The Alberta Oil Sands Then and Now: An Investigation of the Economic, Environmental and Social Discourses Across Four Decades

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Oil Sands Research and Information Network

The Oil Sands Research and Information Network (OSRIN) is a university-based, independent organization that compiles, interprets and analyses available knowledge about managing the environmental impacts to landscapes and water impacted by oil sands mining and gets that knowledge into the hands of those who can use it to drive breakthrough improvements in regulations and practices. OSRIN is a project of the University of Alberta's School of Energy and the Environment (SEE). OSRIN was launched with a start-up grant of $4.5 million from Alberta Environment and a $250,000 grant from the Canada School of Energy and Environment Ltd.

OSRIN provides:

- **Governments** with the independent, objective, and credible information and analysis required to put appropriate regulatory and policy frameworks in place
- **Media, opinion leaders and the general public** with the facts about oil sands development, its environmental and social impacts, and landscape/water reclamation activities – so that public dialogue and policy is informed by solid evidence
- **Industry** with ready access to an integrated view of research that will help them make and execute environmental management plans – a view that crosses disciplines and organizational boundaries

OSRIN recognizes that much research has been done in these areas by a variety of players over 40 years of oil sands development. OSRIN synthesizes this collective knowledge and presents it in a form that allows others to use it to solve pressing problems.

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REPORT SUMMARY

A detailed study of dozens of documents pertaining to the Alberta oil sands produced by the Alberta government over the past 40 years shows the government's perspective regarding this vast resource has undergone a major shift.

In the 1970s and early 1980s, the Alberta government initiated detailed studies and scientific investigations to better determine oil sands policy. By the mid-1990s documents suggest the government had abandoned that role in favour of promotion and marketing of the oil sands.

It is quite clear from government documents produced in the 1970s that most of the economic, environmental, and social impacts associated with rapid expansion of oil sands operations (often referred to as tar sands in the 1970s) were anticipated. Various studies and surveys were also undertaken by the government of the day to determine how to avoid these negative impacts.

For example, a 1973 Alberta Environment report – *An Environmental Study of the Athabasca Tar Sands* – states: "The disposal of tailings from the hot water extraction process represents the most imminent environmental constraint to the future expansion of this recovery method."

Documents reviewed suggest that at the time the Alberta government saw itself as being primarily responsible for further development of the oil sands. To this end, the government invested millions of dollars in the Alberta Oil Sands Technology and Research Authority (AOSTRA) to kick start expansion. AOSTRA initiated and funded research into technological innovation for the extraction of bitumen. Another government agency – Alberta Oil Sands Environmental Research Program (AOSERP) – investigated social conditions for people living near oil sands plants and environmental impacts such as air emissions and tailings ponds.

By the mid-1980s the Alberta government had pulled back from this direct kind of involvement with oil sands development. And even though much research into environmental and social impacts had been carried out it was put on the back burner in favour of more immediate economic benefits.

This study also examined documents pertaining to the oil sands produced by industry, academia, non-governmental organizations, and the news media over the past 40 years during which time oil sands operations expanded from two to seven oil sands mining projects, 26 commercial in situ projects approved, in addition to about 130 primary recovery projects and 12 experimental schemes.

The study revealed that public discourse about the oil sands has shifted from one that was primarily focused on the economic benefits of oil sands development to a conversation that involves a multiplicity of issues and voices.

Economic signifiers such as job creation, royalty revenues, foreign investment, and markets are still key when it comes to talking about the oil sands. But in the last 10 to 15 years, global issues such as climate change, indigenous rights, pollution of the air and major waterways, and sustainability have become embedded in the discourse about the oil sands. Nowadays, the oil sands are talked about as if they are an arena in which key players and issues vie for attention.

The entry of other voices into the discourse about the oil sands has also affected Canada's dialogue with the United States regarding oil exports. Whereas the United States was once discussed as the prime customer that must be satisfied at all costs, now governments and industry talk about the U.S. as a riskier market and seek to export the oil to China, India and other emerging markets as well.

There are some significant language choices that stand out in the media, particularly the distinction between "tar sands" and "oil sands." It has been suggested in media coverage that supporters for the development of this resource use the label "oil sands", whereas critics deploy "tar sands". While this claim rings true, in the media sample reviewed it becomes evident that "tar sands" was used during the 1980s and 1990s in a completely neutral way, simply in reference to the "Athabasca Tar Sands." "Tar sands" became a more negative term only when it is associated with vivid descriptors such as being a "monster" that "needs to be fed", or as the "black stain of Canada", or simply talked about as something "dirty", "sticky", "gooey", or "oozing." These types of expressions are most often used by Aboriginal sources, environmentalists, political figures (members of the opposition), and sometimes journalists themselves. These stakeholders deploy such terms when they want to criticize the development of this resource. In the sample of articles examined, it was not until 2008 when the environmental action group Environmental Defence published *Canada's Toxic Tar Sands: The Most Destructive Project On Earth* that these types of negative add-ons started to appear.

All of the documents examined in the study were in English, as were the news articles. This is an admitted limitation as we do not capture dialogue in francophone Canada. Most of the documents collected and analyzed for this report came from a database established by the Cumulative Environmental Management Association (CEMA), a collaborative organization based in Fort McMurray, Alberta that includes representatives from government, industry, academia, First Nations, civic and community organizations, and environmental groups. Other documents were collected from university, government, industry and NGO libraries and databases. The news articles were collected from two databases – CBCA Complete and Canadian Newsstand.

Discourse about the oil sands is one of the most important conversations occurring in Canada and abroad. The deeper we can delve into that conversation, the more we can come to understand all the complexities, risks, and rewards that this vast resource presents to Albertans, Canadians and the world.

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1 INTRODUCTION

The purpose of this project was to determine how the discourse in documents and news articles pertaining to the Alberta oil sands that have been produced by government, industry, academia, non-governmental organizations, and the news media over the past 40 years has changed.

1.1 Context

Over the past four decades development of the Alberta oil sands has escalated to the point that it is now the world's largest energy project. Yet in the 1970s there were only two oil sands operators: Great Canadian Oil Sands (GCOS; now known as Suncor Energy Inc.) and Syncrude Canada Ltd.

As of January 2013 there are seven oil sands mining projects, 26 commercial in situ projects approved, in addition to about 130 primary recovery projects and 12 experimental schemes[1].

In the 1970s the GCOS oil sands mining operation was producing 30,000 barrels of oil a day. By 2011, Alberta's production of crude bitumen reached over 1.7 million barrels a day (Alberta Energy 2013). Much of that growth occurred between 1999 and 2007 when oil sands production increased from approximately 300,000 barrels per day to 1.4 million barrels per day.

This exponential growth in such a relatively short time was not anticipated in the 1970s. In fact, the scale and scope of development recommended in government documents of the time was much more measured. Estimates offered then for 2000 assumed eight new projects would be approved over 28 years (Conservation and Utilization Committee 1972).

In the meantime, the oil sands have become so key to Canada's energy sector that 52% of all crude oil produced in Canada now comes from the Alberta oil sands (Natural Resources Canada 2012). Most of that crude oil heads south as Canada supplies more crude oil to the United States than any other exporter. In 2011, Canada shipped about 1.3 million barrels per day of crude oil to the U.S., 15% of U.S. crude oil imports.

The investment and revenue associated with the Alberta oil sands, the world's third largest oil deposit, has had an enormous impact on both the provincial and national economy. In the fiscal year 2011/12, the Alberta government collected about $4.5 billion[2] in royalties from oil sands projects; the third fiscal year in a row that oil sands royalty was the biggest chunk of Alberta's non-renewable resource revenue (Alberta Energy 2013). By 2010 Canada's energy sector accounted for almost 7% of Gross Domestic Product (GDP) or $84 billion; oil and gas extraction accounted for half that amount (Natural Resources Canada 2012).

The oil sands are such a key resource that they are changing Canada's long-standing trading relationships. Whereas once the United States was seen as the prime customer who must be

[1] See www.ercb.ca/learn-about-energy/enerfaqs/enerfaqs12

[2] All figures are C$.

satisfied at all costs, now governments and industry talk about the U.S as a riskier market and seek to export the oil to China, India and other emerging markets.

There is no question that a lot has changed since the 1970s. But how did we get there? And how has the discourse about the oil sands shifted since the Alberta government initiated expansion of oil sands production in the 1970s?

By examining various discourses about the oil sands we get a better understanding of how oil sands development has evolved. As Tonkiss (2004, p. 373) explains: "Discourse analysis involves a perspective on language that sees this not as reflecting reality in a transparent or straightforward way, but as constructing and organizing the terms in which we understand that social reality. Discourse analysts are interested in language and texts as sites in which social meanings are formed and reproduced, social identities are shaped, and social facts are secured."

According to Tonkiss, such an approach is often associated with the work of the French scholar, Michel Foucault and his interest in how the discourse helped to produce the very categories, facts and objects that they claim to describe. Discourse analysis is particularly applicable to "expert" language such as that used in news media reports but it can also be used to analyze political speeches, parliamentary debates, and everyday language and conversation on particular topics.

When the discourse contained in pertinent documents and news articles about the oil sands is examined with this lens we can see, for example, when environmental issues entered the discourse and whether or not they were given priority. We can see when Aboriginal voices entered the discussion. We can see that although the phrase "tar sands" was acceptable for government and industry in the 1970s by the 1990s it had become a pejorative phrase used mainly by critics of oil sands development.

These changes were traced by studying dozens of documents and news articles pertaining to the oil sands produced by government, industry, academia, non-governmental organizations and the news media over the past 40 years. By studying them we can see how the issues are framed, the key players, the shifts in language and emphasis, the ideas that were advanced, the recommendations that fell by the way side, what got the attention of the news media and what was ignored.

All of the documents examined in the study were in English, as were the news articles. A detailed study of francophone Canadian media would certainly be a worthwhile project to undertake in the future. Most of the documents collected and analyzed for this report came from a database[3] established by the Cumulative Environmental Management Association (CEMA), a collaborative organization based in Fort McMurray, Alberta that includes representatives from government, industry, academia, civic and community organizations, and environmental groups. CEMA was established by the Klein government in 2001 as part of Alberta Environment's Regional Sustainable Development Strategy (RSDS) and mandated to find ways to reduce the growing pollution in air and water, and land disturbances from expanding oil sands operations.

[3] Oil Sands Environmental Management Bibliography (OSEMB) at http://osemb.cemaonline.ca/rrdcSearch.aspx; improvements and expansion of the database in 2011 and 2012 were funded by OSRIN and CEMA.

Industry funds the organization to the tune of $5 million a year through the Oil Sands Developers Group (OSDG). The Alberta government contributes $400,000 annually.

Besides CEMA's bibliography, researchers retrieved documents from university, government, industry and NGO libraries and databases. The news articles were collected from two databases – CBCA Complete and Canadian Newsstand.

It must be noted that CEMA's history is also a window into the dialogues reported here. Two key Aboriginal stakeholders – the Athabasca Chipewyan First Nation (ACFN) and the Mikisew Cree First Nation (MCFN), both of whose traditional territories are directly affected and whose primary communities are downstream of the oil sands – left CEMA in 2006 and 2007 respectively. They claimed that because CEMA was industry funded, industry had most of the decision making power. The Mikisew Cree First Nation re-joined CEMA in 2011.

In 2008 The Pembina Institute, an Alberta-based environmental NGO, also pulled out as a participating member of CEMA. It complained that the Alberta government, which is also represented on CEMA, did not provide the leadership and resources necessary to make the organization effective at preventing, mitigating or managing cumulative environmental impacts (Severson-Baker et al. 2008).

There are several words that can be used to describe the way various actors have communicated about the oil sands over the years: dialogue, discourse, discussion, conversation, and narrative. Without this communication oil sands development would not have evolved the way it has. And while it may seem that the current conversation is the most important conversation, it was developed from earlier conversations that seemed just as important. The conversation will no doubt go on for a long time; the more we understand about it the better able we are to get involved in it.

1.2 Research Method

The Alberta oil sands can be studied from a myriad of perspectives. It is a complex topic that includes everything from engineering to land reclamation to economics and marketing. To examine the discourse about the oil sands in an efficient manner, three aspects of oil sands development were selected:

- Discourse about economic impacts
- Discourse about environmental impacts
- Discourse about social impacts

Since the Alberta government spurred significant development of the oil sands in the early 1970s, it was decided that the time frame for examining the discourse would extend from 1970 until early 2013.

The three main themes were then divided into more manageable sub-themes:

- Economic Impacts
  - National economy
  - Foreign investment
  - Canada's trading relationships
- Environmental Impacts
  - Air emissions
  - Tailings ponds
  - Greenhouse gas emissions
- Social Impacts
  - Aboriginal rights, economy, and health
  - Living conditions for residents of the Wood Buffalo region

Since the funder of this study – the Oil Sands Research and Information Network (OSRIN) – had requested that researchers analyze documents in the CEMA bibliography, most of the documents studied were retrieved from that database. Other relevant documents were collected from university, government, industry and NGO libraries and databases. The news articles were collected from two databases – CBCA Complete and Canadian Newsstand.

This report is a qualitative content analysis. When analyzing texts from a qualitative perspective, categories and themes emerge out of the data being used, and the wider context in which these documents are embedded situate the findings presented (Bryman et al. 2012, Deacon et al. 2007). Consequently, this method is quite different than counting the number of times a certain phrase or expression occurs based on a pre-determined list of subjects or expected topics, which is typical of quantitative research (Bryman et al. 2012, Deacon et al. 2007).

A qualitative approach was adopted for this investigation since very little work has been done on oil sands dialogues across the decades. Accordingly, this document should be considered "exploratory" (Neuman and Robson 2011) in nature, meaning that it offers no attempt to generalize; put differently, the authors cannot say with confidence that all dialogues around the oil sands would generate the same results. In contrast, this report should be appreciated as a scoping exercise designed to encourage further work on the subject (Neuman and Robson 2011). This makes using a non-probability, convenience sample, in which cases are used because they are readily available, an appropriate choice (Bryman et al. 2012).

This exploration also adopts a discourse analysis approach. Discourse in this case simply refers to a particular system of language with a "characteristic terminology and underlying knowledge base" (Seale 2004, p. 507); in this instance this report investigates the discourse of oil sands development in Alberta. According to Bryman et al. (2012) the key questions that need to be addressed when conducting a discourse analysis include:

- Who is writing about this?
- What are they producing?
- Where is it being published?
- When is it being talked about?

A core component of any discourse analysis is also a consideration of what is not included in the sample selected (Bryman et al. 2012, Seale 2004). In terms of steps followed, a discourse analysis involves a careful reading of the content selected looking for general themes, specific words and pairings, and evaluating whether the value statements being made about a topic are either positive or negative (Bryman et al. 2012).

The key limitations to a discourse analysis approach are:

- the analysis is only as good as the texts supplied,
- there is the potential to try and make linkages that are hard to prove with certainty,
- this method cannot easily answer why things happen but rather offers a rich, descriptive picture of what occurred,
- people analyzing the same content may take away different meanings (Bryman et al. 2012).

Despite these criticisms, the major strengths to this technique are: it is unobtrusive; others can easily replicate the work conducted by accessing the same sample; and the discovery of multiple meanings typically prompts debate and encourages future research (Bryman et al. 2012).

Because each of the three themes presented their own complications, the research methods used for each theme are presented in more detail in the appropriate section.

2 DISCOURSE REGARDING THE ECONOMIC ASPECTS OF OIL SANDS DEVELOPMENT

2.1 Introduction

The magnitude of the economic impact of the oil sands on Alberta and Canada is hard to ignore. Industry, government, non-governmental, and even media sources often extol the virtues of this resource by offering compelling statistics linked to growth. For example, recent figures posted on the Oil Sands Development Group's website offer the following projections for the Alberta oil sands over the next 20 plus years:

- A growth of employment across Canada from 75,000 jobs in 2010 to 905,000 in 2035.
- The generation of $2.1 trillion in economic stimulus over the next 25 years (2010 to 2035).
- Development contributing $105 billion to provincial taxes and over $311 billion in federal taxes.
- The collection of over $350 billion in royalties from 2010 to 2035 (Oil Sands Developers Group 2009a).

Other statistics mention the oil sands' significant contribution to the Alberta and national gross domestic product. While the future looks promising based on the aforementioned statistics, over the past 40 years the economic landscape for oil sands development has also shifted dramatically. For example, in Alberta during the 1970s there were only two major companies operating: Great Canadian Oil Sands (GCOS; now known as Suncor Energy Inc.) and Syncrude Canada Ltd. In contrast, as of January 2013 there were more than 127 oil sands projects approved across the province, including new mine developers (beyond Suncor and Syncrude) Shell and Canadian Natural Resources (CNRL) (Alberta Energy 2013)[4]. Moreover, in 1973 the annual average price of domestic crude oil (in $/Barrel) was $4.75, which adjusted for inflation is $24.70, whereas in 2012 it was $86.13 (which adjusted for inflation sits at $87.68) (McMahon 2013). Additionally, in this time frame the price of oil has shifted dramatically reaching an all-time low in 1998 (lower than the price in 1946) and only 10 years later reaching an all-time high in real inflation adjusted terms (McMahon 2013). Such figures illustrate just how profoundly the value and scale of this resource has shifted in the past four decades.

Discussions of employment, royalties, general contributions to wealth, and changes in prices, seemingly offer irrefutable evidence that this resource is invaluable to Canada's growth, yet this is only part of the economic story. A deeper look at the dialogue of the past and visions of the future about the oil sands supplies insight into changes in inter-provincial relations, Canada's relationship with other nations, and the view of oil as an influential national and global resource.

[4] Imperial Oil's Kearl oil sands mine started processing after publication of the Albert energy report. Additional mines are in the regulatory review process.

To determine how this discussion has changed since the 1970s several topics were selected for this section of the report that would offer insight into the emerging narrative of the past 40 years. The subjects chosen are foreign interests (investment/ownership and markets) as well as the presence of the oil sands in the context of Canada's national economy.

Below is a brief discussion of the methods for this section, followed by a general picture of the technical documents selected and a specific look at the economy through the national and foreign lens. Some general conclusions and areas of future research are then offered to complete this section.

2.2 Research Method

As in the other parts of this report, the document list selected for this analysis was generated by using the CEMA bibliography (Oil Sands Environmental Management Bibliography – OSEMB) and a media scan. In total, 153 OSEMB records were captured at project outset, using the "economics" search term. This number was then reduced to a core 56 documents, after filtering for overlap with other report areas, poor reproduction and non-accessibility. The breakdown of what was available includes 10 government documents, 28 from industry, four in the NGO/other category and 14 in the academic area. In addition, 45 non-OSEMB documents were acquired in an effort to expand the search for relevant sources. This was undertaken partly due to gaps in the CEMA bibliography – particularly with regard to recent Alberta government documentation on overall economic and energy strategy – and partly as general research for context setting sources in what is a significantly diverse discourse space. The extra documents and web sources broke down by category as follows: government (18), industry (23), and academic (24). Consequently, in sum a total of 101 documents on the broad topic of economics were collected. These included 28 government works, 51 from industry, four from the NGO category and 38 academic pieces.

All records were either captured as or converted to PDFs and swept by the research team using software-based keyword searches to isolate and code relevant instances of discussion around concepts of interest. All documents and/or isolated sections were then re-read by several members of the research team for confirmation of coding relevance and contribution to the discourse on the selected sub topics.

The media search for economics was more targeted. To ensure consistency with the other sections of this report it used two databases (Canadian Business & Current Affairs Complete and Canadian Newstand) to look at national and foreign economic issues. Two groups of documents were generated. The first used the following key words: (foreign) and ("oil sand" OR oilsand*) and ("tar sand" OR tarsand*). This yielded 215 results which were then, with an initial review of headlines, decreased to a total of 140 articles. For the national economy topic the search terms used were (nation* econom*) and ("oil sand*" OR oilsand*) and ("tar sand*" OR tarsand*). This yielded 224 hits cut down to 134 once repetitive articles were removed. The time parameter selected for both topics was January 1972 to January 2013, "English" was specified as the language of choice, and "newspapers" was chosen as the source type and full text was specified for all the key words.

The media articles were all downloaded electronically and entered into Mendeley[5]. All of the texts were read in full and coded by members of the research team using the following questions as a guide:

- background and context
- key participant groups involved/discussed
- framing of the issue by the participant groups
- the language used to communicate the topic at hand
- dialogue type and quality
- lessons learned, forgotten, and recommended

Once the coding was completed, attention was paid to how these areas of interest changed over time, with patterns and themes highlighted.

2.3 Economy in General

In reviewing the technical documents drawn from the OSEMB and the supplemental literature on this topic one general trend is clear: there was a rich and detailed plan laid out in the government work conducted in the 1970s and early 1980s regarding how to manage and monitor this resource. But there was a defined shift moving into the 1990s. Industry then took the lead in talking about this topic in the 1990s relegating government to a facilitation role, and putting technological innovation at the top of the list as the key to moving the industry forward. In this past decade however the dialogue shifts back to a more evenly balanced discussion of government and industry roles in the negotiation of a more holistic approach and global reality.

Government documents from the 1970s and 1980s in the technical group of documents reviewed are definitional and context-setting, urging a more active role on the part of government and often coupling social and economic concerns together. Studies conducted on behalf of the Alberta Oil Sands Environmental Research Program (AOSERP) reveal comprehensive economic data gathering and analysis quite early on. These documents were drafted as the Alberta government took the initiative for major expansion of the oil sands via the establishment of the Alberta Oil Sands Technology and Research Authority (AOSTRA). AOSTRA was a crown corporation set up in 1974 to ramp up development in the industry by facilitating the development use of new technological solution for both the production and extraction of oil within the oil sands (the in situ method).

In reviewing documents from the early 1970s, it is clear the Alberta government was aware of the deficiencies in the Oil Sand Development policy initially proposed in the early 1960s (Conservation and Utilization Committee 1972) and the general company-by-company approach to regulating the industry. Consequently, it was seeking reliable perspectives from which to take planning to the next level. Three major studies were conducted on their behalf. In terms of

[5] See http://www.mendeley.com/

recommendations these foundational studies include the suggestion of establishing a "baseline information system" to create an "internally consistent ordering of data" for the region (Earl Berger Ltd. 1978) indicating the value of drawing on extensive and wide ranging socio-economic indicators to "review the economic evolution of the Athabasca Oil Sands region" (Peter C. Nichols & Associates Ltd. 1979), and a desire "to assemble data that would facilitate an understanding of the demographic and socio-economic impacts of oil sands development" in the region (Urban Dimensions Group Inc. 1980). Overall, the message at the time was clear: careful, measured planning with "deliberate" government intervention for managed growth would be essential to moving the industry forward. Social and economic benefits were presented as inseparable (hence the term "socio-economic" that is consistently deployed) and it was stressed that "foreign energy demands should not be the only force influencing development" but rather maximizing the benefits for Albertans and Canadians should be paramount (Conservation and Utilization Committee 1972, p. 6).

The scale and scope of development recommended in the government work during the 1970s was measured. In fact the following predictions were the estimates offered then for 2000 assuming eight new projects were approved over 28 years:

- An annual production rate of one million barrels per day
- A depletion rate of the resource at approximately 734 years
- A population of 600,000 in Fort McMurray needed to support such growth (Conservation and Utilization Committee 1972)

Despite the prediction, the picture today looks somewhat different. For example, recent numbers note:

- Alberta's production of crude oil was 1.7 million barrels per day in 2011 and is expected to more than double to 3.7 million barrels per day by 2019 (Alberta Energy 2013).
- The depletion rate of the resource is projected at approximately 400 years (Government of Alberta, n.d).
- The population of Fort McMurray in 2001 was almost 40,000 and in 2011 just over 60,000 (City Population 2012).
- There are seven oil sands mining projects and 26 commercial in situ projects approved, in addition to about 130 primary recovery projects and 12 experimental schemes (Energy Resources Conservation Board 2011).

Clearly, the annual production rates and number of players involved has increased significantly despite the 1972 warning for a conservative, strategic, and coordinated approach for the management of this resource and ultimately its preservation for our provincial and national use.

In the 1990s, industry becomes an active player in producing the context for an economic discussion, clearly articulating their desire to take a leadership role in this sector and positioning

government as simply a facilitator. Nowhere is this more apparent than in the National Task Force documents produced by the Alberta Chamber of Resource (ACR), a cross-sectoral industry association which aims to provide guidance for the development of natural resources within the province[6]. ACR identified the oil sands as one of the most important resources in Canada as early as the 1970s and presents the Task Force report as a culmination of almost 20 years of dialogue on this topic. The Task Force itself was formed in 1993 and was composed of specific operating companies (such as Shell, Suncor, Syncrude, and Imperial), government, research agencies, and suppliers. Its mission was:

> To be a catalyst for further development of Canada's oil sands through identification of a clear vision for growth and preparation of a plan of action. This will be achieved through a series of assessments regarding the technological, fiscal and socio-economic, environmental and regulatory, and marketing and transportation aspects of oil sands development. The Task Force will identify new concepts, technologies, and strategic approaches, and make recommendations and communicate the results to key private and public sector decision-makers. (National Task Force on Oil Sands Strategies 1995a, p. 2)

The seven "fundamental elements" of their "oil sands development paradigm" for the next 25 years included a "well-articulated common vision to organize resources and coordinate industry decisions among key stakeholders," the suggestion that all economic activity associated with oil sands be "customer-responsive and market driven"; that "incremental and rapid growth be accepted as parallel tracks"; and that the entire value-chain be exploited "until every possible energy, mineral and technological product, by-product and co-product has been exploited" (National Task Force on Oil Sands Strategies 1995a). The Task Force even goes so far as to lay out the "Roles of Oil Sands Stakeholders", using phrases such as "primary responsibility" and "providing leadership" to describe industry's role in key areas, such as new technology, continuous improvement and maintaining an effective "intellectual infrastructure." In those same categories, respectively, the government's role is described in a more hands-off role designed to "encourage and facilitate," serve as a "key source of … funding," and "harmonize." This document tends to pay minimal attention to socio-economic issues but rather key ways to promote technological innovation within the sector.

It is worth noting that the Task Force was working during a time when the price of oil was quite low, making this a much more challenging resource to posit a future for. This makes it unsurprising that they were seeking an open regulatory framework comprised of factors such as: "flexible 'all-market' and 'all products' pipeline transportation systems"; "imaginative, diverse, internationally-based capital formation"; and "a generic fiscal regime" (National Task Force on Oil Sands Strategies 1995a, p. 8). This also helps explains why they would turn to "science and technology advancement … to achieve an increasing rate of return for bitumen and crude oil, in a market in which those products must take prices set by conventional crude and commodity markets" (National Task Force on Oil Sands Strategies 2005a, p. 8).

[6] A list of the National Task Force on Oil Sands Strategies documents can be found in the reference list under National Task Force on Oil Sands Strategies 1995 a to e.

This shift within industry can be seen even earlier than the National Task Force report. For example, as one Esso Resources manager put it in a presentation to the 1991 Canadian Heavy Oil Conference, the key to reinvigorating the industry in a time of economic difficulty is "increased business leadership in the research community," such that "universities and governments … be receptive to industry guidance" (Overfield 1991). According to Alberta Senator Dan Hays, with regard to government support specifically, "it is important for the industry to inform government as to its preferences for incentive vehicles" and that it is perhaps time "investment decision-making is, to the greatest degree possible, market-based and out of the hands of bureaucrats" (Hays 1990).

In sum, the reports from the decade exhibit a strong shift in tone and substance from those of the early government documents which imply a proactive and watchful view of industry suggesting instead that the "next century country" will be one discovered and largely managed by industry and their focus should be on promoting technological innovation.

By the 2000s documents reveal a clear shift in emphasis to better understanding and integration of issues, as well as the need for a broader, more global approach to planning and managing oil sands development, mirroring many of the insights of the 1970s and 1980s. This can for instance be seen in the urging by influential Albertans like Peter Lougheed to slow the pace of development for both economic and environmental reasons (Riley 2012). In terms of the industry dialogues, the ACR is once again characteristically forthright, arguing instead of primarily industry initiative, that the future will in fact require "leaders with a new mindset, a fresh vision with a commitment and willingness to experiment and learn" with whatever partners necessary (Alberta Chamber of Resources 2004). They go on to propose designing a "'foresight lens' – a new decision-making framework, complete with financial analysis, lifecycle economics, and sustainable metrics that enables decisions to be made in light of the emerging future in regional, provincial, national and global contexts." Later in the decade, Deloitte follows suit in its series of *Gaining Grounds* documents, arguing in 2012, for example, that oil sands leaders should be "shifting gears to be seen as thinking globally first, North American second and Canadian third" in terms of "working to be understood as real stewards – leaders with interests far bigger and broader than their own" (Deloitte 2012). This is echoed in groups like the Energy Policy Institute of Canada, which advocates "the sharing of knowledge with government that is straightforward, accurate, ambitious and insightful with an objective to motivate policy that will maximize the social and economic potential from Canada's energy wealth and Canada's leadership in the world" (Energy Policy Institute of Canada 2011).

A shift back towards a socio-economic understanding of the oil sands operating environment so common in the 1970s is also reflected in the mandates and charters of the industry associations described above. This is likely due to the increasing pressures to consult by various stakeholder groups and perhaps additional media exposure about the concerns associated with oil sands development. For example, the Oil Sands Developers Group's first task in their mandate to inform stakeholders "was to complete a cumulative socio-economic assessment of all the oil sands projects" (Oil Sands Developers Group 2009b). Moreover, the industry-comprised Oil Sands Leadership Initiative's (OSLI) 2010 Charter takes as its prime directive the guiding of

"collaborative efforts" through four overlapping programs covering water management, land stewardship, technological breakthrough and sustainable communities (Jacobs et al. 2012).

A quick survey of online accessible Corporate Sustainability Reports among main oil sands producers also indicates a re-integration of socio-economic issues in the spirit of the 1970s documents. For example, Syncrude's 2011 document entitled *Are the oil sands being responsibly developed?* spends 120 pages detailing findings, accomplishments and plans for advancing key sustainability areas of land use and biodiversity, water, tailings, aboriginal relations, regulatory relations, employment and labour and the community (Syncrude 2011). The notion of sustainability as something all-inclusive is echoed in the work of OSLI discussed above and has within the last two years come to mean much more than simply pursuing an environmental agenda. Moreover, Suncor's most recent 36-page corporate sustainability report is shorter but the message from CEO Steve Williams is blunt, suggesting that recent industry activity shows that "… if too much emphasis is put on short-term economic gain at the expense of promoting strong communities or a healthy environment, long-term economic costs are almost certain to occur" (Suncor 2012a). In addition, Canada's Oil Sands Innovation Alliance (COSIA), a partnership of 14 major oil sands companies, acknowledge in their founding charter that development should not just be about economic gain but also "social well being" (Canada's Oil Sands Innovation Alliance n.d.). This more holistic approach by industry is heartening since associations such as ACR and the OSDG have no power to impose their recommendations on individual companies.

Not only is a more global understanding of the issues clear in industry documents it is also apparent in government reports. In fact, the Alberta government's thinking on long-term understanding, planning and managing of the oil sands becomes much clearer in a series of reports produced from 2005 onward, including *Investing in our Future: Responding to the Rapid Growth of Oil Sands Development* which identifies several areas of strength, deficiency and opportunity in government policy. The 185-page report's overall conclusion is that government planning and decision-making process is adequate in some respects and "deficient in others," including housing, health care, infrastructure and social services – all areas specifically highlighted in 1970s reports. Moreover, an Oil Sands Consultation report – one of three leading up to the province's comprehensive energy strategy in 2008 – admits to "concerns" over how the province had managed previous oil sands consultations (Government of Alberta 2007).

It advocates that consultation must include the following sorts of stakeholders: "representatives from the government departments with responsibility for various aspects of oil sands policy, aboriginal groups, Non-Government Organizations, industry, and municipal governments". The province's recent energy strategy itself is even more direct in past failings, stating that "No longer will it optimally serve Albertans to address energy strictly from a narrow point of view. Alberta's energy strategy must encompass a broader vision and transcend the traditional silos if we are to realize intended outcomes" (Government of Alberta 2008). This strategy was followed up by specific plans for the oil sands themselves (Government of Alberta 2009a) and a series of progress reports that reflect this mandate explicitly, with in-depth sections devoted to policy direction around: infrastructure and healthy communities; economic planning; aboriginal

consultation; innovation and research; and better data gathering and measurement systems – a veritable mirror image of what was proposed by the early studies of the 1970s.

2.4 National Economy

The review of this theme highlights how the oil sands have been used to suggest the possibility of building national identity and exemplifies an overall noticeable increase in economics promotion. There is a consistent dialogue of how resources can help build the nation. This becomes more evident in the OSEMB documents reviewed across all discourse areas during the 2000s.

In reviewing government documents on the national economy the oil sands themselves are presented as a tool to build a strong economy not only in Alberta but for the entire country. This type of nationalistic spirit can be seen over 40 years ago in a 1972 report which asserts: "The evolvement of tar sand technology should be led by Canadian technologists for the benefit of Canadians" (Conservation and Utilization Committee 1972). In this case these benefits for the nation are expressed by suggesting control of the resource ought to remain Canadian since it states: "Alberta owns the supply (one third of the world's known reserve) and the greatest demand emanates from markets external to Canada. With time Alberta should be able to utilize the tar sands as a lever in the socio-economic development of the province" (Conservation and Utilization Committee 1972, p. 46).

Today, government dialogues are still linked to building the economic power of the nation. However, the possibility of how this can be achieved is quite different. Maintaining Canadian/Albertan control is not what is stressed, instead the construction of pipelines is at times presented as the source of this power. A recent Senate report on Canada's energy future captures this shift in emphasis nicely when it compares modern day industry efforts to build pipelines with symbols of the nation from the past:

> Legacy infrastructure projects in Canada like the railway system, the Trans-Canada Highway and the Saint Lawrence Seaway have greatly facilitated the movement of people and goods, strengthened the national economy and knitted together the country's regions. Today, Canada has the opportunity to further advance the building of the nation through modernizing and expanding our … oil and gas pipelines (Standing Senate Committee on Energy, the Environment and Natural Resources 2012, p. 28)

The presentation of pipelines as something that will "knit" together regions is an interesting choice in this case as the media picture (which is highlighted below) presents the topic of pipelines as divisive.

In addition to government support for the use of the oil sands to build national identity, industry and the NGO documents also endorse this idea in their discussion of a national energy strategy. They include documents from Suncor (2012a), the Academy of Engineering (Marceau and Bowman 2012), Energy Policy Institute of Canada (2011, 2012) and Deloitte (2011, 2012). Moreover, from the NGO sector the idea of having a national energy strategy is covered extensively in the work of the Pembina Institute, which argues that in the past there has been a

hesitation on the part of governments to have an "informed and constructive discussion about how to collectively manage the economic and environmental impacts in the best interest of all Canadians" (Lemphers and Woynillowicz 2012, p. 62). It is possible that this notion of an energy strategy was talked about less in the 1990s and early 2000s due to past policy decisions. This is certainly implied in an endorsement for this approach in a recent Deloitte (2012) report that specifies present dialogues about implementing a "national energy strategy" should not be imagined as "a repeat of the Trudeau-era National Energy Program", instead the "fears and resentments of the past" associated with this process must be "disregarded" and planning efforts should aim to "focus on the future" (p. 24). Some of the concerns with the National Energy Policy were echoed in the press coverage on this topic (such as Byfield 2007, Mandryk 2008).

In the late 2000s, there has been a steady increase in promotional terms associated with how this resource can be mobilized to build the nation in industry, government and NGO documents associated with the national economy theme.

As noted in the Aboriginal section of this report, one of the key trends across all of the discourse communities is less information being provided and more promotion being supplied. In the case of reporting on economics there are now briefer discussions of issues, more photos, and in general embracing more descriptive terms. Some of the more noticeable rhetorical tools being deployed include the following:

- Metaphors, such as "energy superpower" (discussed below), "plucking the golden goose" in reference to royalties (McKenzie 2011), oil as "treasure in the sand" (Canada West Foundation 2005), Alberta talked about as living "in the shadow of the boom" and encouraging "oil sands fever" (Lemphers and Woynillowicz 2012)
- Analogies, such as the implication that Canada has "Dutch disease" due to commodity prices associated with oil (Lemphers and Woynillowicz 2012)
- Hyperbole, including references to Canada's "blackened reputation" (Hirsch 2005) and a stress on the "urgency" and small "windows of opportunities" in which policy decisions can be made (Standing Senate Committee on Energy, the Environment and Natural Resources 2012)

More specifically, a metaphor that stands as directly linked to the national economy theme is that of an "Energy Superpower". According to Way (2011), the use of the energy superpower metaphor began in 2006 with a speech given by Stephen Harper to the Canada-UK Chamber of Commerce and was reiterated over the following 25-month period by government in a variety of international settings.

Within the reports reviewed, the "energy superpower" metaphor is deployed within various industry reports in the late 2000s, including the Canadian Academy of Engineering (Marceau and Bowman 2012) who use it in the title of a recent report *Canada: Winning as a Sustainable Energy Superpower*, Deloitte (2012), and the Energy Policy Institute of Canada's (EPIC) recent discussions (Energy Policy Institute of Canada 2011, 2012). Within these documents the metaphor is used positively and presented as an unquestionable reality. This is nicely illustrated

in EPIC's *Canadian Energy Strategy Framework* which opens with the following claim: "Canada is an energy superpower with the potential to achieve even more for the benefit of Canadians. Realizing our national potential will require aggressive and focused innovation, exceptional environmental performance and a broad-based capacity to serve domestic and international markets with energy products and expertise" (Energy Policy Institute of Canada 2012, p. 6).

Despite its enthusiastic deployment by industry, the energy superpower metaphor is also considered by academics (see Kim 2010, Way 2011) who provide a more critical lens for this term. In particular, Way (2011) argues that just because Alberta and Canada possess an abundance of oil this does not make them superpowers. She argues that a superpower requires a desire to mobilize the resource beyond its immediate region and can apply sanctions if needed to assert its control. Critiques launched against Canada as an energy superpower include its lack of a national strategy in this area, its inability to restrict the flow of oil to the United States (due to NAFTA), and the large amount of foreign ownership of the oil and gas sector (Way 2011, pp. 78-79).

In addition to problematizing this term, Way (2011) offers other metaphors that might be more appropriate to describe Canada such as:

- "Energy satellite", likely alluding to Canada's overreliance on a trading relationship with the United States
- "Energy superstore", referencing to our ability perhaps to let others buy our products and shop around
- "Energy pussycat", commenting again on Canada's weak position on the international stage or as a leader on issues such as climate change

Way also suggests that in her review of media coverage from 2005 to 2007 (the period in which this term was being formulated and used by the federal government) only a small number of articles specifically deployed this term, some negatively and other positively. Despite this mixed response her analysis indicates that mainstream media supported the basic components underlying what Prime Minister Stephen Harper hoped to promote in using the energy superpower concept (though in her mind Harper's view of the concept does not make it so): Canada is a safe, reliable investment.

This report's analysis of the national economy literature supports the lack of traction this term seems to have in the media. Out of the 200 plus stories reviewed only two deployed it, both without serious interrogation of the concept.

2.4.1 *Media Findings: National Economy*

A scan of news media databases reveals that media coverage of the Alberta oil sands' impact on national economy starts in the 1990s. Overall, as with the consideration of the press coverage on foreign interests that follows, what is apparent in media discussions of this topic is that the

Alberta oil sands became a subject of focus from 2008 onward with a steady increase of articles each year up until the present day.

In the over 130 newspaper articles that were reviewed and coded, a variety of topics emerged including jobs, profitability, and the impact of environmental interests on pipeline debates. Among these subjects three major findings were of note.

Recent discussions of the national economy cite oil sands employment as a positive development for all of Canada. In the last five years when employment issues are discussed it is often in the context of being not only for the benefit of Alberta's economy but also for the rest of Canada; this includes coverage about the increasing use of fly in work options for local and nationwide manpower (Rekai 2013). Current news media discourse refers to job creation in the oil sands as a nation-building exercise. They often use statistics such as data from the Canadian Association of Petroleum Producers which claims for instance that: "The oil sands will contribute $55 billion to the Ontario economy, and $23 billion to Quebec's, in the next 25 years. In terms of jobs, the oil sands are projected to create more than 800,000 person years of work in Ontario and 375,000 in Quebec" (MacDonald 2013). Another example of the jobs equals nation-building theme can be found in the recent statement by the chairman of Syncrude, Marcel Coutu, who called the oil sands "a national treasure" and noted B.C. stood to gain "$45 billion in economic spinoffs and 28,000 jobs a year from it" (Inwood 2010). In another media study, Way (2013) found that 61% of news articles about the economic impact of oil sands development to other parts of the country focused on how the oil sands would generate economic growth outside Alberta (p. 140).

More striking than the use of numbers to suggest that the oil sands job creation builds the nation is the recent labeling of those who do not support industry development as enemies of the state. This is nicely captured in a recent statement made by a Conservative Member of Parliament, in response to the New Democratic Party's concerns about the "ecological, economic and social debt" of the oil sands, in which he notes "… The NDP members should stop taking the side of the extremists who want to kill Canadian jobs … They have made it clear they want to shutter our new development of the oilsands. They are willing to destroy hundreds of thousands of jobs across the country" (O'Neil 2011). A statement such as this suggests that jobs ought to be preserved for the good of Canada and takes a position that suggests to do otherwise seems radical.

Oil sands often become a strategic tool mobilized by political leaders during election times. A noted pattern that is not surprising given the power dimensions associated with the control and regulation of this resource, is just how often political figures use the oil sands and its potential to advance their cause (both provincially and federally). For instance, a profile of Liberal Energy Minister Anne McLellan of Edmonton noted that she differed from her Liberal colleagues who saw the oil patch as "a bottomless pit of revenue, suitable for high taxation, and an environmental pariah." The article credits her with $27 billion in investment, sparking an economic boom in Edmonton, and McLellan was identified as an Alberta voice at national cabinet (Staples 2004).

Moreover, in 2008 Alberta was front and centre during the federal election as "the province keeping Confederation out of the recession" so a slowdown in Alberta should concern the rest of the country (Martin 2008). Each of the candidates had a position on the Alberta oil sands which was repeated in media reports. These ranged from slowing down oil sands production (New Democrats) to championing the oil sands as an economic and job engine (Conservatives). There were criticisms over subsidies to the oil producers. As well, "Opposition leaders accuse Harper of focusing too much on Big Oil," was the headline (Markusoff 2008) in an article that mentioned the loss of manufacturing jobs in Canada owing to increased value of the Canadian dollar. As Laura Way showed in her two-year newspaper media study (2005 to 2007), there are few articles about the economic impact of the oil sands on other provinces (Way 2013). However, the federal election brought these to the fore in the media reports.

In sum, just as industry and government documents provide a plethora of statistical evidence and sources which would suggest that oil sands development is good and necessary for the nation, so does the news media. However the media has at times reminded us of the other side of this debate. In reviewing the coverage over more than 15 years it becomes apparent that no matter what the topic – international meetings, interprovincial relations, or pipeline projects designed to boost oil sands exports – the oil sands are typically viewed as good for the nation. For example, in terms of climate change discussions, concerns with the Kyoto proposals resulted in the deployment of sources making claims that this was a "life or death situation for Alberta" and warning of the danger of allowing investments "to migrate" to other countries with huge tar-sand deposits" but also that "40% of the market capitalization of the Toronto Stock Exchange (utilities, oil producers and steelmakers) would be affected if an emissions plan is implemented in Canada" (Mackinnon 2007). More recently the rest of Canada was set straight about the oil sands contributions to the national economy in a blistering editorial by Licia Corbella, head of the editorial board at The Calgary Herald, who noted "In 2009 Albertans paid $40.46 billion in income, corporate and other taxes to the federal government and received back just $19.35 billion in services and goods from the feds. That means the rest of Canada got $21.1 billion from Albertans or $5,742 for each and every man, woman and child." She noted that Albertans gave 3 times what Ontario contributed. She also alleged that Quebec's free university tuition was free because of Alberta transfer payments (Corbella 2010).

Despite these glowing endorsements that correlate oil sands development with the building of the nation, we do sometimes see a different side presented in the press not found in government or industry documents. For example, despite the present view that jobs in the oil sands are good for all of Canada, a review of earlier press discussions of jobs paints a very different picture. In 2005, while the oil sands were at times posited as the "gift that keeps on giving" (Varcoe 2005b) in terms of employment there were also those that talked about "Alberta connections and perceptions from the outside looking in" (Martin 2005). From this context jobs in the oil sands were presented as something that offers a great paycheque for young people not found elsewhere in Canada. However, the migration of youth from provinces such as Newfoundland was also positioned as having a profound impact on these communities. Alberta and the jobs it offered were described as creating a "giant economic sucking sound separating job-seekers from their

family roots" (Martin 2005). Moreover, even earlier discussion in the mid-1990s suggests that while there is opportunity in the oil sands, "tempting … the unemployed" to take advantage of a potential "job bonanza" the picture in "Fort McMoney" is bleak; when projects are not approved life is grim (Boras 1996). Additionally, quite recently in terms of employment and the oil sands the issue of temporary foreign workers has been raised. For example, NDP leader Thomas Mulcair asserted: "The already large-scale importation of low paid foreign labourers deprived of their full rights is eerily reminiscent of the opening of the Canadian West by the Chinese workers who were brought to BC to build the first railroad" (Braid 2013). Current coverage also sometimes highlights the issue of skill shortages (see for example Lamphier 2012). Such claims are quite different than the legacy building nationalistic rhetoric found in the Senate report discussed previously.

In sum, "the oil sands as good for the nation" due to economic spinoffs has been a common theme in the mass media coverage reviewed. Moreover, bursts of coverage around election times occur supporting this theme. Nevertheless, sometimes the press offers a voice of dissent and may widen our view of an issue in contrast to the positions typically deployed in present day government and industry documents. In doing so the media may also offer a view from other provinces and/or a national perspective that helps avoid the potential myopia of the oil sands story told only from the vantage point of Alberta.

2.5 Foreign Investment/Ownership and Market Potential

2.5.1 *Foreign Investment/Ownership*

The topic of foreign investment/ownership does not appear that often in the technical group of the documents explored. However the presence of this theme is illuminating as it illustrates strong shifts in policy thinking and noticeable differences across the dialogue communities.

There are two clear and divergent frames in the government documents reviewed regarding foreign investment. One of the earliest views on the need to develop a comprehensive and integrated policy position for the management of the oil sands, neutrally referred to as the "tar sands" in a 1972 document produced for the government of Alberta. In regards to the issue of foreign ownership this piece presents the oil sands as a unique resource capable of shifting existing trade power dynamics. It notes:

> The tar sands offer a unique opportunity to change the historical trend of ever increasing foreign control of non-renewable resource development in Canada. Here is a reserve of the greatest magnitude which does not require highly speculative investment to find and prove. The world-wide demand for petroleum will be so compelling within the near future that it should be Alberta's objective to increase Canadian equity participation in the resource developments. Huge amounts of capital will be required for further development of technology and the purchase of plants and equipment. However, to the maximum extent equity capital should be raised in Alberta and Canada recognizing that the usual past constraints of unproven reserves and uncertain markets (Conservation and Utilization Committee 1972, p. 16).

This report goes on to note "Foreign investment often makes it difficult to control the resource development in the best interests of Canadians" (Conservation and Utilization Committee 1972, p. 48). These claims suggest that by keeping national control of the oil sands, Canada and Alberta will benefit in the long term. The resource itself is presented as a clear economic winner, one that requires an investment by both levels of government.

It is worth noting that this report was written in a political climate during which there were strong concerns about foreign ownership (for an even earlier negative view on this process see Freeman 1966). In 1973, a Liberal Trudeau government imposed extensive measures on the oil and natural gas industry. This included setting crude oil prices well below world levels (Canadian Centre for Energy Information 2013). This was the start of what later became a formal policy introduced by Trudeau in 1980 known as the National Energy Policy (NEP). The NEP involved extensive government intervention in the industry and a "made-in-Canada" price policy. Both governments and industry stakeholders in the oil-producing provinces were unhappy with the NEP. However, by 1985 the Conservative government (under Brian Mulroney) had dismantled the NEP, deregulated the price of oil and opened Canada's borders to additional oil imports and exports (Canadian Centre for Energy Information 2013).

Also significant to this discussion is that the two early players in the oil sands, Syncrude and the Great Canadian Oil Sands (later known as Suncor), were the product of multinational initiatives perhaps triggering a desire for less of a foreign presence. For example Syncrude, one of the earlier players in the Alberta oil sands during the 1960s and onwards was initially formed by the following American companies: Imperial Oil (an affiliate of Exxon), Atlantic Richfield (ARCO), Royalite Oil, and Cities Services R & D (Bridges et al. 1990, p. 5). In 1978 ARCO pulled out of this consortium and the Alberta and federal government joined as partners (Bridges et al. 1990, pp. 44-45). Moreover, the other major player (the Great Canadian Oil Sands Company Limited), which later became Suncor, was established initially by Sun Oil Company, another American multinational.

The nationalistic spirit of this early government piece has clearly disappeared in current discussions of foreign ownership. For instance, a quite different position is articulated in a recent Senate document on the topic of energy management. It states:

> Unlike many other countries, foreign investment in the energy sector is welcomed. This openness to the world is crucial given Canada's relatively small population base, limited capital markets and the massive capital needed to develop our vast energy resources. We must never take this for granted (Standing Senate Committee on Energy, the Environment and Natural Resources 2012, p. 10).

It also notes "As seen in other countries, the lack of foreign capital and expertise leads to diminished energy sector productivity, growth, profitability, environmental performance and energy efficiency" (Standing Senate Committee on Energy, the Environment and Natural Resources 2012, p. 10). These statements reveal foreign ownership is often constructed by government as both desirable and inevitable.

Building internal strength (the position apparent in the 1970s) versus seeking new markets while welcoming foreign investment (as evident in the recent document cited) requires different financial commitments and regulatory frameworks. Despite the early framing of this resource as a national or provincially owned asset to be protected from outside influences, this is not the course of action that was selected by either level of government. A recent estimate suggests that at least 71% of the oil sands are foreign owned; moreover, even seemingly national companies such as Suncor or Husky are subject to non-Canadian ownership interests (Hislop 2012). Moreover, NAFTA's controversial proportional sharing clause (Article 605) requires Canada to continue exporting oil and gas to the United States even in times of shortages. Consequently, the question that the presence of these competing positions raises is interesting: was the spirit of the 1970s report naïve in terms of the capital required to make the oil sands work or did Canada simply get caught up in the dynamics of free trade and fail to consider the ramifications of its economic decisions? Moreover, considering that the first two major players in the Alberta oil sands were the product of multi-nationals, we need to ask: has the potential for a Canadian-made industry ever been feasible?

Industry clearly emphasizes a pro-foreign investment position with minimal government regulation. While there is some debate in the government documents in the last four decades as to whether extensive foreign investment is advisable, the industry position on this matter is clear: money, no matter what its origin, should be welcomed. For instance, the ACR's 1995 *New Energy Vision for Canada* document stresses: "Investment from all potential sources [should] be encouraged, with no barriers to foreigners who wish to participate in that investment" (National Task Force on Oil Sands Strategies 1995a, p. 34). A more up to date Deloitte report reiterates this claim justifying such an approach with the following assertion:

> The question is not whether to limit international investment, but how to structure deals in a way that maximizes shareholder value. For instance, resource owners can continue to attract investment while allaying security of supply fears by encouraging minority investments and joint ventures versus controlling interest acquisitions (Deloitte 2011, p. 11).

In addition, the recent Energy Policy Institute of Canada's *Canadian Energy Strategy Framework* (2012) argues "access to large pools of financial capital, including foreign investments, strengthens the financial capital feature needed to support energy innovation" (p. 102). What these assertions collectively illustrate is that today industry presents foreign investment as essential to the growth and survival of the oil sands.

A pro-foreign capital position generated from the business community is not surprising. Typically, businesses advocate that less government regulation is better. Proponents of the virtues of a deregulated free market economy often claim that businesses, not government, should be responsible for deciding how to make a profit for their investors. However, foreign investment means that there is the potential for significant profits from this non-renewable resource to not be shared with Canadians.

There is a still small space in which an anti-foreign ownership/investment position is expressed in the media and NGO documents. The NGO and academic dialogues on economics generally do not raise foreign investment issues when talking about economics. However, when they do, they typically mirror the industry position where this trend is presented as normal, natural or expected. A central example of this can be found in a 2012 Conference Board of Canada publication. The Conference Board devotes an entire chapter to extolling the benefits of foreign investment and ownership. This piece notes "For an economy such as Canada's, foreign direct investment is a key component of its capital formation and therefore of its economic prosperity. In the last three years alone, 32% of total investment in Canada's oil and gas sector, representing $45.5 billion in spending, has been foreign. Foreign companies will continue to be a major source of oil sands investment" (Conference Board of Canada 2012, p. 43). This document also emphasizes Canada's success in exporting its oil and gas talent. Overall, the suggestion in this document and others like this is that the presence of foreign funds is a key to Canada's economic prosperity.

Despite such reports, a small glimpse of what a less enthusiastic approach to foreign investment might look like can be found in a 2010 Canada West Foundation report. This piece highlights the dimension of the foreign ownership debate in its discussion of oil sands media coverage from 2009 to 2010. It notes that both sides of the issue have been raised around Petro China's efforts to "purchase of a majority share of Athabasca Oil Sands Corporation's McKay River and Dover projects" (Gibbins 2010, p. 10). Advocates of the pro-foreign investment perspective would present this acquisition as a sign of economic recovery. Critics might not only express a general discomfort with ceding power to another country (it is possible there might be less of an issue if the investor was not a state-owned entity but a private entity) but also consider the dynamics of what it means to upgrade raw bitumen in China. Upgrading elsewhere not only means job losses for Canadians, but also spotlights the environmental record of the country where refining occurs. These general concerns can also be raised in the context of the recent bid by the Chinese state owned CNOOC for Nexen (Conference Board of Canada 2012).

The media scan completed for this analysis confirms the discussion above, critical sources in the media opposed "the sale of Canadian natural resources to a company controlled by a communist state" (Whittington 2012) whereas proponents placed the deal in the broader framework of a desire to secure a "Canada-China Foreign Investment Promotion and Protection Agreement (FIPA)" which "is intended to guarantee fair treatment of each country's investors when doing business in the other nation" (Whittington 2012). Interestingly in the context of this discussion the press also suggests that the government must decide if such a takeover is "of net benefit to Canada" and in doing so imply that not all foreign investment should be accepted as positive (which as noted above is the *de facto* stance in most industry, government, and NGO discussions of this topic).

2.5.2 *Foreign Markets*

A review of this topic illustrates some dramatic shifts in who we believe we should trade with and why. This emerges more clearly in the key findings discussed below. Constructions of the

United States as a necessary and positive trading partner have wavered in recent government and industry documentation.

The review of dialogue on access to Alberta's oil in relation to the United States is telling. From the 1970s right up until the early 2000s the United States was presented as the clear choice for a trading partner. This is well captured in the ACR's 1995 energy vision that notes:

> There are expanding markets for bitumen and upgraded crude oil in Canadian and U.S. refineries. The major market growth opportunity is in the United States which now imports over 50 percent of its crude oil supply, including six percent (900,000 barrels per day) from Canada. In an uncertain world, the security of a major oil supply on the same continent, and in a stable geopolitical environment, could be of major economic value to the U.S. (National Task Force on Oil Sands Strategies 1995a, p. 14).

This statement is typical of the general views about the benefits of providing oil to the United States.

Almost 20 years later however the type of partnership with the United States praised by the ACR strategy is constructed quite differently. For instance, a recent Senate report notes that being closest to the world's "largest energy market" has resulted in a "monopsonist trade relationship – which simply means that Canada, by and large, sells its energy products to a single buyer" leaving us "vulnerable" and unable to "realize higher international prices" (Standing Senate Committee on Energy, the Environment and Natural Resources 2012, p. 24). Others also point to Canada's "over-reliance on the U.S. market" as problematic (Government of Alberta 2008, Deloitte 2011, Energy Policy Institute of Canada 2012) noting, for example "Americans are excellent customers. But the U.S. no longer enjoys uncontested dominance in the world's economy. China and India want our energy supplies, too. Alberta has opportunities to reduce our singular dependence on the U.S. market – and improve our bargaining power – by cultivating additional markets" (Government of Alberta 2008, p. 16).

In sum, the dialogue has moved from encouraging a close and integrated relationship with the United States to a less enthusiastic construction of this nation as a primary trading partner. A more negative construction of the United States is also bolstered by recent policy decisions. This includes "President Obama's decision not to approve the construction of the XL pipeline", "California's Low Carbon Fuel Standard (LCFS)" as it discriminates "against products derived from Canadian oil sands" (which require a higher carbon footprint to extract) and "Section 526 of the 2007 federal *Energy Independence and Security Act* (EISA)" because it may potentially "restrict US government purchases of oil sands products" (Energy Policy Institute of Canada 2012, pp. 121-122).

The media scan on foreign interests confirms the same patterns, generally positive constructions of the U.S. as a trading partner particularly earlier in the decade. This view changes with the discussions of cap and trade, California legislation, and pipeline objections.

The discussion of alternative trading partners has become clear during the 2000s in industry and government documents. A viable alternative to the United States as a trading partner has not

come into focus until quite recently: Asian countries are now overwhelmingly being promoted as the place to export (and sometimes as investors), with less frequent mentions of Europe (though Europe is becoming less attractive with its consideration of a Fuel Quality Directive which is seen as singling out and penalizing the oil sands). A pro-Asia position is well articulated in the recent Senate report on energy that notes:

> The world has entered the "Pacific Century", characterized by the rapid industrialization of Asian economies like China and India, which will account for a commanding share of global economic growth over the next decades. Canada is facing increasingly aggressive competition. Other oil and gas exporting countries in the Middle East and South America as well as Australia, Russia, and the United States are aggressively competing to access these new Asian energy opportunities … the window of opportunity for Canada may be open, but it will not remain open indefinitely. There is urgent need to act now (Standing Senate Committee on Energy, the Environment and Natural Resources 2012, p. 8).

Several of the economics group of documents studied acknowledge the presence of China as a global player desiring to acquire assets (such as Government of Alberta 2009a; Conference Board of Canada 2012, Deloitte 2011) and also as an untapped market that will need oil (Conference Board of Canada 2012, Government of Alberta 2009, Natural Resources Canada 2011). For example a recent Conference Board of Canada (2012) document notes "China is expected to account for 48% of the increase in global oil demand over the forecast period … By 2030, China is expected to be the world's largest consumer of oil" (p. 4). It also asserts "Although data on China-specific investment in Canada's oil sands is not readily available, there is considerable anecdotal evidence of China's growing interest in the oil sands" (p. 45). In most references to China and India it is a given that such "emerging economies" will need oil to "enjoy the same energy-intensive lifestyles as ours" (Conference Board of Canada 2012, p. 15). Typically, documents in the industry and government arenas do not question the politics of trading with countries like China with the exception of the Deloitte report which claims in passing that Chinese interest "has given rise to some political debate around resource ownership, national identity and energy security" yet ultimately concludes that having China as a trading partner "provided significant economic benefits" thus overshadowing such concerns (Deloitte 2011, p. 11). Clearly missing in this discussion are the environmental implications of such large markets consuming energy at the same rates as Canadians and Americans and the environmental impact of reliance on non-renewable resources.

2.5.3 *Media Findings: Foreign Interests*

The media scan of foreign interests suggests a more tempered view of the potential of China and India – these nations are acknowledged as important new trading partners but usually described not as emerging economies but rather as "energy hungry" and characterized as "gobbling up" a resource which is in high demand.

When assessing the search results it seems that the foreign economic dimensions of the oil sands received very little press prior to this decade (2003 to 2013) and there was in fact an increase of

coverage in 2008. For example, out of the 140 articles reviewed in the initial search 131 came after January 2008. This observation is significant as it indicates that much of our understanding of early dialogues has to come from the reviews of other sectors or a more targeted and detailed search of the databases in future work. However, within the last five years there are several interesting trends of note.

Writ large foreign ownership as a direct topic was not often talked about in the press despite the fact that who owns our resources and where the investment dollars come from is significant in terms of wealth generation, job creation and environmental standards. However, when this subject was addressed it was clustered around three major events: the bid of a state owned Chinese company to buy Nexen (discussed earlier), an NGO protest (Warnica 2009) and the publication of a document on this topic by Forest Ethics (De Souza 2012). What can be gleaned from a review of these specific stories is that the foreign ownership statistics are hotly contested by different stakeholders; this is largely because they may be used by different groups to encourage more stringent laws and regulations to ensure for example "that companies do not leave Canadians with excessive environmental risks while the foreign owners are reaping the profit" (De Souza 2012). If foreign ownership levels of the oil sands are as high as NGO groups suggest they are, for instance Forest Ethics suggests 71% of the ownership of oil sands production is foreign (De Souza 2012), rethinking who benefits from the oil sands extraction and why seems like a logical question. However, if these levels are more modest as Natural Resources Minister Joe Oliver notes, claiming the foreign ownership "of the oil industry in general to be at about 35%" (De Souza 2012), concerns over these benefits seems less urgent. In addition this debate over the actual involvement of foreign players it also seems that there are different attitudes towards a "foreign" presence in Canada (United States versus European and Asian versus state owned).

Most of the press coverage in the last few years regarding foreign markets pits environmental groups' efforts to make oil sands oil look unattractive versus government attempts to market our oil as something unique (received via pipelines or other export channels). Advocates of both these positions can be found in the media coverage, each using language strategically to build a specific image in the mind of the reader.

Those in favour of oil sands development exporting Alberta oil to other jurisdictions typically are from industry and government organizations and invoke the following sorts of claims:

- "We will continue to promote the oilsands as a safe secure and socially and environmentally responsible alternative source of energy for the world." (Natural Resource Minister Joe Oliver, cited in De Souza 2012)
- "Through the Keystone system, the U.S. can secure access to a stable and reliable supply of oil from Canada where we protect human rights and the environment, or it can import more higher-priced oil from nations who do not share America's interests or values." (Russ Girling, TransCanada chief executive in O'Meara and Alberts 2011)

- "It is ethical oil. It is regulated oil. And it's secure oil in a world where many of the free world's oil sources are somewhat less secure." (Conservative Environment Minister Peter Kent in Lewis 2011)
- "The pendulum is still on their side but I think it is starting to swing back and for that I credit . . . (Libyan leader) Moammar Gadhafi, because every day we see with our own eyes what blood oil looks like." (Author Ezra Levant in Healing 2011)

As these quotes indicate, "secure", "safe", "responsible", "regulated", "ethical", and consistent with "US values" are key words used to characterize the resource. Proponents also consistently compare Canada to other potential sources such as the "Middle East", Nigeria, and Venezuela, characterized as "dictatorships", built on "blood oil" (Fekete 2010). Such comparisons are designed to underpin a perception that Canadian oil is more "ethically" sound because it is generated in a democratic regime. Some sources even praise the oil sands because it comes from Canada the "big huggie bear" (Varcoe 2005a), and/or "friendly place" (Bridgeman 2012, Snyder and Penty 2013

Those who oppose the export of Alberta oil for profit often use the label "dirty oil." They also consistently refer to the resource as "tarsands." Moreover, such opponents typically begin with environmental concerns and then link the discussion to wider social or human rights dimensions.

While the two positions were often represented, the anti-oil sands voice was harder to find in the media coverage reviewed. In addition, there was a general lack of diverse sources available representing a less positive view on oil sands development and its ethical dimensions. When looking at the stories in this group of documents more space was given to the pro-oil sands position. Way (2013) confirms this finding in her study which found that the use of "oil sands" versus "tar sands" and the portrayal of oil sands development in the headline and body of stories favoured a pro-development stance.

> Overwhelmingly all newspapers adopted industry and government's preferred descriptor of the resources, 'oil sands', in both the headline and body of stories. Given the media's preference for utilizing an economic frame, it is not surprising that positive stories outnumbered negative ones (Way 2013, p. 196).

She also found that the major daily newspapers relegated the majority of their oil sands coverage to the business sections and that served to institutionalize a pro-development frame. Critiques were viewed as controversial (Way 2013, abstract ii and iii).

Journalists also seemed to rely on a wider network of sources when presenting this position, as often the *de facto* critic in the articles reviewed would be Greenpeace (Paskey and Steward 2012). In the case of foreign investment this stance is one in which government intervention is not encouraged and businesses can be counted on to manage the resource responsibly using the right technology to facilitate growth.

2.6 Conclusions

This review of economic dialogues about the oil sands over the last 40 years with a specific focus on national economic issues and foreign economic interests has offered some findings of note, particularly across the different discourse areas reviewed.

The Alberta government under the AOSERP umbrella was a clear leader when it came to discussing economic issues during the 1970s and early 1980s. While relatively silent after the AOESRP agenda was not renewed (i.e., during the 1980s and 1990) the Government of Alberta (GoA) returns as a more significant presence again in 2005 and becomes increasingly more visible and clear about its role and that of others in the management of the oil sands, culminating in a general vision for this resource in a provincial 2008 Energy Strategy. While it is a positive trend to see the province moving forward on the energy agenda and being more transparent to citizens by documenting its efforts (for example in the oil sands progress reports it publishes yearly) one cannot help but look back on the extensive research that done was four decades ago and wonder why it took the government so long to enact many of the key recommendations? In looking back we can also wonder what our province would look like if we had followed the 1972 Tar Sands report recommendation which suggested measured growth of the industry designed to meet the needs of Albertans and Canadians first as opposed to external markets.

Secondly, during the 1990s, oil sands industry organizations and representatives became a decisive voice mapping out a projected future for the next 25 years and relegating government to a less active role, and positioning technological innovation as the key lever for economic change. This move by industry was not surprising given its desire to attract investors in a climate where the price of oil was low and the cost of extraction still high. It was thus encouraging to see that within our present decade industry had moved beyond a discussion of technical fixes to the need for a more comprehensive and collaborative process, by acknowledging that social and economic benefits are intertwined. However, it is worth noting that paying attention to the socio-economic dimensions on paper is much easier than operationalizing such a vision in real life; social priorities can be costly, seemingly not offering the easily captured return on investment so often expected by company shareholders.

Thirdly, there has been a tremendous increase in media coverage on oil sands issues from 2008 onwards, with a particular concentration in the last two years. Much press coverage is reactive to events, but it does at times offer a more reflective and balanced view of the issues in question. For example, looking at media coverage in the last decade contributes to a more balanced understanding of how Canada's relationship with trading partners like the United States and China can be understood. Moreover, the press coverage on these economic issues can help widen our understanding of the stakeholders involved and does not simply accept Alberta's desire to seek new markets as a good thing. Despite these positives, a more detailed review of who speaks in regards to foreign interest issues and what they talk about suggests less space devoted to an anti-oil sands position and an over reliance on sources that construct the oil sands as a stable, secure, ethical choice for energy. This indicates that there is very little discursive voice in the economics area providing alternative ways of thinking about these issues.

Despite the aforementioned patterns, this analysis of the state of the dialogue would support a Canada West Foundation (2005) observation that discussion of economics issues more generally tend to "lack the broader platforms or striking visuals" of environmental concerns, so they are often downplayed; while their comment was made in terms of media attention, it applies to other discourse areas as well. This desire to make economic issues more engaging to a wider audience might help explain why it has become quite common in government, industry, and NGO discussions of economic issues to increasingly rely on metaphor, analogies and hyperbole.

In terms of the economics story itself, as this analysis has shown, much had changed over the last 40 years. The 1970s saw the government embrace a more nationalistic view which advocates a conservative approach to the development of this resource dictated by Albertan and Canadian demands not external foreign needs. However, as oil prices dropped and fewer funds for large capital infrastructure investments were available, industry-led technological innovation became the central way progress and growth in industry was imagined (i.e., during the late 1980s and 1990s). Finally, in the present decade, a global, holistic and collaborative approach is more common. Economics is not seen in a silo but inexorably linked to environmental and social issues. Moreover, the present view of how the nation can be built advanced within government and industry discussions is not by simply conserving and satisfying what Canada and Alberta need in terms of energy requirements (as it was in the 1970s) but rather by building pipelines and reaching new markets especially those of China and India. While these markets are described as "emerging" and characterized as full of potential in industry and government documents, the press is less enthusiastic about these energy "gobblers." While most mass media accounts do not deny the risk of relying solely on the United States for the export of Albertan oil, they present these new partners as energy "hungry" which is not necessarily a good thing.

As with any story, the tale you can tell is only as complete as the material that you can draw upon. In the case of this analysis clearly more extensive searching of the 1980s and 1990s might have expanded what could be said about these economic issues. Moreover, there are other subjects of economic interest not covered in this work in great detail (or at all) including royalties, employment, and how our view of the future demand for oil has been transformed. Exploring these topics would require more time and resources than this project permitted but would likely be fruitful. Moreover, one voice that has not been adequately captured is that of the public. Future work on this topic could be quite illuminating if public polls on the issue of the Alberta oil sands were tracked over time and responses to specific stories (via user comments) were analyzed. That said, the goal of this work has been to inspire future debate and discussion on the future of a resource that is deeply enmeshed in our daily lives and start thinking about what people might say in 40 years if they were to look back on our dialogue today. Let us hope that we do not miss the many opportunities that were not seized in the past.

3 DISCOURSE REGARDING THE ENVIRONMENTAL ASPECTS OF OIL SANDS DEVELOPMENT

3.1 Introduction

The Alberta oil sands, the third largest oil reservoir in the world, the world's largest energy project, and a key source of oil for the United States, has long been a source of controversy but it is only within the last decade that much of the controversy involved environmental issues.

Rather than examine the changes in discourse about all environmental issues that are associated with oil sands development, for there are many, three have been chosen as particularly relevant.

- Air emissions
- Tailings ponds
- Greenhouse gas emissions

Documents show that pollution from oil sands air emissions was extensively researched and discussed by government and industry in the 1970s when oil sands development was expanding significantly. Tailings ponds were not as high on the research agenda at that time but they were cited in a significant government document as "the most imminent environmental constraint to (the) future expansion" (Intercontinental Engineering of Alberta Ltd. 1973). Because key discourses about air emissions and tailings ponds are evident from the early days of oil sands development they provide a clear comparison of how those issues were discussed then and how they are presented now.

Documents and news stories indicate that significant public dialogue about greenhouse gas emissions doesn't begin until 2000. So it is a relatively new environmental issue associated with oil sands development. For this reason, examination of this discourse also provides insight into how the dialogue on oil sands has shifted over the past 40 years.

Using these sub-themes to examine the public discourse about the oil sands and the environment ensures that the results will reflect discourse about specific topics and from that discourse a clear picture of the general discourse about the oil sands and environmental issues in general will emerge.

3.2 Research Method

Since the vast majority of documents in the CEMA bibliography deal with environmental issues, it was necessary to not only have three clear sub-themes but to winnow down the number of documents retrieved into a manageable number for analysis.

- Using CEMA's search term "tailings" yielded 653 documents
- Using CEMA's search term "tailings water" yielded 258 documents
- Using CEMA's search term "tailings treatment" yielded 231 documents

Since this was a total of 1,142 documents dealing with tailings and as the time limitations for this project did not allow for extensive analysis of the content of that number of documents it was decided to focus on "tailings water" documents.

- Using CEMA's search terms "tailings water" yielded 157 unique citations[7]
- Using CEMA's search term "air emissions" yielded 165 unique citations
- Using CEMA's search terms "CO_2/GHG/CCS" yielded 57 unique citations

A review of the citations to determine what documents were readily available either digitally or in hard copy resulted in 35 documents dealing with tailings water, 70 documents dealing with air emissions, and 18 dealing with greenhouse gases.

Additional key documents dealing with these three sub-themes were added to the OSEMB retrievals.

The documents were grouped according to sub-theme and decade and then examined to determine if there were summary, workshop, or seminar reports that combined the information from separate documents. Other documents were selected on the basis that they were representative of the discourse of a particular decade.

A total of 63 documents were coded using the following coding table:

- Title/year of publication/number of pages
- Background and context
- Key participants
- Framing of the issue (what was emphasized, what was omitted?)
- Language used
- Dialogue type
- Quality
- Recommendations, lessons learned.

An initial scan of CBCA for media stories using the key words "oilsands[8] and air pollution", "oilsands and greenhouse gases" and "oilsands and tailings" since 1970 resulted in 3,165 entries. Since this is too large a body of work to analyze, the terms were used to find entries in the database that contained those terms in the abstracts. A total of 418 entries were retrieved and organized into decades so that trends in topic and language use could be determined.

[7] "unique citations" number is lower than the total number of documents found due to removal of duplicate coverage (e.g., a report or thesis and a conference paper).

[8] The term "oilsands" rather than "oil sands" is the preferred style of Canadian Press.

3.3 Air Emissions

3.3.1 *Discourse from the 1970s*

Documents in the OSEMB database indicate that during the 1970s virtually all available research on the effects of airborne emissions from oil sands plants was carried out by the Alberta Oil Sands Environmental Research Program (AOSERP). This program was funded jointly by the Alberta government and the federal government's environment ministry. In total, 22 documents from the 1970s were identified when "air emissions" was used as the key search phrase in the CEMA bibliography.

AOSERP was part of the Alberta government's initiative to develop the oil sands in partnership with the oil sands operators. AOSERP received a total $4.5 million annually from the two funding partners. In the 1970s the Alberta government also established and funded the Alberta Oil Sands Technology Research Authority (AOSTRA) which focused on developing in-situ technology for extracting bitumen. In its 18-year existence AOSTRA spent only 1% of its total budget on environmental research, the rest was spent on research into technological development (Hester and Lawrence 2010). In 1979 the federal government pulled out of AOSERP and oil sands environmental research became the responsibility of Alberta Environment.

It is clear from the documents that AOSERP decided early on to focus most of its research budget on air pollution, rather than other issues such as tailings water. Rather than code all the research documents from the 1970s, most of which were highly technical, five were selected as representative of the research efforts into air emissions during that period because they presented overviews of the research undertaken during that decade.

From these documents it is clear that during the 1970s AOSERP was most interested in baseline studies that could be used to compare the effects of oil sands emissions on air, soil, vegetation, and water as oil sands development expanded (Addison and Baker 1979, Davison et al. 1976, 1981, Malhotra 1976). According to Chastko (2004), these were the first baseline studies conducted in the oil sands region even though Great Canadian Oil Sands had been operating in the region for over 10 years and construction of the Syncrude plant was well underway (p. 161).

Emissions from the oil sands plants were identified in a 1979 government document as complex mixtures but predominantly sulphur dioxide and carbon monoxide with smaller quantities of nitrous oxides, particulates with metal oxides and water vapour (LGL Limited 1979).

That same document also provides detail about the damage to vegetation that these emissions, particularly sulphur dioxide can cause:

> Since 1888, nickel ore has been smelted in the Sudbury basin resulting in severe damage to forests and crops that are only recently showing signs of recovery. In western Canada during 1930, local residents of Trail, British Columbia, made formal objections to the government regarding damage to forests and crops as a result of smelter fumes. When SO_2 was identified as the major cause of damage, a large number of reports were

generated in an attempt to determine the effects of SO_2 on forests and crops in the area (LGL Limited 1979).

AOSERP wanted to establish an effective bio-monitoring program so pollution in the air and precipitation could be measured year over year. For example, the 1979 workshop of air pollution experts organized by AOSERP and the federal government agreed that after five years the Alberta government should have an effective bio-monitoring system in place and once that was established only a "low level" of research would be required (LGL Limited 1979). It is interesting to note that of the 20 participants in this workshop, only one was from industry. The rest were government or academic environmental experts.

An extensive literature review on pollution deposition processes prepared for AOSERP (Denison et al, 1979) is another indication of the baseline bio-monitoring methods that were being investigated.

3.3.2 *Discourse from the 1980s*

AOSERP research documents on air emissions continue to be published into the early 1980s. A summary report of research activities between 1975 and 1980 that was published in 1981 states "the Air System program is further advanced than Land, Water, and Human systems, and comes closest to meeting its major objectives" (Smith 1981).

An extensive literature review (265 pages) prepared under the auspices of AOSERP and Syncrude provides a detailed road map to all the research on air pollution and technology used to deal with it (Hart et al. 1983). The literature review indicates that there was already a substantial amount of research and technological development in this field that AOSERP could rely on.

Although this literature review was a joint government/industry effort, the documents indicate that government took the lead on both research and regulatory initiatives during this period.

But by 1985 air emissions research documents in the CEMA bibliography dry up.

Of course, this is also the period when the National Energy Program (NEP) caused turmoil in Alberta. And then in the late 1980s, oil prices began to drop precipitously and the oil industry cut back on planned projects. The Alberta government also cut spending because revenue from oil royalties had plummeted. As a result, environmental research by both government agencies and industry was put on hold.

In 1989, Ralph Klein, the former mayor of Calgary, was named environment minister by Premier Don Getty. Klein oversaw the passage of the *Environmental Protection and Enhancement Act* which prohibits anyone from carrying out activities that may impact the environment in Alberta unless they obtain approval. The Act came into force on September 1, 1993.

A key development during the 1980s was the founding of the Wood Buffalo Environmental Association (WBEA)[9]. A collaborative effort of provincial, federal and municipal governments,

[9] See http://wbea.org/

aboriginal organizations, industry, environmental groups, health agencies and scientists, WBEA was designed to monitor and report on air quality in the oil sands region, carry out research, and advise government on the issue.

This collaborative effort was deemed necessary after three important events. In 1984, residents of the Fort McKay First Nation, which is located near oil sands plants filed a Notice of Motion with the ERCB calling for public hearings on the cumulative health impacts of the oil sands plants after a study found that residents had high levels of lead in their blood (CBC News 1985, Globe and Mail 1984); in 1991 Suncor pled guilty to four air pollution charges and was fined $70,000 (Ellis 1991); in 1993 the Alberta government established the Clean Air Strategic Alliance (CASA) a multi-stakeholder consensus organization designed to coordinate efforts aimed at reducing air pollution[10].

In 1997 WBEA assumed responsibility for ownership and operation of a regional consolidated air quality monitoring network with capital costs originally provided by Suncor and Syncrude. Alberta Environment provided equipment and expertise.

3.3.3 *Discourse from the 1990s*

Despite these developments in the late 1980s, the 1990s are a relatively dry period for research, policy development, media and public discourse about air emissions in the oil sands region. There were only 11 documents for the entire decade relating to air emissions in the CEMA bibliography. One was a 30-page study of stress on vegetation in the oil sands region which involved infrared photographs taken from an aircraft . The survey found the vegetation condition to be "moderate to good" (AGRA Earth and Environmental Limited 1998). In 1999 WBEA conducted a study of jack pine in the region to determine how to organize baseline studies (AGRA Earth & Environmental 1999). There were no summary reports. A scan of CBCA using the key words "oilsands" and "air pollution" produced sporadic references to air pollution in the oil sands region but no sustained coverage.

3.3.4 *Discourse from the 2000s*

Beginning in the year 2000 documents in the CEMA bibliography dealing with air emissions in the oil sands region increase significantly. But whereas in the past decades most of the documents were government-sponsored research papers there are now a variety of documents produced by various interest groups. WBEA produces annual reports and studies on its monitoring programs. Scientists publish a number of articles in peer-reviewed journals. Environmental NGOs publish research on their key issues. Government publishes brochures and information packages about the oil sands designed for a wide audience.

It is obvious that the oil sands are attracting widespread attention nationally and internationally. But it is interesting to note that there is not much attention paid to air emissions as pollution in

[10] See http://www.casahome.org/

the news media. This is partly because public attention regarding emissions has shifted from air pollution to greenhouse gases and their effect on climate change.

It is also clear from government documents produced in this period that Alberta Environment and the Alberta government in general, have shifted from the research and policy development role of the 1970s and early 1980s to that of a friendly regulator, defender, and promoter of the oil sands. One example is a 2001 13-page document produced by Alberta Environment and entitled *Pollution Prevention and Control: Industrial Initiatives in Northern Alberta* (Alberta Environment 2001*)*. This booklet is not focused solely on the oil sands but includes pulp mills and other industrial operations. It features examples of how various types of air pollution have decreased. But there is no standard to compare to, no reference to national standards, or specific information about Alberta's pollution prevention regulations.

At the end of the document Alberta Environment commends Suncor for reducing sulphur dioxide emissions and then it makes it clear that government prefers voluntary compliance rather than enforced compliance when it comes to preventing air pollution:

> The department is investigating ways to encourage, recognize and reward voluntary initiatives from industry and municipalities. Industrial and municipal plant operators are in the best position to identify actions that will deliver cost savings as well as measurable outcomes that benefit the environment (Alberta Environment 2001, p. 13).

In 2001 the Alberta government established the Cumulative Environmental Management Association (CEMA), a collaborative organization based in Fort McMurray, Alberta that includes representatives from government, industry, academia, civic and community organizations, and environmental groups. CEMA is part of Alberta Environment's Regional Sustainable Development Strategy (RSDS) and mandated to find ways to reduce the growing pollution in air, water, and land from expanding oil sands operations. CEMA includes the Air Working Group (AWG) that is charged with developing recommendations for regional air quality and air-related deposition management. Industry funds CEMA to the tune of $5 million a year through the Oil Sands Developers Group (OSDG). The Alberta government contributes $400,000 annually.

In 2004 CEMA published *Recommendations for the Acid Deposition Framework for the Oil Sands Region of North-Eastern Alberta* (Cumulative Environmental Management Association 2004). According to the document "The goal of the framework is to maintain the chemical characteristics of soils and lakes to avoid adverse effects on ecosystems, plants, or animals in the management area" (p. 1). But in an addendum to the document CEMA makes it clear that it does not have evidence of a serious problem with acid deposition to date.

The current management framework does not address or identify specific biological receptors that would provide an indication of environmental effects; rather the framework seeks to protect the chemical characteristics of soil and water, which provide an early and proactive warning for biological receptors. The framework does not address the potential effects of air contaminants on the potential acidification of the flowing waters (i.e., streams and rivers) of the oil sands

region because these are not considered to be at risk (Cumulative Environmental Management Association 2004, p. 31).

In 2008 the Alberta government produced a 25-page glossy booklet entitled *Environmental Management of Alberta's Oil Sands: Resourceful, Responsible* (Government of Alberta 2008). This document emphasizes the economic importance of the oil sands to Alberta and Canada and offers assurances that development is being carried out in a sustainable manner (it was published a few months after 1,600 ducks died after landing on a Syncrude tailings pond). A similar booklet published by the Alberta government in the fall of 2009 approaches environmental issues much more directly (Government of Alberta 2009b). It lays out what the Alberta government has done to protect the land, water, air and vegetation surrounding oil sands development. Air quality is not a high priority in this document. It is discussed last after other environmental issue such as land reclamation, tailings ponds, water, and climate change. The booklet states:

- Air quality in Fort McMurray is rated good 98% of the time in 2008
- Air quality in the oil sands region is consistently better than urban regions such as Vancouver and Montreal
- Four out of five air pollutants show improvement or no change, nitrogen oxide is the only one increasing.

Both booklets are basically well-illustrated primers about the oil sands that attempt to explain in simple terms to people who are not familiar with oil sands development what efforts have been made to ensure that the oil sands industry is environmentally responsible while it extracts bitumen from a wide swath of northeastern Alberta.

Reports produced by the Wood Buffalo Environmental Association (WBEA) during this period present much more detailed information about its air monitoring program as well as conclusions and recommendations for future monitoring. For example, its 70-page report in 2007 (Wood Buffalo Environmental Association 2007) determines that exposure to both nitrogen oxide and sulphur dioxide was lower than existing guidelines. WBEA recommended continued implementation of the Human Exposure Monitoring Program as well as creation of a community-focused education program about exposure pathways to airborne contaminants or pollutants.

But other investigators of air emissions in the oil sands region were not so convinced that the emissions were problem free. In 2008 an article entitled *Have Atmospheric Emissions from the Athabasca Oil Sands Impacted Lakes in Northeastern Alberta*? (Hazewinkel et al. 2008*).* appeared in the Canadian Journal of Fisheries. It was written by several scientists from the University of Alberta, Queen's University and University College London (U.K). The authors began their article by stating that "the rate of bitumen extraction is outpacing the rate of ecological understanding of the region" and that "sulphur dioxide and nitrogen oxide emissions have the potential to acidify surface waters." The article concludes that there is no evidence these lakes have become acidified but the absence of acidification does not imply that the emissions from oil sands are environmentally benign but rather suggests that the

biogeochemistry of these lakes differs fundamentally from well-studied acidified counterparts in Europe and NA (Hazewinkel et al. 2008, p. 1563).

In 2009, an article published in PNAS (Proceedings of the National Academy of Sciences of the United States) reported that "oil sands development is a greater source of contamination than previously realized" (Kelly et al. 2009, p. 22346). The study was conducted by scientists from the University of Alberta and Queen's University. Among the most notable were David Schindler who had been investigating water issues in the oil sands region since the 1970s, and Jeffrey Short, the leading chemist for the governments of Alaska and the United States for the natural resource damage assessment and restoration of Exxon Valdez oil spill, and author of numerous studies on the distribution, persistence and effects of the oil.

Their research project found:

- In 2008 within 50 km of oil sands upgrading facilities, the loading to the snowpack of airborne particulates was 11,400 T over 4 months and included 391 kg of polycyclic aromatic compounds (PAC)[11].
- Significant increases in PAC concentrations in the Athabasca River and its tributaries.
- Oil sands development in the previous two years was related to elevated dissolved PAC concentrations that were likely toxic to fish embryos.

The journal article (Kelly et al. 2009) indicated that major changes were needed in regard to the way oil sands environmental impacts are monitored and managed. The authors of the study were also very critical of the Regional Aquatic Monitoring Program (RAMP)[12], a collaborative endeavour of government, industry and other stakeholders:

> Our study confirms the serious defects of the RAMP. More than 10 years of inconsistent sampling design, inadequate statistical power, and monitoring-insensitive responses have missed major sources of PAC to the Athabasca watershed. Most importantly, RAMP claims that PAC concentrations are within baseline conditions and of natural origin have fostered the perception that high-intensity mining and processing have no serious environmental impacts (Kelly et al. 2009, p. 22350).

In late 2010 The Royal Society of Canada Expert Panel produced a lengthy report entitled *Environmental and Health Impacts of Canada's Oil Sands Industry* (Gosselin et al. 2010). This report did not sound the same alarms as the article in the PNAS journal. It concluded that air quality monitoring data showed minimal impact from the oil sands. The Panel also stated that

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[11] Polycyclic aromatic compounds include polycyclic aromatic hydrocarbons which are created when products like coal, oil, gas or garbage are burned but the burning process is not complete. They can be breathed in, enter through the skin, or with food and drink containing water with PAHs. There is no information available from studies on humans that demonstrate the effects on humans exposed to PAHs at certain levels. However, breathing PAHs and skin contact seem to be associated with cancer in humans (United States Environmental Protection Agency 2008).

[12] See http://www.ramp-alberta.org/RAMP.aspx

current evidence on water quality impacts does not suggest that oil sands development activity is a threat to aquatic ecosystem viability. The expert panel did, however, note that there were valid concerns about RAMP that must be addressed. It also concluded that the regional cumulative impact on oil sands development on groundwater quality and quantity had not been assessed.

A few months later in April 2011 the Pembina Institute, an Alberta-based environmental NGO, issued a report entitled *Solving the Puzzle: Environmental Responsibility in Oil Sands Development (*Grant et al. 2011). It noted that acidifying emissions from oil sands development may pose a risk to northern lakes. The NGO called for air emission limits that meet the World Health Organization's Air Quality Guidelines (Grant et al. 2011, p. 28) to protect air quality and human health. Pembina also recommended that air monitoring be expanded to meet scientific needs and that monitoring design should be developed through a consensus-based approach with full stakeholder input, and with government implementing final decisions.

Later that same year Environment Canada produced a document entitled *Integrated Monitoring Plan for the Oil Sands* (Environment Canada 2011). The plan had an extensive air quality component (65 pages) and made many of the same recommendations that Kelly et al. (2009) had made in their paper.

According to the document, the air quality component of the integrated water, air and biodiversity monitoring plan was developed collaboratively by a large group of experts from Environment Canada, Natural Resources Canada, Health Canada, provincial and territorial governments, academia and non-government organizations and underwent an independent expert panel review[13]. The executive summary made it clear that air quality issues include both ambient air and atmospheric deposition that affects the ecosystem and human health.

Air quality is addressed in a comprehensive way, from monitoring at the point of emission through to ambient air and atmospheric deposition monitoring that will enable the evaluation of potential ecosystem and human health impacts. The geographic scope includes the immediate oil sands region, as well as upwind and downwind areas in Alberta, the Northwest Territories, Saskatchewan, and Manitoba reflecting the trans-boundary nature of air pollution, and the predicted geographical extent of potential ecosystem and human health impacts (Environment Canada 2011, p. vii).

The plan recommends increased scope of monitoring of air pollutant emissions from the oil sands region including enhanced monitoring of industrial stacks, mobile sources and area sources (including tailings ponds). It also recommended that all the data be "publicly available, easily accessible and comprehensive, building upon existing inventory information."

Air pollution related to bitumen processing was an issue taken up by a U.S. based environmental NGO – Forest Ethics. In 2012 it produced a document entitled *Tar Sands Refineries: Communities at Risk* (Sanger 2011). The report warns Americans that U.S. refineries that

[13] For an earlier dialogue on designing an effective oil sands monitoring program see James, D.R. and T. Vold, 2010. Establishing a World Class Public Information and Reporting System for Ecosystems in the Oil Sands Region – Report and Appendices. OSRIN Report No. TR-5. 189 pp. http://hdl.handle.net/10402/era.19093

process bitumen blends or synthetic crude from the oil sands produce more sulphur dioxide which is hazardous to human health. The report lists 100 refineries in the U.S. that refine bitumen or synthetic crude from the oil sands.

At the end of 2012 another scientific study (Kurek et al 2012) conducted by scientists at Queen's University confirmed Schindler's 2009 finding. "For a long time, industry and government's recurring mantra has been 'It's natural' but now we have the smoking gun," John Smol told the Edmonton Journal (Klinkenberg 2013, Jan. 25). Smol is the director of a Queen's research program that studies long-term changes in aquatic ecosystems using lake and river sediments.

Whereas a scan of CBCA shows media coverage of air emission issues was not intense compared to tailings ponds and greenhouse gases between 2000 and 2012, both Schindler's and Smol's study received widespread coverage. The introduction of the federal government's Integrated Plan for Monitoring the Oil Sands was also widely covered. In April 2013 the Alberta and federal government established a website – Canada-Alberta Oil Sands Environmental Monitoring Information Portal[14]. But since there has been little new information on the results of monitoring, news media coverage of this issue has dropped off.

3.3.5 *Conclusions*

Analysis of the documents reveals that air emissions from oil sands operations have been a significant issue since the 1970s when the Alberta government established programs designed to encourage research and development of the oil sands. Air emissions were a prime focus of government research programs which in turn guided policy and regulations. But by the mid-1980s both the Alberta and federal government had pulled out of oil sands environmental research in favour of more collaborative models of research that included government, industry, community stakeholders, aboriginal communities; scientists and environmentalists. These bodies such as the Wood Buffalo Environmental Association and the Cumulative Environmental Management Association stressed in regular reports that the air quality in the region was high and stable.

But by the mid-2000s independent scientific investigators were telling a different story. David Schindler of the University of Alberta and John Smol of Queen's University led investigations that found that there was widespread deposition of chemicals from oil sands operations in lakes and rivers as far as 50 kilometres away. Environmental NGOs such as the Pembina Institute often used these sorts of findings in their own publications giving them a wider platform.

The pressure from scientists and environmental NGOs eventually forced the federal government to establish its own investigation and as a result a new monitoring system was proposed. But it is possible that without the published independent scientific investigations there might not be a new monitoring system. In other words, the public dialogue about air emissions was captured by scientists and it became difficult for government or industry to dispute their findings.

[14] http://www.jointoilsandsmonitoring.ca/pages/home.aspx?lang=en

The documents reveal that dialogue on oil sands air pollution was primarily an in-house discussion between government and industry until about the mid-1990s. Documents also reveal that in the 1970s the words pollution or pollutant were more likely to be used than the word "emissions". For documents published between 2000 and 2012 it's the opposite case: the word "emissions" is used much more than pollution or pollutants by scientists, industry and NGOs such as CEMA. It's also interesting to note that there was research into acid deposition or acid rain in the 1970s. Schindler et al. (1979) wrote a report on the acidification of a lake in the oil sands regions as part of an AOSERP pilot project. The topic of acid deposition does not appear regularly again until the 2000s when 12 out of 103 citations dealing with air emissions include the phrase "acid deposition." Two of those citations refer to journal articles (Kelly et al. 2009, Kelly et al. 2010) authored by the same David Schindler as the 1979 report.

Between 2000 and 2012 it is clear from the documents that discussion of air pollution/emission issues related to the oil sands is intended for a much wider audience than in previous decades.

3.4 Tailings Ponds

3.4.1 *Discourse from 1970 to 2000*

Oil sands tailings ponds have prompted scientific investigation, technological innovation, and controversy ever since they were deemed a necessary step in the process that separates oil from the sand in which it is embedded. This process, usually referred to as upgrading bitumen, results in large amounts of waste water that holds sand, suspended minerals and unextracted bitumen. A study of tailings ponds conducted in the 1970s "showed the presence of organic acids, phenolic compounds, sulphur compounds, nitrogen compounds, hydrocarbons and several other classes of organic compounds in amounts totaling as much as 84 ppm in a single mining effluent. A number of these compounds are believed to be toxic to aquatic organisms" (Strosher and Peake 1978). Since it can take years to reduce the toxicity through natural bioremediation processes after the deposition of tailings ceases, and since the solids take decades if not more to settle so they can be reclaimed, tailings ponds have long been considered the most dangerous environmental impact associated with mineable oil sands development.

A 1973 Alberta Environment report – *An Environmental Study of the Athabasca Tar Sands* – is quite clear about this "The disposal of tailings from the hot water extraction process represents the most imminent environmental constraint to the future expansion of this recovery method (Intercontinental Engineering of Alberta Ltd. 1973, p. 73)." The report was the result of a year-long study commissioned by Alberta Environment into all aspects of the environmental impact of oil sands development. Of the 15 recommendations contained in the report, five focus on tailings ponds.

- Exterior tailings ponds to be more rigidly regulated for: size, location, and duration of use;
- Tailings ponds not to be constructed on shorelands of active rivers or lakes;

- Exterior tailings dykes to conform to prescribed standards of design and construction;
- Tailings to be placed into mine pit within 3 years after starting mining;
- Liquid tailings not to be stored over permeable sink holes (p. 8).

The report concludes the section on tailings ponds with this warning:

> "The magnitude and significance of the tailings problem could deter the future development of the tar sands industry. As a short term constraint it is imperative that exterior tailings ponds be restricted in their size, location and duration of use. The ultimate resolution of the problem will require intensive and coordinated research by qualified agencies to eliminate the continuous accumulation of liquid tailings (p. 76)."

A 1975 document produced by AOSERP details the proceedings of a Technical Seminar for the Expert Advisory Group to Aquatic Fauna Committee (Wallace 1975). The key participant groups involved in the seminar were Environment Canada, Alberta Environment, industry representatives, and university-based scientists. There is also a mediator and opening remarks at the seminar indicate that there were significant differences between the government and industry over environmental policy and practice. These are the words of Martin Bik, Syncrude's senior environmentalist, as the seminar got underway:

> …the Oil Sands Environmental Study Group realized that one of the better ways to create an atmosphere in which the industrial and environmental research worker could engage in constructive dialogue would be the provision of as much technical information as time would permit. We have learned from previous disagreements, that the main obstacle to mutual appreciation and understanding resides in an insufficient appreciation of the technical aspects of oil sands resource extraction technology and development on the environmental side, and a lack of comprehension of desirable environmental protection objectives on the industrial side. You may place this seminar in the larger context of our belief that through provision of adequate technical information, industry can assist environmental researchers in the identification of the environmental problems attending oil sands development that require resolution (Wallace 1975, p. vi).

At the end of the seminar, George Hodgson, the independent mediator, summed up the discussion this way:

> … discussed today is the particularly deadening realization that there is very little that we can do about developing innovation in the production systems that we are speaking about. This is determined by the overall economics of the entire issue, the scale and the financing demands that are integral in the whole operation. One would want to say a tailings pond of 12 square miles can't be tolerated. We could, therefore, move toward changing the system in order to avoid that degree of alienation of that land, but as was pointed out earlier, the scope for that kind of innovation is very limited at this time. In order to finance a project of that magnitude right now, your engineering plans must be

> firm, and time is not available to build a holding system and prove it to the extent that the owners of the money will be convinced that it is a sound approach (Wallace 1975, p. 76).

In other words, the tailings ponds were a significant environmental hazard but an innovative solution to the problem would not be economical for the industry.

However, news stories retrieved through a scan using the key words "oilsands" and "tailings" indicate that tailings ponds were not the subject of much media discussion. The perceived dangers of tailings ponds were reflected in two of the rare news stories from this era. An article in the Globe and Mail (Rowan 1978) described the mechanical scarecrows with shotgun sounds that Syncrude was using to deter birds from landing on the ponds. A 1987 Globe and Mail article referred to tailings ponds as "tar lakes" (Phillips 1987).

And even though the number and size of tailings ponds continued to increase until by mid-2000 they covered 100 square kilometres (Cumulative Environmental Management Association 2007, p. 18) tailings ponds were not high on the agenda for research or government attention until about 2000. At that time, articles in scientific journals about the tailings water begin to rise until by 2012 a total of 95 were found through the CEMA bibliography and other sources. This compares to a total of 20 in the preceding three decades. Among other topics, the published studies focused on identifying the contaminants found in tailings ponds and their effect on plants, fish and birds (He et al. 2012, Jardine and Hrudey 1988, Timoney and Ronconi 2010, van den Heuvel et al 2000), and how seepage to groundwater and rivers could be minimized (Yasuda 2013).

3.4.2 *Discourse between 2000 and 2012*

It's not completely clear what prompted this surge in research or what agencies were funding it. But in 2003 the Oil Sands Tailings Research Facility was established at the University of Alberta with funding from industry, government, and other university-based research centres such as the Canada School of Energy and Environment (CSEE). Besides research dollars, the new organization also managed to attract an international conference on tailings and mine waste to Canada for the first time.

In 2007 CEMA produced a lengthy (130 pages without appendices) research document entitled *Guideline for Wetland Establishment on Reclaimed Oil Sands Leases* that was adopted by the government (Alberta Environment 2008) which includes detailed discussion of how areas now covered by tailings can be reclaimed and returned to natural wetlands[15]. The discussion also highlights how oil sands operators can minimize damage to wetlands from processed waste water as they design plans.

Developments regarding tailings ponds were sporadically covered by the news media but tailings ponds still weren't high on the public agenda until April 2008 when 1,600 ducks died in one of

[15] This was the second edition of the Wetlands Guide, the first having been issued in 2000.

Syncrude's tailings ponds. Suddenly the dangers of tailings ponds, along with photographs of the oil covered ducks, became a key news item across Canada and the world. A scan of CBCA Complete abstracts using the keywords "oilsands" and "tailings" found only one story in 2007 compared to 31 in 2008, 21 in 2009, and 65 in 2010 (when a judge found Syncrude guilty of breaking two environmental laws).

Newspaper headlines and images of oily ducks on television and the Internet brought more public attention to the tailings ponds than they had ever received in the past 40 years. A second bird event occurred shortly after adding to the already high level of publicity (Gosselin et al. 2010, p. 80). Here is a sampling of some of those headlines:

- Hundreds of birds trapped in oily waste pond (Bonnell 2008).
- Ducks dying on Syncrude tailings pond (Macdonald 2008).
- Hundreds of ducks make deadly landing in toxic pond (CTV Television, Inc. 2008).
- Dead ducks tar Canada's image, PM says (Cotter 2008).

Some of the articles and television reports were accompanied by images taken from Google Earth that showed the extent of the tailings ponds from an aerial perspective. Since Google Earth is readily available to Internet users all over the world they could easily see for themselves how much ground the tailings ponds covered. In addition, NASA's Earth Observatory which records images using Landsat satellites produced a series of photographs that shows expansion of the tailings ponds between 1984 and 2011 (Lewis 2011). These images were also readily available to Internet users.

A few months after the duck event, *Tar Sands: Dirty Oil and the Future of a Continent* (Nikiforuk 2008) was published by Greystone Books of Vancouver. The author, Andrew Nikiforuk, an award-winning Alberta journalist, devoted an entire chapter to the tailings ponds and introduced that chapter with a reference to the ducks that had drowned in Syncrude's tailings pond earlier that year.

> "In the spring of 2008, five hundred ducks made international news by landing on Syncrude's Aurora North Settling Basin, which locals now call Dead Duck Lake. It's a large body of toxic waste covered with bitumen as sticky as Krazy Glue. Many of the migrating visitors were buffleheads, keen divers that slipped under the water and never resurfaced. When Syncrude managers failed to report the incident, a company whistle-blower alerted authorities and Greenpeace. Before anyone could say quack, Alberta Premier Ed Stelmach and Canadian Prime Minister Stephen Harper had apologized for the tragedy (Nikiforuk 2008, p. 82)."

The book was later awarded the 2009 City of Calgary W.O Mitchell Book Prize.

It is also in the post-dead ducks period that various environmental NGOs addressed issues arising from the tailings ponds. Environmental Defence, a Toronto-based organization that is affiliated with a U.S counterpart published *11 Million Litres a Day: The Tar Sands Leaking Legacy*

(Environmental Defence 2008). Environmental Defence described the tailings ponds as "massive" and pointed out that:

> Several studies have found tailings pond water to be acutely toxic. An experiment with goldfish in tailings waters found adverse impacts on endocrine functioning. A study of tree swallows on wetlands that used tailings water found that the odds of dying on the sites using the most tailings water were ten times higher than those on the control site. An experiment to assess the impacts of tailings water on plants found that it slows germination in several plant species, and led to reduced weight in seedlings (p. 8).

High profile and credible magazines such as Canadian Geographic (Gillespie 2008) , National Geographic (Kinzig 2009), and Nature (Schindler 2010) published articles that focused on the environmental impact of the oil sands, particularly the tailings ponds, and featured aerial photographs of the land area covered by the ponds.

It is also interesting to note that two thirds of the academic documents published after 2000 that focus on tailings ponds (mainly journal articles or conference papers) were published between 2009 and 2012, after the deaths of the ducks on the Syncrude tailings pond. In 2009 the Energy Resources and Conservation Board (ERCB) introduced new and stricter regulations for the management of tailings. The ERCB Directive (074) (Energy Resources Conservation Board 2009) stated that while in the past "mineable oil sands operators proposed the conversion of fluid tailings into deposits that would become trafficable and ready for reclamation… they did not meet the targets set out in their applications (p. 2)." As a result, the ERCB states, "the inventory of fluid tailings that require long term containment have grown… and with each successive application and approval, public concerns have also grown (p. 2)."

The Pembina Institute, an Alberta-based environmental NGO, responded later that year with a detailed report on the compliance of oil sands operators to the new regulations (Simieritsch et al. 2009). Pembina found that seven out of nine operators that submitted plans did not meet the requirements of Directive 074 for its initial timelines and called on the ERCB to enforce its new rules.

It was also in 2009 that Environment Canada established new reporting requirements retroactive to 2006 for the reporting of substances disposed of in tailings and waste rock to the National Pollutant Release Inventory (NPRI). They require that mining and other facilities must also report the quantities and concentrations of substances disposed of in tailings and waste rock (Oil Sands Research Information Network 2011).

In June 2010 Syncrude was found guilty of breaking two environmental laws and in October the company was fined $3 million as penalty for the offenses. According to federal Environment Minister Jim Prentice, it was the largest fine in Canadian history for an environmental offense (CBC News 2010b).

The trial, the verdict and the fine were the subject of much media coverage that year. Spokespeople for environmental NGOs were often called upon by reporters to comment on the case and the environmental impacts of the oil sands in general. It was also in 2010 that seven oil

sands operators formed the Oil Sands Tailings Consortium with the intention of cooperating on research and technology designed to manage and contain tailings ponds. Interestingly, a document on the consortium's website entitled Tailings Overview (Canadian Association of Petroleum Producers 2010) never uses the word "toxic."

2010 was also the year that the Alberta government developed a high-profile advertising campaign designed for American consumers that focused on the easy availability of Canada's oil. The campaign ran during the five-month span between the Syncrude verdict and sentence. "We want Americans to know … that we are developing the oil sands in a responsible manner, that we are considering the environment and that we are doing ground-breaking work on carbon capture and storage," a spokesman for Premier Ed Stelmach told CBC News (CBC News 2010a).

Barely two months later, The Royal Society of Canada released an extensive report on the environmental and health impacts of the oil sands (Gosselin et al. 2010). The Panel was given a mandate to review and assess available evidence bearing on these issues and identify knowledge gaps to provide Canadians with a scientific perspective in a summary report. One section of the report refers to "massive tailings ponds holding wastes toxic to fish and waterfowl." The Royal Society concluded: "technologies for improved tailing pond management are emerging but the rate of improvement has not prevented a growing inventory of tailings ponds." It also recommended more independent environmental monitoring of the oil sands region. These concerns were echoed again in 2011 when the Oil Sands Advisory Panel appointed by federal environment minister Jim Prentice also recommended an independent and systematic monitoring system to more readily determine the environmental impacts of oil sands operations (CBC News 2010c).

3.4.3 *Conclusions*

While the significance and hazards of the oil sands tailings ponds were clearly noted in government documents as early as 1973, they did not become a high priority for government, industry, academia, or the news media until about 30 years later. In 2000 with the establishment of such organizations as the Oil Sands Tailings Research Facility at the University of Alberta, the number of science-based research documents increased significantly over the decade. But it wasn't until 2008 when 1,600 ducks died in a Syncrude tailings pond that the tailings ponds became an intense focus of public attention and discussion. Close-up images of oily ducks, extensive aerial photographs of the tailings ponds, and frequent use of the word "toxic" in headlines combined to create an impression of a "massive" (Environmental Defence 2008, Gosselin et al. 2010) environmental problem. The tailings ponds had never received such intense news media coverage. The deaths of the ducks also provoked a number of announcements and publications by government, industry, and environmental activists and NGOs. The environmental activists were able to use the deaths of the ducks to make points about the hazards of the tailings ponds and the oil sands in general. Government and industry spokesmen were left in a defensive position, trying to explain why the oil sands and the tailings ponds in particular weren't as bad as they appeared to be in news coverage.

By 2011 their arguments had fallen flat as expert panels reported that the tailings ponds were indeed a toxic hazard that needed to be monitored and restricted.

Since the 1970s the preferred term for government, industry and scientists when discussing the waste water and waste solids that are produced during bitumen processing is "tailings" or "fine tailings." In the early days it was more common to see the word "sludge" when tailings were discussed[16]. A scan of 653 document citations retrieved when the search term "tailings" was used in the CEMA bibliography shows that between 1979 and 1993 the word "sludge" is used in 40 titles and then disappears. The words "toxic" or "toxicity" appear in 46 out of 653 citations beginning in the mid-1980s (6), continuing into the 1990s (6). In the 2000s the words toxic or toxicity appear in 34 citations.

It's also interesting to note that since 2000 in descriptions of the tailings ponds, words such as toxic, lethal, poisonous, and contaminated are much more likely to be used by scientists and environmentalists than government or industry spokesmen who tend to use much tamer descriptives such as "process affected water" or "solid wastes and chemicals" when referring to the composition of tailings (Canadian Association of Petroleum Producers 2010, Energy Resources Conservation Board 2009, Environmental Defence 2008, Government of Alberta 2008, Kelly et al. 2010, Nikiforuk 2008).

3.5 Greenhouse Gases

Unlike issues associated with air pollution and tailings ponds, greenhouse gas emissions from oil sands operations and their effect on climate change did not appear on the scene as a pressing and public environmental issue until 2000. There are no pre-2000 documents in the CEMA bibliography dealing with this issue and a scan of CBCA Complete using the key words "oilsands" and "greenhouse gases" showed that coverage in the news media was also scant during this period. The upsurge in discussion and coverage of this issue between 2000 and 2012 was due to the introduction of the Kyoto Protocol[17] in 1997 – an international accord developed under the auspices of the United Nations Framework Convention on Climate Change (UNFCCC).

The Kyoto Protocol legally binds developed countries to emission reduction targets. Canada's commitment to the international treaty was ratified in Parliament in 2002. The Protocol's first commitment period started in 2008 and ended in 2012. The second commitment period began on January 1, 2013 and will end in 2020. The Kyoto Protocol was signed by Liberal Prime Minister Jean Chretien and committed Canada to target of a 6% total reduction by 2012 compared to 1990 levels.

Alberta was opposed to the Kyoto Protocol right from the start because, it argued, as the country's largest producer of oil and natural gas its emissions rate was much higher than other

[16] While "sludge" may be an unattractive term it beats South Africa's term "slimes" – see http://www.infomine.com/library/publications/docs/Caldwell2010b.pdf

[17] See https://en.wikipedia.org/wiki/Kyoto_Protocol

provinces and couldn't possibly be reduced significantly in the pre-determined time periods especially given the anticipated expansion of oil sands operations. Steve West, Alberta's Minister of Energy when the accord was signed urged Canadian negotiators not to sign it (Wallace 1997).

Later, Premier Ralph Klein and the oil industry claimed that the Kyoto Protocol would deliver such a blow to the Alberta economy compared to other provinces that it was in fact discriminatory. An excerpt from Canadian Press (Monchuk 2002) illustrates how heated the dispute became:

> Calgary – An angry Ralph Klein lashed out at Prime Minister Jean Chrétien on Thursday, rejecting Mr. Chrétien's assurances to oil patch executives that the Kyoto climate accord won't hurt Alberta's economy.
>
> A day after the Prime Minister tried to allay fears in the Canada's energy capital, Mr. Klein called Mr. Chrétien's plan to have Parliament ratify Kyoto before the end of the year "the goofiest, most devastating thing ever contemplated by a Canadian government."
>
> The Alberta Premier's comments came as developers of a $3.5-billion oil sands project announced major cuts, saying potential costs of reducing carbon emissions may kill the plant's economic viability.

Klein did eventually win some concessions from Chretien. But greenhouse gas emissions and climate change continued to be a prominent issue nationally and internationally.

After Stephane Dion won the Liberal leadership, his first federal election campaign (2008) featured the "Green Shift" which would have imposed a carbon tax on energy consumption and distributed the revenues among the provinces. Once again, Alberta claimed the plan was discriminatory because it would dampen its economy. Dion lost the election and Conservative leader, Stephen Harper, who hailed from Alberta and was sympathetic to Alberta's oil and gas industry, formed a second minority government.

Later in 2008 Barack Obama was elected president of the United States. Obama had campaigned on a platform that included a carbon tax or carbon trading system as a way to reduce greenhouse gases and slow climate change. Prime Minister Harper, who was not as committed to the Kyoto protocol as his Liberal predecessors, announced that Canada would wait and see what actions the U.S. took to reduce carbon emissions before committing to made-in-Canada regulations to enforce the Kyoto Accord. In December 2012, after efforts in the U.S. had failed to establish a carbon trading system, Canada became the first country to officially withdraw from the Kyoto Accord.

It is against this political background that the documents in the CEMA bibliography relating to greenhouse gas emissions and the oil sands must be analyzed. There were so many developments on this front between 2000 and 2012 that it would negligent to underestimate their influence on the type of documents that were produced, who produced them, and the intended audience.

In total 25 documents pertaining to dialogue about greenhouse gases and the oil sands were coded and analyzed for this report. Most of them came from the CEMA bibliography. Others were recovered from other databases as well as the University of Calgary library. Eleven fell into the academic category, five were produced by environmental NGOs, three by the Alberta government, three by industry, and four by independent business consultants.

3.5.1 *Findings*

3.5.1.1 Academic

Much of the material pertaining to greenhouse gases and the oil sands that appeared in academic journals between 2000 and 2012 was highly technical and focused mainly on technological innovations or energy saving methods that could reduce carbon emissions (Betancourt-Torcat et al. 2012, Furimsky 2003, Kraemer et al. 2009). Furimsky writing in Energy and Fuels concluded that "Definitely, the reduction of CO_2 emissions can be achieved more readily by implementing proper actions and regulations on the liquid fuels utilization side than those on the production side (p. 1541)." Kraemer et al. (2009) suggested that solar power could be used to reduce carbon emissions. Bloomer et al. (2010) recommended a strategic management approach to the kind of technological innovation oil sands operators would need to reduce carbon emissions.

Another category of articles in academic journals that dealt with the oil sands and greenhouse gas emissions focused on the various extraction methods (mainly mining and steam-assisted-gravity drainage) to determine which methods produced the most carbon emissions and which produced the least (Bergerson et al. 2012, McKellar et al. 2009, Ordorica-Garcia et al. 2007). This comparison of production methods is clearly outlined by McKellar et al. (2009):

> … steam, hydrogen, and power are the most GHG-intensive energy inputs to the process, accounting for 80% of the GHG emissions in the base case. CO_2 accounts for 95% of the total GHG, while methane and nitrous oxide bitumen and SCO are responsible for the remaining GHG emissions of all the producers in the base case. The model results reveal that electricity and steam demands for upgrading and mining operations will roughly double by 2012 and increase by a factor of 2.4 between 2012 and 2030.

The life cycle of greenhouse gas emissions also became topical (Charpentier et al 2011). Writing in Environmental Science & Technology, Bergerson et al. (2012) recommended "an increased focus in policy discussions on understanding interproject variability of emissions of both oil sands and conventional crudes, as this has not been adequately represented in previous studies (p. 7865)."

These sorts of academic investigations gained prominence when California enacted a Low Carbon Fuel Standard (LCFS) in 2007. Similar legislation was adopted by British Columbia and the European Union. The initiatives prompted much discussion about how, where and when to measure greenhouse gases – at the refinery or the gas pump - with different factions focusing on one or the other to support their position: the longer the life cycle measured, the less difference between oil from the oil sands and conventional oil.

Two other articles focus on the projected effects of climate change on the oil sands region (Jung et al. 2013, Keshta et al. 2012)[18].

It is also relevant to note that in 2003 the Canadian Institute of Resource Law (University of Calgary) produced a paper entitled *Oil Sands, Carbon Offsets, and Emission Offsets; Towards a Legal and Policy Framework* (Kennett 2003).

While it is not overtly stated in any of these academic articles, the working assumption seems to be that the oil sands operators will be required at some point to reduce carbon emissions therefore it is prudent to examine methods by which this can be achieved and the results measured.

According to one survey (Chapman and Das 2010) many Albertans believed that important measures were already underway. Concerns about carbon emissions and greenhouse gases ranked as the fourth most important issue associated with oil sands development. However, 60% of those participating in the survey believed there is complete or partial CO_2 capture in Alberta oil sands when there is none.

3.5.1.2 Government

After opposing Canada's participation in the Kyoto accord, the Alberta government decided to introduce its own greenhouse gas emissions reduction program in 2007. In 2008 Premier Ed Stelmach pledged $2 billion in government subsidies for development of Carbon Capture and Storage which he said was the most promising technology for reducing carbon emissions "The $2 billion we're investing is the largest amount dedicated to carbon capture and storage anywhere in the world" (Scotton 2008). A 2009 government document entitled *Environmental Management of Alberta's Oil Sands: Resourceful, Responsible* (Government of Alberta 2009b), which was essentially an update on Alberta's plans to develop the oil sands while protecting the environment, explained the new thrust in dealing with carbon emissions in a section dealing with climate change:

> In 2007, Alberta became the first in North America to legislate GHG reductions on large industrial facilities. Any facility, including oil sands facilities, that emits more than 100,000 tonnes of GHGs a year is required to reduce emissions intensity by 12%.
>
> Under this legislation, Alberta gave companies three options for meeting the emissions reduction by March 31, 2008:
>
> - To make improvements that will reduce GHG emissions immediately,

[18] See also two OSRIN reports addressing climate change impacts on oil sands reclamation: Welham, C., 2010. Oil Sands Terrestrial Habitat and Risk Modeling for Disturbance and Reclamation – Phase I Report. OSRIN Report No. TR-8. 109 pp. http://hdl.handle.net/10402/era.22567 and Welham, C. and B. Seely, 2011. Oil Sands Terrestrial Habitat and Risk Modelling for Disturbance and Reclamation – Phase II Report. OSRIN Report No. TR-15. 93 pp. http://hdl.handle.net/10402/era.24547

- To buy carbon credits from other sectors that have reduced their emissions in the Alberta-based offset system, or
- To pay $15 for every tonne over their reduction target.

Results from 2008 show that companies made 10 million tonnes of actual reductions through operational changes and practices and investing in verified offsets created by other Alberta projects. In addition to emission reductions, $82.3 million was paid into the Climate Change and Emissions Management Fund[19] in 2008, which is now worth $123.4 million. Money from this fund will be invested into developing and implementing technologies that will reduce GHGs and improve our ability to adapt to climate change (Government of Alberta 2009b).

This report also emphasized that "Alberta's GHG emissions represent 5% of the national total of greenhouse gas emissions and 1% of the global total."[20]

A 2010 progress report entitled *Responsible Action: A Plan for Alberta's Oil Sands* (Government of Alberta 2010) did not go into as much detail about greenhouse gas emissions but it did mention Carbon Capture and Storage (CCS) as key to reducing carbon emissions and that negotiations for funding CCS exploratory projects were in progress.

In the 2011 progress report (Government of Alberta 2012) the government was much more specific about its commitment to CCS:

> One of the ways Alberta will reduce greenhouse gas emissions is called carbon capture and storage (CCS). Carbon capture and storage is a process that captures carbon dioxide emissions from large industrial emitters and stores them in secure geological formations kilometres below surface. Alberta's 2008 Climate Change Strategy commits to reducing projected emissions by 200 megatonnes by 2050 – 70% will be achieved through CCS. CCS is the only technology that can achieve large reductions in carbon dioxide emissions from industrial sources.

As mentioned earlier, greenhouse gas emissions and their effect on climate change had become a pressing issue by mid-2000. The combination of the Kyoto Accord, the election of Barack Obama in the United States, and mounting opposition in the U.S. to importing bitumen and synthetic crude the production of which required high carbon emissions, forced Alberta to take action on this front lest it be seen as completely ignoring the growing concern about carbon emissions and climate change while at the same time encouraging development of the oil sands. It is also important to note that it was in 2008 that duck deaths in a Syncrude tailings pond was an event that put the Alberta oil sands under the international spotlight.

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[19] See http://ccemc.ca/

[20] See updated statistics http://www.osrin.ualberta.ca/Resources/DidYouKnow/2013/April/OilSandsContributionstoNationalGreenhouseGasProduction.aspx

It is clear in these three publications (Government of Alberta 2009b, 2010, 2012) that the Alberta government wants to convince its critics, particularly those in the United States, that it is indeed facing up to the environmental challenges presented by oil sands development. The booklets feature high production values, numerous brightly-coloured photographs of wildlife – birds, bees, ladybugs, flowers – and open green spaces. The text is clearly written, interspersed with simple statistics about the oil sands, and designed for a wide audience rather than specialists. The tone implies that the Alberta government and the oil sands industry are really doing their best to develop an abundant and useful resource in a responsible and sustainable manner. Phrases such as "clean energy", "wise energy use", and "sustained economic prosperity" are used. These documents could be described as calmly persuasive rather than strident or defensive.

3.5.1.3 Industry

The oil sands industry broached the issue of greenhouse gases as early as 2000 in a publication entitled *Canada's Oil Sands and Heavy Oil* by the Petroleum Communication Foundation (2000), a consortium of energy corporations. The section on greenhouse gases is short compared to other sections in the 40-page booklet, and consists mainly of large statistical graphics; one shows that the carbon dioxide emissions from the oil sands are one quarter of emissions generated by consumers of petroleum products. Another shows that by 2005 the industry will have reduced its per barrel CO_2 emissions by half from 1990 levels.

The introduction to the section states that oil sands operations emit large amounts of carbon dioxide and some methane otherwise called greenhouse gases that "may" affect climate change. Energy efficiency is touted as the best way to reduce greenhouse gas emissions but the industry admits that even though it will reduce per barrel carbon dioxide emissions, total oil production is expected to triple compared to 1990.

By 2011 the industry was taking a much more direct approach to the environmental issues facing the oil sands, including greenhouse gases and climate change. In 2011 the Canadian Association of Petroleum Producers (CAPP) issued a 52-page report on the results of discussions with focus groups and selected observers about Canada's oil sands. Entitled *Report on the Dialogues on the Oil Sands: Engaging Canadians and Americans (*Canadian Association of Petroleum Producers 2011), the report states that "the effect of oil sands development on all aspects of the environment – GHGs, water (use and quality), air pollutants, land, habitat, and sustainability – was a top-of-mind issue for most participants." It reported that many respondents perceived oil sands carbon emissions as a challenge that must be dealt with because they are impacting Canada's international reputation. The study also found that most participants didn't know much about Alberta's efforts to reduce carbon emissions.

In 2012 CAPP produced a seven-page document entitled *Air Emissions in Canada's Oil Sands* (Canadian Association of Petroleum Producers 2012). It reported the results of a study commissioned by CAPP into the life cycle of oil sands GHG emissions which concluded that "the life cycle of GHG emissions for oil sands are comparable to U.S. domestic and imported

conventional crude." With pie charts it demonstrates oil sands contribution to national and international GHG totals and explains what the industry is developing via technology to deal with GHG. It also explains the Alberta government's carbon emission regulations. This booklet appears to be a low-key response to some of the concerns expressed in the Dialogues report a year earlier.

3.5.1.4 Environmental NGOs

Government and industry documents and dialogue about the oil sands and greenhouse gases could be described as explicatory and calmly persuasive. That certainly isn't the case for booklets and other documents dealing with these issues published by environmental NGOs during this period. These documents can be described as deliberately provocative, using strong language and images to convince readers of their arguments. The Pembina Institute, for example, published at least five documents that dealt with the greenhouse gas issue. The titles include: *Oilsands Fever: The Implications of Canada's Oilsands Rush* (Woynillowicz et al. 2005); *Clearing the Air on Oilsands Myths* (Grant et al. 2009); *Responsible Action? An Assessment of Alberta's Greenhouse Gas Policies* (Bramley et al. 2011).

In *Clearing the Air on Oilsands Myths* six sections on greenhouse gases lead the discussion. And the Pembina Institute frames the discussion as a search for the truth amidst government spin:

> **The Spin:** "Alberta is a leader in how we manage greenhouse gases..."
>
> **The Plain Facts:** While the scientific consensus is that there must be deep reductions in greenhouse gas emissions, Alberta's climate plan will lead to emissions in 2050 that are higher than 1990 levels (Grant et al. 2009, p. 2).

The document also states that "the information presented here draws on independent research, public information and the work of others to put the relevant facts in their proper context. It delivers the full story behind the most common oil sands 'spin'" (Grant et al. 2009, p. 1).

In contrast to the government documents which feature brightly coloured photos of wildlife and open green spaces, the images in the Pembina documents look as though they were taken with black and white film. They feature grey-toned oil sands mining pits, brown rivers, murky skies and heavy machinery. This is the real oil sands, the images imply. And the text supports that notion: "Focusing on public relations instead of public policy is a strategy that backfires. Observers scrutinizing the oil sands see through the spin and shallow promises made by government and industry, which further diminishes Canada's reputation." This confirms that in many ways the controversy is about the perception of images associated with the oil sands as most people have never seen them in person.

If the Pembina documents make strong, dramatic statements in clear, easily accessible language a booklet produced by Greenpeace and authored by Andrew Nikiforuk goes even further. Entitled *Dirty Oil: How the Tar Sands are Fueling the Global Climate Crisis* (Nikiforuk 2009)

this 45-page document uses the most dramatic language of any of the documents dealing with greenhouse gases. The introduction states:

> "The unrestrained release of greenhouse gases (GHGs) from the burning of fossil fuels now threatens the political stability of human civilization. Every year, climate change kills approximately 300,000 people and costs the global economy more than $100 billion."

The first key finding also uses strong, dramatic language and phrasing: "The rapid development of the tar sands, the world's largest capital project, signals the end of cheap oil. To escalate the production of high-cost and high-carbon unconventional fuels will destabilize the climate and the global economy."

The document is sprinkled with other provocative words and phrases such as: dirty oil, exploitation, cannibalism, unconventional bomb, Canada as a global polluter, Canada's climate melt down. The images in this document are all dark and foreboding. And while the information in the document is supported by research and numerous citations, the document leaves an overall impression of impending doom.

In 2011 the Green Party of Canada issued an 80-page document entitled *A Comprehensive Guide to Canada's Oil Sands* (Mech 2011). Within the first five pages this statement is made:

> As devastating as the Oil Sands already are, it is the prospect of the potential magnitude of future development that will exponentially reap disastrous and irreversible levels of environmental destruction. Oil Sands production is expected to triple by 2030. As Avatar film director James Cameron recently stated, "The capacity for an ecological disaster here on an unprecedented scale is possible."

This document features a variety of photos. Some are of the grainy, murky type featured in the Pembina and Greenpeace documents. Others show a more pristine view of the rivers and lakes of northern Alberta. But there is no question that the oil sands are presented in a negative light.

It is also apparent when comparing these documents with the government and industry documents that what is at stake here is "the real truth." Facts, research, images and rhetoric are used to convince readers that their version of the situation is the "real truth" about the oil sands.

3.5.1.5 Media

A scan of CBCA Complete abstracts using the search terms "oilsands" and "greenhouse gases" yielded 246 articles published between 2000 and 2012. This total is significantly higher than totals for searches using the terms air pollution and tailings. Even though the issue of greenhouse gases came late to oil sands discourse compared to tailings and air emissions, it dominates oil sands environmental discourse in the media after 2000. Two thirds of the articles retrieved appeared in 2007 or after. Coverage peaked in 2008 which was the year of the federal election in which Stephane Dion campaigned on his Green Shift, the year that Barack Obama was elected President, and when Premier Ed Stelmach announced plans to subsidize Carbon

Capture and Storage (CCS) development projects. All of these events pushed greenhouse gas emissions, climate change, and the oil sands to the forefront of public discussion.

Here is a sample of some of the headlines from 2008 the peak period of coverage

- Oilsands heavyweights back Alberta's new climate change plan (Krugel 2008).
- Oilsands execs, environmentalists agree that firm carbon rules are needed (Weber 2008).
- Federal climate plan complements carbon tax: PM (Anderson 2008).
- Alberta industries pay $40 million for exceeding new emissions limits (Canadian Press 2008a).
- Suncor's emissions rise because of `operational challenges' at oilsands plant (Canadian Press 2008b).
- U.S. mayors pass resolution urging cities not use oilsands-derived fuel (Canadian Press 2008c).
- Ad mockingly invites U.S. governors to watch Alta. 'dirty oil' destroy forests (Dambrofsky 2008).
- Alberta researchers claim their machine removes CO_2 from the air (Cryderman 2008).
- Harper foresees common climate change plan (Blanchfield 2008).
- Obama, Harper set to talk oilsands and climate change (Fekete and D'Aliesio 2009).

In these articles greenhouse gas emissions are described as "continuing to increase", "a huge volume", and "sky rocketing." It is also pointed out that oil sands operations produce three times as much greenhouse gases as conventional oil production. Greenhouse gases are also described as "belched" and "spewed" out. Government representatives use much more vague language when discussing greenhouse gases. Prime Minister Harper, for example, refers to them as "challenges created by the oil sands." None of these articles specify how much greenhouse gas is produced annually by oil sands operations, what percentage of Canada's total output that represents, or how that compares to global production of greenhouse gases.

3.5.2 *Conclusions*

Oil sands' greenhouse gas emissions and their impact on climate change became a key public issue beginning in 2000. Before that carbon dioxide emissions from oil sands operations were not on the government, industry or media agenda. The upsurge in attention was mostly the result of international events such as the signing of the Kyoto Protocol. The issue generated much controversy and resulted in heated political disputes between Alberta and the federal government which were duly reported by the news media. This issue also became front and centre because of political events in Canada and the United States, namely Stephane Dion's plan for a carbon tax,

and the election of Barack Obama in the United States who had promised to introduce a carbon trading system. In 2007 California enacted Low Carbon Fuel Standards and shortly after the European Union established their own Fuel Quality Directives. These events put Alberta and its carbon emissions under a glaring spotlight.

Government responded with new regulations, action plans and public relations documents that spelled out what Alberta was doing to confront the challenge of high carbon emissions and climate change. Industry also produced studies that sought to explain their position and assuage the concern over oil sands environmental issues. Overall the tone of these documents was reasoned and persuasive. The oil sands were pictured as beneficial and not harmful to the environment or climate.

Environmental NGOs took a different approach. They issued deliberately provocative publications designed to counter the government and industry's smoother approach to the issues. They used dramatic language, gloomy, stark images and barrels of statistics to convince readers that government and industry were not telling the "real truth" about the oil sands.

For the most part, the news media followed the events that created the controversy and relied for information, statistics and context on government, industry and to some extent environmental NGOs.

3.6 General Conclusions on Discourse Regarding Environmental Aspects of Oil Sands Development

This analysis has revealed that as early as 1973 the Alberta and federal governments anticipated many of the environmental impacts of oil sands development and also recommended strategies to eliminate or minimize those impacts. But many of those recommendations were overshadowed in favour of the economic benefits that would accrue from development. It wasn't until about 2000 that the environmental impacts that had been predicted started coming home to roost and environmental issues became embedded in much of the public discussion of the oil sands.

Breaking down the environmental issues associated with oil sands development into three categories – air pollution, tailings ponds, greenhouse gases – made it clear that each of these issues has its own peaks and valleys when it comes to public dialogue. Swings in attention can be caused by a number of things but in the case of the oil sands it is clear that since about 2000 oil sands developers and the Alberta government have been swung around several times by environmental issues as attention shifted from one issue to another.

For example, tailings ponds were not high on the public or news media agenda until tailings pond duck deaths in April 2008. The incident attracted widespread news coverage and soon Syncrude and the Alberta government were being asked to explain why tailings ponds were so large and so toxic.

Air pollution caused by oil sands operations was under the radar as an issue for decades. It was the one issue that the Alberta government tackled early on and continued to monitor and tinker with over the decades. The issue didn't receive much news media coverage because it all

seemed to be under control. Way (2013) found that "air quality issues appeared, for the most part, only to be on the provincial newspaper agenda as only three national stories in the Globe were captured (p. 146). That was all turned upside down when scientists discovered that cancer-causing chemicals from oil sands operations were being deposited in lakes and rivers as many as 50 kilometres distant.

Greenhouse gases were not even talked about in the 1990s but suddenly by 2000 they became one of the key issues of the decade. Scientists and environmentalists declared oil sands operations the largest greenhouse gas emitter in Canada and began pressuring government to introduce carbon taxes and other measures in an effort to slow climate change.

Environmental NGOs such as Pembina Institute, Greenpeace, and Forest Ethics knew how to talk about these issues in accessible and dramatic language. Government and industry preferred a cautious, reasoned, persuasive approach that essentially maintained they were looking after things as best they could. The NGOs saw this as nothing more than "spin", an attitude that was reflected in the rhetoric and dark images used in their publications. At stake was "the real truth" of the situation.

For the most part, the news media's attention swung with the events of the day. For example, coverage of tailings ponds peaked from 2008 when the ducks drowned to 2010 when Syncrude was found guilty of breaking environmental laws. After that, coverage of tailings ponds issues tapered off. Greenhouse gases and climate change were widely covered in 2008 and 2009 after the election of Barack Obama and the possibility that the U.S would establish a carbon trading system and Canada would follow.

But there is no question that around 2000 the public discourse about the oil sands shifted from being primarily an economic discourse to one that included significant discussion of environmental impacts. There are several factors which account for this, including: the scale and magnitude of oil sands development; the growth of environmental NGOs which filled a vacuum left by government, especially when it came to research; the growing public and political awareness of the causes and effects of climate change; an increase in academic scientific research focused on the oil sands; certain events such as the image of 1,600 ducks in a tailings pond that attracted intense media coverage of the oil sands; and environmental investigations and reports produced by government appointed expert panels.

4 DISCOURSE REGARDING SOCIAL ASPECTS OF OIL SANDS DEVELOPMENT

4.1 Introduction

The social issues associated with the development of the oil sands are complex. Some concerns include: the impact of resource development on Aboriginal communities, long term planning and infrastructure funding for municipalities in the Fort McMurray region, the influence of transient workers on social stability, and the effects of the oil sands on education, to name only a few. This section of the report focuses primarily on the compelling discussions associated with oil

sands development and Aboriginal communities (particularly in Wood Buffalo), with a secondary consideration of living conditions in the Wood Buffalo area.

Wood Buffalo is a municipality in northeastern Alberta that was formed in 1995 as a result of partnership between Fort McMurray (the city) and District No. 143. It is the second largest municipality in Alberta constituting 15.2% of the province's landmass and a central location for its oil sands activity (Government of Alberta 2013). Recent estimates suggest the population in 2012 was 77,797 (the urban area) and 23,325 in the project work camps (Regional Municipality of Wood Buffalo 2010), a 20.5% growth from 2006 (Government of Alberta 2013) and about five times the population of this area in the mid-1970s.

The area has a population of about 6,400 First Nation residents including: the Mikisew Cree First Nation (MCFN), the Athabasca Chipewyan First Nation (ACFN), the Fort McKay First Nation, the Fort McMurray No. 468 First Nation, and the Chipewyan Prairie Dene First Nation Chard (Oil Sands Developers Group 2010). There are also seven Métis locals, which represent approximately 5,000 to 6,000 residents (Oil Sands Developers Group 2010).

In addition to these five bands, there are least 26 other First Nations groups across the province that report they are impacted in the Athabasca, Cold Lake, and Peace River oil sands regions (Government of Alberta 2007).

Alberta has three populated treaty areas covered by Treaty 6 (1876), Treaty 7 (1877), and Treaty 8 (1899). These treaties are legal agreements that were negotiated between the federal government and various First Nations; they confer rights, benefits and obligations for both parties. By signing these treaties Aboriginal peoples gave up large portions of land to the Crown in exchange for reserve land and the right to hunt, trap and fish on ancestral land (Aboriginal Affairs and Northern Development Canada 2010).

Canada, and the provinces and territories, all have a legal duty to consult to accommodate First Nations groups if their aboriginal or treaty rights may be impacted by development on or near their reserve land; many of the oil sands projects in Alberta can be found in just such areas[21]. At present, various First Nations and Métis communities are worried about the cumulative impact that developments have on their water, land, air, and animals because it influences their ability to practice their traditional lifestyle and compromises their health. While First Nations have been active participants in the regulatory hearings which grant approval of industry mineable oil sands

[21] See Howlett, M. and J. Craft, 2013. Application of Federal Legislation to Alberta's Mineable Oil Sands. OSRIN Report No. TR-33. 94 pp. http://hdl.handle.net/10402/era.31627 for more information on aboriginal rights.

projects, they are also increasingly voicing their discontent via lawsuits[22] and have mobilized to propose a "moratorium" on all new development in Alberta.

Aboriginal issues and living conditions were selected after an initial search on social issues as they offered the greatest diversity of documentation, or lack thereof, over the past 40 years. They are also strongly linked to wider concerns associated with urban planning, work, and training since the population of the area in 1976 was 18,000 (Dev-Cor Technical Services 1976) but has grown exponentially since then.

Below is a summary of the methods, what was found in different discourse areas (academic, government, industry, NGO/other, and media) for Aboriginal issues, followed by a discussion of living conditions, and some general conclusions. As the introduction to this report notes, this analysis deploys a convenience sample, thus it is by no means generalizable. However, these results are meant to inspire future debates about where we have been, where we are going, and how this has changed over time in the context of Alberta's most talked about resource: oil.

4.2 Research Method

4.2.1 *The CEMA Bibliography: Methodological Notes*

The Cumulative Environmental Management Association's (CEMA) bibliography was used to explore the views on Aboriginal issues in the government, industry, and NGO/other category. For this search, the "Aboriginal/First Nations/Metis" keyword was selected and the timeframe specified was January 1972 to January 2013. This generated 87 citations (24 in academia/34 in government/3 in industry/26 in the other/NGO group). Of these 87 entries, all of the documents that were accessible either electronically or via interlibrary loan were reviewed: this brought the total sample to 62 documents (17 academic/25 government/3 industry/and 17 other/NGO). In addition, there were several documents mentioned in the texts reviewed that seemed relevant so they were added to the list. Since industry representation was low in comparison to the other categories, a supplemental search was completed by consulting major oil companies' websites and looking for downloadable documents on Aboriginal issues. These add-ons brought the total sample analyzed to 80 documents: 21 from academics, 20 from government, 16 from industry, and 23 from the NGO/other category.

To analyze the topic of living conditions, the key word selected in the CEMA bibliography was "social issues." The time frame selected was again from January 1972 to January 2013, and titles that seemed to explicitly concern living conditions and oil sands development were reviewed. This initially yielded 122 citations in total (64 for government, 21 for academic, 8 for

[22] In October 2007 The Woodland Cree First Nation of northwestern Alberta launched legal action against the province arguing it should be consulted before any oil sands leases are sold on traditional lands. In May 2008, the Beaver Lake Cree First Nation launched a civil action against the Alberta and federal governments claiming that intensive industrial development in their territory renders their Treaty 6 rights meaningless. In March 2012 it was ruled by the Alberta courts that this case could proceed. Moreover, the Athabasca Chipewyan First Nation (ACFN) filed suit against Shell Oil Canada in September 2011. Their case against Shell concerned contractual agreements made in 2003 and 2006 about two open pit mines related to their oil sands activity.

industry, and 29 for other/NGO). Out of these 122 possibilities, 63 documents were available to be analyzed (11 academic/45 government/3 industry/and 3 other/NGO), many of which overlapped with those in the Aboriginal category.

4.2.2 *Media Data: Methodological Notes*

For the media sweep, two databases were chosen because they represent a sampling of both local and national newspapers across the country: CBCA Complete and Canada Newstand. The search parameters for Aboriginal concerns included the following: (aborig* OR indigen* OR "First Nations" OR "native people*") AND ("oil sand*" OR oilsand*) AND ("tar sand*" OR tarsand*). For living conditions the search terms used were (living condition*) AND ("oil sand*" OR oilsand*) AND ("tar sand*" OR tarsand*). The time parameter selected for both topics was January 1972 to January 2013, "English" was specified as the language of choice, and "newspapers" was chosen as the source type. This yielded an initial collection of more than 500 documents (498 articles on Aboriginal concerns and 54 articles on living conditions). A preliminary review of the documents decreased this number to 298 for analysis. The types of articles that were discarded in the first sweep were those that had fewer than one mention of the keywords. All 298 were read in detail. From this 298 only 152 were identified as relevant to the Alberta context (130 associated with Aboriginal issues and 20 with living conditions).

The OSEMB documents and media articles were all downloaded electronically and entered into Mendeley[23]. All of the texts were read in full and coded using the following questions as a guide:

- background and context
- key participant groups involved/discussed
- framing of the issue by the participant groups
- the language used to communicate the topic at hand
- dialogue type and quality
- lessons learned, forgotten, and recommended

Once the coding was completed, attention was paid to how these areas of interest changed over time, with patterns and themes highlighted.

4.3 Aboriginal Issues

4.3.1 *Government*

The late 1970s and early 1980s was a rich time for government documentation on Aboriginal issues, demonstrating struggles over how to best research and understand growth in the area. This period includes detailed government reports about how to approach Aboriginal issues in the

[23] See http://www.mendeley.com/

oil sands and establish a baseline for integrating First Nations into the government work force, efforts to capture the overall history of the region, and a consideration of some of wider social/personal concerns. This comprehensive research agenda was initiated by the Alberta Oil Sands Environmental Research Program (AOSERP), a government initiative.

From 1976 to 1980, nine major reports were produced for AOSERP, between 50 to 200 plus pages, which either directly or indirectly discussed Aboriginal peoples. These documents included extensive literature reviews and some even involved participant observation and interviews with relevant stakeholders.

In these government efforts to understand Aboriginal concerns in the context of oil sands development, the focus was primarily on social and or mental health issues[24], a sample of which includes the following statement:

> Social problems tend to be defined differently by various groups in society. In other words, what is troublesome for the residents of the community may be significantly different from what government or industry consider vexatious. The whole question of deviance (in terms of value systems and behavior) must be viewed against this contrast (Van Dyke and Loberg 1978, p. 105).

Within these reports, economic and environmental concerns were of secondary importance to discussions of the social. This is a sharp contrast to the government documents of our present decade in which environmental concerns are emphasized, with economic and social issues less frequently evaluated. In addition, many of the terms used then are not as common today (such as deviance, acculturation) or are talked about slightly differently (i.e., mental disorders are typically talked about as mental health issues at present).

Overall, the government sources from the 1970s establish how resource development in the Athabasca area should be understood. Discussions about other intense developments such as James Bay, railway towns, logging camps, and the Cominco Mine in Greenland, were considered useful points of comparison (Parkinson et al. 1980).

Efforts were also made to imagine how changes for Aboriginal peoples due to the presence of this resource should be conceptualized. For example, it was questioned whether First Nations should be understood as "low income", "unemployed", "poor", and/or "culturally disadvantaged" (Dev-Cor Technical Services 1978, p. 64). As well, the tendency to group all Aboriginal communities as the same was interrogated, as noted in the following claim: "many studies show that specific labels (such as 'native') cloud significant differences within the group;

[24] Examples include: the reduction of "family problems" (Dev-Cor Technical Services 1976),"personal adjustment and social conditions" as well as "colonial adjustment" (Earl Berger Ltd. 1978), "social adjustment", "psychopathology", "mental disorders" and "acculturative stress" (Walsh 1978), "the social (troublesome or vexation) and personal problems caused by resource development" and the "displacement or assimilation of native communities, and disruptions of traditional patterns of life" (Van Dyke and Loberg 1978), "individual" and "family well-being" (Larson 1979) and "deviance" (Parkinson et al. 1980).

region, educational level, closeness to the traditional way of life, etc. all affect the individual's view(s)" (Deines et al. 1979, p. 53).

Additionally, these 1970s reports are replete with recommendations and/or lessons learned. Among the most compelling are:

- The need to capitalize on local peoples' knowledge of the meteorological conditions, history, and knowledge of the local terrain (Dev-Cor Technical Services 1976, p. 65). This resonates with the ideas of incorporating traditional knowledge assessment, an approach that has become increasingly prevalent in our present decade (2010 to present).
- Cultural appropriateness is often overlooked in research thus instruments that measure impact ought to have validity and reliability with the groups being studied (Walsh 1978). This is an issue that many First Nations groups suggest is overlooked today (see for example Athabasca Chipewyan First Nations 2012).
- Accurate data needs to be collected on a broad range of community, social and personal dimensions. These measurements must be explanatory as well as descriptive and include subjective as well as objective data with respect to the specified dimensions (Earl Berger Ltd. 1978, Larson 1979).
- Solutions for native unemployment are multi-faceted, assumptions about this population can and should be challenged by talking to the communities themselves (Deines et al. 1979).

Unfortunately though the aforementioned suggestions are quite relevant today, many appear to not have been followed up or considered again until the mid-2000s, if at all.

In terms of language choices, in the documents from the 1970s, "Aboriginal" or "First Nations" are not terms that are deployed (though Métis is). Aboriginal peoples are talked about as "natives" (versus "non-native") or as "Indians." In addition, the word "indigenous" is used to refer to people who have lived in the resource development region for an extended period of time as opposed to an "immigrant" (Parker 1980) or "cosmopolitan" resident (Dev-Cor Technical Services 1976). In the material reviewed, "native" was a term used until 1999, where it was still apparent in a regulatory document (Alberta Energy and Utilities Board 1999). However, after the year 2000 "Aboriginal" or "First Nations" is deployed and "Indian" is only used in reference to the *Indian Act*[25].

The distinction between "native" and "non-native" is also invoked to differentiate types of economic activity present in the oil sands. As an illustration, Earl Berger Ltd. (1978) argues the "interests of native people are in conflict with those of large-scale industrial developers" (p. 46). However, Deines et al. (1979) warn that, even then "presuppositions previously held about native

[25] See http://laws-lois.justice.gc.ca/PDF/I-5.pdf

employment (e.g., Indians prefer short-term, casual, seasonal employment) are being challenged by evidence derived directly from native people" (p. 52).

The late 1980s and 1990s were a relatively silent time for government documentation on Aboriginal concerns. When looking at the CEMA bibliography the only documents available in the mid-1980s to the early 2000s discussing Aboriginal issues and the oil sands involve regulatory decisions. This could be explained by the fact that major political and legal dealings related to First Nations took place within this time frame.

Key events associated with First Nations groups include the insertion of Section 35 into the 1982 Canadian Constitution; this specific section formally recognizes existing Aboriginal and treaty rights. In addition, serious efforts were made around developing a self-government system for First Nations in both the Meech Lake Accord (1987) and the Charlottetown Accord (1992). Moreover, the 1990 Oka Crisis redefined the nature of First Nations' activism across Canada. Furthermore, in 1997 the case Delgamuukw versus British Columbia became a landmark Supreme Court decision; it confirmed that aboriginal title includes the rights to the land itself, not simply the right to extract resources. While these actions brought attention to Aboriginal issues across the nation they may have stalled the Alberta government's response to First Nation groups. For example, it may have hindered developing clear directives on land management and consultation.

The regulatory decisions reviewed offer excellent insight into the diversity of Aboriginal concerns. The Alberta Energy and Utilities Board (EUB)[26] consistently encourages industry to resolve issues with First Nations as opposed to directing them to the province. Moreover, when assessed collectively there is an increase in technical language being used. In total, 11 regulatory hearings conducted by the EUB/ERCB were analyzed from the CEMA bibliography. All of the hearings involved a "public interest" determination. Moreover, in all of the decisions considered the oil sands projects seeking approval were deemed fit to meet the "public interest" standard (though sometimes industry was given follow up conditions before this would be the case). Industry defined public interest rationale as creation of jobs, contributions to royalties, spending in the province, and/or assistance to specific social or cultural programs in the surrounding areas. However, the "public interest" principle as used by the EUB/ERCB seemingly had no fixed or consistent parameters since each hearing offered different justifications for how it was met[27].

Within these regulatory proceedings the objections expressed by specific bands were not uniform. As an illustration, in a 2004 EUB decision the Mikisew Cree First Nation (MCFN) was

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[26]The EUB was established in 1995 as an "independent" and or "quasi-judicial" agency to regulate oil pipeline development and public utilities. It replaced the Petroleum and Natural Gas Conservation Board created in 1938. In 2008, this agency was split into two organizations: the Energy Resources Conservation Board (ERCB) and the Alberta Utilities Commission (AUC). Of the two, the ERCB regulates the oil and gas industry. This shift and naming of new organizations is in itself interesting because "conserving" a resource is quite different than "regulating" a public utility; conservation implies planned management.

[27] A sampling of these hearings can be found in the reference list under Alberta Energy and Utilities Board.

concerned with Canadian Natural Resources Limited's (CNRL) application for a mine primarily because of the uncertainties about water withdrawals (Alberta Energy and Utilities Board and Canadian Environmental Assessment Agency 2004b). As well, the Wood Buffalo First Nation (WBFN) raised health concerns and the lack of consultation by industry. Moreover, in regards to the same project, the Athabasca Chipewyan First Nation (ACFN) had reached an agreement with CNRL, so this group only raised an issue with the operation of CEMA, an internal management issue not to be solved by this type of regulatory hearing.

An additional pattern evident from comparing early hearings to later ones is the increasing use of technical language mobilized by First Nations groups. As time goes on there are increasing instances of specific bands willing to challenge a company's proposal on scientific grounds. For example, by 2004 you have a group like the MCFN requesting "interim thresholds" be established prior to *Water Act* approvals being issued (Alberta Energy and Utilities Board and Canadian Environmental Assessment Agency 2004b), and two years later arguing that a project demonstrates a lack of research and utilization of "best demonstrated available technology" (BDAT) (Alberta Energy and Utilities Board 2006b).

These regulatory hearings were also used as a venue for First Nations groups to command government and industry attention about their communication strategies. A lack of "meaningful consultation" and "duty to consult" (as related to constitutional rights) are often discussed. In addition, there are treaty Aboriginal groups (such as the Wood Buffalo First Nation Elders Society) who intervene in the hearings despite not being viewed as a "band" by the federal government[28].

What is also significant in the context of these proceedings is that companies are consistently praised by the EUB/ERCB for reaching agreements with specific bands. An example of the type of language can be found in the following decision:

> The Joint Panel commends Imperial Oil, ACFN, MCFN … and the Clearwater Band on their efforts in reaching full or partial agreements. While these agreements will not form part of the EUB approval, the Joint Panel does expect Imperial Oil to meet its commitments and continue its consultation and communication efforts throughout the life of the … Project (Alberta Energy and Utilities Board and Canadian Environmental Assessment Agency 2007, p. 19).

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[28] This was apparent in the following appeal made in relation to a project decision in which it was stated:

> A Notice of Question of Constitutional Law under Section 12 of the Administrative Procedures and Jurisdiction Act was filed in this proceeding by the Clearwater River Paul Cree Band #175 (Clearwater Band) and the Wood Buffalo First Nation Elders Society (WBFNES) … In the notice and written submission, the Clearwater Band and the WBFNES each asserted that it had aboriginal rights that required government to consult with them in relation to the proposed project" Alberta Energy and Utilities Board and Canadian Environmental Assessment Agency 2006, p. 7).
>
> The panel reviewing this request nonetheless determined that both groups were not a "Band under the *Indian Act*" and thus did "not have treaty or aboriginal rights that give rise to a duty of consultation" (Alberta Energy and Utilities Board and Canadian Environmental Assessment Agency 2006, p. 114).

Unfortunately the details of such partnerships are not made public. This lack of transparency creates a gap in knowledge about the precise nature of the relationship between industry and First Nations in regards to oil sands development.

It is only in the last decade that the government produced official policies on public/Aboriginal consultation and or land resource management issues. Key documents representative of these efforts include the following:

- The 2005 production of The First Nations consultation policy on land management and resource development in which the province attempts to outline its "responsibilities" as well as those of First Nations[29] (Government of Alberta 2005).
- The 2006 generation of The Oil Sands Consultation Group final report and recommendations which has as is its mandate to "develop revised plans for consulting on the policy principles for Alberta's oil sands area in relation to oil sands development and environmental management" (Oil Sands Consultation Group 2006, p. 5).
- The 2007 Aboriginal consultation final report produced by the Aboriginal Consultation Interdepartmental Committee (ACIC), commissioned by the Government of Alberta. This document contains "strategies" and "action plans" to implement the vision of oil sands development produced in the previous consultation report (Aboriginal Consultation Interdepartmental Committee 2007). What is particularly striking about this piece is the number of stakeholders involved (20 Métis organizations and 30 First Nations across three different jurisdictions). Varying positions are presented throughout the report via direct quotes[30]. This report was part of the larger Multistakeholder Committee consultations but still recognized the importance of a separate track dealing with First Nations.
- The 2009 20-year strategic plan entitled *Responsible Actions: A Plan for Alberta's Oil Sands*. Subsequent progress reports were produced in 2009, 2010, and 2011 (Alberta Treasury Board 2009, 2010, 2011). Six pillars represent the core of this plan. One is specifically devoted to Aboriginal issues suggesting the province will

[29] This document lists "expectations" for both industry and First Nations. These expectations make industry responsible for consulting with Aboriginal groups on specific projects, while also acknowledging the government's duty to "meaningfully consult" in "good faith." This policy avoids going so far as to suggest that the Crown has a "duty" to protect the land that Aboriginals may need to continue their traditional practices such as fishing, hunting and trapping, despite recognizing the Aboriginal right to engage in these activities as something which is "constitutionally protected." This oversight is acknowledged in the academic work reviewed (see Ross 2003).

[30] Some Bands express excitement about the economic possibilities generated by oil sands development (as expressed in the Peace River Métis Consultation Session); others such as ACFN and MCFN argue for a "moratorium" on new projects until their specific concerns (in relation to water, health, reclamation etc.) have been addressed. There is also a real difference in those groups that chose to deploy technical terms versus those that communicate a concern over the relationship being created with "Mother Earth."

aim to "Strengthen our proactive approach to Aboriginal consultation with a view to reconciling interests" (Alberta Treasury Board 2009, p. 36)[31].

Overall, what is most noticeable about these reports is a shift from the Alberta government simply offering policy information to a desire to engage in policy promotion; a trend that has been noted elsewhere at a federal and provincial level (Kozolanka 2006, Williams 2010). Recent (i.e., post 2007) documents typically contain glossy pictures and white space. They are also much shorter and less research intensive.

In addition, in these current reports there is a reiteration of the lessons or suggestions discussed in the 1970s, yet they are often presented as new ideas. This is well illustrated in the 2009 progress report which notes "The Government of Alberta is working on developing widely supported approaches and methodologies for population statistics that can be utilized as input for planning, forecasting, budgeting, and broad policy formation" (Alberta Treasury Board 2009, p. 9). This need for quality statistical data to be used for responsible resource development echoes what Earl Berger Ltd. (1978) and Larson (1979) proposed and mapped out in detail more than 30 years ago.

Finally, there is a noticeable increase in the technical terminology present in recent documents. For instance, the 2010 Responsible Actions progress report consistently uses acronyms such as "Social and Infrastructure Assessment Modeling" (SIAM), "Human Capital Plans" (HCPs), "Comprehensive Regional Infrastructure Sustainability Plans" (CRISPs), and "Bitumen Royalty-In-Kind" (BRIK), to name only a few. These discussions thus necessitate a certain type of technical literacy and are used by government in relation to the area (Wood Buffalo Region) and issues (revenue sharing) that impact First Nations groups.

4.3.2 *Academic*

There is a diverse array of topics covered by academics related to Aboriginal issues and oil sands development, some neutral and others more prescriptive (i.e., contain precise recommendations). The range of subjects found in the OSEMB documents includes studies on trace elements, air emissions, employment (youth and all demographics), legal assessments, health and environmental impacts, and consultation/partnerships opportunities. In sum, various disciplines have contributed to this discussion and they range from short conference papers to doctoral dissertations.

What is noticeable about the different sorts of analyses present in this area is that the technical/scientific papers on air emissions or water quality remain neutral in their positions; they simply present their empirical findings without offering recommendations about how to assist the First Nations communities potentially impacted by oil sands projects. For example, claims about air quality levels are assessed as either "acceptable" or "unacceptable" for human

[31] The phrasing "strengthen our proactive approach" in this pillar implies a history of provincial involvement in consultation, which is not necessarily the case. In addition, "reconciling interests" is an interesting choice of wording as it may trigger an association with truth and reconciliation efforts.

health (such as Kindzierski and Bari 2011, Mueller 2001). Moreover, authors appear silent on the topic of whether changes in air or water quality might be linked to industry development. A distinct exception to this trend is the work of Timoney and Lee (2009). Though their analysis remains highly technical they also state the following about the Athabasca region: "Present levels of some contaminants pose an ecosystem or human health risk. The effects of these pollutants on ecosystem and public health deserve immediate and systematic study … The attention of the world's scientific community is urgently needed" (Timoney and Lee 2009, p. 65). Their plea to get researchers engaged with this topic is both compelling and unexpected since it moves beyond simply assessing environmental impact to an attempt to incite action. In contrast, papers from the social sciences, humanities, or legal area, more often than not offer normative suggestions (see for example McKillop 2002, Passelac-Ross and Potes 2007a, Taylor et al. 2009).

Many of the recommendations made in the 1970s by government documents on oil sands development continue to be reiterated in academic documents today. What is salient when reviewing the social science pieces in the OSEMB documents is just how much of what continues to be presented as proposals for future courses of action is something that was talked about in the 1970s AOSERP work.

For example, several of the academic investigations stress the need to move beyond "blaming the victim" (i.e., First Nations groups) for not integrating themselves effectively into the industrial economy. They argue that we ought to focus on specific structural barriers including racial discrimination and informal mechanisms of exclusion (education and training) (Krahn 1983), a history of colonization (Ferreira 1992), and concealed power structures (Friedel and Taylor 2011) instead. The requirement to deal with systematic obstacles was key to what Dev-Cor Technical Services (1976) proposed in their work on integrating Aboriginal workers into the government research workforce concerned with oil sand development several decades ago.

Moreover, in the academic domain McKillop (2002) argues that when assessing the impact on communities and traditional territories, smaller and more meaningful analysis is advisable[32]. This echoes a 1976 Dev-Cor assertion about the need to rely on indigenous knowledge for resource exploitation.

There are also claims in the current academic literature that both the federal and provincial government require better research on education, training and work (Taylor et al. 2009) and on environmental, health and social issues (Gosselin et al. 2009, Schindler et al. 2011). The need for careful, systematic research in all of these areas is what both Earl Berger Ltd. (1978) and Larson (1979) advocated for more than 30 years ago.

Furthermore, the value of consulting with Aboriginal peoples themselves when conducting research about their communities is confirmed in present day academic work and NGO work (see for instance Taylor et al. 2009, Schindler et al. 2011, Stantec Consulting Ltd. 2012). The

[32] This recommendation has also been reinforced in the more recent work of CEMA such as O'Flaherty and Davidson-Hunt (2008), Chan and Lawn (2008) and WRG Westland Group Inc. (2009).

benefits of talking to the actual groups impacted by oil sands development in person was stressed by Walsh (1978).

Finally, the claim that categorizing groups with labels such as "Indian", "Inuit" and "Métis" involves a level of exclusion that can be problematic suggested by scholars such as Taylor and Friedel (2011) was precisely what Deines et al. (1979) were concerned about. Or put differently, these groupings sometimes leave certain people out and can cause issues for those that do not quite fit into typical categorizations (such as "band" status).

A key struggle identified in the academic literature involves how to define "consultation" and "constitutionally protected rights." Almost a decade ago, Ross (2003) proposed that the government must be willing to "radically restructure" resource allocation and consultation with Aboriginal groups if it is to be "meaningful." A major step in this process would include developing official consultation policies (Ross 2003). This is however an action that the government only achieved in 2005 with its land management policy, and in 2007 with its consultation guidelines.

Additionally, in 2007, Passelac-Ross and Potes drew attention to the fact that Government of Alberta and First Nations differ fundamentally on what they see as the purpose of consultation. To the government it is simply a "decision making tool," whereas to First Nations it is a device for "rights protection" (Passelac-Ross and Potes 2007a). They also claim that the "economic-growth model" of the oil sands development threatens to "extinguish" Aboriginal treaty rights since it is not focused on protection but rather the mitigation of risk. They conclude that this could have some serious legal ramifications in the future depending on the outcome of the challenges currently being negotiated (Passelac-Ross and Potes 2007a, b).

Water is an important issue in dialogue with Aboriginal communities. As Kidd (2007) notes, access to clean water is seen as "treaty" and/or "human right" to Aboriginal groups. However, the provincial government's belief in a "minimally regulated market" in regards to oil sands development is not conducive to the preservation of this particular right (Kidd 2007). Passelac-Ross and Buss (2011) also note that water rights have yet to be acknowledged as "constitutionally protected". They argue convincingly that such rights should have the same status as hunting, fishing and trapping, since clean and adequate water levels are essential to making sure the wildlife involved with these other activities survive.

4.3.3 *Industry*

There is a paucity of public documents from industry on Aboriginal issues and oil sands development, especially prior to the early 2000s. There is a small paper trail in the CEMA bibliography (three documents). As with any document corpus, expansion is possible with further searching. For example, all the major oil sands companies have produced annual reports that would be available in their corporate libraries in which specific projects are discussed and interactions with First Nations groups might be reviewed. However, since this research report represents an initial scoping exercise on the state of the oil sands dialogues over the past 40 years, presences and absences are significant (Bryman et al. 2012, Seale 2004).

A possible explanation for this break in the dialogue could be the cyclic nature of oil sands development itself. As Earley (2003) notes, there are at least three distinct phases in the province's oil sands history. The "first boom" took place between 1964 and 1984, and involved the initial development and expansion of the two major oil sands producers Suncor and Syncrude with "large construction forces" and the creation of a "boom town atmosphere" (Earley 2003, p. 90). In the second phase a slowdown took place. Between 1984 and 1996, "capital investment decreased significantly" and efficiency became paramount (Earley 2003, p. 90). At this time layoffs and struggles to raise money were constant, consequently the morale in the community "was low" (Earley 2003, p. 90). By 1996 a new boom had begun, oil sands were increasingly marketed as a "reliable, domestic energy source" (Earley 2003, pp. 90-91). A fourth phase, could be added to Earley's (2003) categorizations, one which began in 2008 with the start of the global financial crisis; this crisis made capital less available, and provided opportunities to consider the implications of large scale resource intensive projects. In sum, since there was not much activity in oil sands development from 1984 to 1996, it is to be expected that it would not be talked about.

A supplementary on-line search of industry documents and major oil companies' websites suggests that Syncrude offers the most accessible public documents on Aboriginal relations. However, other industry players are increasingly developing consultation policies. Since the CEMA bibliography offered only three documents on the topic a brief web search of the major companies involved with oil sands projects in Alberta was conducted[33].

One of the first publicly accessible industry documents concerning Aboriginal issues is the 2003 CAPP document entitled *Guide for Effective Public Involvement* (Canadian Association of Petroleum Producers 2003). This manual provides direction on how to deal with stakeholders (of which Aboriginal groups are simply one of many) when initiating a project. However, this piece does acknowledge how challenging negotiating with First Nations peoples can be when it states:

> Resource development must reflect and take into account Aboriginal treaty, title and rights. The law within this area is in a continual state of development, with new issues and perspectives being explored on a regular basis. As a result of judicial interpretation and rulings regarding the principles of Aboriginal and treaty rights, many Aboriginal communities are enveloped in a complex framework of legislation, legal opinion and court decisions (Canadian Association of Petroleum Producers 2003, p. 50).

[33] This included looking at the following sites for discussions of Aboriginal issues: Suncor Energy Inc. (http://www.suncor.com), Nexen (http://www.nexeninc.com), Shell, Canada (http://www.shell.ca), Syncrude (http://www.syncrude.ca), Imperial (http://www.imperialoil.ca), Total E&P Canada (http://www.total-ep-canada.com/). The sites of the Canadian Association of Petroleum Producers (CAPP) and the Oil Sands Development Group (OSDG) were also reviewed.

This guide also provides an accessible glossary of the various terms associated with industry and First Nation consultation[34].

In terms of language choices within the corporate documents reviewed, it is noteworthy that industry also tends to frame discussions with First Nations and other stakeholders not as "consultations" but rather as "engagement" or "dialogues" (Canadian Association of Petroleum Producers 2011). Such "dialogues" are also linked to most companies' "corporate social responsibility" commitments (Oil Sands Developers Group 2010).

A recent development of note, that has linguistic significance, concerns the formation of the Oil Sands Leadership Initiative (OSLI) in 2010. OSLI is a "collaborative network of six like-minded companies" who work together in "non-competitive areas" to do work with communities under the guise of a wider view of "sustainability." They note:

> The 'business case' for social sustainability in oil sands communities is about more than building good relationships, meeting corporate social responsibility obligations, growing a local labour force and workforce participation opportunities, or just 'doing the right thing for kids and communities. Societal needs and aspirations are intertwined with, and are as vital as, economic and environmental sustainability (Jacobs et al. 2012, p. 9).

This passage is highlighted because it indicates that "corporate social responsibility" may become a less popular term in the upcoming decade, replaced instead by an all-encompassing discussion of sustainability.

In regards to specific companies, Syncrude distinguished itself by offering the most accessible documentation on Aboriginal consultation. It offers a detailed "Aboriginal review" in 2006, 2007, 2008, 2010, and 2011 (see Syncrude 2012 for an example). These communication efforts are no real surprise given it has been an active player in the Alberta oil sands since the 1970s. The Syncrude reports are promotionally focused. They are highly descriptive, with large pictures of members from different First Nations communities. The 2008 review entitled *Inspiring People* offers a strong sense of the tone and content of these pieces, beginning with the following description: "Like a wave that ripples and grows ever stronger through generations, inspiration has extraordinary power to build. Through understanding, connection and opportunity, we too are working hard to inspire the Aboriginal community to achieve their goals and aspirations. Here are some of their stories …" (Syncrude 2008, p 2). Interestingly, these reports are one of the few places where the stories of Aboriginal people are presented even though it is through an industry lens. For example, in their 2012 *Pathways* report they offer different stories of members who are impacted by their projects, organized around their six corporate commitment areas. As an illustration under the "Education and Training" priority they devote an entire page to direct quotes from "five young aboriginal adults" who were asked about "their inspirations and what motivates them towards great achievements" (Syncrude 2012, p. 28).

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[34] See also http://www.osrin.ualberta.ca/Resources/DidYouKnow/2013/May/CommonTermsRelatedtoAboriginalConsultation.aspx

In addition to the work of Syncrude, Suncor has an Aboriginal relations policy developed in 2012 (Suncor 2012b), as does Imperial Oil (Imperial Oil 2011). Interestingly, Nexen has recently produced an *Indigenous Peoples Policy* (2013). The fact that they have chosen to use the "Indigenous people" label instead of "Aboriginal" is significant. In doing so Nexen draws attention to the United Nations Declaration on the Rights of Indigenous People (United Nations 2008). The Nexen (2013) policy defines "Indigenous Peoples" as those that:

> Have cultures and ways of life that are distinct from the wider societies in which they live and their use of particular lands precede the presence of other inhabitants … they are often reliant on the land and its natural resources for their livelihoods [and] may also have strong economic, cultural and spiritual ties to such land (p. 2).

The invocation of "Indigenous rights" as a comparison to First Nations struggles in Canada also appears in the media articles that were reviewed post 2010. Shell and Total E&P Canada's policies in this area were not available (though they are part of the OSLI network discussed above).

4.3.4 *NGO/Other*

The number of interested parties and overall documentation on First Nations issues in this area has steadily increased since 2000, with a noticeable surge in 2008. A direct Aboriginal voice is surprisingly absent[35]**.** What is most remarkable in reviewing documents in this category is the diversity of stakeholders represented, as the reports examined included those prepared for industry, small issue based environmental groups (for instance Keepers of the Water, and the Wood Buffalo Environmental Association), large environmental groups/institutes (including Pembina and Greenpeace), those consulting on behalf of First Nations, contracts on community-based monitoring for CEMA, political parties, and even investment/advocacy firms.

Though many bands are members of the different organizations producing these documents (such as CEMA, Keepers of the Water, and the Wood Buffalo Environmental Association) what is noticeable is that direct commentaries from Aboriginal groups are not readily available. The major exception is *Nih boghodi: We are the stewards of our land* written by the Athabasca Chipewyan First Nation (ACFN) in 2012. The major purpose of this document is to affirm their "sacred, pre-existing, and sovereign right and responsibility to protect, care for, and manage our air, land, and water so that our children and their children, into the farthest future, may be able to practice their rights and way of life freely" (Athabasca Chipewyan First Nation 2012, p. 4).

Post 2008, there is a growing complexity in the types of partnerships options available between First Nation groups and industry, and also an appreciation that expertise about the prudent development of the oil sands can take many forms. In reviewing the documents from the CEMA bibliography one of the most noticeable trends present in this sector is the different ways consulting and engagement can be discussed. For example, the diversity of tools for formalizing

[35] That is not to say that this voice may not be present in on-line contexts, simply that in the documents reviewed it was not often present.

relationships between industry and Aboriginal groups is nicely captured in a benchmarking report by Northwest & Ethical Investments (2009), a mutual fund company that makes portfolio managers accessible to Canadian retail investors. "Free, Prior and Informed Consent" (FPIC), appears to be the "gold standard" that companies should strive for which involves Aboriginal communities becoming fully informed about a project before it is proposed and having the real capacity to refuse it at the outset (Northwest & Ethical Investments 2009, p. 17).

An additional pattern of note, is the recognition that many different types of knowledge are necessary for the responsible development of the oil sands including policy, scientific, community-based (both Aboriginal and non-Aboriginal), and traditional (see Athabasca Chipewyan First Nation 2012, Candler et al. 2010, Lawe et al. 2005, O'Flaherty and Davidson-Hunt 2008, Sustainable Ecosystems Working Group 2009).

Reports in this area draw attention to both the federal and provincial government's lack of involvement in the consultation process associated with First Nations and oil sands development. There is an increasing sense of frustration about the consequences of such inaction. Several of the documents analyzed in this arena are critical of the federal and provincial governments' inaction in protecting treaty rights, meaningfully consulting with First Nations, and managing resource development in a responsible manner. These reports use highly charged language to express their malaise with the current state of affairs (see for example Athabasca Chipewyan First Nation 2012, Stewart and Laboucan-Massiom 2011, Mech 2011). The general tone of such discussions is nicely captured by the Athabasca Chipewyan First Nation (2012) who note:

> ACFN has had enough with having our land destroyed, no one is dealing with it; neither the Federal nor the Provincial Crown. Yet you come to us for approval of new projects. It is time for the Government to stop cheating us of our rights to land use and livelihood, culture and identity without proper consultation, mitigation and compensation (p. 11).

The frustration contained above helps explain why some groups talk about the need for "a moratorium", "halting", or taking a "pause" in the development of oil sands resources (Athabasca Chipewyan First Nation 2012, Stewart and Laboucan-Massiom 2011, Walsh 2012). This desire to stop development outright has only emerged within the last decade.

Documents in this category are replete with suggestions about how to better manage the responsible development of Alberta's oil sands. Besides encouraging the active involvement of the federal and provincial government in the acknowledgement of treaty rights, some of the key recommendations to emerge in this area of the document group include:

- Industry "having staff dedicated exclusively to Aboriginal engagement" and not to "stakeholder engagement at large"[36] (Northwest & Ethical Investments 2009).

[36] It is interesting to note First Nations have said repeatedly they are not "stakeholders" but instead a separate class of people distinguished by their rights. This necessitates a more complex dialogue in which some people are labeled stakeholders and others get a different recognition.

- Adequate "public disclosure" when managing the risks of oil sands developments for investors (Northwest & Ethical Investments 2009, Reuter et al. 2010).
- Oil sands producers should pursue "more pro-active, incremental strategies" and develop more "comprehensive" and "long term strategies" when working with Aboriginal groups (Reuter et al. 2010).
- Independent monitoring of environmental, health and safety effects, to increase public confidence is needed, this will require a specific educational component because of legitimate or perceived risks (Chan and Lawn 2008, Fort McKay Environment Services Ltd. 1977, Walsh 2012, Wood Buffalo Environmental Association 2007, 2008).

Undoing damage, building trust, and establishing independent research monitoring, are the reoccurring themes in all of these proposals.

4.3.5 *Media*

In general, Aboriginal issues are often included as part of a wider dialogue associated with environmental groups or mentioned in the context of key events. Only about half of the 130 documents reviewed in this area focused almost exclusively on Aboriginal issues (i.e., key sources being Alberta Aboriginal leaders or organizations discussing specific concerns associated with First Nations). The remainder of the media coverage situated First Nation concerns in the context of major events such as:

- the release of a documentary/Hollywood film /or interest by a celebrity in the area (such as *Avatar* in 2010)
- the visit of high profile American political figures (i.e., Barack Obama)
- the publication of a key document by a special interest group or government or the organization of a key event (including the recent work on the Keystone XL pipeline and the Enbridge Northern Gateway hearings)

This means that a true elaboration of the myriad of Aboriginal issues associated with oil sands development is something that lacks detailed elaboration by the press.

A discussion of Aboriginal issues and the oil sands was virtually absent until 2008 in the press coverage reviewed. This result suggests that this topic was not selected as something to discuss by the mass media until quite recently. This does not mean that there were not issues being raised of importance prior to 2008, it simply indicates that First Nation concerns were not consistently reported upon.

The two major issues related to First Nations up until 2011 were environmental and health. Environmental discussions typically focused on the pollution of the Athabasca River or the consumption or discovery of "tainted fish." Moreover, health matters included frequent mentions of oil sands development contributing to "rare cancers" or "chronic diseases" due to the "toxicity in animal life." A central figure in stories on health is Dr. John O'Connor, a physician

who in 2003 raised concerns that residents of Fort Chipewyan had unusually high rates of cancer (see, for example, Remington 2009, Virag 2009).

In 2011, there was a slight shift in focus away from these topics. The "protection" and/or "stewardship" of land became more prominent. This change coincides with discussion of Keystone XL pipeline to Texas, and its implications on Alberta and British Columbia resources.

Some examples of how these concerns are voiced based on the response of Aboriginal leaders include the following:

- In regards to the Keystone pipeline, Chief Allan Adam of the Athabasca Chipewyan First Nations notes: "The pace of current tar sands construction in northern Alberta is out of control … tar sands projects are destroying our traditional lands, poisoning and draining our sacred waters, leading to treaty violations and contributing to run-away climate change. The pipeline will allow the continued expansion and destruction of our home lands" (Wohlberg 2011). Moreover, former Chief of the Mikisew Cree Nation in Fort Chipewyan, George Poitras suggests: "From an Indigenous perspective, watching and being victim to the 40 years of unrelenting, unfettered, unmonitored development of the tarsands, there is nothing 'ethical' or 'humane' about the development of the tarsands" (Wohlberg 2011).
- Regarding health concerns, Adam asserts: "We've seen a drastic change in water contamination going down the Athabasca River, which has a direct impact on our reserve … seventy-eight per cent of our community still relies on traditional foods. Every animal survives off the river, and we still live off those animals … There are two known cases of bile duct cancer … that's a rare cancer, one in 100,000. There are possibly four others, but the others cannot be recorded because the people have passed on. If there are six in a community of 1,200 people something's got to be going on. Everyone is pointing to the water" (Couture 2008). Moreover, Poitras states: "People in Fort Chipewyan are dying, we suspect highly from the pollution in the water from the tar sands … While this development has long been characterized as dirty oil, people in Fort Chip have begun characterizing it as bloody oil" (Bell 2009).

Despite the generally negative tone of the coverage, there are also the occasional good news stories about Aboriginal businesses in relation to oil sands development (see for instance Gunter 2012).

There are some noticeable absences and inclusions in the media coverage of Aboriginal affairs and oil sands development in comparison to the other areas reviewed. Some of the main concerns raised in the government, academic, industry and or other/NGO documents analyzed, are not really talked about in the media. Among the most significant of these topics are:

- Métis issues
- Meaningful consultation

- Aboriginal traditional knowledge's contribution to an understanding of land management
- Industry/Aboriginal partnerships outside of employment opportunities
- Governance issues with the Cumulative Environmental Management Association
- Cumulative Environmental Management Association (CEMA), Regional Aquatics Monitoring Program (RAMP) and the Energy and Utilities Board (EUB)

This is not surprising given that to explore such concerns would require extensive space in the paper, not something that was often present (most stories were only two to three paragraphs).

Despite these silences, the press also raised concerns that were not talked about elsewhere. For example, who funds First Nations groups when they launch civil suits or travel to other places to raise awareness about the impact of oil sands development on their communities was a media focus. The fact that the Cooperative Group in the UK is funding the Beaver Creek lawsuit against the Crown regarding treaty rights described as a "David and Goliath" battle, was something noted by Babiak (2009). Moreover, the funding by Hewlett Packard and Tides to certain bands was something that concerned Krause (2010); she was critical of such funds and wondered what the motives of such funding are. Additional points that were highlighted by newspapers but not discussed anywhere else are the public relations battles between First Nations groups and the federal and provincial governments and the details associated with a celebrity interest in the region.

Overall there was a lack of diversity of sources representing the Aboriginal voice in the press coverage reviewed. The ***most commonly used spokespersons*** for Aboriginal groups in relation to the oil sands in Alberta are: Allan Adam (chief of the Athabasca Chipewyan First Nations from 2003 to present) and George Poitras (chief of Mikisew Cree First Nation from 1999 to 2002). Though these bands are not the only ones impacted by oil sands' activities in the province, their leaders seem the most willing/or available to comment.

4.4 Living Conditions: Supplementary Analysis

Overall, when looking at discussions both within the CEMA bibliography and the press sample, discussions of living conditions in the Fort McMurray show many of the same trends associated with Aboriginal communities and oil sands development explored in the previous section.

4.4.1 *Government*

The impact of oil sands development on the surrounding communities was another area that was studied in detail in the 1970s by the Government of Alberta, or more specifically by AOSERP. In fact, there were 22 documents produced related to this topic accessible in the OSEMB documents reviewed for this study. Additionally, a whole range of issues were studied associated with living conditions including employment opportunities (Dev-Cor Technical Services 1978), the development of recreation and leisure facilities (MTB Consultants Limited 1980, Phillips et al. 1978) and the use of camps as accommodations (Parkinson et al. 1980), and

service delivery (Peter C. Nichols & Associates Ltd. 1980). Similar to the discussions of Aboriginal issues, in these early reports some terms that are not as common today were used to talked about basic social concerns such as: "personal/human/social adjustment" (Earl Berger Ltd. 1978, Gartrell 1979, Gartrell et al. 1980); "deviance" (Johnson 1979); "family well-being" (Larson 1979); and "human perception" (Marino et al. 1980). Moreover, these documents tended to focus on the problems related to this area as something that should be studied at the level of the individual. In contrast, more recent discussions of this topic avoid this tendency, focusing instead on "community development" and or "growth" (see for example, Government of Alberta Oil Sands Sustainable Development Secretariat 2011).

In addition, comparable to what was found when looking at First Nations concerns, the recommendations proposed in these early government studies are comprehensive and still relevant. For example, though Van Dyke and Loberg (1978) are describing a trend they observed more than 30 years ago, the passage that follows would not seem out of place when describing Fort McMurray today:

> Because people are pouring in at such a pace and in such large numbers, structural problems such as provision of accommodation, social services and management of growth are nearly impossible to deal with under present conditions. If the influx of people were to occur after the amenities and organization had been put in place, rather than both occurring at the same time, many problems would be averted or at least substituted by more manageable difficulties (p. 140).

What is also striking is that despite the observation that infrastructure should be in place first before acquiescing to industry demands for further development an official government policy on the management of growth in this area has only recently been produced. In sum, despite consistent warnings about the impact of fostering a community that fundamentally encourages people to come "to get what they can for themselves rather than to invest themselves in the community" (Van Dyke and Loberg 1978, p. 140) little has been done to mitigate these concerns in the past 30 years.

Finally, consistent with the analysis of Aboriginal issues, the government documents available in the 1990s up to the early 2000s about living conditions in the Athabasca region are regulatory hearings. In these proceedings a variety of stakeholders express an urgency and frustration with the constant approval of projects without permitting time for the community to adjust. For example, Decision 2002-89, had the Wood Buffalo First Nations voicing concerns about unemployment, lack of adequate educational and training opportunities, poor housing, rising living costs, insufficient medical services, and social family problems among its membership (Alberta Energy and Utilities Board 2002). At this same hearing, the Oil Sands Environmental Coalition (OSEC) suggested housing shortages, high prices (which disadvantage middle and lower income families), local traffic in the community, and safety issues with Highway 63, ought to be addressed. Moreover, in regards to this project the Fort McMurray Medical Staff Association stated "public safety would be at risk" if additional demands were placed on "a medical system very near or already stretched to capacity" (Alberta Energy and Utilities Board

2002, p. 58). Moreover, in 2006 the Regional Municipality of Wood Buffalo (RMWB) attended the three oil sands hearings and made strong statements about capacity. For example, in regards to the Muskeg River Mine proposal, the RMWB acknowledged that the project and the development of the oil sands in general would provide important benefits to Alberta and Canada. However, it also stated that this project would contribute cumulatively to negative socioeconomic impacts on the region and that the residents of the municipality were the most adversely affected by continued oil sands development. It submitted that the RMWB required tangible solutions to the infrastructure and services needs in the region (Alberta Energy and Utilities Board and Canadian Environmental Assessment Agency 2006). The concerns highlighted by the aforementioned groups are representative of the kinds of appeals common to all of the regulatory documents analyzed.

Despite their concerns the RMWB has quite recently become more proactive in their vision of the future, approving "Envision Wood Buffalo", a plan to guide future long-term sustainability in the region[37].

4.4.2 *Academic*

In terms of the 11 academic papers reviewed on the subject of living conditions, the topics covered were once again diverse. Scholars examined issues such as labour market segmentation, driving perceptions, reclamation concerns, and offered general discussions about basic social issues in the area.

Most of these investigations recognize the failure in government and industry forecasting efforts and offer some useful recommendations about what ought to done. One insightful example of this sort of work comes from Earley (2003). To counter the inadequacies he witnessed in area planning over a decade ago, he proposes at least three plausible courses of action for the provincial government:

- offer more funding to the region due to their "unique needs,"
- develop a solid set of indicators for "social effects management" and challenge industry to meet these standards,
- coordinate efforts with industry and formulate "an integrated, long-term plan, which is based on the assessment of cumulative social as well as biophysical effects." (Earley 2003, pp. 173-174).

Unfortunately, the sort of planning suggested above has only really begun as is evident in the Comprehensive Regional Infrastructure Sustainability Plan (CRISP) for the Athabasca Oil Sands Area (AOSA) released by Alberta Treasury Board's Oil Sands Sustainable Development Secretariat (Government of Alberta Oil Sands Sustainable Development Secretariat 2011). Moreover the region itself has just recently approved a guide that plans future long-term sustainability in the region aiming to "find balance" in their "economic, environmental, cultural

[37] See http://www.woodbuffalo.ab.ca/living_2227/Community-Planning/Envision-Wood-Buffalo.htm

and social systems" and "live within their natural limits" (Dillon Consulting Ltd., 2010), thus embracing a more holistic definition of sustainability.

4.4.3 *Industry*

In terms of industry coverage, comparable to investigations of Aboriginal concerns, discussions of living conditions in the area were not something covered extensively by industry in the sample of OSEMB documents available[38]. However, the promotion of building sustainable communities as opposed to simply meeting corporate social responsibility obligations that is being advanced by the OSLI (discussed in the findings on Aboriginal issues) is also significant in this context; it implies that in the future industry may adopt a more holistic view of how they think about the social issues associated with resource development and manage it more collaboratively.

4.4.4 *NGO/Other*

The three documents for this section represent a small sampling of voices including those of Deloitte, Canada West Foundation, and Pembina. What is interesting is no community groups appear to have produced reports on this matter. The Deloitte (2012) document represents a positive position about project approvals much like you would expect to find in industry representations. Development issues in Fort McMurray are simply framed in terms of the job opportunities offered to residents with the strain on the infrastructure not acknowledged at all. A more balanced view comes from a 2005 Canada West piece (Hirsch 2005). It claims to offer an "objective and accessible resource" and talks about the social challenges associated with growth while pointing to the need develop better infrastructure (both electric and transportation) to make development work. This document also contains a textbox dedicated to exploring if the region is a "special case" in terms of funding priorities for government support. The idea that Fort McMurray may be a "special case" was considered in the academic work on this topic a little earlier (see for instance Earley 2003). Overall, the recommendation of the Canada West report comes as no surprise since it echoes the early concerns highlighted in government research of the 1970s: the size, scope, and speed of oil sands development ought to be managed more carefully. This document also highlights an emerging theme in the mid-2000s across all the OSEMB documents reviewed and the media sources: the appropriate balance between using royalties to improve services across the province (as a benefit for all) and the desire to manage the strain on the infrastructure for Fort McMurray residents (a smaller subsection of the population).

4.4.5 *Media*

In terms of the media work associated with living conditions, what was most notable is that descriptions of this area are predominantly negative across the decades. Journalists consistently used the terms "boom" and "bust" to describe an economy that is having a destructive impact on Fort McMurray residents; put differently press coverage has consistently focused on "the bleak

[38] However, using OSEMB's "planning" keyword retrieves the following early reference: Strong Hall & Associates Ltd., 1977. Socio-economic impact assessment: A strategy for planning. Syncrude Canada Ltd., Edmonton, Alberta. Professional Paper 1977-7. 91 pp.

side of development" (Penketh 1980). Media accounts have also emphasized the impact of migration to this area for high-paying jobs from other parts of Canada (especially the Maritime provinces). Additionally, the presence of insufficient infrastructure to meet community demands has been a consistent concern in articles from the 1970s onward. More recently there has been an emphasis on camps and their improvements and even fly in operations (see Gordon 2011, and even earlier Caroll 2007 and Jaremko 2006).

Despite the general negative coverage of life in the Fort McMurray area, a glimmer of hope emerged in the 1990s when the Regional Municipality of Wood Buffalo was formed. There was optimism that having formal leadership in this area would "create a better future for everyone" (see for instance Windspeaker 1995). Nevertheless, the presence of the municipality does not seem to have made a major difference for residents, since the same problems in this region continue to be reported upon today.

Finally, the voice of residents from the community itself is surprisingly absent in dialogues about living conditions. Typically opinions on this topic come from political figures, industry representatives, or regional organizations.

4.5 Conclusion

This analysis represents a preliminary mapping of some of the more significant changes in the dialogue about oil sands development and Aboriginal issues. It also touches upon how the living conditions in Fort McMurray and surrounding areas have been talked about by government, academics, industry, NGOs and the press, in relation to this resource.

Overall, in assessing the results, one of the most interesting findings concerns the large silences present in the dialogue produced over the last 40 years. While the government invested a great deal of time, effort and energy into studying how this resource should be managed from 1975 to 1980, this stopped abruptly in the 1980s. In fact, most of what was recommended was not really acted upon until quite recently.

In general it is clear that the dialogue (volume of documents produced and number of people participating in all areas-government, media, academic, NGO, industry) about Aboriginal issues and living conditions in relation to the oil sands has increased dramatically since 2008. The sorts of technical terms used to describe the planning efforts being developed have also been rising steadily since 2000 (necessitating a new kind of technical literacy). These are promising trends that signify increased levels of engagement.

Despite this positive sign, what is discouraging about the results of this analysis is that we continue to see the same sort of advice from the 1970s being repeated today, often as if it were something new on the part of government or industry. Such recommendations included the need to capitalize on local knowledge, a desire for accurate and impartial data collection on health, employment, economic and social indicators in the impacted regions, and a desire to incorporate culturally appropriate consultation into the regional planning process. Unfortunately, much strain has been placed on the area's infrastructure, surrounding communities (Aboriginal and otherwise), and the environment. In addition, the overall amount of space dedicated to

developing a sophisticated dialogue on rights management and social concerns is decreasing. Moreover, across all the discourse arenas explored, it appears that information promotion over research provision is triumphing, indicating that we are becoming less educated about these issues as time goes on. This was also confirmed by Way (2013) who found that the "social frame" has received little attention in the media literature (p. 89). In her media study on oil sands, Way (2013) found that only 8.4% of news articles had a "social frame" behind economic and environmental. Furthermore, the fact stakeholders most invested in these issues (the First Nations groups and Fort McMurray residents) have very little direct voice in the media and available not-for-profit documents is problematic. Another finding that is confirmed by Way (2013) is that "Aboriginal peoples' voices were almost entirely absent from newspaper discourse, quoted as the first source just two percent of the time (54 stories) and as a second source only one percent of the time (25 stories)" (p. 166). One of the few surprising places where these voices could be heard was in the work of industry (i.e., Syncrude's Aboriginal reports).

In general, these findings highlight some significant shifts in terminology. The term "native" is now rarely used to talk about Aboriginal peoples, though it was quite common up until the late 1990s. In addition, "treaty rights" and "meaningful consultation" are ideas not only situated within the expected framework of jurisprudence but also being considered within the context of "risk management", particularly for discerning investors. Certain stakeholders are now also invoking a desire for a "moratorium" on all new oil sands projects. In industry, these results suggest that the requirement to meet "corporate social responsibility" obligations may be folded into a more all-encompassing view of sustainability in the future.

While some terms have changed or are changing, the destructive impact of the "boom or bust" economy associated with oil sands development on the Fort McMurray region is a theme that has remained constant[39]. Considerations of this area still elicits a desire by many parties to deal with safety issues (Highway 63), inadequate social services (health, education, and basic supports), and the gap between workers who can afford to live lavishly and pay premiums for the limited housing and middle and low income residents. Though these struggles were flagged as issues during the 1970s by government research efforts and by the media in the 1980s, they are only recently receiving government attention.

It is hoped that this analysis will encourage further discussions about these topics and inspire more research. Possibilities for future work include seeking documents across all sectors from the 1980s and 1990s that were not immediately retrievable to see if the findings above are confirmed or refuted. Such a process could involve accessing information from corporate holdings, band offices, and the Fort McMurray library. Widening the scope of the types of social topics covered is also possible such as investigating activism, views on migrant workers, and or political/electoral shifts. In addition, this exploration has demonstrated that the regulatory hearings are a rich data set that could be more carefully mined since they represent a diversity of

[39] See for example http://www.ipe.ualberta.ca/en/EventsandSeminars/BoomandBustAgaintheSequel.aspx

stakeholder positions. It is also plausible that the views of citizen journalists and other on-line organizational resources not captured in the datasets could offer additional insights.

To conclude, this preliminary exploration of the oil sands "then and now" dialogues related to Aboriginal concerns and living conditions tells a story of missed opportunities. Unfortunately, it also seems that less space and place is available for imagining how we should manage this resource responsibly. However, these discussions do not have to stop here, more research intensive scholarship on these topics could generate additional insight about how we can do better in the decades to come.

5 CONCLUSIONS

After dividing the discourse about the oil sands into three sub-themes – economy, environment, and social conditions – it became apparent when examining documents and news stories reaching back to the 1970s that there were several common trends running through the three sub-themes.

As they analyzed documents and news stories, researchers found that the same sort of advice that was being presented in the 1970s is still being presented today by government and industry, often as something new. The 1970s, as it turns out, was rich with government funded studies, population surveys, scientific research, and strategic plans concerned with expanding oil sands development while at the same time minimizing negative impacts. All the government documents of the time that were examined recommended a measured pace of development so that economic, environmental and social impacts could be better controlled.

Most of these data, analyses and recommendations had been put aside by the mid-1980s in favour of focusing solely on the economic benefits of oil sands development. By the 1990s industry made it clear that it wanted to take the leadership role when it came to economic discussions about the oil sands and that government should become simply a facilitator.

During the 2000s several issues such as Aboriginal rights, the containment of tailings ponds, and explosive growth of Fort McMurray that had been foreseen in the 1970s reappeared in the discourse. Only now they were more urgent and difficult to resolve. In addition, there was a pressing new issue – the emission of greenhouse gases from carbon intensive oil sands projects and their effect on climate change that was attracting a lot of attention in the United States and Europe.

Another key trend revealed through analysis of documents and news stories in all the categories is the replacement of hard evidence and information with promotion and marketing. Government, industry and to a certain extent environmental NGOs have become so adept at promoting their views and interests that the oil sands have become an arena of competing, and often, confusing claims.

While there were common themes that ran through all the sub-themes of economy, environment and social conditions, there were also key findings unique to each of these categories.

Economy

- A consistent dialogue about developing resources as a way to build the nation. This becomes more evident during the 2000s.
- Foreign ownership as a direct topic was not often talked about in the news media until the CNOOC takeover of Nexen. Whereas in the 1970s foreign ownership was viewed as undesirable, it is now constructed as both desirable and inevitable by government and industry.
- Whereas the United States was once referred to as the preferred trading partner, industry and government now discuss it as a riskier market.
- Most of the press coverage in the last few years in regards to foreign markets pits environmental groups' efforts to make bitumen look unattractive against government attempts to market bitumen as something valuable provided by a business-friendly, secure neighbour.
- The anti-oil sands voice was less elaborated upon and harder to find in the media coverage reviewed.

Environment

- Around 2000, public discourse about the oil sands shifted from being primarily an economic issue to one that included significant discussion of environmental impacts.
- Beginning in 2000 greenhouse gas emissions became the most discussed and reported environmental issue relating to the oil sands.
- Oil sands tailings ponds were low on the government, industry, and news media agenda until 2008 when 1,600 ducks died in a Syncrude tailings pond.
- Oil sands air emissions were addressed early on by government and industry but by 2008 independent scientists found the monitoring system to be inadequate. This provoked more news media coverage than the issue had ever received before.
- Environmental NGOs filled a research and discourse vacuum about the environmental impacts of the oil sands that had been vacated by government.
- There were very few easily accessible industry documents regarding oil sands environmental research available.

Social Conditions

- Dialogue (volume of documents produced and number of people participating in all areas – government, media, academic, NGO, industry) about Aboriginal issues and living conditions in relation to the oil sands has increased dramatically since 2008.
- One of the few places where Aboriginal voices could be heard was in the work of industry (i.e., Syncrude's Aboriginal reports).

- First Nations groups and Fort McMurray residents have very little direct voice in the news media articles and NGO documents studied.
- "Treaty rights" and "meaningful consultation" are ideas not only situated within the expected framework of jurisprudence but also being considered within the context of "risk management", particularly for discerning investors.

This study presents an examination of a very broad discourse pertaining to the oil sands over a relatively long period of time (1970 to 2013). It involved dozens of documents and hundreds of news stories that touched on many aspects of oil sands development. For that reason it invites further research on more focused topics.

But overall, the research provided a fascinating and detailed account of the way talk and discussion about the oil sands has evolved since the Alberta government decided to kick start expansion in the 1970s. Of course, oil sands operations have also evolved – there are now over 100 whereas once there were two. By studying the discourse, we developed a type of road map that allows us to see how we got from there to here with all the side trips along the way.

Such a map may also help us to discern future directions, as well as hazards to avoid.

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7 ACRONYMS

ACIC	Aboriginal Consultation Interdepartmental Committee
ACFN	Athabasca Chipewyan First Nation
ACR	Alberta Chamber of Resources
AOSA	Athabasca Oil Sands Area
AOSERP	Alberta Oil Sands Environmental Research Program
AOSTRA	Alberta Oil Sands Technology and Research Authority
ARCO	Atlantic Richfield Company
AUC	Alberta Utilities Commission
BDAT	Best Demonstrated Available Technology
BRIK	Bitumen Royalty-In-Kind
CAPP	Canadian Association of Petroleum Producers
CASA	Clean Air Strategic Alliance

CBCA	Canadian Business & Current Affairs
CCS	Carbon Capture and Storage
CEMA	Cumulative Environmental Management Association
CNRL	Canadian Natural Resources Limited
CRISP	Comprehensive Regional Infrastructure Sustainability Plans
EISA	Energy Independence and Security Act
EPIC	Energy Policy Institute of Canada
ERCB	Energy Resources Conservation Board
EUB	Alberta Energy and Utilities Board
FIPA	Foreign Investment Promotion and Protection Agreement
FPIC	Free, Prior Informed Consent
GCOS	Great Canadian Oil Sands
GDP	Gross Domestic Product
GHG	Greenhouse Gas
HCP	Human Capital Plans
LCFS	Low Carbon Fuel Standard (LCFS)
MCFN	Mikisew Cree First Nation
NAFTA	North American Free Trade Agreement
NDP	New Democratic Party
NEP	National Energy Policy
NGO	Non-Governmental Organization
OSDG	Oil Sands Developers Group
OSEC	Oil Sands Environmental Coalition
OSLI	Oil Sands Leadership Initiative
OSRIN	Oil Sands Research and Information Network
OSTC	Oil Sands Tailings Consortium
PAC	Polycyclic Aromatic Compounds
PDF	Portable Document Format
PMO	Prime Minister’s Office

PNAS	Proceedings of the National Academy of Sciences of the United States
RAMP	Regional Aquatic Monitoring Program
RSDS	Regional Sustainable Development Strategy
SCO	Synthetic Crude Oil
SEE	School of Energy and the Environment
SIAM	Social and Infrastructure Assessment Modeling
UNFCCC	United Nations Framework Convention on Climate Change
WBEA	Wood Buffalo Environmental Association
WBFN	Wood Buffalo First Nation
WBFNES	Wood Buffalo First Nation Elders Society

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