Lessons from Dumpcano: Governance Issues in Solid Waste Management in Nunavut

Gloria Song

This article explores the difficulties of governing solid waste management practices in Nunavut, Canada's Arctic territory. The governing framework of solid waste management practices is compared with the actual state of landfills in Nunavut, by analyzing inspection reports of three communities in Nunavut (Baker Lake, Gjoa Haven, and Iqaluit) for ten years. This analysis confirms that communities consistently fail to meet waste management standards set by Nunavut's legal framework. These waste management issues are reflective of larger systemic issues of governance in Nunavut, relating to infrastructure and funding. With the settlement of a recent litigation over treaty implementation problems, and a renewed commitment to the Nunavut Land Claims Agreement, it is hoped that these challenges will be overcome. Various measures are suggested, including strengthening the legal framework, providing adequate personnel and training, and including the participation of the public. It is time to shift our conceptualization of the Arctic and its residents from merely viewing them as passive victims of environmental harm, to recognizing that northerners can also be actors with the agency to cause environmental harm. This conceptual shift is necessary in order to better prioritize the governance of solid waste management in the North.

Introduction

In May 2014, a giant fire raged in the landfill of the city of Iqaluit, the capital of Nunavut, Canada's Arctic territory. Firefighters struggled to put out the football field-sized fiery volcanic mountain of garbage, nicknamed "Dumpcano" by social media. However, Dumpcano continued to burn for four months, exposing its residents to smoke, odours, and pollutants, and forcing residents to stay indoors during a usually pleasant time of the year.

The Dumpcano incident brought to the world's attention Nunavut's solid waste management problems. In this article, I explore the challenges in governing municipal solid waste in Nunavut. I focus on municipal solid waste management practices such as landfills and therefore have not included sewage and wastewater systems. I argue that these governance issues are reflective of broader infrastructural difficulties in implementing the Nunavut Land Claims Agreement

Gloria Song is a lawyer, researcher and writer. She recently earned her Master of Laws from the University of Ottawa. She would like to acknowledge funding from the Social Sciences and Humanities Research Council, the Nunavut Law Foundation, and the Environment, Society and Policy Group.

(NLCA), which had been considered a hallmark of Indigenous self-governance when it was first signed (Fenge & Quassa, 2009: 86; Legare, 2008: 336).

I reviewed the relevant legislative framework as well as the regulations and guidelines that govern solid waste management standards in Nunavut. I then examined the inspection reports of landfills conducted by water resources officers for Indigenous and Northern Affairs Canada (INAC) from 2005 to 2015 in three communities in Nunavut: Baker Lake, Gjoa Haven, and Iqaluit. I chose these three communities of varying sizes to ensure all three regions of Nunavut were included. In analyzing the landfill inspection reports, supplemented with newspaper articles and three studies commissioned by the federal and territorial government on Nunavut's waste management practices, I compared the legal framework for solid waste management with the reality of what is actually practiced at solid waste facilities in order to identify potential challenges in governing waste management practices in Nunavut.

My interest in this subject stems from my personal experiences in dealing with the unique waste management issues in Nunavut. For the last few years, I practiced law in one of the northernmost law offices in Canada, in a remote community in Nunavut called Cambridge Bay. Ravens would attack the garbage bags that I left outside my building and, to my embarrassment, would scatter the contents of my trash across the Arctic tundra. Lacking a commercial shredding service in town, it was not uncommon practice to take boxes of paper that needed to be disposed and haul them to the municipal landfill, to spend afternoons burning paper at the dump. Rumour had it that offices used to dispose of junk by pushing them into the Arctic Ocean, including old vehicles. My experiences left me with a strong impression of both the beauty and the fragility of the Arctic.

The Iqaluit 'Dumpcano' smouldered for several months during the summer of 2014. Credit: Aaron Watson

Background

Existing literature

There is very little academic literature on the legal aspects of sustainable waste management in Nunavut. Much of the academic literature on environmental issues in Nunavut discuss the effects of climate change in the Arctic (Hohmann, 2009; Theriault 2008-2009) and frame residents of the Arctic as the passive recipients – or even victims – of environmental damage caused by unsustainable practices (Johansen, 2002; Tyrrell, 2006). Although the Canadian Arctic region is "one of the most intensively studied in the world" (Ford et al., 2012: 292) there is very limited research on the vulnerability of municipal infrastructure, including waste management (Ford et al., 2012: 293).

While studies on climate change and other environmental impacts continue to be important, I argue that we must move beyond this perception of the North as only a passive victim and instead recognize the agency of its residents. It is not enough to focus on how the actions of the rest of the world affect the Northern environment; we also must recognize that northerners also have the power to produce environmental harm. It is only in doing so that we can emphasize the importance of developing an effective way to govern environmental practices in Nunavut.

Some scholars have in fact looked at the Canadian North and its waste management situation as a potential pollutant issue, rather than merely as a victim of pollution. Glenda Samuelson examined waste management issues in Iqaluit in 1998 long before Dumpcano, predicting that Iqaluit's expanding population would cause waste management issues to become increasingly complicated, and urging for improvements to existing waste management facilities (Samuelson, 1998: 328, 335). Weichenthal et al. studied the impact of Dumpcano on ambient air quality, one of the first studies to do so with quantitative data, recognizing the importance of this issue "as waste management practices often differ from southern locations owing to unique challenges faced in northern regions" (Weichenthal et al, 2015: 46). Daley et al. also conducted a case study on Coral Harbour's water and wastewaster sanitation system, a topic quite related to the topic of waste management as both are governed by the same bodies (Daley et al, 2011: 130). They looked at residents' perceptions of the functionality of their current systems, and noted that infrastructural challenges included the remote geography of Nunavut, minimally-staffed government departments, incomplete monitoring and record-keeping, and shortages of qualified operators.

Context

Nunavut is Canada's newest territory, created on April 1, 1999, through the Nunavut Act and the Nunavut Land Claims Agreement negotiated between the federal government and the Inuit of the Nunavut Settlement Area. It is the least densely populated of Canada's provinces and territories, with the country's smallest territorial population of 36,919 in the most expansive geographical region covering over 1.8 million square kilometres (Nunavut Bureau of Statistics, 2015; Statistics Canada, 2011).

Approximately 85% of the population of Nunavut are Inuit (Nunavut Tourism). Although Inuit traditionally lived semi-nomadic lifestyles moving in small family groups between camps (Daley et al., 2011: 125), as a result of federal government policies, Inuit families gradually began to shift

their lifestyles to more permanent settlements, often near the Distant Early Warning Line of radar stations scattered across the Arctic, and by the 1970s, this shift had happened all across the North (Eber, 1997: 4). Before this shift, the waste created by Inuit was comparatively minimal as it was typically scattered or buried (Daley et al., 2011: 125). This relatively recent transition to permanent settlements suggests that overfull or nearly full landfills are a fairly new phenomenon that communities are dealing with: it may not have been noticeable as a problem before, simply because there were not such high numbers of people staying in one place for so long.

Nunavut's location in the far North makes waste management problems more difficult and complicated to fix. The long distances between Nunavut's geographically isolated communities, which are not connected by roads, mean that operational costs are more expensive than in southern Canada (Daley et al, 2011: 125).

A study conducted in 2010 indicated that Nunavummiut generate more waste per capita than the other territories Yukon or the Northwest Territories, possibly as a result of the goods and materials brought to the community by barge requiring more packaging (Arktis Solutions, 2010). Furthermore, as noted by Daley et al. in their examination of wastewater infrastructures in Nunavut, there is a lack of a resident tax base in these communities due to limited economic opportunities in the territory, which means that municipalities must rely on the territorial and federal government to provide services (Daley et al., 2011: 125).

Despite these challenges, thanks to interests in areas such as the mining industry and Arctic shipping, Nunavut has experienced a boom of economic development activity in Nunavut, which means that the populations in each community will only continue to expand. This further highlights the importance of governing sustainable practices in carrying out these activities in the North. In advocating sustainability for Nunavut, former premier Eve Aariak commented that the recent wave of changes leaves the people of Nunavut with a dilemma:

> On the one hand, there is the possibility of economic expansion for our communities currently struggling with unemployment and limited opportunities. On the other hand, increased traffic activity brings new risks to our fragile environment – the foundation of our culture, our diet and our wellbeing (Aariak, 2013: 1).

Legislative Framework

There is no one body governing solid waste management standards for Nunavut. Instead, various acts and regulations provide the regulatory framework for solid waste management practices in the territory. For example, several different pieces of legislation prohibit the disposal of waste into water without approval.[1] The Government of Nunavut has also developed guidelines for solid waste management.[2]

All three levels of government are involved with waste management in Nunavut. Generally, municipal governments are in charge of managing and operating solid waste management facilities, while receiving funding and support from the territorial Government of Nunavut's (GN) Department of Community and Government Services (CGS).

Municipalities must acquire water licenses for their waste management facilities from the Nunavut Water Board (*Nunavut Waters and Nunavut Surface Rights Tribunal Act*, ss.12(1) and 57(a)). The water licenses issued by the NWB themselves also include conditions about the maintenance

and monitoring of solid waste facilities which municipalities must follow (*Nunavut Waters and Nunavut Surface Rights Tribunal Act*, s.70(1)). These licenses eventually expire and require a renewal application process.

Enforcement of waste management standards are mainly conducted by Indigenous and Northern Affairs Canada (INAC) by water resources officers, whom I will refer to as "inspectors" for the purpose of this article (*Nunavut Waters and Nunavut Surface Rights Tribunal Act*, ss.85-87).

Table 1. Legislation, regulations & guidelines governing solid waste management in Nunavut*

Regulatory Source	Subjects include	Oversight/enforcement body
Nunavut Land Claims Agreement	Establishes Nunavut Water Board Use of water & disposal of waste into water in Nunavut	Government of Canada Inuit of Nunavut
Nunavut Waters and Nunavut Surface Rights Tribunal Act, S.C. 2002, c10	Use of water & disposal of waste in waters in Nunavut	Nunavut Water Board (issuing licenses)** Indigenous and Northern Affairs Canada (enforcing licenses)
Arctic Water Pollution Prevention Act, RSC, 1985, c A-12	Deposit of waste in Arctic waters	Transport Canada Fisheries and Oceans Canada
Fisheries Act, RSC, 1985, c F-14	Activities harmful to fish Disposal of prejudicial/deleterious substances in waters where fishing is carried on	Fisheries and Oceans Canada
Environmental Protection Act, RSNWT 1988, c E-7, s.5	Discharge of a contaminant into the environment	Department of Environment
General Sanitation Regulations, R.R.N.W.T. 1990,c.P-16 (Public Health Act)	Insanitary conditions Accumulation & deposit of garbage Municipality's responsibility to provide waste disposal grounds	Department of Health
Environmental guidelines (various)	Disposal of various types of waste	Department of Environment

*This is not an exhaustive list.

**The Nunavut Water Board is an institution of public government created under the Nunavut Land Claims Agreement, an agreement between Canada and the Inuit of Nunavut, as well as the federal legislation Nunavut Waters and Nunavut Surface Rights Tribunal Act

Results & Discussion

The results of the inspection reports have been summarized from Tables 1 to 3 in the Appendices. For ease of reference, I have contrasted some of the specific requirements set by the legal framework with some of the actual practices that were found in the reports, which demonstrate the difficulties that the three communities faced in complying with the requirements.

Waste management standards	**Actual practice as found in inspection reports**
Waste management sites must have a valid **water licence** (*Nunavut Waters and Nunavut Surface Rights Tribunal Act*, s.12(1)).	**Expired water licences** Baker Lake: 2005 & 2009 reports Gjoa Haven: 2009, 2011, 2012 Iqaluit: 2012, 2013, 2014
Access to waste management facility sites should be controlled and secure, especially for special storage sites (*Environmental Guideline for Waste Batteries,* 2002, p.9; *Environmental Guideline for Used Oil and Waste Fuel*, 2012, p. 10; *Environmental Guideline for the General Management of Hazardous Waste*, 2010, p. 14)	**Inadequate or no fencing** Gjoa Haven: 2007

Waste run-off must be controlled to prevent leaking into water (*Nunavut Waters and Nunavut Surface Rights Tribunal Act*, s.12(1))	**Failure to control and prevent leaking of waste**, resulting in uncontrolled pools or streams of spills and leakages Baker Lake: 2009, 2010, 2011 Gjoa Haven: 2005, 2009, 2011, 2013 Iqaluit: 2009, 2010
Waste should be **segregated**, particularly hazardous waste and waste oil (*Environmental Guideline for Waste Batteries*, 2011,p. 9; *Environmental Guideline for Used Oil and Waste Fuel,* 2012, p. 10)	**Uncontrolled to minimal waste separation** Baker Lake: 2010, 2011 Gjoa Haven: 2006, 2007, 2009, 2010, 2012 Iqaluit: 2009
Hazardous waste • Contaminants must not be discharged into the environment (*Environmental Protection Act*, RSNWT 1988, c E-7, s.5) • Incompatible hazardous waste must not be mixed • Storage of hazardous waste must be temporary until they are transported, treated or disposed. • Hazardous waste must be stored in proper sealed clearly labeled containers that are not damaged or leaking • Only trained personnel should have access to storage area (*Environmental Guideline for the General Management of Hazardous Waste*, 2010, pp.11-14)	**Failure to segregate and properly store hazardous waste**; failure to transfer/dispose of hazardous waste Baker Lake: 2009, 2010, 2011 Gjoa Haven: 2009, 2010, 2011, 2012, 2008 Iqaluit: 2009, 2010, 2013
Batteries • Storage **of waste batteries** must be temporary until they are recycled, transported, or disposal • Large batteries should be placed on wood pallets off the ground or stored in sound and sealable labeled containers • Only trained personnel should have access to storage area (*Environmental Guideline for Waste Batteries*, 2002, p. 9)	**Failure to segregate and properly store batteries**: batteries are scattered throughout sites, and sometimes even broken open on the ground Baker Lake: 2009, 2010, 2011 Gjoa Haven: 2005, 2010, 2012 Iqaluit: 2009
Waste oil • Storage of waste oil must be temporary until they are recycled, transported, or disposal. • Waste oil should be stored in special tightly sealed containers that are not leaking or damaged, clearly labeled • Only trained personnel should have access to storage area (*Environmental Guideline for Used Oil and Waste Fuel*, 2012, pp.10-11)	**Improper storage of waste oil**: drums do not have secondary containment, lack a lid, are leaking, or are stored haphazardly Baker Lake: 2005, 2009, 2010, 2011 Gjoa Haven: 2005, 2009, 2010, 2011, 2013
Due to the release of harmful pollutants to the air and potential uncontrolled tundra fires, **open burning** on the ground is actively discouraged (*Environmental Guideline for the Burning and*	**Open burning of waste on the ground is a common practice in Nunavut** Baker Lake: 2010 Gjoa Haven: 2011

Incineration of Solid Waste, 2012, p.9)	At times, **landfills have been on fire**: Gjoa Haven: 2009 Iqaluit: 2014

Besides Iqaluit's Dumpcano, some of the stories that emerge from the reports and newspapers illustrate the extent of the concerns about solid waste management in Nunavut. In the 2009 inspection report for Gjoa Haven, the inspector reported the solid waste area to be:

> a complete catastrophe and conditions have deteriorated much further from issues observed last year. There is a severe lack of waste management by the Hamlet. Lack of proper compaction and fill combined with lack of segregation has resulted in a very dangerous situation: the dump was on fire in multiple locations at time of inspection. (Indian and Northern Affairs Canada, August 4 & 5, 2009).

Years later in 2013, the Nunatsiaq News reported that Gjoa Haven's landfill's location on a slope above water has resulted in a stream flowing from the waste management facility site to the ocean, bringing with it waste, some of it toxic. This caused concerns about the chemicals leaching into the local soil and water and possibly entering the food chain and affecting residents' health (Rogers, 2014).

In Baker Lake, the hazardous waste problems became significant enough in 2010 to be covered in the news that same year, when Arctic researcher Frank Tester described in a CBC interview his observations at the landfill of leaking containers of hazardous waste. The issue raised concerns about potential toxicity in the water supply, as runoff from the landfill might enter the drinking water supply ("Toxics in Baker Lake dump appall researcher", 2010).

Particularly concerning is the lack of progress reported during the inspections in addressing these issues, as is evidenced by the years-long pattern of non-compliance. In Baker Lake, the inspection report for the 2009 noted that "[n]o follow up or compliance actions have been undertaken by this office to seek correction of any of the deficiencies noted in inspections from 2002 to 2009" (Indian and Northern Affairs Canada, August 6, 2009). The following year, the inspector recorded that none of the recommendations from the 2009 inspection report had been addressed by the hamlet. The inspector concluded "[s]uch obvious disregard for authority and disrespect for the environment are of great concern to the Inspector" (Indian and Northern Affairs Canada, August 31, 2010). Similarly, in the 2011 inspection report for Gjoa Haven, the inspector concluded that it was "unclear what efforts if any the Licensee has undertaken over the past year to come into compliance with the Act or expired license" (Indian and Northern Affairs Canada, July 13, 2011).

But what are the underlying reasons for these difficulties? Many of the issues appear to relate to the unique conditions of the North, such as the relative remote and isolated location of the communities, which make waste management problems more difficult and complicated to solve. When special equipment is ordered to be brought up by sealift, which generally arrives only once a year, communities will have to wait up to a year, which means repairs may happen at a much slower pace than in southern Canada.[3] In addition, garbage often never leaves the community or the territory once it enters (Varga, 2014a).

Indeed, the most daunting challenge appears to be cost. Despite one report's recommendation to adopt a modified landfill as the most feasible approach in providing environmental protection as well as safe and efficient waste management practices (Arktis Solutions, 2011), the Government of Nunavut decided that the recommendation was too expensive to implement (Rogers, 2014). It is clear that these difficulties in governing waste management are reflective of a deeper governance problem of insufficient infrastructure in Nunavut.[4]

But why is there not enough money to deal with such infrastructural problems in Nunavut? While there is a complexity of reasons that are beyond the scope of this article, one important clue may be found in the difficulties in implementing the Nunavut Land Claims Agreement. When the NLCA was first signed, it was seen as "a triumph of political stagecraft" and "the most advanced model of Aboriginal self-determination in Canada," (Fenge & Quassa, 2009: 86; Legare, 2008: 336) as a realization of the Inuit of Nunavut's desire to establish political, social, and economic autonomy through a self-sustaining territory of their own (Legare, 2008: 343; Campbell, Fenge & Hanson, 2011; *NTI v Canada (AG),* 2008 NUCJ 11, para 20). In exchange for giving up their aboriginal claims and titles to the land to Canada, the Inuit of Nunavut were to receive certain rights and benefits, including the creation of the new territory of Nunavut with its own government (NLCA, articles 2.7.1, 4, and 25.1.1).

However, after the NLCA was signed, difficulties with implementing the treaty soon became painfully apparent. These difficulties were fueled in part by the parties' differing interpretations of what was required to fulfill the requirements of the treaty. While Canada took the opinion that it had adequately met many of its obligations under the NLCA, the Inuit of Nunavut argued that it had not, and the Government of Canada has been accused of following only the letter of the NLCA, rather than the spirit of its original objectives (Vertes, Connelly & Knott, 1999: 5-6; Office of the Auditor General, 2003: 13-14; Berger, 2006: 19; PriceWaterhouseCoopers, 2006: 6; Nunavut Tunngavik Inc., 1999: 76). Although the Government of Nunavut is responsible for providing public services, it has been argued that because of these issues, the Government of Nunavut lacks the resources and power to do so, leaving it dependent on the Government of Canada to finance its operations (Mifflin, 2009: 92-93).

Attempts to resolve these disputes were unsuccessful (Office of the Auditor General, 2003: 9; Campbell et al, 2011: 38; Fenge & Quassa, 2009: 85), and as a result of the difficulties having the NLCA implemented, the Inuit of Nunavut filed a lawsuit against the Government of Canada, alleging breach of contract with respect to many provisions under the NLCA, including issues with respect to funding the implementation of the NLCA (Statement of Claim, 2006: para 12).

The case of Gjoa Haven provides useful insight on this intra-governmental tension. The 2011 inspection report noted that at a meeting with representatives from the three levels of government, there was some discussion on the noncompliance issues. There the hamlet expressed its belief that the territorial government had not provided them with sufficient support and resources to deal with its solid waste management issues (Indian and Northern Affairs Canada, July 13, 2011). In 2012, the federal government took further enforcement action against the territorial government, writing to the Minister of Community & Government Services about the "widespread and continuing non-compliance with municipal water licenses" for a number of municipalities, including Gjoa Haven (Aboriginal Affairs and Northern Development Canada, June 28, 2012). An Inspector's Direction was issued, requiring CGS to bring the five identified

communities, including Gjoa Haven, into compliance with the Act (Aboriginal Affairs and Northern Development Canada, June 28, 2012: 3).

The Minister of the Government of Nunavut's Department of Community and Government Services expressed strong objections to the Minister of AANDC, arguing that the Government of Nunavut was not the proper party because water licenses are issued to municipalities and that there was already progress in dealing with noncompliance issues (Government of Nunavut, July 12, 2012). The Minister claimed that the funds contributed by the Government of Canada were not sufficient "to address all needs in one fiscal period to immediately meet all compliance requirements", as the infrastructure requirement alone to bring all of Nunavut's communities into compliance was estimated to exceed $500 million. The Minister noted: "Within the GN's limited capital program and in balance with all other competing Government priorities, CGS is helping municipalities address aging water and waste management infrastructure needs over time." Finally, the Minister pointed out that $100,000 fines accumulating at the rate of $3 million per month would "only add to Nunavut's fiscal and infrastructure challenges and would further restrict progress on compliance" (Government of Nunavut, July 12, 2012).

It is clear then, the difficulties in governing solid waste management are linked to the underlying financial issues that have plagued the municipalities and the Government of Nunavut. These issues in implementing the NLCA have served as a significant obstacle to successful self-governance in Nunavut.

Fortunately, after nearly a decade of litigation, the Government of Canada and the Inuit of Nunavut recently reached a settlement agreement in 2015, where the Government of Canada agreed to pay $255.5 million to have the action dismissed on consent (Nunavut Tunngavik Incorporated, the Government of Canada & the Government of Nunavut, 2015, para 1). The Government of Canada also agreed to provide funding for the Government of Nunavut to implement the NLCA (Nunavut Tunngavik Incorporated, the Government of Canada & the Government of Nunavut, 2015: para 29). With increased funding and, hopefully, an improved relationship between the different governments, perhaps some of the infrastructural issues underlying Nunavut's solid waste management issues will be addressed and improved in a meaningful manner.

With the new implementation phase of the NLCA, and hopefully more funding to the territorial and municipal governments for waste management, some practical steps that can be taken to improve the governance of solid waste management in Nunavut include the following.

A clearer, comprehensive, coherent legal framework

The current governing structure is an often confusing patchwork of various federal, territorial, and municipal laws that assign separate licensing, oversight, and enforcement roles for different agencies to deal with different aspects of a municipal dumpsite. For example, while the Nunavut Water Board issues water licenses for solid waste management facilities, it is a different body (INAC) that is responsible for the enforcement of license conditions. The system as it currently stands is both confusing, in that multiple bodies deal with the same issue from sometimes different but often overlapping angles, while at the same time failing to be comprehensive in that not all aspects of environmental sustainability are considered in practice.

Despite the multitude of laws governing waste management standards in Nunavut, and the fact that various officers, both territorial and federal, have the power to inspect premises to enforce the relevant provisions under legislation,[5] it appears that the only inspections that are regularly conducted to ensure the enforcement of these standards are by INAC under the Nunavut Waters and Nunavut Surface Rights Tribunal Act (Varga, 2014a). INAC water resource officers conducting such inspections are only mandated to look at compliance with the Act and the water license, and not necessarily other non-water-related aspects of municipal dumpsites (Arktis Solutions, 2010: 115).

Furthermore, even where the provisions of other acts are enforced, there are three separate legislative provisions that essentially govern the same action: the deposit of potentially harmful substances in water (*Arctic Water Pollution Prevention Act*, RSC, 1985 c A-12 s.4(1); *Fisheries Act*, RSC, 1985, c F-14, s.36(3); *Nunavut Waters and Nunavut Surface Rights Tribunal Act*, SC 2002, c10, s.12(1); Nunavut Land Claims Agreement, article 13.7.1). These provisions deal solely with water, and not other aspects of the environment, such as land, air, and even non-marine animal welfare. As such, the enforcement of only water-related environmental degradation will not serve a comprehensive, integrated approach to governing solid waste management practices.

Prohibit the acceptance of waste generated outside the community

One specific legal solution is to strengthen and clarify rules preventing waste produced outside of the community, especially industrial waste from mining camps or exploration camps, from being brought into the municipal waste management facilities, as facilities are not designed for those purposes and may affect the lifespan of the landfills (Arktis Solutions, 2010: 32). This issue has been a repeatedly mentioned by inspection officers (for example, see Indian and Northern Affairs Canada, Report for Baker Lake, August 31, 2010).

Reports (Arktis Solutions, 2010: 32) have already highlighted how accepting such waste at the municipal dumpsites presents certain legal grey areas: if the municipality obtains a water license to accept waste from the community, would the acceptance of waste from outside the municipality be a violation of the water license as the practice would be outside of the initial environmental screening for the project? Could this serve as a loophole for companies running projects from outside municipal boundaries, allowing them to shift their responsibility over their industrial waste to the municipality, using territorial funds to fund industrial waste management?

Increase personnel support and training

Staffing issues, often in form of staff vacancies due to the high turnover rates and shortage of qualified workers in Nunavut, are often cited in the inspection reports as a reason that municipalities have difficulty keeping up with compliance requirements for their water license.[6] In order to ensure that municipal solid waste management facilities continue to run smoothly and in accordance with the legal framework and the water license, it is imperative that staffing issues be addressed at the municipal level.

Municipalities also require proper training. The Environmental Guidelines issued by Nunavut's Department of Environment stipulate that only workers with proper training should deal with hazardous waste (Environmental Guideline for the General Management of Hazardous Waste, 2010: 6). However, given that many municipal dumpsites do not even properly segregate

hazardous waste from other forms of waste, it is questionable whether this guideline is followed. Levels of experience and technical expertise in waste management have been reported to be limited in the territories, and communities have been encouraged to complete training in areas of waste management (Arktis Solutions, 2010: 33).

Some municipalities have already implemented new training initiatives. After Dumpcano, Iqaluit's landfill staff began new training on how to properly segregate combustible waste from other materials when receiving garbage ("Iqaluit's long-smouldering 'dumpcano' garbage finally out", 2014). This initiative should be expanded to other communities as well.

Increase public awareness and participation

Lack of awareness has also been identified as a barrier for waste management (Arktis Solutions, 2010: 25). It is essential that the public play a role in sustainable solid waste management. At the very minimum, residents must alert landfill staff to the type of waste brought to the site, including potentially dangerous wastes such as batteries or propane tanks ("Iqaluit's long-smouldering 'dumpcano' garbage finally out", 2014). Raising public awareness about solid waste management issues could help involve residents and private companies in developing solutions, such as reducing the amount of waste created in the first place, and encouraging the segregation of waste at the household level, especially hazardous materials such as batteries.

Research suggests that public support for sustainable waste management practices already exist: the report on recycling in Nunavut found that a territory-wide recycling program would likely be supported at the community level (Dillon Consulting Limited, 2010: 16). Similarly, the Arktis Solutions report on waste management in Nunavut found that most communities were not only interested in obtaining further information about alternative waste management approaches, but were willing to implement programs such as waste separation, waste backhauling, recycling, and hazardous waste management (Arktis Solutions, 2011: 12).

Conclusion

In examining the inspection reports of solid waste management facilities for three communities in the last ten years, it is clear that municipalities have constantly struggled to comply with the requirements imposed by water licenses and the legal framework governing waste management standards. These governance challenges are related to infrastructural problems stemming from the unique conditions of the north and difficulties in implementing the Nunavut Land Claims Agreement.

As the new implementation phase of the NLCA has begun with the settlement of the lawsuit over its implementation, I argue that a paradigm shift is required. The massive "Dumpcano" fire at Iqaluit's landfill highlighted the need to prioritize addressing solid waste management issues for all of Nunavut's communities. It is time to recognize that residents in the North can also have a harmful impact on the environment if the governance issues of solid waste management practices are not improved, and the importance and urgency of the situation must now be recognized. It is time to utilize the resilience, cooperation, and adaptability that has been historically demonstrated by residents of the North (Daley et al, 2014: 129-130) and to find creative solutions for the Canadian Arctic.

Acknowledgments

The author would like to acknowledge funding from the Social Sciences and Humanities Research Council and the Environment, Society and Policy Group.

Notes

1. Article 13.7.1 of the NLCA generally prohibits the use of water or disposal of waste into water without the approval of the NWB. This provision is echoed in the federal legislation Nunavut Waters and Nunavut Surface Rights Tribunal Act, which forbids the use of waters in Nunavut or the deposit of waste in waters in Nunavut or any other place in Nunavut under conditions where the waste may enter waters in Nunavut, except in accordance with a license: *Nunavut Waters and Nunavut Surface Rights Tribunal Act*, S.C. 2002, c10 at ss 11(1) and 12(1). The Arctic Water Pollution Prevention Act and the Fisheries Act also provide similar prohibitions against polluting the waters: *Arctic Water Pollution Prevention Act*, RSC, 1985, c A-12, s. 4(1); *Fisheries Act*, RSC, 1985, c F-14, ss.35(1) and 36(3).
2. A list of the Government of Nunavut's Department of Environment guidelines on waste management can be found here: http://gov.nu.ca/environment/information/documents/195/184
3. Another story from Iqaluit illustrates this point. Last year, the City of Iqaluit experienced difficulty in dealing with wood and cardboard at the landfill because the cardboard baler was out of operation due to a lack of baling wire, and the burn box that the City of Iqaluit ordered would not arrive until autumn because it was being brought up by sealift: Iqaluit's new garbage separation plan hits snags. (2014, 15 August). *CBC News*. Retrieved from http://www.cbc.ca/news/canada/north/iqaluit-s-new-garbage-separation-plan-hits-snags-1.2737433
4. Former premier Eva Aariak acknowledged the Nunavut's infrastructure issues in Aariak, E. (2013) Building Sustainability into a Changing Arctic. *McGill International Journal of Sustainable Development Law & Policy*, 9(2): 1-3.
5. Such as inspectors under the Chief Environmental Protection Officer (*Environmental Protection Act* RSNWT 1988, c E-7, s.3); health officers under the *Public Health Act* (*General Sanitation Regulations*, RRNWT (Nu) 1990 c P-16, s.6), and pollution prevention officers (*Arctic Waters Pollution Prevention Act,* R.S.C., 1985, c. A-12, s.14(1)).
6. For example, "The Senior Administrative Officer (SAO) suggested in the interview that the short falls in compliance stem from the loss of their Hamlet foreman, who handled all water license issues for the municipality and his recent departure from the hamlet." (Indian and Northern Affairs Canada. (2012, July 6) *Municipal Water Use Inspection Report Form*. Report of Rankin Inlet by Christine Wilson, Inspector).

Appendices

Table 1: Summary of some of the concerns outlined in INAC inspection reports for Baker Lake's solid waste management facility

	Baker Lake
2005	Expired license Waste oil storage issue
2006	No inspection reports found
2007	No inspection reports found
2008	No inspection reports found Inspector's Direction issued to arrange inspection
2009	Expired license Improper storage of hazardous waste Improper storage of waste oil Improper segregation of waste Lack of signage Failure to file annual reports Failure to control runoff from landfill site
2010	Improper storage of hazardous waste Improper storage of waste oil Uncontrolled leaks and spills Open burning on site
2011	Improper segregation of waste Improper storage of hazardous waste Improper storage of waste oil Improper storage of animal carcasses
2012	No inspection reports found
2013	No inspection reports found
2014	No inspection reports found
2015	No inspection reports found

Table 2: Summary of concerns outlined in INAC inspection reports for Gjoa Haven's solid waste management facility

	Gjoa Haven
2005	Improper storage of waste oil Improper storage of hazardous waste

	Uncontrolled leaks and spills Improper storage of animal carcasses Inspector's Direction issued.
2006	Lack of signage Incomplete segregation of waste No operation and maintenance plan
2007	Improper segregation of waste Inadequate fencing No operation and maintenance plan No annual reports
2008	No inspection report
2009	Expired license Improper segregation of waste Improper storage of hazardous waste Improper storage of waste oil Landfill fires and explosions Uncontrolled leaks and spills Landfill capacity problem Lack of signage No operation and maintenance plan
2010	Expired license Improper segregation of waste Improper storage of hazardous waste (batteries) Improper storage of waste oils
2011	Expired license Improper storage of hazardous waste Improper storage of waste oil Lack of signage No operation and maintenance plan Uncontrolled leaks and spills Open burning
2012	Expired water license Improper storage of hazardous waste Improper segregation of waste No operation and maintenance plan

	No annual reports Inspector's Direction issued
2013	Expired license Improper storage of hazardous waste Improper storage of waste oil Lack of signage Uncontrolled leaks and spills No operation and maintenance plan
2014	No annual reports Lack of signage
2015	No inspection reports found

Table 3: Summary of concerns outlined in INAC inspection reports for Iqaluit's solid waste management facility

	Iqaluit
2005	No inspection reports found
2006	Inspector's Direction issued regarding the collection of leachate
2007	No inspection reports found Inspector's Direction issued regarding sewage system
2008	Improper storage of hazardous waste No operation plan No annual report Lack of signage
2009	Improper storage of hazardous waste Uncontrolled leaks and spills No operation and maintenance plan No annual report Capacity concerns
2010	Capacity concerns Improper storage of hazardous waste Uncontrolled leaks and spills
2011	Capacity concerns
2012	Expired license Capacity concerns No annual report

	No operation and maintenance plan
2013	Expired license Capacity concerns Improper storage of hazardous waste No operation and maintenance plan Inspector's Direction issued for failure to file long-term solid waste management plan
2014	Expired license Landfill fires (Dumpcano) Capacity concerns
2015	No inspection report found

References

Legislation

Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada as amended [Nunavut Land Claims Agreement].

Arctic Water Pollution Prevention Act, RSC, 1985, c A-12.

Environmental Protection Act, RSNWT 1988, c E-7.

Fisheries Act, RSC, 1985, c F-14.

General Sanitation Regulations, RRNWT (Nu) 1990 c P-16.

Nunavut Waters and Nunavut Surface Rights Tribunal Act, S.C. 2002, c10.

Public Health Act, RSNWT (Nu) 1988, c P-12.

Case Law

NTI v Canada (AG), 2008 NUCJ 11.

NTI v Canada (Attorny General). (5 December 2006). Iqaluit 0806713CVC (NUCJ) (Statement of Claim).

Nunavut Tunngavik Incorporated, the Government of Canada, & the Government of Nunavut, *Movement Forward in Nunavut: An Agreement Relating to Settlement of Litigation and Certain Implementation Matters*. (4 May, 2015). Retrieved from http://www.tunngavik.com/files/2015/05/FINAL-SIGNED-SETTLEMENT-AGREEMENT.pdf

Secondary Sources

Aariak, E. (2013) Building Sustainability into a Changing Arctic. *McGill International Journal of Sustainable Development Law & Policy*, 9(2): 1-3.

Arktis Solutions. (2010). *Final Report: Development of an Overview of the State of Waste Management in Canada's Territories*. Report submitted to Environment Canada, Waste Reduction and Management Division.

Arktis Solutions. (2011). *Report on Current State of Solid Waste Management and Facilities in Nunavut and Cost-Benefit Analysis of Selected Solid Waste Management Approaches*. Report submitted to the Government of Nunavut, Community and Government Services. Retrieved from http://assembly.nu.ca/library/GNedocs/2011/000359-e.pdf

Campbell, A., Fenge, T., & Hanson, U. (2011). Implementing the 1993 Nunavut Land Claims Agreement. *Arctic Review on Law and Politics*. 2(1): 25-50.

Daley, K., Castleden, H., Jamieson, R., Furgal, C., & Ell, L. (2015) Water systems, sanitation, and public health risks in remote communities: Inuit resident perspectives from the Canadian Arctic. *Social Science & Medicine*. 135: 124-132.

Dewar, B., 2009. Nunavut and the Nunavut Land Claims Agreement – An Unresolved Relationship. *Policy Options* 30(7): 74-79.

Dillon Consulting Limited. (2010). *Evaluation of Recycling Pilot Projects: Final Report*. Report submitted to Government of Nunavut, Department of Environment, Environmental Protection Division, 2 March 2010. Retrieved from http://www.gov.nu.ca/sites/default/files/Evaulation%20of%20Recycling%20Pilot%20Projects%20-%20Final%20Report%20-%20March%202%202010.pdf

Eber, D. H. (1997). *Images of Justice*. Montreal and Kingston: McGill-Queen's University Press.

Fenge, T. & Quassa, P. (2009). Negotiating and Implementing the Nunavut Land Claims Agreement. *Policy Options* 30(7): 80-86.

Ford, J.D., Bolton, K.C., Shirley, J., Pearce, T., Tremblay, M., & Westlake, M. (2012). Research on the Human Dimensions of Climate Change in Nunavut, Nunavik, and Nunatsiavut: A Literature Review and Gap Analysis. *Arctic*. 65(3): 289-304.

Hohmann, J. (2009) Igloo as Icon: A Human Rights Approach to Climate Change for the Inuit? *Transnational Law & Contemporary Problems*. 18: 295-316.

Iqaluit dumpcano has been burning for 3 months. (2014, 20 August). *CBC News*. Retrieved from http://www.cbc.ca/news/canada/north/iqaluit-dumpcano-has-been-burning-for-3-months-1.2741513

Iqaluit's long-smouldering 'dumpcano' garbage finally out. (2014, 16 September). *The Globe and Mail*. Retrieved from http://www.theglobeandmail.com/news/national/iqaluits-long-smouldering-dumpcano-garbage-fire-finally-out/article20620273/

Iqaluit's new garbage separation plan hits snags. (2014, 15 August). *CBC News*. Retrieved from http://www.cbc.ca/news/canada/north/iqaluit-s-new-garbage-separation-plan-hits-snags-1.2737433

Johansen, B. E. (2002). The Inuit's Struggle with Dioxins and Other Organic Pollutants. *American Indian Quarterly*. 26(3): 479.

Legare, A. (2008). Canada's Experiment with Aboriginal Self-Determination in Nunavut: From Vision to Illusion. *International Journal on Minority & Group Rights*. 15(2): 335-367.

Mifflin, M. (2009). The prince and the pauper – Nunavut Tunngavik Incorporated and the Government of Nunavut. *Policy Options*. 30(7): 92-96.

Nunavut landfills a health, environment risk says study. (2011, 8 November). *CBC News*. Retrieved from http://www.cbc.ca/news/canada/north/nunavut-landfills-a-health-environment-risk-says-study-1.977595

Nunavut Tourism. *People of Nunavut*. Retrieved from http://nunavuttourism.com/about-nunavut/people-of-nunavut.

O'Connor, J. (2014, 26 May). Fiery 'dumpcano' filling Iqaluit with noxiously smelly fumes too big to extinguish, firefighters say. *National Post*. Retrieved from http://news.nationalpost.com/news/canada/fiery-dumpcano-filling-iqaluit-with-noxiously-smelly-fumes-too-big-to-extinguish-firefighters-say

Rogers, Sarah. (2014, 12 May). From landfills to local environment – how to curb Nunavut's toxic taste. *Nunatsiaq News*. Retrieved from http://www.nunatsiaqonline.ca/stories/article/65674from_landfills_to_local_environment_how_to_stop_the_flow_of_nunavuts_t/

Samuelson, G.M. (1998). Water and Waste Management Issues in the Canadian Arctic: Iqaluit, Baffin Island. *Canadian Water Resources Journal*. 23(4): 327-338.

Sophie Theriault. (2008-2009). Northern Frontier, Northern Homeland: Inuit People's Food Security in the Age of Climate Change and Arctic Melting. *Southwestern Journal International Law*. 15: 223-249.

Toxics in Baker Lake dump appall researcher. (2010, 22 September). *CBC News*. Retrieved from http://www.cbc.ca/news/canada/north/toxics-in-baker-lake-dump-appall-researcher-1.870275

Tyrrell, M. (2006) Making Sense of Contaminants: A Case Study of Arviat, Nunavut. *Arctic*. 59(4): 370-380.

Varga, P. (2014a, 10 March). Garbage piles up in communities as Nunavut awaits federal funding. *Nunatsiaq News*. Retrieved from http://www.nunatsiaqonline.ca/stories/article/65674garbage_piles_up_in_communities_as_nunavut_awaits_federal_funding/

Varga, P. (2014b, October 23) Nunavut needs big waste management overhaul, MLA says. *Nunatsiaq News*. Retrived from http://www.nunatsiaqonline.ca/stories/article/65674nunavut_needs_serious_waste_management_overhaul_mla_says/

Weichenthal, S., Van Rijswijk, D., Kulka, R., You, H., Van Ryswyk, K., Willey, J., Dugandzic, R., Sutciffe, R., Moulton, J., Baike, M., White, L., Charland, J., Jessiman, B. (2015) The impact of a landfill fire on ambient air quality in the north: A case study in Iqaluit, Canada. *Environmental Research*. 142: 46-50.

Government Documents

Berger, T.R. (2006). *Nunavut Land Claims Agreement Implementation Contract Negotiations for the Second Planning Period 2003-2013: Conciliator's Final Report*. Retrieved from http://www.aadnc-aandc.gc.ca/DAM/DAM-INTER-HQ/STAGING/texte-text/nlc_1100100030983_eng.pdf

Department of Environment. (2012). *Environmental Guideline for the Burning and Incineration of Solid Waste*. Iqaluit: Environmental Protection Division.

Department of Environment. (2010). *Environmental Guideline for the General Management of Hazardous Waste*. Iqaluit: Environmental Protection Division.

Department of Environment. (2012). *Environmental Guideline for Used Oil and Waste Fuel*. Iqaluit: Environmental Protection Division.

Department of Environment. (2002). *Environmental Guideline for Waste Batteries*, Iqaluit: Environmental Protection Division.

Nunavut Bureau of Statistics. (2015, July 1). *Nunavut Quick Facts*. Retrieved from: http://www.stats.gov.nu.ca/en/home.aspx

Nunavut Tunngavik Inc. (1999). *Taking Stock: A Review of the First Five Years of Implementing the Nunavut Land Claims Agreement*. Iqaluit: Nunavut Tunngavik. Retrieved from http://www.tunngavik.com/documents/publications/1999-12-00-Taking-Stock-A-Review-of-the-First-Five-Years-of-Implementing-the-NLCA-Eng.pdf

Office of the Auditor General of Canada. (2003). *Report of the Auditor General of Canada to the House of Commons: Chapter 8 Indian and Northern Affairs Canada – Transferring Federal Responsibilities to the North*. Ottawa: Office of the Auditor General of Canada. Retrieved from http://www.oag-bvg.gc.ca/internet/docs/20031108ce.pdf

PriceWaterhouseCoopers. (2006*). Second Independent Five Year Review of Implementation of the Nunavut Land Claims Agreement*. Retrieved from: http://www.gov.nu.ca/sites/default/files/files/016%20-%20Nunavt%20Land%20Claims%20Agreement%20Second%20Five-Year%20Review.pdf

Statistics Canada. (2011). *Focus on Geography Series, 2011 Census*. Retrieved from: http://www12.statcan.gc.ca/census-recensement/2011/as-sa/fogs-spg/Facts-pr-eng.cfm?Lang=eng&GC=62

Vertes, N.L, Connelly, D.M.H, Knott, B.A.S. (1999). *Implementation of the Nunavut Land Claims Agreement – An Independent 5 Year Review*, 1993 to 1998. Iqaluit: Innirvik Support Services., Retrieved from http://www.gov.nu.ca/sites/default/files/files/015%20-%20Nunavut%20Land%20Claims%20Agreement%20Five-Year%20Review%20(1993-98)%20English.pdf

Inspection Reports

Baker Lake

Indian and Northern Affairs Canada. (2005, August 23). *Municipal Water Use Inspection Form*. Report for Baker Lake by Scott Stewart.

Indian and Northern Affairs Canada. (2008, August 12). *Inspector's Direction*. By Andrew Keim, Inspector, addressed to Dennis Zetler, Senior Administrative Officer of Baker Lake.

Indian and Northern Affairs Canada. (2009, December 8). *August 6th, 2009 Municipal Water Licence Inspection 3BM-BAK9904 – Expired*. Iqaluit: Report for Baker Lake by A. Keim, Inspector, Nunavut District, addressed to Dennis Zetler, Senior Administrative Officer of Baker Lake.

Indian and Northern Affairs Canada. (2009, August 6). *Water Use Inspection Report*. Report for Baker Lake by A Keim.

Indian and Northern Affairs Canada. (2010, August 31). *Water Use Inspection Report Form CIDM #428916*. Report for Baker Lake by A Keim.

Indian and Northern Affairs Canada. (2011 August 6). *Water Use Inspection Report*. Report for Baker Lake by Ian Rumbolt.

Gjoa Haven

Indian and Northern Affairs Canada. (2005, July 27). *Municipal Water Use Inspection Form*. Report for Gjoa Haven by Scott Steward, Inspector.

Indian and Northern Affairs Canada. (2005 August 8). *Written follow up to an Inspectors Direction issued to Raymond Kamootak in the Hamlet of Gjoa Haven on July 27, 2005*. Report by Scott Stewart, Water Resource Officer of Field Operations, Nunavut District Office, addressed to Raymond Kamootak, Senior Administrative Officer for the Hamlet of Gjoa Haven.

Indian and Northern Affairs Canada. (2006, September 20). *Municipal Water Use Inspection Form*. Report for Gjoa Haven by A. Keim, Inspector.

Indian and Northern Affairs Canada. (2008, January 7). *September 11th 2007 Gjoa Haven Municipal Water Inspection*. Report by Ian Rumbolt, Water Resources Technician, Nunavut Region, addressed to Raymond Kamootak, Senior Administrative Officer for the Hamlet of Gjoa Haven.

Indian and Northern Affairs Canada. (2009, August 4&5). *Water Use Inspection Report*. Report for Gjoa Haven by M. Joy, Inspector.

Indian and Northern Affairs Canada. (2010, July 12). *Water Use Inspection Report Form*. Report for Gjoa Haven by A. Keim, Inspector.

Indian and Northern Affairs Canada. (2011, July 13). *Municipal Water Use Inspection Form*. Report for Gjoa Haven by A. Keim, Inspector.

Aboriginal Affairs and Northern Development Canada. (2012, June 28). *Use of Water and Deposit of Waste in a Manner Inconsistent and Non-compliant with the Authorizations Issued by the Nunavut Water Board under the Nunavut Water and Nunavut Surface Rights Tribunal Act*. Letter from

Andrew Keim, A/Manager Field Operations, Nunavut Regional Office, addressed to the Honourable Lorne Kusugak, Minister of Community and Government Services, Government of Nunavut.

Government of Nunavut, Department of Community and Government Services. (2012, July 12). Letter from Lorne Kusugak, Minister of Community and Government Services addressed to the Honourable John Duncan, Minister of Aboriginal Affairs and Northern Development Canada.

Government of Nunavut, Department of Community and Government Services. (2012, July 23). Letter from Roy Green, A/Deputy Minister of Community and Government Services addressed to Robin Aitken, Regional Director General of the Nunavut Regional Office of Aboriginal Affairs and Northern Development Canada.

Aboriginal Affairs and Northern Development Canada. (2013 January 4). *Inspection Report*. Report of Gjoa Haven from Andrew Keim, Water Resources Officer, addressed to Enuk Pauloosie, Senior Administrative Officer for the Hamlet of Gjoa Haven.

Aboriginal Affairs and Northern Development Canada. (2013 July 17). *Municipal Water Use Inspection Form*. Report for Gjoa Haven by Andrew Keim, Water Resources Officer.

Aboriginal Affairs and Northern Development Canada. (2014 August 20). *Water Licence Inspection Form*. Report for Gjoa Haven by A. Keim, Inspector.

Iqaluit

Indian and Northern Affairs Canada. (2006, October 6). Deposit of Waste Water from Solid Waste Management Area – Inspector's Direction. Issued by Andrew Keim, Water Resources Officer, addressed to Crystal Jones, Project Officer for the Department of Engineering, City of Iqaluit.

Indian and Northern Affairs Canada. (2006, October 11). *Municipal Water Use Inspection Report*. Report for Iqaluit by A. Keim, Inspector.

Indian and Northern Affairs Canada. (2007, March 6). *Deposit of Waste Water from Solid Waste Management Area – Inspector's Direction*. Issued by Andrew Keim, Water Resources Officer, addressed to Geoff Baker, Manager of Engineering Services, City of Iqaluit.

Indian and Northern Affairs Canada. (2009, May 24). *July 19 2008 Iqaluit Municipal Water Licence Inspection*. Report for Iqaluit by A. Keim, Inspector addressed to Steven Iyago, Operations Superintendent for the City of Iqaluit.

Indian and Northern Affairs Canada. (2009, July 30). *Water Use Inspection Report*. Report for Iqaluit by A. Keim.

Indian and Northern Affairs Canada. (2009, November 5). *Iqaluit Municipal Water License Inspections conducted July 30th and October 13th 2009*. Report for Iqaluit by A. Keim, Inspector addressed to Chris Callahan, A/ Director of Public Works for the City of Iqaluit.

Indian and Northern Affairs Canada. (2010, July 1). *Water Use Inspection Report Form*. Report for Iqaluit by A. Keim.

Indian and Northern Affairs Canada. (2011, July 7). *Municipal Water Use Inspection Form*. Report for Iqaluit by A. Keim.

Indian and Northern Affairs Canada. (2012, October 1). *Municipal Water Use Inspection Form*. report for Iqaluit by A. Keim.

Aboriginal Affairs and Northern Development Canada. (2013, March 5). *Inspector's Direction*. Issued by Andrew Keim, Inspector, addressed to John Hussey, Chief Administrative Officer for the City of Iqaluit.

Aboriginal Affairs and Northern Development Canada. (2013, July 4). Municipal Water Use Inspection Form. report of Iqaluit by Andrew Keim, Inspector.

Aboriginal Affairs and Northern Development Canada. (2013, October 23). *Municipal Water Use Inspection Form*. Report of Iqaluit by Justin Hack.

Aboriginal Affairs and Northern Development Canada. (2014, January 13). Failure to Comply with Inspector's Direction. Letter from Justin Hack, Acting Water Resources Officer, addressed to John Hussey, Senior Administrative Officer for the City of Iqaluit.

Aboriginal Affairs and Northern Development Canada. (2014, June 30). *Municipal Water Use Inspection Form*. Report of Iqaluit by Andrew Keim, Inspector.

Aboriginal Affairs and Northern Development Canada. (2014, October 8). *Water Licence Inspection Form*. Report of Iqaluit by Robert Savard, Inspector.

Rankin Inlet

Indian and Northern Affairs Canada. (2012, July 6) *Municipal Water Use Inspection Report Form*. Report of Rankin Inlet by Christine Wilson, Inspector.