

Sarah Marie Wiebe

# EVERYDAY EXPOSURE

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**Indigenous Mobilization and Environmental  
Justice in Canada's Chemical Valley**



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## Foreword

### A Canadian Tragedy

JAMES TULLY

Every once in a while, an outstanding work of scholarship comes along that transforms the way a seemingly intractable injustice is seen and, in so doing, also transforms the way it should be approached and addressed by all concerned. Such a work is *Everyday Exposure: Indigenous Mobilization and Environmental Justice in Canada's Chemical Valley* by Sarah Marie Wiebe. The injustice is the systemic social and ecological suffering of Indigenous peoples and their communities within the jurisdictions and policies of the Canadian federation. She shows how this unjust system persists and deepens despite well-meaning attempts to address it in what is perhaps the worst case: the horrendous “slow violence” of health and ecological suffering of the Aamjiwnaang First Nation surrounded by Chemical Valley. In meticulous detail, she delineates the complex system or assemblage of private and public law, power relations, different types of knowledge, ambiguous jurisdictions, history of treaty making, geopolitical interests, consultations, deliberations, partnerships, protests, reviews, and differentially situated actors in which policies are developed and applied. With this multilayered policy assemblage in clear view, she shows precisely how it repeatedly fails to generate and enact policies that effectively address either the unregulated production of petrochemical and polymer toxins and pollutants that devastate the lives and homeland of Aamjiwnaang citizens or the ongoing intergenerational human harms and ecological devastation to Aamjiwnaang citizens and their home.

Sarah Marie Wiebe developed a unique method to carry out this research. She draws on the best critical literature in a wide range of fields: policy studies,

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Indigenous scholarship, political theory and science, ecology, health studies, feminism, intersectionality, governmentality, decolonization, reproductive justice, and most important, in-depth interviewing and engagement. She brings the useful insights of these diverse approaches together in a comprehensive method and fashions them to fit this specific case. However, her objective is not only to bring to light this made-in-Canada tragedy and to provide a method for studying it in other cases; her objective is also to show us that there is a way to transform this unjust system into a just one.

Through her “creative engagement” with the Aamjiwnaang people, Sarah Marie Wiebe learned that a way of transformation already exists here and now in the daily lived experience of Aamjiwnaang citizens taking care of themselves and their home. At the heart of this alternative, place-based, relational, and embodied way of being in the world with human and more-than-human relatives is the practical knowledge that humans acquire primarily through their sensuous and perceptual participation with the living earth they inhabit – that is, knowledge of the anthropogenic ecosystems in which humans and the earth’s ecosystems co-evolve. And the basic mode of participation is gift-gratitude-reciprocity relationships of interdependency and mutual responsibility with the living earth. The animate earth takes care of us, and we in reciprocity take care of “it” – “all our relatives.”

This Indigenous (Anishinaabe/Anishinabek) way of being is learned through practice and stories. It is mobilized in the ecological citizenship practices through which Aamjiwnaang citizens attempt to take care of their contaminated bodies and home. Yet it is misunderstood, discredited, and marginalized or co-opted from the perspective of the dominant nonrelational forms of being and knowing of the policy assemblage. From this perspective, as Sarah Marie Wiebe documents, what happens within Chemical Valley is said to be unrelated to what happens without. There are no “offsite impacts.” Scientific research has not shown a verifiable causal relation between health and environment, and the Aamjiwnaang methods of gathering data are said to be unreliable. If there are unusual health problems in Aamjiwnaang, they are said to be due to “lifestyle choices,” and biomedical knowledge treats the diseased bodies in isolation from the environment. In this atomistic world, no one has responsibilities that derive reciprocally from relationships of interdependency and interbeing because no such relationships exist. Even if some responsibility is shown to be due, given the structure of corporate law and the ambiguity of jurisdictions in Canadian federalism, it is almost always possible to shift the responsibility to someone else or, if this fails, to shelve the report, commission another study, or prolong

the response indefinitely. And so on, time after time. It is a vicious social system that generates and rewards an ethos of irresponsibility.

The most important and challenging argument of *Everyday Exposure* is that this tragedy can be overcome. The key is to base policy on Aamjiwnaang interdependent ways of being and knowing in the first instance – that is, on the perceptual relationship of the senses and nervous system of the human body with the living earth and on the epistemology and practices of reciprocal responsibilities that follow from it. This is what she calls “sensing policy.” This would involve a radical decolonization and transformation not only of policy but also of the whole policy assemblage of Canadian federalism. Indigenous people cannot achieve this outcome on their own, as this case study shows. It requires the mutual aid of non-Indigenous policy communities and partners throughout the assemblage. Securing this aid is not impossible. As Sarah Marie Wiebe points out, the embodied, place-based, relational, and responsible way of Aamjiwnaang citizens resonates with recent approaches in holistic health studies, deep ecology, eco-phenomenology and eco-feminism, ethnobotany, the Gaia hypothesis in the life sciences, ecological citizenship, scientific responses to global pollution, climate change and the Anthropocene, the shift from linear to cyclical cradle-to-cradle economics, and community-based lifeways. These place-based forms of research, participation, and engaged policy making are slowly finding their way into the ways that local communities around the world self-organize and coordinate with policy communities, universities, and governments.

As difficult and challenging as this transformation appears, the point is surely that there is no alternative. The policy assemblage that is devastating the Aamjiwnaang people and their ecosystems is part of the Canadian federal policy assemblages that are devastating other Indigenous communities and, more slowly yet just as inexorably, non-Indigenous communities. No one is offsite or not responsible. The choice is change or self-destruction. This is the deep truth of the relational view that Sarah Marie Wiebe learned from Aamjiwnaang citizens she worked with and that she explains so clearly in this remarkable book. The rest is up to us.













## Atmosphere

### *Home, bittersweet home*

Arriving in Sarnia at night, you are greeted by an orange glow that extends its embrace. It hovers permanently over the city. Visible from miles away, it guides you forward like the Northern Star. As you approach, it spreads beyond the pines, beyond the fields, over the road. You gaze upward, wondering when you will see its edge. It feels like you are entering a twilight zone. You are then met with a bouquet of strange scents: rotten eggs, decaying onions, burning gasoline, and many more that don't compare to anything you've ever smelled before.

Such a grisly welcome would turn away most visitors. But, in the heart of Canada's Chemical Valley – an industrial complex housing the country's densest concentration of petrochemical plants – rests a home and a haven for over 850 Anishinabek people who inhabit a patch of land measuring 12.57 square kilometres where trees still reign tall and where the occasional deer or wild turkey still roams freely in the bush. By continuously safeguarding this territory, the Aamjiwnaang First Nation prevents it from suffering a dismal fate, one where its value would rest in the money that can be made from its exploitation rather than in the lives it spawns.

Although a refuge, their surroundings also act as a constant reminder of what they've lost, of the atrocities perpetrated against Indigenous communities in the country, and of the enduring injustices they come up against. Behind each towering smokestack is a legacy of scorn; each wailing siren acts as an omen, warning us all that we continue to disfigure and destroy the beautiful yet haunting landscape that Aamjiwnaang residents call both prison and home.





## CAPTIONS

- 1 Located at the confluence of the St. Clair River and the Great Lakes along the St. Lawrence Seaway, Sarnia quickly became an industrial hub. Every major multinational petrochemical company impresses itself upon the landscape with a facility in the area. Their activities are responsible for the orange glow that can be seen from afar, welcoming you to Chemical Valley. December 2010.
- 2 Approximately 60 percent of releases of air pollutants by the industries located in Sarnia happen within five kilometres of Aamjiwnaang First Nation. Ineos Nova and Lanxess, respectively specializing in polystyrene and polymer products, are located across the road from the band office, the playground, and a community resource centre. January 2012.
- 3 On the Canadian side of the Canada-US border, more than forty large industrial and petrochemical facilities surround Aamjiwnaang. They spew out more greenhouse gases than the province of British Columbia and more toxic air pollutants than Manitoba, New Brunswick, or Saskatchewan. The nighttime light is courtesy of Suncor. December 2010.
- 4 The sirens around Chemical Valley remind people that the release of unwanted and dangerous chemicals into the air, water, or ground could occur at any given time. However, many locals consider this system less than reliable since it provides little information as to how one should react. December 2010.
- 5 There is no place to rest in peace in Aamjiwnaang. Even its cemetery lies in the shadow of Suncor's facilities. Constant mechanical humming is heard in the background. Every Monday at 12:30 p.m., the test sirens wail. Given its location on the other side of a mere chain-link fence, it further infiltrates this place of meditation. January 2012.
- 6 Talfourd Creek runs through the Aamjiwnaang First Nation Reserve and alongside the Suncor facilities until it reaches the St. Clair River. PCB, nickel, cadmium, arsenic, and lead contamination render it dangerous for humans and wildlife alike. What was once a source of pleasure – bathing, food, fishing – is now a source of constant worry. January 2015.

*Photos and text by Laurence Butet-Roch*



# 1

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## **Skeletons in the Closet** Citizen Wounding and the Biopolitics of Injustice

Home is both refuge and prison for citizens of Canada's Chemical Valley. There, human and more-than-human residents dwell on a threshold between a state of normalcy and emergency. Chemical Valley is a heavy industrial zone, located in southwestern Ontario and responsible for approximately 40 percent of Canada's chemical manufacturing, with sixty-two plants on both sides of the Canada-US border. It is Ontario's worst air pollution hotspot (Ecojustice 2007a; Scott 2008). Chemicals from Aamjiwnaang's industrial neighbours include benzene, hydrogen sulfide, and sulphur dioxide. In Chemical Valley, individuals must be prepared for hazardous incidents at any given time. In general, alerts occur in the case of a chemical spill, fire, explosion, nuclear emergency, extreme weather event, or transportation accident. In Aamjiwnaang, such occurrences have become the norm.

Because warnings can be heard over loudspeakers, megaphones, and sirens, Chemical Valley is an audible place, which deeply affects those who live there. Noise pollution bears upon those living in this "sacrifice zone" (Lerner 2010). Each Monday at 12:30 p.m., the test sirens sound. These relics of the Second World War remind citizens of the constant invasion of their air by the neighbouring chemical facilities. Alongside wailing sirens, bodies clench as individuals jump for their radios, phones, and televisions to see whether there is any imminent threat. For some, this is little more than the everyday scene, which has destroyed the previous serenity of this place; they barely flinch. In such a seemingly post-apocalyptic environment, sounds mask the silence with which invisible chemicals penetrate bodies.

On June 8, 2011, community members gathered and laid yet another cancer-stricken loved one to rest in their cemetery. The graveyard – whose perimeter is surrounded on all sides by a chain-link fence, smokestacks, junkyards, somewhat clandestine surveillance cameras, and conciliatory cedar trees – looks like an island, displaced from the remaining reserve territory. During the ceremony, as is customary, members gathered around to sing, dance, and drum. That day, the neighbouring industrial vibrations accompanied the beat of the drum as the corpse was lowered beneath the earth's surface, drowning out the audibility of ceremonial song. Although one might expect that being laid to rest is a peaceful procedure, here it is anything but, as industrial flaring overbears ceremonial reverberations. Not only is Chemical Valley heard, but it is also a stunning aesthetic masterpiece. Sirens, stacks, and steeples dominate the airspace and ensconce the Aamjiwnaang First Nation.

According to Anishinabek beliefs, the world we live in is not “the real” world.<sup>1</sup> It is a mirror, reflecting what is to come in the spirit world. As bodies enter the spirit world in Aamjiwnaang, the earth perpetually vibrates in response to what is felt above and below the ground. Elders state that the spirits are trapped; they haunt this place, unable to reach the world they are destined for. The greatest grievance here is that not only do Indigenous peoples in Canada experience the ongoing effects of the tragedies of colonization and the legacy of the residential schools, but now their spirits also remain captured between past and future, which affects the ability of Indigenous peoples to survive and thrive in the present. As the Royal Commission on Aboriginal Peoples (RCAP 1996) has emphasized, many wish to keep such secrets – “ghosts of the past” – hidden. The haunting semblance of these ghosts lingers today. Although all is not lost, the residential schools were but one nail in the coffin marking what has been lost in this community. With colonization came warfare, epidemics, and the reduction of a vast population to the mere “sample size” remaining today. The Aamjiwnaang First Nation graveyard is the ultimate symbol of Canadian entrapment, a living trace of our collective history and reflective of all that we would like to store away beyond immediate vision and out of mind: our skeletons in the closet.

## **Sensing Policy**

To breathe life into Canadian policy, a site-specific, experiential, and place-based account of everyday struggles for environmental reproductive justice is needed. According to the US Environmental Protection Agency (2011), environmental justice “is the fair treatment and meaningful involvement of all people regardless

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of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations and policies.” With origins in the US African-American, Hispanic, and Indigenous communities, the environmental justice movement in the United States is well documented (Bryant 1995; Bullard 1993; Soja 1996, 2010). Much of this movement is grounded within individual and community experiences in particular places as they seek environmental justice. Although there have been some studies in Canada, the discourse of “environmental justice” and substantive policy making has been minimal. Nevertheless, some academics are actively engaged with research on environmental justice (Clarke and Agyeman 2011; Agyeman et al. 2009; Haluza-DeLay 2007; McGregor 2009; Scott 2005, 2008). Moreover, *environmental reproductive justice* – the inextricable connection between physical and cultural survival – is less prominent than environmental justice in research and practice (Hoover et al. 2012). This is especially the case within the Canadian context.

In 2005 members of the Aamjiwnaang First Nation teamed up with health researchers to conduct community-based participatory research. One key finding rocked the community: a stark decline in the number of male births (Mackenzie, Lockridge, and Keith 2005; see Appendix 1). As discussed in Wiebe and Konsmo (2014), the term “reproductive justice” originated within US organizations to promote the rights of women of colour and Indigenous women and to link “reproductive rights” with “social justice.” That discussion evaluates struggles for reproductive justice in Canada to make crucial connections between the reproductive body, social justice, and place. Configured historically, geographically, and experientially, this approach considers bodies to be “contextually specific” (Parr 2010, 1). In this respect, the affected, feeling, *sensing* body is a conduit for knowledge. Parr (ibid., 9) focuses on the robust materialities of everyday encounters as “directly and fleshly as possible.” This emphasis on “flesh” underscores the significance of the body and embodied ways of knowing. Reframing environmental justice to account for reproductive justice helps us to examine how citizens in Aamjiwnaang employ and mobilize experiential knowledge.<sup>2</sup> This approach draws into focus the following components of analysis: *multilayered analysis*, *lived experience*, *geopolitical location*, and how *situated bodies of knowledge* make the living sense of policy both more visible and sensible. These four features are crucial to making policies that account for diverse experiences and ways of knowing and that are ultimately more democratic and just.

In telling the story of ongoing struggles for environmental reproductive justice, it is crucial that place and cultural knowledge be made central to citizen

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claims. Cues from Indigenous scholarship, gleaned both from relevant literature and from narratives presented to me in conversations with local carriers of that knowledge, are integral to this project (Alfred and Corntassel 2005; J. Borrows 2002, 2010, 2013; Coulthard 2014; Doerfler, Sinclair, and Stark 2013; L. Simpson 2011). Counter to a discursive framing that separates individuals from their environment and aligned with Alfred and Corntassel's (2005, 597) argument that some expressions of Indigeneity offer a radically different kind of "being," or place-based subjectivity, I situate bodies in place to document citizen struggles for environmental reproductive justice. To examine ongoing citizen struggles for knowledge in Aamjiwnaang, a biopolitical and interpretive analysis inspired by the works of "postmodern" theorists Michel Foucault, Gilles Deleuze, and Félix Guattari demonstrates how all knowledge is power-laden and thus political.

At the core here is a concern with the individual, neoliberal, biopolitical subjectivity assumed and offered by much of official and unofficial public health discourse and policy. In addition to framing what we can or cannot say, discourse can be understood as "actions, sites of production, practices, embodiments and images that support or resist a particular way of thinking and talking about a subject" (Rutherford 2011, xxiii). Discourse is ultimately about the construction and enactment of power through repressive and productive means. It entails an ensemble of institutional, linguistic, practical, visual, and embodied sign systems. To examine the ensemble, or *assemblage*, of Indigenous environmental justice, both a textual analysis of Canadian public policies and a discursive analysis of concerns raised by citizens of the Aamjiwnaang First Nation are employed in answering the following questions: How do environmental and reproductive injustices impact Aamjiwnaang citizens, and how do they respond?<sup>3</sup> Moreover, what do citizen struggles in Chemical Valley tell us about the meaning and expression of citizenship in Canada and beyond? What are the implications for our understanding of citizenship if we take seriously the practices and discourses of Aamjiwnaang community members articulated in their own terms?

To address these questions, Chapter 3 contextualizes citizens' *multilayered* struggles over knowledge by discussing the relationship between biopower and the *policy assemblage* for Indigenous environmental justice, encompassing Canadian jurisdiction for on-reserve environmental health. Biopower involves twin biopolitical poles: population management and individual practices of citizen responsibility for self-care and rule. Subsequently, Chapter 4 documents local citizens' corporeal concerns and practices to account for *lived experience*. Chapters 5 and 6 examine the Aamjiwnaang First Nation's activities on the

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ground as they cope with their health and habitat to make sense of how they should respond to their slow-moving pollution problem. Whereas Chapter 4 documents citizens' stories presented in their own terms, Chapter 5 examines *geopolitical location* and discusses how Aamjiwnaang came to be situated in the middle of Chemical Valley. Chapter 6 then assesses *situated bodies of knowledge* based upon in-depth interviews with residents and policy makers. In doing so, it examines struggles over knowledge and scientific expertise in the context of a local health study as the community seeks recognition of the impacts of these exposures on their reproductive health. This focus on knowledge illuminates the contested nature of what constitutes data, science, expertise, and ultimately "truth."

The term "biopower" refers to the ways that biological processes of daily life become infused with politics in disciplinary and productive ways. As much biopolitical scholarship reveals, in addition to being a concept about how the "vital or productive processes of human existence" become implicated in new forms of power through the "capacities of bodies and conduct of individuals," biopower is a form of both repressive and productive power (Braun 2007, 8; Dean 2010; Rose 2007). As the following chapters demonstrate in visceral detail, disciplinary techniques include the maximization of bodily forces through efficient systems of population management; at the same time, biopolitics takes the nation as an object and makes it legible through various knowledge systems. Moreover, examining bodily interrelations and interactions with policy offers a *multilayered* approach to policy analysis that extends from the community to the provincial and federal governments. Such an account takes into consideration how ongoing struggles have developed over a century of settlement, industrialization, and cultural dislocation. The components of *multilayered analysis*, *lived experience*, *geopolitical location*, and *situated bodies of knowledge* are crucial to the enhancement of scholarship on environmental reproductive justice in Canada.

We must bear in mind that this situation of injustice is not a matter of historical accident. As Brown (1995) contends, due in large part to the institutional configurations of state rule, citizens live within "states of injury." The apparent "policy void" that has resulted in the lack of environmental reproductive justice in Canada can be attributed to the same systemic problem. How, then, can we make sense of citizen concerns in a climate of state withdrawal, and how can situated stories speak back to decision makers in order to inform better policy making in Canada? Turning to community members' concerns highlights the ways that their experiences and voices interact with and confront the policy assemblage for Indigenous environmental justice. Such a textured approach

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sheds light on the prismatic ways that biopower operates today. It also provides some visibility to the ongoing injustices, with the ultimate aim of contributing to how this situation can be seen, lived, and felt to be otherwise in order to enable escape from the ensnarement of this “biopolitical trap” (Rancière 2004, 301).

## Introducing Wounded Citizens

On October 29, 2010, Ecojustice – a national charitable legal firm dedicated to defending the right of Canadians to a healthy environment – launched constitutional litigation against the Province of Ontario’s Ministry of Environment (MOE) and Suncor Energy Products Incorporated on behalf of two members of the Aamjiwnaang First Nation: Ron Plain and Ada Lockridge. The case challenges the “deficient manner in which the Ministry of Environment regulates pollution in the area around Ada and Ron’s community of Aamjiwnaang” (Duncan, field notes, Queen’s Park, Ontario, November 1, 2010). Following close to a decade of local and global environmental activism in a battle against the province’s environmental legislation, the litigants articulated frustration with the ministry’s continued approval of permits to allow the advancement, expansion, and encroachment of pollutants on their land, in their homes, and on their bodies: “I felt as if my family’s health and well-being was being sacrificed, at a cost” (Plain, field notes, Queen’s Park, Ontario, November 1, 2010). Fatigued by the lack of attention to the cumulative impacts of the pollutants and to the consequential health effects, members of this First Nation took action to speak out against the provincial government and industry. A ministry approval to allow Suncor, a petroleum and ethanol refinery, to expand its chemical refining production in an oversaturated industrial area within a few kilometres of their reserve was the coup de grâce for these individuals. They contend that the approval constitutes a violation of their basic human rights under the Canadian Charter of Rights and Freedoms, particularly Section 7 on the right to life, liberty, and security of the person and Section 15 on the right to equality for all Canadians.

Citizen bodies in Aamjiwnaang are continuously exposed to creeping contamination. This exposure causes alarm: “I was taught growing up that it was a good thing when the flares are going, ’cause it’s more dangerous down on the ground, and not to burn off, but I never thought about what was burning and how it can affect our health” (Lockridge, field notes, Queen’s Park, Ontario, November 1, 2010). Flaring – the act of disposing of gas that cannot be processed or sold by burning it off and releasing it into the atmosphere – is meant only to

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be an emergency practice for when gases build up. In Chemical Valley citizens live with this practice in a perpetual state of emergency, resonant of what Nixon (2011) refers to as “slow violence.”<sup>4</sup> Such chronic violence takes place over time and is often state-sanctioned, invisible, and not considered to be violence at all. Shedding light on the policy assemblage of Indigenous environmental justice brings into focus the operation and inner workings of uneven power relations in Canada’s colonial present.

To examine these asymmetrical relations and the ways that they establish a certain kind of political order, we can understand the policy assemblage of Indigenous environmental justice as a deeply political social technology. This assemblage of *institutional configurations*, *discursive fields*, and *citizen practices* thus presents structural and discursive ways of thinking about power relations that enable a particular kind of slow violence, injury, and ongoing wounding (Jain 2006, xi, 2–3; Nixon 2011).<sup>5</sup> These relations reveal that the contemporary manifestations of colonial biopower in Canada, from universal state policies to intimate sites and lived experiences, are distributed through policies across scales from the Canadian Constitution to the individual citizen. Injury and wounding in Chemical Valley thus emerge as incidental features of Canadian politics with direct consequences for the meaning and practice of citizenship. Although this injurious culture appears to be fixed to the Canadian policy landscape, writing about power relations in this way requires nuance and respect for the agency of those resisting on the ground. As assemblages are fluid, there exists the possibility that this landscape can be thought of, felt, lived, and experienced otherwise. A turn to the visceral weight of policy in Chemical Valley brings to life the everyday impact on citizens.

The Ministry of Environment grants approval to facilities that seek to emit certain substances in Ontario. Pursuant to the province’s 1993 Environmental Bill of Rights, all approvals appear on the Environmental Registry’s website, which contains “public notices” about environmental matters proposed for a thirty-day period of public consultation. The conventional process for obtaining a certificate of approval (COA) outlined in Section 9 of the Environmental Protection Act (EPA) depicts how industries must estimate maximum emissions to air, soil, and water based on standards for specific pollutants established by the Act’s regulations. These criteria are commonly referred to as “point of impingement” (POI) standards.<sup>6</sup> They set a limit on the concentration of a pollutant that can be present at any POI, often defined as the fence line, or property line, of an industrial facility (Ecojustice 2010, 7). Under the EPA, the minister has the discretion to consider cumulative effects beyond the fence line. In contrast to the COA procedure, under Sections 18, 157, and 196 of the EPA, the

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ministry has the authority to permit companies to operate outside the POI standards (ibid., 9). The ministry allowed Suncor to enhance its production through amendment of one such control order, a discretionary, industry-government negotiated process that did not require public consultation.

This particular incident allowed a 25 percent increase in chemical production – up to 180 tonnes of sulphur a day – at the Sarnia refinery, a facility that produces transportation and heating fuels, liquefied petroleum gases, residential fuel oil, asphalt, feedstock, and petrochemicals (Ecojustice 2010, 9, 13). Approximately 75 percent of the crude oil at Suncor's petroleum refinery in Sarnia is synthetic crude supplied from Suncor's tar sands operations, which contain high levels of sulphur. In its productions, it emits sulphur dioxide, hydrogen sulphide, oxides of nitrogen, carbon monoxide, particulate matter, and benzene (ibid., 10). Each entails corollary adverse health effects; yet some of these chemicals, such as benzene, remain unregulated under the EPA rubric. Benzene is sweet and colourless. It evaporates quickly in air and dissolves slightly in water. It is highly flammable, can cause bone marrow not to produce enough red blood cells, and has been known to cause anemia and leukemia (MOE 2005). Others, such as hydrogen sulphide, are known neurotoxins that are frequently released in the flaring process. Several adjacent neighbouring facilities produce similar chemicals. However, the cumulative effects of such a high conglomeration of facilities continue to be unregulated by the existing legislative framework. The applicants became aware of the specifics of this amendment only through a formal request under the Freedom of Information and Protection of Privacy Act, shifting the burden of responsibility for monitoring Suncor's production from the government to this community. Suncor is but one facility among sixty-two located on both sides of the Canada-US border (Ecojustice 2007a; Scott 2008).

Suncor's presence affects every angle of the reserve's perimeter. Not only does this facility encircle the traditional burial ground, dislocating it from the reserve, but the stacks also pierce the sky at such a height that they are visible from nearly every residential home on the Aamjiwnaang First Nation Reserve. Resting easy in death is no simple feat, as noise and vibrations are some of the sensations felt when citizens of this community lay loved ones to rest. Children play in their yards amid a landscape bearing sounds akin to jets blasting for takeoff. Residents and their children express fear of entering the streams and creeks, perceived to be a toxic stockpile. Against the backdrop of sirens, smells, and soot, as rates of cardiovascular and respiratory illness rise, individuals look at their surroundings with distress.



Members of this community experience and articulate numerous physical and psychological health harms. In addition to respiratory, cardiovascular, reproductive, and skin diseases, fear is an everyday reality (Ecojustice 2007a). Knowing neither the contents of what is spewing into the air, soil, and water nor their impact on individual bodies is a cause of discomfort. Individuals become susceptible to these unknown substances; yet bearing the burden of proof for bodily harm remains onerous. Over the years, Aamjiwnaang residents became frustrated with hearing that their “lifestyle choices” were to blame for adverse health effects. A leading community advocate stated, “Don’t tell me that nowhere else in the world people don’t smoke, don’t drink, they don’t use drugs, they don’t use makeup, they don’t have carpets in their house. I always thought, like many others have, that the government was taking care of us. But now I believe that’s not true” (Lockridge, field notes, Queen’s Park, Ontario, November 1, 2010). Many Aamjiwnaang citizens wish to live a healthy and productive life; however, they have lost some of their personal autonomy with respect to health outcomes, and they bear a disproportionate responsibility for proving toxic exposure and adverse health effects. Some residents have moved away and have never turned back. This forced mobility follows a long history of cultural dislocation and socio-economic disadvantage for First Nations peoples within Canadian society at large and Aamjiwnaang in particular.

Subsequent to nearly a decade of responsible neighbourly activities, which included documenting spills, odours, noises, and vibrations, calling the ministry’s Spills Actions Centre, “bucket brigades,” biomonitoring, body-mapping, shutting vents and windows, and sheltering-in-place, this community became weary.<sup>7</sup> When communities mobilize to gain expertise, the interactions between community members and the makers of public policy are charged with political meaning and laden with asymmetrical power relations. Communities facing environmental injustices frequently bear a disproportionate burden of environmental risk exposure as well as the costs associated with gaining expertise and knowledge about this exposure. Thus the polluted become “powerless” when faced with pollution (Scott 2008, 335). As communities embark upon resistance strategies, from biomonitoring to bucket brigades, they seek to make inroads and change environmental monitoring and regulation. Although bucket brigade activities in Aamjiwnaang served as a precursor to getting an air monitor on the reserve, the burden of “proof” and responsibility for environmental management continues to fall upon the shoulders of Aamjiwnaang’s citizens at a distance from governmental regulation. As Scott (*ibid.*, 338) discusses, citizens transition from “victims” to “agents of change.” They are simultaneously co-opted and empowered by this kind of agency.

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## Aamjiwnaang: A Place Where Spirits Live in the Water

Despite the alarming landscape, this place is *home*. The Aamjiwnaang First Nation Reserve, or Sarnia Reserve 45, is home to approximately 850 Anishinabek people, also known as the Chippewas of Sarnia. Located just across the Canada–US border from Port Huron, Michigan, the reserve is at the southernmost tip of Lake Huron, approximately seven kilometres south of Sarnia’s core. For nearly half a century, Aamjiwnaang’s land has been almost completely surrounded by one of Canada’s largest concentrations of petrochemical manufacturing. Much of the original reserve, founded by Treaties 27½ and 29 in 1825 and 1827, has dwindled over the years due to various surrenders, the peak of which occurred through controversial land deals in the 1950s and 1960s when development companies sought to purchase the entire reserve. This attempt was enabled through the federal government’s fiduciary responsibilities, in line with the Indian Act. The land base has since been compressed as a partial consequence of land sales and surrenders, highway expansion, and municipal annexations. According to one local historian, the Anishinabek people effectively became “prisoners in their own home” (Plain 2007). Pipelines, factories, and petroleum storage tanks occupy today’s territory and encircle the reserve.

In September 2011 the World Health Organization (WHO) surveyed 1,100 cities in ninety-one countries and declared Sarnia to have the worst air quality in the country (Jeffrey 2011). Canada ranked third in the world when it came to air quality; yet the airshed above Sarnia was found to have the highest concentration of particulate matter per cubic metre in all of Canada, on par with a population-dense city like New York. According to Dean Edwardson, general manager of the industry-funded Sarnia-Lambton Environmental Association, housed at Suncor’s Sustainability Centre, “60% of what’s measured comes from the U.S.” (ibid.). Pointing to coal-fired plants across the river, he considered the WHO’s findings to markedly differ from local monitoring statistics. This discrepancy raises the question of who is responsible for providing accurate information to citizens of Sarnia about the contaminants in their environment.

The Sarnia area, including the city of Sarnia and the township of St. Clair, can be further characterized by a dense concentration of industrial facilities. A MOE (2005) report identified chemical plants, natural gas sites, petroleum refineries, plastics recyclers, fertilizer plants, electric generation stations, a wastewater treatment plant, and a landfill site. This report did not include inactive sites, which also house and store waste products and litter the landscape in this area (see Figure 2 below). It hosts Canada’s largest hazardous waste dump

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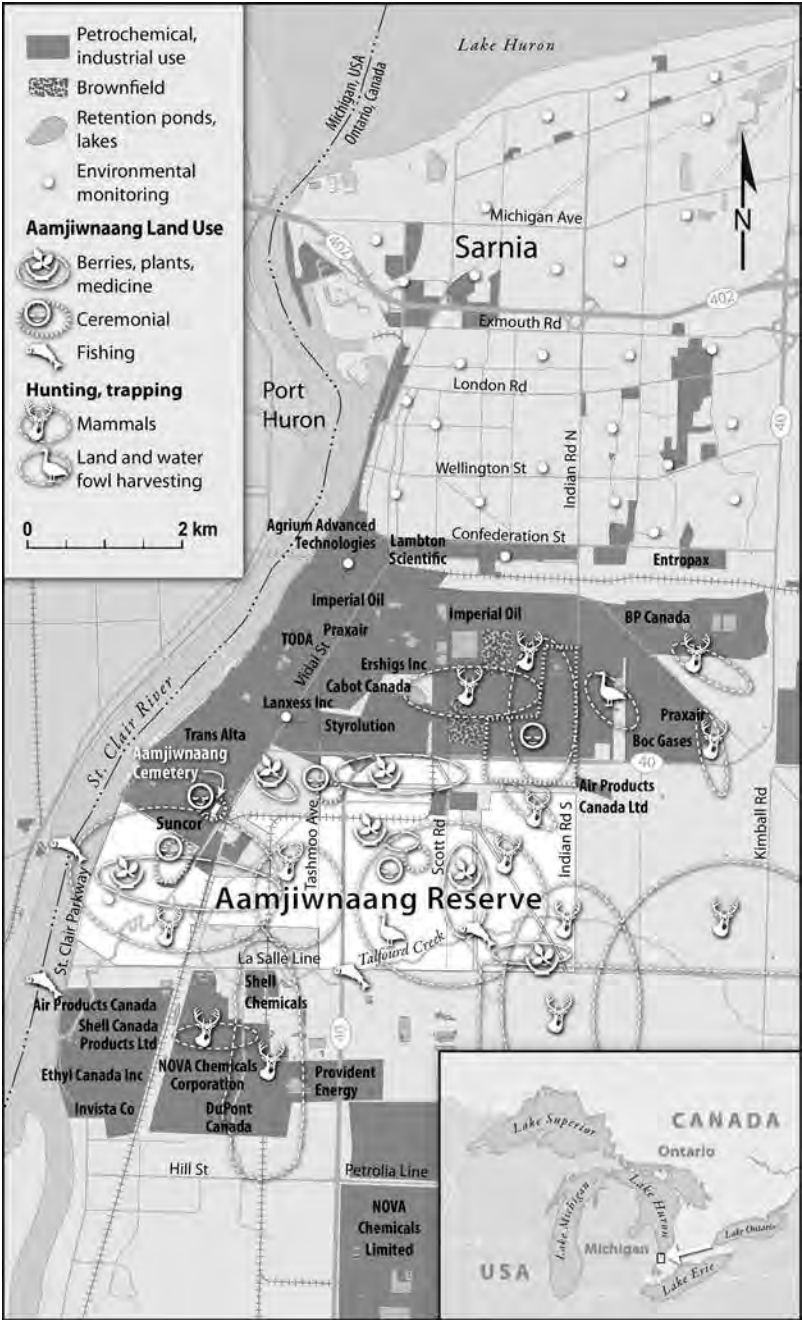


Figure 2 Map of Aamjiwnaang traditional land use and industrial sites. Cartography by Ken Josephson.

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and is a hub for the production of synthetic rubber, polyvinyl chloride, and plastics.

According to this report, a common risk of petroleum refining is exposure to hydrogen sulfide, which contains a rotten egg smell. However, “concentrations above 150 ppm may overwhelm the olfactory nerve so that the victim may have no warning of exposure” (MOE 2005). Whereas low-level hydrogen sulfide may cause irritations in mucous membranes and the respiratory system, high-level exposures result in more neurological and pulmonary symptoms, including possible loss of consciousness. Very high concentrations lead to cardiorespiratory arrest because of brainstem toxicity (*ibid.*). Several researchers point out the corresponding correlation between ambient air pollution and elevated hospital admission rates for respiratory and cardiovascular disease in London, Ontario, 100 kilometres east of Chemical Valley (Fung et al. 2005). In 2005 citizens and stakeholders met to discuss their concern about the impact of pollution on health and wellness within Lambton County. As Chapter 6 discusses in depth, by 2008 they had formed a board of directors and commenced the Lambton Community Health Study.

Tourism literature and accolades from the Chamber of Commerce tout Sarnia, population 73,000, as a beautiful and desirable place to live and work. Located within the county of Sarnia-Lambton, it is part of a gorgeous region affectionately referred to as Bluewater Country (Tourism Sarnia-Lambton 2011). With a total population of 128,204, headquartered in Wyoming, Ontario, the Corporation of the County of Lambton encompasses eleven municipalities and the four regions of Sarnia and Point Edward, St. Clair River District, Lambton Shores, and Central Lambton (Statistics Canada 2006). This is truly a rich place in material and natural beauty. The reported 2005 median income for couple households with children was \$90,929, approximately \$3,000 higher than the average Ontario income level (*ibid.*). Adjacent to Lake Huron, the county boasts miles of scenic waterfront, sandy beaches, and breathtaking sunsets. It is a place to “discover your inner explorer”; “experience a festival of fragrance”; and “escape to a place that puts it all in perspective” (Tourism Sarnia-Lambton 2011). In under an hour, Sarnia citizens can escape to Pinery Provincial Park, host to the last remaining oak savanna in North America, or continue fifteen kilometres to reach the stunning site of Ipperwash Provincial Park.<sup>8</sup>

In addition to boasting a relaxed waterfront lifestyle, Sarnia is a hotbed of industrial activity. Oil was first discovered and produced in the area during the 1850s, which spawned the emergence of an oil boom and industrialization. Imperial Oil Limited soon followed. The affectionately coined “Chemical Valley” moniker emerged after the Second World War, during which time the

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Crown corporation Royal Polymer came into being, effectively starting an empire of rubber manufacturing. It even graced the country's ten-dollar bill (Bellamy 2007). Sarnia's central position within the Great Lakes waterways and its accessibility to the United States make it an ideal location for industrial development. With deep-port access on the St. Lawrence Seaway, it is an international water corridor. Moreover, Lake Huron and the St. Clair River cater to the industrial sector, connecting it to the waterways for processing, cooling, fire protection, marine docks, and effluent discharge. In addition, Sarnia is serviced by the Canadian National Railway and the rails of CSX Transportation, as well as by the Chris Hadfield Airport. Chemical Valley's industrial complex in South Sarnia contains an extensive network of hydrocarbon raw materials, such as natural gas, crude oil, ethylene, and natural gas liquids (SLEP 2011). It is a world leader in plant construction, process engineering and operations, metal fabrication, sustainable energy production, and environmental technology and management. Sarnia is also at the forefront of petrochemical production and its relevant spinoff industries. For instance, when the Gulf of Mexico oil spill disaster hit, British Petroleum turned to a Sarnia firm to "mop up" the devastating mess (Dobson 2010). However, Sarnia's own cleanup efforts remain a matter of dispute.

After nearly a century of heavy industrial manufacturing and refining, and following the 1985 "blob" incident at Dow Chemicals – the release of perchlorethylene, a dry-cleaning solvent, into the St. Clair River – this stretch of sixty-four kilometres along the river was identified as an "area of concern" in the Canada–US Great Lakes Water Quality Agreement (Environment Canada 2012). This designation rode the coattails of Dow's legacy of releasing mercury into the river for many years. Prior to the introduction of environmental legislation, regulation, and standards in the 1970s, some Aamjiwnaang residents played with and collected mercury during childhood. In 2002 Dow began dredging to remove methyl mercury from the riverbed. In 2005 Pollution Watch added three Chemical Valley industries to its list of the top ten respiratory pollutants (Ecojustice 2007a). As these environmental concerns began making waves, Environment Canada, the Ontario Ministry of Environment, and the US Environmental Protection Agency met to discuss a remedial action plan. Shortly thereafter, wetlands, wastewater treatment sites, and various restoration projects appeared on the landscape.

Local residents residing in this area face a large pollution problem. Dow Chemical is but one facility among sixty-two located within twenty-five kilometres of Sarnia and Aamjiwnaang (Scott 2008). Community-based participatory research between members of the Aamjiwnaang First Nation and the

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Occupational Health Clinic for Ontario Workers – Sarnia (OHCOW) has revealed a range of health concerns within the community, including headaches, diabetes, thyroid issues, asthma, skin rashes, high cancer rates, neurological, reproductive, and developmental concerns, and a declining male birth rate, in addition to a loss of cultural practices on the land (Ecojustice 2007a; Hoover et al. 2012; Mackenzie, Lockridge, and Keith 2005). With the help of OHCOW, these concerns were tracked on large “body maps” with colour-coded stickers and shown to the community (see Chapter 4). In addition to bodily concerns, industrial sources of air pollutants pinch the reserve on all sides and are located directly across from the band office, the church, the cemetery, a resource centre, and until recently, the daycare centre (Ecojustice 2010). Lead levels beyond acceptable MOE guidelines were found in Talfourd Creek, which weaves through industry and the burial grounds and into the St. Clair River.

Red-lettered signs with a skull and crossbones that tell people to “KEEP OUT” demarcate Talfourd Creek’s course in Aamjiwnaang. Figuring out the composition of the creek’s contamination requires sustained monitoring sanctioned by the reserve in partnership with government officials and researchers. Although the testing continues, questions are still being raised, and concrete answers are few and far between. Despite the signs with the skull and crossbones, as life goes on, many citizens swim, fish, and play in the waterway.

These living conditions are unsatisfactory to several community members and activists. To raise awareness, residents like Ron and Ada often provide public “toxic tours” (Garrick 2015). In 2009 Ron and Ada requested a legislative review under the Environmental Bill of Rights. Upon receiving no response, these individuals had to resort to the court. Soon thereafter, I participated in one such “toxic tour” and ended up in Sarnia.

## My Place

Aaniishnaa  
Sarah, dizhnikaaz  
Vancouver, ndoonjibaa  
Niizhtana niizhwaaswi niin doonsibboongis  
Anishinabek nige ndaw.<sup>9</sup>

During my time residing in Sarnia, I joined a weekly Ojibwe class. We spent the first few weeks discussing the meaning of introductions. As my teacher continuously emphasized, who you are connects to where you are from. While attending and participating in many events and ceremonies, I learned that

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