budget deficit (Minnesota 22.58)." Comparable comments were lacking in the Wisconsin dataset.

5.2.3.3 Mining as a Costly to Taxpayers

COSTLY (damage caused by mines has financial consequences for the taxpayer, government, and communities) was identified more (by proportion and count) in the Minnesota dataset (identified in four documents) than in the Wisconsin dataset, where it was coded only once in an Op-ed by Spencer Black. The messages, however, were the same. For example, in the Minnesota dataset, an unaffiliated individual wrote:

> Sulfide mining has never been done in Minnesota. So far, the multi-national companies behind the new mines have been unable to show that they can meet Minnesota's laws. This type of mining is the most polluting industry in the country, with a legacy of costly or impossible cleanup (Minnesota 18.58). [COSTLY] [POLLUTE]

In the Wisconsin dataset, Rep. Spencer Black (D), mentions the Summitville Superfund site noting that it polluted, "many miles of trout streams and poison[ed] water supplies in southern Colorado. Taxpayers in that state will pay as much as $150 million to try to clean up the damage" (Wisconsin 94).

5.2.4 Comparing Documents by Code – Minnesota and Wisconsin

5.2.4.1 Positive and Negative Breakdown of all documents in Wisconsin and Minnesota

Figure 2 (below) show total articles in each data set divided by negative and positive code application, where documents in the "positive only" group only contain positive codes, documents in the "negative only" set contain only negative codes, and documents in the "mixed" group contain both positive and negative codes. A few documents contained neutral codes and were placed in a 'neutral" category.

Figure 2 shows that 74% (84) of all documents in the Wisconsin dataset included one or more of the negative depictions, 22% (25) of those offered both positive and negative depictions, leaving a total of 53% (59) that offered only negative depictions of mining. More articles holding positive themes than negative themes were identified in Minnesota, the opposite of Wisconsin. It also shows that 68% (19) of all articles coded in the Minnesota dataset included one or more positive themes, 25% (seven) of those offered both positive and negative depictions, leaving a total of 43% (twelve) carrying only positive depictions of mining.

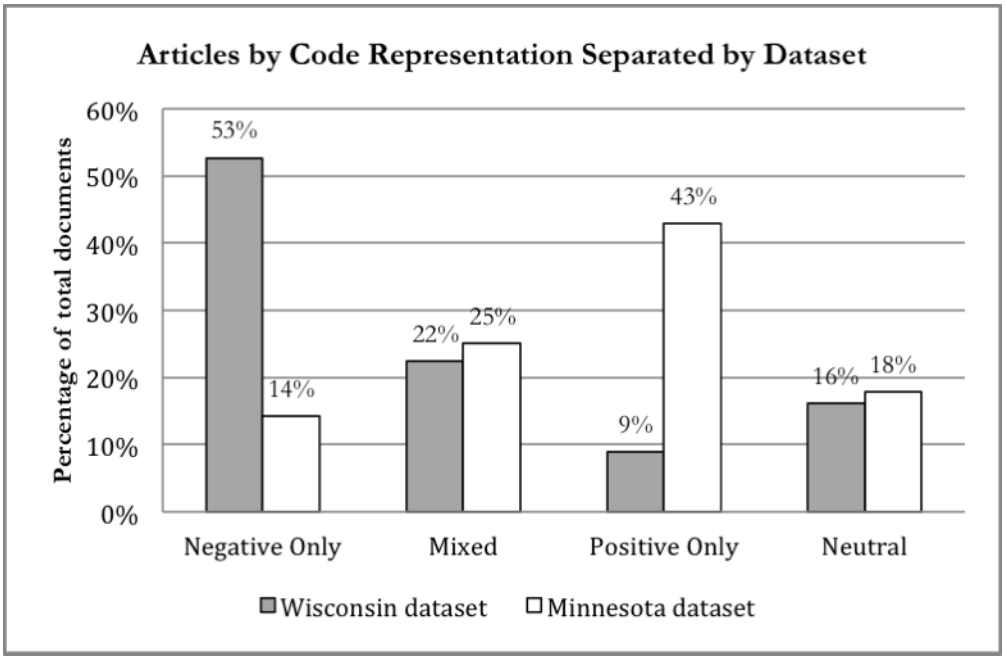

Figure 2: Articles by Code Representation Separated by Dataset (Minnesota, n=28; Wisconsin, n=112)

5.2.4.2 Positive and Negative Breakdown of Opinion Articles in Wisconsin and Minnesota

Figure 3 shows opinion articles divided by opinion categories (positive opinion of mining, negative opinion of mining, neutral opinion of mining) and author (elected official, individual, editor, and governmental agency) for Wisconsin. There were no opinion articles reported to be written by tribal representatives or environmental group representatives.

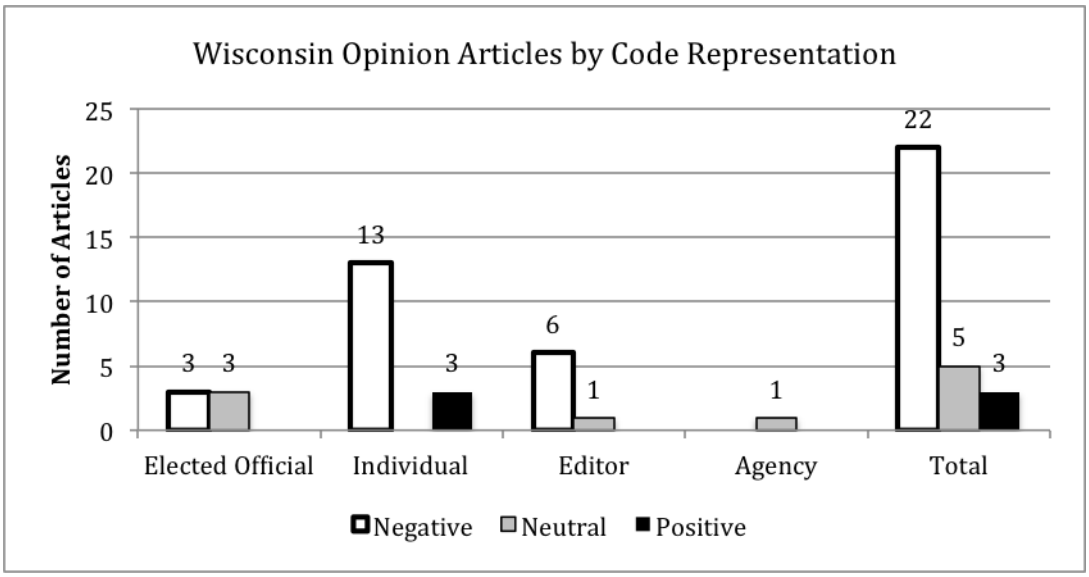

Figure 3: Wisconsin Opinion Articles by Code Representation (n=30)

The opinion pieces included seven editorials, six op-eds submitted by state legislators and the Secretary of the Wisconsin Department of Natural Resources, as well as 16 LTEs from reportedly unaffiliated individuals. There were significantly more opinion pieces offering a negative opinion (73%) of mining than either positive (10%) or neutral (17%). The most activity comes from individuals, authors that did not report an affiliation.

The Minnesota dataset only included four opinion pieces: one negative LTE from an individual, a negative LTE from an environmental representative, a positive press release from Polymet, and a positive opinion piece by two Duluth reporters. Positive codes and the LAWMAKER code were applied more frequently in the Minnesota dataset than in the Wisconsin dataset, showing a total of seven articles featuring the LAWMAKER_SUP (praise by lawmaker) code. Despite a much larger dataset (112 documents as opposed to Minnesota's 28), the Wisconsin dataset included no instances

of the LAWMAKER_SUP code, three documents with LAWMAKER_CRIT (criticism of mining), and three documents with LAWMAKER_NEUT (neutral).

6 Discussion

6.1 Political resources

Examination of the available Fortune 500 rankings and financial data indicate that all companies investigated have access to at least one political resource: money. A better measure of power, however, was the listed lobbying expenditures in that they provided a glimpse of both wealth and mobilization capacity of metal mining interests in Wisconsin and Minnesota. Based on the information available, it cannot be determined in which instance metal companies spent more money on lobbying. This is primarily because the Minnesota Chamber of Commerce (MCC) was a conglomerate of business interests. Also, it is important to note that the expenditures in Minnesota only cover half of the biennium (2011), but the reported expenditures and lobbying efforts in Wisconsin cover both years (1997 to 1998).

Nonetheless, the purpose of evaluating money, wealth, and lobbying expenditures was to provide evidence to determine if the mining industry can be reasonably deemed politically powerful and remove Schneider & Ingram's deviant and dependent categories as possible types. This information supports the claim that the mining industry should be identified as either belonging to the contending group or the advantaged, but does not provide enough information to say the mining industry had more or less political power in Minnesota than it did in Wisconsin.

6.2 Comparing Social Constructions

As predicted, instances of positive images of the mining industry were more common in the Minnesota dataset than in the Wisconsin dataset. In addition to the entire dataset having more documents with positive codes generally, there were more documents featuring elected officials (including candidates) expressing support for the mining industry either by describing the industry with positive codes or defending the industry against restrictive regulations (see VICTIM codes in Appendix B and Appendix C for code applications by document). As discussed in Section 2.1.4, Schneider and Ingram (1993) suggest that elected officials are less likely to give public support to contenders as they are to advantaged groups. Schneider & Ingram point out that elected officials tend to publicly criticize contending groups or risk losing political capital with their constituents.

This research supports Schneider & Ingram's observation. In Wisconsin, as illustrated in Section 5.01, policymakers were publicly criticized for (or accused of) supporting the mining industry. Both datasets were mixed, however, suggesting the social construction of the mining industry is still contested. The differences between the two time periods suggests that the mining industry, if not yet a well-established advantaged group, certainly enjoyed more positive news coverage in 2011 Minnesota than it did in 1998 Wisconsin.

As with any study, comprehensiveness is compromised for the sake of parsimony and feasibility. Unfortunately, determining what caused this shift in social construction is unclear. This research, however, does implicate a few possibilities. For example, the

emphasis on job creation and economy boosting as a positive attribute of the mining industry in the Minnesota dataset suggests that differences in the economic climate may have meant the "mining industry as job creator" message was more relevant in Minnesota in 2011 than it would have in Wisconsin 1997. As mentioned in Section 2.1, a dramatic event may alter the public's opinion of a target group (Schneider & Ingram 1993). The Exxon 1987 oil spill in Valdez, Alaska may have contributed to their negative public image and their inability to influence passage of the Mining Moratorium Bill. Whether or not those were truly causal factors, however, is a determination that is outside the scope of this study.

7 Conclusion

Hardrock mining is associated with severe environmental and economic costs. Of particular concern is acid mine drainage which has contaminated several thousand kilometers of streams across the United States, representing a formidable danger to watershed health. Given the high risks of this activity, ensuring high regulatory standards may be an important quality control measure to protect areas vulnerable to mining impacts. With this in mind, this study sought to understand the factors that led to two different policy approaches toward mining permits - the Mining Moratorium bill in Wisconsin and the Permit Streamlining Bill in Minnesota.

Schneider & Ingram's Social Construction of Target Populations framework argues that a group's social construction and political power help determine what public

policy approach is used to modify its behavior. In line with the framework, it was hypothesized that the mining industry enjoyed a more positive social construction in Minnesota than in Wisconsin. Content analysis was used to determine whether or not there was a difference between 1) the social construction of the mining industry in Wisconsin during the 1997-1998 legislative biennium that passed the Mining Moratorium bill and 2) the social construction of the mining industry in Minnesota during the 2011 legislative session that (introduced and) passed the Permit Streamlining Bill (HF1). Content analysis of newspaper articles collected from both time periods revealed that the social construction of the mining industry was indeed more positive in Minnesota dataset than in the Wisconsin dataset.

8 Policy Recommendations

The value of social construction research in the context of policy formation is more than just understanding what has happened. The true value lies in predicting what policy approaches are likely to be feasible (i.e. acceptable to politically powerful target populations and policymakers) and effective in inducing behavioral change in the target population. In an effort to guide mining policy, increase water resource and environmental projects, and provide greater assurances to the public in the case of mine abandonment, previous research has called for strengthening the regulatory framework by raising minimum standards of the 1872 Mining Law (Schultz, 2006) or increasing enforcement of water quality standards by requiring mining operations to cease

operations until "appropriate remediation is addressed and implemented" (Woody, 2010, p329). While these policy recommendations are well reasoned, the Social Construction of Target Population framework suggests that these polices will be difficult to implement (or pass) if the target population is powerful and impossible to implement (or pass) if the target population is also positively constructed.

The mining industry is powerful and, while not universally favorably viewed, appears to be cultivating a positive social construction. This suggests that efforts focused on introducing restrictive legislation in Minnesota may not only be arduous, but also a misuse of effort. Instead, to entice mining companies to change their behavior through policy, the focus should be on legislation that seeks to incentivize, rather than mandate. One example may be to provide federal funding for research innovating new technology to prevent and mitigate environmental damage. Another example may be to provide capacity building measures, like offer technical assistance, or providing subsidies for mitigation projects and efforts to prevent water contamination. If mining is seen as a way to offer a social good (i.e. meeting the demand for metals), policymakers may be able to justify offering additional subsidies to mining companies, even at the expense of taxpayers. In other words, society is paying the cost for meeting the public's demand for metals.

Policymakers may be able to satisfy both the advantaged and contender social construction of the mining company by suggesting legislation that both requires greater financial assurances for environmental damage (i.e. the company will pay for the perpetual maintenance of acid mine drainage) and offers subsidies for corporations who use the best technology to prevent damage. This would reward mining companies

meeting standards and punishing those who fail appealing to both the "responsible" mining company image, offering incentives to mine more safely, while still punishing the polluting contender.

It should be noted, however, that previous policy design influences social construction and target population behavior (refer to Section 2.1). Providing incentives to the mining industry as a means to increase environmental safety may also push the mining industry deeper into the advantaged category. The above recommendations to policymakers are not a call to accept the environmental, social, and economic externalities of mining. Nor is it a recommendation for groups working to tighten regulations or strengthen enforcement of current regulations to cease their work. These efforts, however, should be coupled with a concerted effort to influence the social construction of the mining industry, not just mining policy.

Schneider and Ingram note that high levels of contender activity, though it leads to beneficial policy for a time, draws attention to their sub-rosa activity. This, in turn, can lead to a backlash and incite public opposition to an undeserving contending group receiving policy benefits. The language of the Permit Streamlining Bill (HF1) in Minnesota never directly mentioned the mining industry. Despite the positive depictions of the mining industry in the Minnesota dataset, the opacity of the language of the bill indicates that the mining industry is still utilizing "sub rosa" behavior to induce policy benefits. The bill was also passed in less than four months after it was introduced, which perhaps did not allow the potentially interested public enough time to become aware of the policy process. It will be important, then, for groups interested in limiting the policy benefits delivered to target populations to mobilize and direct public attention to the

mining industries' political activities emphasizing the benefits they are receiving. This may be in the form of a media campaign that links the mining industry to already salient negative images (e.g. the Exxon Oil Spill in 1997).

What specific messages are effective may also depend on the social climate. For example, in both Wisconsin and Minnesota, pollution was an externality of mining that was discussed. In the Minnesota dataset, however, the need for jobs was a touted benefit of mining that addressed the public's concern for jobs amidst a recession. Emphasizing the financial burden of the mining industry and its negative affect on a widely recognized popular image (e.g. the taxpayer) may be a message that will be more effective than citing pollution alone. As mentioned in Section 2.1, reframing a subset of a previously constructed group is one way to build public support and pass legislation. Continuing to identify sulfide mining as a harmful subset of the mining industry may be a useful strategy. The Mining Moratorium bill explicitly targeted "sulfide mining" as separate from other forms of mining.

In sum, the social construction of the mining industry appears to be in a state of flux. As such, Schneider & Ingram's framework contends that changing the mining industry's public image is possible. Taking advantage of the instability of its social construction should then be a part of any efforts to regulate hardrock mining. If the end goal is to tighten the lenient regulatory legacy of the Mining Law of 1872 or otherwise limit the policy benefits bestowed to the mining industry, political groups must focus on negatively framing the target population's social construction.

1 Bibliography

Abandoned Hardrock Mines Reclamation Act of 1999, H.R. 395, 106th Cong. (1999)

Akard, P. (1992). Corporate Mobilization and Political Power: The Transformation of U.S. Economc Policy in the 1970s. *American Sociological Review , 57* (5), 597-615.

Audit Bureau of Circulations. (2012, March 20). *eCirc database.* (A. B. Circulations, Producer) Retrieved May 27, 2012, from Audit Bureau of Circulations Web site: http://abcas3.accessabc.com/ecirc/index.html

Bakken, G. (2008). *The Mining Law of 1872: Past, Politics, and Prospects.* Albuquerque: University of New Mexico Press.

Bell, S., & York, R. (2010). Community Economic Identity: The Coal Industry and Ideology Construction in West Virginia. *Rural Sociology , 75* (1), 111-145.

Bernard, H. (2006). *Research Methods in Anthropology* (4th Edition ed.). Oxford, UK: AltaMira Press.

Bertossi, T. A. (2008). Mining for Public and State Approval: Corporate Strategies for Metallic Sulfide Mining on Michigan's Yellow Dog Plains. Master's Thesis, Western Michigan University, Department of Geography, Kalamazoo.

Bloomquist, L. 2000a. "IRRRB retreat focuses on the future of mining in St. Paul will address ways of keeping the region prosperous." *Duluth News-Tribune* (Minnesota). 14 February 2000: 01a. Newspaper.

___. 2000b. "Precious metals mine receives $5 million boost from investor deal with Australian firm will help pay for feasibility tests at Babbit site." *Duluth News-Tribune* (Minnesota). 8 June 2000: 01B. Newspaper.

___. 2000c. "Tests Encouraging for Babbit Precious Metals Site. If Mine Were Opened, It Would Create up to 450 Range Jobs." *Duluth News-Tribune* (Minnesota). 19 June 2000: 01E. Newspaper.

___. 2000d. "East Range Leaders Prepare for Life after LTV. " *Duluth News-Tribune* (Minnesota). 3 September 2000: 01B. Newspaper.

___. 2000e. "Mining developers hopeful some say new projects could create Iron Range jobs despite steel crisis." *Duluth News-Tribune* (Minnesota). 19 October 2000: 01A. Newspaper.

___. 2004a. "Arrangement could put idle LTV facilities to work." *Duluth News-Tribune* (Minnesota). 17 February 2004: 01A. Newspaper.

___. 2004b. "Money for copper-nickel mine cut off." *Duluth News-Tribune* (Minnesota). 24 April 2004: 01A. Newspaper.

___. 2004c. "Vancouver, B.C.-Based Mining Company Seeks Permits for Babbitt, Minn., Mine." *Duluth News-Tribune* (Minnesota). 12 May 2004: 01A. Newspaper.

___. 2006. "Legislators hope for smooth ride." *Duluth News-Tribune* (Minnesota). 26 February 2006. Newspaper.

Blumer, H. (1969). *Symbolic Interactionism; Perspective and Method.* Englewood Cliffs, NJ: Prentice-Hall.

Boulanger, A., & Gorman, A. (2004). *Hardrock Mining; Risks to Community Health.* Earthworks.

Bridge, G. (2000). The social regulation of resource access and environmental impact: production, nature and contradiction in the US copper industry. *Geoforum* , 237-256.

BusinessNorth. 2011. "Dayton signs controversial HF1 bill." BusinessNorth News (Duluth, Minnesota) 4 March 2011. http://www.businessnorth.com/briefing.asp?RID=3914 (Last accessed 3/15/2011)

Central Intelligence Agency. (2012). *The World Factbook 2012*. Retrieved April 24, 2012, from https://www.cia.gov/library/publications/the-world-factbook/index.html

Churchill, R., & Furtman, L. (2007). The buzzards have landed; The real story of the Flambeau mine. Deer Tail Press.

Cline, K. (2011). Targeting Agriculture: Air Quality Policy in California's San Joaquin Valley. *Western Political Science Association Annual Meeting* (pp. 1-20). Fresno: California State University.

Cohen, R. (1980). The Business Lobby Discovers That in Unity There is Strength.". *National Journal , 28*, 1050-1055.

Congressional Budget Office. (2000). *Reforming the Federal Royalty Program for Oil and Gas.* Washington, D.C.: Congressional Budget Office.

Congressional Research Service. (2008). *Mineral Price Increases and Volatitily: Causes & Consequences.* Congressional Research Service.

Council on Environmental Quality. (2007). *A Citizen's Guide to the NEPA:* Having *Your Voice Heard.* Executive Office of the President. Washington, D.C.: Executive Office of the President.

Cutter, S. L., & Renwick, W. H. (1999). Exploration conservation preservation: A geographic perspective on natural resource use. New York, New York: John Wiley & Sons Inc.

Depass, D. 2006. "Revival on the Range; Hope Unearthed." Star Tribune (Minneapolis, MN), 6 November 2006. Newspaper.

Duluth News Tribune staff-writer. 2011. Environmentalists object to IRRRB exemption. *Duluth News-Tribune* (Minnesota). 23 February 2011. Newspaper.

Earthworks. (2012, April 30). *Toxic Release Inventory - Mining Industry* Opposition. Retrieved April 30, 2012, from Earthworks Web site: http://www.earthworksaction.org/issues/detail/TRI_industry_opposition

Edsall, T. (1984). *The New Politics of Inequality.* New York: W. W. Norton.

Eggers, A., & Hainmueller, J. (2011). Political Capital: Corporate Connections and Stock Investments in the U.S. Congress, 2004-20081. Harvard's Institute for Quantitative Social Science.

Elimination of Double Subsidies for the Hardrock Mining Industry Act of 1999, H.R. 397, 106th Cong. (1999)

Elo, S., & Kynga, S. H. (2008). The qualitative content analysis process. *Journal of Advanced Nursing , 62* (1), 107–115.

Ferguson, K. D., & Erickson, P. M. (1988). Pre-Mine Prediction of Acid Mine Drainage. In W. Salomons, & U. Forstner (Eds.), *Dredged Material and Mine Tailings.* Springer-Verlag Berlin Heidelberg.

Friends of the Boundary Waters Wilderness (FBWW) website. http://www.friends-bwca.org/issues/sulfide-mining. (Last accessed 5/1/2011)

Gedicks, A. (2001). Resource rebels: Native challenges to mining and oil corporations. Cambridge, UK: South End Press.

Gedicks, A. (1993). The new resource wars: Native and environmental struggles against multinational corporations. Boston, MA: South End Press.

Gedicks, A., & Grossman, Z. (2001). Native resistance to multinational corporations in Wisconsin. *CulturalQuarterly , 5* (1).

General Mining Law of 1872. (n.d.). General Mining Law of 1872, 30 U.S.C. §§ 22–39 (1872). .

Gordon, R., Bertram, M., & Graedel, E. (2006). Metal Stocks and Sustainability. *Proceedings of the National Academy of Sciences of the United States of America , 203* (5), 1209–1214.

Gray, V., & Lowery, D. (1996). The Population Ecology of Interest Representation: lobbying Communities in the American States. Ann Arbor, MI: University of Michigan Press.

Gray, V., Lowery, D., Fellowes, M., & McAtee, A. (2004). Public Opinion, Public policy,

and Organized Interests in the American States. *Political Research Quarterly , 57* (3), 411–420.

Guzzardi, W. (1978, March 27). Business is Learning How to Win in Washington. *Fortune* , pp. 52-58.

Hall, R. L., & Deardor, A. V. (2006). Lobbying as legislative subsidy, . *The American Political Science Review , 100* (1), 69-84.

Hardrock Mining Reform Act of 1993, H.R 322, 103rd Cong. (1993)

Hardrock Mining Royalty Act of 1999, H.r. 394, 106th Cong. (1999)

Hardrock Mining and Reclamation Act of 2007, H.R. 2262, 110th Cong. (2007)

Hardrock Mining and Reclamation Act of 2009, H.R. 699, 111th Cong. (2009)

Himmelstein, J. (1990). *To The Right: The Transformation of American* Conservatism. Berkeley, California: University of California Press.

Horowitz, L. (2010). Twenty Years Is Yesterday': Science, Multinational Mining, and the Political Ecology of Trust in New Caledonia. *Geoforum , 41* (4), 617-626.

Hudson, T., Fox, F., & Plumlee, G. (1999). *Metal Mining and the Environment.* American Geological Institute.

Ingram, H. S. (1991). The Choice of Target Populations. *Administration & Society , 23* (3), 333-356.

Ingram, H., Schneider, A., & deLeon, P. (2007). Social Construction and Policy Design. In P. A. Sabatier (Ed.), *Theories on the Policy Process* (2nd Edition ed.). Boulder, Colorado: Westview Press.

Jennings, S., Neuman, D., & Blicker, P. (2008). *Acid Mine Drainage and* Effects *on Fish Health and Ecology: A Review.* Bozeman: Reclamation Research Group .

Keane, M. J. (2000). *Wisconsin Briefs: Regulation of Metallic Mining In Wisconsin.* Report, Wisconsin State Legislature, Wisconsin Legislative Reference Bureau.

Kelleher, B. 1999. "Troubles at the IRRRB." Minnesota Public Radio (Duluth, Minnesota) 7 December 1999. http://news.minnesota.publicradio.org/features/199912/06_newsroom_irrrb-m/troubles.shtml (Last accessed 3/15/2011)

Kim, A. G., Heisey, R., & Duel, M. (1982). *Acid Mine Drainage: Control and Abatement Research.* U.S. Department of the Interior, Bureau of Mines IC 8905.

Kimmel, W. G. (1983). The impact of acid mine drainage on the stream ecosystem. In *Pennsylvania Coal: Resources, Technology, and Utilization* (pp. 424-437). Pennsylvania

Academic Science Publications.

Knight, C. (2002). A Regulatory Minefield: Can the Department of Interior Say "No" to a Hardrock Mine? *University of Colorado Law Review , 73*.

Kuipers, J., Maest, A., MacHardy, K., & Lawson, G. (2006). Comparison of Predicted and Actual Water Quality at Hardrock Mines: The reliability of predictions in Environmental Impact Statements. Butte: Kuipers & Associates.

Lantz, P., Weisman, C., & Itani, Z. (2003). A disease-specific Medicaid expansion for women: the Breast and Cervical Cancer Prevention and Treatment Act of 2000 . *Women's Health Issues , 13* (3), 79-92.

Lapakko, K. (1993). *Mine Waste Drainage quality Prediction: A literature* Review. Minnesota Department of Natural Resources, Division of Minerals, St. Paul, MN.

Lei, K., & Zhou, S. (2012). Per Capita Resource Consumption and Resource Carrying Capacity: A Comparison of the Sustainability of 17 Mainstream Countries. *Energy Policy , 42* (0), 603–612.

Levitan, S., & Cooper, M. (1984). *Business Lobbies: The Public Good and the Bottom Line.* Baltimore: Johns Hopkins Press.

Levitan, S., Cooper, M. L., & Cooper, M. (1984). *Business Lobbies: The Public Good and the Bottom Line.* Baltimore: Johns Hopkins Press.

Lowi, T. (1964). American Business, Public Policy, Case Studies, and Political Theory. *World Politics , 16*, 677-715.

Mahmoud, K. K., Leduc, L. G., & Ferroni, G. D. (2004). Detection of Acidithiobacillus ferroxidans in acid mine drainage environments using florescent in situ hybridization (FISH). *Journal of Microbiological Methods , 61*, 33-45.

Marketwire 2007. "*Polymet Reports a 51% Interim Increase in Reserves at NorthMet.*" *Marketwire (Vancouver, British Columbia).* 26 September 2007. Newspaper.

Marketwire 2010. "Polymet loan from Iron Range Resources Approved. *Marketwire* (Vancouver, British Columbia) 16 December 2010. Newspaper.

Martinez-Alier, J. (2001). Mining conflicts, environmental justice, and valuation. *Journal of Hazardous Materials , 86*, 153-170.

Minnesota Environmental Partnership website. http://mepartnership.org/mep_members.asp (last accessed 3/15/2011)

Milwaukee Wisconsin Journal Sentinel. (2012, May 27). *Journal Sentinel Online - Archives.*

Retrieved May 27, 2012, from Milwaukee Wisconsin Journal Sentinel Web site: http://www.jsonline.com/historicarchive/search/

Mineral Exploration and Development Act of 1997, H.R. 253, 105th Cong. (1997)

Mineral Exploration and Development Act of 1999, H.R. 410, 106th (1999)

Minnesota Campaign Finance and Public Disclosure Board. (n.d.). *State of* Minnesota *Campaign Finance and Public Disclosure Board.* Retrieved from http://www.cfboard.state.mn.us/lobby/lobbassc.html

Myers, John. 2008. "Bill sells Superior National Forest land to Polymet." Duluth News-Tribune (Minnesota) 6 June 2008. Newspaper

National Environmental Policy Act of 1969, Pub. L. 91-190, 83 Stat. 852 (codified as amended at 42 U.S.C. §§ 4321-4347 (2000).

Nee, V., & Opper, S. (2010). Social Capital in a Market Economy. *Social Forces , 88* (5), 2105-2132.

Neshkova, M., & Goo, H. D. (2011). Explaining the Patterns of Public Participation in Agency Decision Making. *11th Annual Public Management Research Conference.* Syracuse: Syracuse University.

Northland News. 2010. "Polymet Gets $4 Million Loan." Northland Newscenter (Duluth, Minnesota) 17 December 2010. http://www.northlandsnewscenter.com/news/iron-range/Polymet-Gets-4-Million-Loan-112027569.html (Last accessed 3/15/2011)

Papp, J., Bray, E., Edelstein, D., Fenton, M., Guberman, D., Hedrick, J., et al. (2008). *Factors that influence the price of Al, Cd, Co, Cu, Fe, Ni, Pb, Rare Earth Elements, and Zn.* Reston, VA: U.S. Geological Survey .

Passi, P. "Agencies Begin Search for New Jobs. Mine Closure Reinforces Need for Economic Diversity on the Range." *Duluth News-Tribune* (Minnesota). 18 June 2000: 01A. Newspaper.

Palcich, Elanne. 2011. "Streamlining Pollution in Minnesota." Headwaters. 10 March 2011. Online News Website.

Polymet Mining Corporation. (2012, May 27). *Polymet History.* Retrieved May 27, 2012, from Polymet Mining Web site: http://www.Polymetmining.com/inside-Polymet-history.php

Power, T. (2007). *The Economic Role of Metal Mining in Minnesota: Past, Present, and Future.* Report prepared for the Minnesota Center of Environmental Advocacy and the Sierra Club, University of Montana, Department of Economics, Missoula.

Predmore, S., Stern, M. J., & Mortimer, M. (2011). Constructing the public: the 'substantive sieve' and personal norms in US Forest Service Planning. *Journal of Environmental Planning and Management , 54* (3), 403-419.

Quinn, D., & Shapiro, R. (1991). Business Political Power: The Case of Taxation. *The American Political Science Review , 85* (3), 851–874.

Richardson, R. (2003). Governing Western Mineral Resources: The Emergence of Collaboration. *Natural Resources Journal , 43*, 561-585.

Sampat, P. (2006, June 23). *From Rio to Johannesburg: Mining less in a* sustainable *world.* Retrieved from Worldwatch Institute: http;??www.worldwatch.org/node/1734/print

Schill, S., & Bederman, D. (2010). Glamis Gold, Ltd. v. United States. *The* American *Journal of International Law , 104* (2), 253-259.

Schneider, A., & Ingram, H. (1993). Social Construction of Target Populations: Implications for Politics and Policy. *The American Political Science Review , 87* (2), 334-347.

Schneider, A., & Ingram, H. (2005). *Deserving and Entitled: Social* Constructions *and Public Policy.* New York, New York: State University of New York Press.

Schneider, A., & Ingram, H. (1997). *Policy Design for Democracy.* Lawrence: University Press of Kansas.

Schneider, A., & Sidney, M. (2009). What Is Next for Policy Design and Social Construction Theory? *The Policy Studies Journal , 37* (1), 103-119.

Schroedel, J., & Jordan, D. (1998). Senate Voting and Social Construction of Target Populations: a Study of AIDS and Policy Making 1987-1992. *Journal of Health Politics, Policy, and Law , 23* (1), 107-132.

Schuler, D. (2008). Peering in from Corporate Political Activity. *Journal of Management Inquiry , 17* (3), 162-167.

Schultz. (2006). Between a Rock and a Hard Place: a Proposed Sulfide Mine Illustrates the lack of an Adequate Federal and State Environmental Regulations Over Hard Rock Mining and the Need to Utilize the Public Trust Doctrine. *Vermont Journal of Environmental Law , 7*, 1-43.

Shaw, C. 2011a. "Environmentalists challenge Minnesota Capitol moves on mining." *Finance & Commerce (Minneapolis, MN).* 4 March 2011: Newspaper.

Shaw, C. 2011b. "Enviros angry over mining moves in Minnesota." *The Legal Ledger (St. Paul, Minnesota).* 4 March 2011: 01a. Newspaper.

Shepsle, K., & Weingast, B. (1987). The Institutional Foundations of Committee Power. *American Political Science Review , 81* (1), 85-104.

USDA Forest Service. (1993). Acid Mine Drainage from Mines on the National Forests, A management Challenge. Program Aid 1505.

USDA Forest Service 2010. Proposed NorthMet Mining Project and Land Exchange. Report.

U.S. Geological Survey. (2012). *Mineral commodity summaries 2012*. Washington, D.C.

United States General Accounting Office. (1989). *The Mining Law of 1872 Needs Revision.* Report to the Chairman, Subcommittee on Mining and Natural Resources, Committee on Interior and Insular Affairs, House of Representatives.

United States General Accounting Office. (1992). Mineral Resources: Value of Harrock Minerals Extracted From and Remaining on Federal Lands. United States General Accounting Office.

USEPA. (1994). *Acid Mine Drainage Prediction.* Technical Document, Office of Solid Waste, Washington, D.C.: U.S. Environmental Protection Agency.

USEPA. (1994b). *Background for NEPA Reviewers: Non-coal Mining Operations.* Office of Solid Waste. Technical Document, Washington, D.C.: U.S. Environmental Protection Agency.

USEPA. (2000). *Liquid Assets 2000: America's Water Resources at a Turning Point.* EPA-840-B-00-001. Office of Water (4101). Washington, DC: United States Environmental Protection Agency.

USEPA. (2004). Evaluation Report: Nationwide Identification of Hardrock Mining Sites. Washington, D.C.: U.S. Environmental Protection Agency.

USEPA (2010). "Re: NorthMet Project - Draft Environmental Impact Statement. CEQ# 20090387." 18 February 2010. Letter to Colonel Christensen, USACE District Engineer.

USEPA. (2012a, February 24). *AML Site Information*. Retrieved April 30, 2012, from USEPA Web site: http://www.epa.gov/aml/amlsite/index.htm

USEPA. (2012b, April 2). *Mining Waste.* Retrieved May 27, 2012, from Environmental Protection Agency Web Site: http://www.epa.gov/osw/nonhaz/industrial/special/mining/index.htm

USEPA. (2012c, April 30). *Toxics Release Report Explorer.* Retrieved April 30, 2012, from USEPA Web site: ub.epa.gov/triexplorer/tri_release.chemical

Washington, R. "Editorial: Rukavina's frankness, experience win out." Duluth News-Tribune (Minnesota) 5 October 2010. Newspaper.

Wisconsin Department of Natural Resources. (1997). *Potential Metallic Mining Development in Northern Wisconsin.* Madison, WI: Wisconsin Department of Natural Resources.

Wisconsin Department of Natural Resources. (2012, February 27). *Recent and potential metallic mining projects in Wisconsin*. Retrieved May 27, 2012, from Wisconsin Department of Natural Resources Web site: http://dnr.wi.gov/topic/Mines/Projects.html

Wisconsin Legislative Reference Bureau . (2006). *RESEARCHING LEGISLATIVE HISTORY IN WISCONSIN* . Madison: Wisconsin Legislative Reference Bureau.

Woods, N.F., Catanzaro, M., 1988. Nursing Research. Theory and Practice. The C.V. Mosby Company, St. Louis, Washington DC, Toronto.

Woody, C., Hughes, R. M., Wagner, E., Quinn, T., Roulson, L., Martin, L. M., et al. (2010). The Mining Law of 1872: Change is Overdue. *Fisheries , 35* (7), 321-331.

Appendix A: List of Articles Used in Content Analysis

Dataset	ID	Title	Author	Date	Type	Publisher	Author Type
Minnesota	2.58	Proescholdt, Seitz: Listen to citizens worried about sulfide mining	Kevin Proescholdt and Greg Seitz	3/31/11	opinion	St. Paul Pioneer Press	enviro
Minnesota	5.58	Other voices: Cooperation can make mining project work	anon	3/17/11	opinion	St. Paul Pioneer Press	reporter
Minnesota	6.58	Fresh off a convincing special election win, 25-year-old Carly Melin gets ready to take her place at Minnesota Capitol	Bierschbach, Briana	2/18/11	column	Legal Ledger	reporter
Minnesota	9	Controversy brews in Minnesota over environmental bills	Shaw, Charley	3/25/11	column	Legal Ledger	reporter
Minnesota	9.58	Merger boosts mine project near BWCA	Shaffer, David	3/4/11	column	star tribune	reporter
Minnesota	10.58	Report: Minnesota's environmental review process is slow	Bierschbach, Briana	3/3/11	column	Finance & Commerce	reporter
Minnesota	11	Minn. session: What's done, what's not	Condon, Patrick; Bakst, Brian	3/25/11	column	AP	reporter
Minnesota	12	Conservation groups drop lawsuit over $4M mine loan	anon	3/22/11	column	St. Paul Pioneer Press	reporter
Minnesota	12.58	Landwehr embraces Minnesota Department of Natural Resources balancing act	Shaw, Charley	3/2/11	column	Legal Ledger	reporter
Minnesota	13.58	Mine's risks spotlighted	Marcotty, Josephine	3/2/11	column	star tribune	reporter
Minnesota	15	Conservation groups drop lawsuit challenging loan to Polymet mining	Lien, Dennis	3/21/11	column	St. Paul Pioneer Press	reporter
Minnesota	15.58	Environmental groups see bias for Minnesota Iron Range agency	Lien, Dennis	2/23/11	column	St. Paul Pioneer Press	reporter

Minnesota	17.58	What's happening at Minnesota Capitol: Dayton's budget: The day after; 'Health Care Freedom'	Grovum, Jake	2/17/11	column	St. Paul Pioneer Press	reporter
Minnesota	18.58	The fall guys	Chadwick, Samantha	2/12/11	opinion	St. Paul Pioneer Press	individual
Minnesota	20	Permit bill is a win for state businesses	anon	3/6/11	column	star tribune	reporter
Minnesota	20.58	Politics in Minnesota: the Weekly Report: January 28, 2011	staff	1/28/11	column	Legal Ledger	reporter
Minnesota	21.58	Skraba meeting with DNR Commissioner: A sign the Range is not forgotten in St Paul	staff	1/22/11	column	Ely Echo	reporter
Minnesota	22.58	Minn. Gov. Dayton's cabinet is taking shape	Demko, Paul	1/7/11	column	St. Paul Pioneer Press	reporter
Minnesota	23.58	Minnesota DNR's new leader starting with full plate	Niskanen, Chris	1/6/11	column	St. Paul Pioneer Press	
Minnesota	24.5	Local legislators score on government reform, environment panels	Swenson, Brad	1/2/11	column	Bemidji Pioneer	reporter
Minnesota	25	Enviros angry over mining moves in Minnesota	Shaw, Charley	3/4/11	column	Legal Ledger	reporter
Minnesota	31	Who should guard hen house?	Roper, Eric	3/3/11	column	star tribune	reporter
Minnesota	32	Businesses gain environmental clout Dayton clashes with green groups	roper,eric; kaszuba, mike	3/4/11	column	star tribune	reporter
Minnesota	33	Report calls Minn. permitting slow, duplicative	Condon, Patrick	3/2/11	column	AP	reporter
Minnesota	42	Bemidji Day at the Capitol: Gov. Dayton greets delegation, hears concerns of local leaders	Swenson, Brad	2/2/11	column	Bemidji Pioneer	reporter
Minnesota	47	Polymet Names Brad Moore Executive VP-Environmental and…	Scipioni, Joe	2/24/11	opinion	Marketwire	mining
Minnesota	48	Dayton pushes Minn. Agencies to speed permit calls	Bakst, Brian	1/24/11	column	AP	reporter
Minnesota	50	Politics in Minnesota: This Weekly Report: January 14, 2011	staff	1/14/11	column	Legal Ledger	reporter

Wisconsin	20	WEAKENED SMOKING BILL PULLED FROM CEREMONY	Pommer, Matt	4/2/98	column	Capital Times	reporter
Wisconsin	21	ENVIRONMENTAL DECADE ISSUES AN UPBEAT REPORT	Seely, Ron	4/22/98	column	Wisconsin State Journal	reporter
Wisconsin	22	GARVEY SAYS HE'S FRIEND TO ENVIRONMENT	Mayers, Jeff	4/22/98	column	Wisconsin State Journal	reporter
Wisconsin	23	ANTI-MINE SIGNING SET FOR EARTH DAY	Mayers, Jeff	4/21/98	column	Wisconsin State Journal	reporter
Wisconsin	24	Groups rally for Wolf River	Block, Dustin	3/27/98	column	Badger Herald - University Wire	reporter
Wisconsin	26	Here's How to Lobby if Other Side Has $1 Million	Seely, Ron	3/21/98	column	Wisconsin State Journal	reporter
Wisconsin	27	Rep. Black Pleased; Tommy to Sign Mine Bill	Callender, David	3/20/98	column	Capital Times	reporter
Wisconsin	28	THOMPSON SAYS HE'LL SIGN MORATORIUM BILL	Seely, Ron	3/20/98	column	Wisconsin State Journal	reporter
Wisconsin	29	STATE CUTS LAST AFDC CHECK	Callender, David; Pommer, Matt	3/5/98	column	Capital Times	reporter
Wisconsin	30	THOMPSON URGED TO SIGN MINING MORATORIUM	Seely, Ron	3/3/98	column	Wisconsin State Journal (Madison, WI)	reporter
Wisconsin	31	LIBERTARIANS GO AGAINST TIDE AS 25 GROUPS PUSH MINE BILL	Pommer, Matt	3/2/98	column	Capital Times	reporter
Wisconsin	32	WHAT IS TOMMY THOMPSON WAITING FOR ON MINING BILL?	Spoolman, Scott	2/26/98	Opinion	Capital Times	individual
Wisconsin	33	SIZE OF PROPOSED MINE CONCERNS GOV. THOMPSON	staff_PP	2/19/98	column	St. Paul Pioneer Press	reporter
Wisconsin	34	THOMPSON LIKELY TO SIGN MINE BILL	Pommer, Matt	2/18/98	column	Capital Times	reporter
Wisconsin	35	CELEBRATING A PEOPLE'S WIN	editor_CT	2/16/98	Opinion	Capital Times	editor
Wisconsin	36	A BIG VICTORY FOR THE ENVIRONMENT AND DEMOCRACY	Black, Spencer	2/16/98	Opinion	Capital Times	legislator

Wisconsin	37	REP KEEPS 'EM GUESSING	Zaleski, Rob	2/14/98	column	Capital Times	reporter
Wisconsin	38	THOMPSON NOT AGAINST HMONG FOOD STAMPS	Johnson, Paul	2/13/98	column	Wisconsin State Journal	reporter
Wisconsin	39	LOBBYISTS GET LESS BANG FOR THE BUCK?; THEY PAID OUT A RECORD $ 23.5 MILLION IN 1997, BUT THE BIGGEST SPENDERS; DIDN'T GET THE RESULTS THEY WANTED.	Mayers, Jeff	2/13/98	column	Wisconsin State Journal	reporter
Wisconsin	41	INCUMBENTS' BANK ACCOUNTS GROW TO $ 4.4 MILLION IN '97	Mayers, Jeff; Flaherty, Mike	2/11/98	column	Wisconsin State Journal	reporter
Wisconsin	43	REP. BLACK HYPOCRITICAL ON ASSEMBLY'S MINING BILL CHANGES	Ourada, Tom	2/10/98	Opinion	Capital Times	legislator
Wisconsin	44	SIGNING MINE BILL IS A SMART MOVE	Pommer, Matt	2/9/98	column	Capital Times	reporter
Wisconsin	45	MINE FOES SAVOR WIN, FOR NOW	Ivey, Mike	2/7/98	column	Capital Times	reporter
Wisconsin	46	SIGN MINE MORATORIUM	editor_CT	2/5/98	column	Capital Times	reporter
Wisconsin	47	MINE VIGIL SET AT MANSION	staff_CT	2/5/98	column	Capital Times	reporter
Wisconsin	48	MINING MORATORIUM BILL APPROVED; ASSEMBLY SENDS AMENDED BILL TO THOMPSON	Seely, Ron	2/5/98	column	Wisconsin State Journal	reporter
Wisconsin	49	ASSEMBLY POISED TO CONCUR IN NEW, TOUGH MINING BILL	Pommer, Matt	2/4/98	column	Capital Times	reporter
Wisconsin	50	MINE BILL NOW POLITICAL POLLUTION	Lorge, Robert	2/4/98	Opinion	Capital Times	individual
Wisconsin	51	WILL GOVERNOR SIGN IT?; TOUGH MINE BILL GETS OK	Callender, David; Pommer, Matt	2/4/98	column	Capital Times	reporter
Wisconsin	52	SENATE PUTS MUSCLE BACK INTO MINING BILL; THE ASSEMBLY VERSION WOULD HAVE MADE IT MUCH EASIER TO GET A MINING PERMIT.	Seely, Ron & Mayers, Jeff	2/4/98	column	Wisconsin State Journal	reporter

Wisconsin	53	MINING FOES LOOK TO SENATE; VOTE ON MORATORIUM SCHEDULED FOR TODAY	Seely, Ron & Mayers, Jeff	2/3/98	column	Wisconsin State Journal	reporter
Wisconsin	54	DIG FOR MIDDLE GROUND ON MINING	editor_WSJ	2/1/98	Opinion	Wisconsin State Journal	editor
Wisconsin	55	ASSEMBLY GOP, EXXON JOINED TO PULL TEETH OF MINING MORATORIUM BILL	Black, Spencer	1/29/98	Opinion	Wisconsin State Journal	legislator
Wisconsin	56	NEW FIRM CREATED FOR CRANDON MINE	Callender, David	1/29/98	column	Capital Times	reporter
Wisconsin	57	NO LIGHT AT END OF TUNNEL IN MINE FIGHT	Mayers, Jeff	1/25/98	column	Wisconsin State Journal	reporter
Wisconsin	58	HERE'S THE ASSEMBLY'S VERSION OF MINING BILL	staff_WSJ	1/25/98	column	Wisconsin State Journal	reporter
Wisconsin	59	EXXON'S GONE, THREAT REMAINS	editor_CT	1/24/98	Opinion	Capital Times	editor
Wisconsin	60	EXXON ABANDONS MINE DEAL	Nichols, John; Russel, Scott	1/24/98	column	Capital Times	reporter
Wisconsin	61	EXXON ABANDONS CRANDON MINING; A DAY AFTER THE STATE ASSEMBLY'S PASSAGE OF A SO-CALLED 'MORATORIUM BILL,'; THE ENERGY INDUSTRY GIANT SELLS ITS PROJECT SHARE TO RIO ALGOM.	Mayers, Jeff	1/24/98	column	Wisconsin State Journal	reporter
Wisconsin	62	AS ASSEMBLY OKS BILL, GARVEY SEEKS MINE DEBATE	Pommer, Matt	1/23/98	column	Capital Times	reporter
Wisconsin	63	MINING BILL AT A GLANCE	staff_WSJ	1/23/98	column	Wisconsin State Journal	reporter
Wisconsin	64	GOP ALTERS MORATORIUM MINING BILL; ANTI-MINING GROUPS OPPOSE FINAL FORM, NOW IN SENATE	Mayers, Jeff	1/23/98	column	Wisconsin State Journal	reporter
Wisconsin	65	GOP HANDS MINING FIRM A BIG VICTORY	Pommer, Matt	1/22/98	column	Capital Times	reporter

Wisconsin	66	SCRUTINIZE MINING, DON'T ABANDON IT	editor_WSJ	1/21/98	Opinion	Wisconsin State Journal	editor
Wisconsin	67	REPUBLICAN TAKES STATE ASSEMBLY SEAT	Mayers, Jeff; Flaherty, Mike	1/21/98	column	Wisconsin State Journal	reporter
Wisconsin	68	JENSEN: ASSEMBLY WILL AMEND, PASS MINING BILL	Pommer, Matt	1/18/98	column	Capital Times	reporter
Wisconsin	70	MORATORIUM ON MINES GAINS MOMENTUM	Mayers, Jeff	1/18/98	column	Capital Times	reporter
Wisconsin	71	APPROVE THE MINING MORATORIUM	CAPITAL TIMES	1/18/98	Opinion	Wisconsin State Journal	editor
Wisconsin	72	REPORT BY MINE COMPANY BLASTED	Pommer, Matt	1/15/98	column	Capital Times	reporter
Wisconsin	73	POLL: CRANDON MINE UNPOPULAR; CLINTON, THOMPSON GET SO-SO RATINGS	staff_WSJ	1/12/98	column	Wisconsin State Journal	reporter
Wisconsin	74	PETITIONERS WANT MINE BILL 'AS IS'	Pommer, Matt	1/9/98	column	Capital Times	reporter
Wisconsin	75	40,000 SIGN PETITION TO BACK MINING BILL	Seely, Ron	1/9/98	column	Wisconsin State Journal	reporter
Wisconsin	76	CRANDON MINING VOTE IS REALLY A TEST OF DEMOCRACY	Mutter, John	1/6/98	Opinion	Capital Times	individual
Wisconsin	78	THOMPSON LOOKS LIKE A CANDIDATE; THE GOVERNOR FACES SOME ISSUES THAT MAY HURT HIM, BUT HE IS ALSO PROMISING; A FEW SURPRISES.	Mayers, Jeff	1/4/98	column	Wisconsin State Journal	reporter
Wisconsin	79	MENOMINEE DECIDE MINING IS WRONG	anon	12/26/97	column	Wisconsin State Journal	reporter
Wisconsin	80	DON'T SWALLOW CRANDON MINING CO.'S BITTER PILL	Olson, Jan	12/20/97	Opinion	Capital Times	individual
Wisconsin	81	REP ILLOGICAL ON MINE ISSUE	anon	12/15/97	Opinion	Capital Times	editor

Wisconsin	82	MINE BAN WON'T HALT TRIBES, FOES SAY; MORATORIUM BILL CALLED 'SHAM'	Callender, David	12/12/97	column	Capital Times	reporter
Wisconsin	83	INDIAN MINES CONCERN SOME STATE LAWMAKERS	anon	12/12/97	column	Wisconsin State Journal	reporter
Wisconsin	85	DNR ACTIONS ON MINE SHOW WHY AGENCY ISN'T TRUSTED	Mutter, John	12/3/97	Opinion	Capital Times	individual
Wisconsin	86	MINES GET SHAFT FROM CLOSED MINDS	Hogan, Dave	11/26/97	Opinion	Capital Times	individual
Wisconsin	87	MINING BILL LOOMS AS TEST FOR TOMMY	Zaleski, Rob	11/17/97	column	Capital Times	reporter
Wisconsin	88	PROGRESS IN MINE FIGHT	anon	11/14/97	Opinion	Capital Times	editor
Wisconsin	90	MINING FOES HAIL PANEL VOTE	Callender, David	11/12/97	column	Capital Times	reporter
Wisconsin	91	MINE WOULD BE STATE'S BIGGEST TOXIC DUMP	Lewke, Andrea	11/9/97	Opinion	Wisconsin State Journal	individual
Wisconsin	92	GOP PROPOSING CHANGES IN MINING BILL; DEMOCRATS SAY REPUBLICAN REVISIONS WOULD DILUTE THE BILL THAT SEEKS TO SUSPEND; HARD-ROCK MINING.	Seely, Ron	11/9/97	column	Wisconsin State Journal	reporter
Wisconsin	93	ASSEMBLY'S SHAKE-UP LEAVES MINING BILL IN LIMBO	Furtman, Laura	11/6/97	Opinion	Capital Times	individual
Wisconsin	94	MINING MORATORIUM BILL WOULD PROTECT WOLF RIVER	Black, Spencer	11/4/97	Opinion	Capital Times	legislator
Wisconsin	95	SULFIDE MINING MORATORIUM	anon	2-Nov-97	column	St. Paul Pioneer Press	reporter
Wisconsin	96	DNR CHIEF PLAYING GAMES ON MINING MORATORIUM	Wolf, Kathryn	10/28/97	Opinion	Capital Times	individual
Wisconsin	97	DNR NOT LOBBYING TO HELP MINE FIRMS	Meyer, George	10/23/97	Opinion	Capital Times	agency
Wisconsin	108	MINING FIRM TO PAY WORKERS TO OPPOSE BILL	Murphy, Chris	9/27/97	column	Capital Times	reporter

Wisconsin	109	BLACK: MINING MORATORIUM NECESSARY; IT'S THE ONLY WAY TO SAVE THE STATE FROM ENVIRONMENTAL HARM, HE SAID IN; DEFENDING HIS LEGISLATION.	Seely, Ron	9/27/97	column	Wisconsin State Journal	reporter
Wisconsin	110	LETTER WRITER DISTORTS TRUTH ON MINING LEGISLATION	Rep. Marc Duff (R)	9/16/97	Opinion	Capital Times	legislator
Wisconsin	111	MINING GROUP IS UNETHICAL	Sturnot, Linda	9/16/97	Opinion	Capital Times	individual
Wisconsin	113	VOTE ON MINING BILL IS PAST DUE	Furtman, Laura	9/2/97	Opinion	Capital Times	individual
Wisconsin	114	FORMER MAJORITY LEADER VOWS TO GET TOUGH ON TARDY BUDGET	Mayers, Jeff; Flaherty, Mike	8/27/97	column	Wisconsin State Journal	reporter
Wisconsin	115	STATE LINES: NEWS FROM CA, GA, NJ, NC, PA, SC, WA AND WI	Imrie, Robert	8/26/97	column	Associated Press	reporter
Wisconsin	116	CLAUSING CITES UNSTATESMANLIKE CONDUCT BY SENATE COLLEAGUES	Mayers, Jeff; Flaherty, Mike	8/13/97	column	Wisconsin State Journal	reporter
Wisconsin	117	MINING HEARING REJECTED FOR CRANDON (FIRST EDITION); MINING HEARING REJECTED FOR CRANDON (SECOND EDITION); DEMOCRATS SAY RESIDENTS DESERVE TO BE HEARD	Seely, Ron	5/23/97	column	Wisconsin State Journal	reporter
Wisconsin	118	MINING MORATORIUM GETS ASSEMBLY'S EAR	Seely, Ron	4/16/97	column	Wisconsin State Journal	reporter
Wisconsin	119	CHVALA, JOHNSRUD CLASH ON MINING MORATORIUM BILL	Mayers, Jeff; Flaherty, Mike	4/12/97	column	Wisconsin State Journal	reporter
Wisconsin	121	BOARD SCHEDULES MINE HEARINGS	Seely, Ron	3/27/97	column	Wisconsin State Journal	reporter
Wisconsin	123	THOMPSON, MINE FOES CROSS SWORDS	Seely, Ron & Mayers, Jeff	3/14/97	column	Wisconsin State Journal	reporter

Wisconsin	124	MINE MORATORIUM BACKERS GEAR FOR FIGHT; REP. BLACK SAYS OPPONENTS WILL TRY TO WATER DOWN BILL IN ASSEMBLY	Callender, David	3/13/97	column	Capital Times	reporter
Wisconsin	125	SENATE HANDS LOPSIDED WIN TO MINING FOES	Callender, David	3/12/97	column	Capital Times	reporter
Wisconsin	126	SENATE OKS MINING LIMITS; BILL RETAINS SPECIFIC PERMIT REQUIREMENTS	Seely, Ron	3/12/97	column	Wisconsin State Journal	reporter
Wisconsin	127	MORATORIUM WON'T CLOSE MINING COMPANY HARNISCHFEGER HEAD SAYS; APPROVAL WOULD NOT MEAN A SHUTDOWN AND LOSS OF 1,200 JOBS.	Seely, Ron	3/11/97	column	Wisconsin State Journal	reporter
Wisconsin	128	ANTI-MINING BILL SHOULD BE REJECTED	anon	3/9/97	Opinion	Wisconsin State Journal	individual
Wisconsin	129	COURTING THE LAWMAKERS ABOUT CRANDON; INDUSTRY LOBBYISTS ADMIT OPPOSITION RALLIED FIRST	Seely, Ron	3/8/97	column	Wisconsin State Journal	reporter
Wisconsin	130	SENATE PANEL PASSES ANTI-MINING BILL; 10-YEAR SAFETY PROOF LIVES, 3-2	Seely, Ron	3/6/97	column	Wisconsin State Journal	reporter
Wisconsin	131	CRITICS SAY CRANDON MINING REPORT HAS FLAWS	Seely, Ron	3/4/97	column	Wisconsin State Journal	reporter
Wisconsin	132	ADVOCATES FIGHT BACK WITH 'MINING SUCCESS' EXAMPLES	Seely, Ron	2/18/97	column	Wisconsin State Journal	reporter
Wisconsin	133	LEGISLATORS' REACTIONS VARY TO BUDGET PLAN; JAUCH SAYS PRESSURE TO INCREASE TAXES WILL BE FELT BY LEGISLATURE	Karlson, Karl	2/13/97	column	St. Paul Pioneer Press	reporter

Wisconsin	134	DEMOCRATS LAUNCH ENVIRONMENT AGENDA; GOP CALL MOVE POLITICAL ANTICS	Seely, Ron	2/7/97	column	Wisconsin State Journal	reporter
Wisconsin	135	MINING PROPONENTS OUTSPENT FOES 3-TO-1	anon	2/5/97	column	Wisconsin State Journal	reporter
Wisconsin	136	FEINGOLD, KLUG OPPOSE 'NON-GREEN' PROJECTS	Anderson, Dana	2/4/97	c	Capital Times	reporter
Wisconsin	138	CHVALA CONFIDENT OF SURVIVAL OF DEMOCRAT AGENDA	Mayers, Jeff	1/27/97	column	Wisconsin State Journal	reporter
Wisconsin	139	UNFINISHED ENVIRONMENTAL BUSINESS WILL RESURFACE IN '97	Seely, Ron	1/5/97	column	Wisconsin State Journal	reporter
Wisconsin	112b	MORE MAIL: EFFECTS OF MINING AND PESTICIDE USE ON THE ENVIRONMENT; WHAT'S HOLD-UP ON BILL TO BLOCK MINING?	Pubanz, Len	9/14/97	Opinion	Wisconsin State Journal	individual
Wisconsin	120a	TODAY'S MAIL; SENATE VOTES POLITICS OVER REASON ON MINING	Hill, Robert	4/10/97	Opinion	Wisconsin State Journal	Individual
Wisconsin	120b	TODAY'S MAIL; SENATE VOTES POLITICS OVER REASON ON MINING	Duesler, Frank	4/10/97	Opinion	Wisconsin State Journal	individual
Wisconsin	120c	TODAY'S MAIL; SENATE VOTES POLITICS OVER REASON ON MINING	Marrari, Jim	4/10/97	Opinion	Wisconsin State Journal	individual
Wisconsin	S1	Mining Firms Spend 331,841 Lobbying . (SEE DISCUSSION)	Walters, Steven	2/5/97	column	Milwaukee Journal Sentinel	reporter
Wisconsin	S2	Mining Moratorium Approved, In Senate	Jones, Richard	3/12/97	column	Milwaukee Journal Sentinel	reporter
Wisconsin	S3	Mining Moratorium Bill Will Pass, Jensen Predicts	Walters, Steven; Behm, Don	1/20/98	column	Milwaukee Journal Sentinel	reporter
Wisconsin	S4	MINING MORATORIUM GOES TO FULL SENATE	Walters, Steven; Behm, Don	3/6/97	column	Milwaukee Journal Sentinel	reporter

Wisconsin	S5	Mining 'moratorium' Goes To Thompson	Rinard, Amy	2/5/98	column	Milwaukee Journal Sentinel	reporter
Wisconsin	S6	Mining Moratorium Bill Will Not Stop Mine .	State Rep. Marc Duff (Republican)	7/19/97	opinion	Milwaukee Journal Sentinel	legislator
Wisconsin	S7	Real Meaning Of Mining Bill Will Require Some	Rinard, Amy	1/26/98	column	Milwaukee Journal Sentinel	reporter
Wisconsin	S8	40,000 Sign Petition Supporting Bill To Stop Crandon Mine .	Walters, Steven	1/9/98	column	Milwaukee Journal Sentinel	reporter
Wisconsin	S9	Mining Linn Lobbying Topped .Si (DISCUSSION)	Theimer, Sharon	2/8/98	column	Milwaukee Journal Sentinel	reporter

Appendix B: Codebook (in alphabetical order by code name).

Code	Code Type	Long name	meaning and notes	examples and search terms
AD_CAMPAIGN	Neutral-subcode	AD/Public Campaign Money	mention of mining industry's public awareness campaigns	Exxon spent 1 million dollars on xyz ad campaign.
AGENCY	ID-subcode	agency	executive agency (federal or state)	EPA, DNR, Minnesota Pollution Control Agency
AGENCY_CRIT	NEG-subcode	Criticism by agency	IDs coded as AGENCY and a NEG code	The EPA said…[bad thing about mining company]
Agency_SUP	Positive-subcode	OPEN support by agency	agency representative openly supports mining industry, praises mining industry: Indication of Advantaged population	
BAD_EMP	NEG-subcode	bad employer	bad employer, unhealthy working conditions	
BADECON	NEG-subcode	bad for economy	mining industry is stated to be "bad for the economy" or closely worded equivalent	
BAN_IT	NEG-subcode	Ban sulfide mining	it is suggested that mining should be banned	Sulide mining should be banned!
BURDEN_exist	VICTIM-subcode	burdensome existing	existing legislation is overly burdensome to industry	inconvenient, burden, unfair
BURDEN_prop	VICTIM	burdensome proposed	proposed legislation is overly burdensome to industry	inconvenient, burden, unfair

CORPORATE MONEY	NEG-subcode	corporate money	mining corporation money is emphasized as a tool used against people, to influence policy, or otherwise to weild power	"Since Mr. Meyer has now changed his position on the bill, we must assume the influence of political forces, big money and extensive lobbying on this important mission"
COSTLY	NEG-subcode	costly	damage caused by mines/consequences of mining/ mines are costly to taxpayers/government/communities, "lack of financial assurance" and other similar statements that allude to financial consequences of mining impacts may also fall under the costly code	
DEMAND	Positive-subcode	Satisfies Demand	mining meets the demand	
DH20	POLLUTE-subcode	drinking water	polluting drinking water, drinking water mentioned specifically	
ELITE	Outsider-subcode	Outsider	The word elitist is used.	elite
ENVIRO_FRIEND	Positive-subcode	environmentally friendly	industry described as "environmentally friendly" or "environmentally safe"	
EXXON_BAD	NEG-subcode	Exxon is Bad	reference to Exxon's "bad reputation"	the word reputation is used following some negative adjective
Exxon_spill	EXXON_BAD subcode		Exxon's oils spill in Valdez is mentioned	Valdez, Alaska, oil spill

FISH	POLLUTE-subcode	fish	fishing or fish mentioned specifically as a concern.	fish, fisherman, fishing advocacy group (e.g. Wisconites for Walleye)
GENEROUS	Positive-subcode	Generous	industry described as generous, free with money, charitable (may include in kind donations or volunteering)	charitable, donation, generous, donated $$$, volunteered, etc.
GOODECON	Positive-subcode	Helps economy	"mining is good for the economy" or some other derivation (jobs listed separate code). NOTE: especially in regards to HF1 - if the statement says generally HF1 will help the environemnt, do not code as GOODECON unless the statement was said by a mining representative AND/OR mining was just menioned in a previous sentence or a sentence directly following the "HF1 helps economy" statement. SEE HF1ECON	mining contributes to a better "business climate", is good for the economy, "mining is vital for a healthy economic future' or " without mines/this mining project/company the economy will not improve", etc.
GOV	LAWMAKER-subcode	Governor	Governor	Governor
GREEN_ ECON	Demand-subcode	Green Economy	green economy depends on mining	
H20	POLLUTE-subcode	water	water resources is an explicitly mentioned concern of mining activities	river, watershed, lake, etc.
HERITAGE	Positive	Proud Heritage/history	(mining is a part of proud heritage)	proud heritage, proud history, long history of mining providing benefits, grandfather was a miner, etc.

HF1	Bill	HF1, Permit Streamlining Bill	neutral description of hf1 - simply an explanation of what it is for context	HF1 (permit streamlining bill)
HF1ECON	HF1-subcode		hf1 is good for jobs economy - without explicitly referencing mines	HF1/streamlining permit bill... promotes a better business climate, helps the economy, opens the door to more jobs, etc.
HONEST	Positive-subcode	honest	the word honest or trustworthy used to describe the mining industry or specific company or aspect of mining industry (e.g. technology). Depending on the context - "transparent" as in Transparent practices, may also be coded as honest.	
ID	ID- Primary	Who was quoted saying something about the mining industry/company/project?	NOTE for all ID codes: QUOTES ONLY or paraphrases attributed to a person or specific group (e.g. "environmental groups say..." = does not get coded. "Sierra club said xyz…" or "Sierra club said, 'xyz'..." both get quoted). An actual quote from an anonymous person representing a generic group (e.g. "Someone who prefers not to be named from an environmental group, said, "xyz") should also be coded.)	Senator, Representative, lobbyist, tribal member, other names of people and groups.

IND	ID-subcode	individual	not associated with a particular group	
IRRESP	NEG-subcode	irresponsible	anytime the mining industry is called irresponsible or some other derivation (does not take responsibility, avoids responsibility).	
JOBS	Positive-subcode	Job creator	mining brings jobs. NOTE: especially in regards to HF1 - if the statement says generally HF1 will bring jobs, do not code as JOBS unless the statement was said by a mining representative AND/OR mining was just menioned in a previous sentence or the sentence directly following the "HF1 creates jobs" statement.	employment, jobs, creates jobs, brings jobs or conversely - jobs that mining brings will be threatened by a moratorium or other restrictive legislation
LAWMAKER	ID-subcode	policymaker	elected official or candidate	Rep., Sen., Congresswoman, Congressman, gubernatorial candidate, councilman/woman, etc.
LAWMAKER_CRIT	NEG-subcode	Criticism by lawmaker	IDs coded as POLICYMAKER and a NEG code	Representative Dawson said, "I don't want to see anymore irresponsible mining companies pollute here in Minnesota."

Lawmaker_SUP	Positive-subcode	OPEN SUPPORT by legislator/politician	politician openly supports mining company, openly praises mining company: Indication of Advantaged population	
LOBBY_ENV	ID-subcode	enviro lobby/rep	lobby group	Sierra Club, Environmental Advocacy, Nature Conservancy, etc.
LOBBY_MIN	ID-subcode	Mining Lobby/rep	paraphrase/quote is attributed to the mining industry, employee, representative, lobby group	Search terms - Rio Algom, Polymet, Exxon, C.E.O., lobbyist, lawyer, spokesperson, Nicolet Minerals… e.g. "Joe Smith, the CEO of Rio Algom said…"
MEET_STANDARDS	Positive-subcode		will meet standards, meets standards (for future tense options - this may include statements that a company will meet standards or that a company will be subjected to the same standards as everyone else).	
Mine_HERE	Neutral-subcode	Mine here, not there	it is better to mine here, than overseas; mining in U.S./Wisconsin/Minnesota, better than mining somewhere else	

MORATORIUM	Bill	Mining Moratorium bill	Statements simply describing the moratorium bill. NOTE: while the language of this bill links mining to pollution, do not code with POLLUTE or a POLLUTE subcode.	e.g. " The Moratorium Bill adds another layer of regulation to the state's existing laws by requiring a mining company seeking permits to cite a similar mine that operated for 10 years and has been closed for 10 years without polluting the environment."
NATURE	POLLUTE-subcode	nature and wildlife	wildlife or nature is an explitiicly mentioned impact of mining; polluting nature and wildlife (as opposed to recreation, human health/safety)	
NEG	NEG-Primary	Negative Codes	Negative words or phrases used to describe mining industry	polluter, irresponsible, undeserving, dishonest, etc.
OP_POS	Opinion	Applies to Opinion pieces only	overall, opinion positive depiction of mining	mining indicated as valued, positives of mining outweight negatives of mining, mining is vital - pro-mining view point
OP-NEG	Opinion	Applies to Opinion pieces only	overall, opinion piece negative depiction of mining	negative aspects of mining outweigh positive aspects of mining
OP-NEUT	Opinion	Applies to Opinion pieces only	neither positive or negative opinion. Neutral.	the author does not indicate a clear preference or perspective.

OTHER	ID-subcode	other groups	other groups that do not fit in other categories. E.g. chamber of commerce	
OUTSIDER	NEG-subcode	Outsider	mining company described as an outsider. NOTE: neutral statements (e.g. Minig company X is from another country) does not count. Must be used in a deragatory or disparaging manner. When in doubt make judgement based on surrounding sentences.	
POLLUTE	NEG-subcode	Polluter	statements that suggest the mining industry pollutes, has polluted, or will or may degrade or will otherwise harm the environment. Statements that are simply describing the contents of the Mining moratorium bill, however, should be coded as MORATORIUM	dump, wastes, harm environment, degrade
PubGOOD	Positive-subcode	PUBLIC GOOD	connecting money from mining to social services, education, other public goods, good for the state (generally)	
PubHEALTH	POLLUTE-subcode	public health	public health generally is an explicitly mentioned concern; catches issues outside of poor working conditions; mining is bad to human health	public health concern, carcinogen, asthma
REC	POLLUTE-subcode	recreation	recreation is explicitly mentioned concern of mining activities.	kayaking, hiking, hunting, fishing, recreation, "sporting groups"
RECESSION	Neutral-subcode	recession	document references an economic recession, unemployment, or a budget defecit	unemployment, recession, joblessness, budget deficit

REPSONSIBLE	Positive-subcode	Responsible	uses the word responsible (or equivalent) to desribe mining industry or mining representative. Statements that the mining industry has a record showing it cleans up messes, prepared to deal with impacts, takes responsibility for impacts. Statements prefaced by "claimed" or otherwise expressing doubt should not be included in this code.	
SLY	NEG-subcode	shifty/tricky/politically sly	the mining industry is politically sly, finds legislative loopholes, has secret meetings with law makers. Note about loopholes: Must indicate the mining industry is (or will) intentionally seek loopholes, not merely that legislation contains potential loopholes that will benefit the mining industry.	political influence, tactic, strategy, loopholes, sneaky, suspicious, secret meetings, behind closed doors, subversive, secretive, hiding, obfuscates, etc.
SPECIAL INTEREST	Outsider-subcode	Outsider	Mining interests/lobbyists/corporations describd as "special interest" group	special interest
SUBSTAND	NEG-subcode	sub standard	mining industry is "not meeting current standards", is operating "sub standard" is "failing standards", standards being some sort of regulatory standards	
SULF_BAD	NEG-subcode	Sulfide is worse than other mining	sulfide mining is described as worse than other mining explicitly	
SUSTAINABLE	Positive-subcode	sustainable	uses the word sustainable to describe mining or some aspect of mining	

TECH	POSITIVE	advanced technology	company uses best technology/advanced technology	modern technology will prevent pollution, frequently noted as prevent pollution associated with older technology, or technological advances will stop pollution
TOURISM	POLLUTE-subcode	tourism	mining harms tourism industry	
TRIBE	POLLUTE-subcode	native/indian/Ttribal	impact native culture, sacred sight; indication that impact of mine is an artifact or aspect of native culture	
UNFAIR	NEG-subcode	unfair	existing unfair priviledge to target population	
UNLAW	NEG-subcode	unlawful	mining industry or rep (e.g. CEO) reported to have broken the law	REMOVED FROM ANALYSIS - POORT INTERCODER RELIABILITY
VICTIM	VICTIM - Primary	Mining as victim	Mining company/industry portrayed as victim of policy, environmentalists, etc.	mining projects scared off by environmentalists; scapegoat, mining industry is being targeted unfairly; lamenting that the mining industry will die off due to strict legislation…

Water_NEUT	Neutral-subcode	water-mention	water mentioned in sentence (the word "water" or waterbody words ("stream", "lake", "river", "creak", "wetland", "pond"(though "retention pond" or "tailings pond" should not be coded here) , but harm or damage from a mine is not directly indicated.	Nicolet Minerals, a subsidiary of Rio Algom Ltd. of Toronto, seeks state and federal permits to remove 55 million tons of copper and zinc ore from a deposit about five miles southwest of Crandon near the headwaters of the Wolf.
LIAR		mining industry lies	text indicating mining industry is dishonest or tells lies	lies, dishonest
PROFIT HUNGRY		mining industry is profit hungry	the mining industry only cares about profit, puts profit above all else	"cares only for profit" "profit above all else"
RESPONSIBLE			mining industry described as responsible	responsible

Appendix C: Positive (Pos.), Negative (Neg.), and Neutral (Neut.) code application by document. Documents with both positive and negative codes are denoted by "Mixed".

Dataset	ID	Code	Dataset	ID	Code	Dataset	ID	Code	Dataset	ID	Code
WI	20	Neut.	WI	58	Neut.	WI	97	Mixed	WI	s3	Mixed
WI	21	Neut.	WI	59	Neg.	WI	108	Mixed	WI	s4	Pos.
WI	22	Neg.	WI	60	Mixed	WI	109	Mixed	WI	s9	Mixed
WI	23	Neut.	WI	61	Mixed	WI	110	Pos.	WI	s5	Neg.
WI	24	Neg.	WI	62	Neg.	WI	111	Neg.	WI	s6	Neut.
WI	26	Neg.	WI	63	Neut.	WI	112b	Neg.	WI	s7	Neg.
WI	27	Mixed	WI	64	Neg.	WI	113	Neg.	WI	s8	Neg.
WI	28	Neg.	WI	65	Mixed	WI	114	Neg.	MN	2.58	Mixed
WI	29	Neg.	WI	66	Mixed	WI	115	Neg.	MN	5.58	Mixed
WI	30	Neg.	WI	67	Neut.	WI	116	Pos.	MN	6.58	Pos.
WI	31	Neg.	WI	68	Neg.	WI	117	Neut.	MN	9	Neg.
WI	32	Neg.	WI	70	Mixed	WI	118	Neg.	MN	9.58	Mixed
WI	33	Neg.	WI	71	Mixed	WI	119	Pos.	MN	10.58	Pos.
WI	34	Neg.	WI	72	Neg.	WI	120a	Pos.	MN	11	Neut.
WI	35	Neg.	WI	73	Neg.	WI	120b	Neg.	MN	12	Neut.
WI	36	Neg.	WI	74	Neg.	WI	120c	Neg.	MN	12.58	Mixed
WI	37	Mixed	WI	75	Neg.	WI	121	Neut.	MN	13.58	Mixed
WI	38	Neut.	WI	76	Neg.	WI	123	Mixed	MN	15	Neg.
WI	39	Neg.	WI	78	Pos.	WI	124	Neg.	MN	15.58	Neg.
WI	41	Neut.	WI	79	Neg.	WI	125	Neg.	MN	17.58	Pos.
WI	43	Mixed	WI	80	Neg.	WI	126	Neg.	MN	18.58	Neg.
WI	44	Mixed	WI	81	Neut.	WI	127	Pos.	MN	20	Pos.
WI	45	Neg.	WI	82	Neg.	WI	128	Mixed	MN	20.58	Neut.
WI	46	Neg.	WI	83	Neg.	WI	129	Mixed	MN	21.58	Pos.
WI	47	Neut.	WI	85	Neg.	WI	130	Mixed	MN	22.58	Pos.
WI	48	Neg.	WI	86	Pos.	WI	131	Mixed	MN	23.58	Mixed
WI	49	Mixed	WI	87	Neg.	WI	132	Pos.	MN	24.5	Pos.
WI	50	Neg.	WI	88	Neg.	WI	133	Neut.	MN	25	Mixed
WI	51	Neg.	WI	90	Pos.	WI	134	Neg.	MN	31	Pos.
WI	52	Mixed	WI	91	Neg.	WI	135	Neut.	MN	32	Pos.
WI	53	Neg.	WI	92	Mixed	WI	136	Neut.	MN	33	Neut.
WI	54	Neg.	WI	93	Neg.	WI	138	Neut.	MN	42	Pos.
WI	55	Neg.	WI	94	Neg.	WI	139	Neg.	MN	47	Pos.
WI	56	Mixed	WI	95	Neut.	WI	s1	Neg.	MN	48	Neut.
WI	57	Neg.	WI	96	Neg.	WI	s2	Mixed	MN	50	Pos.