The Place of Oil in Manitoba: A Critical Place Inquiry

by

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Abstract

The purpose of this dissertation research is to advance critical place inquiry (CPI) as a methodological lens within the field of natural resources and environmental management (NREM) by critically examining how the practices of oil and gas extraction happen and continue to operate in Manitoba through the lived realities of oil extraction. I analyze Manitoba's oil and gas extraction using a critical place inquiry approach articulated by Tuck and McKenzie (2015). I use qualitative methods of discourse analysis, semi-structured interviews, participant observation and feedback surveys to collect data, and draw on feminist material-semiotic methods for analysis. Using this approach revealed the practices and components that create an ongoing place of oil in Manitoba, particularly the way settler colonialism conditions the relationships to land in the south-western corner of Manitoba, facilitating the extraction of oil and making it difficult to question or change these practices. My findings indicate that this occurs in several ways; the production of information by and for industry, information precarity displayed in lack of access to information and lack of capacity at the government level to keep up with or produce analysis of information when concerns arise. There is also the ongoing naturalization of oil extraction as a "matter of fact," and a study of two advocacy organizations that work (and worked) to change legislation regarding oil and gas practices but ultimately are unable to create significant change to the practices of oil in Manitoba. The conclusions I draw relate to the practices that create and condition spatial-temporal relationships to land, bringing into being the ongoing place of oil, a contingent place that is both maintained but also resisted. These conclusions also point to how our methodological understandings about spacetime in NREM limit our conceptualization of place, which in turn limit our ability to think broadly (across spacetime) about why certain places exist and the way research can be enrolled to uphold or resist status quo resource relationships.

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This work is dedicated to my children,

Julian Luiz
&
Clara Joy

(I love you both, with all my heart)

And also, in memory of the incredible feminist geographer,

Dr. Doreen Massey (1944-2016)

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Chapter 1: Introduction

1.1. Setting the Stage

"They are coming to drill an oil well, and they are coming right away!" (Gray 2006). Thus begins the DVD documentary and historical re-enactment of the *Eternal Flame*, a film produced in 2006 to share the little-known story of the roughly 50-year history of oil and gas extraction in the southwestern corner of Manitoba. The title refers, perhaps ironically, to flaming flare stacks that dot the landscape in southwestern Manitoba, burning continuously throughout day and night. The title also speaks to the importance of the oil industry in the social and economic lives of residents in southwestern Manitoba. Shortly after the film was produced, an unprecedentedly large Manitoba oil boom began that garnered provincial and national attention. This boom occurred partly as the result of high global price of oil and the deployment of twinned drilling technology for horizontal well-drilled and multi-stage hydraulic fracturing, commonly known as fracking.

At its peak, the boom in Manitoba produced 1,000 new wells a year, a considerable surge in a province that had never seen more than 100 new wells in a year since the early days of oil exploration and discovery in the 1950's (Hulshko 2017). The boom created new levels of oil extraction activities in Manitoba, yet compared to other oil jurisdictions in Canada, Manitoba's oil production is so minor it barely shows-up in national oil production statistics (NRCAN 2021). The story is similar within the geological shale formation of the Bakken (where wells are drilled to access this so-called "tight oil"); Manitoba's production is very small in comparison to Saskatchewan, North Dakota, and Montana. Even within Manitoba, many Manitobans are unaware that oil is extracted from their province, much less the adoption of fracking technologies. My dissertation research coincided with an abrupt end to the boom, though production and drilling continued at levels more commonly seen in this area of Manitoba.

My work builds on some of the only social science research looking at the impacts and concerns related to fracking in Manitoba, as most research is based in the geological sciences and techniques of locating, identifying, and mapping various mineral resources in Manitoba, including oil and gas. Social scientific studies that investigate Manitoban oil and gas are limited to the last decade and their conclusions are troubling. There have been two recent master's dissertations on oil extraction in Manitoba; one on the political ecology and socioeconomic realities of people living with oil extraction activities in the southwestern corner of Manitoba (Hulshko 2017) and another focusing on the lack of policies and implementation of habitat conservation in areas of oil extraction (Dohan 2018). There was

also a recent book chapter looking at the environmental history of oil in Manitoba, focusing on the ambiguities that structure people's cultural relationships to oil extraction (Peyton & Dyce 2021). These studies indicate an industry that is mostly unknown to those who do not live directly with extractive infrastructure, and one that is facilitated with very minimal oversight by the Manitoba government. In fact, both Hulshko (2017) and Dohan (2018) find the practices of the Manitoba government facilitate ongoing extraction at the expense of environmental and social health, often even at the economic loss to the Manitoban government itself. As Hulshko (2017) concludes, "With a focus more on production than protection, people who live alongside the Manitoba oil industry are adversely affected" (p. 58). However, these people, who bear the costs of the industry, are also dependent on the industry for economic and social wellbeing and growth in this rural area of Manitoba. Peyton and Dyce (2021) go into more depth into the array of mixed histories regarding oil extraction in Manitoba, finding that narratives of wealth and poverty go hand in hand. These studies also indicate the downloading of responsibility, from both government and industry, for environmental or socio-ecological health to individuals living with the benefits but also the costs (Hulshko 2017; Dohan 2018). The work of my dissertation builds particularly on Hulshko's (2017) work, digging down deeper into the components and practices that create what I describe as the place of oil in Manitoba.

One of the key aspects of oil and gas extraction in Manitoba is the controversial use of fracking technology. As this technology became more widespread to access oil and gas reserves that were previously difficult to extract out of, and as the potential social and ecological effects became more widely known, communities around the world began to raise alarms and to protest in earnest. Several jurisdictions responded to these anxieties and uncertainties with moratoria on fracking technology at both the national level, such as in France and South Africa, and subnational level, such as in the Canadian provinces of Quebec, Nova Scotia, New Brunswick and Newfoundland and Labrador (though this has since changed with a lifting of the ban in Quebec, and the ability to test some fracking technology in Nova Scotia) (Larkin et. al. 2018; Olive 2016). Academics also began to focus studies on the effects of unconventional drilling (see for example: Council of Canadian Academics 2014; Finewood & Stroup 2012; Haggerty et. al. 2018; Konkel 2016; Jackson et. al. 2014; Lauer et. al. 2016; Neville et. al. 2017; Metze 2017; Willow & Wylie 2014). During the so-called "energy revolution," produced in large part through the deployment of fracking technology, there were many studies conducted showing the potential negative effects, such as: increased seismicity due to the fracking process (López-Comino et. al. 2018; Shultz et. al. 2018), uncertainty regarding the long-term health of

communities living close to fracking activity (Coram, Moss & Blashki 2014; Davidson 2018; Neville et. al. 2017), and issues regarding wastewater disposal and "fugitive emissions" - gases that leak during the process that are toxic or greenhouse gases such as methane ((López-Comino et. a. 2018; Jacobs & Testa 2019; Lauer et. al. 2016; Konkel 2016).

Academic research also produced different ways to explore the effects of these "energy revolutions" in oil and gas extraction activity. Some studies are framed through a cost-benefit analysis of concerns and ways to mitigate them to ensure the positives of the technology outweigh the possible negatives. Jackson et. al. (2014) and Jacobs & Testa (2019) frame their research around how to increase the benefits for communities living close to fracking operations in order to compensate for and mitigate the known costs. There are also studies that look at the complex dependence of communities on continued extraction, where the costs are accepted due to the need for the benefits (Truong, Davidson & Parkins, 2019). Others look at discursive and narrative framing that create either pro-fracking or anti-fracking sentiments (see for example, Bronson, Dobson & O'Doherty 2019; Soyer et. al. 2019). Wylie (2018) published a book on the rise of "fractivism" or activism designed specifically to bring awareness to the potential harms associated with fracking. Much of this research shows a complex and nuanced relationship to oil and gas extraction expressed by those in close proximity to oil wells who must negotiate both the benefits and costs to themselves but also to their communities. This research often attempts to create tools to help communities negotiate these cost-benefit relationships (Mayer 2017; Truong, Davidson & Parkins 2019). One similar line of inquiry considers people's perceptions of fracking technology at different scales, from local, to provincial (or state), to national, in order to recommend policies to mitigate costs (Junod et. al. 2018; Haggerty et. al. 2018; Zanocco et. al. 2019). In this literature review focused on North American research, two general questions are commonly addressed: what are people's perspectives about fracking (or oil and gas extraction more broadly, including pipelines), and why do some people support its continuation, while others strongly disapprove and work to stop it (see for examples: Boyd 2017; Hurst & Krenter 2021; Junod et. al. 2018; Luke et. al. 2018; Olive 2016; Olive & Delshad 2017; Mando 2016; McLaughlin & Cutts 2018; Soyer et. al. 2019; Zanocco et. al. 2019).

Such research can be useful for highlighting the complicated realities of oil and gas extraction, such as the costs, benefits and ambiguities (I will explore this more in Chapter 2 of this dissertation). Yet the results of the research, particularly in environmental resources management, are used to propose ways to manage uncertainties produced through cost-benefit analysis. Often there are policy

recommendations to compensate for costs to communities as well as educational resourcing to attempt to explain complex oil and gas extraction processes to prove their safety, or to prove their unsafety. In these studies, there is also agreement that places in proximity to oil extraction contain nuance and complex histories, however the solution is then to suggest ways to categorize and pay attention to these nuances in order to manage them. In other words, in applied Natural Resources and Environmental Management (NREM) studies, the problem of fracking is often one of management of places where people live close to fracking. This analytical approach limits the type of questions that are asked by locating the problems around the wellsite, while accepting extraction as beyond question, as natural and inevitable. This concern was articulated in depth by Bavington's (2010) work on the collapse of the cod fishery in Newfoundland, which he traces to the deeply problematic desires to manage the cod fishery. Bavington (2010) clearly outlines the way that management relies on worldviews and paradigms of knowledge that are based in settler-colonial apparatus, arising from the way that geographies and species are "known" and then organized. In Bavington's (2010) final chapter on alternative to management, he suggests we need research paradigms that arise from different ways of understanding the world and the role of research in NREM. Therefore, in this dissertation, I approach articulating a critique of the way place is conceptualized through NREM research to investigate our underlying conceptualizations of space, time and, especially place.

There is wide recognition in the use of the concept of place across disciplines regarding the need for ongoing processes of connection to places that are multi-faceted and nuanced (see for examples: Butler & Sinclair 2020; Mayer 2017; Mando 2016; Lewika 2011; Wheeler et. al. 2016). However, in this introductory review of fracking literature above, place is often conceptualized as the location where people deal with fracking technology, both the benefits and costs, yet there is very little critical discussion about how these places of extraction come into being through ongoing place practices (such as histories of settler-colonialism). Also, in NREM studies that establish how these places are contested and nuanced, the academic move is often research work to categorize these various perspectives. For example, as mentioned above, in NREM the issues of complexities and contested place meanings becomes a concern of management and planning to encompass the many categories of connection (for example see Mayer 2017; Hurst & Krueter 2021). This concern (explored in more depth in the literature review of Chapter 2) regarding the lack of attention to how places come into being and then what is done with places when we recognize they are nuanced, was voiced in the 1990s by feminist geographers such as Doreen Massey (1994), Gillian Rose (1993), Geraldine Pratt and Susan Hanson (1994) among

many others. These geographers were concerned, especially in their early work, with the way gender was constructed through geography, particularly how the effect of gendering was to keep women in their place (Domosh & Seager 2001). The analysis of these feminist geographers did not remain focused solely on women and gender but has been a part of larger feminist conversations and critiques of modes of categorization that produce access for some bodies and denial for others (such as practices of race, sex, ableism to name only a few). Some key components of this feminist analysis were taken up by Indigenous geographer Eve Tuck and environmental education theorist Marcia McKenzie regarding the concept of place in *Place in Research* (Tuck & McKenzie 2015a). The intervention of this work is at the level of knowledge-making, an injunction to interrogate the ontologies and epistemologies employed by researchers in order to do research on, for, and about places. The central argument of their book, and a subsequent article, is that researchers need to deeply consider the constructions of spacetime in their work, building partially on the work of Massey (2005), and the ways that settler-colonialism continues to operate through knowledge-making projects in places. In other words, how are knowledge-making practices of place reproduced through research that is ontologically beholding to settler colonialism (Tuck & McKenzie 2015a & 2015b). They argue that scholars of place need to examine assumptions about places and how they are made, paying special attention to Indigenous theories and ontologies about land/place and in particular how qualitative research relates to the ongoing process of settler-colonization in a North American context (Tuck & McKenzie 2015b). Critical Place Inquiry (CPI), the analytical mode developed by Tuck and McKenzie, is a lens for research. It begins with a set of components that condition the research in a way that digs into concerns about how the concept of place is and has been used in many different disciplines, by centering ontological and epistemological Indigenous research practice.

1.2. Purpose of the Research (An Explanation)

This dissertation arrives in a time of great crisis and change: a global pandemic, recognition of climate change, and troubling environmental consequences worldwide, as well as the overlapping crises of racial violence, struggles for Indigenous sovereignty and reconciliation, and unprecedented wealth disparity in late-stage capitalism. I conducted this research with these things in mind, particularly as a feminist researcher with complicated intersectionality; I am a white settler immigrant, the third generation of European immigrants to the western half of the USA (Colorado, Kansas), who came to Manitoba, the focus area of this dissertation, over 18 years ago. Manitoba is a province based in the settler-colonial

practices of the making of Canada and I live on land that has been taken care of by Indigenous peoples for millennia but that has a history of violence and loss of land, identity and home for people of Indigenous and Métis descent. Manitoba is comprised of 63 First Nations communities and 5 Treaty agreements, from Treaty 1 to Treaty 5. My home is in Winnipeg located on Treaty 1 territory, a city with a large, urban Indigenous population and immigrant communities, a place where the histories of violence live on, but also where, resistance, as described by Owen Toews (2018), make spaces for alternative possibilities. I am a feminist, a mostly single parent to two wonderous children, and a critical geographer living on Treaty lands in times of great socio-ecological crisis. I explain these things to display my positionality and to give some insight in to the places I am coming from as a researcher.

I was inspired by Shawn Wilson's (2008) book regarding Indigenous research methods during previous work on my Master's thesis on shared land and the concept called Sense of Place in NREM and geography (see Wheeler Wiens, 2012). Wilson's (2008) work considered the way our research paradigms condition our research relationships, framing our questions and the concepts created to explore problems. This instigated my exploration into considering how the conception of place (in this instance Sense of Place and Place Attachment) may limit which questions I asked, and importantly how my research might be applied. I used Doreen Massey's work (1994, 2004 & 2005) because, at the time of my master's thesis work, her concept of a progressive sense of place articulated ontological concerns about the way concepts of place (such as sense of place or place attachment) continued to be used in geography. My work investigated these same concerns about problematic uses of the concept of place that were prevalent in NREM. Massey has had a lasting influence on feminist geography and the way the concept of place has been taken up in many disciplines, however, the use of this work continues to carry structural issues highlighted in the work of Tuck and McKenzie (2015a & 2015b). Thus, building on the work of my master's thesis, one of the central concerns of this dissertation is the way that the concept of place, particularly in NREM and environmental planning, continues to naturalize place-making practices without a deeper theoretical engagement into the processes that create places.

However, I struggled with Massey's work which, when applied in to the interdisciplinary studies of NREM, often failed to deliver a more critical look into the practices, components or actors that created places. In this dissertation (explored in more depth in Chapter 2), I decided to draw on another feminist critical theory and the work of Donna Haraway (see Haraway 1988, 1989, 1991, 1997, 2008, 2016), who draws on a methodology called feminist material-semiotics (Law & Singleton 2014). This is a way of doing research that focuses on practices, which are both material and also symbolic, embedded

in everyday life that are inherently political (Law & Singleton 2014). Haraway is concerned with how these material and semiotic (aka symbolic) practices become naturalized in such a way as to hide their political agendas, to make them seem unquestionable, but also that these naturalization practices are indeed, practices, that can be remade through resistance (Haraway 2004). The role of feminist material-semiotic research is partially to expose these practices of naturalization, to show their contradictions, so that more hopeful political alternatives can be created (Law & Singleton 2014). In the lens of Critical Place Inquiry (CPI), articulated by Tuck and McKenzie (2015b), this feminist material-semiotics is explored through the idea of "places as themselves mobile, shifting over time and space, and through interactions with flows of people, other species, social practices" (p. 635). Thus, I brought critical place inquiry and feminist material-semiotics together to articulate a concept of place (aka the Place of Oil in Manitoba) that works to display the ongoing spatial and temporal practices of oil extraction in Manitoba, the ways they are naturalizing oil extraction in Manitoba but also, the ways they are resisted.

1.3. Research Objectives

My objectives for the research included:
(1) Describing the place-making practices of oil and gas extraction in Manitoba by investigating information produced about this sector;
(2) Considering people's encounters with information about oil and gas activities;
(3) Exploring critical place inquiry as a research approach that pays analytical attention to how place is conceptualized within social science investigations in the interdisciplinary fields of environment and resources management.

1.4. Methods

My research occurred in two phases - gathering information and stories, and then disseminating and reflecting. The methods included an integrative literature review, discourse analysis, semi-structured interviews, participant observation, public lectures, and feedback surveys as described below.

1.4.1. Discourse Analysis

Discourse analysis is used to pay attention to material-based discourse. It is a method derived from narrative theory, which considers the ways in which culture is created, practiced, and/or encountered

through language (Bernard 2011; Laurier 2010; Vannini 2009). There are many ways to find these texts, for example through written words in media forms; newspapers, legislative documents, websites, transcriptions of meetings, signs, and videos (Bernard 2011). I focused my review and analysis on various media, often published online, although I was given a few items such as a government pamphlet and a DVD not available online. I began initially by conducting word searches both on the internet and through library databases (such as SCOPUS), inputting terms such as, but not limited to: "Oil and Gas in Manitoba, Manitoba Oil, Oil Spills Manitoba, Fracking in Manitoba, Manitoba's Oil Boom." As I searched, I would pay attention to ways that oil and gas were described in Manitoba and try those key terms as well to see what they produced. I also looked in my searches for mention of people, companies, and government that were involved and then I would follow up on those names and locations. For example, the Manitoba Petroleum Branch came up frequently, as well as Tundra Oil and Gas and Virden, Manitoba. I continued to focus and limit my collection on items relating to oil and gas extraction in the province of Manitoba, even if it was a minor connection. Much of the data from this search and document review is used in Chapter 3 and 4.

1.4.2. Semi-Structured Interviews

I used a semi-structured interview guide during my participant interviews (Schensul, Schensul & LeCompte 1998) (see Appendix B), which I recorded, transcribed and gathered, with the other documents mentioned above, using NVivo™ software (see Appendix C & D for ethics documents regarding contacting participants and consent forms for interview and recording permissions). Semi-structured interviews are a qualitative method designed to give the interview a simple structure that can be used to guide the conversation, however the participant retains the power to direct the conversation (Berg 2004; Chase 2008). During my previous research into people's sense of place for my master's degree, I had considered the ways that asking a person about a specific place create situations where participants would share personal memories and historical context (Wheeler Wiens 2012). I noticed that asking questions about a specific, but also significant, place seemed to create interview situations that allowed participants to feel comfortable sharing stories that otherwise may not have come to light. For example, in my master's thesis interviews, people told me stories of struggling with mental health, living in the place to be close to children in residential schools, connections to ancestors, and childhood stories of poverty and struggle. I explored in subsequent published writing some of the difficulties in thinking about contested places, and how to hear different perspectives and then apply these lessons (Wheeler et.

al. 2016). In my initial proposal for this dissertation research, I created an interview guide (Appendix B) based on some of the learning I did in my master's research but pushed that thinking to reconsider my conceptualization of place. I wanted to consider how oil and gas extraction in Manitoba created a certain place, or certain places, and then to see if I could invite similar openness in the interview situation by framing my questions around oil and gas in Manitoba as a specific, significant place. I also drew on some guiding questions in a proposed analytical framework, which I have included in the appendices (Appendix A) because it remains a useful window into the way I began my research regarding the place of oil extraction in Manitoba. I was thinking broadly but also looking for specific people, locations, and components that could be found to describe a place of oil extraction in Manitoba.

To find people to ask for interviews, I drew on my initial document review that identified key players organizations, and I also asked participants during interviews to identify other potential participants. I wanted to make sure I collected a broad range of perspectives so I looked for participants in industry (6 participants), government (7 participants), environmentalist groups and legal aid (4 participants), university (5 participants) and also people living in the area with oil extraction on their land (8 participants) (see Figure 1 below). Obviously, these categories overlap, for example where a landowner was also active in a local government office. None of my participants identified as Indigenous or Métis, and though I spoke on the phone with office staff from Gambler's First Nation (at the time the only First Nation in Manitoba involved in oil extraction activities), I was unable to obtain an interview. All of my interview participants were immigrants to Canada, either recent or from families who immigrated to Manitoba after the Manitoba Act was established in 1870. In my field work, I found that most activism and Indigenous presence in oil activities revolved around the movement of oil and gas through pipelines across Canada, which was outside the scope of my study (I comment on this in Chapter 4 and 7). In terms of gender identification, 12 of my participants identified as women, with the rest as men. Most of the 30 interviews lasted anywhere from 30-90 minutes and were conducted in person with a recording device. A few were conducted by email or video/phone call and I recorded them or just took notes. I took three separate trips to southwestern Manitoba, staying in Virden twice and once in Brandon, to conduct interviews, as well as to conduct participant observation. At least half of the interviews were conducted in Winnipeg, as Winnipeg was a key site for many of the decision making and information holding aspects of oil and gas extraction in Manitoba. At all times, I followed ethical protocols developed during my ethics review, attached in Appendix B, C & D. Figure 1 gives an overview of the general backgrounds of the interview participants.

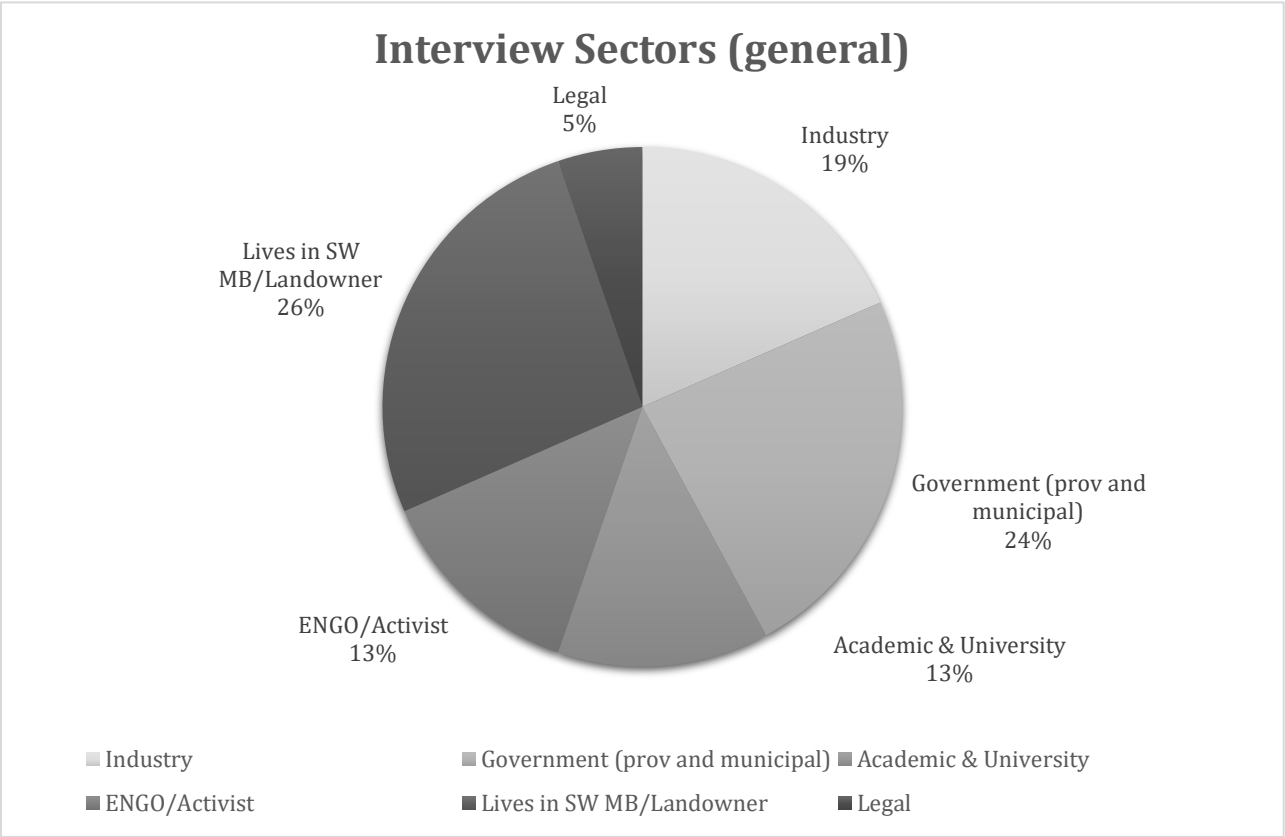


Figure 1: Sectors Breakdown for Participants

1.4.3. Participant Observation

According to a CPI lens, places are mobile and visible partially "through interactions with flows of people, other species, social practices" (Tuck & McKenzie 2015b, p. 635). This is why I used participant observation, specifically in Phase 1, to look for oil and gas extraction in Manitoba. I took part in activities, observing and photographing situations where oil and gas extraction take place and the resulting visible and invisible (for example, underground pipes) infrastructure in the landscape (See Appendix E). Participatory observation (PO) is a tool much used in qualitative research (Cresswell & Cresswell 2018; Bernard 2006; Taylor & Bogdan 1998) and it recognizes that the researcher enters the field as both an observer and a participant. This allows for rich and varied observations to be taken, informing the data collection and also facilitating the making of research relationships due to the in-person aspect of participant observation data collection (DeLyser et.al. 2010). Instances of participant observation included a tour of the oil field around Virden and Cromer, Manitoba by a Petroleum Branch

Regulator, in which I was encouraged to take photographs but not audio record our conversation. This tour lasted three hours and was seen as an aspect of the regulator's job; they took individuals or groups on tours as the occasion arose. I also was taken on a tour by a different Petroleum Branch regulator of the Manitoba Geological Survey (aka the Core Lab), located in central Winnipeg, again as a feature of their job. A final instance where I was a participant observer occurred in a small town south of Winnipeg where a group of concerned citizens led by an ENGO, the Manitoba Eco-Network, held an information and discussion session regarding a replacement oil-bearing pipeline (Enbridge). As I conducted this field work, I collected and reflected on participant observation data by writing field notes and sometimes making audio recordings as I reflected on my observations (phases 1 and 2) (Schensul, Schensul & LeCompte 1999). These can be described as a material-producing research process using jottings, a research diary, photography, and/or voice memos that allow the researcher to collect information and create a path that can be traced or reviewed for validity, replication, and accountability (Bernard 2006; DeLyser et.al. 2010). I collected and organized this data (jottings, etc.) again using Nvivo™, paying attention to reoccurring words and how they informed or became enrolled in practices, or narrative framings, which later informed my analysis and the subsequent themes in my results chapters.

1.4.4. Presentation and Feedback Survey

As I collected data of the ongoing place of oil in Manitoba, I planned to share it through small dissemination events (see Appendix F). My field notes, transcriptions, and document collection from phase 1 were used to create and share a story about the place of oil in Manitoba, focusing on the story of GASPE, discussed in detail in Chapter 7 (Place as Organization). I used my data to construct an encounter where the public could respond and then I gathered anonymous responses through a feedback survey and reflected on them.

The design of the two public presentations I gave drew on literature regarding focus groups (Berg 2004; Taylor & Bogdan 1998) but also on art and performance as tools for public dialogue (Pratt 2004). More specifically, I utilized the literature regarding the material-semiotics of figures (Collard 2011; Haraway 2008) as well as the ideal conditions for discourse to shape the event. To collect responses, I used a short exit survey with three open-ended questions designed to give audience members a chance to record their reactions to the encounter with the data I created with the presentation (see Appendix F for the details). Exit surveys are often used within organizations as a way to gather data

about behaviours and perspectives that otherwise might not be voiced (Giacalone, Jurkiewicz & Knouse 2003; Pecker & Fine 2015). There was also a question-and-answer period after the presentation and I had an assistant, who had been identified to the audience, collect general notes about what people asked or the comments they made during this period. I also organized this data (e.g., the written words and notes on spoken questions) using Nvivo™, and used this analytical moment to reflect critically on the narrative framings that I had encountered in my earlier analysis and the ongoing practices enrolled in the place of oil in Manitoba.

1.4.5. Data Analysis

I used my thesis to demonstrate a CPI lens where I took place as mobile, shifting through interactions that condition possibilities and one that is understood/experienced differently by each person. This is the conceptualization of place articulated by Tuck & McKenzie (2015a & 2015b). I decided to create several interventions of the place of oil in Manitoba. In this way, I would use my theoretical literature (explored in depth in Chapter 2) to display different ways to see or frame how oil extraction in Manitoba comes into being. Hence my chapters begin with, "Place as," and then signal the mechanism around which that place of oil revolves (see Figure 2 for a visualization). This is an attempt to build on the way Tuck & McKenzie articulate a foundational component of CPI research, or "*places as themselves mobile,* shifting over time and space" (2015b, p. 635, italics added for emphasis). In this way, I hoped to move away from the problem of much NREM conceptualization of place in research that ends up categorizing people's connection to place (this makes the place more static), or measuring these connections rather than revealing and describing social and material practices that bring place into being in specific and ongoing ways (Massey 2005; Wheeler et al. 2016; Wheeler & Luedee 2021). Within the results chapters and during my analysis of the data I used NVivo12™ as an organizational software to hold and collect the data. I created codes based on key words that I found reoccurring and also from the literature on material-semiotics to highlight narratives and practices that seemed to be reoccurring and frame the discourse. Spending time transcribing and coding the transcriptions but also many of the other materials I collected, such as websites, gave me familiarity with the discursive place of oil. I selected several interventions into the place of oil or storylines that emerged, by considering the different ways the place comes into being. I worked to bring rigour and validity to the data and my analysis by keeping in touch with participants throughout the process, by member checking but also by fact-checking evidence against other interviews and information available. This created a layered approach built on

feminist geographic analysis and understanding of intersectionality of identity, where multiple aspects are intersecting simultaneously through place (Massey 1994; Bondi & Davidson 2005).

Figure 2: Place As, Chapter Themes

1.5. Main Contributions to Knowledge

This research contributes to place research within the fields of natural resources and environmental management and geography by furthering the theoretical framing of the concept of place through Critical Place Inquiry (CPI) (Massey, 2005; Tuck & McKenzie 2015a). CPI being interdisciplinary and emerging through diverse fields, needs further application in practice to challenge the general lack of engagement in the NREM literature related to underlying assumptions about spacetime and place (Yung et al. 2003; Tuck & McKenzie 2015b). Drawing on lessons from feminist material-semiotics to guide methods for collecting CPI data addresses a gap in application of place research in NREM, where there has been little engagement with how to study place as a dynamic and mobile entity. Finally, this research created and continues to create knowledge and awareness of the intricacies and breadth of the development of hydraulic fracturing for oil and gas in the province of Manitoba.

1.6. Organization of the Thesis

After this introduction and the literature review, each chapter is an intervention in to the place of oil in Manitoba with Chapter 3 giving a contextual overview of the place of oil in Manitoba through a focus on activities in southwestern Manitoba. I then use analytical frames to think through the "place of oil as…" reflecting my data analysis, both from the literature and grounded subthemes. Figure 2 above is a visualization of this "place as" organization of the data. Chapter 4 sets out a historical context of the "Place of Oil in Manitoba" by drawing on resources geography and outlining how the recent Manitoba oil boom happened and why paying attention to a spacetime event (Massey 2005), such as a boom, can be highly indicative of the practices of a place. Chapter 5 explores the information encounters of the research and looks at how information creation works, who creates information, who is able to use information and why. Chapter 6 shifts into the figures of the place of oil, drawing on material semiotics and figuration theory to display the power of ideas about land and ownership, and where and how they function to make certain aspects of oil extraction practices beyond question. Chapter 7 looks at the place of oil in Manitoba through the learning experiences of organizations based in the southwestern corner of Manitoba that in some way contest how oil extraction happens and try to modify some of the ways it works. This chapter applies more broad thinking about the narratives and stories about living with oil extraction and their effects. Finally, I conclude in Chapter 8 by reflecting on the lessons learned about oil and gas extraction in Manitoba through CPI research, the gaps, and future directions.

Chapter 2: The Use of Critical Place Inquiry within NREM

2.1. Place in Geography

Place is a geographic concept that is utilized in many ways. This thesis is preoccupied with the way that place is used in social science investigations in the interdisciplinary fields of natural resources and environment management (NREM). Tuck and McKenzie declare that many social science researchers, influenced by the spatial turn, new materialisms, and decolonization theory, still

> …do not go far enough to attend to place and land. There are important exceptions to each of these characterizations, but ironically, works across social science which now are attending to issues of being and existence can rely upon conceptualizations of place that are markedly shallow or emptied (Tuck & McKenzie 2015b, p. 633).

Following the example of Tuck and McKenzie (2015a & 2015b), I continue to focus on the use of the word "place" and conceptualizations that engage place. This can be confusing because academics who focus on space and place, tend to use the words interchangeably. This dissertation is concerned with the application of the concept of place in NREM, however, it is important to engage the vibrant discussions on space, time and place altogether. Critical Place Inquiry is derived from a conceptualization of place that arises from a critical lens of relational space and time, and I will attempt to explain why in more depth in this chapter.

In this first section, I outline the problems of the conceptualization of space, time, and place, and the theoretical imperative to research place differently, as established in the literature. I draw on Doreen Massey's *For Space* (2005), which articulates a feminist geographic notion of spacetime based in her earlier observations of the way gender is constructed through geography (Massey 1994). Her work also engages and is founded in the so-called spatial and new materialists turns in social sciences. For Edward Soja (2010) the "spatial turn" constitutes "an unprecedented diffusion of critical spatial thinking across an unusually broad spectrum of subject areas" (p. 14). In other words, academics focus attention on the ways that spatial relationships produce social relationships, instead of how social relationships occur on a platform (Bridge 2018) or on a pool table like flat arena of space (Massey 2005). Prior to, or different from this spatial focus in social science, it was more common to see space as, "an unproblematic substrate on which technical, economic and/or political action unfolds" (Bridge 2018, p. 12). The spatial turn, in thinking about the production of space, also influenced research questions themselves, bringing

critique back into academic knowledge making relationships and the way they condition research possibilities (Bridge 2018).

In tandem with this spatial turn is the new materialist turn, paying attention to the *literal* materials of bodies, actors and, "how matter comes to matter" (Barad 2007 in Tuck & McKenzie 2015a, p. 15). The intervention of this materialist turn occurs by contesting more traditional western-based notions of spatial temporality by investigating what Donna Haraway calls, "spatialization" or a "never-ending, power-laced process engaged by a motley array of beings" (1997, p. 136). Studying these processes of spatialization, and their materiality, has been taken up in discussions of the conceptualization of place and place-based realities of identity, particularly race and gender. For example, George Lipsitz's *How Racism Takes Place* (2011) displays the way racism is located in process across space and time, in ways that become imprinted on the landscape, found in particular places. He describes processes of wealth accumulation and discriminatory placement of neighborhoods, segregating people through their locations and leading to continued income disparity between the populations of black and white Americans, where and how they live, and why (Lipsitz 2011). The Truth and Reconciliation Commission (2015) in Canada also found that racist beliefs about the superiority of non-Indigenous white peoples continues to occur in places such as schools through education practices. This highlights both the ongoing racist practices occurring in Canada and specifies *where* these relationships occur, which is in places of knowledge sharing and creation such as schools. These types of findings embody inquiry which is able to resist and upset spatial, temporal, racialized constructions of space, time and place. They clearly indicate that racism is not something that is over, or has occurred only in the past – this is something occurring in our current space, time and place. Yet, as Tuck and McKenzie note, much research still ignores the *where* of the issue. As noted by Edward Casey (2009): "however much we may prefer to think of what happens in a place rather than of the place itself, we are tied to place undetachably and without reprieve" (p. xiii). We must, instead, think of how the concept of place itself has come into being and comes into being through research as a knowledge creation practice that upholds problematic ideas of space and time, or practices rooted in racism or sexism (Tuck & McKenzie 2015a). The literature then leaves us with the question of where and how does the concept of place in NREM get lost along the way?

Place is a central concept in geographic inquiry, with a long and contentious history for such a seemingly simple word (Cresswell 2014). The first major 'return to place' occurred in the 1970's when humanist geographers argued for the importance of people's experiences of place. It was a movement

away from grand generalizations about spatial relationships and towards an interest in the local, the particular, and the small (Cresswell 2014). Key texts include Yi Fu Tuan's *Space and Place* (1977) and Edward Relph's *Place and Placelessness* (1976) which drew on philosopher Martin Heidegger's writings in the 1920's about dwelling and being. The contributions of Heidegger are summarized by Cresswell (2014), a leading contemporary commentator on the notion of place, as: "The relationship between people and place is affirmed as a relationship of dwelling – of inhabitation – in which there is a continuity between person and place" (p. 27). Heidegger insisted that place comes before space, or that place makes space, as opposed to much of the more dualistic thinking at that time. Heidegger was foundational to Tuan's work as a humanist geographer who drew on phenomenological work sought to understand qualitative experiential knowledge about place. Tuan (1976) brought humanities into the study of the geography of place, drawing on the worldview's phenomenological ability "to describe experience(s)…. of man-in-the-world" (p. 3). He espoused a new geographic philosophy of space and place, again with a nod to humanism, or the primacy of human experience, beginning with this clear delineation and definition of the two:

> Geographers appear to be confident of both the meaning of space and the methods suited to its analysis. The interpretation of spatial elements requires an abstract and objective frame of thought, quantifiable data, and ideally the language of mathematics … As location, place is one unit among other units to which, it is linked by a circulation net; the analysis of location is subsumed under the geographer's concept and analysis of space. Place, however, has more substance than the word location suggests: it is a unique entity … Place incarnates the experiences and aspirations of a people. Place is not only a fact to be explained in the broader frame of space, but it is also a reality to be clarified and understood from the perspectives of the people who have given it meaning (Tuan 1974, p. 387).

Both Heidegger and Tuan were asserting that place is a central aspect of human life and, thus not to be dismissed as a small unimportant detail in the broader scheme of theoretical work. Another notable contribution is the relationship between a person's place and their ability to function as a person; the more control and connection one has over their capacity to inhabit a place, the healthier that person is. Heidegger described this relationship between people and place as, "building dwelling thinking" or the "existential importance of residing with things in a sustained and absorbed fashion" (Heidegger 1971, *in* Cresswell 2014, p. 27). Tuan took this concept and outlined a "field of care" and "topophilia" which is, "an affective bond between people and place" (Tuan 1974, p. 4). Tuan also differentiated place as "pause" and space and "movement" saying, "if we think of space as that which allows movement, then

place is pause; each pause in movement makes it possible for location to be transformed into place" (Tuan 1977, p. 6). This idea, the ability to transform location into place, continues to be the main conceptualization of place in NREM. Location is akin to a coordinate in space, and ascribing meaning to it is what makes it place, in other words, space is an external "substrate" upon which socio-political relationships occur (Bridge 2018).

These authors, among others, brought new, albeit varied, attention to the concept of place by taking people's experience into play as quintessential to understanding how and why people do things. This was a move in geography that got people to pay attention to the unique particulars of place and how they created and interacted with social life. For example, the concept of place or local was taken up with geographers such as Lucy Lippard's *The Lure of the Local* (1998), Ann Buttimer and David Seamon's *Human Experiences of Space and Place* (1980), and Edward Relph's, *Place and Placelessness* (1976). There was also exploration of place-based politics such as John Agnew and John Duncan's *The Power of Place* (1989) and then Kay Anderson's exploration of place and the institutional making of race in Chinatown (1987). These works, among others emerging from the spatial turn in social science, led to broad engagement with the concept of place with various application within NREM. Descriptive terms included: sense of place (Tuan 1977), place attachment (Altman & Low 1992; Lewicka 2011), and place identity (Proshansky et. al. 1983; Twigger-Ross et. al. 2003), to name a few of the main ones applied in both geography and NREM research. Most of these uses of place draw on the definition of place as an "affective bond", similar to Tuan (1977), and also of space being transformed into place through experience. Other descriptions of place emphasized different dynamics, including loss of place or displacement (Carter, Dyer, & Sharma 2007), the way places are inherently contested (Low & Lawrence-Zúñiga 2003), and an overall agreement that people's sense of place, or attachment to a place is important for wellbeing and health (see for example, Hay 1998; Norton & Hannon 1997; Relph 1976; Wheeler et. al. 2016).

However, there continued to be issues with the way place, as a conceptual tool, was taken up and applied in related interdisciplinary fields of NREM. An expansive review of 40 years of literature regarding the concept of place in social science (Lewicka 2011) finds,

> …opposition between, on the one hand, place understood in the 'classic' way…, as a bounded entity with unique identity and historical continuity, a cozy place of rest and defense against the dangerous and alien 'outside', and, on the other, place defined as 'open crossroads', a meeting place rather than an enclave of rest, a location with 'interactive potential'… inviting diversity and multiculturalism (pp. 209-210).

Lewicka attributes this opposition in the way the concept of place is theorized to the different views of society as either, “traditional, conservative” or “globalized world spaces of today” (Lewicka 2011, p. 210). However, the author misses something quite important by setting up this dichotomy of place conceptualization as located in socio-cultural preferences, instead of undertaking a deeper critique as to why place is seen as either traditional (static and bounded) or globalized (mobile and dynamic). In other words, the lessons of the spatial turn regarding the production of space, do not seem to be inherent in these conceptualizations of place. If space is a relational production, then location itself is produced and place-making is a process of making place; aka it is always political (Massey 2005).

Attending to a feminist critique of place to understand this dichotomy of the conceptualization of place in social science, geographer, Gillian Rose (1993) both applauds humanistic geography's insistence on (or return to) place but also critiques it in several ways. Rose was concerned with the lack of women within the discipline of geography, declaring that the discipline itself was, ‘masculinist.’ This term, was defined by Gillian Rose as, “work which, while claiming to be exhaustive, forgets about women's … [or others] … existence and concerns itself only with the position of men” (Rose 1993, p. 4). Rose reflects on women and women's contribution, and lack thereof, to the discipline of geography, but she also considers how knowledge production within geography was ontologically and epistemologically closed, holding a singular or universal understanding of the world. This universal knowledge production becomes apparent, she argues, in “geography's claims to know” (Rose 1993, p.. 5). Within humanist geographers’ turn to place there is an idea that place is elusive, experiential and therefore somewhat beyond the ability to know. However, within this elusiveness is also the striving to document and ‘know’ place, which Rose describes partly as feminizing “place, as the humanistic Other” (Rose 1993, p. 61). Place, according to Rose, is then seen by these geographers as being beyond/before discourse, occurring without thinking, or without rationality – in other words, it is natural. Once something is naturalized, scientists can apply scientific rationality to objectify and study this naturally occurring object - place. Rose suggests that the critiques of post-colonial, feminist, and post-structural work that have been applied to scientific rationality and the separation of nature and culture (e.g., Haraway 1997; Latour 2004; Mckittrick 2006; Shapin & Schaffer 1985), must also apply to humanistic geographic concepts of place. While reclaiming the places/spaces of “everyday life,” it is important to acknowledge things formerly deemed insignificant. Naturalizing place in opposition to space as an

"unknowable" knowable, or something that is unstable but can be known through continued study, is problematic as it continues to objectify places, and thus also the people in places.

This issue becomes more apparent in the coupling of place with essentialist conceptions of 'home' and 'local' or 'locale.' Rose and other feminists problematized the placing of domesticity and women in the same category, while romanticizing the natural dwelling place of the human (Bondi & Davidson 2005). The concern was in the turn to place that, while gesturing towards its fluidity, also suggested that everyone felt similarly about the needs or desires to attach with 'warmth' to a place. This attachment argument is universalistic, where, "In the search for 'essence' – 'difference' has no place" (Cresswell 2014, p. 40). The Marxist geographer, David Harvey, also seriously doubted the usefulness of place because it was often naturalized or essentialized. He stated, "…place in whatever guise is, like space and time, a social construct. The only interesting question that can then be asked is: by what social process(es) is place constructed?" (Harvey 1996, p. 293). In writings from the mid-90's', Harvey was concerned with the social construction of the significance of place in a world where 'time-space' compression increasingly put pressure on places and the meanings people ascribed to them. This threat of time-space due to, "the collapse of spatial barriers…has put renewed interest [in place meanings] … which, in turn, give new material definitions of place by way of exclusionary territorial behavior" (Harvey et. al. 1993, p. 3). Accordingly, place can be constructed to resist global commoditization and reanimate politics: a useful mobilization of place. Yet, it is more often used to determine a singular place identity and then actively exclude all other visions of that place. This view of place is as, "a deeply ambiguous facet of modern and postmodern life" (Cresswell 2014, p. 97). Thus, Harvey and Rose find the concept of place more problematic than useful due to its constant co-option into dominant discourses that work to confine people, such as women to a place of 'home' or xenophobic uses of place to decide who belongs and who does not.

Due to these feminist, Marxist, and other critiques of the return to the concept of place, many, especially in critical fields, have chosen not to use "place" or to use it, "only in a critical mode" similar to Harvey (Cresswell 2014, p. 41). However, Doreen Massey, summarizing these feminist critiques of place and, also Harvey's concerns, writes,

> Place and the spatially local are then rejected by many progressive people as almost necessarily reactionary. They are interpreted as an evasion; as a retreat from the (actually unavoidable) dynamic and change of "real life," which is what we must seize if we are to change things for the better. On this reading, place and locality are the foci for a form of romanticized escapism from the real

> business of the world. While "time" is equated with movement and progress, "space/place" is equated with stasis and reaction (Massey 1994, p. 151).

Massey, though she has concerns similar to those of Rose (1993) and Harvey (1993), posits another way to inquire critically into spacetime and place; one that responds to their concerns but does not dismiss the possibility for the concept of place. She suggests that Tuan, Rose, and Harvey, though different, are all using similar spatial and temporal constructions, the same ideas of space and time, and thus, their engagement with place all ends up in a similar way. In the same vein, place as an 'affective bond' or as the transformation of space into place through experience, of much interdisciplinary engagement with the concept of place, is also problematic. When Lewicka (2011) attributes Massey's engagement with place to reflect openness due to "globalized world spaces of today" she is suggesting that today places are more fluid due to rapid change (p. 210). Massey, although her seminal paper was titled, "A Global Sense of Place" is suggesting that places have always been relational, specific and constellations of "power geometry." In a collection of essays taking up Massey's *Spatial Politics* (2013) Lawrence Grossberg articulates this take on reconceptualizing space and time; "If the past, the other, was never as simple or homogeneous or local or unified as we imagine, the present is probably not as fractured or heterogeneous or global as we assume" (p. 33). In summary, the problem of place in social science is more about our conceptions of space and time, and what those conceptions mean for place.

Massey's intervention into place began in the 80's with *Spatial Divisions of Labour* (1984) and early 90's with a paper entitled, "A Global Sense of Place" (1991). Her geographic foundations were Marxist, an industrial/economic geographer studying the varying effects of economic restructuring policies in England. As a Marxist, she analysed issues of commoditization and effects of production and movement of commodity chains, but as a feminist she noted how these flows tended to act differently between men and women. Initially, she considered, "the dynamic interplay between social relations of class and the spatial organization of production," where she began to connect, "space, place and gender as interrelated, mutually constitutive processes" (Bondi & Davidson 2005, p. 16). By this time, she had already begun to engage in the critical spatial turn, drawing on work in early post-structuralist feminist literature, and the beginning of the new materialist turn. She found that neither gender nor place could be fixed but *neither* were they "freely chosen or easily transformed" (Bondi & Davidson 2005, p. 16). This she called the "stickiness" of identity, also referred to by Geraldine Pratt and Susan Hanson (1994) as the "geography of placement", or the way that identity has spatial relation, or materiality, where space, gender, and place are co-constitutive.

In 1994, Massey explored how "geography matters to the construction of gender," but even more so the very concepts of space, place and gender as, "culturally specific ideas" (Massey 1994, p. 2). In fact, she argued, the way we think about space and place relate to "particular social constructions of gender relations" (Massey 1994, p. 2). Drawing on new materialities, Massey began to bring in other disciplines, such as biology and physics and their considerations of spacetime. Massey uses these to grapple with the implications of the ways we 'think' spatially, as a theoretical practice, which denotes an engagement with a more trans-disciplinary approach to unpacking knowledge production around identity politics.

> The view, then, is of space-time as a configuration of social relations within which the specifically spatial may be conceived of as an inherently dynamic simultaneity… [which leads to] … an ever-shifting social geometry of power and signification (Massey 1994, p. 3).

Spacetime conceptions are practiced in places, and this is an intervention into the political because, as academics, we can attend to the way power plays out in attempting to affix identity to place for specific political purposes. Again, this became more visible as Massey and others in the 1990's dug into gender and geographic relationships created through places. The philosophical mechanics of the practices of gender are more apparent in the work of Judith Butler who, working in the fields of rhetoric and philosophy, was unpacking gender in a similar way. Butler drew heavily on post-structuralism, but without the commitment to the core geographic concepts that concerned Massey. Butler also saw gender materially as a practice of, "performative bodies," where what is viewed as gender is socially constructed through both material and discursive acts (Butler 1990, p. 179). "Gender ought not to be constructed as a stable identity or locus of agency from which various acts follow." In other words, gender is not essential or natural, it is relational (Butler 1990, p. 179). Massey, observing gender geographically, brought this similar argument to spacetime and place. These concepts, she argued, and the way we conceive of them, shape how we relate to them.

In this dissertation, I focus on the way these feminist academics evolved to see gender as non-essential, i.e., a fact that does not occur naturally in bodies, and then how this same idea can also be applied to the concept of place. In other words, our ideas of place do not occur naturally, nor can we view places as merely locations that have human meanings ascribed to them. This critique of place challenges the humanist engagement with place, drawing on concerns of feminist geographers, to argue that there are no essential or "fixed" aspects of identity that attach to place. Place is *just as* relational as space and time and specifically responds to Tuan's (1977) dichotomous definition of place as "pause"

while space is “movement.” This critique also responds to Harvey's concern about spacetime compression, the dissolving of spatial barriers and thus seeing place as something used by people to counter this anxiety about identity loss, by suggesting that spacetime itself cannot be dissolved or compressed. Places are relationally and materially practiced, suggesting instead that anxiety about globalization is created to produce reactionary place relationships (Massey 2005). It is this inevitability about places that I explore more in in Chapter 4, particularly the way there is desire to naturalize places through research in order to study them. Hence, studying a place of oil troubles the notion that oil is naturally occurring. Instead, it has a place, and this place is made continually, relationally, materially.

So how does Massey see the possibility of spacetime and place and what are the political implications of a ‘global sense of place’? She begins her 2005 intervention first by describing three stories: 1) about an Aztec understanding of space/time during the arrival of European colonizers, which was entirely dismissed by them, 2) about governmental conceptions of globalization, 3) about concerns related to loss of place. Each of these “ruminations provide an example of some kind of failure (deliberate or not) of spatial imagination” (Massey 2005, p. 8). Massey begins with the concept of space and envisions a different spatial imagination:

> *First*, that we recognize space as the product of interrelations; as constituted through interactions…*Second*, that we understand space as the sphere of the possibility of the existence of multiplicity in the sense of contemporaneous plurality; as the sphere in which distinct trajectories exist, as the sphere of co-existing heterogeneity. Without space, no multiplicity; without multiplicity no space…*Third*, that we recognize space as always under construction. Precisely because space on this reading is a product of relations-between, relations, which are necessarily embedded material practices which have to be carried out, it is always in the process of being made. It is never finished; never closed (Massey 2005, p. 9, italics in the original).

She then proceeds to conduct an extensive discursive deconstruction across multiple disciplines regarding various implicit uses of space and time that prioritize one over the other – fixing one to free the other. This attention to discursive dichotomy is a central activity of much feminist work and Massey is taking it up with core geographical concepts, suggesting that western knowledge uses conceptions of space and time in a way that continually limits a fully critical engagement. Massey builds on the work of decolonial theories of the time with authors such as Eric Wolf (1982) and Stuart Hall (1996) as they “de-centre” Europe by re-spatializing the story of modernity. The previous story of modernization was told as the story of people with a singular notion of time (progress) and a fixed “flat” view of space. Wolf and Hall’s re-telling of those stories creates multiplicity temporally (other understandings of history) and

spatially (other experiences of relationality) which challenges "*both* a system of rule *and* a system of knowledge and representation" (Massey 2005, p. 64, italics in the original). Therefore, she contends the critical geographer must always be attentive to the continued desire to close space, to remove multiplicity spatially or temporally. However, in a nod to post-humanism, she also de-centres humans by declaring it does not matter how often we people attempt to close space: "… 'space' won't allow you to do it. Space can never be definitively purified" (Massey 2005, p. 95). Thus, the relationality of space can be seen or encountered in research through place-making practices, where people are caught up in the friction of being molded by things beyond their control, but also making up those things.

This is where Tuck & McKenzie (2015a) take up the project of *Place in Research*, drawing on Massey and geographers such as McKittrick (2006), Agnew (2005), and Casey (2009), through several interventions by investigating and critiquing the concept of space (or spatialization). They agree that Massey, in particular, articulated several key components of the spatial turn such as, "Remaking space as multiplicity…rethinking relationships between space and time…considering the consequences of lack of depth in theorizing space, [and] pushing back against the false inevitability of globalization" (Tuck & McKenzie 2015a, p. 13). This multiplicity and these components are articulated through what becomes a critical place inquiry into a radical relationality, which is the effect of these critical turns, articulated by Massey as:

> The challenge of our constitutive interrelatedness – and thus our collective implication in the outcomes of the interrelatedness; the radical contemporaneity of an ongoing multiplicity of others, human and nonhuman; and the ongoing and ever-specific project of the practices through which that sociability is to be configured (Massey, 2005, p. 195).

Yet, Tuck and McKenzie still find that though space and time may be effectively engaged, most researchers who draw on the concept of place fail to take seriously the contributions of Indigenous epistemologies and the decolonization of knowledge practice as they relate to land/place (Tuck & McKenzie 2015a) (see section 1.4.5.). This is especially true in NREM where, many of the lessons of feminist analysis and the spatial turn have not been incorporated in to conceptions of place.

2.2. Place in Natural Resources and Environmental Management (NREM)

My dissertation is not an intervention into the conceptualization of place across the social sciences because that has already been done, in many ways, by scholars working within new materialisms, the spatial turn, decolonization and post-colonial theory, and critical race theory. Instead, my focus is on

how the concept of place is used specifically in NREM and my intention is to explore critical spatial thinking in research practice in the interdisciplinary field of NREM. NREM and planning have been grappling with the challenge Massey (2005) proposes through conversations regarding such diverse literatures as social-ecological systems, biodiversity, resiliency, sustainability, climate variability, collaborative planning, and adaptive co-management (e.g., Armitage et al. 2009; Bohunovky, Jäger & Omann 2011; Davenport & Anderson 2005). Place, as a concept, has been called upon within these literatures to understand people's diverse yet important connections to place in order to develop strategies to protect and promote this nebulous and complex relationship (e.g., Cheng, Kruger & Daniels 2003; Uruhart & Acott 2014; Williams & Patterson 2007; Windsor & McVey 2005). However, one of the issues within NREM is the way the concept of place is ambiguously used and often without any thought to constructions of space and time, or unintentionally naturalizing certain place-making processes even while finding them problematic. For example, even in the Cheng, Kruger & Daniels (2003) article there is awareness of the contested nature of place, and the need to recognize this in management plans, yet there is little analysis about the reasons for the contestation, particularly people's connection to place through settler-colonial relationships to land. Building on this concern, my dissertation studied literature regarding the failures of the "return to place" to identify problematic research practices within NREM. Tuck & McKenzie (2015b, p. 633) summarize the key issue with the use of the concept of place:

> Indigenous intellectual contributions rarely fail to engage in issues of land and place—especially via conceptualizations of tribal identity, sovereignty, and treaty rights—yet when these discussions are taken up by non-Indigenous and settler scholars, the salience of land/place is frequently left out of the picture.

In the arena of NREM this becomes especially troubling because it is regularly applied in policy recommendations and project management. For example, a literature review of almost 20 years of an NREM tool called social-ecological system research (mentioned above) found that "place-based" research is one of the key instigators of methodological frameworks, and these are applied to sustainability and conservation management programs globally (deVos, Bigg, Preiser 2019). A 2013 book on place-based conservation is a prime example of a collection of NREM practitioners engaging in application of the concept of place (in this instance, place-based) in management and policy and suggesting their book, "presents a human-centered approach to conservation that incorporates and draws on the deepest meanings of place" (Stewart, Williams, & Kruger 2013). Another example is a 2017

literature review on the use of place-based research and management plans in global sustainability that suggests one of the key problems with place-based work is its difficulty with "transferability" and "scaling up" of recommendations (Balvanera et. al. 2017). These difficulties indicate a conception of place as a location in space, where research should be transferable across distance. Yet, the upcoming International Symposium on Society and Natural Resources conference, whose theme for 2022 is "Sustainable Development in Practice: Integrating People, Place and Policy," indicates the use of the concept of place is still a central focus of NREM research and application (https://www4.iasnr.org/2022-iasnr-conference/). However, in these examples the concept of place is essentialized and made static, by making policy recommendations transferable or scalable through categorization.

Categorization is one of the main ways in the NREM literature to develop schematics for measuring connection to place (sometimes called place attachment or place identity) in an attempt to ask why some individuals have more connection than others. For example, Leahy & Lyons (2021) measure the place attachment differences between family foresters, adding in the concept of place in order to expand on subgroups of landowners. They conclude: "Our study suggests that forest outreach, forest policies and additional family forest research should further consider and incorporate the intangibles of the landowner experience" (Leahy & Lyons 2021, p. 295). Place is included in this as one category of "intangible" connection, yet one that can be measured to produce better management plans for landowners. This use of the concept of place is a continuation of a humanist notion of place, as the unknowable knowable. This study is only one of many that use this concept of place where, in this case, place is enrolled as a measurable category and applied to resource and environmental management decisions and recommendations. Another example is this investigation of the "relationship between proximity to energy development and support for/opposition to such development" (Evensen & Stedman 2016, p. 14). This is a recent trend in the use of place research in NREM, particularly in regards to fracking – thinking about proximity. Their conclusion is that proximity matters in terms of perception and information, yet not in the way we might assume as policy makers, where those in support may be farther away and those in opposition may be close by, or *vice versa*, and/or where individuals hold a collection of nuanced beliefs somewhere between opposition and support (Evensen & Stedman 2016). They recommend "systematic investigation of these two separate constituencies [from their research field sites] for adequately-informed policy development" (Evensen & Stedman 2016, p. 20).

A similar paper, based in Alberta on the topic of public perception of hydraulic fracturing, concludes that "context matters" (Truong, Davidson, & Parkins 2019, p. 1325). They take proximity as a

measure but, because it has proven not effective at predicting attitude (as found by Evensen and Stedman 2016) they include several other contextual based indicators such as "gender, employment in the oil and gas sector, geographical location, trust in government and government bodies, and factual knowledge of fracking as predictors of attitudes toward fracking" (Truong, Davidson, & Parkins 2019, p. 1326). This information is certainly interesting and respectful of the nuance that people hold in place, and there is definitely a gap in knowledge about public perception of fracking in Canada. However, the conclusion again suggests we must pay attention to "unique local histories and culture" in order to predict fracking attitudes (Truong, Davidson, & Parkins 2019, p. 1331). In other words, the conclusion is that, depending on where you are and your histories in that place, you will have various nuanced perceptions of fracking and we can use those to predict your attitude. This conceptualization of place opens it to reflect on how people have varied and ongoing connections to places. Yet, both examples fail to take place seriously. They miss the point on "the implication of place," and our "interconnectedness," or the way places are made or come into being based on factors across space and time and what that implies about why people are where they are and why they might hold certain attitudes (Massey 2005). The purpose and recommendations of Truong, Davidson and Parkin's (2019) study suggest again that we need to *know more details about people's connection to place* in order to plan better - in other words, to develop a schematic of some kind to collect details. The recommendation from these two papers echoes the ones above where management of places is the key goal, and to do better management, one must have a better grasp of the "place." They also fail in the lack of attention to the ongoing spatial and temporal project of colonization, and in the case of North America where these two studies are done, that of settler colonization.

In fact, very few studies of fracking in resources management in North American context, the focus of this dissertation, remark at all on settler-colonization, even studies of fracking that focus on or use a conceptualization of place. One fracking study examines the town of Denton in Texas, USA, where there was a particularly strong, locally organized movement to ban fracking activities within the town site (Soyer et. al. 2019). This study focuses on place as local perspectives both for and against fracking activities and finds: "connection to land drives the motivations of both environmental and anti-environmental advocates" (Soyer et. al. 2019, p. 1334). The study also finds that each group draws on their claims to place based on a "rightful connection to Denton; opponents were deemed 'outsiders'" (Soyer et. al. 2019, p. 1333). This use and focus of people's connection to land, and the purpose of amplifying local people's voices through this study by revealing nuanced connections, is useful in terms

of seeing place-making as being a complex ongoing process. Yet, there is no mention or discussion around land rights and why or how people decide their connection is more "right." The paper only comments on how each group finds their connection more important than the other and there is no discussion or consideration regarding how these narratives could be based in ongoing spatial and temporal processes of settler-colonization.

Another example comes from a study within the Bakken Shale field to theorize a "Goldilocks Zone" of unconventional oil and gas development (aka UOGD) acceptance, where the residents are not too close to receive negative (mostly socio-ecological) impacts, but also not too far away to receive positive (mostly economic) benefits, in other words their location is "just right," alluding to the fictional story of Goldilocks and her three options (Junod et. al. 2018). The authors draw on the geographic conceptualization of distance and proximity to location, but they also use place-based meanings and identities, to look at where these place-based meanings are disrupted by fracking practices. This builds on earlier research calling for people's sense of place and place attachment to be taken into consideration as a "factor in risk perceptions of technology" (Boyd 2017). Both Junod et. al. (2018) and Boyd (2017) focus on people's place-based perceptions of energy development, whether these people support or oppose such development and theorize place as a static location that one can have attachment to, creating place-based meanings. Studying these attachments and place-based meanings can be understood to determine how a community may react to energy development. Another group of academics, Zanocco et. al. (2019) drew on this conceptualization of place but attempted to apply the Goldilocks Zone to a national level within the USA using the terms, "spatial discontinuities" or "spatial nonlinearities" to examine the nuance of support or opposition to fracking practices at various proximities to the actual drill sites. This study did not find a national level Goldilocks Zone but also has this interesting conclusion:

> …while measures of distance are fixed, feelings of proximity are not. Indeed, we tested for a Goldilocks Zone using nearest geographic distance, when other measures of proximity—such as psychological distance (i.e., how close to or far from an experience an individual feels), visual distance, or distance to associated impacts beyond well locations alone (e.g., to spills, newly constructed roads, proposed pipelines, etc.)—may more appropriately capture this effect (Zanocco et. al. 2019, p. 1070).

This quote displays underlying assumptions about space, time, and place that are based in a Western ontological and epistemological practice. In other words, that space is measurable (distance is fixed) but place is based in feelings, and that the correct thing to do is to widen the search parameters to "more

appropriately capture this effect" (from the quote). The studies above display these qualities of the way space is configured and the use of the concept of place, and in this case the idea of proximity. Furthermore, all of these researchers draw on research and theorization of place from the 1970s to 1990's, and as Lewicka (2010) pointed out, there has been very little actually theorization of place (attachment) since then. Instead, the focus of these uses of place in NREM is on developing scientific tools to capture the illusive considerations of people attached to places, to better account for support or opposition to unconventional oil and gas development, or energy development in general. None of these studies explore in any depth settler-colonization, histories of unequal development, or even surface and mineral rights concerns.

This becomes disconcerting particularly in the way place is enrolled in NREM to continue to undermine Indigenous land rights, by not including critical analysis of place-making processes. In an interesting turn, however, there has been a rise in the use of place in NREM through Indigenous work also called "place-based research." This is somewhat related to other "place-based research" as mentioned above, as the use of this term is meant to highlight the relationship between the research and where it comes from. However, Leanne Betaspoke Simpson (2017) articulates the way Indigenous peoples in Canada make use of whatever tools they can to continually resist the ongoing processes to displace Indigenous right to land. One of those tools is the concept of place and place-based research, and the insistence on keeping research local and owned by the people and communities where the research happens (Simpson 2017). Simpson is one of many who use place-based conceptualization to push back against lack of engagement in research to the "salience of land/place" problematized by Tuck and Yang (2012). In this reading of place-based research, the focus is on people's enduring relationship to land/place and the need to historicize ongoing power inequalities in access to land, the inability to have relationship, and the ongoing displacement and erasure of Indigenous presence. CPI draws on these conceptualizations of place/land to articulate different but useful ways to engage place in research. However, as I am not Indigenous, the use of the concept of place in this dissertation is not to do Indigenous research – rather I am inspired by their lessons and critique and seek to articulate ways that settler researchers can attend to place and place-based research alongside the work of Indigenous academics such Simpson (2017). I explore this effort in more depth in this next section.

2.3. Taking Place Seriously: Critical Place Inquiry and Settler-Colonial Practices

According to Tuck & McKenzie (2015a & 2015b) taking place seriously means also being serious about attending to spatial and temporal processes of settler-colonization. This is particularly important because a key component of this form of colonization is a relation to the land that forecloses future life with and on the land, because it is based on expansionist, racist, and neoliberal processes that prioritize growth of profit over socio-ecological wellbeing. In other words, settler-colonization displaces life on the land – particularly Indigenous forms of life - in order to extract resources from it. This does not mean that place is erased, but rather, that places are created to naturalize and legitimize settler-colonial ways of life and this occurs at the level of knowledge production where research is based on these conceptualizations of place (Tuck & McKenzie 2015a). As outlined above, it is this aspect that is most often missing from NREM conceptualization of place but, in order to understand how to do things differently, I return to Tuck and McKenzie to create an alternative way to conceptualize place in NREM. Tuck & McKenzie's work (2015a) gathers literature to articulate a CPI lens from settler colonial studies but also postcolonial studies, decolonization studies, critical race studies and, importantly, Indigenous studies literature. This literature unpacks the problematic knowledge-making apparatus of colonial projects – particularly those that establish ownership of land and bodily labour as an ongoing accumulation by dispossession (Hoogeveen 2015; Tuck & Rowe, 2017). Thus, CPI is situated as a research lens dealing specifically with the spatial-temporal constructions of knowledge in academia that continue to, "require corporeal and epistemic elimination of the Native" (cf, Wolfe, 1982; Veracini, 2011). Ongoing settler colonialism in Canada operates as a spatio-temporal place-making practice that functions as a set of ahistorical, socioeconomic and political relations that reify property as the natural spatial relation to land (Tuck & Yang 2012). This relationality works by asserting that colonization happened in the past (as a temporally closed event) and that property ownership is the only legitimate relationship to land (Tuck & McKenzie 2015a; Veracini 2011). Recognizing this as a structural and systemic situation demands attention to knowledge-making apparatuses, particularly as academics where it is our duty to theorize deeply Sundberg 2014). Following McKittrick (2006), "Geography is not, however, secure and unwavering; we produce space, we produce its meanings, and we work very hard to make geography what it is" (p. xi). Geography, as the study of space and place, must consider its relationship to how research is done, particularly "where" research processes and knowledge making occur (Tuck, McKenzie & McCoy 2014).

Accordingly, Critical Place Inquiry (CPI) is a methodological lens articulated by Tuck and McKenzie to question the "entrenched tendencies of social science to disregard place" and then collect

and theorize research that "engages place explicitly and politically" (2015a, p. 635). Tuck and McKenzie's lens centres on a concept of place that draws on critical, feminist, decolonial and Indigenous literature. This concept of place is not reducible to a simple definition but is a collection of characteristics and attributes, or components, that ground the research orientation. This grounding may be used with a variety of methodologies however, it does require theoretical attention to Indigenous epistemologies and worldviews as well as underlying acceptance of a pluralistic notion of spacetime (Massey, 2005; Tuck & McKenzie 2015b). I have gathered these components of a CPI lens and displayed them in the following Figure (1).

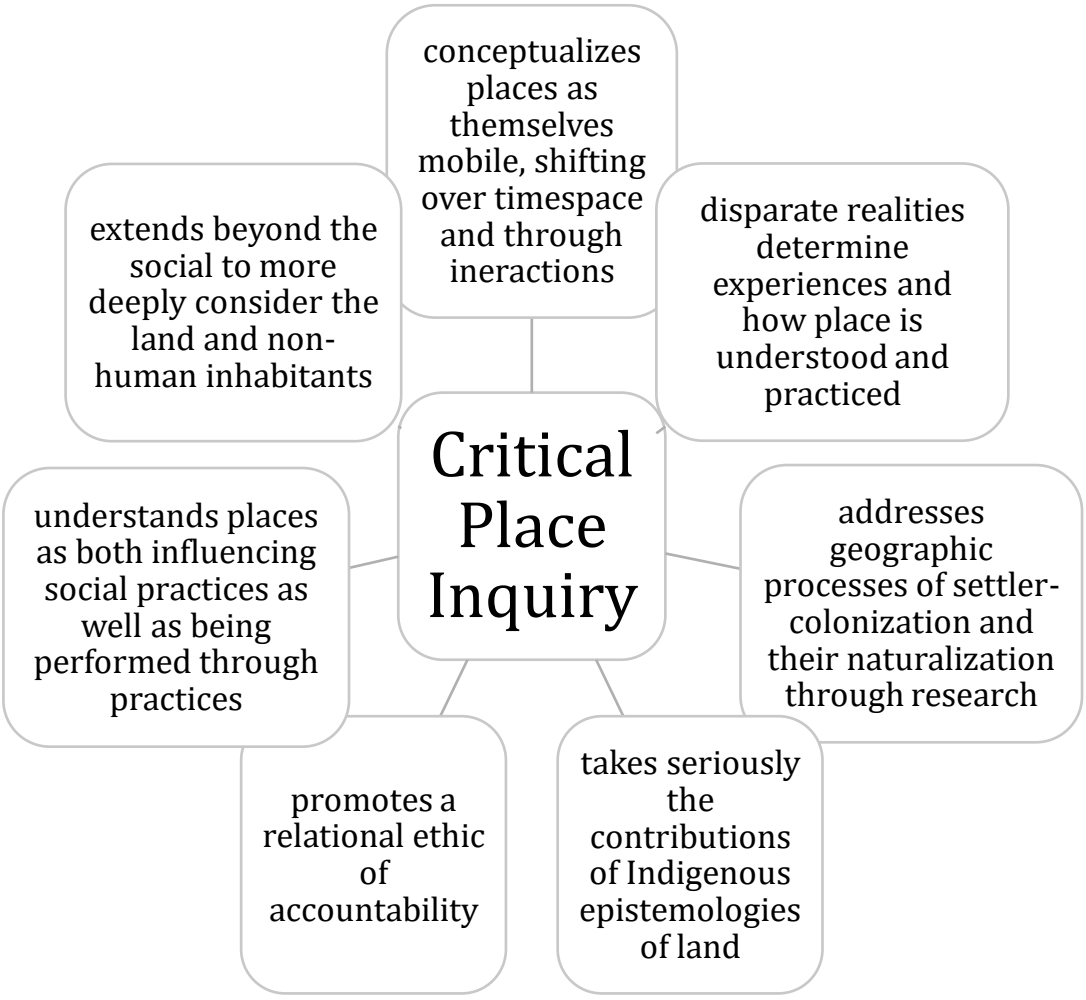


Figure 3: Components of Critical Place Inquiry, adapted from Tuck & McKenzie (2015b, pp. 635-636)

One important component of CPI is the use of the conceptualization of "*places as themselves mobile*, shifting over time and space and through interactions with flows of people, other species, social practices" (Tuck & McKenzie 2015b, 635, italics added). Seeing places as socially and materially (sometimes called sociomaterial) practiced entities that shift and move through time and space is conceptualization designed to challenge the dualistic tendency to separate the material world from the social world. This is an important aspect of much Indigenous and feminist work that resists more Western notions of this separation, sometimes described as the body/mind dualism. Paige Raibmon (2018) sees it as "professionalized knowledge" vs. "Indigenous or other forms of lay knowledge" (p. 249). Raibmon's description of the differences in epistemologies and methods of knowledge production is at the heart of taking place seriously, as she notes:

> Where Indigenous epistemology was old—derived from millennia of occupation—professionalized knowledge was new—derived from eighteenth-century scientific developments. Where sensory knowledge used direct experience, professionalized knowledge used instruments and tests. These technologies buttressed professional practitioners' claims to objectivity and authority. In contrast to lay knowledge, professionalized knowledge privileged isolated specificity over broad context. Where Nuu-cha-nulth youth learned from Elders to consider relationships between variables in their proper contexts, medical specialists, public health officials, and environmental scientists learned from their professors to disaggregate and measure factors separately (Raibmon 2018, p. 249).

The issue with this separation of knowledge from bodies and places is a continued displacement through settler-colonial ways of knowing institutionally and legally, that disregard knowledge based on epistemologies different from their own (Tuck, McKenzie & McCoy 2014). This is where the concept of place in NREM seems to go amiss, due to the lack of engagement with the production of knowledge about places. The argument of Tuck and McKenzie (2015a) is we must start from this understanding the time and space of place at an ontological and epistemological level. So, for this dissertation, I draw on a CPI lens to employ a material-semiotic methodology which has been called an ontology in practice.

2.4. Place as itself mobile

The methodological lens to investigate place as mobile partly arises from the interdisciplinary field known as Science and Technology Studies. This sociology of science draws on various veins of new materialist, post-humanist work, such as Actor-Network Theory (ANT) or assemblage thinking. It has often been taken up in health studies and also education, and is summarized in Fox and Powell (2021) as an ontology, or way of knowing what is becoming reality, that is concerned with relational processes of human and more-than-human that come to matter. According to McKenzie and Bieler (2016)

sociomaterial theorization in the field of critical education is linked directly to the work of Karl Marx, whom they summarize as saying, "we are what we do" (p. 1). In other words, paying attention to how social practices are entangled inherently with material conditions and practices, while being reflective on the role of the researcher, through a decolonial academic lens.

The science and technology studies (STS) new materialism that this dissertation employs is primarily that of Donna Haraway, who is described as a feminist material-semiotics academic (Law and Singleton 2014). Place as co-constitutive and relational means that one must use novel tools to engage with a field site that is undetermined and also one that must continually remain undetermined, even while gathering and sharing evidence of its processes, components, and actors. It follows that we need a methodology that is both ontologically and epistemologically hybrid and digs deeper into knowledge-making apparatus (a practice of academic decolonization). The molecular biologist and feminist STS academic, Donna Haraway, is the chief instigator of the concepts and theory regarding figures and figuration since the 1980's with her publication, *A Cyborg Manifesto* (republished in 1991). As she says, *"*I learned early that the imaginary and the real figure each other in concrete fact, and so I take the actual and the figural seriously as constitutive of lived material-semiotic worlds" (Haraway 1997, p. 2*).* Harawayian theory is transdisciplinary, feminist, materialist, posthumanist and, in general, an ongoing response to academic tendency to divide and categorize (Wilson et. al. 2011). However, one of the difficulties following in her footsteps is that her methodology is unclear. "The cyborg is our ontology; it gives us our politics," says Haraway, meaning the cyborg is itself an intervention into ways of knowing and becoming, or epistemology and ontology (Haraway 2004, p. 8).

I focus on two important aspects of Haraway's writings: Figures and figuration theory. A figure has both representational elements and also materiality of the thing-in-itself, but the important part is its ability to 'catch' us through tropes, and "involve some kind of displacement that can trouble identification and certainties" (Haraway 1997, p. 11). In other words, figures are co-created, trope-based collections of semiotic-material practices that do work. Their job is to pass on information, to be stories that create relationships and identities, as knowledge-in-the-making. For example, a chair is simply a chair with four legs, and its purpose is a sitting device. However, the chair, as a figure, allows us to think about relationships co-constitutive of the chair, such as chairs that have cultural meaning: the executioner's chair, the judge's chair, or the throne. The chair, in a figurative sense, is an integral part of "lived material-semiotic worlds" (Haraway 1997, p. 2). Material-semiotics is a descriptive study of "the enactment of materiality and discursively heterogeneous relations that produce and reshuffle all kinds of

actors" (Law 2009, p. 141). More simply, it is how, "each practice generates its own material reality" (Law 2009, p. 152). Thus, the figure enacts realities through practices and relations, telling us something about ourselves as we encounter it. For example, consider a few of the following figures used by Haraway: the nuclear family, human genome, OncaMouse™, ecosystem, chip, cyborg, etc. (Haraway 1997). The 'list' is a group of words on a page, and yet, each word conjures up images, other words, experiences, ideas, etc. Haraway is using them as figures – both literal and tropic – as "condensed maps of contestable worlds" (Haraway 1997, p. 11).

Haraway relates her particular use of figures to the technoscience reality of, "the legacy of Christian realism" (1997, p. 11), which is related to how settler-colonialism proceeds through cultural enactment (Tuck & Rowe 2017). In *Modest_Witness@Second_Millennium* she begins by firmly situating herself as an American biologist, witnessing and resisting (Haraway 1997). She uses figures as an act of resistance to a scientific discourse full of problematic figures related to her background in molecular biology. Within those studies, she found that "discourses of genetics and information sciences are especially replete with instances of barely secularized Christian figural realism" (Haraway 1997, p. 10). Figuration as a feminist theory is the foundation or practice of using figures and can also be seen as a methodology, predicated upon epistemological and ontological hybridity (Wilson 2009). In fact, perhaps one of the most useful aspects of feminist theory is the intervention with the foundation of western knowledge practices that are predicated upon simplification and dualism. Haraway draws on arguments by Steven Shapin and Simon Schaffer, who recount the creation of 'matters of fact,' the severing of "Nature" from the political realm, the building of regulated *public* space for knowledge, and the establishing of practices that could objectively view reality (Haraway 2004; Shapin & Schaffer 1985). This objective viewing of scientific experiments created locations - sites of knowledge production - predicated upon a "modest witness."

The scientist, Robert Boyle, and the Royal Society stipulated how experiments were to be witnessed by a group of individuals and how all must agree upon what had been observed (Shapin and Schaffer, 1985). The observations were of a machine performing a function and revealing natural facts. In other words, the machine, and not the human, mediated relationship between humanity and nature. The technology created distance between manmade relationships, such as politics and culture, and matters of natural fact: "It was to be nature, not man, that enforced assent. One was to believe, and to say one believed, in matters of fact because they reflected the structure of natural reality" (Shapin and Schaffer 1985, p. 79). The so-called, "modest witness" was a person who could observe, agree, and

recount these observations objectively as fact which created "…the separation of expert knowledge from mere opinion" (Haraway 2004, p. 224). Also, these witnesses were men with wealth/power in society, included in the Royal Society. It is this dramatic narrowing of participants in the production of knowledge and the separation of nature and culture that continues to occupy feminist and critical theory.

The Cyborg is Haraway's most famous figure, her most obscene and visible resistance to the separation of nature and culture (which she often refers to as naturecultures) and the ongoing colonial empirical mode of asserting authority (Haraway 1991). The cyborg's manifesto is an active intervention because it defies dualisms; it is both machine and organism, dead and alive, making of and unmaking of the category of human. Furthermore, while spending time with the cyborg and tracing its connections, Haraway's work outlines a critique of the separation of nature and culture, oppressive national policies, militarism, and technology enrolled in projects of oppression, labour politics, commodification of bodies and knowledges, etc. (Haraway 1991, 1997 & 2004). The cyborg is also a witness, making practices visible (Wilson 2009). Finally, the cyborg is a project of change, predicated upon the belief that figures, as "meaning-making nodes" surround us and they imagine/create relationships with all things (*e.g.*, humans, non-humans, places) (Haraway 1997 & 2004). Thus, the cyborg is a figure with a purpose, enrolled, "to build an ironic political myth faithful to feminism, socialism, and materialism" (Haraway 2004, p. 7). From this initial figure, Haraway proceeds to, "make kin with" her figures such as the Modest_Witness@Second_Millenium, FemaleMan©, OncaMouse™, race, and recently dogs, coyotes and other companion species, to list just a few (Haraway 1989, 1997, 2004, 2008, & 2016).

In the literature, figures are used as research tools that witness and make visible relationships, acquire information as meaning-making nodes, situate the researcher within these relationships, and diffract or create other relationships through the research (Haraway 2004, 2008; Wilson 2009). These tools are ontologically hybrid because they suggest multiple and intentional practices of becoming, or more accurately, "becoming with" (Haraway 2008, p. 3). They are epistemologically hybrid because knowledge is practiced through messy relationships created by inhabiting figures. "Figures help me grapple inside the flesh of mortal world-making entanglements that I call contact zones... My body itself is just such a figure, literally" (Haraway 2008, p. 4). The toolbox of figuration theory includes a plethora of figures that are inhabited, whose relationships are explored and (always partially) known, by a scientist who herself is a figure, a collection of figures. So, this thesis draws heavily on the work of figuration, to consider the contact zones, or encounters with the place of oil in Manitoba (explored more in Chapters 5 and 6). However, often in practice it is the material-semiotics of figuration theory, rather

than exploring the figures themselves, that have come to be used as research tools by academics who came from the same Science and Technology Studies (STS) discipline.

For example, Sara Ann Wylie brought STS theory into the arena of oil and gas extraction (Wylie 2018; Wylie & Albright, 2014; Wylie et.al., 2017). I use her work on industrial embodiment and novel investigative methods, drawing across multiple disciplines, to bring figuration into the place of oil in Manitoba. In my investigation of Haraway's figures, I came to understand her foundation in the study of science and knowledge-making practices, which become specifically applicable to resource extraction through Wylie's work. Wylie, and those working with her, drew on the ground-breaking discoveries of the scientist Theo Colburn, whose investigation into toxicity uncovered endocrine disrupters such as BPA (Wylie 2018). Wylie traces the paths of knowledge making and information production by looking at the literal inability to produce scientific knowledge and information. This leads her to consider the material-semiotic practices of places and how they work to give and take away authority (Wylie 2018). She also works to create applied methods to contest knowledge-making practices that disempower by attempting to "materialize exposure" through citizen science and open-source digital methods (Wylie et al. 2017).

One of the main aspects of her work that became important in my own work is the way she focuses on regulation and corporate practices coming into being in a day-to-day manner that prioritizes extraction over all else. There is an essential place paradox in which increases in fracking information and technology are predicated upon the embodied experiences of workers trying to get more oil out of shale fields, and yet;

> Conversely, the embodied experiences of landowners and workers whose lives and landscapes are transformed by the shale gas industry are readily dismissed, silenced and forgotten. Their stories of loss – of health, property, livelihood, social stability, even control over their own bodies – are deemed anecdotal, not scientific. Their exposures and illnesses are impossible to prove through traditional scientific methods (Wylie, 2018, p. 279).

Tracing material practices of knowledge making, she points out how certainty around safety during fracking practices is decided upon in laboratories and universities and any evidence outside of those places is simply disregarded. She also gives evidence, along with a few colleagues in the same field of study, of the corporate capture of university research and regulatory bodies. These captures facilitate the ongoing extraction of oil and natural gas in the USA regardless of mounting evidence indicating negative health concerns for people, animals and land (Willow & Wylie, 2014; Willow 2016; Wylie 2018; Wylie & Albright, 2014; Wylie et.al., 2017). This work displays and critiques the way information

practices are strategically "disembodied," and thus beyond civic engagement[1]. It also engages to create relational and accountable civic science that desires to produce industry and governance systems "that enables us to democratically account for the bodily consequences of industry" (Wylie 2018, p. 281). I draw on this work in my chapter on information, the investigation of the figures of land rights and royalty rates and, particularly in the work of the small advocacy group, GASPE, and their embodied experience of toxicity.

One issue with the work of Wylie is, however, a lack of attention to spatial temporal processes of settler-colonization that Haraway is somewhat more attentive to. Others use the STS lens in a similar way, but more related to Indigenous knowledges and extractive industrial practices. One of these is Paige Raibmon, who traces knowledge production practices and the specific ways that institutional practices are unable to attend to industrial toxicity and health, experienced in particular by Indigenous people. She tells the story of "the production of imperception, the construction of colonial subjecthood, and the struggle for Indigenous sovereignty" regarding a decades long fight by Yuquot families in regarding to a paper mill's continued legacy of environmental pollution (Raibmon 2018, p. 241).

Fabiana Li's (2015) work on mining practices in Peru, draws on the work of STS scholar Bruno Latour, known for Actor-Network Theory, who articulates "matters of fact" from "matters of concern" or the practices also articulated by Haraway that sever facts from reality (p. 22). In her book, *Unearthing Conflict*, Li demonstrates how, "the physical properties of the landscape are not natural or uncontested; rather, they are the product of constant negotiation, which sometimes exceeds human intentionality" (Li 2015, p. 23). In her analysis, the research shift is to look into the web of relationships created during these negotiations, particularly in moments where conflict arises. In the recently published book, *Regimes of Obstruction*, editor William Carroll (2021) outlines an interdisciplinary "corporate mapping" project predicated on tracing these relational webs, or the power-laden relationships that continue to obstruct a transition toward a post-carbon future. Carroll situates this project as a public sociology of knowledge-making practices that map the "organization of power, socially, economically, politically and culturally" (Carroll 2021, p. 9). The purpose is to make visible and perceptible the spatial and temporal relationships that obstruct a move to a just energy transition. An example would be in tracing the way Canadian universities are corporatized and thus their knowledge-making apparatus is captured in the interest of continuing fossil fuel production (Carroll 2021). A final study that draws on material-

[1] The civic engagement model is related here to the work of Fortune & Fortune (2005) and Faber (2008) who describe a "collective body of common interest" (Wylie, 2018, p. 281).

semiotics to disrupt knowledge-making practices is that of Luedee (2021), who explicitly explores the way the Canadian colonial state used technoscientific tools to determine thresholds of safety for nuclear radiation, in human and caribou bodies in the north. Luedee traces, through discourse analysis of archival material, the way scientific knowledge regarding safe amounts of radioactivity, due to global nuclear weapons and energy testing, were based on

> …the view that radiological hazards—including those linked to environmental radioactivity—had to be measured against the ostensible social, political, and economic benefits offered by nuclear technological development (Luedee 2021, p. 89).

This was particularly evident in the way that bodies in the Canadian north - human, animal and plant - could be allowed to hold higher amounts of radioactivity than those in the southern part of Canada, based on the ongoing racialized settler-colonial framing of northern Canada. All three of these examples demonstrate the role of the production of knowledge to obscure spatial-temporal relationships. How, studying the way information is produced through an STS methodology, reveals the way places are made to produce settler colonial land relationships.

2.5. Summary: Collecting Feminist Material-Semiotic Data through CPI

The final aspect of a CPI research methodology relates to the use of Indigenous epistemologies by drawing heavily on the work of Indigenous academics such as Shawn Wilson. In his *Research as Ceremony* (2008), Wilson suggests "Rather than viewing ourselves as being *in* relationship with other people or things, we *are* the relationships that we hold and are part of" (Wilson, 2008, p. 80, emphasis in the original). In other words, instead of seeing ourselves as arriving to places, we start from the Indigenous premise that we are places (Tuck & Yang 2012). This creates accountability as the relational aspects of place are tied into the ability to fact-check and validate the research, through attention to relationships in and with the data but also recognition that the researcher is researching and revealing themselves through the data (Wilson, 2008). Furthermore, there is a deep attention to the practice of research, how the research is done, for whom and why. By practice, I refer to the actual data collection and what is done with the data – how one conducts themselves in the field, recognizing that the boundaries are blurred and intertwined (Simpson, 2017). A major part of this practice is to let go of the ownership of knowledge and the data being collected, if data is, in essence, a relationship in practice, then it cannot be displaced or taken away from where it arose. It also means it cannot be known in full, because it is in process always, again returning to the central component of the CPI lens: "places as themselves mobile through interactions" (Tuck & McKenzie 2015, p. 635). If places are mobile, then the

data about those places must follow the same rules. Therefore, the data is always partial and what matters then is how one looks for place and what one looks for, making the relevance of the data not static results but rather details about practices and components.

Tuck and McKenzie (2015) suggest there are many research methods that work well with a CPI lens; as noted in Chapter 1, I draw on qualitative methods to look for material-semiotic aspects of the place of oil in Manitoba. Inspired by the feminist material-semiotic methods employed by Donna Haraway and others to search for knowledge making practices and sites of knowledge production, I viewed oil and gas extraction in Manitoba as a site of knowledge production that produced information about itself when carrying out my research. I began searching for this place by looking online for it, inspired by the work on pipelines of Andrew Barry (2013) who points out that the discursive framing of information is a major component of the place-making of oil geographies. I also planned and conducted interviews and had tours of oil extraction infrastructure with people involved in the industry in some way – regulating its extraction, working in the industry, living in the area, or advocating against it. Again, these interviews led me to other sources of information and ongoing research relationships. This material-semiotic method is described as, "sociomaterial tracing" (Fenwick, Edwards & Sawchuk, 2011). Collecting traces of data is a way of understanding that the research can never capture a static reality, and *"*...to insist on a kind of 'seeing' that is necessarily partial – but no less a fact*"* (Wilson, 2009). The purpose of tracing in research practice is to build an understanding of a place that operates through components and practices and that reveal the "functioning of sociomaterial experience" (always partial) of foundational components, actors, and ongoing practices (McKenzie & Beiler 2016, p 2). This material-semiotic approach "links social and material conditions…[these] everyday interactions or entanglements of humans with land, place, and other forms of matter" but also focuses on the implications of research relationships as they relate to broader social change (McKenzie & Beiler 2016, p.2). The methods I employed – document analysis, semi-structured interviews, participant observation, and qualitative surveys – are all well-grounded qualitative methods, and used within the paradigm of critical social science (described in depth in Chapter 1). The difference was in what I was looking to find.

Chapter 3: The Place of Oil in Manitoba

The phrase, "the place of oil in Manitoba" is my attempt, through this dissertation, to do the feminist material-semiotic work described in Chapter 2: to build an understanding of a place that reveals the "functioning of sociomaterial experience" (always partial) of foundational components, actors, and ongoing practices (McKenzie & Beiler 2016, p 2). Enlisting the concept of place in this way is an attempt to see place as more than a location that people ascribe meaning to but instead as a world-making process, and in this way, answering questions about what types of places are being brought into being by oil and by Manitoba. In this chapter, I outline some of the overall context by describing some of the place-making practices and components of the place of oil in Manitoba through informational discourse encountered during my field work and the ways these narratives took on life through infrastructure. I draw on the CPI component for "understanding places both as influencing social practices as well as being performed and (re)shaped through practices and movements" (Tuck & McKenzie 2015b, p. 635). In other words, this is an introduction to consider what it means to witness stories and information about fracking in Manitoba *but also* live with fracking activities in the "backyards" of people in southwestern Manitoba. This is an introduction into what words and narratives of people who live in these places use, and snapshots of some of the visual material that make up these places of oil in Manitoba.

3.1. Discourses of Fracking

Fracking, the shorthand term for some version of hydraulic fracturing technology, is a key discursive aspect of oil and gas extraction in Manitoba and structured many of the questions of the document search and conversations I had throughout my field work. This discourse, or social informational practices, of oil and gas extraction conjured up strong but also heavily technical imagery. I made a list early on in my field work to document my encounters with some of the main terms: Tight Oil; Shale Play; Show; Sweet Oil; Sour Gas; Sour Oil; Land Spraying; Fugitive Emissions; Sweet Crude Oil; Hydrogen Sulphur Gas (H2S); Bitumen; Flowlines; Light Sour Crude Blend (LSB); Oil Spills; Battery Site; Casings; Flaring; Brackish Water; Methane; Proppant; Water Injection; Pressurized Formation. Each of these terms were found numerous times in my data to explain the process of fracking, or to voice a concern about the process of fracking. Many of the descriptive terms in fracking included words like "sweet," "play," "tight," "battery," which conjure imagery that is suggestive of sensual, bodily and

sexual activities. This imagery is also heavily material and embodied in the action of oil and gas extraction; drilling holes in the ground and injecting pipes and highly pressurized fluids in short intense intervals. At the beginning of the data collection, I was very interested in the way fracking was spoken about both as a major shift in technology to access "tight" oil, but also as a continuation of practices from the early wells drilled in the 1950's. The narratives suggesting fracking was new technology mostly came to me from outside of southwestern Manitoba, and those suggesting fracking was an ongoing technology since the beginning were mostly from those living in and working in southwestern Manitoba (explored in more depth in Chapter 4).

In their chapter on the oil cultures of Virden, Manitoba, Peyton and Dyce (2021) historicise this ongoing "technological adaptation" but question also "how the geological base of knowledge that the technology requires is produced by the state and extractive interests" (p. 327). Indeed, my participants made it clear in numerous ways that oil had been and was still being extracted in Manitoba since at least the 1950's (or earlier) and the technology had changed in an ongoing way since the beginning. In other words, I would ask about the recent fracking technology and would be told by interview participants, we have always been fracking in Manitoba. This insistence, that things had not changed so much, obscured the quite dramatic change in technology that allowed exceptional access to extract much more oil from the shale rock (but still only 15% or so of the possible oil trapped in the shale). This discourse of fracking-as-ongoing gave more clarity to the ongoing spatial-temporal process to prioritize oil and gas's mineral resource mobility. Of course, the technology still featured largely in many ways, and the focus of this chapter was my introduction to some of the current (as of 2018) socio-technical or infrastructural context of the way oil and gas extraction happens in Manitoba.

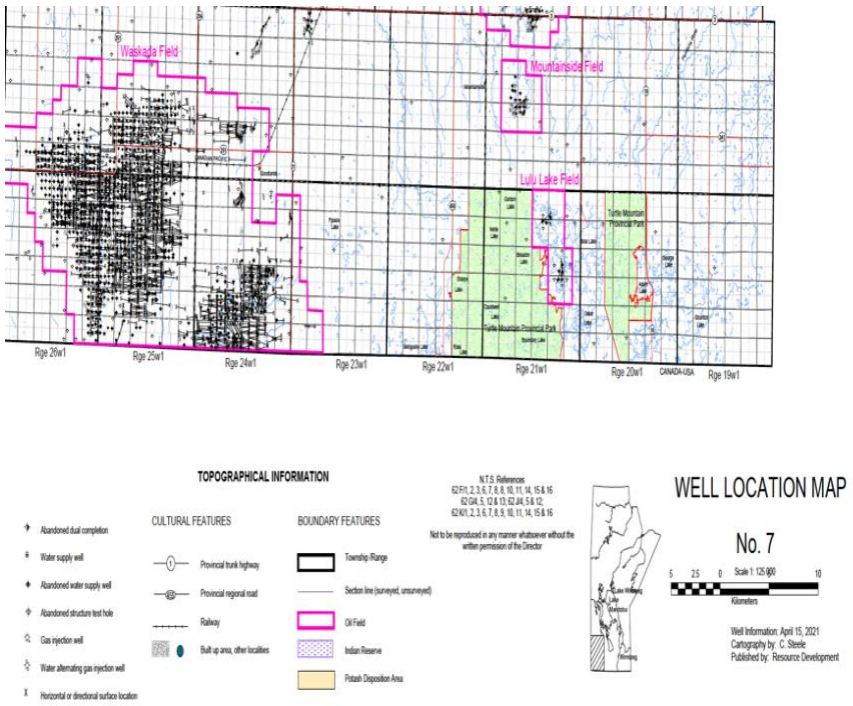


Figure 4: Photo of GIS Well Location Map with Key

3.2. GIS Mapping Locations of Oil in Manitoba

Mapping is a powerful place-making activity and one of the most important aspects in the making of the place of oil in Manitoba. It is through maps, found on the Petroleum Branch website, that land and mineral rights are established for granting licences for extraction. These maps also provide a visible and flattened landscape of the scope of drilling in southwestern Manitoba. I go in to more depth about maps as information-making moments in Chapter 5. In this section, I want to focus on what the maps make visible and invisible about oil and gas extraction within the provincial borders of Manitoba.

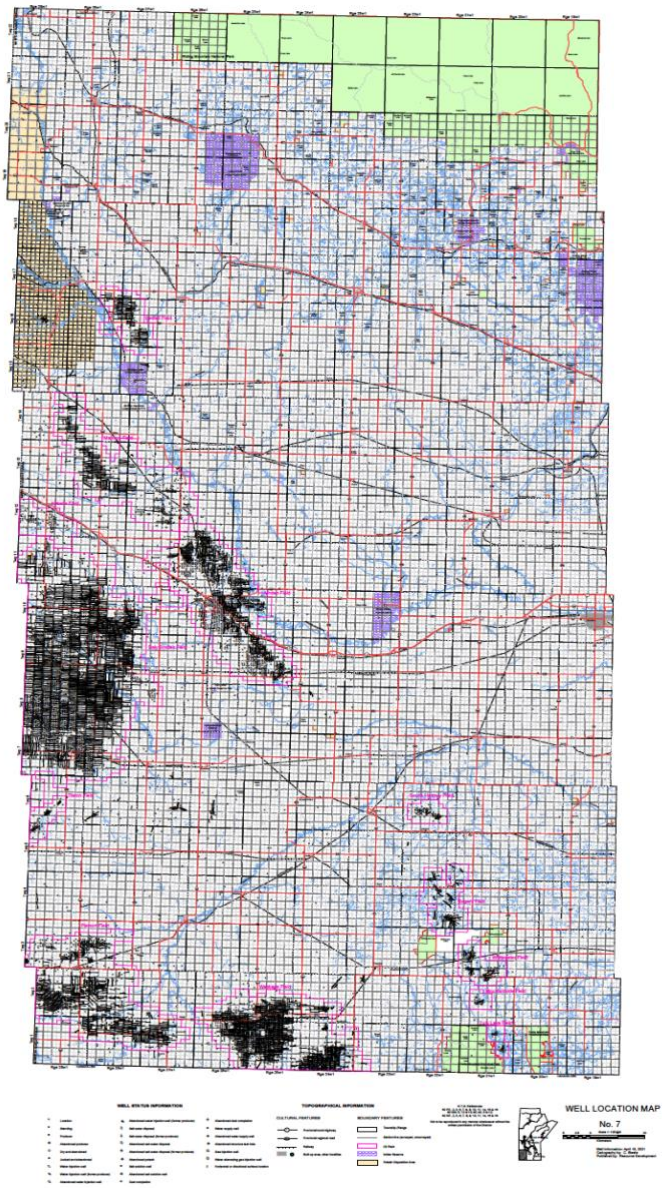


Figure 5: Manitoba Petroleum Branch Well Location Map, April 15, 2021

The Manitoba Petroleum Branch publishes GIS maps on their website that display the oil wells drilled as well as the general direction of the horizontal portion of the well. Figure 5 (Manitoba Government, 2021) shows the current spread and density of the wells in Manitoba based on April 15, 2021 data, along with their field designation, for example the Waskada field shown in this zoomed in photo of the Well Location Map (Figure 4 above, Manitoba Government, 2021). The overall formation is the Bakken but within that geological shale rock bed (comprised of shale rock, salt water, gases, oil or hydrocarbons) there are layers of the rock that are named and designated by the provincial geologist as a field, for example the Daly Sinclair shown in this very closely zoomed screen shot, Figure 6 below (Manitoba Government, 2021). This practice of gathering geological and GIS data to map out locations and designate fields, is a material-semiotic knowledge making activity. These field designations are used in

the licencing of wells, and determine important implications for drilling companies such as, what type of tax holidays might be applied.

In Figure 6, I have indicated (with a circle) two main locations for oil activities in Manitoba; Cromer and Virden. In this photo you can see the density of the drilling, the type of well and also the horizontal well line, giving a better idea of the well's actual size. One of the main things that is apparent is the figurative image of these well-sites on the map, the way they bleed and flow, connecting people and place in this southwestern corner. There should be even more connections, because what is not shown in this photo, or any map produced by the province, are the multiple flowlines that go between wells and battery sites, which are *never removed from the land* but are abandoned in the ground (noted as well by Hulshko 2017). This is an example of how the practice of mapping creates places that appear less complicated than they are by omitting a great amount of infrastructure from the map. There is also a formation that can be seen in other graphics published by the Branch that shows other presence of hydrocarbons and natural gas that travels all the way up to the Hudson Bay. In fact, early exploration of

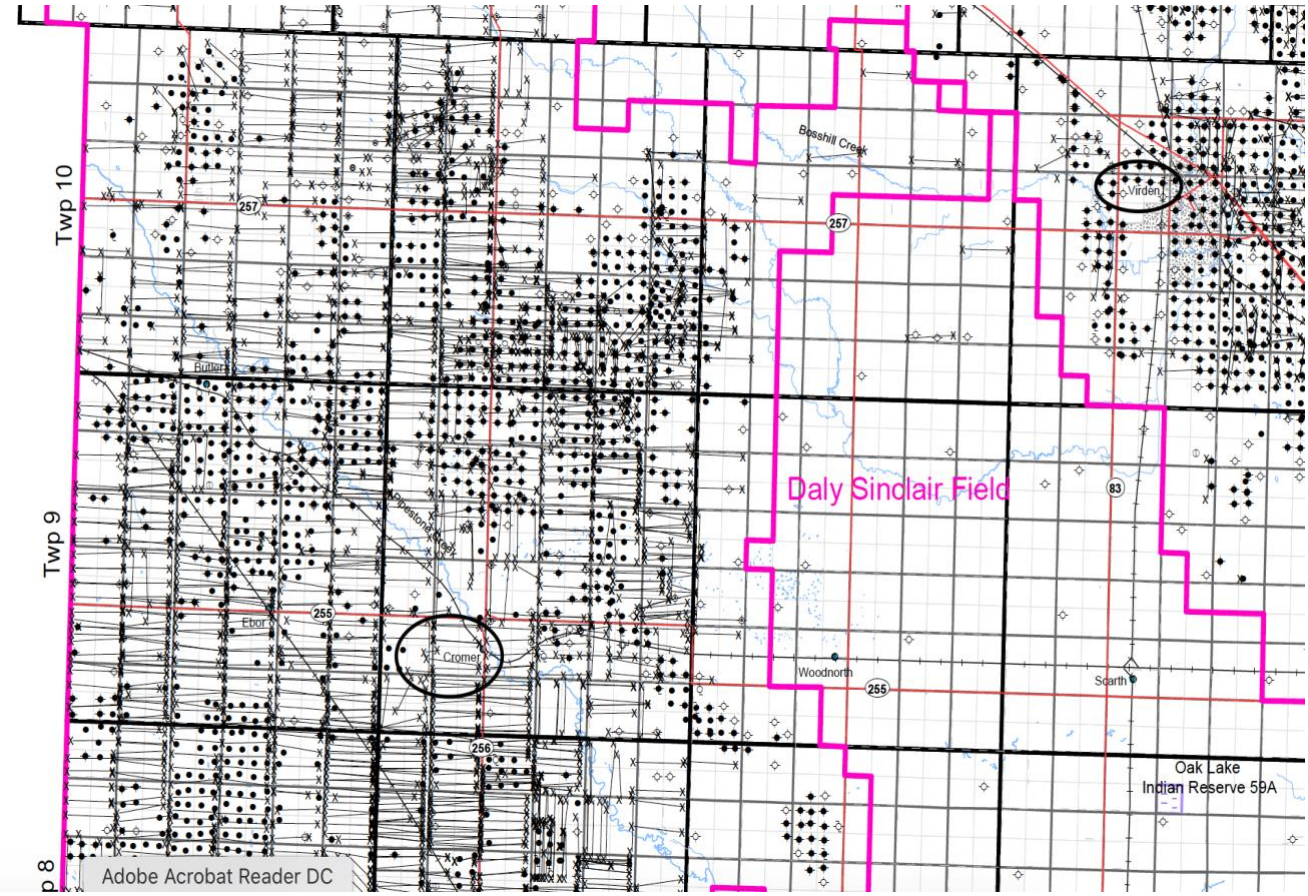


Figure 6: Zoom in on Daly Sinclair Field, Well Locations Map April 15, 2021

oil in Manitoba occurred around Virden, in the southwestern corner, but also around Churchill at the far northern edge of the province (MB Oil and Gas 2020).

One of the major technological changes that expanded the infrastructure underground in numerous ways (made visible in Figure 6 with the little lines connected to each well site dot) was the ability to drill horizontally. For this reason, the vertical wells that do not have a horizontal component are often considered as more conventional oil wells even though they do usually use some basic hydraulic fracturing techniques to get the oil, gas and water mixture flowing up. Improvements in the technology to drill horizontally, such as stronger drill bits, really allowed access to larger areas of the geological formation or the, often fairly narrow, layer of rock that must be accessed to get at the oil and gas trapped in the rock and water. Of course, there were also significant changes in developing fracturing fluids, consisting of a slurry of freshwater mixed with of a proppant (such as sand to hold open the cracks), chemical lubricants, and also anti-fungal or bacterial chemicals to reduce friction. This increased the ability to get more out of a single drilled well than before. However, even with all of this, it is still difficult to get much of the oil out of the formation. In the best-case scenario, with the most advanced technology, including re-pressurizing the formation by injecting water at high pressure back in through older drill sites, the estimated extraction is only 30% of what is available in the shale rock and more often it is closer to 10-15% (Participant AA0310).

3.3. Virden Petroleum Branch and Extraction Sites and Process

To help me contextualize some of the place-making practices of oil in Manitoba it was important to visit and be introduced to the active Manitoba oil fields. One of the first participant observations I conducted during my field work was a tour of the Virden region with a participant (whom I will refer to in this chapter only as he, or a code name of Jim) who was a field inspector who gave these tours as a part of their job and let me take photos and detailed notes of our conversation. Like the process of oil extraction that begins with examination of

Figure 7: Piece of core with oil traces

core samples, I was first introduced to a core sample at the Virden Petroleum Branch office in the file room where Jim handed me a smooth cylinder of rock with labels on it (see Figure 7) identifying oil traces. Jim explained that this core was taken during the exploration phase (Manitoba Energy and Mines, 1987). A hole is drilled and a long cylinder of rock is pulled up for a geologist to study and identify various aspects, such as the layers of rock and presence of minerals such as oil. Obviously, the oil is liquid and so the presence in this sample is literally a trace, or a stain on the rock. Since I was the only participant on this tour, I rode along in his government-issued truck, which was full of dust, files and various pieces of equipment, mostly safety equipment he explained for visiting active work sites and other areas.

To get a sense of the face of the next stages in the extraction process, Jim drove me several kilometres or more outside of Virden, stopping at various sites. For the sake of clarity, I will give examples of the stages in their procedural order, as established in the literature (Manitoba Energy and Mines, 1987) rather than the roundabout order that I witnessed them. My description of these infrastructural oil making practices in Manitoba is supported throughout by reference to documents and other materials that I gathered during my data collection. There is also a YouTube video, produced by Manitoba Minerals (related to the overarching government offices that includes the Manitoba Petroleum Branch) that goes over this same information but includes a connection to a store owner and their servicing of the petroleum industry (Manitoba Minerals, 2012, https://youtu.be/lQCiq6rqOh8).

Figure 9: Drilling operation, Manitoba

Figure 8: Ready for Fracking, Manitoba

The first evidence of oil extraction is the drill site. In Manitoba the main signal of this is the presence of a drill tower (Figure 8). Though it is hard to see in this photo taken from inside the truck, there is a large number of people and lots of equipment around the tower (Figure 8). We were not able to get out due to safety regulations. I could see however that they clear the area and put down mats and then drill hundreds of metres into the ground to create what is essentially a very deep hole that curves at some point to horizontal tunnel. This tunnel, sometimes more than a kilometre long, goes through a rock layer

containing the oil and gas deposits. As they drill, the technology associated with the drilling sends GPS tracking nodes, as well as a constant amount of rock chips to be analyzed (either on site by a field geologist, or later by the geologist of the petroleum branch). With this information, it is possible to very carefully direct the drill to weave around within the targeted layer of rock containing the oil they are trying to reach (explained more by Participants AO1101 & HT2811).

Once this hole is drilled, the bit is removed and a pipe is loaded into the vertical shaft and then cement is poured around the pipe in an effort to protect the layers of rock, and the water table, as the fracking fluid is pumped in and the oil slurry mixture is pumped back out. The site "look" associated with this next phase (Figure 9) includes wooden mats on the ground where the topsoil has been pushed to the side (to be replaced at some point) to keep the ground from becoming a pit of sticky mud if it rains. However, one field geologist later told me, if there is a lot of rain or snow melt, it really doesn't matter. The mud is a constant problem that those working on a day-to-day basis on these sites, must learn to negotiate (Participant AO 1101). There is a small nozzle in the ground that looks like a strange fire hydrant and this is the top of the drilled well. When the site looks like this it is ready for the fracking

Figure 10: Fracking operation, Manitoba

Figure 11: Storage Tank, Manitoba

crew to come. In Figure 10, one can see the fracking crew and equipment (Figure 10). At this site we were not able to get out and walk around, due to safety regulations. Jim explained that this was the hydraulic fracturing occurring where a mixture including fresh water, sand, chemicals and lubricants is pumped at extremely high pressure into the previously drilled hole. This breaks up the rock and releases the oil and gas to be pumped out of the formation. This stage takes about two to three days. Once this is completed a pumpjack, like the one pictured in the photo in Figure 12, is immediately installed on the top of the pipe to connect the flow to pipelines, leading into storage tanks (Figure 11) and/or connecting directly to the battery site (Figures 14 & 15). The particular tank in this image (Figure 11) was not connected to a grid and so a truck comes to collect all the fluid in the tank and transport it to a battery site. In other cases, in Manitoba the tanks are connected to underground flowlines and the fluid in them is pumped directly to the battery sites (such as in Figures 14 & 15). The fluid in the storage tanks consists of a significant amount of water that was salty, the fracking fluid that had been pumped down, along with the oil and gas (Participant REL 0223). At this stage all of the fluid (and gas) would arrive at a battery site, either by underground pipeline or truck (Participant AA0310).

Figure 12: Pumpjack, Manitoba

3.4. Preparing and Moving the Oil out of Manitoba

Figure 15: Battery Site with Flare Stack, Manitoba

Figure 14: Battery Site with Flare Stack (ex. 2), Manitoba

A battery site includes the infrastructure for the separation of fluids and gas, the water mixture is removed and taken to a disposal site (i.e., injected back into the formation), the gas burned off, and the oil then transported to "market" or a large holding facility to be put into a larger pipeline to go to a refinery (Participant AA0310). The photos in Figures 14 and 15 provide two different examples of typical battery sites in Manitoba. The tall pipe sticking up with the fire and smoke is the flare stack, which is designed to take the gas higher up off the ground and then burn it off in such a way as to dispose of it according to current safety standards (which are outdated according to Hulshko 2017). This natural gas, also includes other gases such as hydrogen sulfide (H2S) (Safe Work Manitoba, 2016).

Figure 13: Overview of Enbridge Station at Cromer and Tundra Market Limited Station, Manitoba

The reason it is burned off instead of being collected and used or sold has to do with the lack of facilities and market to sell the natural gas. Jim explained there was a project with Manitoba Hydro to collect and use some of the gases to power a battery site, however it was only at one battery site (during this tour in fall of 2017) and they only were able to use some of the gas. These battery sites are connected via underground pipelines to two major facilities near the town of Cromer, Manitoba. One of the facilities is

the Tundra Marketing Limited collection site (Figure 16) where, as I understood, all the oil extracted in Manitoba is collected. Tundra Marketing Limited does the work of collecting the oil (via truck or their own network of flowlines) and then operates as the middle person, buying the oil from those who extract and separate it, and then sending it across the road to an Enbridge facility (Figure 13 for an overview) and pipeline that travels from Alberta and takes oil to refineries in the USA (Participant REA1402). The reasons for this will be explored in more depth in Chapter 4, however mainly that there are no oil refineries since the 1970's in Manitoba (Smith, 2020; Manitoba Energy and Mines 1984). These facilities are on the municipality of Cromer's land and pay taxes to the municipality (Figure 13, above). The large round tanks store the oil until there is enough to put it through the pipeline. I was also told that Tundra Marking Limited injects butane into the oil to help it be more viscose. I confirmed this with an industry member but was not able to find out why this process happens (Participant ERF).

There was also a railcar site to load oil on to railcars that was quite close to the facilities pictured here. Jim explained that it had not been used since the fall of the price of oil and subsequent reduction in production in 2014. There were still rail cars with oil from the Bakken formation that went through this site but all Manitoba oil was sent on via the pipeline as it fetches a higher price on the USA market going to a refinery based in the USA. The rail line was used for oil mostly from Saskatchewan and

Figure 16: Tundra Market Limited Holding Facility, Manitoba

would be going to a refinery in Ontario. Jim said it was preferable to use pipelines for transportation as they were considered to be a safer mode of transportation, although this was also up for debate (Conca, 2018). This need to transport unrefined crude oil large distances is partially related to the lack of refinery facilities in Manitoba (or even across the US and Canada) (Conca 2018). However, in Manitoba only when there was a high amount of production the excess amounts would be shipped via rail car, which is

why the station was built during the recent boom in oil production. To be clear, oil is still both piped and transported by railcar across Manitoba, however the crude oil being moved by rail is rarely Manitoba based. The Enbridge owned pipeline that carries Manitoba crude oil comes from Alberta and south across the US/Canada border to a refining facility.

One key aspect of the tour provided an overall sense of this more unconventional oil extraction (mostly implied by the horizontal well drilling, but also by the increase in hydraulic fracturing technology) through its visibility, or more to the point, its invisibility (Schorpp, 2018). Fracking is obvious on the landscape through infrastructure such as drill towers, pumpjacks, and battery sites, but it is also minimalistic, particularly when it was often compared to oil extraction that happens in the tar sands. Jim explained how one of the advantages of the horizontal wells, and being able to frack the same well multiple times to extract more oil, or inject water into old wells to pressurize the oil towards an already pumping well, is the reduction in the amount of well sites. Jim pointed out that where there used to be six or eight wells, now there would only be two, for example. Or that if a surface rights owner did not want the oil company to go on their land, it was sometimes possible to drill a well next to the land and still access the minerals under the surface (explored further in Chapter 5 and 6). This also means a reduction in the amount of surface area taken up by drill pads and a few less roads. Yet, what has happened is the fracking activity has increased exponentially below ground in a much less visible way. This lack of visibility appears to shape social practices of oil in Manitoba by making current practices of oil extraction seem less invasive, and therefore more responsible to those who use the surface.

As well, I was struck when Jim told me about the number of pipes underground connecting everything. These so-called flowlines are included in the surface lease but do not produce the same amount of money for the surface rights owner, as the land is technically replaced immediately after the pipeline is buried. However, these lines are also never removed, left abandoned in place, as noted above. On the tour, Jim and I had a moment just imagining the number of flowlines underneath the ground as we drove around. “Like the pipes underneath a city?” I said, and he agreed. There are no maps of these flowlines in public record, they are only held by the company that installs them (Participant HT 2811). This “invisibility” of the impact of oil was understood by the people in the area to also create situations where the benefits and costs of oil extraction were mostly unknown by other Manitobans. This is explored in other locations of fracking by attempts to find ways to “materialize exposure” (Wyle et.al. 2017). Wyle and colleagues found that the invisibility of toxic gases leaking from well sites worked to make exposure difficult to prove to regulators. In fact, the invisibility of much fracking infrastructure

often creates place-making practices that make them difficult to contest as shown in Gullion (2015). In Gullion's (2015) work it was when the fracking activities started to encroach on neighbourhoods that it became difficult for people to live with the negatives of fracking for natural gas. It is often when these practices and infrastructure become more visible, or are made visible through activist awareness campaigns, that they are able to be questioned (Wylie 2018). Jim also lamented the lack of visibility of oil extraction in Manitoba, explaining how people in southwestern Manitoba connected to oil extraction do not have a political voice. On this tour and in subsequent interviews with other regulators I was told about measures to address the lack of awareness: the Manitoba Oil Museum, and the DVD the *Eternal Flame*, a community-based effort to celebrate and support oil culture and awareness. I also go into more depth about other community-based efforts to contest oil extraction activities in Chapter 7 of this dissertation.

3.5. Manitoba Oil Museum and Interpretive Centre and the Eternal Flame DVD

I first heard about the Manitoba Oil Museum and Interpretative Center (MOMIC) during the tour. It then came up in two of my interviews, and I was immediately intrigued. Upon further investigation, I discovered a non-profit entity and online references to a Manitoba Oil Hall of Fame, which since the 1990's has inducted members at an annual event. During interviews, I ended up speaking with the chair of the board and learned that the MOMIC had initially hoped to create a physical museum facility in

Figure 18: Rig Replica, Manitoba Oil Museum, Field Notes, Oct 2021

Figure 17: Manitoba Oil Museum Artifacts, Field Notes, Oct 2021

Virden Manitoba, but had shifted to a more feasible idea of creating a virtual museum and possibly establishing a small physical presence at the Morden Dinosaur Museum, in Morden Manitoba (Participant HT 2811).

The museum was founded in the early 1990s by a group of people engaged in oil extraction activities, including those involved in the oil industry, landowners in the area, and government oil and gas regulators in southwestern Manitoba. The motto displayed on the poster in the photo in Figure 19 reads, "Manitoba Oil Museum: Heritage Preservation, Public Education, Industry Promotion." Interview participants explained that one of the main purposes of the MOMIC was to celebrate the oil and gas industry for its contributions and benefits to the people in the area. Another purpose was to educate people, both kids and adults, about oil and gas extraction. In the late-90's they created a not-for-profit organization along with a Board of Directors. During this time, the museum gathered a considerable membership base and charged dues to fund small events, and even received larger donations earmarked for a museum in the early 2000's (Participant HT 2811). Artifacts were collected, such as newspaper articles from the 1950's to 1990's, educational materials created for bi-annual Manitoba Petroleum Branch conference, "Oil Days" (See Figure 19), and books or pamphlets explaining oil and gas extraction techniques (See Figure 18). There are even miniature models of drilling apparatus (see Figure 17, above), and full-length posters and banners, all of which have been held in boxes and are currently gathered in a municipal office

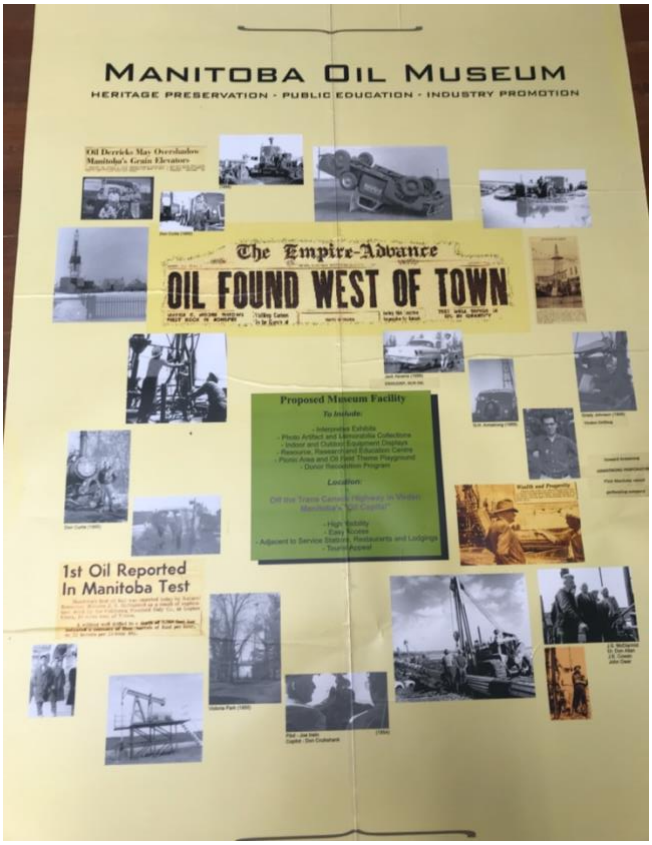


Figure 19: Manitoba Oil Museum Poster, Field Notes, Oct 2021

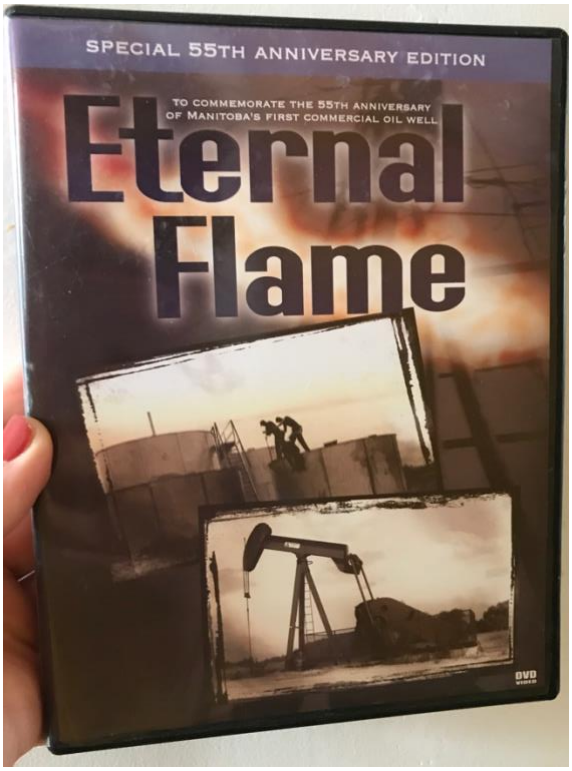


Figure 20: Eternal Flame DVD Front Cover

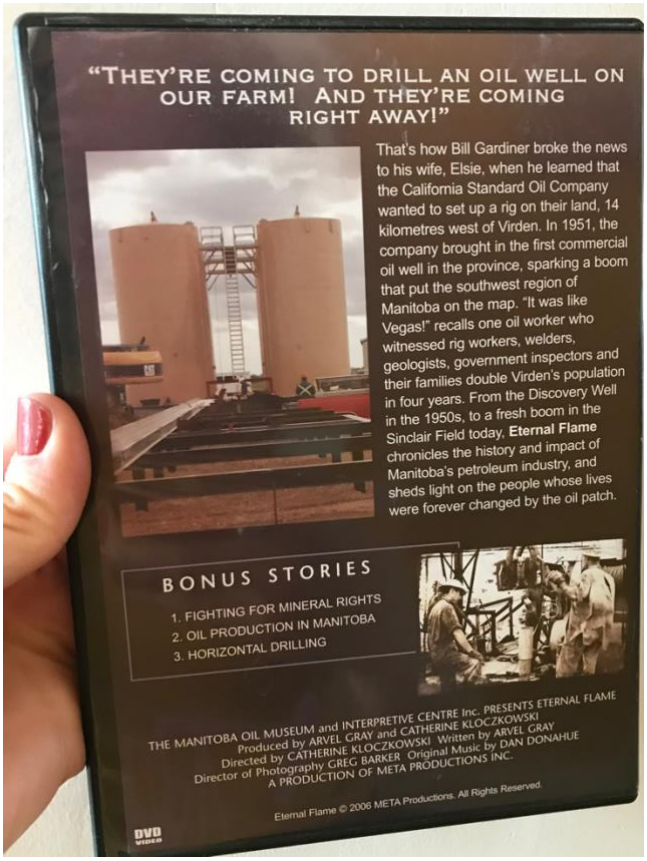


Figure 21: Eternal Flame DVD Back Cover

in Virden, MB. Museum founders hoped to create recognition and awareness more broadly within the province of the importance of the oil industry, which, as I have mentioned before, participants believed had mostly gone unrecognized and under-appreciated. Despite only being found in a small area of the province, museum promoters believed that the industry had contributed significantly to the provincial GDP and certainly had a large socio-economic impact on the region.

Overall, many activities of MOMIC, such as annual events, have slowed considerably since 2007, though it maintains not-for-profit status in Manitoba and small group of board members using the existing funding to support the current online development of the museum. The slowdown occurred during and after a more recent boom and then bust in oil activities (explained in more depth in Chapter 4). Research participants explained that this happened first because everyone was too busy to focus on the museum, and then because everyone was scrambling to deal with the bust (HT 2811). More importantly, the Manitoba Petroleum Branch stopped holding the bi-annual "Oil Days" conference in the early 2000's, so there was no place to display many of the artifacts and educational materials created and collected by the MOMIC. This is indicative of the performative practices of place, theorized by Tuck and McKenzie (2015b), a desire to make living with oil in Manitoba more visible, both to those working and living with oil practices, and also to Manitobans and others not connected to oil in their daily lives.

One of the key public moments for the museum was when the MOMIC published a DVD called the *Eternal Flame.* This DVD represents the culmination of MOMIC's efforts to publicize and communicate the importance of oil in the province. The filmmakers emphasized the stories and perspectives of specific people in southwestern Manitoba and their views on living with oil (Wheeler & Luedee 2021). *Eternal Flame* was the result of a group of people involved in the MOMIC who wanted to combine elements of documentary film making with historical re-enactment to share key stories about the history of oil extraction in Manitoba. The film was written and directed by Manitoba-based documentary maker Arvel Gray, and produced by Catharine Klockzkowski of META Productions, a small production company based in Winnipeg. The film's production was funded by MOMIC members and a group of companies, municipalities, and individuals who live in the area of southwestern Manitoba. Tundra Oil and Gas Ltd., which has a major stake in oil extraction in Manitoba, was a major sponsor of the film; the company's logo was included in the insert inside the DVD case, alongside MOMIC's logo (See Figures 20 & 21: Photos of the front and back cover the DVD; Gray 2006). MOMIC produced *Eternal Flame* as an educational project to commemorate 55 years from the first productive oil well in Manitoba. It was also a communicative tool to share the stories of those people whose lives were positively impacted by the emergence of an oil economy in southwestern Manitoba (Gray 2006).

However, though rooted firmly in the past, the film also signals a specific vision of Manitoba's anticipated petro-future. Indeed, the title, explained on the insert found inside the DVD, is a reference to the notion that "Mother Nature" produced petroleum, a substance that was revered by "ancients," and is now burned to create energy (Gray 2006). Through its extraction, the film suggests, petroleum has fueled viable and desirable livelihoods in the southwestern corner of Manitoba. Ultimately, the film expresses hope that theses livelihoods, derived from the extraction of oil, will continue indefinitely even though physically, as a non-renewable resource, this is not possible. The DVD itself concludes with an assertion of that desire, stating: "And if the world's people nurture this precious energy source, what was once revered so long ago will remain an eternal flame" (Gray 2006). This film reveals a place-making relationship of dependence and commitment to ongoing processes of oil and gas extraction. This is often described as a petroculture, or the way in which "the story of petroleum has come to play a foundational role in the American [and Canadian] imagination and therefore in the future of life on earth" (LeMenager 2014, p. 4). This is in line with the description of the political economy at work in southwestern Manitoba by Hulshko (2017); one that prioritizes and naturalizes continued extraction.

However, the dependence on livelihoods derived from oil extractive practices is not simply an imagined place, these communities do depend on this industry. What's more, these communities have very little choice in the matter. The story presented by *Eternal Flame* is one that, while celebrating achievements, also shows the difficulties people have just in getting access to small pieces of the potential wealth derived from oil sold on the market. Yet, what is not told by this DVD are the stories about the difficulties people face when dealing with the costs and dangers of the industry, which I will go into more depth in chapters 6 and 7.

3.6. Summary

This overview of the context of oil fracking in Manitoba, specifically the technology enrolled to get the oil – at least some of it - out of the ground and into pipelines, displays aspects of the co-constitutive relationship of material and social practices of place. For example, the purpose of the public tour is to help people get a sense of the industry but also to show how small of an environmental impact it has, and how safely regulated and organized it is. These social and environmental relations for Manitoba oil with focus on *safety* practices of oil were observed in detail by Hulshko (2017) (from Chapter 1), whose data collection occurred closer to the height of the recent oil boom 2012 to the crash in mid-2014. My tour leader, Jim, was himself was a farmer and rancher, and spoke of the way agriculture and oil work together, because they have common interests in keeping the land useable for future generations of farmers. The shift to horizontal wells and more recent fracking techniques means that there is less visible impact on the surface (while there is exponentially more impact underground, or invisible impact), but much more return on the amount of oil extracted and sold, which was interpreted on this tour, as a sign that the oil industry in Manitoba is sustainable and that industry cares about the agricultural industry critical to Manitoba and works in tandem with it. This indicates a social and material life of oil infrastructure that is somewhat geographically invisible or accommodating, minor, non-invasive, respectful, and something to feel proud of to be involved in. In other words, "Virden is oil country" (Peyton & Dyce 2021). Yet, living in the centre of "oil country" really means negotiating a life with the oil extraction infrastructure that makes the place of oil in Manitoba. As discussed briefly in this chapter but more in the subsequent chapters, much of the decision-making, and information holding occurs some distance from the sites I encountered on my tour. It is this dependence and also, desire to share the benefits and "minor" costs of oil extraction that is communicated by the group involved in the MOMIC. This reveals the ongoing place-making of oil in Manitoba – the way this infrastructure and

social practices effectively condition resource management relationships across spacetime, where resource extraction is prioritized and naturalized as another way to live off the land. At the same time, the difficulties or struggles of living with the impacts of oil is downplayed as I reveal toward the end of Chapter 5 regarding how information in the place of oil in Manitoba is made and who has access to it, and also in Chapter 6 and 7.

Chapter 4: The Place of the Most Recent Manitoba Oil Boom

There have been several booms and busts (defined as sudden increases or decreases in the amount of oil being extracted) in the history of Manitoba since the 1950's when the first well was discovered (Collins, 1956, Sept 29; Galarnyk, 1987). However, the most recent boom, often called the "fracking boom," included unprecedented growth mostly attributed to the increase and development of hydraulic fracturing and horizontal well technology (Hulshko, 2017; Kirbyson, 2011; Kornelsen, 2009, Jan 15). A 2013 news article in the *Winnipeg Free Press* reported that oil extraction contributed 2.5% to the provincial GDP and stated;

> The introduction of fracking technology in the oil and gas extraction business has turned North Dakota and Saskatchewan into major oil producers, and even though Manitoba's oil patch is still limited to the southwestern corner of the province, the new technology has allowed crude oil production in Manitoba to double since 2009 and increase fivefold since 2004 (Cash, 2013, Nov 15).

The following graph from Natural Resources Canada helps to visualize this boom by the amount of oil produced.

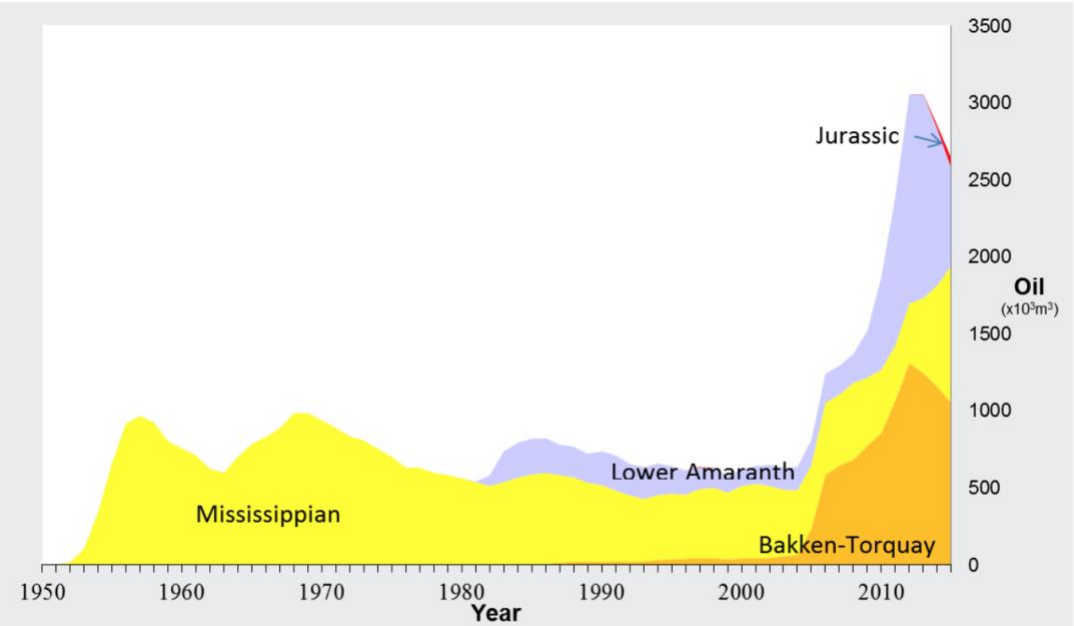


Figure 22: NRCAN Graph of oil production in Manitoba (Natural Resources Canada, 2017)

The graph (Fig. 22) displays the entire production, including the names of the field formations, or shale layers, since the first oil well was drilled in 1951. It shows the rise and fall of past booms and busts, and then the major boom starting around 2004 and beginning to drop in 2014. In 2014, the drop in Manitoba

production reflected a major decrease in production nationally as the price of a barrel of oil dropped significantly (Manitoba Government, 2017).

This chapter draws on the CPI framework around the multiple and mobile place of oil in Manitoba by considering the material-semiotic practices of oil booms, drawing on Massey's understanding of place as spacetime events (Massey 2005; Tuck & McKenzie 2015a). I also draw on a critical resource geography lens to think through how an oil boom is not inevitable, or naturally occurring, but is rather a social and material mechanism to continually facilitate oil extraction. This is predicated on the concept of resources as social and material collections of relationships (Bakker & Bridge 2006; Bridge 2009; Zimmermann 1951). For example, an oil boom includes a bust, and this dialectic is generally regarded as the accepted way for oil and gas development to work (as well as other minerals). Resource geographer Arn Keeling (2010), uses a concept of Harold Innis, "cyclonic development," to challenge the notion of a 'natural' resource cycle. He describes the storm-like attributes of the mineral development of Uranium city in northern Saskatchewan. This cyclonic development displays boom-and-bust geographies as, "inherently precarious, subject to the disruptive shocks of geographically distant technological changes, market cycles, and government policies" (Keeling 2010, p. 230). Keeling (2010) builds on Trevor Barnes's (2005) notion of 'cyclonics' and argues that, "different staples exhibit particular 'space-time biases' rooted in the geographical and historical process through which they are discovered, produced and incorporated" (p. 230). These 'space-time biases' indicate the particularities of each staple, articulating the connections of flow created from far flung locations, as well as their sudden disconnection during a bust cycle (or once abandoned). Building on this work, I see oil booms as carefully crafted spacetime events; spatial-temporal structures that create conditions for certain entities to take advantage of resource extraction situations. In other words, the mechanisms of oil and gas have always been ready and continue to be readied to create places of oil booms and busts. For example, Wylie (2018) shows how oil companies are poised waiting until specific legislative change. They then arrive in communities and use narratives that create a sense of rush and imminence – that the individual must take advantage of an opportunity offered by the company before it is gone. In reality, the opportunity is for the oil company to make a deal predicated upon conditions that are most favorable to it, in this way manipulating the perception of spacetime to create a place of urgency; to create an oil and gas boom (Wylie 2018).

This chapter proceeds through several sections, first explaining spacetime events and the recent Manitoba oil boom that initiated my investigation. Then, drawing on a component of CPI to contest the

naturalization of settler-colonization in geography, I explore how settler-colonization continues to condition oil and gas extraction, being a structured process of relationships to land that prioritize extraction of resources (Harris 2014; Hoogeveen 2015). In section 4.3 and 4.4, I describe the federal and then provincial legislative and regulatory practices and how they operated during the recent boom. Finally, in section 4.5., I explore how the place of an oil boom is negotiated daily by those living in direct connection with activities of oil extraction. Together these sections present the place of the recent Manitoba oil boom as contingent and conditioned on spatial-temporal relationships, before, during, and after the boom, while being located in southwestern Manitoba and elsewhere, simultaneously.

4.1. Oil Booms as Spacetime Events

Certainly, the context for CPI research is of great importance but, finding an ongoing co-constitutive entity in a way that does not fix it or render it inert, is a conundrum. One of the lessons of Massey's *For Space* (2005) was to think of place as an event in spacetime, being intentional about holding the spatial and temporal aspects together, as a way to open the arena for the political to re-enter the dialogue. The implications of this approach require me to investigate in a way that pays attention to the relational aspects of the place-making of an oil boom. For example, boom and bust cycles in oil and gas extraction are expected, particularly in shale or unconventional oil and gas exploration (Haggarty et al. 2018). Yet researchers working in critical resource geography have explained the many components, practices, and players that bring resources into being in particular ways to benefit specific players (for examples see, Bakker & Bridge 2006; Cameron 2012; Desbiens 2004; Kosek 2006). Both Cameron (2012) and Desbiens (2004) apply feminist geographic analysis to explore the semiotic (symbolic) construction of the "north" as a wilderness, or mostly uninhabited Indigenous land, in Canada. This created the ongoing impetus to materially extract resources from lands that were framed as having huge energy resource potential. This framing produced ongoing geographic relationships; where the "north" became a sacrifice zone for the energy and mineral wealth needs of the nation of Canada, at the expense of the human and non-human life in the area (Cameron 2012; Desbiens 2004). Both of these books give evidence of the material-semiotic practices of resource extraction, where the semiotic construction of the place and people of the place are utilized to justify major material transformations to harness energy (the hydroelectricity) or extract minerals. The work of Philip Wight (2017) explores how a pipeline in northern Alaska transformed "oil *reserves* into economic *resources*" due, partly, to the need to *make use of* the pipeline. In other words, the framing of the needs of the state of Alaska, and of the nation of the

USA, demanded and justified the need to fill the pipeline with oil and thus open up vast areas of protected and Indigenous land to extraction. Kosek (2006) details how land tenure agreements made with Spanish and Mestizo settlers during the Treaty of Guadalupe in the south western states of the USA, were slowly taken over by the Forestry and National parks, conditioning community held and managed resources into government held and managed resources. This has continued a legacy of poverty for communities in the area and violent conflict with the Forest Service, due to logging and other forest practices that have been made illegal (Kosek 2006). The examples detail the ways resources are socially and materiality configured to benefit certain actors, such as the federal and provincial/state governments, or companies, at the expense of inhabitants in the area (human and non-human). In other words, to have an extraction boom in one place, you must have it in many other places where people, logics, technics, and ideologies co-mingle to produce the possibility of resource extraction (Keeling 2010). Some of those places have more stake in how and when a boom can occur, and all places must negotiate their situation to the best of their abilities, even when power is unequally distributed (Wylie 2015). These places are all related but they are also discreet once the particularity of a place is explored. For instance, Manitoba's oil boom is predicated upon many other locations, such as Winnipeg, Calgary, Ottawa, and University research labs in Texas, USA. These locations facilitate oil extraction and booms in many places in Canada, and yet Manitoba's oil boom is also conditioned particular to Manitoba. In other words, the way the oil boom happens in Manitoba will be unique in specific ways. Even if the well drilled uses the same technology, and is negotiated by the same company, it will occur with different conditions than a well just a mile over the border in Saskatchewan, or North Dakota.

As I began my investigations into oil extraction in Manitoba, news headlines and other discourse mentioned and described a "Manitoba oil boom" or the "oil boom" as an entity bringing life to rural Manitoba (CBC News 2011; Kirbyson 2011). In fact, much dialogue about oil extraction generally reflects engagement with boom-and-bust cycles. However, instead of framing questions that consider the impacts of boom-bust cycles, I decided to focus on the oil boom as a spacetime event to the overall place-making of oil in Manitoba, treating this particular boom-and-bust cycle as an object of critical attention. I wanted to know how the boom happened and what the boom did, and then how the bust was considered an acceptable aspect of resource extraction in the context of southwestern Manitoba. As mentioned above, Wylie (2015) has described how oil and gas companies manipulate spacetime for communities by creating a sense of great urgency to pressure citizens to sign leases. Following Wylie, I began to investigate how spacetime was being manipulated in Manitoba to create an oil boom, by whom

but also by what, assuming that non-human entities are also collecting and operating within places. This

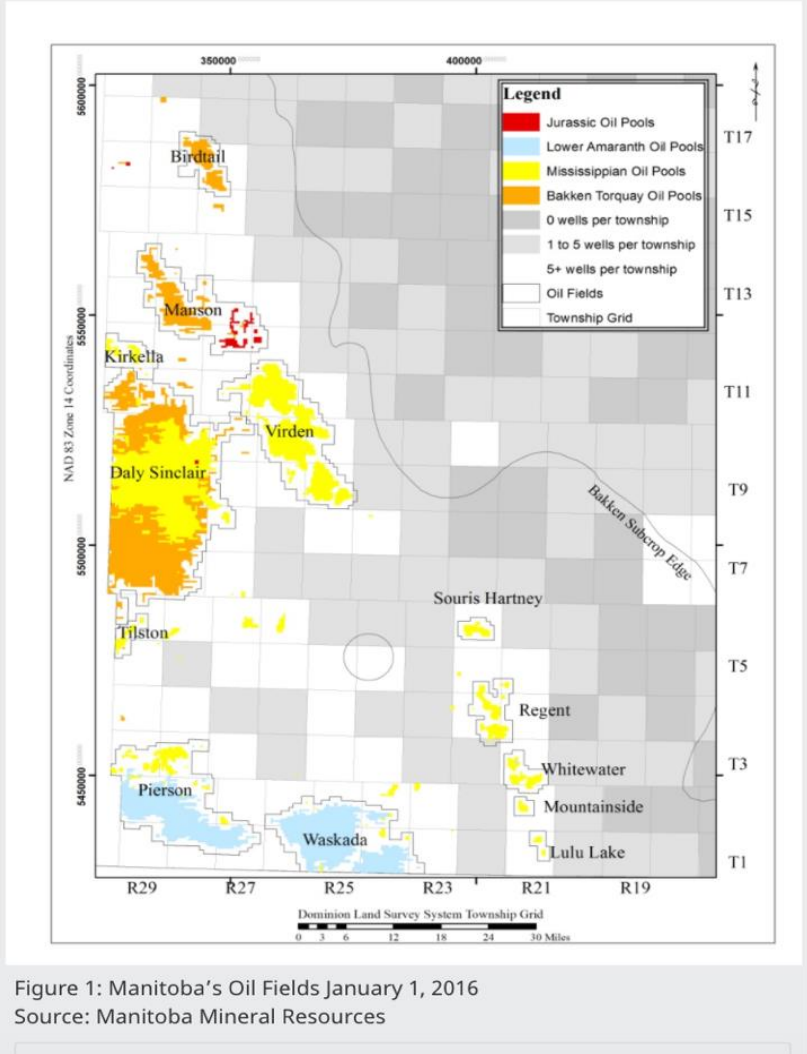


Figure 23: NRCAN Map of Manitoba's Oil Fields (Natural Resources Canada 2017)

opens up political questions regarding the spatiotemporal conditioning for oil extraction to occur in such a way that creates a boom-bust economy. Also, I was interested to know what it was like to live in southwestern Manitoba, or be connected to Manitoban oil and gas, during this boom. The above image (Figure 23) is from the Natural Resources Canada website and gives a general map view of the extent of oil wells in the area of southwestern Manitoba.

4.2. Laying the Groundwork for Canadian Confederation and the Coloniality of Oil Booms

….as Civilization was kind of moving west through Canada, the government um, gave landowners like, rights to their land (Participant OT 1311).

In Chapter 5, I explore in more detail the implications of rights (land or surface rights and mineral rights) and royalty rates. In this section, I want to describe the ways that oil in Manitoba happens through the framework established by the settler-colonial process to create the nation-state of Canada. Particularly through the Dominion Lands Act of 1872 (and the associated Dominion Lands Survey that mapped Indigenous land in a grid pattern), settlers were enticed to arrive and displace Indigenous and Metís people by claiming and reorganizing the land (see for examples, Harris 2014; Hoogoveen 2015; Owram 1992). The present-day licencing needed to drill an oil well is built on these relationships to land, established during these land surveys and property offices, which continue to create authority in a way that (over)determines people's relationship to land (Harris 2014; Nichols 2017). One participant explained the difficulties of a landman (the person hired to negotiate obtaining mineral and surface rights to drill a well) due to the need to deal with so many owners. This speaks to the legal and discursive power of the grid overlaid on the landscape of the prairies, establishing ownership squares and designating rights to incoming settlers. It also reinforces the performative place-making power of technology to mediate relationship to land (Participant REL 0223). Most of my participants knew intimately the ways that mineral and surface rights worked. They would often tell me inception stories of how it came to be this way in Manitoba, including the note in the quote above where "civilization" moved toward the west (Participant OT 1311). However, none of my participants questioned why these rights held authority. The reordering of the landscape is simple, obvious and historically factual. Its legibility is rendered as an outcome of historical progress. Furthermore, as a spatial and temporal process to continue this settler-colonial relationship to land, there is an underlying socio-technological acceptance, as seen in this participant quote about "civilization" moving west, of the way mineral resources have configured place (Hoogoveen 2015).

4.3. Laying the Groundwork Nationally and Technologically for Oil to Boom

Since the 1950's, oil has been an increasingly important resource for Canada, now the fifth largest producer of oil in the world (Natural Resources Canada, 2017). Prior to WWII, Canada was still dependent on oil imported from the United States (U.S.). In an effort to make oil and gas exploration within Canada more appealing, the federal government initiated a series of policy decisions that integrated US and Canadian oil industries into what by 1955 was essentially a continental oil market (Chastko, 2012). Some of these policies included tax incentives for oil exploration companies, waiving

import fees on drilling technology, and the integration of energy markets through agreements with the U. S. These measures effectively removed the primary barriers that would slow or hinder the exploration, development, and mobilization of oil across national borders. Policies were aimed at moving investment and technology north, into Canada, allowing oil to move south, into the US. Between 1950 and 1958 five major pipelines were constructed, and during this period American-based companies controlled almost 70% of the oil production in Canada (Chastko, 2012).

Indeed, the crude oil product extracted from the ground only becomes valuable through its mobilization, as it must be moved to refineries for conversion into useable products (fuel, lubricants, etc.). While Canada has refineries in Alberta and Ontario, most crude oil product is exported to the U.S.; in 2015, over 70% was exported to the United States for refinement (Natural Resource Canada, 2017). Most oil from Manitoba travels to the United States via pipelines, with small amounts traveling by rail to oil refineries in Ontario (Participant AA 0310). Manitoba-based oil refineries were shut down by the mid-1970s, and all crude oil extracted in Manitoba and Saskatchewan must leave the region for processing, most traveling south on the Enbridge lines to refineries near Chicago (Galarnyk, 1987; LeNeveu, 2014). At the federal level, policies facilitate the inward movement of investment and the outward movement of oil. Resource transportation via pipeline or railway is regulated federally; once the oil is transported to the pipeline, or the rail station, it is no longer under provincial jurisdiction. Once the oil is out of the ground it moves relatively freely out of the provinces (Chastko, 2012). Thus, the federal policy context for oil mobility is largely facilitatory and restricted to transportation regulations. Substantive regulation of oil extraction in Canada occurs largely at the provincial level and at the front-end, in the case of Manitoba oil, in the licensing offices of the Manitoba Petroleum Branch and at well sites where oil companies work to get oil out of the ground and moving to market. Thus, regulatory oversight for *how* oil is extracted is left to the provinces, but once extracted, the federal government oversees the movement of the resource to a global market.

Following the initial wave of conventional oil production across Canada in the 1950s–1970s, exploration and extraction slowed, and Canadian oil development struggled to compete globally. In the late 1990s, though, the technological innovation of horizontal drilling and continued improvement of hydraulic fracturing of wells allowed development of hard-to-reach oil reserves (referred to in the industry as “tight oil”) (Holloway & Rudd 2013; Natural Resources Canada 2017). Though in production in the Prairies since the 1950s, technological innovation in fracking techniques in the early 2000’s expanded oil exploration and extraction possibilities, and led to this more recent and

unprecedentedly large oil boom in Manitoba (Hulshko 2017). Figure 24 shows the rapid increase in the price of oil in the early 2000's and the subsequent spikes in drilling licenses and actual wells drilled. Prior to the boom, Manitoba never had more than 150 wells a year licensed and drilled; between 2005 and 2015 there were 300–500 per year. There was also significant development associated with the oil industry infrastructure, including a new crude oil rail car distribution and processing centre in Cromer, MB in 2012 (LeNeveu, 2013). In 2013, at the peak of the boom, the province produced roughly 19 million barrels of oil, all of which traveled out of its borders to the United States and eastern Canada. Between 2004 and 2013, the proportion of Manitoba's GDP related to crude oil production grew fivefold, from less than 0.5% to 2.5% (Cash, 2013). However, development often comes with legal, environmental, and infrastructure-related concerns. Levels of investment in development are often not matched by corresponding investments in accompanying infrastructure or increases in government oversight.

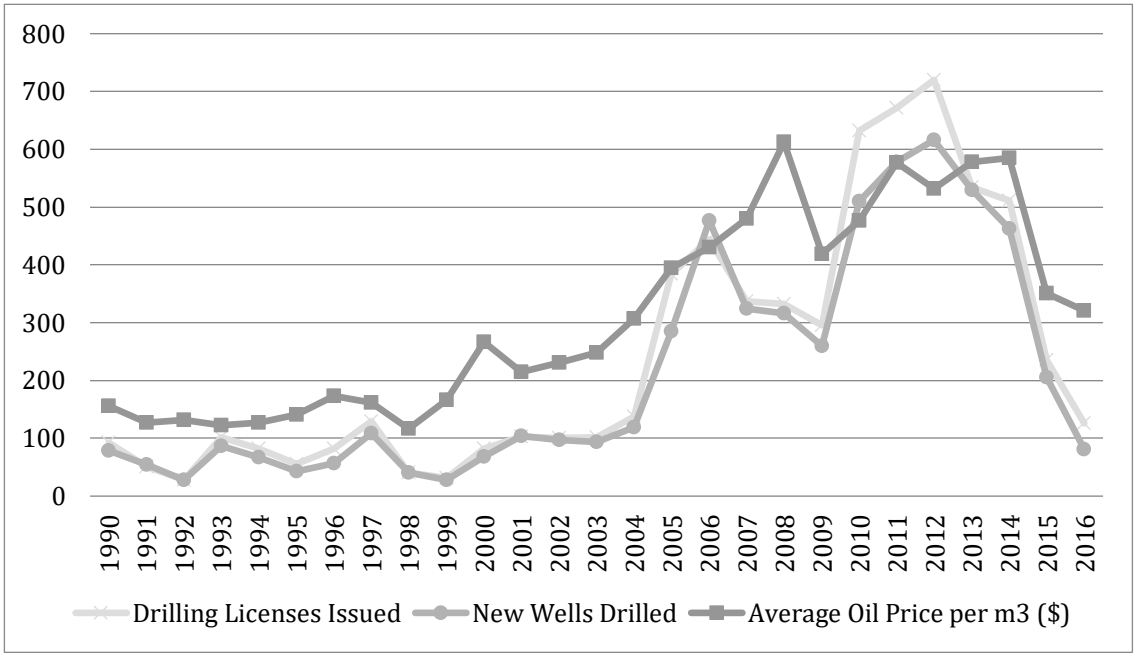


Figure 24: Manitoba's Oil Boom: Well Licensing and Drilling and Price of Oil, 1990–2016 (data collected from Manitoba Petroleum Branch 2017)

4.4. Regulating an Oil Boom as the Province of Manitoba

Since the 1990's, regulation of oil and gas by the federal government has remained facilitatory to oil development. There are no tariffs as oil crosses the US/Canada border, and some argue that the national territorial border is, in practice, largely inconsequential to its flow (Carter & Eaton, 2016). Regulation of the exploration, extraction, and development activities of the oil and gas industry has remained almost

exclusively at the provincial level. This is an issue that has historically created great friction in federal/provincial relationships and continues to affect these relationships, seen for example in the recent introduction of carbon tax (Janigan 2012; Tasker 2020).

In the Prairies, provincial governments are the primary regulators of oil extraction activity. They have followed minimalist regulation strategies, typical of "energy dominant" states, designed to enable oil and gas development (Carter & Eaton, 2016). In Manitoba, oil was legislated under the mining act and later in the 1990's legislation was adopted to regulate specific activities related to oil (e.g., *The Oil and Gas Act*, C.C.S.M. 1993, c O34; *The Oil and Gas Production Tax Act*, C.C.S.M. 1996, c O37). Since then, there have been few changes to this legislation, aside from the creation of more tax incentives and drilling programs to promote private investment in the industry. There was an amendment passed to the Oil and Gas Act (*The Oil and Gas Amendment and Oil and Gas Production Tax Amendment Act*, C.C.S.M., once assented to, c 034), which will be discussed in more detail in Chapters 6 and 7. It was never implemented and has recently been repealed in 2019 (*The Reducing Red Tape and Improving Services Act*, S.M. 2019, c. 11).

Furthermore, even as the type of technology and scale of development changed rapidly leading up to and during the oil boom, only minor regulation and implementation adjustments were made regarding oil exploration and development. In 2004, *The Oil and Gas Act* was amended to include guidelines regarding the sustainable development of oil resources. However, these guidelines do not mention the change in technology, such as the major adaptation to horizontal drilling and the scale and capacity to use fracking technology to increase the amount of oil extracted from the shale layers (*The Oil and Gas Act*, C.C.S.M. 1993, c O34). In fact, according to a review of the implementation of Sustainable Development in Manitoba (Sinclair & Quinn 2012), most of the power of the *Sustainable Development Act* was reduced to guidelines and housed in the Department of Conservation. This had the effect of lessening the effective reach of sustainable development into legislation and implementation. This issue regarding the lack of institutional legislative capacity in oil and gas in Manitoba was explored by Dohon (2018), who concluded that sustainable development and habitat protection were inadequate in Manitoban legislation and regulation of oil and gas activities.

The other primary provincial regulation is *The Surface Rights Act* of the late 1980's through which lease agreements and compensation between landowners and mineral rights owners are negotiated (landowners only retain rights to the first six inches; C.C.S.M. 1987, c S235). This legislation attempted to improve surface rights owners' ability to negotiate agreements and to hold companies accountable for

returning the land to be able to farm it again, and/or dealing with spills. However, the Act's provisions continue to prioritize the development of the mineral resource. If the mineral rights owner wants to explore, drill, and extract oil, the surface rights owner can only negotiate minor details regarding *how* the company does this, such as slight increase in money for compensation or the location of a well (Participant OAR 2711). The *Surface Rights Act* also established the Surface Rights Board, a quasi-judicial board that the surface owner can take complaints to if they feel they are not being treated fairly by a company. But again, only minor details can be negotiated and the enforcing body of the decisions made by this board is the Manitoba Petroleum Branch. These instances indicate how provincial regulations governing extraction operate in such a way as to facilitate and promote extraction on behalf of company interests (explored in more depth in Chapter 6).

However, it is not only the context but also the implementation and enforcement of the legislation that matters (the place-making in action). The Manitoba Petroleum Branch is the primary entity involved in the implementation and enforcement of provincial regulations related to the industry. Aspects of oil production involving the licensing and drilling of wells and movement of the extracted product to a battery (where oil is separated from other fluids) and to transportation sites fall under the Branch's jurisdiction. It is responsible for monitoring companies and the entire process from drilling to abandoning (or closing) a well site. The Branch also deals with any externalities, or aspects of oil production that cannot be sold but must be managed and disposed of, including toxic wastewater and sour gas. In Manitoba, before natural resources can be extracted, regulations require that developers obtain an environmental license. However, under *The Environment Act* (C.C.S.M. 1987, c E125), oil is not legally considered a resource, so decisions related to oil development remain only under the jurisdiction of Manitoba Petroleum Branch. Jurisdiction is not shared by Conservation, or the environmental assessment office of the government, which occurs with other mineral development in Manitoba. This means the Branch bypasses any formal environmental assessment processes, consulting stakeholders when it deems it necessary but not required to do so by law. It also creates a potential conflict of interest, with the Branch mandated both to promote and to regulate oil development (Manitoba Petroleum Branch 2017; Manitoba Government 2005). As noted in a legislative hearing in 2005 regarding Bill 21, a proposed amendment to the Oil and Gas Act;

> "The Petroleum Branch is responsible for promoting the sustainable development of Manitoba's oil resources. All developments have an environmental impact. The conflict between promoting the development and ensuring the safety of the surrounding environment indicates the error of having Petroleum Branch regulating both sides of the conflict" (Manitoba Government 2005).

One of the key considerations of the proposed Amendment to the Oil and Gas Act in 2005 was the obvious conflict of interest held by the Petroleum Branch as both regulator and promoter of the industry.

Considering how the Branch actually implements these regulations on a day-to-day basis revealed another astonishing aspect. In Manitoba during the 2004–2015 oil boom, even as exploration and production surged the Branch responsible for its regulation did not expand accordingly. In fact, the amount of people working the offices continued to be reduced. Leading up to the oil boom, it was rare for regulators to review licensing applications for more than 100 wells in a year. However, in 2005 there were 384 wells licensed, and by 2012 that number had increased by 600%, peaking at 720. This quote and photo (Fig. 23) from a participant are attempts to make sense of this increase:

> "So, all of the sudden 6 or 7 times the amount. Where is it? Right here. (Pointing to a paper on the wall, photographed below) I did this one year because I thought, I wanted to see… (moving to another part of the office to see a paper taped to the wall) …so license number 1, 1947. So, it took us… 7 years and 11 months to get 1,000 wells. And then it, to get the next thousand, it took us…8 years. Then took us 18 years, to get another thousand wells. Then it took us 4. Then it took us 13, 5, 2, 1, 1, 2" (Participant HT…).

This participant is speaking about their need to understand how busy things had become and to put it into perspective, doing this by comparing the number of licences granted by year for every 1,000 licences. In the years from 2009 to 2012, as noted on this image (Fig. 25), during the height of the boom there was an unprecedented increase in licencing of wells. Yet, even as the work of the Branch grew dramatically, its personnel capacity actually contracted and continues to contract, even as I edit this dissertation. During the boom there were fewer positions than in previous years, but they had to continue performing all the same regulatory activities. One participant I spoke with said, "there are less people working now than in 1991… [and there is] two times as much oil infrastructure" (Participant AA0310). Another participant explained:

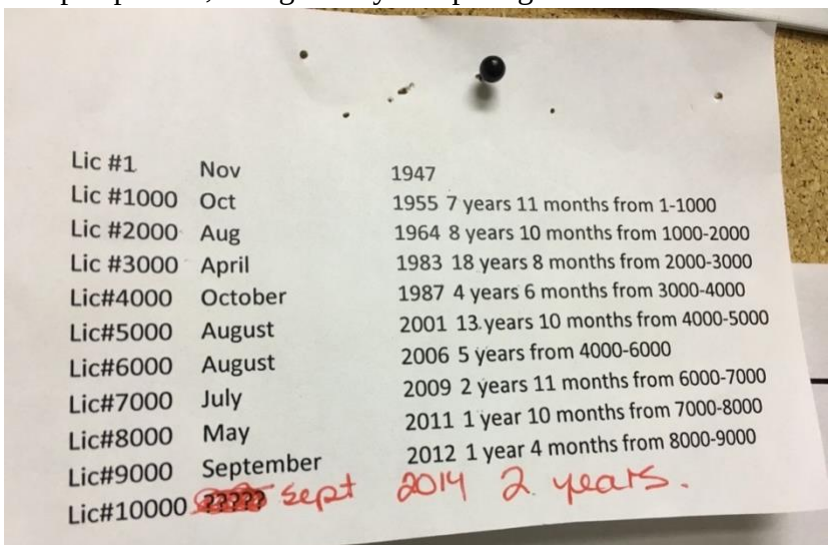


Figure 25: Image from Office, Fieldwork trip 2018

> "So, when I was hired on, I was hired on under someone who was on stress leave, and she was on stress leave for probably ten years, and um, so basically I ended up doing two jobs. And, during the oil boom there was no extra people hired on…. And, yes, there has been a decline in

> the last year because of the price of oil, but there's just been more retirements. And…yeah, more work to do" (Participant AUE 1102).

To cope with all the work, I was told that the Branch cut back on actual site visits, approving plans for well sites in the office unless there were obvious concerning features, such as a water body that could be affected (Participant HT 2811). According to Carter and Eaton (2016), the same deficit of capacity occurred in neighbouring Saskatchewan. The reduced regulatory capacity during these Prairie oil booms did not mean that licenses took longer to procure; rather, in Manitoba it meant that the Branch changed its practices to approve demanded licenses as efficiently as possible. The Branch is under pressure to prioritize the development and mobilization of oil even when staff are severely curtailed by capacity to fulfill their day-to-day obligations.

Prior to and during the most recent Prairie oil boom, the rate and intensity of extraction was supported by federal and provincial policies put in place prior to the boom and essentially unmodified during the boom in terms of facilitating rapid increases in drilling and production. As the global price of oil increased in the mid-2000's, there was a dramatic rise in the number of wells licensed and drilled. As Figure 24 implies, without a solid market (and high price) for the oil, the rate and intensity of oil development decreases. It also implies that licencing precedes itself, suggesting that the Petroleum Branch continues to ramp up drilling, even when it cannot keep up with capacity. Also, this lack of support for regulatory capacity, in the context of rapid mobilization, reveals an emphasis on profit due to a sense of urgency to extract oil and get it flowing to markets. This potentially occurs at the expense of local considerations such as community and ecological wellbeing. Just as natural resources are not "natural," but are produced, an oil boom is not inevitable, but is a continued set of choices accompanied by complex benefits and costs. These choices, however, are not made by those who live with oil. Instead, they are federal and provincial policies of the past, present, and future, enacted at a local level by bureaucrats seemingly without the necessary capacity to do their jobs.

4.5. Living with Boom Spacetime

"Calgary is Calgary to the Manitoba oil and gas business" (Participant OAR2711).

As I began to interview participants, collecting stories and reflections on oil in Manitoba, I heard about the recent unprecedented oil boom and its bust. It was a cohesive material-semiotic event, spoken about as an event ("the boom"), but also one that has happened many times before. My interview participants

would talk about it as, “this boom”, or the “recent boom”, or the “crazy boom” to distinguish it from other booms. As mentioned in the introduction, a boom spacetime, related to Massey (2005) and her spacetime events, suggests that things do not occur in time and separately in space, but rather in relational spacetime. The oil boom/bust cycles are spatial-temporal events that create place in personal and intimate lived ways. They also condition people and places for their continuance, or for their legitimacy as geographically past, present and future ongoing processes (Massey 2005). One of the key aspects of this spacetime is to locate the boom, as though it occurred naturally, as geological fact predicated upon discovery of shale beds, and technological innovation (Braun 2000). The earlier section of this chapter and other work on oil and gas boom/bust cycles also indicates various components and actors that condition an ongoing cyclical aspect of extraction. As mentioned at the start of this chapter, this cyclonic development idea is explored with mining in Canada’s north by Keeling (2010). That work further explored the issue through oral historical accounts from Indigenous residents of some areas in northern Canada that have experienced the booms and busts of mineral development (Keeling & Sandlos 2015). Keeling & Sandlos (2015) found that studies on boom-and-bust geographies often focus on the far off, or large-scale causes but then tend to ignore the adaptations and lived realities of those who remain behind during a bust cycle. In Manitoba, Hulshko’s (2017) work began to investigate the oil cultures of the southwest corner of Manitoba that entangle people socioeconomically in accepting, integrating, and promoting the continuation of the presence of oil extraction. This section builds on that but focuses specifically on the material-semiotic practices of the recent oil boom in southwestern Manitoba, or the way residents of the area are entangled in social discourses and material lived effects of boom spacetime.

This quote reveals how the boom in Manitoba was structured elsewhere, the power being held in a distant-from-Manitoba location. This participant was speaking about the excitement in the region of southwestern Manitoba during the recent oil boom, but knew exactly where the balance of power was going to remain regardless of how big the boom was:

> …the mayor of Brandon at the time was…, she said, well we want to be the Calgary to the Manitoba oil and gas business. And we [the participants] are going well, your problem is you’re 40 minutes away from oil and gas. And the other problem you’ve got is; Calgary is Calgary to the Manitoba oil and gas business. It’s just the way it is. The geology is in Calgary, that’s where they do all that stuff. You’re not going to take it, or bring it to Virden and you’re not going to bring it to Brandon. And it’s not going to end up in Winnipeg (Participants OAR 2711).

This quote is indicative of a spatial-temporal paradox; oil and gas cannot be located in Brandon because it is, "40 minutes away" but also because of Calgary, Alberta, which is more than ten hours away. In other words, it is Calgary that is central to the Manitoba oil and gas business, even though it is much farther away in spacetime. Also, this centrality, that is not going anywhere, is predicated on other oil and gas business in Canada. Calgary, Alberta, is a central place for finance, knowledge and expertise and main decision-making for oil and gas decisions across Canada, so Manitoba is only a small piece of that operation. Even Tundra Oil & Gas, and Tundra Marketing Ltd., two of the largest oil extraction companies in Manitoba and owned by a Manitoba based family, has its main offices in Calgary (Participant OT 1311). The main operational offices for most of the larger companies extracting oil in Manitoba are located in Calgary, where the decisions are made about where to explore next. This is what the participant meant by the "geology." One geologist I spoke to described receiving maps and information about well production at their office in Calgary, and then it was their job to direct the company where to look next, and which pieces of mineral and surface rights to acquire on lease (Participant AO 1101). However, what this quote indicates in terms of boom spacetime is the flurry of activity that led the mayor of Brandon, a city of roughly 50,000 about 45 minutes west of Virden in Manitoba, to desire some of the organizational component of oil and gas extraction to relocate. This participant has grown up in Virden, through several smaller oil booms, and knows that this will never happen. Even Winnipeg, the capital of Manitoba, will not be able to entice oil and gas operations to move from Calgary. The strength of the statement, "Calgary is Calgary to Manitoba oil and gas business" denotes its material-semiotic practices for the place of oil in Manitoba. Calgary has been socially and materially constructed to be the central headquarters for oil and gas extraction in Canada, and it will remain so in the future. It also implies a resignation or acceptance of a reality; even an unprecedented Manitoba oil boom cannot change this.

These same participants also mentioned a municipal conference they attended as they reflected on the promises arriving with a boom, along with the lack of knowledge most people have regarding a larger picture that brings into spatiotemporal view the bust side of all booms:

> P1: Dan gets up and the first thing out of his mouth is, 'Welcome to the Oil Patch.' And then he goes, he starts talking about the highly mobile workforce in the oil and gas industry and he's talking about the whole thing and everybody's getting excited and Dan gets done and he goes off the stage and Harry goes, he said [to me], 'you and I were the only guys in the room that understood what he said.' And I said, 'Which part? The fact that that highly mobile work force is gonna leave way faster than it ever showed up?' And he said, 'That's exactly it'….and then we are into the regular downturn and whose left to pay for everything? The farmer, the little old

> lady? That [the oil and gas] industry is gone. Those people, they are gone and they disappear faster than they ever showed up. As soon as the jobs are gone, they're gone. So, you quit drilling, they're gone. Like it is, they are almost gone before the downturn (laughs) like you can [predict it]. There's a whole bunch of indicators out there and being a business guy on the main street, it's my fourth boom and bust.
> P2: That's the thing, they always think that the last boom's gonna last for 20 years. And it never does, right? There're always people [to] spend, you know, he's seen it [gesturing to P1]. People spend like unbelievable money while it starts, the boom, and they don't mind their nickels or dollars. And then as soon as it starts to go the other way, they're gone, right? They have spent it all, debts, and they are out of luck and gone. And, there's always a bust. Every single time. It doesn't last forever (Participants OAR2711).

The first participant speaks to this being a cycle that he has seen before, at least four times, since he was a child living on a farm in the area and the second participant affirms this lived knowledge. These experiences and their acceptance naturalizes, in a material and discursive way, the boom-and-bust cycles of oil and gas. This quote also displays the way an oil boom arrives with information sessions, such as this one to a municipality, sparking excitement, willingness to spend, and take on debt. Yet those who have lived through previous cycles know it isn't going to last; there is "always a bust. Every single time" (Participants OAR2711). Yet, as the participant also notes, others do not seem to know or acknowledge this fact. It is more about taking advantage of the opportunity as it arises and preparing to do so. This observation is similar to those described by Keeling (2010) and then Keeling and Sandlos (2015), particularly in the reference to the mobile work force, but also to the sudden arrival of an exuberant financial outlook and "unimaginable" spending. Keeling (2010) outlines the legacy of uranium mining left behind for those who were not a part of the mobile labour force and who remained to live on with the environmental degradation and toxic wastes, particularly once it was abandoned. Governments - in Keeling's case, the provincial and federal government, and in the above quote the municipal government - get excited about the arrival of the boom and yet as soon as a downturn hits, the company money and labour force clear out and the people who remain are left to clean up and carry on.

I also heard participants speak about the confusion that came with a boom, the frenzy to get the oil moving out of the ground. It was described to me as "crazy" and one participant told me bluntly "I never want to see that again," outlining how he would be working from 6am to midnight with a constantly ringing phone (Participant AA 0310). Another person explained how it was somewhat of a relief that oil prices were going up a bit, after the major bust in 2015, but expressed a desire for them not to rise to the amounts that trigger boom spacetime expansion;

> And now, like the oil prices are picking up a little bit, but you hope it doesn't get that, I mean, this is me personally, if it hits that high thing again, then you are due for a bigger crash, right? It'd be nice just to level it out. Keep people working and now…make housing go insane…because it just, yeah, it just gets so, so expensive. Where if you lose that job, I mean you are in trouble. So, yeah, there's some good things but then there's some, not so good things, right? About people making that much money (Participant HT 2811).

These quotes are from people witnessing the effects of a boom through their job and their neighbourhood, hoping oil extraction could, "level out" instead of operating so extremely. This included frustration expressed by the municipal officer of Virden, at the time, about the way the economics worked during boom-time pressures:

> We have people coming in wanting to locate here, and we can't make it happen quickly enough for them. When its $100 dollars [per barrel of oil on the market] …At the same time… we don't want the guys who only want to be here if it is $100… Because when it becomes $60, they go away and they've a, unfinished business, really. But those are the, those are the, it got crazy moments [when the price of a barrel of oil was so high].
> And the oil companies know it happens, too. So, like that's the other part that's frustrating. It's like, you know, they're the ones who go…Well it's at $100 we have to do this and we need it yesterday. And so, they start, they create their own problems…so if you look at what happened in Alberta the day after the prices plummeted…. A bunch of companies sent out letters to all their suppliers saying, 'you have to cut your prices or else we are letting you go.' I am like, well the reason why the prices were so high is because you made unreasonable demands on them, so in order to make it meet that demand they had to raise their prices. It's like, yeah sure we will cut our price, but you are now getting 60% of the service you wanted (Participant CE 1212).

Again, this participant is referring to the way rise in the price of oil affects people in Southwestern Manitoba, something they have no control over, or something they witness almost as bystanders, with "it got crazy" moments. They accommodated and lived through the boom, but they did not particularly welcome it. Rather, they hope for a more stable oil extraction industry.

In terms of accommodation and negotiations, in the same conversation about the difficulties of living with oil, especially during boom times, I also heard stories in defense of the oil industry. I was told by several regulators and others how the industry, particularly the oil service industry (business that arise as a result of drilling), keeps people in southwestern Manitoba who would otherwise have to leave to find jobs. One participant described these people as, "born and raised…gives them a career" and many of those people are employed by a Manitoba-owned company, keeping dollars in the province (Participant AA 0310). The mayor of Virden showed me how the oil industry contributed to the construction of an Opera House and an active Art Gallery,

> …the Richardson's [one of the main oil company owners] support those kinds of things. Um, some of the oil companies support those. And they all see those benefits to having these things in their communities, right? We have a library, we have a lot of things that make the quality of life, things that would be on quality-of-life indicator, ah, for communities. Those are all here and it's the businesses that recognize they need them here (Participant CE 1212).

In other words, to draw a highly mobile workforce, including workers that will stick around for the ups and downs, companies have to invest in places like Virden. A company that takes the time to invest in a community like this is far more likely to remain during a bust period. For example, the companies owned by the Richardson's (mentioned in the quote above), Tundra Oil and Gas, and Tundra Energy Marketing Limited, actually increased their stakes in the oil industry in Manitoba during the downturn, making several acquisitions and by 2017 employing more than half of those working in the oilfields in southwestern Manitoba (Zinchuk 2017). In the *Pipeline News*, published in Saskatchewan, Ken Nuefeld, the CEO of Tundra Oil and Gas speaks about being proudly Manitoban and how the company has worked hard to reduce costs but "survive at these prices [speaking of the low price of a barrel of oil]" and remain in operation during the downturn (or bust cycle) (Zinchuk 2017). It can be assumed, from the use of the word 'survive', that Tundra Oil and Gas is counting on the price going back up at some point. So, the company must survive until then. As part of that survival strategy, Tundra must also maintain relationships in southwestern Manitoba by continuing to employ its Manitoba-based workforce, some of which the company used during the downturn to clean up old well sites. However, even though it is clear this company is sticking around through the bust period, it is because they are preparing for the next boom.

While the boom-and-bust might be manageable for Tundra Oil and Gas, for others it is a different story. Another participant in Virden, gave a stark picture of the community toll of an oil boom, particularly on households and women who continue to be responsible for most childcare:

> "And then another thing was, … But I mean I think this is just a community thing, not as much an oil thing. Its childcare. Is that there were a lot of women that, [during the oil boom] either had to leave their jobs or, find other mothers. We just didn't have all the childcare that we needed. So, had to find other mothers that work shift work. And so other mothers were taking care of other people's kids when other people were at work. Last I heard there was like, 90 spots that were needed in Virden for full time childcare. Like 90 kids without it. And for a small town of 3,500 people that's…pretty huge. Um, but then people got laid off so then maybe they bought a house that was more expensive. And you get laid off…(sighs)…yeah it's sad" (Participant HT 2811).

When I was doing my fieldwork, there were more than 100 houses for sale in Virden, displaying the difficult lived realities for people who are not so mobile, people who stay and live through boom and busts cycles. This is even more of a problem for the women who shoulder much of the burden of dealing with the inconsistent income and work patterns of the primarily male work force of most oil and gas operations (Parson & Ray 2020). Informal labour, sometimes called unpaid domestic work or "care work," is primarily performed by women. Legerski and Hand's (2020) work details the explosion of this care work in communities during the Bakken oil boom. Parson and Ray (2020) argue that there is a huge undervaluation of the multiple ways women's bodies are enrolled in the oil and gas industry, also looking at the Bakken oil field. Both studies also detail the ways in which physical infrastructure needs during boomtime are often high priority for companies and governments (local and state) but the "human infrastructure," including services such as daycare, health care, and support around domestic violence, often lag behind or are ignored altogether. Legerski and Hand (2020) also detailed the ways these care workers (paid and unpaid), though suffering burnout, continued to provide care work, at times more than double the amount they were providing prior to the boom. This reproductive labour, as theorised by social reproductive theorist Tithi Bhattacharya (2017), is all the labour that goes into creating the conditions for the "oil" worker to perform their job and yet, this labour is so highly gendered that the provision of requirements for undervalued women's labour is mostly invisible, or disregarded. Even in the quote from the participant I spoke to, she comments that it may not be an "oil thing" just a community thing, even while noting that it was during the oil boom that "other mothers were taking care of other people's kids" (Participant HT2811).

4.6. Summary

Oil booms, and their counterpart, oil busts, are not naturally occurring aspects of oil and gas extraction. Instead, they are ongoing spatiotemporal relationships bringing particularly kinds of place into being (Massey 2005). The data shows how one of the main components of an oil boom is the ongoing settler-colonial relationships to land which prioritize extraction through ownership of mineral and surface rights, thus establishing power to legislate and regulate how oil extraction happens (Hoogeveen 2015). Implementing or practicing these relationships through oil extraction regulations requires day-to-day jobs with people overwhelmed by the amount of work and under-supported by the state, even as the licensing and extraction proceeds at an accelerated pace. During the recent, unprecedented oil boom, the number of licences increased by 600% at the peak and yet no new people were added to the regulatory

body of the Manitoba Petroleum Branch. This undercutting of capacity to do the job required by legislation is a common practice of oil facilitation in a settler-colonial state, confirmed by studies of geographies of oil extraction and regulatory procedure elsewhere in Canada and the US (Eaton & Kinchy 2016; Carter & Eaton 2016). People in my study, who lived through the recent oil boom, mostly speak to a desire to never experience that again – even when their livelihoods depend on oil extraction in the area. Using a CPI lens brings into focus the spatiotemporal practices of resource booms animating the structures that create the Manitoban place of oil. Making the structures visible reveals the way boom spacetime narratives continue producing relationships with place negotiated daily by those in proximity to and with oil extraction activities. This suggests again that the material-semiotics of oil booms and busts work to legitimize the ongoing settler-colonial resource extraction practices that prioritize rapid extraction of oil as resource, creating and drawing on precarious and gendered or "informal" labour conditions. The next chapter delves into the particularities of information as place-making encounters, in my second incursion into the multiplicity of the place of oil in Manitoba.

Chapter 5: Place as Information Encounters

5.1. Information Encounters

Where do we find out about oil extraction in Manitoba? Where do the actual encounters with information occur and how are they made? If places are in production, then they are comprised of and produce information about themselves. Analyzing this power-geometry of the place of oil is the focus of this incursion and another aspect of the ongoing entanglement of social and material practices of the place of oil in Manitoba (McKenzie & Beiler 2016). Material-semiotics, or the study of the meanings of materiality and relationships of meaning-making, suggests that information encounters occur in multiple ways: spoken words, text, courses, relationships with people whose lives include connection to the information, events, websites…etc. (Law 2009; Law & Singleton 2014). As well, information about oil extraction is often a key site for legitimizing but also contesting the place-making of oil (shown in Barry 2013). For example, powerful actors are able to leverage pieces of information to create narratives and build support for extraction in such a way as to convince listeners that they are their own common-sense ideas, as demonstrated by Gunster et. al. (2021). Drawing on a CPI lens, if places are constantly coming into being in multiple ways, we have to look for where they are coming into being in other locations, locations that may be distant from extraction sites and especially locations that are online, and so discursive. Also, if disparate realities mean that people experience place differently, this also implies that people have different roles in producing and/or modifying information (Tuck & McKenzie 2015b). This chapter focuses on the ways information is produced by and produces the place of oil in Manitoba through two types of research encounters: 1) My personal research encounters with the place of oil in Manitoba, for example through my document collection and discourse analysis, and, 2) The information encounters of my participants. One of my main observations is that the information about this place occurs and is encountered mostly online, through websites, and online sources of data collection and dissemination (such as well reports). This chapter also details the ways my participants first encountered the place of oil in Manitoba and the activities they took part in that taught them about their role in oil extraction in Manitoba. Finally, I look at what my participants did with the information they encountered in order to make visible how information about oil in Manitoba is produced, by whom, and for what purposes.

The findings regarding the information encounters producing the place of oil in Manitoba from this data are threefold: first, information is produced partly to inform and assure the public but more so

for industry and landowners to use to conduct both surface and mineral extraction activities; second, information production often occurs outside of south-western Manitoba through online platforms; and third, there is little available information or analysis of information produced, particularly by the regulating body, that could be used to question industry practices or hold industry accountable. This brings into view a place where industry is the active producer and user of information. Furthermore, industry has leveraged information in such a way as to be seen to be fairly responsible to the requirements of the provincial government's regulations and the people and land in the area of southwestern Manitoba where oil extraction occurs. However, the information also indicates that for people with concerns, there appears to be little access to useful information, an inability to create information, and a regulatory body whose job is undermined by loss of capacity and the inability to keep up with information or do in-depth analysis.

5.2. My Encounters

At the start of my research, I set out to find as much information as I could about oil extraction specific to Manitoba. I looked for news articles in the last 20 years using the search engine Google, because this is what most people would use and is easily accessible as I wanted to find out what was readily available to the public. I also used library search engines, leading me to both peer-reviewed articles and other specific to oil in Manitoba. I spent time looking at all the pages associated with the Manitoba Petroleum Branch's website and other government websites that had information about oil extraction in Manitoba. I found a small, annual industry-affiliated magazine (*Manitoba Oil and Gas*) only published online. I started to make contacts for people I would interview and read two theses on oil extraction in Manitoba (Dohan 2018; Hulshko 2017). Drawing on a CPI lens, I coded the data to keywords drawn from the literature and also emerging from my collected documents to organize it and spend time with it (creating a relationship with it and allowing it to speak to me) using Nvivo™ software. As I read through this data, I used grounded analysis to look for themes reoccurring through the initial data I found. In my reading, I noticed a many emotional terms and phrases used to describe oil extraction in Manitoba but these three emotions appeared consistently throughout – Excitement, Assurance, and Alarm - so I gathered the data into these categories and explain each below. Drawing on material-semiotic methods, I looked for what this information did, how it created certain types of place and what meanings were attributed to different information.

5.2.1. Excitement

Much of the excitement in the data I reviewed came out of the media's presentation of information but there were also notes of excitement within the narratives presented on government websites. The key reason for excitement was related to the most recent Manitoba oil boom that occurred roughly between 2006 to 2013 (Manitoba Petroleum Branch 2017). The phrase, "Manitoba Oil Boom" was seen in news articles and used regularly in provincial and national newspapers reporting on oil extraction in Manitoba (see for examples: Cash 2013; CBC News 2011; Fattori 2013; Kirbyson 2011; Kives 2015; McCarthy 2011; Western Investor 2011). Usually, information about oil extraction in Manitoba circulates only within local southwestern Manitoba-based newspapers and a few online-only news sites. However, as an oil boom develops, activities and movement of labour, capital, and technology increase, garnering more attention. Some commentary from news media even at the very beginning of the boom indicate the level of excitement about the scale of investment and extraction activity in south-western Manitoba.

> Communities such as Waskada and Pierson—villages with populations in the low hundreds—are experiencing increased growth and activity. There is more money flowing around the communities and more job opportunities ("Oil Exploration in Southwest Manitoba," 2005).

Headlines such as, "Oil drilling boosting small-town economies in southwestern Manitoba" (CTV Winnipeg 2010), "Tiny Manitoba towns hit with oil boom" (Western Investor, 2011) and "Oil boom transforming small Manitoba town" (CBCNews 2011), conveyed feelings of excitement with coded words like, "boosting," "hit," and "transforming." A news article from the *Winnipeg Free Press*, somewhat ironically, declares "Exploration and production in southwest Manitoba is on fire" (Cash 2013). This image (Fig. 26) from a national newspaper, *The Globe and Mail*, seems to suggest a rather empty rural area full of pumpjacks and the title, "Drilling technology sparks new oil boom" indicating that it was the technology as the driver of the boom (McCarthy 2011). In this image, I include the caption from the online news

Rows of pump jacks stand out against the snowy landscape southeast of Waskada, a small town in southwestern Manitoba.

TIM SMITH FOR THE GLOBE AND MAIL

SHAWN MCCARTHY › GLOBAL ENERGY REPORTER
OTTAWA
PUBLISHED FEBRUARY 7, 2011

Figure 26: Image from news article, 2011

article and the juxtaposition of this scene from the viewpoint of a national newspaper clearly intended to entice an emotion such as excitement for those living in the rural, and probably mostly unknown, town of Waskada, Manitoba.

Figure 27: Manitoba Oil Rush Poster, Fieldwork Trip 2018

I encountered this similar language used for resource extraction with the word, "rush" on a poster in the Manitoba Petroleum Branch office. "Manitoba's Oil 'Rush'" is the title of the map with the key oil field found during the recent boom displayed with "rush" in quotations (see Fig. 27). The word rush, is interesting, semiotically, because it implies a movement of activities towards the oil, rather than boom, which implies an explosion moving outwards. Other minerals, most popularly, gold or uranium, as shown by Keeling (2010), have a history of rushes – where people rushed toward the mineral creating a burst of gathering labour, capital, and technology for the purposes of extraction. The use of excitement as a material-semiotic signpost of the place of oil in Manitoba, gestures to an ongoing spatial-temporal narrative where the priority is to extract resources, quickly and urgently. This is documented by Keeling (2010), who clearly demonstrates the way that the province of Saskatchewan, though concerned about the volatility of mineral resource extraction, bought into the excitement and promise of economic gain to be achieved through the development of uranium in the late 1940's. However, by the 1980's the mine was entirely abandoned while the social and environmental consequences remain and continue to cost the area and the provincial and federal government, in terms of money for clean-up and ongoing health and environmental degradation (Keeling 2010; Keeling & Sandlos 2015).

5.2.2. Assurance

Fabiana Li (2015) explores the materialization of mining conflicts in Peru by thinking through the notion of equivalence and controversy as "matters of fact" that become "matters of concern" (p. 22, referring to Latour 2004). "Matters of fact" refer to those situations where things, aka facts, are accepted as natural and, "indisputable, obstinate, and self-evident" and "matters of concern" are moments where

things, seen formerly as facts, become "destabilized, contentious, and connected to an ever-wider range of actors" (Li 2015, p. 22). Mining activities, such as those extracting oil in Manitoba, have the possibility to open the door to uncertainty regarding worker safety, and environmental and public health. They are thus often carefully conceived as safe, as noted in Hulshko's (2017) observations of safety practices and discourse around fracking in Manitoba. When the door to uncertainty is open, then the situation becomes controversial and the dialogue can shift to where "matters of fact" become "matters of concern." Li's work grounds this subtheme of assurance as she considers "how solutions to the conflicts are conceptualized… [but also] …the underlying tensions that remain beneath the surface" (2015, p 23). Finding instances of assurance in the data points to these practices where there is a great possibility for uncertainty and instability around what can be proven factually, in terms of extraction techniques and public/environmental health. Assurances indicate either a need to keep a "matter of fact" from becoming controversial or, an attempt to deal with a "matter of concern." This theme permeated much of the information that I encountered about oil extraction in Manitoba. Some of these assurances made specific claims regarding the oil extracted in Manitoba. Others made claims more broadly about the circular relationship between safety, the environmental soundness of the technology used in extraction, and the regulatory practices of the industry and government to ensure safety.

Media articles such as this one from 2013 in the *Winnipeg Free Press* present reassuring provincial claims about the safety of well sites, water contamination from fracking operations, and the strength of the Manitoban regulation;

> 'We think we have very good rules,' said John Fox, assistant deputy minister of the mineral resources division of Manitoba Innovation, Energy and Mines. 'There are certainly public issues, and we want to make sure we have the information that we can assure the public so their concerns are addressed' (Welch 2013).

The article ends with this quote from a provincial bureaucrat with responsibility for oil and gas policy, implying that the minister is at work to make sure there is the necessary information to provide the needed assurances to the public. The information referred to here are the regulatory conditions of a well licence that stipulate what the industry must provide to the government so that they can make sure the companies are following the "rules." However, when the Free Press journalist asks about well regulation, and writes this article her publishers title it; "Fracking on the rise in Manitoba: Not as dirty as American kin, but oil well regulation lacking." This article presents the provincial government's response to questions about oil well regulation and evens concludes the article with John Fox's statement; "We think we have very good rules" (Welch 2013). There is some follow-up on this inquiry

Figure 28: Tundra Oil & Gas home page, current, updated 2017 (www.tundraoilandgas.com)

by this reporter, a couple more articles with some concerns, however, overall, the response from the government appears to have been sufficient. There were no changes in regulation and no further hires in the Manitoba Petroleum Branch. The boom continued.

There was also quite a need for assurance regarding fracking because many locations around the world were staging public inquiries and even moratorium on fracking exploration. The public website

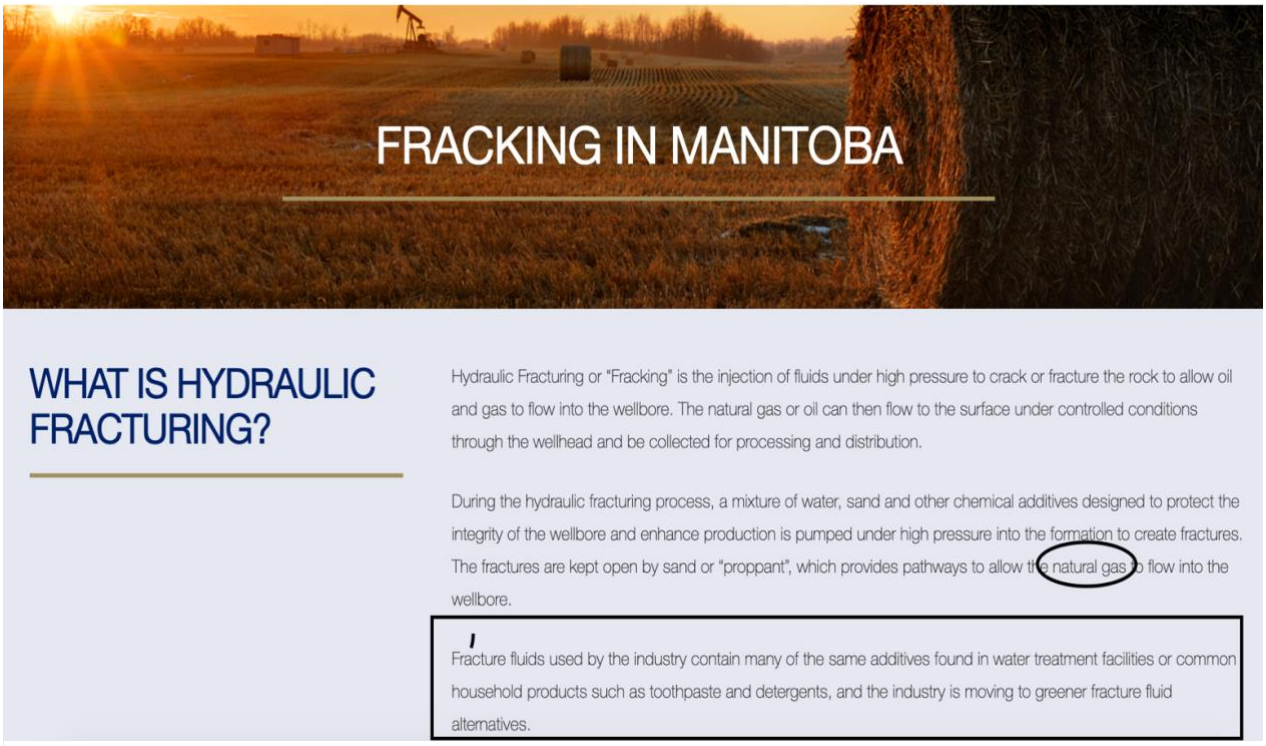


Figure 29: Tundra Oil and Gas Website, "Fracking in Manitoba", Current, updated 2017

(examples in Fig. 28 & 29) of one of the main companies operating in Manitoba, Tundra Oil & Gas, is full of reassuring words and short informational pieces. The home page declares that the company (owned by the Richardson family, one of the richest and most industrially active companies in the province) has been "Proudly investing in Manitoba since 1980." The page displays and celebrates community supported projects and the company's environmental initiatives (see image, Fig 28). The wording is reassuring: "At Tundra, we do our best to respect and protect the environment" (Tundra Oil & Gas, 2017). Upon arriving at the webpage entitled "Environmental Initiatives" there is a heading, "Respect and Protect" with a short paragraph on their values and then six initiatives, where each can be clicked on for a short concise explanation, roughly 150 words or less in length. These initiatives include: Land Conservation and Reclamation, Spills, Conservation Efforts, Air Quality, Facility Amalgamation, Environmental Organizations. There is a link from the homepage to Environment Initiatives but you can also arrive there through a separate webpage entitled "Sustainability" which outlines briefly some of the same information but includes more on their community initiatives such as the Tundra Oil and Gas Place (a facility with a hockey rink and banquet hall) or the purchase of two Zambonis for hockey rinks in the area. From the drop-down list of options in "Sustainability" there is a whole page (see Fig. 29 with text indicated) dedicated to "Fracking in Manitoba" (Tundra Oil and Gas, 2017). There is a confusing instance where the paragraph speaks to natural gas (see the circled text in Fig. 29) flowing into the wellbore, even though it is exclusively oil that Tundra collects and sends to market (though in a couple cases they do use the natural gas at battery facilities). Another sentence (outlined by a box) compares fracturing fluid to benign household items like toothpaste, or things used in water treatment facilities, while also reassuring the reader that the industry is working on finding alternatives. The prominence of these explanations is amplified with the photograph header on each page with the hay bale in the foreground and a very small pumpjack across a beautiful landscape. As Peyton & Dyce (2021) show in their analysis of oil cultures in Virden Manitoba, there is a discursive desire to see agricultural activities as stable and certain and to then link oil extractive activities to this stability and certainty. Yet neither activity (or resource regime) is stable or certain, being full of socio-technological uncertainties and risk. Also, the attempt to condense complicated technical practices into authoritative reassuring sentences suggests an offensive move. By offensive, I want to imply that this company uses their online web-based platform to assure those with questions about the uncertainties of the technology regarding safety and socio-ecological health, in such a way as to satisfy their concerns, to keep the public from asking further questions. I am not suggesting that Tundra Oil & Gas does not take their promises seriously but that they

are, in fact, promising something, where the need for a promise displays industry practices that have and might cause concern.

Another type of assurance is directed at the community itself with headlines such as, “Oil Downturn Slows the Economy but Hope Still Thrives” (Franner 2016) from the *Manitoba Oil and Gas Review*. This claim was related to the beginning of the bust in the boom-and-bust cycle as the price of oil dropped significantly in 2015. Phrases such as, “The community will get through this” from the mayor of Virden were common in the *Manitoba Oil & Gas Review* (quote attributed to McConnell 2016, in Franner 2016). Another regional news article from the *Manitoba Cooperator* assures readers that “Manitoba oil industry slows but won’t cease,” while the CEO of a company interviewed for this article explains that these bust cycles are expected as “a natural part of how the industry works” (Paige 2015). This is an instance where this CEO suggest that bust cycles are, in effect natural or, “indisputable, obstinate, and self-evident”, which is the description of “matters of fact” (Li 2015, p. 22). This statement is again an example of the work to maintain something as fact especially when there is a slippery slope during a downturn to oil extraction’s volatile nature becoming a concern or something, “destabilized, contentious, and connected to an ever-wider range of actors” (Li 2015, p. 22). Overall, the place of oil in Manitoba as one of assurances implies that there are concerns and doubts about the safety and viability of oil extraction but that the community can remain confident in oil’s continued presence.

5.2.3. Alarm and “Matters of Concern”

The final theme I encountered as I searched for information of the place of oil in Manitoba was alarm, or where a fact had become a concern, or a “matter of concern” (Li 2015, p. 22). These instances occurred less often but were in stark contrast to information pieces that suggested excitement and assurance about oil extraction in Manitoba. The theme of alarm indicates the need for concern or worry, as in the practice of raising alarm described by Wylie (2018) as a process to make visible toxic exposure. The authors that expressed alarm, or matters of concern, about Manitoba oil extraction were few and many of those I did find were articles produced in associations with small environmental NGOs, such as those found in the *Manitoba Eco-Network’*s newsletter (LeNeveu 2013). This same author also wrote in the *Council of Canadian’s* newsletter about risks of transporting Manitoba crude (LeNeveu 2014). These two articles are full of information that is technically detailed and specific about environmental concerns, lack of regulations, and possible outcomes if the government does not deal with the hazards of hydraulic fracking in the Bakken formation.

Other articles consulted were mostly about spills that occurred in Manitoba. One in particular was in a small online newspaper called the *Spectator Tribune* about a fairly large oil spill in Manitoba in 2015 due to a leaking pipeline (Dyck 2015). It was situation brought to the media's attention by a

Figure 30: Spectator Tribune article (Dyck 2015)

landowner and farmer in the area, Carlyle Jorgensen, who took these aerial shots of his farm and the oil-stained ground to create evidence of the oil spill's extent (See the image in Fig. 30). The author explains that this spill could have been caused from a leak that went unreported over 10-30 days from a pipeline put in by Tundra Oil & Gas, suggesting a lack of oversight or a failure in pipeline safety protocols. Details from article's positionality suggest that the dynamics of alarm are often shrouded by politics or by perception of bias in the media. The author also suggests that there has been a lack of media attention (absence of alarm) and the reporter explains how a regional newspaper contacted him to investigate and spread the word (evidence of alarm) (Dyck 2015). Two other articles from 2012 reported on cases where this same farmer, Carlyle Jorgensen, brought attention to other oil and contaminated produced water spills around his farm (Dawson 2012; Kusch 2012; CBC News 2013). In these articles the spills are from wells sites and also trucks transporting oil and produced water[2] from fracked wells, and in one case, he contends the spill was deliberately done by a company who did not want to pay to inject the fluid into a disposal well (Kusch 2012). The reporter states, "A southwestern Manitoba farmer who has witnessed the aftermath of three oil spills in the past year worries the province doesn't have enough inspectors to police the oil patch" (Kusch 2012). The alarm raised by these articles feels urgent, and yet,

[2] In the fracking process there is frackwater fluids, which are pumped into the well to break up the shale and prop it open, and produced water, which is usually salinated and rises to the surface with oil and gas from the shale field.

there were few other mentions of these spills, or many other farmers saying the same things. The next time there was broad media coverage of a spill in southwestern Manitoba was a spill from a train derailment in 2019, which did not come into my initial field work, but interestingly it is a similar story (Lambert 2019). The farmer raising the alarm states it took two days before he got a response from the company. In this case, CN, the train company, apologised to the farmer for taking so long to respond (Weber 2019).

A CBC news item – "First Nation sues Tundra Oil & Gas, province over oil wells near reserve land: Gamblers First Nation wants court to quash licenses granted to oil company," – framed a story regarding the small nation suing the Manitoba Petroleum Branch for licencing wells that were too close to their reserve lands while also failing to follow Duty to Consult procedures (Kubinec 2015). The information in the article refers to the technological process of horizontal wells and hydraulic fracturing which, they suggest, was close enough to their lands to potentially deplete their mineral reserves by depressurizing the shale field (Kubinec 2015). Gambler's First Nation believed they should have been consulted and also compensated for the Tundra Oil and Gas's wells being in proximity to their border. There are two aspects at stake here: the Duty to Consult, where the Crown, in this case the Manitoba Petroleum Branch who is acting on behalf of the provincial Crown, has a duty to check in with Indigenous people anytime development occurs that could impact treaty rights on the land. The other aspect Gambler's First Nation is drawing on is the fact that the reserves, though only small parcels of land, include the surface and, importantly, the mineral rights to that land. Gambler's is arguing the province should have consulted them about wells in proximity to their lands, based on treaty rights, but also that Tundra is potentially taking the oil minerals from under their land. This would essentially leave the First Nation unable to access the same amount of oil under their reserve. This has to do with the technology of horizontal well drilling and also the need to pressurize the shale field to push the fracked oil (water and gas) toward the well site. The alarm evident in this article, by a provincial news outlet (CBC Manitoba) was important. It was the first time I found data where a party from southwestern Manitoba was upset enough to file a lawsuit, and also data about Indigenous interests in oil and gas extraction in Manitoba (not to be confused with the transportation of oil through pipelines and rail). In this case it highlighted the way that patterns of settler colonization had severely limited Indigenous ownership of surface and mineral rights. Perhaps more interestingly, this First Nation displayed their ability to raise alarm, due to historic relationships of treaty (explored in more depth in Chapter 5). This is not the case for individual farmers in the area, who I was told by an environmental lawyer I consulted,

would struggle to have the recourse to sue the province or the company – being held back by the Surface Rights Act (Participant OIN0721).

After encountering the advocacy group GASPE (Group Advocating for Safe Petroleum Emissions)[3], I was given and found more articles from the early 2000's that indicated a great amount of community raised alarm due to H2S (hydrogen sulfide) poisoning from the battery site in Tilston, Manitoba. The material was both alarming and assuring; from information in newspaper articles to a whole page in the Manitoba Petroleum Branch's website that refers to Air Quality in Tilston, Manitoba (for examples see, Bell, 1999 & 2003; CBC News 2001; Chabai 2005; Manitoba Conservation, 2002; Manitoba Government, 2001; Rampton 2000). The news articles were full of alarm, but also assurance such as an article declaring, "Manitoba Energy and Mines appears confident that an oil battery is not to blame for the toxic gases afflicting a farm family near Tilston, Man." (Bell 1999). The article cites two other studies and explains, in the language of expertise and model behavior common to western science, how sulfur dioxide travels;

> Manitoba Energy and Mines used computer modeling to learn how sulfur dioxide emissions from the battery affect air quality. The model predicted what concentrations of sulfur dioxide would be found at ground level at various distances downwind of the battery. At 287 metres downwind of the plant, concentrations of the gas were well within air quality levels accepted in Manitoba (Bell 1999).

What is strange about this is that it is hydrogen sulfide and sulfur dioxide are different, although they are both toxic and both occur due to oil and gas extraction, but it is unclear in the article what the difference is – in fact, H2S is not mentioned in this article from 1999. Again, in 2003 this same reporter writes an article about this group, who were now engaged in the court system;

> …the residents want to force the Manitoba government to conduct proper environmental assessments of oil batteries, something they do not believe is being done at this time. They also want the government to hold a public hearing on the issue before the Clean Environment Commission (Bell, 2003).

The information in these articles' references computer modeling for emissions, environmental assessments and acceptable levels of gas. These reporters inevitably present a paradox described in this article in 2000;

> "They [the GASPE group] have tried talking to officials from the provincial government and Tundra Oil and Gas about the head-aches, nausea, breathing problems and dizziness they believe are caused by a nearby oil battery. There have been studies and meetings and monitoring sites,

[3] I go into more depth on this group in Chapters 6 and 7.

> but no one is taking responsibility for the problems, said Wendy. 'They tell us the air is fine and the oil battery is not to blame,' she said. The Andersons and about 60 other families in southwestern Manitoba believe otherwise" (Rampton 2000).

The GASPE group presented a clear and consistent message of alarm and concern over the battery-related air quality in their community, yet on the Manitoba Petroleum Branch website, there were three documents with links that functioned under the heading "Air Quality" from a study and a health survey conducted in and around Tilston, MB. There were two other links that did not work, and one link to a proposed Western Canada emissions study on plant and animal health related to toxic emissions. I could not find any finalized studies or reports from this proposed study (Agriculture and Resource Development, 2001). The fact that there are no other documents related to air quality on the Manitoba Petroleum Branch website indicates clearly that these studies were conducted due to the alarm raised by the group, particularly as they were only conducted in the area surrounding Tilston and nowhere else in southwestern Manitoba.

This paradox within the information, where alarm and concern are raised about overall oil extraction practices but only dealt with as specific situations suggests the underlying controversy, described in Li's work (2015), where "matters of fact" become "matters of concern." In these instances of alarm, the stability or validity of the information is taken into question. However, the above indicates the alarm narrative at work in the place of oil in Manitoba is often countered in a way that re-establishes fact, to move away from a matter of concern, through simple authoritative statements and documents. Also, the lack of more current information raising themes of alarm, and thus, a matter of concern, is indicative that the assurances promised within the information were effective in silencing the alarm raised.

5.3. Participant Encounters

The next encounters with the information production of the place of oil in Manitoba came from interviews I conducted beginning in the fall of 2017. I asked participants how they became involved in or connected to oil extraction in Manitoba. Figure 31 gives an illustration of the answers to this question – beside each entry is the number of people per category of association. I also asked about learning experiences that occurred during or because of their connection to oil extraction in Manitoba; learning at events they attended, workshops, etc. Asking how a person is connected to a place reveals a great deal of personal information, as well as perspectives about oil extraction in general (Wheeler, et.al, 2016). As a CPI researcher, the aim was to bring the material-semiotic practices of the place of oil in Manitoba to

the fore, displaying how people connect to oil extraction by detailing where and when they became involved, along with their perspectives. This data indicates where information is being encountered, who is making or producing the information about oil extraction and also, how people are able to interact with information produced for about oil extraction in Manitoba. As they connected to oil extraction and became involved through their jobs, research, or advocacy, they also became integral to the practices of information production. This section (5.3) is divided into two themes; Connection to Oil Extraction and Learning Practices, and Information Production, with grounded sub-themes within each.

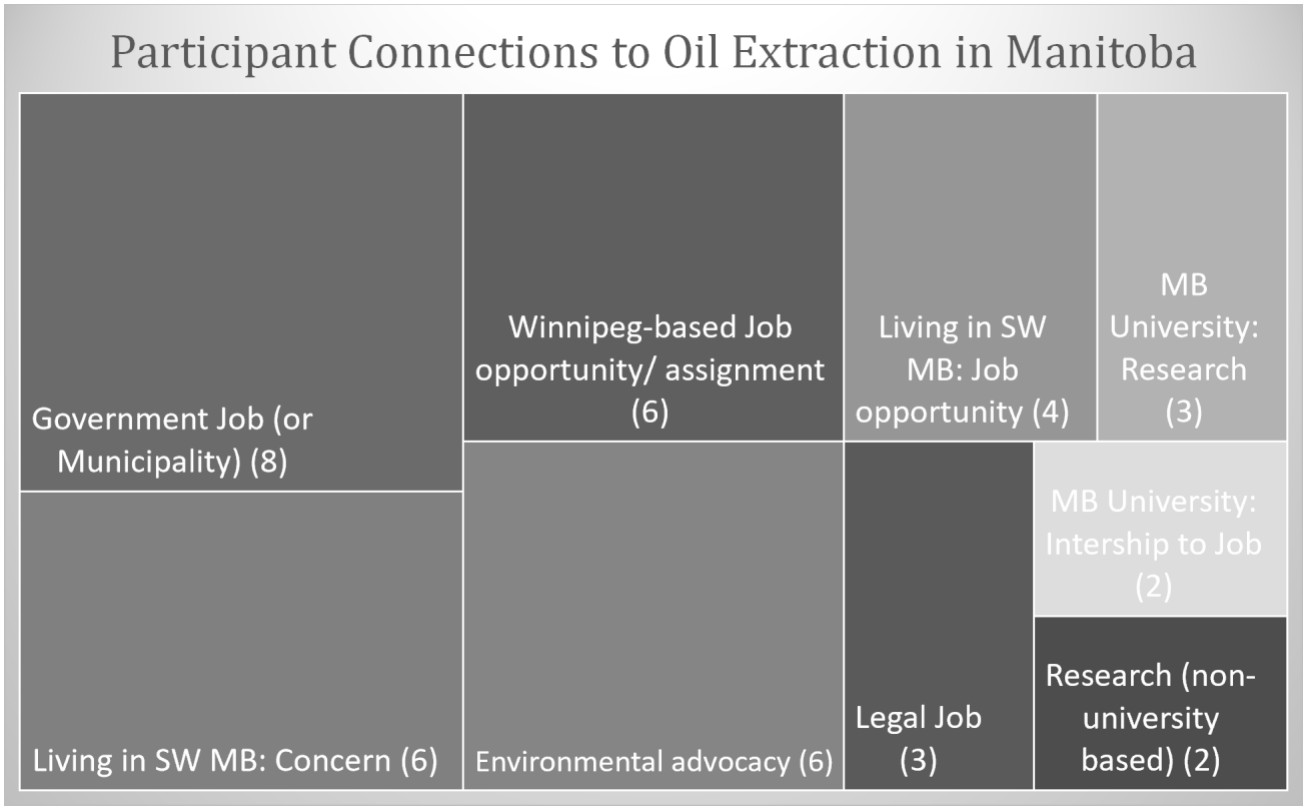


Figure 31: Ways participants became connected to oil extraction in Manitoba

5.3.1. Connection to Oil Extraction in Manitoba and Learning Practices

I asked each participant to explain how they became involved in or connected to oil extraction in Manitoba. As my participants explained their initial connections, I heard personal relational stories about their lives and what led them to where they were now. This question often was answered in a life history way; I heard personal stories about people's lives and the choices and chances that brought them into the place of oil in Manitoba. As Figure 31 illustrates, only a portion of the people I spoke to actually lived in the area of south-western Manitoba when they initially became connected to oil. As I grouped these stories into information encounters, considering each participant's relationship to the information

they told me about, I organized the data using grounded analysis. This work revealed the following four subthemes, laying out how people became connected but also the ongoing connection and the way they related to that connection.

5.3.1.1. Skill, Chance & Luck

The data I gathered indicates that the practices of oil extraction in Manitoba often take place outside of south-western Manitoba, and occur by chance due to a skill set or involvement in something related. For example, students graduating from the University of Manitoba with skills in the geological sciences did not plan to find jobs in oil extraction because most Manitoba jobs in geology are geared towards mineral mining exploration. As one student pointed out, "I think, my degree…I wished, I wished my degree was a little bit…more oil and gas related… but then there was only one class of petroleum geology. There was only one. So, I didn't really have enough to actually learn about oil and gas" (Participant AO1101). The reason this participant was able to get a job in oil and gas was due to the oil boom and the proliferation of jobs at that time. Another University of Manitoba geological sciences graduate was surprised to find himself working for oil and gas, first in Alberta and then returning to Manitoba. He spoke about having to learn on the job, using his skill set as a geologist more generally and learning the ins and outs of how to look and plan for oil and gas extraction (Participant AA 0310). One person told the story of how quickly he could pick up a job, even though he did not have the specific skills that were needed. He explained, "I met with his boss at a Tim Horton's on a Monday, had a job offer from him that Wednesday, accepted the position that Friday and started the following Monday. I knew absolutely nothing about the land business with respect to oil & gas when I was hired" (Participant REL 0223). This occurred later on in his career as well, and both times he worked his way up the ladder of the company to become a manager. However, he also mentioned the "feast or famine" nature of the oil and gas industry and concluded his description of how he became involved in oil and gas by saying, "I guess you could say I had a lot of luck to have had things work out for me like they did. So far, I have been lucky enough to avoid being laid-off in my career although it does not escape me that I likely will be laid-off at some point" (Participant REL 0223). This participant's use of the word, 'luck,' indicates how people take a chance at oil and gas and then appear surprised when it pays off, but are also wary about its future ability to sustain them.

Other chance encounters that gave people opportunities to connect to oil extraction were due to government regulatory jobs. One participant took a position to fill a maternity leave and never left (AUE

1102). Another participant was assigned a role after being in a different government office and spent a great part of her new job just learning the ropes, with help from co-workers who had similar stories (MO 0628). These jobs were based in Winnipeg with trips to the field in south-western Manitoba, but mostly conducted online and by phone. One scientist, a geophysicist, was connected to oil and gas through a regulatory avenue while doing research about the ability to contain bio-hazards such as those from a nuclear power plant. This person was later hired to do research in Saskatchewan for an oil and gas company regarding the ability to contain carbon in abandoned wells for carbon sequestration credits (EEN 1912). This research inspired them to look into other instances in oil and gas in Manitoba and led to a series of talks and articles. The level of expertise of this participant allowed them to seek information that most people would not have the knowledge to look for, and also to understand the data and recognize where data was sorely lacking. This intersection between some skill and mostly chance may explain why there is so little knowledge about oil extraction in Manitoba outside of southwestern Manitoba.

5.3.1.2. Circumstance: Living with Oil Extraction

Another mode through which people became connected to oil and gas was their location - living in the area of southwestern Manitoba where the oil industry has been active since the 1950's. However, for several of my participants, they also had to leave southwestern Manitoba to gain skills and expertise elsewhere and later return. All of my participants born in the area also had deep connections to agriculture and a generational connection to early homesteads. They became connected to oil extraction due to job opportunities, income opportunities by having oil infrastructure (for example a well) on their land, and instances of concern due to oil extraction infrastructure spills and leaks. For these participants there is an intimate integration between agricultural practices and oil extraction practices. As one participant told me (and I summarize), the land belongs to the farmer and it has to go on to the following generations (AA 0310). Another participant became emotional and teary, several times, about the negative effects on their cattle of oil extraction and battery site leaking Hydrogen Sulfide (H2S) gas. These people's connection to oil in Manitoba was sensory and pragmatic – oil extraction had always been around and they had to learn ways to live with it.

5.3.1.3. Learning Experiences

Another way to think about people's encounters with information about the place of oil extraction in Manitoba is to investigate where and how they learned, or gained more information, about it after initial

contact. I asked about how they kept up on the information and their knowledge about what to do with the information while working on a job in the field, or doing advocacy. Most participants spoke of simply learning while doing, reading "everything they could get their hands on" (Participant REA1402), or spending years driving around until they knew more than a GPS system about how to get places (Participant AEE 0610). Others spoke about getting help and information from co-workers and learning through dialogue, through talking to people on the job, calling on the phone and asking questions, or through email conversation (Participants MO 0628 and EEN 1912). Of course, there were also instances of workshops, in person and online, as well as conferences where lots of information was exchanged, as noted by this participant speaking of a large regional conference called the Williston Basin Petroleum Conference held that year in North Dakota;

> Like when my manager would go down, that [conference] was very huge for information. Because you will have every state and every province at that conference. And, so, information people are coming up, going; what information do you have? And we would go, well we have these data exports every month. Or we have technical well file exports. So, our, those pdf technical wells files, people, companies also subscribe to receiving all of that information, every month where they go and bring it into their systems. So, they don't have to look at our site for it, they look at it in their own site (Participant HT2811).

None of these workshops or conferences specifically geared towards oil extraction that my participants spoke about occurred in Manitoba, anymore. Most of the education and materials came from Alberta or outside of the country, such as the Williston Basin conference mentioned above or the workshop that a participant attended in Texas (Participant AEE 0610). This indicates people learned through dialogue and co-workers and through educational materials and events occurring and being produced outside of Manitoba, often in Alberta.

One key theme was the struggle to keep up with information, particularly from those participants in the regulatory body. During the oil boom years, the offices moved much of the information online to reduce the in-person contact and become more efficient in the delivering of licences. A large backlog of information was also created as the office struggled to keep up with uploading and digitizing information logs from well sites and other areas (Participant HT 2811). This regulatory body was also struggling with loss of person capacity as people retired and their jobs were not filled, creating situations where more information needed to be dealt with by less people (as detailed in Chapter 4). Another change included sending the well reports and other paper data to an external data management company, based in Calgary, to process the data and send it back to be uploaded to the website (Participant

HT2811). This quote indicates some of these changes in movement of information that the participant had learned due to a need to transfer things online:

> And then um, like Accumap, or I.H.S…., they are out of Calgary, we send them data and a really cool thing that they help us do, is we send them um, all of our files that we save every single month. Like, every, every paper, piece of paper that comes through. So, there is like a thousand pieces a month where they are doing service on oil wells. Like service reports, the completion reports, drilling reports. Um, we save them and then I export them to, um, I.H.S. and they send them back, web ready to go and bring into here (HT 2811).

The increase in the amount of information that needed to be processed, literally thousands of pieces, meant learning new ways to keep up with data such as outsourcing partnerships to accomplish the required tasks of the job. However even with these newer practices, keeping up with the data was more than a full-time job and often I heard resignation where participants indicated that this was just the way of things in the boom-and-bust cycles of oil.

Another theme was the loss of learning places. For example, events people had attended in the past, such as the Williston Petroleum Conference (mentioned above) but now people claimed there was no money for travel and attendance. This conference, usually held in North Dakota or Saskatchewan, was geared towards extraction of oil and gas in the whole geological formation, called the Williston Basin, and brought together people from Canada and the USA. During the oil boom, members of the Manitoba Petroleum Branch had attended, and many people working in the industry also attended.

Figure 32: Panning for Gold at the Core Lab, Fieldwork Trip, 2017

However, after the price of oil fell, the Petroleum Branch stopped attending, due to budget cuts and lack of time due to staff shortages. Conferences or gatherings in Manitoba relating to oil and gas have mostly occurred in southwestern Manitoba. One participant told me about how the Winnipeg-based Mines and Minerals conference had, "…tried to bring in the oil and gas to it. But it hasn't gone over very well" (Participant OT1311). This person also pointed out that there are no other Winnipeg-based conference options for the oil and gas industry (Participant OT1311). Even Winnipeg-based conferences, such as the Mines and Mineral conference, had been curtailed while some aspects of the conference were cancelled. For example, I took a participant observation tour of the Core Lab[4], a geological public library of rock

[4] The official name is the Midlands…. But it was always called the Core Lab or Rock Lab by my participants.

samples from all over Manitoba, and was told that they usually attend a conference and have a special children's activity where kids can learn to pan for gold. That year the kid's activity at the Minerals and Mines conference was cancelled (Participant AUE1102). The Core Lab is the central location of public holdings of geological data, including core samples of all well sites in Manitoba and any exploration drilling for oil in Manitoba. However, it had also suffered from bureaucratic loss in capacity, similar to the one I described in Chapter 3 with the Manitoba Petroleum Branch. When I took the tour there was only one person left working full-time, doing the work of several people. He had prepared for the upcoming conference and had the materials ready, so he taught me how to pan for gold instead (see Fig. 32) (Participant AUE1102). This photo is a fun one, but the feeling I got from the tour was of a young new hire in charge of a library of rocks all alone. The loss of capacity and relationships with co-workers in places such as this rock library, or gatherings like a conference, indicates a decline in overall capacity and investment in future regulatory oversight. This also points to an underlying issue in Manitoba where there is little interest in creating engagement and awareness of oil and gas extraction. If there are few educational opportunities at the University of Manitoba to study oil and gas, no opportunities for a conference presence in Winnipeg, and less presence of child education of the role of geology at all in the province, then there is a greatly reduced public awareness of presence of oil and gas in Manitoba. This lack of learning places that have contact to information about oil and gas in Manitoba, both in formal and non-formal educational settings, is problematic for those who work in oil and gas and especially for those who advocate when issues arise (Bush-Gibson & Rinfret 2010; Moyer, Sinclair & Diduck 2014).

5.3.1.4. Precarious Connections

One theme that spanned all my participant discussions was the precarious nature of their connection to the oil extraction industry. Precarity is a useful concept for framing this theme as one where people were dependent upon work and work-built relationships in oil and gas, and yet their dependence is always at risk. This is a theme that is found often in literature regarding oil and gas dependent communities (see for example, Diz 2020; Eaton & Kinchy 2016). Precarity is theorized and defined by Judith Butler (2009) as a "politically induced condition in which certain populations suffer from failing social and economic networks of support" (p. 25). Diz (2020) speaks to the need to recognize precarity as a mode of interdependence in northern Argentina, where the community continue to have hope for a better future through hydrocarbon work, even when the reality is often grim. In other words, one must notice where precarity is the condition of life and wellbeing is entangled in costs and benefits, particularly in

oil and gas geographies. For example, Eaton and Kinchy (2016) consider "ambivalence" and "nonmobilization" within communities who acknowledge the costs of fracking but stay mostly silent due to need for the benefits that also arise from fracking activities. These conditions of precarity are an aspect of place-making of oil and gas extraction that is particularly spatial and temporal, as one's position as a beneficiary of oil and gas activity is a practiced and ongoing uncertainty. This arises, for example from the above section on skill and chance, when participants mentioned the feeling of chance or luck at being offered a job in oil and gas and yet also not being surprised when they find themselves out of a job. The excitement about getting a job that wasn't expected is a part of this precarity but, in the following examples, the stress and worry due to the impending possible loss of the job is also present. This participant details their connection to the oil and gas industry, moving out to Calgary for the job in 2016 when oil prices were dropping:

> OT: I got kind of hired on kind of as things were dropping. So, it was kind of like every day was like, am I going to be working tomorrow? I am not sure.
> M: Oh, that's crazy.
> OT: Yeah, because like I went out to Calgary knowing that, like things were ok but you could tell that, like things were kind of shaky and I was originally hired as a contractor so, you kind of just, you are on for a three month or a six month contract. And then it was like, I don't really know what's going to happen after that. So, it, kind of, just go out for six months and you're like, ah, if it's over then I come back. (laughs) But then I got hired on full-time, after that, and it was, it was pretty ugly at that time, so I was just happy to have a job, kind of thing. Because it wasn't like I could go to another company and say, will you hire me? Because they are letting go like thousands of people every day (laughs) (Participant OT1311).

Another participant I spoke to mentioned that both she and her husband worked in the oil and gas industry and they decided that this was not sustainable during the crash in prices. She explains:

> "…it definitely hits really bad when both of us are in the same industry, which is so volatile. I think that was the toughest part in our marriage at the beginning is that, we were, oil prices were not good, working environment was bad. Calgary was just depressed, Stampede was [depressing because of] budget cuts and just not very fun, nobody really wanted to go out. You know people were jumping off the bridges because they were laid off. Things like that, right, it was just very depressing. And then you bring all of this home and then the two of us just like, ah, we are just in this industry and, it's like (laughing) and so, I think that was a turning point for me to be like, I think I need to get out. Like this is not healthy. At least, one of us is not in the, you know, being in the oil and gas industry is a little bit more stable" (Participant AO1101).

This participant also laughed as she mentioned a piece of advice from her manager, "when its sunshine and rainbows then it is, but when rains it pours, right?" (Participant AO1101). The acceptance of the precarity is structural, a learned lesson passed down by co-workers and experienced firsthand. However,

the cycles are both accepted and lamented in this quote, which indicates a juxtaposition that echoes language used while explaining an addiction like gambling, as in this quote repeated from above; “So far I have been lucky enough to avoid being laid-off in my career” (Participant REL 0223). The acceptance of this precarity is a practice that obscures the way mineral resource development, in this case oil and gas, is conditioned to prepare for and take advantage of situations where there are boom conditions, and then depart when there is a bust as described by Keeling (2010) and Diz (2020). This precarity also has themes like the ones I encountered in my initial search for the place of oil extraction – excitement about the possibility of work, then assurance regarding the up and down cycles and finally alarm regarding concerns of living with oil extraction and its effects on people and places. These themes indicate that my initial analysis of the place of oil in discourse is similar to the actual experiences of those working and living with oil extraction connected to Manitoba.

5.3.2. Information Production

The production of information is another way to think through a CPI lens of a place that is constantly coming into being. Investigating how people create information, what sorts of information is created, and where that information is shared, says a lot about place practices (McKenzie & Beiler 2016; Tuck & McKenzie 2015a). In effect, the place of oil extraction in Manitoba is sustained and made visible, or purposefully invisible, by the information that is created by it. Paying attention to these practices, particularly drawing on social and material practices of resource production, brings those practices in to the political sphere. Zalik (2010) gives the example of the way an oil company manipulates, through its oil scenarios documents, the “social conditions that influence prices [of oil]” (p. 554). According to Zalik (2010), this speculative information produced by an oil company works to conceal the political purpose of the information produced. Information is socially conditioned to appear politically neutral, however, the effect of this information is to determine current oil prices, which have large material consequences, including increased profits for the company in question (Zalik 2010). In another example, industry-based social media campaigns were examined and they found that claims regarding the benefits to the public were greatly exaggerated (Gunster et. al. 2021). These claims include seeing oil extraction, a thoroughly private endeavor, as belonging to the Canadian public through democratic or grassroots citizenship engagement (Gunster et. al. 2021). Drawing on these example, this section looks in more depth at the practices of information creation, which reveal assumptions about the role of information, the purpose of information, and who is able to legitimately create information and use it. As I coded, I

used grounded analysis to note differences in where the information was produced and by whom. I also noticed that there were differences in how people's roles conditioned their participation in information creation, creating these subthemes below: to collect, to collect and use, and to collect but not be able to use. The final subthemes are related to how often I heard about conflict in or around information, depending on who had it or the fact that there was not enough information. This includes a theme that was about my own trouble finding information to verify certain things, like where waste water actually goes, which I organized as information about places that do not materially exist.

5.3.2.1. Collect and Contain: Regulatory Body

In my conversations with participants whose job it is to regulate and promote oil and gas in Manitoba, I heard many instances of information collection, mostly referred to as data and reports. These reports were catalogues of several active aspects of the extraction process, including physical matter from a well such as rock chips from drilling. These rock chips were then entered into well reports that would come to the desk of the geologist back in Winnipeg, who would read the reports to ensure the company was drilling in the correct formation (Participant AUE 1102, Participant OT 1311). Other reports would include production matter recordings, such as the volume of fluids coming up from a well or the breakdown between water, oil, and gas materials (Participant AA0310). These reports and reporting events occurred regularly, often hourly, and they were sent to the regulatory body's office. These reports were sent to a public provincial office but the reports were not *made public* for a certain amount of time. This amount of time could be several months and this was done to allow the company with the well licence to maintain a competitive advantage (Participant OT1311). The Petroleum Branch did (and does) publish some of the data online in a series called, "Weekly Well Activity Reports" (Manitoba Government 2011). This was (and still is) a document that compiled the information collected every week and then added it to a growing number for the current year, along with a short summary of detailed licence information for each wellsite or operation that year so far (See an example of a report in Appendix G). However, this data was merely a summary and not necessarily useful other than as an overall look at the activity of the oil extraction.

The website is a repository for information, pdfs, GIS maps, industrial spill statistics (collected by the company and shared with the government as per regulation). However, participants indicated that there are gaps in this information. For example,

> HT: So, um, and then when it comes to the pipelines, I didn't have a full GIS dataset of it. So that's what I am building right now and the flowlines, those being mapped were actually out-

> sourced because we couldn't possibly keep up, with that. So, what we received back I used internally and I don't give out to the public. Um, and you don't want to give it out to the public either, because we didn't require. I do not believe, I think it was like 95, 1995, 1996 for people that actually survey. So, anything prior to the mid-90's was not survey accurate.
> M: Oh. For where the flow [lines are] …
> HT: Where exactly it is. So, since then we have asked for survey accurate [information], so we didn't have GIS in the mid-90's so you asked for paper survey. Well, that doesn't help me here. So now we are just trying to catch up…as companies start um, getting more into GIS. They start maintaining their own files which in turn they will start sending them back to me. Or they are, that are more survey accurate. So, I can replace ones that were less survey accurate. And so, we use that, like within the office for, like um, kind of like the Petroleum Branch Call Before You Dig, if anybody's doing any excavation in southwestern Manitoba, they get a hold of me directly and I let them know who is in the area. I don't tell them exactly where it is. So, then they have to go and contact the company that is in the area, which in turn they will come and locate their lines (Participant HT2811).

I was told that the accuracy of the pipeline/flow line data is questionable due to technology or lack of applied technology. This means the flowlines, the lines connecting well sites to battery sites and the Cromer station, are not entirely visible to the public. This lack of visibility is another moment where information is not *made public*, in this case due in part to capacity to keep up with information processing. This lack of public information is an example of where there is an inability to encounter information about oil extraction in Manitoba, unless you need to use the information for a specific purpose, such as to dig in the area. In fact, as another participant told me, you may encounter the physical evidence of a pipeline before you can encounter any information about it.

> So, this, (pointing at the map) this is a flowline. This is just an oil line that goes between wells, so are these ones here too. So, you see, these ones were abandoned a long time ago and in fact, the guy who works… for Tundra was digging his basement and hit this line. It was abandoned and he thought he didn't have to worry, but he still hit that line (Participant CE1212).

This instance is one of many ascribed to "bad" practices in the early years of oil extraction in Manitoba when there was less insistence on accurate record keeping. However, as pointed out in the earlier quote by Participant HT2811, the Petroleum Branch doesn't have the actual data. The Branch only has access to a general location (one that is not survey accurate); in order to secure specific information, you have to go to the company to get them to come and actually find their own lines. In this way, as a repository, or container, the Petroleum Branch acts more of a connector of information for those who have information to those who have a need to use the information. This practice has the effect of producing illegibility in that the responsibility for the information (accuracy) is held by corporate bodies, instead of publicly, as well as leaving the finding of the information up to the individual seeking it. This creates an

extra step to locating pipelines and flowlines, which technically do fall under the regulatory jurisdiction of the Manitoba Petroleum Branch (i.e., the Provincial government).

Another example of a gap in collected information is air quality data. Gases coming out of the well site are not measured, or are only indirectly measured. This is seen at the Branch as a minor gap that could be changed, likely with a focus on measuring the amount of methane released into the air. The following is a conversation about whether or not Manitoba measures the amount of specific gas, such as H2S.

> PM: Yeah, we have got some indirect measurements. And people have to file those reports annually with us. Um, I know that the quality is not as good as (MO: yeah) it could be…. But it is a pretty small volume and the other thing Manitoba does that is different, I would say, then the other provinces, all those gases are what we call destroyed" (MO0628).

This participant is explaining that companies in Manitoba do indirectly measure H2S amounts, and file those measurements, however they are not good quality measurements. He is also telling me that, in Manitoba, as compared to other provinces, the gases are flared and thus considered destroyed and are not measurable. This quote displays a strange informational paradox, where the speaker contradicts, or undermines the information they give with conflicting information. What can be concluded by this conversation is that they are not actually measuring H2S gas, or any other gas for that matter, other than as a quantity to be disposed of in the atmosphere. It also came to my attention, by another participant, that the process of flaring is not as simple as is suggested by the above participant, because what is burned off, or flared, actually creates other acidic toxins, such as acid rain (Participant EEN 1912). There was also very little, if any mention, of greenhouse gas emissions, though there is more data being collected now due to federal government requirements. This gap in information has the material effect of making these gases, particularly H2S invisible and unquantifiable, while also obscuring other serious atmospheric effects. By not collecting and containing this information, the implication is that it is not important, and possibly harmful for public relations, and thus not put into the public repository.

5.3.2.2. Collect, Restrict and Use: Industry

Conversations about the collection and use of information came mostly from those in the oil and gas industry, or formerly in the industry. They indicated that there was an active gathering of information in order to make and execute decisions. The speed of this collection for use was very rapid during the oil boom and slowed considerably after oil prices fell. In the following dialogue about information sharing and off-confidential dates (which are dates where the information gathered by the company becomes

public information), decisions about where to acquire land to drill wells depended upon information gleaned from other companies drilling in the area, or alternatively through the protection of information to maintain strategic positioning in the area.

> M: Is there a company policy about information?
> OT: Yeah, like you don't tell them anything, unless its public knowledge, because there's certain timelines as to when information becomes public. So within, like an operating field, within a month, or within three months they have to report what their production was, so, there's definitely timelines as to what's going on, and what the reporting is, so, if you within those timelines you don't tell them anything. (laughs) But there's like ways that you, kind of can get around it a little bit. (laugh). They are a little sneak…They sound a little sneaky but, if they had like some wells and there are kind of exploratory wells so we don't really know what is going on nearby, they are very grassroots, nothing's been done in the area. Um, if they have production, they have a longer timeline to be able to release those results because their more confidential.
> M: For exploratory? Interesting.
> OT: So, there's, depending on how the license is classed it gives a certain timeline. But sometimes you can send out scouts, to like kind of, based on like the pump jack rhythm, you can kind of calculate how much production they have and things like that. (laughs)….. So sometimes you'll send out the field geologist to go out there and do a pump count. So, it's like how many times it pumps per minute, or things like that. But sometimes they will put it on and, they won't produce even, they will produce for like a couple of days and they will get like an initial result but then they won't produce for a while to like, wait till that time is over. There's a lot of strategic things that can be done to like, kind of, moderate the, the flow of the information" (Participant OT 1311).

Moderating the flow of information actively makes the place of oil in Manitoba as something subordinate to proprietary corporate knowledge, as this information is used to make decisions about where to drill next. Another participant explains their job of gathering information to make decisions;

> As a manager now, a lot of my day is spent in meetings where the business development teams, comprised of a landman, geologist, geophysicist, and exploitation engineer present their plans to management for any wells they want to drill or any other projects that they think will add value (Participant REL 0223).

This gathering is indicative of a larger company with many resources to put into these teams that both collect and produce large quantities of mostly proprietary information, giving this company strong advantage over small companies. Another participant I spoke to with a small oil extraction company in the area spoke more about relying on the Manitoba Petroleum Branch to supply them with information to use.

> M: Ok for getting the geological information about where to potentially lease. Are you able to get that from the Branch. Or do you have geologist?

> P: Ya, I get a lot of it from there (the Branch). Um that's probably…I spent a ton of time reading those types of things…[but]…They're [the Manitoba Petroleum Branch's records are] not kept up to date that well. They're slow with the information. So, then you got to turn to like, Acumap or a Geoscott but those cost quite a bit of money. So, we haven't done that (Participant REA 1402).

This conversation also points to the proprietary aspects of information, where you have to pay for access. It is similar to the Manitoba Petroleum Branch outsourcing its data processing to a third party, to eventually upload it to the website, as this participant describes:

> HT: "So, in regard to information…our digital data, um, we send out like a data, a complete data set of our complete data base to, I think it may be 15 different companies. And a lot of them, incorporate it into their software, which, in turn people subscribe to with the whole country's data or a lot of US data, too. And it's all in one place.
> M: So, if you were an oil company, you…
> HT: You would subscribe to…
> M: You would want to get that, those datasets so you could,
> HT: Yeah, like I.H.S. database gives stuff to a company called GDM and they are based out of Calgary as well. And, so GDM has a suite, it's called Converge, where oil companies will buy a seat or buy a license for it. And everything across the whole country is in the one software. Because they subscribe to all datasets for the US and Canada. And it's all in one place, and they update it. So, it's come so far, where, people don't have to come to us as much anymore. And they go to these companies where, I mean we couldn't possibly keep up, on the information people need" (HT 2811)

This quote again refers to Calgary as a location of importance where, in this case, companies processing and holding information are based out of, so that it is "all in one place." Companies can then pay a fee to subscribe to access this information to give them competitive edge over decisions about where to look for oil, where to seek and purchase licences…etc. This outsourcing of information creation is necessary for this government regulator to do their job – but is also creates situations where information is dislocated spatially and also becomes more inaccessible to locals, or people who are not able to pay for the information.

For example, this outsourcing can affect even other industry users. For a smaller company this creates a disadvantage where there is not enough money to subscribe to these datasets. An owner of a very small oil extraction company addressed this lack of access to information with this statement:

> Our competitive advantage is that, they are all employees. We're owners. So, at 9 or 10 o'clock at night I'm still doing stuff. And it's my money, my risk, my investor's money, my risk. The majority straight up. I have always said, how do you compete in capital, or a capital-intensive market without the same amount of capital? Is that you just have to work harder and smarter (Participant REA 1402).

This participant clearly says that, as a small oil company with little access to information, he must work "harder and smarter" in order to keep up. Another difference is locational, since most managers in the oil industry work from offices in Calgary where they have much better access to information to make decisions and implement plans. The small oil company owner is in the southwestern corner of Manitoba and operates from their home office, having less access to information to make decisions even while being located closer to the actual sites of extraction. This points to information existing mostly online, while also being consolidated by private data-processing companies and, in many cases, restricted in ways that make it not readily accessible to those unable to pay for access.

5.3.2.3. Collect and Not be Able to Use

This theme is related to the instances I found where participants collected information but were unable to use that information to inform decision-making, at both a personal level but also on a more broad-scale level.[5] For example, community members near Tilston, Manitoba described installing H2S detection monitors but having these readings disregarded by the province because they were not officially installed monitors (Participant END 1902). This group also filed official complaints and collected folders of family health information, but the lawsuit disregarded most of the information collected as hearsay, to the point where one member felt like all their information was, "whittling away so that there was nothing. It just basically said our names" (Participant END 1920). In these instances, the hard-working collection practices of the community members did not mean they could, in any direct way, make use of their information to inform practices of oil extraction near their homes.

Another example was the work of a geophysicist based in Manitoba but hired by an oil extraction company in Saskatchewan to do a study related to carbon sequestration. The company wanted evidence that, if they injected carbon into abandoned well sites, the carbon would be sequestered and they could get credits for this from the government (Participant EEN 1912). This scientist did the work for the company but found contrary evidence that the carbon would eventually leak out of the formation through the well bore, however the company did not allow this research result to be published.

> And I estimated how long that would take, it's like 10,000 years, thousands of years anyways for it to finally go away *if it doesn't leak.* That's what they wanted to know. So, they published that and ignored, the stuff… of it leaking and then cancelled our contract…because we weren't giving them the right answers (Participant EEN 1912).

[5] I will go into more depth on this matter relating to the group G.A.S.P.E. in chapter 7.

Here the scientist collected the information but was unable to make it public because this work was owned by the company who could make strategic decisions to moderate the flow of information. The difference between the ability for private interests to collect information and make use of it and the ability for public members to collection and make use of information is starkly unequal. Furthermore, this participant indicated that even when the regulatory body collects information, they often do not use it. For example, even when information is collected (in this case by a federal regulatory body for pipelines that travel across provincial and national borders) and practices are followed to hold industry accountable, accountability fails. This quote indicates a set of concerns about oil containing H2S being piped through the Cromer station in south-western Manitoba:

> You know…even Enbridge is required to measure the Hydrogen Sulfide for the NEB (National Energy Board), [and] they were found non-compliant, their line goes right through Cromer. All that oil dumped in there ah, and um, non-compliant in measuring it. And what were the consequences? Nothing! Nothing!" (Participant EEN1912).

This participant had followed up on this non-compliance report when looking into issues about H2S in the oil in pipelines, and was told that there has been no action taken on the report. It was held at the NEB library and could be viewed publicly, implying that the NEB had done their work of monitoring, but the work or action of requiring compliance based on the information collected, that had not happened.

5.3.2.4. Conflict in and lack of information

This final subtheme about the creation of information relates to discussion about information created about oil and gas extraction, that participants felt was incorrect or lacking. When I asked what people thought about fracking in Manitoba. I often heard responses like the following,

> We sometimes get asked about fracking from landowners but in Manitoba we use very, very small fracks compared to what you would see in BC, Alberta and Western Saskatchewan. Also, we are fracking and producing from geological formations well below any potable water aquifers. It really hasn't been much of an issue or concern for Tundra, the Crown or the landowners so far. I think most people you meet that are against fracking are either from areas where it actually might impact them, like New York, Pennsylvania, or Quebec (where the fracks are bigger and the formations are much shallower), or they are just uneducated about how we do fracks in the Williston and Western Canadian Sedimentary basins (Participant REL 0223).

The assertion that people were uneducated, or un*informed*, was very common. In regards to information encounters, this implies that my participants felt that people did not have access to information about oil extraction, or had information that was mistaken, or mis*information*. This is a common move within

practices to create "matters of fact" where only experts are able to have full access to information and understand or use it with authority (Li 2015). Haraway calls this expert, the *modest witness*, and the production of this ability to witness objectively is related to the way facts are made by deciding what is true information and what is mis*information* (Haraway 2004). For example, another participant associated with the government says,

> …you know, unless you work in the industry, you kind of don't know what is truth and what is conjecture and what people want to believe as opposed to what the science you know, is telling them. And that, really, unfortunately, has created problems, I'd say, for the industry. Because there is misinformation (Participant MO 0628).

This person separates truth from conjecture, where science reflects what Shapin and Schaffer (1985) see as statements about what is "the structure of natural reality," which this scientist sees as truth. Conjecture is when people want to believe things but, since they are not scientists, or in this example, since they do not work in the industry and thus carry authority, they are unable to know and unable to produce what is a "matter of fact" (Li 2015). This misinformation was often stated as the reason there might be conflict or concern in the oil field. The implication of this is that, if people have the right information – information that they would have if they worked in the industry – then they would not have any concerns. As noted in this quote regarding how people, who do not participate in oil extraction, do not understand it:

> …I would say that it's in southwestern Manitoba, it's not in the capital. And people just, aren't necessarily aware of what happens in the rural areas. Um, people don't like to think about where their cars come from, their fuels, their clothing. Everything, you know, that they need, they, its generally not on their radar anyway. And they think it's, yeah people like to think that they're green and ah, yeah, and all that stuff is bad and not associated with them in any way (laughs) right? Whereas, it's not bad. It's naturally occurring we are just extracting it (Participant AUE 1102).

The conflict in this participant's description is based in the dislocation of oil extraction from those who benefit from it, as a source of energy, but then still critique it. They also gesture to its inability to be moral, because it is not within the realm of human made items, it is natural. This natural affect seems to make it unquestionable, or a "matter of fact", again as noted by Li (2015), this practice of seeing oil as natural makes the practice of extracting it also natural, or naturalizes it. Thus, this can work to imply that people who do not work to extract oil cannot actually create facts about oil, instead they are *mis*informed, *un*educated, and cannot carry the authority that those who work in the industry do.

I also found instances where people spoke about a lack of information by people key to the process of making oil extraction happen in Manitoba; such as the Surface Rights Board.

> The people they put on the Surface Rights Boards, who is there to adjudicate, none of them have experience being landowners in a part of the province where there is oil and gas operations…You know it's the uninformed adjudicating over something that they don't understand…I've been to a surface rights hearing where a board member, who had been on the surface rights board for over 10 years, was astounded to find out that a truck goes to a well every day. He couldn't believe that they go every day! (Participant OAR 2711).

The word choice here, *uninformed* adjudicating, has implications on those whose lives must depend on negotiation with the oil extraction industry, people who have surface rights but not mineral rights to their lands. According to this participant, the key problem was the lack of experience, or experiential knowledge from living with oil extraction as a farmer and surface rights holder. This participant could detail examples where the Surface Board had, "made the wrong decision" because they did not understand the technology and practices of oil extraction (Participant OAR 2711).

Finally, there was conflict with information due to its extreme complexity and lack of public access to information. One participant had educational credentials of a physicist and thus was able to ask questions and search for information in a way that most of the public cannot, however this participant continually found that the information that is available is not designed for public access or ease of understanding for the non-expert. For example:

> EH: Oh no. The reports that they pointed me to. Are just, a bunch of data. I mean you have to pull up the thing and then mine through it to find what you are looking for. And it is just a monster job.
> M: It really leaves the responsibility to the individual to find it.
> EH: Yes! And you know that, what they told me, that all that hydrogen sulfide information was in all these reports, go find it! That's not my job. That's their job! And then when I tell them I couldn't find it; I get no response (Participant EEN1912).

The conflict becomes more apparent as this participant asks for information that is not there, or for information where the analysis is not done. As I noted earlier, the regulating body acts more as a collector and container for information, which becomes conflictual when questions are asked that require analysis of the gathered information. The analysis of information from oil extraction activities, from my research, occurs by the industry for the purposes of extracting oil, unless the government is confronted by significant amount of concern[6]. This is confirmed by many studies conducted on oil and

[6] This will be explored in more detail in Chapter 7 on GASPE.

gas extraction in other locations, such as Colorado, Texas, and Saskatchewan (see for example, Wylie 2018; Willow & Wylie 2014; Eaton 2017; Eaton & Enoch 2018; Eaton & Zink 2016). This essentially downloads the responsibility to the individual to do the analytical work that the government, or a possibly a third-party expert hired by the government might do to ensure the industry is compliant, or is practicing extraction according to government requirements.

5.3.2.5. Information about Places that Do Not Exist

Finally, I continued to find anomalies in information I encountered on the Manitoba Petroleum Branch website or in interviews with people. One such situation occurred when I spent some time analyzing Bill 21, passed in 2005 (*The Oil and Gas Amendment and Oil and Gas Production Tax Amendment Act*, C.C.S.M., once assented to, c 034). I had already spent some time learning about how oil and gas extraction was licenced and legislated yet, according to this legislative document found on the Petroleum Branch webpage entitled, "Acts and Regulations," it appeared that the Environment Office needed to sign off on licences for battery sites. I have never heard of this happening in Manitoba so I did some digging and eventually emailed my question to the Manitoba Conservation director, who sent me directly back to the Manitoba Petroleum Branch interim director. This person informed me that this Amendment (Bill 21) had never been proclaimed and thus was never implemented. I found it strange that the Petroleum Branch's website was misleading in the way they presented the information about the acts and regulations governing oil and gas. Bill 21 had been written and passed in 2005, almost 15 years before I looked into it, and during the interim the biggest oil boom yet had occurred in Manitoba with an almost 600% increase in the number of wells licenced (refer to Fig. 7, in Chapter 3). Asking what happened to this Bill 21 eventually led me to find the advocacy group, GASPE (Group Advocating for Safe Petroleum Emissions) from Tilston, Manitoba (see Chapter 7). This also helped to explain another anomaly on the website where under "Air Quality Information" - there were reports from the one and only air quality and health study conducted around years 2000-2001. I had wondered what prompted the study but also why ongoing studies were never performed.

A related query also ended at something of a dead end regarding the frack water extracted from the wells. I kept being told that the water was re-injected into the formation or taken to a water treatment facility. However, I was frustrated whenever I tried to find this water treatment facility to see how the water was treated and what was done with it. It did not seem to exist, yet my participants would mention

it when I asked about the leftover frack water. Finally, this was cleared up during an interview where the participant told me:

> PM: Yeah, we had one licensed facility and I know it never ran.
> M: Maybe that is what they (my participants) were referring to.
> PM: It was a company by New Alta, it was a company called New Alta
> ….
> PM: like this New Alta site, our facility, is a pretty innocuous type of waste disposal facility. It would just be water, with a bunch of oil in it and they would separate the oil and basically put down saline water underground. So, they make a lot of their money stripping off oil that comes in with um, you know, contaminated water. You know they charge people to dispose of the water but then they also keep the oil they skim off.
> M: Uhhuh, And that's in Saskatchewan?
> PM: Well, that is how the New Alta one was supposed to operate [in MB] and there is lots of facilities like that (Participants MO 0628).

Confusingly, the participant also talks about this site as though it were in existence but yet none of this happened because, though it was licenced to be built it never got built. Still, I kept being directed towards this unidentified location anytime I asked about waste water disposal. Also, even if it had been built in Manitoba it was not a water treatment facility at all but rather a company that spends energy extracting any leftover oil from wastewater and then injects the remaining water back into the formation. This participant spoke about the water as being saline water but this water would contain things added during a frack operation. I was unable to find any information about the chemicals added during a frack operation even though there was information that said Manitoba was joining the group called FracFocus, in 2015 which mandated that frack chemicals be made public, or at least disclosed to the government (Natural Resources Canada 2017). As of yet, this has not happened and I never heard back from FracFocus about why Manitoba was not included on their website. The industry people I spoke to said they disclosed these chemicals to the government, but as far as I could tell, this information was not shared publicly by the Manitoba Petroleum Branch. When I asked the Manitoba Petroleum Branch, I was told that industry disclosed as a matter of course to get a well licence, however I was unable to follow up on trying to access these actual records. This appears to be a mode of obfuscation, the same as I faced when looking for information about pipelines/flowlines. The responsibility for locating the information about chemicals in frackwater falls to the individual to track it down and is not made available or comprehensible to members of the public. This information regarding places that do not end up actually existing when followed, is a common thread in most oil and gas extraction communities (see for examples, Wylie 2018; Malivel 2019). The information created refer to, or gesture to, a practice and

location that ends up not being in place suggests it is used to defer questions or concerns. These practices will be explored in more depth in Chapter 5 on the figures of the place of oil in Manitoba.

5.4. Summary

Seeking out the information encounters and information-making practices of a place brings its social and material practices into view. This indicates a place of oil in Manitoba that is largely encountered through information produced by industry, but also structured by extractive geographic narratives of boom-and-bust that condition the provincial government's information practices, catered to industry use. In other words, if place, through a CPI lens, is viewed as information, then this is a place primarily produced by and for industry. This also indicates that during the boom, as the government regulating body lacked capacity, there was a shift to outsource information even more so to third-party private contractors. The shift consolidates information but also can have the effect of making it even less accessible to those outside the industry, or even to smaller-scale industry (such as local small oil extraction companies). This creates situations of *information precarity* where it can be difficult to access information, where responsibility to do data analysis is downloaded to individuals, but also where these same individuals are unable to produce alternative information, or information that questions oil extraction practices. By information precarity, I refer the way the concept of precarity (Butler 2004) is used by Wall et. al. (2017) whose study on refugees in Syria looks at their inability to access reliable news and personal information. They define information precarity as a state in which information access, "is insecure, unstable, and undependable, leading to potential threats to their well-being" (Wall et. al. 2017, p. 242). Of importance is the way precarity does not mean well-being is always threatened, but that it is an *ongoing state of potential threat*, where one is living with a level of uncertainty, and that these conditions are seen to be a naturalized state of being in that place. These are the conditions of information production within the place of oil in Manitoba, where even within the industry people experience precarity regarding their job stability. The precarity is also related to inaccessibility of information occurring due to lack of government capacity to collect and analyze data regarding, for example, the amount of H2S leaking from well sites. Within the cyclonic development of extractive geographies, as described for example by Keeling (2010) or Keeling and Sandlos (2015) this is a well-documented effect of boom-and-bust economies and their impacts on people and place. The acceptance of the precarious *nature*, as though it was naturally occurring, of oil and gas obscures the fact that these situations are created and maintained. Looking at the way information is produced brings to light the

practices in place, as well as the actors and components in Manitoba that have the ability to produce and use information, and those who do not.

Chapter 6: Place as Figure

"Figurations map…figurations form geographies, to inhabit them" (Wilson 2009, p. 501).

In this chapter, I investigate in more depth the knowledge-making geographies of oil in Manitoba by spending time with the material-semiotic tool called figuration. Donna Haraway brought figures into academic use in the 1990's with her Cyborg Manifesto, however, Wilson (2009) is the academic whose work attempts to grasp the power of investigating figures that I build on. Paying attention to 'mundane practices' of knowledge-making where nature and culture (or naturecultures) are revealed to be intertwined is the focus of this chapter (see, Haraway 1991, 1997 & 2003a). These figures reveal ways that the place of oil in Manitoba is brought into being and maintained through socio-cultural (read, human made) practices that have the appearance of being natural (read, non-human made but also factual) practices. Figuration is the material-semiotic method of drawing into "radical visibility" the sites and moments (spatial and temporal) where certain kinds of knowledge are practiced, to show what they do and, in that way, to contest their spatial and temporal solidity (or stability) (Wilson 2009, p 501). In this chapter, studying the geographic consequences of mineral (freeholder rights), surface rights (land rights) and royalty rates through the lived material-semiotic realities of my participants displays ongoing negotiation but also seemingly inherent acceptance of each as fact. Building on the CPI framework, figuration does the work required to critically investigate place making in several ways. It addresses the spatial-temporal process of settler-colonization, makes visible some of the disparate and multiple realities determining how places are made, and continues to conceptualize "places as themselves mobile" (Tuck and McKenzie 2015b, p. 635).

I also want to pause in my description of the place of oil and these figures, to recognize the fallibility (or partiality) of this analysis and these figures. Figures, "insist on a kind of 'seeing' that is necessarily partial – but no less a fact" (Wilson 2009, p. 504). My analysis is entirely partial in both senses of the word: it is not complete by any stretch, and it is biased. However, it is still fact. The quotes I draw from and my data of the place of oil in Manitoba display my own perspectives of the geographic implications reaching past, present, and future.

6.1. Royalty Rates & Rights –Place Practices of Oil Geographies

"So, a lot of what went on was a regulatory environment that allowed mineral holders to *literally or figuratively* drive all over the land and just do whatever the heck they wanted*"* (Participant OAR 2711, emphasis added).

The dual figures of rights and royalty rates work together to produce entitlement and value for extractive geographies. Some of the history of rights and royalty rates was in Chapter 4 of this dissertation, so this section will focus on the figures themselves as they arise out of the place of oil in Manitoba through my interviews. The socio-political power of a figure can be analysed by paying attention to when these socio-culturally and materially produced facts (rights and royalty rates) are taken as being natural (Castree & Braun 2001). These practices of naturalizing facts were explored by Cameron (2015) through looking at the way the Canadian government drew on stories about Indigenous and Inuit people to justify a relationship based on continued colonial practices of resource extraction. These stories, about particular events, had the effect of making it difficult for the ancestors of these stories to challenge the stories themselves because they were naturalized as being beyond questioning (Cameron 2015). In other words, it was the symbolic or semiotic practices that conditioned the material relationships in such a way as to dislocate the symbolic relationship in time and space, as occurring in the past and far away (Cameron 2015). In this chapter, I look at the symbolic (semiotic) practices of these two figures, land rights and royalty rates, and how they work to displace the issues around nature and cultural ownership or belonging in Canada, in the past and far away. One of the effects of this displacement is that the issues that are questionable are limited to, or framed by, technology and scientific discovery. For example, this technoscientific move to overcome the problems of getting at the minerals underneath the surface, and then negotiating value (monetary) for them, sidesteps the contradiction that the one cannot arrive without the other. In other words, the contradiction is dealt with by making it seem like a technical problem that can be solved with equations, percentages, and map coordinates to determine who gets what and why. Instead, it is a problem arising from material-semiotic structures of neoliberalism and settler colonialism that determine and condition arbitrary and complicated realities of oil extraction geography (Braun 2019; Hoogeveen 2015). This problem is explored by Coulthard (2014) specifically by focusing on the ways neoliberal democratic practices of Canada continue to, "form the constellation of power relations that sustain colonial patterns of behaviour, structures and relationships" (p. 14). This argument suggests that settler-colonization shifted its practices to be more accommodating and conciliatory. This is partly done through couching issues as technoscientific problems to be solved, but it is still just as dispossessive and exhibiting more of the 'slow violence,' explored by Nixon (2011). Slow violence details the way that environmental problems continue and persist beyond the conclusion of the actual extraction of resources. It often occurs in ongoing uncertain ways that enact mostly under-acknowledged violence on the human and non-human

life and land (Nixon 2011). The continued violence of colonization and capital accumulation is essentially exhibited in neoliberal policies and practices that accumulate wealth through resource extraction. While a more environmentally friendly version, it is still violent and destructive, and proceeds in such a way as to temporally and spatially close those relations to questioning[7] (Coulthard 2014). Through-out my field work interviews, I consistently heard about rights and rates and so I decided to investigate them as figures or material-semiotic nodes of meaning making (following Haraway 1991; Wilson 2009) As powerful makers of place, land rights set the stage for royalty rates by establishing property ownership, so I will explore them first, paying attention to how my participants make sense of these figures, how they accept them, and also how they recreate them.

6.1.1. Rights (Land, Surface and Mineral, or Crown and Freeholder)

Inevitably, as I would ask about oil extraction, I would be told about surface and mineral rights. In several of my interviews, I heard about the "westerly march of civilization" as an explanation for how land rights were assigned and why Manitoba is different from Alberta.

> …in Manitoba its very…. Um… its different than Alberta because, as…. Civilization was kind of moving west through Canada, the government um, gave landowners like, rights to their land. And that included their mineral rights, but as they continued on west, they realized there's so many, like opportunities, that they stopped giving the mineral rights. So, they would only give surface rights. And you would only own the six inches, the top six inches (Participant OT 1311).

> To obtain mineral rights we purchase them at Crown land sales, lease them from freehold mineral owners or occasionally buy them outright. Manitoba is very different compared to other provinces. The regulations are somewhat less restrictive. The Crown/Freehold land split is about 20/80 whereas in provinces like Alberta it is the exact opposite (Participant REL 0223).

Both of these participants are explaining the apparatus that they deal with during the process of extracting oil. Oil companies must secure the mineral rights, as well as the surface rights, and these land rights were given during the creation of Canada as, "civilization was kind of moving west" (Participant OT 1311). The use of the word "civilization" is a material-semiotic signpost signifying that "civilization" arrives with "rights". The fact that these rights are separated is seen, explicitly by this participant as, "correct":

> …most of the time the surface rights owner's not the same person as the oil rights owner….to their credit Petroleum Branch will talk about the fact that the mineral rights holder, has the right

[7] I want to be careful here to explore how this move closes or attempts to close the ability to question, but not to resist! Coulthard (2014) is especially insistent that Indigenous resistance and resurgence is facilitated by these ongoing processes – and brings into being power modes of Indigenous engagement and forms of power.

> to have that, extraction...Um, *which is correct,* but the surface rights owner also has a right in that, to say, like if you are going to use my surface, I have to get something back in exchange for it (Participant CE 1212, emphasis added).

These owners are entitled to consideration; the mineral rights owner to be able to access their minerals and the surface rights owner to be compensated for the use of their surface land. The entitlement comes across as fact that is justifiable and the complex situations arising from the land having a surface (six inches of soil) and an underneath area for extraction of minerals, is not questioned. This figure of rights convinces because it exists within a structure of constitutional and legal documents and practices that have material consequences. For example, the oil extraction company cannot obtain a licence to drill and frack a well until they have negotiated and leased the land, both the surface and mineral rights. Without a licence to drill and frack, the activity would be considered illegal (Participant MO 0628). Also, the company needs to do this for the whole section of land, often designated into quarter-sections or 160 acres (Participant AA 0310). These sections of land were created during the land surveys to establish property, in part for *The Homestead Act* (discussed in more detail in Chapter 4). This creates a situation that occupies a location in-the-past, or spatial-temporally in a time before now, and that closes it to questioning as well. This temporal-spatial closure is demonstrated by Coulthard (2014) in ways that sidestep, or displace, the actual work to transform the "generative material conditions that so often work to foreclose realization of self-determination in the lives of ordinary citizens" (p.. 19). The purpose of this is to suggest that what has happened in the past remains in the past, in a natural way, as though past relations are a "matter of fact" or as Li (2015) explains, essentially certain and stable (explored in Chapter 5). In the situation of surface and mineral rights, what happens now is that a company may have to negotiate with many different people to obtain all the leases in order to get a licence for a well. From my conversations, this is somewhat unique to Manitoba, and is viewed by my participants as a logistic or technoscientific problem of dealing with the complicated conditions of property rights in Manitoba.

Another example of this arbitrary granting of land rights, in a way that is now closed to questioning, was when I was told that the University of Manitoba had been given 100 units of mineral rights by the province in the 1970's (Participant AA 0310). These were not surface rights, just the mineral rights. When I followed up, I found that University of Manitoba was actively colleting royalties on oil extraction on mineral rights they leased out (Participant NAC1602). I could not find out why they were given these rights. The person in charge of leasing the rights and negotiating royalties for the university said they did not know and there was no one at the university any more around who would

know. I also inquired into another university in Winnipeg and was told that the university did not hold any mineral rights to oil and gas in Manitoba, but I was pointed to the Divest UWinnipeg student group. They had produced a report detailing the connections the university had to oil and gas extraction through money and buildings donated to them, such as the Richardson's Science Building (Divest UWinnipeg 2017). The Richardson family, the report notes, are key players in the Manitoban oil industry (Divest UWinnipeg 2017) through their ownership of Tundra Oil and Gas. When I followed a couple lines of inquiry to understand how the province would choose to grant a university mineral rights, or even be able to do this, I could not find any other information. However, I am sure a dedicated search - perhaps in the archives - may turn up more of the story. There is a sense among some participants that it relates, again, to how the land was surveyed and divided into units, with taxation organized in such a way as to provide for schools (Participant AA 0310). The fact that the University of Manitoba received rights when the University of Winnipeg did not (the two main universities in Winnipeg), is more suggestive of a relationship between the government and the university, perhaps a personal relationship. The arbitrary way these rights are, or were, distributed and arranged gestures to ongoing creation, rather than existing naturally.

Minerals can be seen to be naturally occurring where the technology does the work that allows access to these valuable commodities awaiting extraction. In other words, like land rights, minerals obtain value based on societal need and ongoing creation of value. The following quotes illustrate the engagement of industry and government with the apparatus of rights holders as natural, as visible, and also as arising out of technological rather than cultural design:

> The changes to technology, like horizontal drilling, have changed the work we do as landmen by making it more necessary to negotiate with partners and freehold mineral owners to drill wells across multiple spacing units. In Manitoba a legal sub-division (LSD) is a spacing unit. There are 16 LSD's in one section of land; 36 section of land in one township Each township is about six square miles (Participant REL 0223).

> HT: So, if I was to go back to GIS Map Gallery…. (looking at the screen at the website) …and here…So, all of the green, is….um… there's Crown 100% and then if I zoom in a little bit, like there will be purple and that will be Crown partially owned with private mineral owners. And everything that's white is private. So, any wells on white [the royalty payment] is going right to individuals. So, it can be pretty substantial.
> M: And is all these quarter sections? (I am looking at the map on the screen)
> HT: Yep, these are all by quarter…. So, like this mineral owner like…well some have 16%, so…. There's a great amount of private. So, I wouldn't even know what that crazy number would be that people get um, per year, on their minerals. It would be astronomical" (Participant HT2811)

In these quotes, we hear about the necessity to negotiate due to horizontal well technology as well as the way ownership can be viewed on an online GIS map gallery, coded with different colours. These negotiations and identifications of ownership are vital to the assignment of entitled money, which is where the figure works in tandem with that of rights. In other words, royalty rate arises here visibly in the number, 16%, and idea that people would receive "astronomical" amounts from their minerals. Having these rights to minerals only begins to matter when one can receive money due to ownership.

Then there are people who hold surface rights but not mineral rights, yielding interesting insights into the working of the figure of land rights. One of the major sources of conflict in the area occurs due to the historical "severing" of surface from mineral rights, in property documents. I was told this occurred, during the granting of homesteads but also, in the years after the two world wars, when the government returned people's land but had changed the property entitlement to exclude the minerals (Participant AR 1003). In the south-western corner of Manitoba, this means a great deal of land (surface) owners do not hold mineral rights (Participants AA 0310 & AAR 1003). This conflict is revealed in this quote of a participant who struggles with the inadequacies of the structure to deal 'fairly' with landowners (aka surface rights holders):

> P1: So, the reason the Manitoba Surface Rights Association (MSRA) exists today is because the shortcomings in regulatory oversight. So, I think that, if the regulator did a better job than the MSRA probably wouldn't exist. The regulator is, in effect the government, right? So, they always try to wash their hands of that by having an independent regulator, which they appoint. So, they are still responsible. So, everything when it comes to the landowner and landowner engagement and that's how, that's why we are involved is because we are landowners…, *our family was landowners long before there was oil in this part of the world.* I think my granddad founded, it was 37 or 1938. And then we started punching holes here in the ground in the 50's. So, a lot of what went on was a *regulatory environment that allowed mineral holders to literally or figuratively drive all over the land and just do whatever the heck they wanted.*
> M: That was from the oil and gas act?
> P1: Right. So, and a lot of that didn't get righted until well into the 70's. So, it went on that way for quite a few years and they used a template for the surface rights act in Manitoba, which they took from Saskatchewan which was already outdated (Participants OAR 2711, emphasis added).

This participant views themselves as a landowner, rightfully. The figure of land rights looms in this quote as practiced entitlement due to historical landowner status: "our family was landowners long before there was oil in this part of the world." The place of oil in Manitoba arrived after they had already established themselves and yet it acted in a way that, literally and figuratively, superseded their literal and figurative land (surface) rights. The *Surface Rights Act* (C.C.S.M. 1987, c S235) was created in the

1970's due to the work of this participant's father, to protect surface rights holder's positions taking a surface rights 'template' from the neighboring province of Saskatchewan. However, this law is described as already deficient or, "outdated." The deficiency of the Act is seen in the following quote with a story of a landowner trying to negotiate with a company, using the Surface Rights Act to take the case before the arbitrator (the Surface Rights Board). The board made a decision that highlighted their lack of knowledge about how horizontal wells work as well, as displaying the power of the mineral rights holder over the surface rights holder. This participant begins by saying that they are not against the industry and explaining farming practices:

> We are not anti-oil and gas. We are not that group. We are just looking for fairness for the landowners. So, with Carlyle Jorgensen, he had another one which was a great one. He had a section of farmland, his dad died rather young, but he and his dad they cleared a whole section of farmland and drained it. And they did it before it was really difficult to get drainage permits. So, they could farm the whole 640 acres. There were no sloughs, there was nothing to go around. And, so his entry hearing, the Redbird Oil. Redbird vs. Carlyle Jorgensen they, they wanted to put a well in the corner of that pristine 640 acres. It was a horizontal well. Carlyle actually negotiated with the neighbor to get the well moved across the road, in to the pasture. And the neighbor would get the compensation off of it. Carlyle just didn't want it in his square mile. And that oil and gas company took him to the Surface Rights Board and the Surface Rights Board granted them the right to put that oil well in the corner of that pristine farmland. So, he, it wasn't going to change anything. It was still a horizontal well. So, the Surface Rights Board made the wrong decision. Period (Participants OAR 2711).

The ability for this Surface Rights Board to make a decision that did not make sense to this landowner's ability to farm reveals the positionality of those with surface rights vs. those arbitrating on their behalf. In this story, the farmer labours to try and negotiate a fair deal with the company holding the lease for the mineral rights, but is unable to change the situation. The Surface Rights Board, a quasi-judicial board, was created as a place for surface rights holders to receive fair treatment from the oil extraction industry. However, in multiple cases it performs instead as an appendage to strengthen the figure of minerals rights and the continued practices of extraction (Participant AA0310).

The term, "severed" was often used and gestures to the complicated relationship produced between surface and mineral rights. In several instances, I heard the word used to describe how the mineral and surface rights had been taken apart at some point (Participants AA 0310 & AAR 1003). This was mentioned in the context of how communities struggle to deal with the fact that some people hold their surface and mineral rights, and others do not. Even more difficult are situations when mineral holders are not from the community, and do not live in the area of southwestern Manitoba at all. It was

explained to me that this may be why some community members voice more concerns than others (Participants AA 0310 & AAR 1003). In other words, people's concerns about extraction occurred, in part, because they were not able to profit much from the extraction process. They have been "severed" from what they consider to be the natural conditions of entitled profit. This explanation indicates a dismissal of concerns arising from extraction practices, and instead locates concerns or issues with oil and gas, in feelings of being left out. The connection to the term "severed" that I heard in tandem with this explanation points to an injustice that occurred in another spacetime, that is not the fault of the *current* regulator or industry. This is held up in the actions of those on the Manitoba Surface Rights Board, who arbitrate for those who hold surface rights and feel they are not being treated fairly by industry. However, I did not find, as I looked through the most recent decisions posted on online, a single Surface Rights Board decision that did not, in effect, grant the Right to Entry to a company regardless of the concerns brought forward by the surface rights owner. Sometimes the company was ordered to change some minor details about the lease, but in the end the Right to Entry was granted. This reality troubles people in the area who have surface but not mineral rights to their land, so much so that when a surveyor arrived to look for potential oil reserves, one couple who only had surface rights took measures to find ways to protect their land (Participants ACRA 0119). In the end, they found they could donate their land to a program in Manitoba that will protect it for conservation hopefully protecting it from future extraction (Participants ACRA 0119).

6.1.2. Royalty Rates

The figure of royalty rates arises in tandem with mineral rights by assigning monetary value to those rights, as mentioned above. However, unlike land rights, which were distributed during the resettlement of the prairies and created institutions such as property registry and title, royalty rates are currently negotiated and determined by a number of competing factors, such as these described during email correspondence in some depth from the point of view of an extraction company;

> We come up with the royalty rates a couple of ways. Often, we offer the landowner options, sort of like a menu to choose from, where they can take a higher $/acre bonus payment for the lease with a lower Lessor Overriding Royalty (LOR) or they can take the higher LOR and a lower bonus payment. If the landowner's land is in a more exploratory (risky) area we suggest they take the higher bonus payment as the odds of Tundra drilling a good producing well are significantly lower. Likewise, if the area is more of a development project where the risk is lower, we suggest the landowner take the higher LOR. LOR's are largely based on the "going rate" in the area although, similar to house or car prices, it is common to occasionally pay more or less than the going rate depending on other considerations. Sometimes landowners will have

> multiple parcels of desirable land which strengthens their bargaining position. Also, if the landowner owns 100% of the desired parcel, we usually pay a bit of a premium as it makes business a lot smoother with less administrative burden. But in most cases, each parcel of land is owned by multiple people with different interests. This usually occurs when the land is passed down through inheritance … brothers, sisters, cousins, etc.…From a land standpoint, the LOR is the biggest contributing factor to the economics of drilling a well on someone's land. So, in that respect, sometimes landowners can actually hurt their chances of getting a well drilled on their land if they push for too high of a LOR (Participant REL 0223).

The person speaking is often called a 'landman' in oil vernacular, and it is their job to acquire the surface and mineral rights by negotiating a lease, or a set of leases, with however many owners there happen to be on the land in question. This negotiation is based on the so-called, "going rate", which is set by collecting information about what others are paying or getting paid for their land, as noted in this quote from another member of an oil extraction company:

> You always are monitoring what other people, what land they are acquiring, um, what the rates of those lands are. Because you don't want to overpay. You wanna know what they paid for that land, right? So, then you don't overpay them (Participant OT 1311).

It is clear from these quotes that the amount of money that one can collect from owning minerals rights is very much a negotiation where the oil extraction company has much of the power to determine a royalty rate that is favorable to their purposes. Yet, it is also a complicated and competitive dance to find out what other people are paying/being paid for their "land," as, "the LOR is the biggest contributing factor to the economics of drilling a well on someone's land" (Participant REL 0223). It follows that if the royalty rates go up, then it could become unprofitable to drill.

However, as we can see in this quote from a lawyer who negotiates for these royalty rates on behalf of the mineral owner, sometimes, if you have enough knowledge and oversight, a mineral owner can maintain some of the power in the negotiation and even raise the rates for the whole area.

> When I first started it [the going royalty rate] was 12 and a half (%). Um, and then it went to 15 and just stayed at 15. And then people started to ask for 16 and 17 and 18 and they were getting it depending on where they were. But it's kind of leveled off between 15 and 16% right now and I think the companies are still prepared to pay 16. When it dropped, one of the, ah, these leases are negotiated by either the company directly or they hire people called Land Agents, and the land agents come in and they…., One land agent actually started to try and offer people 12 and a half % again. Saying, no, no the price dropped, it's just died, it's like it done, you're not going to get 15 again…And every single person came to me with that rate I just said, ah… tell them no. Just say no, and don't ask them to come back. And in fact, ah, I don't recall seeing much from that particular agent ever again, but it's just like no, don't…. don't pretend to give this guy credibility (Participant CE1212).

Viewing the royalty rate as a figure is useful in thinking through the idea of credibility, where a percentage number offered by a land agent can make them a credible negotiator or not. The land agent (aka landman) offers the mineral owner 12.5% royalty rate, the mineral owner brings this to the lawyer, and the lawyer, due to their experience, has the knowledge to dismiss that offer. The lawyer tells them how to act with that kind of an offer, "just say no," and, "don't pretend to give this guy credibility" (Participant CE1212). However, due to other figurative practices, it makes sense that 15 or 16% as royalty rate numbers do have credibility. Thus, as stated above, when land agents, "wanna know what they [other agents and companies] paid for that land" it is very clear that this is a figurative practice as repetition is what gives it substance. In other words, what people get for their minerals in terms of royalty rate (or as above, Lesser Overriding Royalty and bonus payment), is related directly to what other people have received, and though this is seen to relate to the price of oil, when the price drops the common royalty rate only drops to 15 or 16%, not back to 12.5%.

Royalty rates also perform another action by determining *future* profit on the *possibility* of oil. These rates are negotiated before there is oil to sell; the well is drilled, the oil extracted and then sold. The royalties are then collected from the selling of the oil, implying that if there is little oil to collect, or a very low price of oil, there will be few royalties. It is a speculative endeavor that places the mineral owner in a contract negotiated sometimes years before there is any oil for collecting royalties. The importance is heightened when this negotiation is a one-time occurrence, as noted again by the lawyer, "…I want 15 or 16% because the minute they start producing…that's my rate forever" (Participant CE1212). Once the royalty rate is established it is not re-negotiated, it remains fixed. The fluidity of the royalty rate ends once a contract is signed and this is an aspect that has not changed since the 1950's. There is a historical re-enactment of this reality in a documentary called, "The Eternal Flame," written by Marvel Grey in 2006 about the oil rush in Manitoba (Gray 2006). The film remembers the early oil wells and the first landmen who arrived and signed deals with farmers, who, at first, couldn't believe their luck. Later, when other wells were drilled and higher royalties given, these farmers tried to argue for higher rates, to no avail (Gray 2006). Two participants recall the movie and consider how they played characters from the first oil rush to Manitoba:

> P1: Have you watched the Eternal Flame yet?
> M: I haven't heard of that one, what is that?
> P1: Oh, that was a local documentary done by, ...
> P2: Marvel Grey.

> P1: It was a CBC documentary; I am in it.
> M: What? Is it about the flaring?
> P1: No. It is about the oil and gas industry and establishing it here. And I am playing a Cruikshank from Cromer. And I signed up to, the first offer that hit my desk for royalties and then, I went to Edmonton to try and negotiate a higher amount. Yeah, that is what I....,
> M: Radio or TV?
> P1: TV. I have got it somewhere. Do you ever see that P2?
> P2: I was in it! (laughter) I was the bad land guy, remember, I was the evil land guy. You were the Cruikshank and I was land guy (Participants OAR 2711).

The astonishing aspect of this conversation is the sudden reveal of the figure of the land agent, or landman (in this case, landguy). In this case, the figure of the royalty rate stands by passively and the role of the negotiators becomes one of dark intent. One participant remembers more clearly about both playing the role of the Cruikshank for the documentary but also his thoughts about it, including more thoughts on land agents in general.

> P1: So yeah, he went and did the evil deal to start with and then, so I was, I went to Edmonton to try and negotiate and once Marvel [the director] told me the whole [story], what I was supposed to do right. And I went, well there is no point, right? The contract is signed, it is done. But she was like, oh no, just do this for me. And I said, well I wouldn't even leave. I wouldn't have left Cromer because it was already done. But I think it was something like, he signed for 12% instead of 15% and then he found out all of his neighbors got 15%. But that's how the landguys do it right? They are, they come in and underwhelm. They say yes, everything you tell them, they say yes, yes. 'Yes, you are right, you are right S____, P2 you are right, Mya you are right.' Well, can we do it this way? No. No. That's the landguy. Underwhelm. They are paid, they buy the personality, a person that will come in and underwhelm and get you to feel sorry for them. And you will sign their paper (laughter)…My mom always said, they are lower than the lowest profession. My mom's the church lady, she has been around the oil and gas business her whole life and she really doesn't like landguys (Participants OAR 2711).

In this statement the figure of the land agent becomes one of a sneaky salesperson, locking a person into a deal. The 'evil land guy' is an obvious symbolic characterization and yet is also a deeply ingrained part of the process of extracting oil. In the above quote, the finality of the determined royalty rate is displayed with a sense of absolute resignation "Well I wouldn't even leave," (to go to Calgary) says the participant. This person is explaining to me the futility in contesting a royalty rate, or a land agreement, called a lease. This move displays the power dynamic in a situation that is accepted as natural; oil is natural, extraction of the oil is natural, oil companies are natural and yet they must negotiate a deal with the owner of these naturally occurring minerals and mineral rights (Gray 2006). It is a small moment of opening and it is arbitrary in that the number of percentages of bonus money up front is negotiated with small changes to these numbers based on factors such as the craftiness of the land agent, the foresight

and knowledge of the land owner, and the projected future profits on a projected future amount of oil. The figurative power of the 'evil land guy' displays this moment by locating this power in the person of the land agent, for which a community can grumble about but also accept as a given character of the oil patch. Even attempting to leave the community to go to the places where the actual power is held, locations that establish the legal and legislative apparatus and then uphold such apparatus when needed, is considered foolish.

6.2. Locating Rates, Rights and Place Making

As I explored land rights, royalty rates and also lease payments for surface and mineral rights, I began to look for the locations where rates are organized and regulated. This took me to the oil and gas provincial regulator, whose task it is to determine ownership of minerals and also explore and lease for extraction the provincially held Crown oil mineral rights. I was told about units and how horizontal well drilling creates another degree of complexity in situations illustrated in these quotes:

> Yeah, yeah, So, they have unit agreements with all the mineral owners, within each of the units saying, you know, you will get, you know, one (1) or whatever 5% or 2% or *whatever they figure it out to be* (Participant HT2811, emphasis added).

> Yeah, So, that's how people will [get paid], because like, a lot of time, you know, people will come in here and going, 'ok, like my neighbor gets a massive amount of money, and I only get a little bit. Like how come?' And then you draw them this picture and they are like, 'Oh. Ok.'…Or I would pull up these coordinates on my map and actually draw the buffer and show them how much is actually in their quarter. *And that's how it's figured out, how people get paid*…. Like sometimes your surface can be here, and your production casing won't be till here (points to drawing). (I make a surprised sound) So, you can like go like that. You know what I mean? Where this guy is like what, but it's on my land? Well, they just went straight down and over and your casing isn't set actually till over here? So, he actually would, might not even get very much, compared to, (points to drawing) (Participant HT 2811, emphasis added).

In these quotes, during the same interview the location of the mineral rights becomes a serious technoscientific and geographic endeavor to understand and allot. Each quarter section is broken into units and people can own some or all of the units within a section. Then the geologist, working with the GIS locational spots from the drilling of the horizontal well deep in the ground, decides what percentage of the unit's oil will be collected from the pool (also determined by the geologist). This second percentage is then calculated based on the royalties in the lease contract of the person's unit. Unintentionally the speaker in these quotes uses the words "figure" and "figured" to make sense of the division and allocation of percentages and money. The common sense seen here is in the way that

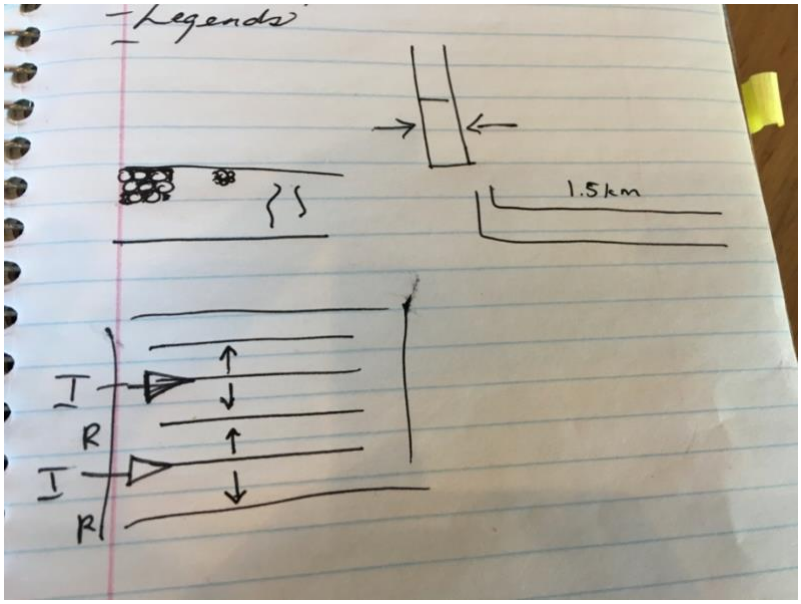


Figure 33: Interview drawings to explain Rights and Royalties, Fieldwork trip 2017

ownership and payments are things that just need to get figured out, implying a practice to make sense of or a knowledge-making moment, and then it is clear. When a person is confused about why they aren't getting as much money as a neighbor, the Petroleum Branch regulator can explain, using their technoscientific expertise, in a way that is appears satisfactory and the inquiry stops there. There were several instances, such as the one above, when I was drawn pictures to explain these complications (See Fig. 33). This photo, from my field work, is similar to ones this person would draw for others and, signals this process to simplify, or render legible, a process that is really quite difficult to comprehend. This is a map, and a map-making process, to show me the way the technology encounters the geography and the overlay of pipes and property rights.

Indeed, the "figuring it out" is an intricate practice requiring much time and energy of those working in the Manitoba Petroleum Branch. I asked about how the royalty rates and taxation are decided through the branch and this is one of the explanations:

> PM: Oh, that, I can talk to you about. It's a function of price, and volume. And actually, that's on our page.
> MO: Yeah, we have got a really, like we do have a document I think too, that is on the webpage that outlines…But, it's pretty cumbersome right now to be honest, like the calculations get a little bit, it took me many times to read it to understand what it is we are actually doing here. Because there is, the drilling incentive program, which has the holiday oil volume. Which makes… so there is,… different categories there, plus we calculate based on spacing units within a well, not just (M: right) one well. So, it gets a bit complicated. So,
> PM: But yeah, that document is, probably (MO: yeah, yeah) the best document we have that kind of goes through, kind of the formulas and it shows some tables of the rates, how they change.

> (MO: yeah) The table, I have got to admit is a little deceiving because, when you look at the rates, those, you think oh well, that's per well. But really,
> MO: Yes, it's per spacing unit.
> PM: You have to, we do *everything here per spacing unit, which is very different than any other province*" (Participants MO 0628, emphasis added).

The conversation here returns unconsciously back to the colonial distribution of land rights as civilisation moved west – again that Manitoba is different because there are more freehold land owners. The geographical history of settlement and subsequent dividing of minerals from surface that were sold, given away or lost over the years creates a situation for these regulators called "spacing units." This can create a lot of paperwork, especially when using horizontal well drilling technology because, in order to drill a well, the company must have a lease signed with any and all owners of the section of land.

> CE: And what they want to do, is they want to get, if they find somebody that's got like, in an area where they want to actually try and do it, they want the person that's got 160 acres, because sometimes it's got like, 10 owners. And you got to get all 10 to sign, and all 10 can negotiate different rates.
> M: Right. And they want to buy up all the leases around the area, so they can…
> CE: Well and they actually cannot drill a well until they've got all the acres tied up. They don't get permission (Participant CE1212)

The permission comes from the Petroleum Branch in the form of a well licence and there is a complicated document to determine taxes and royalties, which does not just deal with the well, it is per spacing unit. These spacing units relate to each owner but they also relate to the legacies of the resettlement of the province because, again, the mineral and surface rights within each unit, are what finally determines who gets what piece of the profit through the extraction process. In other words, the visible infrastructure of the well site does not relate to the delineation of mineral ownership which is only made "visible" using technological mapping tools (such as GIS). None of this is questioned by my participants. What is questioned is the need to make this document more efficient and less of an administrative burden by simplifying it (Participants MO 0628). The spacing units and the way they carve up land, above and below, is seen as a condition that may be unique but is also natural and unquestionable.

Royalty rate decisions were even more convoluted when it came to mineral (and often surface rights) held by the province, or the Crown. Crown lands are provincially held and include the mineral rights (and often surface rights) that were eventually handed over to the Manitoba government from the federal government, and the British imperial Crown, to administer and collect royalties and taxes on. The province entices oil companies to explore for oil in Manitoba by having land sales, where

companies can bid on different pieces of land in order to extract oil. The provincial government creates conditions for these leases that are often more profitable for the company to extract, as noted in this quote:

> Tundra does bid on Crown land at public land sales (in Manitoba there is one land sale per quarter). The Crown royalty rate is predetermined and non-negotiable. It is based on a sliding scale where the more the well produces, the higher the royalty rate payable. Usually, the Crown royalty rate is more favourable than any freehold land LOR (Participant REL 0223).

There are several points of note here: the royalty rate is predetermined and there is no negotiation which takes away the need for a land agent. The rate is not fixed but it operates in such a way that if the well produces more oil the royalty rate is higher, while the rates drop if the well has a lower amount of oil production. This makes the future speculation for oil prices by the company less risky because if the well does not produce very much they end up paying a lower royalty rate on whatever they are able to bring to market. In practice, this means the rate can be as low as 3-5%, which in comparison to a freeholder rate of 15-16% is very low. Another aspect of the figure of royalty rates are taxes and the holiday tax on oil production, where the province does not require oil companies to pay any tax on a determined amount of production. This is done to help the company recuperate its expenses and to help keep the oil extraction industry in production by essentially giving oil companies highly favourable conditions with which to explore and produce oil. Indeed, the Fraser Institute, a far right thinktank for resource extraction companies, produces a global ranking study for resource investment and ranks the Manitoba royalty structure very highly. In the 2013 *Manitoba Oil & Gas Review*, Dr. Angevine, a senior fellow of the Fraser Institute ranks Manitoba 5th globally partly due to favorable "taxation structures" (Del Communications Inc., 2013).

However, as I looked closer at these rates and the holiday tax, and other incentives to encourage production in Manitoba, I was puzzled by the lack of change that occurred during the recent oil boom in Manitoba. The price of oil was at a record high and technology made it possible to drill fewer wells and access more oil. There was a lot of oil production collecting a high price on the market. During this time the drilling incentive program did not change, nor did the royalty rates for Crown lands or the holiday tax. I asked about this because I wondered why the Manitoba government (a moderate NDP government during this entire period) was not interested in producing more royalty revenue from the Crown-held oil resource during this boom time. The answer was:

> MO: Earned [by the government] is pretty low, yeah. And I think that is something that, um, that, probably again because MB was a smaller producing province there was a desire to incent and

> try to get, you know, companies to come and, um, and also at a time when, for example horizontal drilling. When we first started these drilling, the drilling incentive program, horizontal drilling was kind of new and so you are wanting to kind of, incent that because it's recognizing the higher cost, but also it reduces the footprint over all. Right, of your wells? So, I think there is rationale for why things got built the way they were.
> PM: And also, they were trying to compete with other, typically Saskatchewan, because really we drill the same type of wells (MO: yeah), So, if you can get a better deal on this side of the border, I can tell you where the money will go (MO 0668).

The rationale here is about competition with oil companies in Saskatchewan and the need to create circumstances to support an oil extraction industry in Manitoba. Another participant, an oil worker and also a former regulator, said a similar thing but also agreed that the government should have modified the incentive program during the boom times (Participant AA 0310). This participant also admitted that there would have been considerable pressure from oil companies on the Petroleum Branch (indirectly) not to change the program. I was also told that even if the government did collect more royalties and taxes on oil extraction in Manitoba it would be insignificant because there is so little oil to extract in Manitoba. There is a similar assessment of this use of discursive framing, where it is seen to be not worth the trouble for Manitoba to collect more royalties on Crown minerals because there is really so little in comparison to other provinces, through the idea of "stacked scales" in fracking (Sica 2015). Sica (2015) suggests that this is a hegemonic framing by "elites," or persons with the power to make decisions, that enrolls a "spatial rhetoric" in such a way that convinces through the use of scales. In this case, scale is used to explain that it doesn't matter because the amount of profit would be insignificant, *when compared*, to larger scale oil production. Yet this following quote suggests that, even in provinces with significant amounts of oil to extract, governments continue with low rates of royalties and tax incentive programs (which is supported by findings from Carter & Eaton 2016). The participant begins by suggesting that Crown minerals are public minerals that every Manitoban owns;

> Those are my mines and minerals as a Manitoba citizen that you are selling, you are selling me out…And the oil companies, are saying, if you raise the price we are leaving. And I am going, but you are selling only 15%. So how are you affecting any price whatsoever? And the oil companies are getting away with it because in Alberta and Saskatchewan that's what they are paying…The province of Alberta has a study, that has sat on a shelf, for years….and everybody in the province knows about the study, and I know about the study because I have friends there. And the study says, we're giving it [The Crown-held money from mineral rights] away. We need to raise the rate (Participant CE 1212).

This statement is a passionate reiteration of how both land rights and royalties' rates exercise power on the selling of the minerals (oil). The participant is giving a critique of the structures that speed up the

extraction of oil from the provincial ground by incentivizing companies to the extent that the provinces themselves are losing revenue. However, this critique does not consider in any way the legitimacy of land rights or royalty rates – the figurations are so crystalized that the solution to the problem of the Manitoba government shortchanging its citizens is to, "raise the rate" (Participant CE 1212).

Even Indigenous communities in Manitoba have little recourse but to get "in the game" (as one participant called it). However, one approach to land rights and royalty rates on production of oil by the Gamblers First Nation was unique. As mentioned, in more depth in Chapter 4, Gamblers First Nation first sued the government of Manitoba for licencing wells to an oil company too close to the border of their reserve (Kubinec 2015). In this case, Gamblers First Nation appears to be responsible for both surface and mineral rights for their reserve. This is the only time that I could find where a lawsuit was brought against the Manitoba Government (in this case the Petroleum Branch) regarding the licencing of a well (Kubinec 2015). They also found an oil company willing to work with them and become shared owners in extracting the oil on their reserve (Dacey 2017). Chief David LeDoux of Gamblers First Nation explains how it took a while to find a company that was willing to let the First Nation come on as co-owners where they will receive royalty rates, plus 40% of the profits as a co-owner. He states in the CBC News article, "It's going to change the way we do business with First Nations across Canada because they will have a major role in their oil production, their money management, so it's a benefit that I see very beneficial for Elcano and Gambler working together" (Dacey 2017). The author also states there will be a licencing process through the Manitoba Petroleum Branch, so I asked the government about licensing a well on First Nations reserve land and received this reply:

> So, we look, that one took us a little while to figure out what to do about it because it is on First Nations…it is on, like its right on the reserve, and we thought well, shouldn't we be consulting but they are a partner and so…Um, that was a bit of a funny one, in that sense (Participant MO 0628).

It was unique because it does not often happen and actually, cannot happen because, although there are other First Nation reserves in the area, none of them have explored for oil so far, though the Birdtail reserve may be exploring in the future. In most of the rest of the geographical area of southwestern Manitoba that has oil, the mineral rights do not belong to Indigenous or Métis people even though the province has a constitutional duty to consult where there are Indigenous and treaty-based rights related to traditional areas. The regulator speaks to this here:

> So, if we are the Crown, like because it's our juris(diction)… if we are making a decision like that could impact Treaty Rights then it's the Crown's obligation. Like, Provincial Crown's

> obligation to consult. And so, there are cases, yeah, where we will, you know, ah, where we will do notification at a minimum, if there is a well or whatever and we will give 30 days and if we don't hear anything then we will go, ok. So far, we haven't had to do more, like I said…, because I guess, because of the small footprint and it's not impacting, sort of, if we did anything that was bigger, that might impact like hunting or that's right within, you know, sacred space. Like we wouldn't license something if we knew that it was, you know, there's certain places that have been like ceremonial sites…. [later on] … there is not a lot of, I don't have a map in here, First Nations that are close the oil patch. You know, we have Gambler, there is Birdtail. Mostly its Métis, kind of traditional territory (Participant MO 0628).

Traditional territory does not establish the minerals rights for those lands, though there is some duty to consult (this consultation requires a 30-day window, which in most metrics would not be considered meaningful in the way the legal requirement is intended). The above quote indicates that there are few moments in need of consultation because of the small footprint of this type of oil extraction, particularly relating to the more recent use of horizontal well drilling technology. At the time, I was also taken up by the figurative practices of land rights and I thought the main questions should be about whether or not an Indigenous community should be consulted, or should be interested in developing oil on their own. These are highly important questions, yet they obscure the naturalization of land and mineral rights. As Coulthard (2014) warns, conciliatory political practices can have the effect of re-establishing the very conditions that disinherit and dispossess Indigenous presence and land relations. However, one participant said something I found interesting and I encountered similar framing in a couple of other instances:

> But that's a perfect case, right? [Speaking of the Gamblers First Nation] Its one of those, hey well they are not anti-oil, but they just want to be treated fairly. Right? So that the... I think the First Nations and the farmers they need to unite. And go forward as one voice and try to fix some of that (Participant OAR 2711).

The idea was that surface rights owners needed to band together, that they had something in common, and in some ways, they do have things in common, such as processes of extraction that enact the slow violence of dispossessing people from the land. At the same time, this also ignores recent history where geographical relationships in the prairies were created to establish settler-colonial presence by violently dispossessing Indigenous people from the land (Toews, 2018). The current erasure of Indigenous and Métis peoples is located firmly within the figurative and very material practices of land rights and royalties, which I explore more in Chapter 7.

6.3. Summary

In this chapter, I have attended to how the figures of land rights and royalty rates establish and continue to create the place of oil in Manitoba. Within a CPI lens I drew on material-semiotic methods of figuration for this intervention, as a way to highlight some of the social and material aspects of place-making practices. As Wilson suggests, "Figurations do this work of witnessing – acting as a pivot to draw in the various contingencies and contradictions of knowledge-making practices" (2009, p.. 505). There are other figures that we could attend to that create the place of oil but I chose these particular two (rights and rates) because they were consistently mentioned in my interviews and reveal many of the spatial-temporal rhetoric and practices inherent the place-making of oil in Manitoba. This rhetoric and these practices of place making include two foreclosures: a temporal closure and a spatial closure. However, these are linked and intertwined in such a way as to make questioning them almost unimaginable. Coulthard's (2014) work speaks to the way that settler-colonization is seen to have occurred in the (spatial-temporal) past so as to acknowledge it, but continue to produce relationships where colonial violence continues in liberal democracies such as Canada. In speaking to my participants, a similar move occurs where land rights (surface and mineral) are acknowledged to come from the resettlement of the prairies, and yet to also be seen as naturally occurring and the unquestionable structure with which to determine ownership and thus, payment for the use of the land to extract oil, or payment for the oil minerals themselves. These practices of ownership and negotiating of value became even more entrenched due to technoscientific practices of fracking. The addition of horizontal well drilling creates situations of complicated entitlement by literally cutting across the land. These situations of entitlement perform through the determining and paying of royalties (where the word in itself is material-semiotic signpost of ongoing connections to empire-building) where the location of the underground horizontal well must be known and then calculated for each mineral owner to determine the percentage of ownership of mineral right. This "figuring out" displays a spatial rhetoric of making sense, to use Sica's (2015) language, a production of ways of knowing land that goes uncontested or unquestioned because the focus of its complexity is not on its origins but rather on the technoscientific process. There is a need to simplify it, or refine it, but not to question the very origin of the fact there are so many owners, or the geographic improbability of determining ownership on oil trapped in shale fields hundreds of metres under the ground.

Chapter 7: Place as Organization

As an ongoing place-making practice, organizations, created to challenge practices of extraction in Manitoba offer another moment to explore "places as themselves mobile" (Tuck & McKenzie 2015b, p. 635). Organizations are extremely mobile places as they are literally a collection of people who group together to work towards an agreed purpose, or set of purposes (Wong & Lockie, 2018). The organizations I encountered did not have an actual set location, like a main office site, but one of them does have an online web presence. However, they are located in that the members live in the area and it is their experience of living with oil extraction practices that draws them to meet and work in various ways. Organizations that in some way contest the practices of extraction are extremely useful for looking in detail at how a place operates on a day-to-day basis, because they encounter the challenges presented by living with oil. This relates to a CPI lens asserting that places are "performed and (re)shaped through practices and movement of individuals and collectives" (Tuck & McKenzie 2015b, p. 635). Organizations based in the workings of a place demonstrate this inherently. These organizations came into being as places within the place-making of oil only because of extraction in southwestern Manitoba, in order to improve some aspect of how it affects the inhabitants who live close to the physical infrastructure.

The other CPI aspect that I engage in this intervention is to contest the naturalization of settler-colonial forms of life by drawing on a framework from Rob Nixon (2011) called "slow violence." Both of the organizations I encountered and reveal here speak to the realities Nixon (2011) theorizes as an ongoing mode of violence that "occurs gradually and out of sight, a violence of delayed destruction that is dispersed across time and space, an attritional violence that is typically not viewed as violence at all" (p. 2). The violence Nixon is focused on is environmental toxicity and degradation that affects communities (both human and non-human) across time and space, and is often exponentially compounded as it proceeds in that the lives being affected get slowly but increasingly more unable to cope with the negative effects and costs. A CPI lens suggests that settlers, in a settler-colonial place-making system, eventually also experience the dispossession of the land that has affected Indigenous peoples for generations. This is suggested by Kim Tallbear, when she writes that settler-colonization harms not just Indigenous peoples, who have suffered the violence of colonization for generations and understand that the dispossession of the land is *an ongoing violence* (Tallbear 2019). Tallbear and Nixon speak to the narrative mechanisms that work in concert with material effects of ongoing violence of orchestrated capitalist (or neo liberal) cost/benefit analysis. The costs are born by those who do not see

much of the benefits (Nixon 2011) and settler-colonial lives lived at the expense of "supposed democratic promised land of settler mythology [which] is in everyday life a nightmare" (Tallbear 2019, p. abstract).

One of the main narrative mechanisms at work and visible through the organizations I encountered is the ongoing struggle to have one's concerns acknowledged as legitimate by industry or government bodies tasked with regulating oil extraction. In this way, slow violence operates by stalling and/or inhibiting efforts to collect and present sufficient information to make a case. This lack of capacity to produce information about one's place, creates an inability to advocate in such a way that produces significant change in oil extraction practices. In my conversations with participants, there was a marked confusion in that the demands of the organizations were seen as being reasonable. In a liberal democratic system, citizens have the right to use authorized and legitimate ways to contest issues they have with the industry's practices. This 'reasonability' becomes a material-semiotic mode of slow violence in that these participants are, in effect, denied the reality of some aspects their own lived experience. This, in turn, leads them to doubt the intentions of the government to be a care-taker of themselves and the land. In my field work, I encountered two such organizations; the Manitoba Surface Rights Association (MSRA) and the Group Advocating for Safe Petroleum Emissions (GASPE). All members of both organizations live and work in southwestern Manitoba and many of them have worked for periods in oil and gas.

7.1. Manitoba Surface Rights Association: "We just want what is fair"

On a hot summer day, I drove to Virden and parked on the main street of the small town, beside the opera hall. I walked up to a square building overtaking the whole corner. After meeting my two contacts, I was settled into a chair with a bottle of water in a small office and we began a congenial and lively interview that lasted more than two hours. The opening statement was repeated throughout the interview:

> Ok. So, the reason the Manitoba Surface Rights Association (MSRA) exists today is because the shortcomings in regulatory oversight. So, I think that, if the regulator did a better job, then the MSRA probably wouldn't exist (Participants OAR2711).

This association is a group of volunteers who live in the area and offer information and advice to surface rights holders. I found them through their website (http://www.manitobasurfacerights.ca/), which gave a variety of information, in particular a list of FAQs. These included questions such as: "Do I have to

allow the oil company on my land?" and, "What are some things to have set out in a Surface Lease?" (Manitoba Surface Rights Association, 2020). They state their organization to be the following:

> The MSRA was formed in 1978 and has been instrumental in ensuring that Oil and Gas Surface Rights are dealt with in a fair and equitable manner. The MSRA membership is comprised of Manitoba landowners who have oil and gas related surface leases on their property (Manitoba Surface Rights Association, 2020).

Most, but not all of the members live in southwestern Manitoba, and one of the members invited me to Virden to tell me about the work the MSRA does and why. This participant's history with this association is personal as it was their father and a group of other landowners and lawyers who advocated and lobbied for *The Surface Rights Act*.

> P1: The association came about in order to get, and again this was my dad and one of his peers in the 70s…, but historically the work that dad, that Bob Andrew and Wallace Gabriel did was effectively to get Surface Rights legislation here. The first hurdle was getting the legislation. So, you had a bunch of volunteers that had to battle a highly organized oil and gas industry in order to get the legislation into place. And then once it was in place then there was a battle to get the Surface, the first Surface Lease hearing to find out how much, uh, what the compensation was. What is fair compensation. So those were the battles of the 70s and the 80s.
> …. The current battle for the MSRA is just how the legislation is bad enough that the oil and gas industry don't want to touch it because they can manipulate, they can substantially manipulate the legislation and the board. Um, which makes for some interesting ground. Not easy to fix that whole environment. So those are the conversations. Most of the conversations inside the MSRA are strategic and tactical where, uh you, because you almost have to do all of this stuff in the courts or in the tribunals or in the boards. All of the work has to happen there because the oil and gas act eliminates any free negotiation. So, the oil and gas companies have the hammer. There is still no way to have open transparent negotiations with industry as a landowner….
> M: So, just to be clear, with the oil and gas company they sort of offer you and there is not really much you can change as a landowner with that.
> P1: No
> M: And if you did want to change it, you'd have to take it to the Board.
> P1: Right. And they are uniformed and ill equipped (Participants OAR2711).

These themes about needing fair compensation for surface owners and having to put in volunteer effort and energy to try and make changes against a well-funded industry were repeated with sobering examples throughout the conversation. It became apparent that *The Surface Rights Act* (C.C.S.M. 1987, c S235), assented to and implemented in 1987 which created the Surface Rights Board, was an attempt to give people who had surface rights but not mineral rights a way to hold the oil companies accountable. In practice, however, it usually failed to achieve the desired effect;

> So, over my many years now with surface rights, which is probably pushing 13 or 14. Um, landowners have uninvited industrial users on our farmland. They pay us agricultural rates and they leave us the industrial wastes (Participants OAR2711).

This quote about agricultural rates and industrial wastes is repeated on the website banner for the MSRA and, as my participants explained to me, it is about the need to receive enough money to make up for the loss of agricultural land. It is also about tougher regulations and regulatory implementation that are able to force the industry to cleanup spills and hold the oil companies to the conditions of the lease.

It became evident, however, that one of the main problems is not actually tougher regulatory actions or more compensation but the "uninformed adjudication" of the quasi-judicial Surface Rights Board that decides matters related to surface rights. This is essentially a court of law where a landowner can request a hearing to decide matters that cannot be agreed upon between the landowner and the company. The Surface Rights Board consists of at least three members who are appointed by the Lieutenant Governor and then serve indefinitely. *The Surface Rights Act* (C.C.S.M. 1987, c S235), has no stipulations for the members, other than there must be at least three, and the Lieutenant Governor, who chooses these board members, is appointed by the Prime Minister of Canada. There is no indication of any criteria, or factors that must be taken into consideration for these appointments. This is why, according to the MSRA, these appointments are done arbitrarily and not in the interest of the landowners, partly because they aren't from the area:

> …part of the struggle in Manitoba is that there is such a small part of Manitoba that is affected by the oil and gas industry. And, you know, there's, when you go to the politicians, they don't understand it because they don't have it in their backyard… even the people they put on the Surface Rights Boards, who are there to adjudicate, none of them have experience being landowners in a part of the province where there is oil and gas operations (Participant OAR2711).

I learned that this lack of experience, or inability to understand the issues of farmers and the technicalities of oil and gas infrastructure and operations, creates situations that completely undermine the credibility of *the Surface Rights Act* and the Board as an institution that can help landowners. This lack of credibility was even noted publicly in a local newspaper in 2015 during the Jorgensen case, which was a case that received considerable regional press (Eger, 2015). My participant attested to instances where Board members have fallen asleep, Board members asked company lawyers what would be the best thing to do, and where lack of knowledge about current extraction technology ended up in

decisions that were inappropriate (Participant OAR2711). Even more frustrating to the members of the MSRA is the following:

> This is a quasi-judicial board, this is about trying to come up with something that is fair to the landowner and its ah, so it can be a real kangaroo court. In Manitoba, unfortunately, we can't use the courts. We can't even go appeal to the Queen's bench. If we appeal, we go right back to the Board (Participants OAR2711).

I followed this up in a conversation with a Manitoba-based environmental lawyer and he explained that a landowner could take legal action to the Queen's court but it would be very difficult to do so. The legal fees alone would be daunting and there would have to be evidence of wrongdoing or personal injury, which would have to be provided by outside experts. The company could also be taken to a small claims court if, for example, they were not paying the landowner the amount agreed to in the lease (Participant NLP1512). However, there were other complications, particularly the difficulty that a landowner would have to pay for a lawyer or being compensated for the money spent to have their case heard, explained by this participant:

> P2: If you go to the Board and if you get within 10% of their offer, then you don't get to claim expenses.
> M: What does that mean?
> P1: So, the cost to do the, it costs to go to the Board, by the time you've paid your legal fees and all that and specialists, because you've got to…even though we are the experts, because we actually are the only ones in the room that farm around those wells. We have to bring in third-party experts to explain, what we know, what we do every day. So, if you spent 50, 60, 70, 100 thousand dollars getting your case in front of the board. If what the board awards you is within 10% of their offer, you don't get any of your expenses…. So, we are two years in…The lawyer that is on the other side is a $300 dollar an hour lawyer, but the farmer or the landowner they will get $25 bucks an hour for their time, kinda thing. Um, when it comes, so you will have $100,000 dollars into it and then the week before you go to the Board, the oil and gas company will give you another offer. That is probably within 10% of what you're gonna get from the Board. So, for the last year and a half we have been working on a number that is 70% and the week before we go to the Board, they'll offer us 90%. That goes into a sealed envelope that the Board gets. They open it after they've made their awards and you don't get your $100,000 dollars of expenses.
> M: Ok. So, there's very little incentive to fight for…
> P1: Yeah. Lotta guys don't have the fight. They don't want the fight. So, it's a divide and conquer (Participants OAR2711).

Once the Board has rendered a decision it is final, it cannot be appealed. When the oil company manipulates proceedings and undercuts landowner legal agency, as described in this quote, the end result is disheartening for other landowners who might not be happy with their lease or with an offered lease.

According to this participant, the process favours the intentions of the company, or the operator, by having Board members who know little about how extraction works and/or the realities of farmers.

The difficulties for surface rights holders became more visible when I realized that *The Surface Rights Act* and the Board are only there to negotiate entry to companies to extract the oil; there is no legal recourse for a surface rights holder to say no.

> P2: If I protest, and I don't like what that new well is going to look like? You are going to go, the oil and gas industry will go to the very Board that's there to protect me as a landowner and they will get, um, they will go to an entry hearing and within 30 days they will be on my land, doing whatever the hell they want. And they will have a lease, I will get a lease that uh, is drafted by the Surface Rights Board. So, I've lost all my rights.
> M: So, its forced?
> P1: Its forced. You have no rights. So, for people from Winnipeg I put it this way…if you had oil under your house, what they can do is they can come into your front yard or your back yard and drill a hole and start pumping. And the best that you can do is to put them off for 30 days (Participants OAR 2711).

This is why in the minds of many participants, the fight for the MSRA is about creating visibility with politicians to try and change the legislation (in this case *The Surface Rights Act*). However, this effort can easily be derailed. For example, there was an outspoken landowner who had experienced several issues with the oil and gas industry and had a history of hearings and of being in the media, while also preparing another hearing about oil spills on his farm land. However, there was a tragedy, this man, Carlyle Jorgensen, died in a small plane crash (a couple years before my field work) (Participants OAR2711). After the crash, according to my participants, the hearing did not happen and the issues he was making public have been dropped. When the loss of a single person means the whole case is dropped, this indicates how the responsibility to contest oil and gas practices ends up being downloaded by the government to individuals.

After learning about the MSRA, I attempted to contact the Surface Rights Board, to no avail. I also attempted to attend a hearing. However, there were none, or if there were any hearings, they were not publicly accessible. They were not posted on the Petroleum Branch website at all after 2017 and when I asked the interim director about it, this was the response:

> M: I was hoping to talk to somebody [on the Surface Rights Board] or even go to a hearing but they aren't online.
> MO: There hasn't been any. And (M: ok?) we haven't had any like, even though…we haven't had the administrator there, you know, we've got still the avenue, there's been a phone number and a way to receive any complaints and if there was one …we would have to have our staff here, kind of organize it. But now, thankfully, we have somebody who is getting, you know, starting. She's certainly not as knowledgeable as the previous administrator was but she's

> starting to get up to speed. And she has other jobs too, it's not a full-time job, but there hasn't been a hearing. There hasn't been a request for a hearing, so…I think the industry's pretty mature now. What you will get when we do get hearings, is some of the smaller companies maybe. But if you got like a Tundra or Corex or one of the bigger companies they are, they are not going to want to go to the Surface Rights Board so if a landowner is upset, they will find a way to work through it (Participant MO0628).

Since this interview, I kept checking the website and, to my knowledge, they still are not posting upcoming hearings. There was one hearing in 2019; a report was posted after the decision was rendered, a decision which grants the Right of Entry to the operator (Surface Rights Board of Manitoba, 2019). This lack of transparency about upcoming hearings, makes it difficult for a researcher, such as myself, or perhaps another member of the public such as a journalist, to attend what are considered public hearings. The only way to know about a hearing in order to attend, as far as I could deduce, would be to have a relationship to someone who knows a hearing will happen. The answer from the Branch, in regards to the lack of information about the Board hearings, illustrates a serious lack of oversight, and a belief that most of the oil industry is "mature" enough to work with the landowner to make them feel satisfied. This action puts the onus on the industry to operate fairly, and positions the Surface Rights Board and the Manitoba Petroleum Branch as bystanders, who mediate only when a landowner has the time and energy to mount an official complaint. There is also an indication that the inability for me to access these hearings is due to both an administrator that retired and was not quickly replaced and "luck" that no landowners brought any cases to the Board. This suggests a common place-making practice evidenced by other research on community-based fracking organizations, where bureaucratic lack of capacity works to keep the public away from any locations where there is contestation of oil industry practices (Wylie et.al. 2017; Wylie 2018).

The work of the MSRA to help educate landowners and negotiate small changes in how an oil company enters the land to access minerals is curtailed by a lack of knowledge of those in Winnipeg who make decisions on the Manitoba Surface Rights Board. Strangely the people who implement these decisions (the regulator in Virden and the oil companies), live with these decisions (the landowners), and contest these decisions all have coffee together as friends. I came away with a sense that this is a common and fairly acceptable way to live in an oil patch.

> …long-time friend of mine, Keith (the previous director of the Manitoba Petroleum Branch). But, you know, you ah, you know his job of director was, I mean they could only go to this point. Then when it came to all of these other landowner issues, there is no regulator and there is nobody there to enforce them. There is nobody there. These guys, so Keith and his team, they only go to the point where it's there to promote and support the oil and gas industry. So, how can

you be the hammer? If part of your job is promoting the oil and gas industry? (Participants OAR 2711).

This final comment refers to something set out in Chapter 4, regarding the situation where the Manitoba Petroleum Branch is the sole decision-maker regarding licencing oil and gas extraction infrastructure in Manitoba. They consult about environmental and Indigenous issues, but the director is the only one with the power to approve a license. Since the mandate of the Petroleum Branch is to promote and regulate the oil industry, it was stated a few times by my participants, the MSRA as one example, that this is a clear conflict of interest. This question, about the conflict of interest held by the Manitoba Petroleum Branch was asked by the next organization who worked to change the legislation and practices around how oil and gas works in southwestern Manitoba.

7.2. Group Advocating for Safe Petroleum Emissions: "We just want it to be safe"

The acronym GASPE (Group Advocating for Safe Petroleum Emissions) was the first indication of a group that I found on a legislative Hansard from the year 2005 in relation to Bill 21: The Amendment to the Oil & Gas Act (Manitoba Government 2005). I had been trying to understand a webpage on the Manitoba Petroleum Branch website that referred to an issue with "Air Quality" (Manitoba Government 2001) and Tilston, Manitoba. During my search, I had been led to Bill 21 and, eventually, a group of concerned citizens who arrived one evening to the Legislative building in Winnipeg in 2005 to speak on behalf of the amendment being passed. It took some time but eventually I was connected with the key members whose names I had read on that 2005 document and I arrived, with my six-month-old baby and partner, at a small farmhouse in southwestern Manitoba for a group interview around a kitchen table. This was a group of neighbours whose experiences of oil in Manitoba had catalyzed them to act and also brought them together so closely that they could finish each other's sentences. In the space of three hours they cried, laughed and shared their memories and stories with me.

7.2.1. The Creation of GASPE

We thought the government would look after us (Participants CB 1920). We did. We thought that the oil industry would look after us. You know, would not do anything that's going to harm anybody (Participants AW END 1920).
That was the frustrating. I was so naïve I thought, we would go tell our story and everyone would believe us, and we'd get something done (Participant AJ END 1920).

The interview started off with sorrow, some tears and a statement of betrayal. AW[8] warned me, "I was going to say, this is going to be tough for CB and CL" (Participants AW END 1920). She was referring to two of the members around the table, a couple whose parent was instrumental in linking the H2S gas from the battery site to the sickness being experienced by their cattle and their bodies. This was also the couple that made a tough decision to move themselves and their cattle away from home after their eldest son was knocked unconscious by the gas. The decision to move came about after a slow and deliberate process of putting things together: the information about the effects of H2S experienced by people elsewhere in Canada and the USA and the couple's actual everyday experiences. AW explained, "Took a while to get some of us on board because, you know, it was kind of bizarre… so there was a kind of a period of time in there, years actually, before we all caught on. But then it was like, ok" (Participant AW END 1920). The 'ok' moment for CB and CL occurred after a couple years where they struggled with weakened cattle, with higher-than-average miscarriages in the herd, and with regular sickness in their family. "The year we moved away from home, our kids…we just had two living at home then….and our doctor visits went from 43 to 13" said CL. "In a year?" I asked. "Yes…and our kids were always on antibiotics" she told me (Participant CL END 1920).

The context for these realizations occurred during a time in Canada and the USA where information about H2S gas was increasing. The gas was becoming more of a situation that Li (2015) describes as a "matter of concern" (from Chapter 5) to populations, where there is a perception of instability and communities are catalyzed into action due to the contestation of the facts. One participant I spoke with pointed to mobilization of communities around large-scale hog farms in rural Manitoba in the late 1990's (Participant KLE 0819). These hog farms were sites where large amounts of H2S were produced and it could travel. According to my participant, municipalities were catalyzed to push back on provincial changes in regulation that would allow these farms to be set up in a few different places across Manitoba (Participant KLE 0819). This was also during a time when some activists in Alberta (such as Weibo Ludwig and Jessica Ernst) were receiving attention for their actions to contest fracking operations. The author Andrew Nikiforuk (2014 & 2015) has written books detailing the story of both of these people, who struggled in many ways to draw attention to the process of multi-stage horizontal well hydraulic fracturing as a matter of public health concern. Weibo Ludwig was an activist in Alberta who become frustrated by the activities of oil and gas extraction around his home and took action starting in 1996 to vandalize oil company property, including the bombing of a Suncor site (Nikiforuk 2014).

[8] All of the participants' names, or acronyms I use, have been changed from their real names to protect anonymity.

Ludwig became a pivotal figure in the contestation of oil and gas in Canada, particularly fracking of sour gas wells and one of my participants from the GASPE group said he came and visited them in the late 1990's, early 2000 when they were also receiving media attention for their actions. Ernst's story is of a legal battle where she sued a company for contaminating the aquifer during fracking operations and later also the regulatory body of the Alberta provincial government for withholding information that would help her make a case (in particular baseline data on her water well). Ernst was a landowner and rancher who also did work for oil companies but eventually quit in protest and over concerns that she could light the water from her water well on fire due to contamination, she said, that was caused by fracking practices nearby. Her battle and her work to advocate and share her story widely has, in fact, caused other jurisdictions to place bans or moratoria on fracking practices. However, in her own case she has spent hundreds of thousands of dollars and recently had her whole case dismissed by the Supreme Court (Nikiforuk 2021). Essentially, she has been unable to hold the company or the government to account for their actions that caused considerable health concerns for herself, her neighbours and the animals on her ranch (Nikiforuk 2015 & 2021). So, the GASPE group was influenced in various ways by these activists in Alberta and, relating their experiences to the lived experiences of these people, learning better ways to organize. However, they also sought to distance themselves from appearing or being such radical activists.

So, in the late 1990's, the group was small but linked together by their shared experiences living with and learning about H2S in their environment. The reasons they arrived at the creation of a not-for-profit organization called GASPE were varied. There were the immediate, sensory experiences. AJ told about two different times when he was knocked unconscious by the gas while working for an oil company at the battery. The first time he treated it like a silly accident, and his wife, a nurse at the local clinic, did the same. The second time, however, he almost died.

> AJ: That day I opened the hatch to the tank and, I don't know what happened after that. My brother was at the battery and he came up and I was laying up in the catwalk… [later at home] …I got out of the truck at home and, walked in the house, and down I went again, he said. Just, I went over again. And he says, they took me to the hospital. Second time I, it was different… (Participant AJ END 1920).

As an oil worker at the battery with his brother, he also remembers clearing dead birds off the top of the tank, "...and virtually every morning you'd throw about five or six dead birds off" (Participant AJ END 1920). In fact, it was the experiences of the animals, in particular the cattle, that really convinced him and a couple of the others. There were more instances of miscarriages, deformed calves, and they

wouldn't put on weight, "CB just kept saying, 'What am I doing wrong?'" (Participant AJ END 1920). However, the clincher for AW was the connection between her body and the monitor at their neighbour's house.

> It was B____, yeah come down and got me one day and says ok AW you are coming to my house. Because I was, I knew, I probably knew something was going, happening, but I was skeptical and if, if I was, I need to have a little bit of proof or something to, yeah. I mean you can't just say you are having a heart attack because you got a pain in your chest, eh? Something has to tell us that. That was, I guess, my thinking and he took me up to his house and his monitor was being silly. It was really being silly, and my head always seemed to be able to tell me when there was nonsense going on and, instantly I was like. Oh! Shit there is something in this house (claps hand down on the table). It just and, if he hadn't have done that I would have probably still been wandering around in a fog, in a daze thinking well you know, I guess this [being sick] is how it is (Participant AW END 1920).

This connection between information about H2S, the readings from an H2S monitor, and the feelings experienced in her body that had become sadly familiar to AW, was enough to convince her of the gravity of the situation. She uses the phrases, 'being silly' and 'nonsense' to indicate moments when the device would be reading higher than safe parts per million amounts of H2S gas in the air while her body also felt out-of-sorts, unwell, or strange to her. The use of these words also gestures to the continued lived experience that, in effect, did not make sense even while receiving evidence that it was in fact a reality.

The group spoke to the H2S experiences where they began to learn the topography of the area from the way the wind usually blew to the areas or slumps of land where the gas would settle. They would map the conditions and correlate them to their own bodily conditions, becoming, as they would say, their own detectors. This was a valuable practice, which they would use to begin a paper trail of complaints to the local government office of the Petroleum Branch. The four people around the table and others around them who were part of the network, when they were in the vicinity of the battery site, would call in complaints, "if you ever thought you were getting gassed" (Participant AW END 1920). It was important to know how H2S made your body feel and to be able to connect the feelings with where you were at the time. Once these neighbors began to do this, their experiences of H2S gas solidified into a certainty that became unshakeable. Even today they know when they are experiencing H2S gas leaking from a battery or a trunk containing oil, water, and gas from a well site.

The weight of evidence, of their experiences, of the H2S detection device, of the animals, convinced these neighbors and so they formed a group and began to try and advocate for some changes

to the battery site. However, they needed a guide, which is where WW stepped in. He was a local reeve but also friend, living nearby but not in the vicinity of oil wells or batteries. He describes being convinced by AW: "I figured that there was something wrong when AW lost that little gleam in her eye" (Participant WW END 1920). WW had experience and connections within the local government and had an understanding about how to get one's voice heard in government. "He was our savior" said CL quickly joined by AW agreeing, "Yeah, he found us an avenue" (Participants CL END 1920). It was WW who suggested creating an official non-profit group, which they cleverly named GASPE or Group Advocating for Safe Petroleum Emissions.

> [We made it a non-profit] to make us seem more serious. That was a suggestion and [the Public Interest Law Firm representing the group] agreed and yeah. You know if you've, if you are an actual organization then you're much more credible to the public, perhaps and, and it did, it served a very (agreement around the table), yeah. I think it did it. It was good. (Participant AW END 1920)

The organizational status gave the concerns a public face and some credibility, in terms of being an entity the government would come to deal with as a group. This acronym also made them easier to find and identify in my internet searches. This organizational status also gave them a purpose and something to work towards; safe emissions. Moreover, it communicated to those who were skeptical that the group was not against oil and gas extraction; "CL: So, we are not against the oil industry, we were (CB: Advocating) advocating (AW: for safe) for safe petroleum emissions" (Participants END 1920). This was essential for two reasons: 1) The Manitoba Surface Rights Association could not help them because *The Surface Rights Act* only applies to concerns with the land, and gases or air quality do not fall under that legislation, and 2) People who organize around oil and gas are often labeled as being against oil and gas in its entirety and sometimes, in one particularly egregious example, seen as terrorists (such as the example in Nikiforuk 2015).

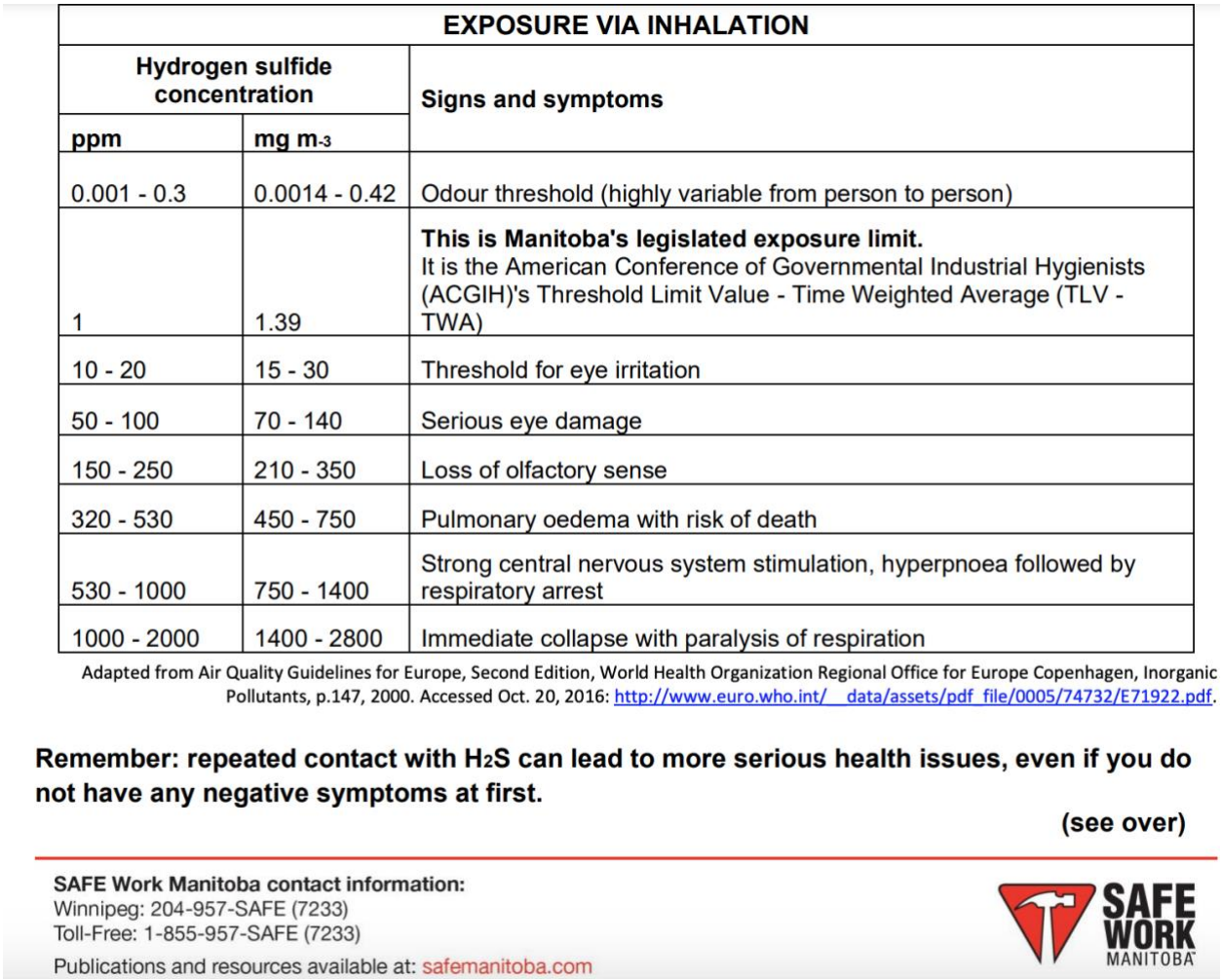
7.2.2. The Actions of GASPE

Once the group had come together and each member had been convinced of the need to act, act they did. The timing of each of these actions was a bit unclear, having happened almost 20 years ago in the late 1990's and early 2000's, so I begin the story with the establishment of the legal non-profit Group Advocating for Safe Petroleum Emissions (GASPE). The group had been working on gathering a paper trail of complaints by those in the group and anyone else in the area of the battery. The strategy was to gather evidence for the regulating body and industry in order to show that there was a problem with H2S

gas leaking from the nearby battery site. The industry already knew there was H2S gas that occurred in the shale oil field and this was apparent due to the fact that AJ and his brother, who worked for the oil industry, were required to carry H2S monitors. It was an aspect of workplace safety. However, AJ says,

> Yeah, but when we worked there though, like 10 parts per million, [was the official amount declared as unsafe] …Like all the alarms they go off. Well, we had them hanging in our truck and they'd go off on the road, before we went in the battery. So, our supervisor at that time, he got them turned up to 15 parts per million, which we really shouldn't even have been working [in those conditions] (Participant AJ END 1920).

There are well-documented hazards of H2S gas and clear safety guidelines, as seen in this image (see Fig. 34) taken from a Safe Work Manitoba Bulletin (Safe Work Manitoba 2016). This bulletin lists the parts per million (ppm) limit that would trigger an alarm, while also listing the symptoms at different levels. However, in the late 1990's the threshold limits were higher (10-15ppm) and, according to my



EXPOSURE VIA INHALATION		
Hydrogen sulfide concentration		Signs and symptoms
ppm	mg m-3	
0.001 - 0.3	0.0014 - 0.42	Odour threshold (highly variable from person to person)
1	1.39	**This is Manitoba's legislated exposure limit.** It is the American Conference of Governmental Industrial Hygienists (ACGIH)'s Threshold Limit Value - Time Weighted Average (TLV - TWA)
10 - 20	15 - 30	Threshold for eye irritation
50 - 100	70 - 140	Serious eye damage
150 - 250	210 - 350	Loss of olfactory sense
320 - 530	450 - 750	Pulmonary oedema with risk of death
530 - 1000	750 - 1400	Strong central nervous system stimulation, hyperpnoea followed by respiratory arrest
1000 - 2000	1400 - 2800	Immediate collapse with paralysis of respiration

Adapted from Air Quality Guidelines for Europe, Second Edition, World Health Organization Regional Office for Europe Copenhagen, Inorganic Pollutants, p.147, 2000. Accessed Oct. 20, 2016: http://www.euro.who.int/__data/assets/pdf_file/0005/74732/E71922.pdf.

Remember: repeated contact with H_2S can lead to more serious health issues, even if you do not have any negative symptoms at first.

(see over)

SAFE Work Manitoba contact information:
Winnipeg: 204-957-SAFE (7233)
Toll-Free: 1-855-957-SAFE (7233)
Publications and resources available at: safemanitoba.com

SAFE WORK MANITOBA

Figure 34: Safe Work Manitoba H2S Bulletin and Table on safe thresholds, 2016

participants, enforcement of these guidelines was much less strict. The group also attempted to gather evidence that the gas traveled further than expected by industry and also maintained higher than safe parts per million levels at locations such as the homes of nearby inhabitants. H2S does not remain in the body in a way that can be tested, so a person experiencing the effects of H2S gas must be their own witness to the effects of the gas. The inability to test for H2S exposure created a situation where the evidence of H2S exposure put forth by the group and others in the area, who sent complaints to the Manitoba Petroleum Branch and the company, was questioned and undermined as being inaccurate. The inaccuracy of the information was based on previous studies and data collected by industry and government that suggested people living near to battery sites should not experience H2S, which was contrary to the findings of the GASPE group. The industry and the government, drawing on information held by the government on the acceptable levels of H2S, were able to dismiss most of the concerns of GASPE, even while making some changes to the practices of the battery to attempt to reduce the amount of H2S leaking from the site. The company that owned the battery site changed a few things. They put a fence around the battery site with a sign declaring, "Do not enter, Poisonous Gas Area" (Participant WW END 1920), and later installed a higher stack (the chimney that allows the gas to escape), and an incinerator to burn the gasses more thoroughly before they were released into the air. Yet this was only, as WW put it, "To get one step ahead of us, they put that big stack up. (AJ: Yep) And made a big issue about that, about how many 100 thousand dollars they spent on the battery (general agreement)" (Participants END 1920). The contradiction at work here, related to the theory of slow violence (Nixon 2014) is that, the concerns of the people in the area were acknowledged by the fact that the company made material efforts to limit the amount of H2S coming from the battery site. However, at the same the people in the area were made to feel as though the company also made a 'big issue' about how much money they spent trying to make it safer. The group felt as though they had been placated and were supposed to stop complaining due to the efforts of the company, however, they were still experiencing the negative effects of the H2S gas leaking.

One thing did occur directly as a result of industry and government reactions, or lack thereof, to this series of complaints. The group became fed up with the delay tactics and lack of acknowledgement. On their last day of work, AJ and his brother - who had quit the oil industry - staged a blockade at the battery site;

> AJ: It was my brother and I were operating but we quit and the last day we quit, we decided to, we may as well… (something unclear) …I guess that was it. So, we ordered a truck in and, then

> blocked. And you and I took our tractors over and blocked the road CB and, just to try and get someone to listen to us. It was frustration (AW: Plain and simple) (Participants END 1920).

The blockade was supported by their neighbours; "Our local community backed us (Agreement around the table)" said AJ. It was in 2000 or 2001 they said, and it was out of, "absolute frustration. We ended up, we just left them there [speaking of the blockade] until we had some Tundra [industry officials] and some government guys there and, yeah." (Participant AJ END 1920). After that confrontational episode, the government took interest and word got out in the media about GASPE and what they were attempting to do. It was because of this notoriety that they started receiving support from all over the province/country, anonymous letters and phone calls from people, including other Manitoba oil workers, sharing similar stories. People came to interview them and write up their stories; a book was even written and self-published (though they were unable to find me a copy) catalyzed by the efforts of the group's work.

GASPE also worked with the Public Interest Law Centre in Winnipeg to collect a Statement of Facts for a lawsuit. They pulled together their families' health records and any other information to try and link the poor health of themselves and their animals to the H2S gasses leaking from the battery site. In tandem with these efforts, they had enough government officials on board to get an amendment to *The Oil and Gas Act* drafted and placed before the Standing Committee on Social and Economic Development on May 3rd, 2005 (Manitoba Government 2005).[9] They gave testimony before this committee, recorded in a Hansard transcript of the legislative proceedings, to argue for why an amendment was needed and what it would do for them. The main components of the Amendment would reclassify battery sites to a different "class" or type of development that would trigger a full environmental assessment as well as an arms-length, third party public inquiry board that would be responsible for hearing community complaints and organizing on their behalf. In transcripts of that evening of May 3, 2005, there is agreement by GASPE members as well as the oil industry that the Manitoba Petroleum Branch was similar to the "fox guarding the henhouse" (Manitoba Government 2005). There was an obvious conflict of interest that the Amendment would attempt to correct.

[9] One of the important aspects of the amendment would be a change to the environmental standards applied to Oil and Gas extraction in Manitoba. The status quo of oil development kept *both* the promotion and regulation of all oil and gas development in the hands of the Manitoba Petroleum Branch. An analogy I heard frequently in my fieldwork was some version of the fox guarding the henhouse. It appeared to be a fairly obvious conflict of interest that the amendment would address by changing the classification on battery sites to one that triggered environmental assessment and also created an arms-length inquiry board to investigate complaints – such as those put forward by GASPE and others.

7.2.3. Responses to GASPE's Activities

Many of their activities did catalyze responses from the government and industry, however, it was an uphill battle at every turn, even after gaining support and media coverage. The group described continuous instances of frustration, such as having someone in a government position actually listen to them and then, a short time later, that person would be moved to a different job within government. Indeed, most of their experiences recount instances where they were denied, delayed, and ignored. This is very much in line with other academic research that details the difficulties oil and gas communities have in voicing concerns, being heard, and having the situation change (see for example, Eaton & Kinchy 2016; Malival 2019; Willow 2016; Wylie 2018, Wylie et. al. 2017).

On the Petroleum Branch's website there is a section titled, "Air Quality," which takes you to another webpage where you can access two reports from 2000-2001 on air quality around Tilston, MB.[10] These air quality studies appear to be a direct result of the complaints and blockade of the GASPE members. The studies were only done in the vicinity of Tilston, MB, even though there were battery sites across the southwestern corner and the GASPE members were directly involved in this study.

> CL: They set up the monitors at Bill's and you [referring to AJ and AW's farm], and WW was the monitor police (WW: Yep)
> AW: Yeah, they let WW be the monitor police, the doors were locked (laughter around the table). So that we couldn't tamper with it.
> CL: And they set up a health study, which didn't prove anything. It said, um,
> CB: Too small a sample.
> CL: Too small a sample. The symptoms were, and these aren't the right words but it was conducive to what we were saying, but, ah, it couldn't be proven, because it was too small a sample (Participants END 1920).

The study concluded that there was not enough evidence to indicate that the amount of H2S is a hazard to those living near to the battery site (Kraut 2000). However, it did suggest that the industry needed to take measures to ensure that H2S was not allowed to accumulate to become hazardous (Kraut 2000). There were never any other studies done in southwestern Manitoba. Tundra Oil and Gas, the owner of the battery, also hired someone to come out and conduct their own study of the battery.

> AW: Tundra hired Entec (agreement around the table) to come out and do a study. Says that yep, things at the battery were working efficiently.

[10] There are a few other links but only two of the links on the page lead to reports from the Air Quality study done by a Dr. Kraut from the University of Manitoba. The other links are broken, except for one, which leads to a news release in 2001 about a Western Canada air quality study that was planning to release a report in 2004. In a follow up on this I found very little, only one report which basically confirmed a study design for beef calf-cow herds but no results regarding their exposure to H2S.

> AJ: Was that the Entec guy, they sat up all night and he got sick? He couldn't work the next day because his head, because he had such a headache.
> CB: Yeah (Laughter around the table) (Participants END 1920)

Again, perhaps contrary to the direct experience of the technician, their experiences were denied as not containing valid proof of the existence of high enough levels of H2S to cause the concerns they were alleging. One story indicates the exasperation particularly CL felt regarding this continued denial of their experiences.

> CL: We would occasionally go over to Tundra's office and go and see B__ and ah, we were into this, I don't know how many years and, he said one day: You don't know how hard this is on me or us (laughter around the table). The four of us were sitting there and, usually, …
> AW: Our usually calm and docile CL, (laughter).
> AJ: Palms come down on that table, the whole table bounced about two or three inches off the floor. He knew you were serious then though. (CL: I don't know) He changed his tune after (Participants END 1920).

Earlier in our conversation they told me that the CEO of Tundra told them that, he was sorry, but he couldn't compensate them for their trouble because if he did with them, he would have to with every group that complained to them. Yet, they also, laughingly, told me that their complaining resulted in many other people in the area receiving more money from Tundra than they would have otherwise. They called this "hush money."

The lawsuit against Tundra Oil and Gas, which the Public Interest Law Firm was involved with, provides another series of stories about the group's evidence being discounted. They gathered a Statement of Facts with all their health information and that of their cattle, but in the end most of the evidence was discounted. It was seen as 'hearsay' and taken from the official record. As three of the group recounted to me:

> CL: …that they just kept whittling away so that there was nothing. (AW: yeah). It just basically said our names and,
> AJ: To small a group to take on a multi-millionaire. Like they are just too rich, we can't. (AW: Yeah) And delay it, eh? They just (AW: Oh, they delayed it). Like how many times, they would, we would get close and then they'd switch lawyers. (Yep, and other agreement around the table)
> AW: And we'd have to start again.
> AJ: And we start all again. And it was to their benefit. Eventually, like, they got the oil patch dry (Participants END 1920).

The group told me they went before a judge twice but nothing came of it, and then, they ended up with a lawyer from the Public Interest Law Firm who was unsympathetic to their story and this upset them enough to make them quit trying. Also, as noted by AJ, the battery was closed and so their immediate

concerns dissipated along with the leaking gas. They told me, in many ways, how they had to move on with their lives.

As they moved on with their lives, the legislative work they did to try and amend the Oil and Gas act to change the classification of battery sites and also to develop an arm's length inquiry panel for hearing and dealing with complaints did not move on. As I mentioned at the beginning of this chapter, it was this work that led me to GASPE through the legislative transcription, or record of the committee meeting where Bill 21, The Amendment to *The Oil and Gas Act*, was discussed and later passed. However, even though it was written into a bill and could be found on the Manitoba government website as a legislative document (*The Oil and Gas Amendment and Oil and Gas Production Tax Amendment Act,* C.C.S.M., once assented to, c 034) and on the Manitoba Petroleum Branch under "Acts and Regulations," I determined that it had never been implemented. When I spoke to the Petroleum Branch and the interim director about this, I got this drawn-out response:

> And the reason why it wasn't proclaimed, so, so the act at the time was introduced, but it didn't become law because it wasn't proclaimed, the reason it wasn't proclaimed is because there is a lot of regulations associated with it. So, I have got my (she takes out a large binder), like this is all our acts and regs and so, the oil and gas act have… (flipping through the binder) Sorry, it has all my things, but you know we've got one, like the production drilling regulation. Um, there is a royalty incentive regulation associated with it so, there's a bunch of regs that come under it. So, in order to make some of those changes that were in there… we had to do regulatory changes first. So that is sort of a lot of the times the process that might happen when there is an act with regs. Like there is certain things in the act that…a regulatory change has to happen, which is a different. Which is a different process it goes through Cabinet. …So, the act gets introduced in the house and then, if it's passed, but if there are regulations associated with it to make it, um, to kind of put it into practice. Because the regs end up being more detailed…That is something that gets put through a Cabinet process. So… it goes public in the fact that there is comment on regulations but, the, it doesn't get voted on by the house, it is the Cabinet that decides. So, I can't say why those regs were never done but that is the reason it wasn't proclaimed because the regulations, there were quite a few regulations that had to happen and somewhere along the line, and I don't know why, it didn't get done. And I don't know if it was, if it was intentional. Like if there was something politically, they changed their mind on, or if it was more of a case of the staff resources just didn't get it done and it kind of got… but obviously, there wasn't a lot of push for it to happen. And so now we've got a situation where its 18 years old…. And there is a new government (Participant MO 0628).

In other words, it didn't happen because it was too complicated and there was not actually a lot of interest in making it happen, and now it will not happen at all. The way this was explained to me, as witnessed by the rambling way this quote shows, is indicative of the way responsibility is diffused so thoroughly that it cannot arrive at any one spatial (or temporal) location. When I talked to the GASPE

group about the fact the amendment had not been implemented, they were not surprised but didn't know about it.

> AJ: I think, I sort of doubted it [the Amendment] ever would [be implemented] though. The industry is just too powerful. And I think they can run our government. (laughs)
> CL: Well, they do. Well, ok I am maybe a bit biased there. It seems to me as though, they do. Is that better? (laughs) (Participants END 1920).

After they gave testimony in 2005 for Bill 21, they had started to let it all go and move on with their lives as best as they could, which was easier due to the closing of the well sites and battery.

> AJ: I think that they, they wore us out though.
> AW and WW: Yeah, they did.
> AW: And we had to move on, we (agreement around the table).
> CB Yeah. It consumed our life and life is too short.
> WW: It consumed your life for too long it was, and they played that game. They knew damn well what they were doing.
> CL: It was very smart of them. And that was their purpose (Participants END 1920).

Yet there were lasting effects. One family never moved back and they suffer from increased sensitivity, memory loss, and other ailments that have been evidentially linked to long term low dose exposure to H2S (Safe Work Manitoba 2016; Ecojustice 2017).

7.2.4. Reflecting on GASPE through Public Lectures and Audience Comments

So often topics are from "far away" places so I was most interested and pleased to hear of events around oil extraction and reoccurring impacts on [our own] Province (Audience Feedback, Jan 21, 2020).

As a part of my research, I planned to disseminate some of the findings and get feedback from a public forum to assess whether critical place inquiry could create learning encounters for the public that might allow alternative perspectives, engagement and knowledge mobilization around contentious issues such as oil and gas extraction. This relates to the CPI lens to promote a research ethic of relationships and accountability to participants by sharing what I found and opening dialogue to question it.[11] I was able to do this when an opportunity arose to do two public lectures for the University of Winnipeg; one at the Millennium Library and another at Wellington Retirement Community. These locations are in Winnipeg but drew a fairly diverse audience. The first was more for those who often attend the Skywalk lecture

[11] On this note I also invited my participants to attend and sent the GASPE group and others the Facebook link to the recording of the lecture, again as an act of being accountable to what I had gathered from those participants.

series that happens weekly during the fall and winter. The second was for those who live at the retirement community and who are interested in continued learning. At both of these events I handed each person a piece of paper (and writing utensil) with three questions (see Appendix F). In total, there were roughly 40 to 50 people who attended and I received 23 written responses. I also took note of questions people asked after the lectures and, in the case of the Skywalk lecture, there was a video recording that was posted to the library's Facebook page. As I reflected upon these comments and questions it gave me insight into some of the contradictions and also place-making processes that are still at work.

The story I presented was about oil in Manitoba through the work of GASPE and the medium was a 30-minute lecture with PowerPoint slides. I began by giving a little background into oil extraction in Manitoba and a map to help visually locate the geography of my story. I introduced the Group Advocating for Safe Petroleum Emissions (GASPE) and showed newspaper clippings from some of the actions in the early 2000's. I also told people about battery sites and explained, briefly, how fracking infrastructure works and the need to flare off the gas, containing among other things H2S gas, that arises with the oil. Much of what is included in this chapter regarding the GASPE group was briefly outlined. I spoke about the work that GASPE did to get an amendment (Bill 21) passed, their concerns, and then addressed how an amendment got passed but never implemented. I received quite a bit of response, both verbally after I finished my lecture and then in written response. Many of these responses were a mixture of outrage, despair and further questions for clarification. Of the 23 written responses, almost 70% offered comments about profit over public, or economy vs. environment, such as:

> I was shocked. Another example of the desire for profit comes before all other considerations (Audience Feedback, Jan 21, 2020).
> The main problem seemed to be between the environment and jobs or making money. With jobs and money seeming to be more important…How can one please industry and still protect the environment? (Audience Feedback, Jan 21, 2020).

These two quotes above illustrate some of the statements about profit over people, but one audience member offered a more nuanced response:

> The Manitoba Government had shown little or no stewardship, especially with regards to Bill 21. Why did the MB legislature not address the concerns about the toxic gas and other serious problems? [Also]…Why were the people most affected by oil extraction in SW Manitoba not taken seriously when they expressed their concerns? (Audience Feedback, Nov 13, 2019).

The quote regarding stewardship connects the responsibility for proclaiming and then implementing this amendment as belonging to the Manitoba government to ensure that the amendment was put into practice. In the verbal response after the lecture, I was asked a bit more about what happened and I explained how it is very unclear why this amendment got so far but then failed to be implemented. The idea of stewardship connects to the story of GASPE as a group of people who expected the government to be operating in their best interest. However, this audience member clearly points to the plight of GASPE and the lack of institutional responsibility.

> Injustice. Especially since GASPE was portrayed as [being for] safe petroleum extraction and not eliminating it completely. Therefore, the injustice is in the lack of prioritization of the public's health over, I assume, large company's profits (Audience Feedback, Nov 13, 2019, emphasis from the original).

This audience member also notes the nuance of the group itself, being one that was not interested in eliminating oil and gas, thus the final non-response by the government becomes, to this Manitoban, an act of injustice. This note about profit before people was instigated, according to this following audience member, by my final question and the sharing of my own reflections on the story of the group;

> Your ending question is great because it leaves us thinking/reflecting on your presentation about capitalism and profit over people even when health is being placed at risk (Audience Feedback, Nov 13, 2019).

This concern summarizes something that I struggled with throughout my field work and indicated to me that I had communicated this through my lecture – though without an answer at the time. Other responses, particularly to the question: "What impressions or reactions arise for you…" included words such as: horror, sad, angry, bewildered, and sorrow. People's emotions were strongly worded and indicate an empathetic response, in which people could connect with the story and imagine it as though it could happen to them, displayed in these three quotes:

> [I felt] frustration on behalf of this community and fear if this happened in my community (Audience Feedback Nov 13, 2019).
> It's a sad story…It invokes feelings of powerlessness in the face of powerful economic and political forces…Even supporters of the industry became victims and were not supported (Audience Feedback, Nov 13, 2019).
> I can only imagine how many more peoples' voices are lost in the pursuit of oil (Audience Feedback, Nov 13, 2019).

These quotes also indicate how well the audience understood the story and were able to relate it and summarize it immediately after the lecture. However, this also may relate to how common this story it is

to hear stories about oil extraction in general. This indicates an aspect of how narratives around resource extraction become naturalized. This naturalization effectively removes them from being questionable, where concern can be voiced but it is accepted as part of the "natural" process of extraction, therefore it is accepted.

As I reflected upon these responses through the lens of CPI, and particularly through the concept of settler-colonial futurity (Tuck & McKenzie 2015a), I began to recognize a pattern. It is shocking but also familiar to the audience to witness this story of GASPE in my presentation, where profit comes before public, and economics before environment. I suggest that this is the settler colonial futurity at work in narrative form – questioning and concerned about the health of the people in the story but also feeling powerless. Futurity is a geographical concept that comes in to dialogue with place and decolonization in a chapter by Tuck and McKenzie (2015) on Reconceptualizing Place:

> Futurity is more than the future, it is how human narratives and perceptions of the past, future, and present inform current practices and framings in a way that (over) determines what registers as the (possible) future" (Tuck and McKenzie, 2015a, p. 69-70).

In this argument, ongoing structures of settler colonial displacement are shown to foreclose Indigenous life. According to Tuck & McKenzie (2015a) settler coloniality is a constant geographic movement to erase the Indigenous and emplace settler realities. In other words, settler colonial futurity is a constant closure, bringing into place only forms and modes that help to bring the desirous aspects of settler lives and labour into being. This is done by normalizing narratives about extraction and also about the government's role in regulating extraction to do so in a sustainable way that keeps the land and communities safe. This topic is also explored in Li's (2015) work on mining controversy in Peru. In Peru, the mining conflicts were seen to be natural resource and environmental management problems solved through democratic mechanisms of "accountability" or ways to make sure the industry operates in safe ways that maintain the health of the people and environment (Li 2015). These practices are attempts to make industrial practices safe, while accepting their toxicity. However, in the reality of these communities in Peru as well as in the story of GASPE that I presented, people who began to experience the negative effects of living with oil infrastructure bring narratives of accountability into question. These historic and current relationships create a future in which, the hope is that oil extraction is done in a way that does not harm those living around it. Yet, the reality of the story of GASPE is troubling because the possibility for that future seems impossible and unreachable.

The foreclosure is at work in this narrative, suggesting the door for change in the arena of oil and gas legislation is closed. Perhaps it has always been closed and that is why the story has a haunting familiarity. Indigenous academic Kyle Powys Whyte explains that Indigenous people "already inhabit what our ancestors would have understood as a dystopian future" (Whyte 2017, p 207). The experiences of GASPE carry a familiarity better understood by those who live in occupied territory, who live displaced, and who continue to resist and survive settler-colonial practices as explained by Indigenous author Leanne Betasamosake Simpson (2017). Bruce Braun, a white settler academic who has written of fracking in the North Dakotan Bakken, has come to this conclusion: "As the example of North Dakota reveals, fracking teaches us that fossil capital is not just a particular mode of geologic life, but a fundamentally racialized one, deeply entangled with the racial politics of settler societies, in which the reanimation of ancient fossils benefits few at the expense of many others" (Braun 2019, p 133). I am suggesting here that the audience accepts this foreclosure, because they cannot understand how to open the door to something else, a place where we can move beyond learning into action.

7.3. Summary

The lessons and realities from these two organizations, the Manitoba Surface Rights Association (MSRA) and the Group Advocating for Safe Petroleum Emissions (GASPE), are sobering. They indicate the difficulties faced by those who live with the infrastructure and practices of extraction in south-western Manitoba. In both cases the organizations were groups of volunteers gathered due to concerns arising from oil and gas extraction practices and, in both cases, they struggled and continue to struggle to change the way oil and gas is legislated and regulated. At the same time, they also naturalized their own struggle by their struggle simply being a part of living in the "oil patch." This was seen as well in the audience response to the story of GASPE in how industry seems to "naturally" come before people and environmental health. This connects again to the work to shift the supposed *naturally*-occurring "matters of fact" about how oil is supposed to operate (and is considered to operate) to "matters of concern" in a way that opens the door to the lived realities where the facts come into question (Li 2015). However, moving something that is practiced and legislated as fact into an arena where those facts can be challenged and debated, is exhausting and the responsibility rests on these groups even as there are many obstacles to overcome. This is an example of the slow-moving violence that takes a toll on people's lives in small ways over long periods of spacetime - emotionally, physically, and mentally (Nixon 2011). Most of the players and places where the legislation and decision making

occur are not located near to the homes of those raising concerns, and they have to visit Winnipeg, a three-hour drive away, or they rely on changes in Alberta and Saskatchewan to affect change in Manitoba. There are also similarities in that the legislation designed to protect the public, in actual practice, is inadequate and in many ways functions to delegitimize their concerns (as witnessed in the accounts by Nikiforuk 2015). Spending time and paying attention to these organizations indicates how the place of oil in Manitoba is created by dislocating responsibility in spacetime. Those who live with oil infrastructure and have concerns are unable to hold the regulator or the industry fully accountable and, even with great effort, have been unsuccessful in changing legislation to make accountability more accessible.

Using a CPI lens to investigate the place of oil in Manitoba displays ongoing geographic practices of settler-colonial structures that spatially and temporally naturalize situations of oil extraction (Tuck & McKenzie 2015b). Both the MSRA and GASPE deal with a discrepancy between what is supposed to happen, or what is said to happen, and what literally does happen. This displays the desire at the industry or government level to interact with a place of oil that is fixed in spacetime, in that it does not need to be negotiated and it does not change or become concerning. Whereas, the reality of those living with oil extraction is contentious and they were demanding renegotiation and change to make it more acceptable (i.e., livable). The legislation, the regulator, and the industry follow their interpretation of what responsible oil extraction is, and these organizations (the MSRA and GASPE) try to show them when and how they fail and how to change it. This ends up creating a place, also conceptualized by a CPI lens where "disparate realities determine experiences and how a place is understood and practiced" (Tuck & McKenzie 2015b, p 636). Massey (2005) explored this through her concept of "power geometry" and thinking about how people experience places differently depending on how they were positioned within that place. Looking at the place of oil in Manitoba through the experiences of these people displays this positionality, or an understanding of some of the power dynamics that condition a person's ability to respond (Haraway 2008). In the case of the MSRM and of GASPE, these people had to come together to gain more legitimacy and presence to speak out about their concerns with the day-to-day operations of oil extraction. However, even then, they struggled to have their concerns acknowledged and taken seriously, and both organizations have been unable to make desired significant or lasting changes to how oil and gas operate. This displays their position within oil and gas extraction as being on the receiving end, where decisions and actions occur *somewhere* and *sometime* that is inaccessible to them. This exposes them to an ongoing experience of "slow violence" theorised by

Nixon (2011), where environmental cost is never a single event, but ongoing events of violence enacted on people and the land.

Chapter 8: Conclusions

8.1. Place As – Interventions into the Place of Oil through CPI

To guide these conclusions, I will restate my goals and framing set at the outset of this research. My purpose was to advance critical place inquiry (CPI) as a methodological lens within the field of resources and environmental management by critically examining how the practices of oil and gas extraction happen and continue to operate in Manitoba through the lived realities of oil extraction. As such, I gathered information and analyzed the resource geography of Manitoba's oil and gas extraction using a critical place approach. I drew on a critical place inquiry lens to ground a feminist material-semiotic based methodology in my investigation and analysis guided by the following objectives:
(1) Describing the place-making practices of oil and gas extraction in Manitoba by investigating information produced about this sector;
(2) Considering people's encounters with information about oil and gas activities;
(3) Exploring critical place inquiry as a research approach that pays attention to how place is conceptualized within social science investigations in the interdisciplinary fields of environment and resources management.

Gathering these objectives and purpose together, I set up this dissertation to explore the place of oil in Manitoba through several incursions, or "place as" interventions in order to conceptualize place as mobile and co-constitutive within NREM (see Figure 1 in Chapter 1). This approach revealed many different stories of actors, components, and practices, displaying the power geometry of the place of oil in Manitoba, or the layers at work in what Massey (1994) would call the sedimentation of a place. I wanted to push past the locating of places, where things are located on a landscape, or a map, and found there. Instead, I researched the place of oil in Manitoba as material-semiotic practices, comprised of moving parts based on the conceptual critical inquiry lens (Figure 1) set out by Tuck and McKenzie (2015b). My hope would be that the reader, once they had read the whole of these data chapters on the place of oil in Manitoba, would have learned a lot more about oil in Manitoba, particularly about the processes of settler-colonial place practices at work. This would also help a reader to know what to look for if they wanted further information, what to keep in mind as they looked, and some of the pitfalls to be aware of as they journeyed. I want my CPI framing of the place of oil in Manitoba to give researchers, be they academics, journalists or concerned people, several ways into this place, to show that there are indeed *several ways into the place*. I hope considering the place of oil in this way promotes

relationality and accountability – my work can be checked, can be contested. But I hope that my participants can read some of themselves in the place in a way that speaks to the realities they inhabit, even if they disagree with other parts of the data. In this way I sought to push the place of oil in Manitoba from one that is practiced more as a naturally occurring "matter of fact" into one that is able to become a "matter of concern" (Li 2015). I've done this through creating a partial knowledge, a research project that is not conclusive but rather presents the diversity of the place-making itself, allowing the place of oil to become questionable.

Furthermore, seeing the place of oil in Manitoba through a CPI lens, helped me to look beyond the spatial and temporal present (aka the naturalization) of oil extraction, to think creatively about how ongoing settler-colonial structures condition what is questionable, who can make information, and relationships to land. These interventions into practices of oil extraction displays relationships to land that are so naturalized they exist only in the spatial-temporal present, lacking their historical context and impeding their ability to be questioned in the future, even while the results of those relationships create hardship and are actively contested. My data shows, however, that these efforts to change how oil extraction is practiced in Manitoba have been fundamentally unsuccessful. By fundamentally, I mean that the conditions of extraction are able to be tweaked or modified in small ways, but overall, the main structure of extractive practices is not able to be changed (Chapter 7). This is very clear in the struggle of the GASPE group and Bill 21 Amendment to *The Oil and Gas Act* that was passed but never implemented, even though it made only minor changes to oil extraction practices in Manitoba (Chapter 7). Instead, people must adapt to live with the foundational conditions of ongoing oil extraction. It stands to reason that we must go deeper (as it were) into spacetime to question and bring to light the way relationships to land are conditioned to facilitate extraction, in such a way as to prohibit or make it extremely challenging to question or modify them.

However, it is also imperative, through a CPI lens to consider the way these relationships are continually questioned and resisted – adaptation does not mean acceptance. Leanne Simpson, Kim Tallbear, Doreen Massey, and other feminist geographers are very clear on the inability to purify space, to fully complete the colonial endeavor to erase all other ways of living and being in and with the land. However, I disagree with the way that the conceptualization of place in NREM (from Chapters 1 and 2) often arrives at the conclusion that we must just know more about people's connection to place (as a dynamic location, but still located) and then categorize more ways of describing people's connection to place in order to mitigate change. The CPI lens focuses more on the relationships of knowing, and

assessing them critically to determine how those relationships are formed and why, who benefits from the relationships, and which ways of knowing the land are suppressed, as my research shows. In the following sections I describe some of the conclusions I drew from my field work through using a CPI lens.

8.2. Critical Place Inquiry and Relationships during Research

> ***Letter for a time capsule to be opened in 2112***
> *This is just to say*
> *we've burned up all the oil*
> *and poisoned the air*
> *you were probably hoping to breathe.*
> *Forgive us.*
> *It was delicious*
> *the way it burned*
> *so bright and*
> *so fast.*
>
> *Poem by Warren Cariou (2012) in "Tarhands, a Messy Manifesto"*

There are many conclusions to be drawn from this dissertation, which speaks to the potential of it being a useful lens to guide research within the interdisciplinary fields of resources and environmental management. First, however, I see it and used it as a way to enact and do critical research within NREM. As I mentioned at the outset, as a white settler person in research I carry an amount of privilege. It seems beholden to me to do the work of both critiquing the way knowledge creation happens around places but also in advancing ways of learning and doing research in a way that reconsiders our relationships to land and to reconciliation. Thus, I begin this section by telling a little about the research relationships I encountered and held during this project.

When I first starting building ideas for my PhD project, I encountered Melanie Dennis Unrau and Warren Cariou. Melanie was starting an Environmental Humanities PhD on petropoetics, with Dr. Cariou on her committee. I mention this because these two went on a tour of Manitoba oil extraction in southwestern Manitoba and then connected me to the person who would take me on a similar tour some months later. This connection to the oil field, and my continued connection and collaboration with Melanie is an example of the relationships I developed along my journey that tempered and created moments for me to process and deliberate about what I was finding and how to interpret it. These two scholars introduced me to the work of writers and poets who engage with the way oil and gas seeps through our lives, who ask how to deal with our entanglements and our complicity in oil and gas or what

it meant to be "messy," and who force us to pay attention to our mess as a creative academic intervention.

I also mention these scholars, and begin this chapter with this poem, because the words by Dr. Cariou illustrate so well the contradictory and emotive landscapes I came to inhabit as I looked for the place of oil in Manitoba. One of the most troubling pieces of information I was given was a future reality where all the holes drilled into the Bakken shale field, during the course of extracting oil from the these "tight" oil reserves, would eventually leak toxic gas, including H2S. A geophysicist, an accredited scientist, described for me a world where whole areas would be uninhabitable, precisely because of the current extractive imperative. I had to hold this apocalyptic future geography alongside other information and realities; communities of people dependent on extraction and geologists who lived on site and did not convey this fear of future poisoning to me. The photo in Fig. 35 was taken as I was driving home from an interview, accompanied by my six-month-old baby, after learning about H2S gas and how it comes out of well sites and battery sites. For me, this illustrates the precarity of living with oil in proximity, which is a reality that is less proximate for me in my daily life. I mean, I do not drive by or live amongst well sites and battery sites. The paradox of being in a place that was considered safe and also unsafe was, at times, almost unmanageable. It was my feminist and anti-colonial methodology; to attend to controversy, not in order to resolve it, but to partially begin to find how it worked, where it worked, and to produce some analysis of why.

Figure 35: Photo taken during field work, driving past a well site and battery site near Tilston, MB, 2019

One of the key components of a CPI lens according to Tuck & McKenzie (2015b) is creating relational validity through the research process, which they define as being:

> …not only about understanding or chronicling the relationality of life and the inadequacy of economic validity but also that research necessarily influences these conditions in small or significant ways; it thus impels action and increased accountability to people and place (p. 636).

I interpret this as an imperative to see my research as belonging to the public and then searching for ways to share my research findings with my participants and other members of the public. This occurred in two ways so far in my research process, so far (as of January 2022). The first was a set of public lectures on the story of GASPE in Winnipeg, Manitoba where I collected feedback from audience members (Chapter 6). The second is a current project with the group called the Manitoba Oil Museum and Interpretive Centre with whom I am helping to create a virtual museum site. Presenting my own information and thoughts on the place of oil in Manitoba and then working with people to think about stories of oil for a museum site, has helped me to continue developing research relationships with my participants but also given me insights and different ways to understand the place of oil (Wheeler & Luedee 2021).

8.3. Concluding Themes

8.3.1. Settler Colonial and Resource Extraction Narratives

Settler colonialism did not just occur in the past, rather it is an ongoing structure of social and material relationships that create the conditions of today and future possibilities (Nichols 2017; Tuck & McKenzie 2015a; Wolfe 1982 & 2013). The data I collected related to objective 1 reveals that facilitation of resource extraction is at the heart of this relationship, as is the ongoing search for opportunities to develop further resources. The process needs buy in – the data presented in Chapter 3, 4, 6 and 7 all suggest that the resignation or the familiarity with this narrative is a part of this buy in. I also set out to consider how people encounter information about oil extraction in Manitoba and the disparate publics created by oil extractive process (Objective 2). Chapter 5, in particular, presents data regarding the ways there is a lack of accessible information about oil extraction in Manitoba, which discourages much engagement from the general public. Throughout my fieldwork, I often encountered people who were surprised that oil extraction happened in Manitoba at all, and even more surprised that it was fracking, which they associated with other places, and often with negative images of water taps being lit on fire. However, as in my public speaking, whenever I spoke to people there was also a sense that this is the normal way oil extraction happens, with profit before health. I repeat the following question from a participant during a speaking event because it speaks to this complexity: “How can one please industry and still protect the environment?” (Audience Feedback, Jan 21, 2020). The fact that this is posed as a question displays the inherently accepted dichotomy that economics and business are often at odds with

health and environment. I am not saying that this is acceptable, or that people are not frustrated by it, but rather that it is seen as something that "naturally" exists. If settler colonization is understood as an ongoing structure of relationships, then the relationship being brought into view here is one of conflict between resource extraction goals and public and environmental health goals (Braun 2019). This conflict is a place-making practice that is conditioned as natural in that there seems to be a dichotomy between those that care about the environment, and those that care about oil extraction. Obviously, this is a simplification of the situation, and yet, it is a powerful place-maker so much so that people in the Manitoba Surface Rights Association, or in GASPE, must work to convince people that they are *indeed in favour* of oil extraction. In other words, the disparate publics can be seen as a place-making practice of oil in Manitoba, designed to focus contestation on a dichotomy of those *for or against* oil, which dislocates the actual situation which is: oil extraction is inherently dangerous but resource extraction is also inherently a part of our livelihood as a settler-colonial nation.

8.3.2. Dislocating Responsibility

In collecting data for objective 1, to describe the practices of oil and gas extraction in Manitoba, I found the lack of ongoing response by the government to the GASPE group and the problems of H2S created geographic conditions of uncertainty. One of the issues, or ways that this occurs, is by dislocating responsibility. H2S is invisible and it cannot be tested on a human or animal body after that body has been subjected to it, therefore one must rely on symptomatic evidence as outlined in Chapter 7. This type of community evidence can and has often been easily discounted (see for example, Davidson 2018; Wylie et. al. 2017). The statement by the GASPE member, JA, from Chapter 7, "I was so naïve I thought, we would go tell our story and everyone would believe us, and we'd get something done" (JA END 1920), displays a dislocation of the ability to make facts – to be believable. "The paradox of place and truth" occurs when the credibility of the truth or fact is based on an authority that is dislocated (Gieryn, 2002, p. 113). In other words, that the evidence collected around the location of the battery site by the residents was discounted, and the evidence collected by the scientist from the University of Manitoba in Winnipeg was considered legitimate (Chapter 7). This is an activity that disempowered the people of GASPE, who worked hard to collect and organize evidence of their experiences. It rendered their collected evidence unacceptable, effectively creating a place paradox where the truth of the experiences of the residents is legitimately discarded by the government and law courts (Gieryn, 2002). The result is that the conditions of their experience is seen to be unbelievable and thus the residents are

effectively unable to prove any of their experiences with H2S. This potentially also disempowers future people and groups from acting when concerns arise given the outcome for GASPE.

My data also reveals another important dislocation relating to the medical and legislative acceptance of H2S as a human health risk *within the work place*. Within the battery site fence, or well site, H2S is seen to be a high risk for worker bodies (Safe Work Manitoba 2016). This is well documented across North America and is clearly outlined by Manitoba Work and Safety legislation and practice in workplace health and safety (Manitoba Safe Work, 2016). H2S is seen to be one of the higher risk substances for death in oil and gas extraction (Jackson et. al. 2014; Skrtic 2006; Work Safe BC 2010). However, for people that live nearby, for those who are not in a work place or a place that is made a work place during work hours, H2S is not a problem. This inconsistency is seen to be reasonable, in that the government provides safe work protocols and legislation to protect workers from the deadly effects of exposure to H2S gas. However, the government *does not* provide protocols and safe living legislation for those that live nearby who may be exposed, and when legislation was passed to start making some of those protocols and legislation for oil and gas, it was not implemented or followed through on.

This is a spatial-temporal practice of dislocating in space (the location of the possibility for gas to be found) and time (the time which it takes for the gas to dissipate) which is based on scientific evidence that H2S gas dissipates upon exposure to air. However, there is also scientific evidence that it can sometimes spatially and temporally linger in the air and travel, creating conditions where those living nearby will show symptomatic evidence of low-dose ongoing exposure to H2S (Malivel 2019; Skrtic 2006). In the community health survey and "Air Quality" reports from 2000/2001 there is even evidence that there are occasional spikes in the amount of H2S measured, but the conclusion of that study is that these are anomalies that could be prevented by the company making sure their equipment is operating properly (Kraut 2000). The conclusion is that this gas does not travel in *space* and does not linger in *time*, in fact that it typically stays in one location and is therefore manageable. Whenever there is evidence that this is not always the case, it can be discounted as anomalous. Here the social and material practice of H2S gas is on display, its fickle nature or its ability to be in two places simultaneously, 1) right next to the battery or extraction sites, or 2) traveling across the land causing damage to people and animals. The solution, in the case of GASPE, was a technoscientific move to place the responsibility for the containing of H2S gas on to the proper working equipment of the company, which again dislocates that responsibility because now a physical technological apparatus is

responsible for the wellbeing of the people and animals nearby. But also, this does the work of helping to dismiss the concerns of the GASPE members by leaving the impression that everything is fine. Here again, the "matter of facts" about H2S are unable to become these "matters of concern" articulated by Li (2015). The realities of the GASPE members and others in the area that experienced the negative effects of H2S gas were unable to make the concerning aspects of H2S into scientific facts, or a fact at all beyond their own group.

8.3.3. Downloading Responsibility

My findings, related to objectives 1 and 2, indicate that those who engage in oil extraction in Manitoba constantly negotiate and adapt to feast/famine conditions of living with oil extraction. In other words, they become individually responsible to make the best of it as they can, as revealed in the data presented in Chapter 7. As this data shows, one of the main struggles people engaged in oil extraction in Manitoba face is the ability to be recognized or known at all by other Manitobans (as well as on a national level). My findings show there is a need to legitimize their experiences, but also to allow them to feel proud of being a part of the practices of extraction (from Chapter 3). The participants I spoke with work hard and are constantly aware of the precarity of their jobs, of their incomes, and of the difficulties in dealing with a provincial or federal government that, for the most part, is overtasked and under employed. Even as I write these last sections of my thesis, there are fewer people working in the Manitoba Petroleum Branch than when I began (a pattern also noted in the earlier study by Hulshko 2017). This despite the fact that the amount of work they need to complete has not decreased. The complete disregard for the job requirements of these positions as indicated in my data is astonishing. The Progressive Conservative government in Manitoba has even more rapidly depleted the number of people doing the same amount of work, while the left-leaning NDP government of previous years did nothing differently during the recent unprecedented oil boom. My data from Chapter 4 reveal a 600% increase in wells licensed with no new hires during the years of NDP government, showing their negligence in terms of providing regulatory support for those tasked with monitoring and keeping up with all the regulations required for a swiftly growing industry. I was told that branch workers adapted, negotiated their jobs, did less of their jobs, changed practices to try to get things done, outsourced as much as possible, and worked longer than usual hours. This is a testament to their intention to be a regulating presence, even if that presence continues to be one of mostly unquestioned facilitation, aka a captured agency (Wylie 2018). This negligence of provincial government, despite very different political party values, through a marked lack

of capacity for the regulatory body during an unprecedented boom, creates practices that continue to naturalize the way oil and gas are extracted. This is primarily because the main body that is able to question industry practice or hold industry responsible to uphold lease agreements slowly has less capacity to do its job. What this tends to do is download responsibility in the hands of industry to take care of the land, and then, when industry practices fail (for many varied reasons) the responsibility to hold them accountable is in the hands of the landowners and community members.

8.3.4. Futurity and Relationships to Land

The conclusions regarding this theme draws on data collected for objectives 1 and 2 and lessons taken from Chapter 6 (figures of rights and royalty rates) and Chapter 7 (organizations that contest oil). My results show that significant change to oil and gas practices is not possible without taking seriously our relationship to land and dealing with the continued processes of settler-colonization. The prioritization of mineral extraction as a foundational place practice creates, as shown in my study, conditions where neither alternatives nor the lasting effects can really be considered. These conclusions support the findings of Keeling (2010) who observed that this prioritization creates conditions where those who are most affected by geographies of extraction, those who live and work with extraction in some capacity, are the *least able* to consider or change those very conditions. In my research, the extractive practices are related to the mineral of oil (and gas) but the conditions are similar to those of Uranium City in Keeling's (2010) work, as they live with ongoing practices of precarity, feast or famine, and an acceptance that this is a natural fact of the "oil patch." This creates spatial-temporal situations where the power to make decisions appear dislocated from the present and from any particular place, making it impossible to access them. My data showed this, with oil company head offices in Calgary and information held online behind privacy regulations (such as the stipulation that the company does not have to publish production amounts for a certain amount of time), or paywalls. However, they only appear in this way to deflect change. These situations are actually ongoing in the present and dynamically located, which means they have current realities and consequences, even while they succeed in foreclosing the ability to do anything but adapt as best as possible to the feast or famine extractive cycles. This demonstrates what Tuck and Mckenzie (2015a) and Andrew Baldwin (2017) describe as a "settler-colonial futurity," where the future is determined, unfairly, by relationships created and continued in the past and present. These relationships include ways of understanding land that foreclose other opportunities or possibilities, such as relationships to oil that do not include proprietary

mineral rights. Or, as a lesson from the GASPE group demonstrates, simply being taken seriously that one is being exposed to unsafe amounts of toxic gas. Their knowledge and relationship to the land, including the animals, where they live and work is dismissed as improbable and lacking evidence. We must examine, intimately, what processes dismiss this experiential knowledge or citizen science (Wylie, Jalbert, Dosemagen, & Ratto 2014). We must also examine and question why property and land rights make sense and if there are other forms of living, other worlds at work that could be brought into being.

One example for rethinking relationships to land, or another way of being spatial temporal beings, draws on what Tuck and McKenzie (2015a) explain as "Indigenous futurity." This relates to the data from Chapter 6 and 7 as I mention above, that we need to reconsider the ways that land rights (surface and minerals) create our ongoing relationships to the land. Land rights, in my research, condition possibilities for extraction and the ways in which people are able to maneuver within the structures that suggest who owns what and who is able to take what from where, using a process deemed safe by those who live somewhere else. What does Indigenous futurity look like? That is not answerable because it is a way of being that does not foreclose possibilities. Instead, it functions through ongoing, present, historical, relationships. Those relationships are not just with other human beings, as the door to non-human entities is open and "making kin" is also recognizing agency and responsibility for that which cannot be understood, known, or controlled as such (Todd 2017). Zoe Todd (2017) speaks to this concept of oil kin by exploring our complicated relations with oil extraction, dependence, but also control in some ways over how we engage. It involves relationships with land designed for ongoing change and relational accountability to human and more-than-human beings (Haraway 2016). This leads me to my final conclusion, that we must inherently understand place as research.

8.3.6. Place as Research: The Ongoing Need to Attend to Settler-colonial Practices of Geography and Natural Resources Management

The final objective (3) of my research project was to consider how a CPI lens would contribute theoretically to the ongoing work of conceptualizing place within the field and academic work of NREM, particularly paying attention to ongoing settler-colonial research relationships. My intervention into the conception of place in research is that it is often seen as the location or the object of the research, rather than the research itself. It is one thing to say, all research happens someplace; it is another thing to take that seriously. Recently there is a rise in place-based research in natural resources and environmental management, attributed in some form to the work of Yi Fu Tuan and other

geographers such as Massey, who charged academics to take place seriously (Massey 2005; Tuan 1977). Particularly in Indigenous research, there is a call to place-based research which is in resistance to the conditions of western-based research that continually dislocates research from place (Coulthard & Simpson 2016). My research, particularly related to objective 3 of my project, seeks to support this Indigenous research imperative as a white settler researcher by dealing with the foundational settler-colonial place-making knowledge practices which, have side-stepped the very real fact that *all research is place-based.* Research makes places. Research is the relationships, it is the ceremony and doing research relationally, with accountability, makes certain kinds of places (Wilson 2008). My work shows these places cannot be dislocated. What is found is interdependent with what one thinks can be found. The ontology and epistemology of the researcher determines this and this is determined by where they are, or where they think they are. This is clear in the way that my research into the place of oil in Manitoba did not reveal a collection of different attachments to places, or categories of attachment. Instead, my research displayed the practices that brought various spatial-temporal realities into the geographies of oil and gas in Manitoba.

In other words, shifting the focus within NREM from looking at people's connections or attachment to places helped me to conceptualize place as ongoing and mobile, while also displaying a more critical lens into constructions of space and time that continue to condition relationships to land. For example, my work revealed how the naturalization of extraction practices are based in spatial and temporal discursive and material practices, such as, the use of oil boom and bust narratives and realities (Chapter 4), or land rights and royalty rate calculation (Chapter 6). This is also seen in Chapter 3, with the invisibility of oil infrastructure along with the community-based need to celebrate oil culture through the oil museum and the DVD, entitled *Eternal Flame*, where the use of the word "eternal" signals a spatial and temporal reality that is both natural and continuous. Finally, in Chapter 7, my data indicates that organizations created to contest and grapple with oil extraction practices must carefully align themselves as being in support of oil and gas, while struggling to affect change because the spatial and temporal conditions of oil extraction in Manitoba are shown to be faciliatory to continued extraction with minimal, and under capacitated government oversight.

My experience, then suggests that a CPI lens can work to create research that pays attention to the conceptualization of place in research practice within the interdisciplinary fields of Natural Resources and Environmental Management. My work does this by paying attention to inherent conceptions of spacetime and subsequent uses of the concept of place in research. This also happens

through ongoing research relationships that continue to hold me accountable to sharing my work with the public, and, more importantly, with my participants. As Tuck, McKenzie & McCoy (2014) admonish at the beginning of my dissertation, we must consider the "where" of knowledge-making, who has access to the research lessons and how are they disseminated. As I work on and contemplate boxes of archival material for the virtual Manitoba Oil Museum website, I feel a deep responsibility to people who have lived in oil extraction practices in their homes, and backyards, over their coffee tables, and in their community centres, many of whom have become friends. I hope to offer a critical perspective that resonates with them, even if they disagree with my interpretation. My work certainly indicates that it is not so much information about oil in Manitoba, nor the oil itself that is problematic but more so our relationships in the place-making of oil in Manitoba: who has access to information, who creates it, whose information is legitimate or illegitimate, and who benefits from oil infrastructure and who does not. I hope my work makes more visible the components and practices that bring the place of oil in Manitoba in to being, so that it may be considered, questioned and ultimately remade in such a way as to stop the ongoing displacement of Indigenous, Métis and eventually even settler peoples from the land in pursuit of short-term profit and long-term costs.

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Appendix A: Guiding Questions from Proposal

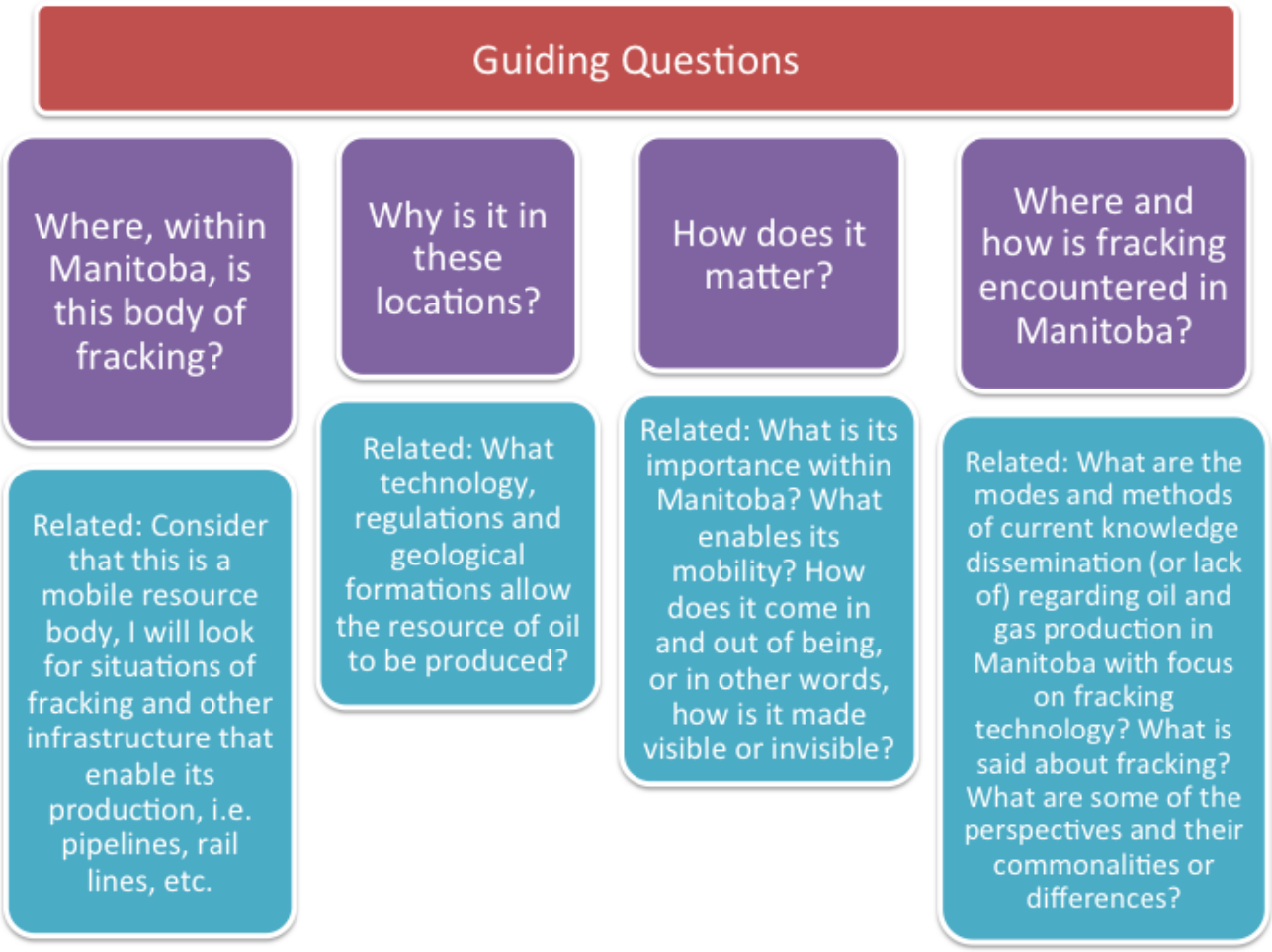

Figure from Proposal – Graphic Explanation of the Questions of Analysis

Appendix B: Semi-Structured Interview Guide (Original)

Encountering Fracking in Manitoba (Phase 1)
To be conducted in: Manitoba
Field Season: November 2016 – April 2017
Researcher: Mya Wheeler, PhD Candidate of the Natural Resource Institute, University of Manitoba

Main focus of study/Research Question:
+ To examine how a reframed place-based research approach can encourage engagement regarding oil and gas development in Manitoba in a way that recognizes the diversity of voices, perspectives and concerns
+ Specifically, for these interviews, to describe the "place of oil" in Manitoba by investigating the location and methods of its production as a resource body (or materiality)
+ Based on questions from Research Framework (Section 6)

*Prior to meeting the participant will have signed a consent form, agreeing to be interviewed and fully aware of the implications, as well as agreeing to be contacted in the future for invitation to the open house event and possible follow-up interview.

Introduction: Thank you for taking your time today to meet with me! As you know, I am doing research gathering information about oil and gas development in Manitoba, specifically the technology of hydraulic fracturing, often called fracking. I will use this research to write my thesis based on our speaking together but, in order to be very clear, my role is not to make plans or changes to current oil and gas development or hydraulic fracturing practice.
Instead, I am much more interested in what you have to say regarding this place. I am glad to answer any questions or concerns you have at any time during the course of the interview or afterwards. We will take between about an hour for this conversation and I will be recording this interview, if you need a break please tell me.

Main Questions with Follow-Up Questions:
*The main questions will guide me in my questioning but will not necessarily be asked directly. I will use the follow-up questions to flesh out the main questions.

1). Where is fracking occurring in Manitoba?
    a). Describe the locations/sites that you are aware of.
    b). Are there locations that are not currently being used?
    c). Are there locations that you might not know about?

2). Why is it in these locations?
    a). What are reasons that fracking occurs where it does in Manitoba?
    b). What locations/places are suitable for fracking development?
    c). Have there been recent changes that have made it more possible for fracking to occur?
    d). Have there been recent changes that have made it more difficult to use fracking technologies?

e). What is the process for creating a new site for fracking? Or for closing one down?

3). How does it matter?

a). What are some changes that have occurred since the introduction of fracking technology in Manitoba? (Economic, social, cultural?)

b). What are some impacts of fracking in Manitoba? Outside of Manitoba?

c). How does fracking relate to other types of energy resources in Manitoba?

d). Who is responsible for creating conditions to allow or disallow fracking?

4). How is it encountered?

a). How did you learn about fracking in Manitoba?

b). How do other people learn about it?

5). Questions or further comments

Debriefing:

Thank you again for sharing your thoughts with me and taking your time to be here!
Again, if you think of any questions or have any concerns please call or email me.

Appendix C: Interview & Recording Information and Consent Form

UNIVERSITY OF MANITOBA

220-70 Dysart Road
Winnipeg, Manitoba
Canada R3T 2M6
Telephone: (204) 474-8373
Fax (204) 261-0038

Research Project Title: Critical Place Research: Encountering Hydraulic Fracturing and Mobilization of Oil in Manitoba

Researcher: **Mya J. Wheeler**

This consent form, a copy of which will be left with you for your records and reference, is only part of the process of informed consent. It should give you the basic idea of what the research is about and what your participation will involve. If you would like more detail about something mentioned here, or information not included here, you should feel free to ask. Please take the time to read this carefully and to understand any accompanying information.

Summary of this Project

My name is Mya Wheeler and I am a Ph.D. candidate at the Natural Resources Institute of the University of Manitoba in Winnipeg. My research is focused on oil in Manitoba. I am interested in how people learn about and engage with information about oil. I greatly appreciate your participation in this study. The benefits to you will be mostly indirect, as this study will contribute more to a broader understanding of the processes of oil. However, I would hope that participation in the study might be interesting and I will be very glad to hear your feedback on my findings. There is no risk to your participation in this study as our conversation will be kept confidential and, unless you specify otherwise, I will use a code name and ensure that no personal information can be connected to you. One way I will ensure your anonymity is that I will check back with you once I have transcribed our conversation so you can look it over. I will ask you to let me know how you would like me to contact you (email or phone).

We will be talking for approximately 30 minutes to an hour and I will ask you a number of questions. I will ask to record our conversation using my recording device and will transcribe the recording for use in my data analysis. This information will be kept confidential and safe throughout my research in the following ways: First, any information that is gathered will be recorded into secure computer files. Also, in the process of writing my thesis and any related papers, I will use a code or pseudonym to keep your identity confidential, unless you have agreed otherwise. I will also ask if you consent to being photographed and whether I can use photos in reports to be published. Finally, once I have transcribed the recordings, I will check with you to make sure the transcripts have removed any details about yourself that you feel may compromise your anonymity and, at this point, I will destroy the unedited transcripts and audio recording. The edited and approved transcripts will be kept secure for use in Phase 2 and for my final thesis publication.

Upon completion of this initial phase of interviews, I will create a brief summary of my findings and will send this to you via email or mail. At that time I will invite you to the 2nd phase of my research and you may chose to continue participating in this study. I will use the information from this interview in Phase 2 of my research and will write all of it into my doctoral dissertation, which is scheduled for completion by June 2019. After this my thesis will be public and accessible online and I will send the link again via email or mail.

All participation is voluntary. You do not need to share your participation in the study with anyone in order to remain anonymous. I may ask you if you might recommend others who may be interested in participating in the study and you are welcome to pass on any information I have given you. However, you do not need to reveal that you have already participated and I will not reveal that you have participated if you provide me with any names. The persons you recommend will also be given the same confidentiality options.

You are free to withdraw from the study without any negative consequences at any time by contacting me. Your continued participation should be as informed as your initial consent, so you should feel free to ask for clarification or new information throughout your participation.

In case of any questions or concerns, you can contact me or my advisor:

Mya J. Wheeler
204 806-6552 Email: umwheelm@myumanitoba.ca
Dr. John Sinclair
204 474-8374 Email: john.sinclair@umanitoba.ca

Your signature on this form indicates that you have understood to your satisfaction the information regarding participation in the research project and agree to participate as a subject. In no way does this waive your legal rights nor release the researchers, sponsors, or involved institutions from their legal and professional responsibilities. You are free to withdraw from the study at any time, and /or refrain from answering any questions you prefer to omit, without prejudice or consequence. Your continued participation should be as informed as your initial consent, so you should feel free to ask for clarification or new information throughout your participation.

The University of Manitoba may look at your research records to see that the research is being done in a safe and proper way.

This research has been funded by the Social Science and Humanities Research Council and approved by the Joint-Faculty Research Ethics Board. If you have any concerns or complaints about this project you may contact any of the above-named persons or the Human Ethics Coordinator at 204-474-7122 or humanethics@umanitoba.ca. A copy of this consent form has been given to you to keep for your records and reference.

Thank you very much for your participation in this project!

Mya J. Wheeler

SIGNED CONSENT

I, _____, consent with my signature to this recorded interview.
Participant's printed name

_____ _____/____/_____ (dd/mm/yyyy)
Participant's signature Date

_____ _____/____/_____ (dd/mm/yyyy)
Researcher's Signature Date

Please contact me using the following method:
Email:
Phone:

Appendix D: Introductory Recruitment Email/or Verbal Script Guide

Dear (potential participant),

My name is Mya Wheeler and I am a Ph.D. candidate in the Natural Resources Institute at the University of Manitoba. I am working on a research project under the supervision of Dr. John Sinclair. I am writing to you today to invite you to participate in a study about the mobilization of oil in Manitoba, particularly the way that hydraulic fracturing technology has created something of an 'oil boom'. I will be examining the way people interact with and learn about the oil industry in southwestern Manitoba, including policies, environmental assessment and knowledge translation. By interviewing a variety of stakeholders, interested parties, and involved individuals, I hope to capture the diverse experiences, opportunities and obstacles presented by the recent oil boom.

This study involves one 30 - 60 minute interview that will take place in a mutually convenient, safe location. With your consent, interviews will be audio-recorded. Once the recording has been transcribed, the audio-recording will be rendered anonymous, and no information will be connected back to you. While this project involves minimal risk, care will be taken to protect your identity. This will be done by allowing you to choose the level of confidentiality of anonymity for documentation, only answering questions that you want to, and allowing you to request that certain responses not be included in the final project.

You will have the right to end your participation in the study at any time, for any reason, up until I submit my thesis. If you choose to withdraw, all the information you have provided will be destroyed. You will not receive any compensation for participating in the interview. The benefits of participating in this study include contributing knowledge to the increasingly important topic of hydraulic fracturing in Southwestern Manitoba. This research will broaden the scope of information available to the public, creating a platform for local voices to participate in the debate around Manitoba's energy future.

All research data, including audio-recordings and any notes will be encrypted and password-protected. Any hard copies of data (including any handwritten notes or USB keys) will be kept in a locked cabinet. Research data will only be accessible by me.

If you have any questions about this research or your role in the research please feel free to email me (umwheelm@myumanitoba.ca) or my thesis advisor (John.Sinclair@umanitoba.ca). This research has been reviewed and approved by the University of Manitoba Research Ethics Board and follows the Canadian Tri-Council Research Ethics guidelines.

If you would like to participate in this research project, or have any questions, please contact me at umwheelm@myumanitoba.ca.

Thank you for taking the time to consider this opportunity!

Mya Wheeler

Appendix E: Participant Observation Guide (Phase 1)

To be conducted in: Manitoba
Field Season: July 2017 – December 2017
Researcher: Mya Wheeler Wiens, PhD Candidate of the Natural Resource Institute, University of Manitoba
Schedule for items to observe during Phase 1:

This is a general guideline of items of interest that I will pay attention to during participant observation of Phase 1:
1) Vocabulary and Images: *i.e.,* which words are being used? What kind of figures? Graphs? Pictures?
2) Connections: *i.e.,* how often do gatherings happen? Where are they advertised? What connections are being made during the gathering?
3) Counting, census-taking, and using ethnographic mapping to record things such as the amount of people, vehicles, equipment, distance to residences, and other items in the area
4) Other indicators of hydraulic fracturing (or fracking) for examples signs, related infrastructure (i.e. the hockey arena)

Appendix F: Research Dissemination Phase 2

Addition to Approved Ethics Document Protocol J2017:084 (HS21035)
"Critical Place Research: Encountering Hydraulic Fracturing and Mobilization of Oil in Manitoba"

To be conducted in: Manitoba
Field Season: October 2019 – February 2020
Researcher: Mya Joylynn Wheeler, PhD Candidate of the Natural Resource Institute, University of Manitoba

Phase 2 Dissemination of results at public events:

I will be participating in publicly organized events such as, but not limited to, the Skywalk Lecture Series, at the Millennium Library and sponsored by University of Winnipeg. At these publicly organized events I will reserve a part of the time I have following the presentation of my research findings for people to give feedback on the research that I am sharing. I will gather this feedback through noting people's general oral comments and questions in my note pad and/or by providing paper and pencils on which participants would be welcome to write questions and comments and if willing, leave those with me with no identifying marks.

I will explain any participation in my research using the following script:

I am a PhD student at the University of Manitoba. I have been conducting research for the last 2 years regarding how people learn about and engage with oil extraction in Manitoba. Today I would like to share some of my findings with you and you are welcome to participate voluntarily and anonymously in giving me feedback on my findings. There will be no direct benefit to you in participating, it will only help me further my objective to learn about what people know about oil extraction in Manitoba and how they engage with that information. I have handed out paper and pencils, you are welcome to use them to write anonymous questions and comments on and, if you are willing, you can leave those with me. If you are comfortable with others in the room hearings your comment or question, there may be a small amount of time to respond verbally at the end of my presentation and I will be taking notes as possible on what you say. I will not record any personal information, only general thoughts and themes.

I will ask these questions at the end of any public presentation I give:

1. What are questions and or impressions that arise for you from this presentation?
2. What new information, if any, have you learned from this presentation?
3. What other information would you like to have heard? Or is there a part of the story that is missing, or that I should have included?

Appendix G: Example of Weekly Well Report

Manitoba
Growth, Enterprise and Trade
Petroleum Branch
360-1395 Ellice Ave, Winnipeg, MB R3G 3P2
T 204-945-6577 **F** 204-945-0586
www.manitoba.ca

WEEKLY WELL ACTIVITY REPORT

PETROLEUM INDUSTRY ACTIVITY REPORT
(January 1/20 – November 23/20)

DRILLING ACTIVITY	**To November 23/20**	To November 25/19	2019 Total
Drilling Licences Issued	64	193	225
Licences Cancelled	11	16	17
Vertical Wells Drilled	7	12	13
Horizontal Wells Drilled	73	188	208
Stratigraphic Test Holes Drilled	0	0	0
Wells Drilled - Total	80	200	221
No. of Metres Drilled	159 875	437 678	482 956
Wells Re-entered	0	0	1
Wells Being Drilled	0	4	0
No. of Active Rigs	1	4	7
Wells Licenced but Not Spudded	32	46	58
Wells Completed as Potential Oil Wells	76	195	217
Wells Abandoned Dry	2	1	1
Wells Drilled but Not Completed	1	0	0
Other Completions	1	4	4
New Wells on Production	89	2	227

GEOPHYSICAL ACTIVITY			
Geophysical Programs Licenced	0	2	4
Licences Cancelled	0	0	1
Kilometers Licenced	0	174	580
Kilometers Run	79	0	20

	2020		**2019**	
OIL PRICES (Average)	$/m3	($/bbl)	$/m3	($/bbl)
Month of September	302.20	(48.02)	447.89	(71.17)
Month of October	296.92	(47.18)	405.35	(64.41)

OIL PRODUCTION (M3)	**2020**	**2019**
Month of September	173 680.5	199 317.4