CANADA'S TOXIC CHEMICAL VALLEY

AAMJIWNAANG AND SARNIA AGAINST PIPELINES

This zine was written by members of the Montreal (occupied Kanienkehá:ka territory) contingent of Aamjiwnaang Solidarity, a network of concerned individuals who work to advance the mission of the grassroots organization Aamjiwnaang and Sarnia Against Pipelines (ASAP).

ASAP aims to create a forum for communication and action around the toxic reality of living in Chemical Valley. ASAP facilitates opportunities for Aamjiwnaang First Nation community members to share their experiences, and works to increase wider public awareness of the unacceptable situation of environmental racism in the Chemical Valley.

ASAP also helps community members stay informed on recent chemical spills in the Aamjiwnaang and Sarnia areas, the content of these spills, and what community members can do to lessen exposure to them.

Both ASAP and Aamjiwnaang Solidarity work to inform allies on how they can speak out against the injustice of Chemical Valley and put pressure on governments and industry to stop the industrial genocide of the Aamjiwnaang community. We work to build active solidarity to struggle for justice for the community.

ASAP Facebook page:
https://www.facebook.com/AamjiwnaangSarniaAgainstPipelines/timeline
ASAP Twitter handle: @TakeActionASAP
ASAP website: http://aamjiwnaangsolidarity.com/

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INTRODUCTION

Chemical Valley (located outside of Sarnia, Ontario) has the highest concentration of petrochemical plants in Canada. The pollution from these plants disproportionately affects members of the Aamjiwnaang First Nation community.

40% of Canada's total annual petrochemical production takes place within a 50 kilometer radius of Aamjiwnaang. The community counts 63 refineries owned and managed by corporations including Suncor, Shell, DOW Chemicals, ESSO Imperial Oil, and Lanxess as neighbours, among many others. These refineries are responsible for self-reporting chemical spills and releases. No government agency is charged with keeping track of overall emissions rates in the Chemical Valley nor with keeping track of all the compounds that are released.

The contamination of the land, air, and water of Aamjiwnaang has a severe and negative impact on the health and way of life of community members as well as local plant and animal populations.

Photo credit: photographs on the cover, this page, and page 25 are by Michael Toledano. All other photos are by anonymous community members and supporters.

FIRST-HAND ACCOUNTS

"Everything around you in Aamjiwnaang is polluted. The water the soil, the air, the sky, and the people. When I say "people are polluted" I mean that we have had some testing, but that has only told us a little bit. We know that we have banned PCPS in our blood, we have mercury in our hair. It's pretty scary coming from a place where animals are mutated from just living off the land like they should be doing. They've found turtles that had blurred sexes, they found fish with tumours which is common in places where communities live with Tar Sands."

Lindsay Gray
Aamjiwnaang & Sarnia Against Pipelines

“Growing up, I’ve had health issues such as athsma, highly sensitive skin. The same goes for most of the children who have attended this particular daycare. A lot of us need puffers. Exactly 39% of my community requires puffers to breathe properly. My brother and my sister both required puffers as children. After I went to daycare here I went to preschool in this blue building over here. As you can see everything is very close to each other. There’s the daycare, the preschool, and our band office. You can also see that we’re very close to industry where they have had a lot of benzene releases.”

Vanessa Gray
Aamjiwnaang & Sarnia Against Pipelines

“The whole area is ruined. There’s nothing. There’s no way we’re ever going to be able to clean it up. Never. It’s even posted for the lake fish you’re not supposed to have it more than once a month or something like that. You are not even supposed to eat the rabbits or the deer or anything that the hunters go after. We’re not even supposed to put in our vegetable garden.”

Ammjiwnaang Community Member,
speaking in *Indian Givers*, a grassroots documentary

HISTORY OF THE CHEMICAL VALLEY

"The reserve used to reach down into Goderich, down to Michigan, and I think it was the Treaty of Greenville 1795 we lost of a lot of our land due to the fact that we didn't understand what they meant by 'owning land' because we had never 'owned land' before. So now I think you can circle the reserve in 5 minutes driving around it. . . . "

Aamjiwnaang resident Jacob Rogers, speaking in *Indian Givers*, a grassroots documentary

" . . . what they asked for was being able to share the lands. They didn't really understand what was going to happen. They wanted to be able to share the land and go out and hunt and continue our own lifestyle and share it with the Americans who, their idea was to set up farms and have private land ownership and that sort of thing. They signed the treaty saying that we could do that."

Aamjiwnaang resident David Plain, descendant of Ojibwe signers of the 1807 Treaty of Detroit, speaking in *Indian Givers*, a grassroots documentary

"I don't know if you have been down to the Chemical Valley in the night, drive, take the ride down Vidal street and how all the lights are there. Well as a child that was part of a Sunday evening. You go down, the lights are all there, they're all on, and boy that just looked like fairy land to us. All the sparkly lights, and wasn't that pretty? My father was an electrician, and back in the day those tanks were kept pristine looking, the gardens were beautiful and it was lovely to see. And we were proud that we lived in the Chemical Valley. And it wasn't till after my husband died it was like-- duh! -- we don't see that anymore. The flowers are dead, the trees are all dying. The drums are all scanty down there. It looks derelict down there because they don't have to keep up the pretense anymore. The gig's up and the words out and it is what it is now. It's the chemical valley."

Sandy Kinart, widow of Blayne Kinart, a millwright at Wayne Chemical Plant who died of mesothelioma

The Chemical Valley is situated on Ojibwe Anishinaabe territory, which extends throughout the central Great Lakes region. European settlers began to occupy the territory in the late 18th century. After the American Revolution, Ojibwe communities on both sides of the colonial border were coerced into ceding their land to the governments of the United States and what was then known as Upper Canada (now Ontario). It is

important to view this process as a part of the imposition of European legal systems onto Indigenous North American societies, including the European concept of private land ownership.[1]

Settlers began to clear the land in order to sell timber for profit and to establish farms. Many Ojibwe communities were forced onto reserve lands in exchange for guarantees that they would be able to continue to practice their traditional ways of life, which depended on small-scale agriculture and hunting over large territories for survival.

But even reserve land was subject to violation. Aamjiwnaang, established under the so-called Huron Tract Treaty of 1827, was guaranteed in perpetuity 10,000 acres of land along the Saint Clair River.[2] Over the course of two centuries, however, the provincial and federal governments of the colonizers, in concert with the town of Sarnia and various corporations, chipped away at the land reserved for the Aamjiwnaang community by means of dubious land purchases and outright land theft.[3] From 1927 to 1951, section 141 of the Indian Act made it illegal for so-called Indians to retain a lawyer for the purpose of a claim against the Canadian government, making it difficult for most Indigenous communities, including Aamjiwnaang, to fight the ongoing denial of access to their land base.[4] According to Aboriginal Affairs and Northern Development Canada's own records, the Aamjiwnaang First Nation Reserve now comprises only 1280.5 hectares, or 3,164 acres of its original 12,000,[5] and lies entirely within the municipal boundaries of the City of Sarnia.

While timber trade and farming were the very first mechanisms by which material wealth was extracted from occupied Ojibwe territory, in the 1850s several settlers encountered bitumen and eventually crude oil near the eastern bank of the Saint Clair. Some of these settlers built the world's first petroleum refineries in Enniskillen, Petrolia, and Oil Springs townships, all approximately 40 kilometers west of Aamjiwnaang, to process bitumen into lamp fuel and lubricating oil.[6]

These same settlers' desire to pull greater monetary profit out of the resources provided by the land led them to increase production and devise more complex ways to refine raw bitumen and crude oil into new petroleum products, including asphalt for paving roads, initially exported to Europe and the United States.

By 1880, there were enough independent oil fields and refineries operating in southwestern Ontario to prompt Jacob Lewis Englehart to found Imperial Oil (now known as Esso Imperial Oil), modeled after John D. Rockefeller's Standard Oil in the U.S. and intent on of corralling all Canadian petroleum production into a single cartel.[7] By 1890, Imperial's largest refinery was based in Sarnia, for easy access to water transportation on the Saint Clair River and the Great Lakes.

The Canadian petroleum industry as a whole was in decline by this time, as coal-powered electric lights replaced oil lamps and as trains replaced roads as the principal mode of transportation, reducing demand for

paving asphalt. But Imperial Oil remained profitable enough to survive into the automobile era, which jumpstarted the petroleum industry.

Over the course of the 20th century, demand for gasoline, a by-product of kerosene production that was formerly discarded but became the preferred automobile fuel, soared. Refineries, including the Imperial Oil refinery at Sarnia, adapted their processes, leading to the output of a greater variety of combustible fuels and the emission of a greater variety of environmental contaminants.[8]

More cars meant more paved roads as well. Automobiles tore up dirt and gravel routes; asphalt provided a more durable surface. By the 1950s, most of the Ontario concession roads, laid out a century earlier by the Government of Canada West, had been paved, facilitating denser residential settlement as well as market access for the output of Ontario's by-then advanced farming and petroleum sectors.[9]

The pavement of the Ontario concession roads with locally-produced asphalt provides a useful illustration of Canada's broader colonial mentality. The land is occupied, its resources are extracted, the extracted resources are applied toward more intensive occupation and the facilitation of further extraction. Meanwhile, the whole process generates monetary wealth for the occupying settlers and their governments, while destroying the natural abundance of clean water and healthy plants and animals on which all humans ultimately depend for survival.[10] This process is usefully referred to as capitalist

settler colonialism.

Unfortunately, the "development" of Chemical Valley did not stop at gas and asphalt. In 1942, desperate for rubber for the war effort, the Government of Canada established Polymer Corporation, a Crown Corporation that used Imperial Oil's crude to manufacture synthetic rubber. By then, Imperial Oil was the largest refinery in the British Empire.[11] The financial success of Polymer Corporation and the ready availability of Imperial Oil petroleum lured corporations seeking to capitalize on the postwar petrochemical boom to Sarnia.[12]

1953 was a key year for the growing petrochemical complex around Aamjiwnaang. In that year, Suncor, specializing in fuel production, and Cabot Canada, a carbon black producer, both set up shop on the border of the reserve.[13] It was also the year that Interprovincial Pipeline Inc. (now Enbridge) extended its pipeline from Edmonton, originally terminating in Superior, WI, into Sarnia.[14] Western oil, first from the Western Canada Sedimentary Basin and eventually tar sands synthetic crude, began to fuel the growing petrochemical complex.

Demand for petroleum-based consumer goods, the ever-increasing array of fuels required for new types of automobiles and aircraft, and the growing use of oil for heating and electricity kept the Valley humming in the post-war boom years.[15] In the era before environmental protection regulation, the Chemical Valley was seen as a model industrial community, a marvel of the modern Canadian state. Families would visit the Valley on weekends to admire the lights on the refinery smokestacks and the

clouds of (highly toxic) vapour streaming out of them.[16]

This romanticisation of industry is one of the cultural adaptations that allows capitalist colonialism to thrive: the glamour of complex machinery is made to outshine the human toll of industrial development.

It wasn't until the 1960s that environmental impact studies began to make mainstream news headlines, and it wasn't until 1972 that the Ontario Ministry of the Environment was established, trailed by its federal counterpart in 1985.

By then, Polymer Corp. had become Polysar and DuPont Canada, Shell Canada, Praxair, Plains Midstream, Styrolution, and Union Carbide had already opened refineries and petrochemical plants in the Valley. New pipelines had been built to feed production with Canadian and US oil, as well as an entire complex of internal pipelines between plants, all with little to no government oversight or regulation of safety or emissions standards. Refinery development continued apace in the 1990s and early 2000s, when Polysar was bought out by Bayer AG and renamed Lanxess, and HC Starck, Nova Chemicals, and CF Industries expanded existing petrochemical facilities or built new ones.[17]

In his 2013-2014 annual report, Environment Commissioner of Ontario Gord Miller declared:

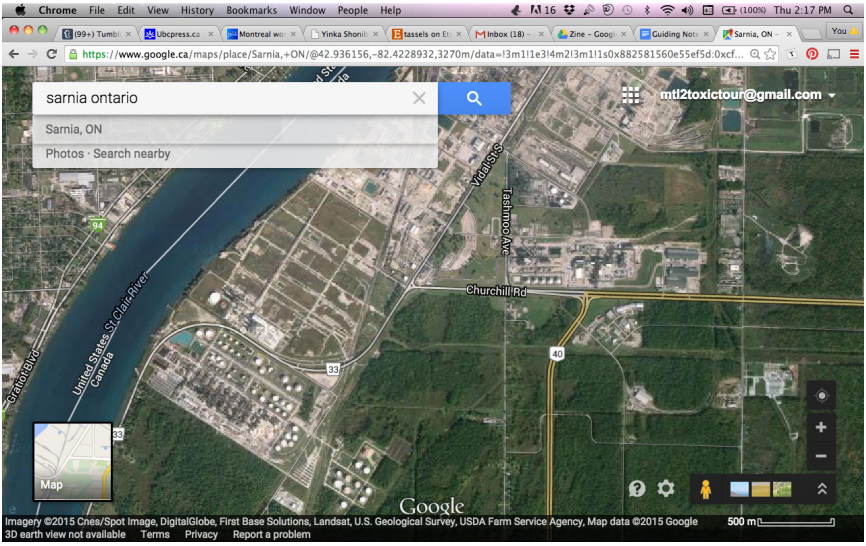
> "Under today's land use rules, it would be highly unlikely that this type of concentrated industrial

> development would occur in such close proximity to a residential community. Yet, the Aamjiwnaang First Nation suffers a daily assault on their ancestral land as a result of this disturbing historical legacy, coupled with contemporary indifference."

He further suggests that to this day,

> "The way Ontario regulates air emissions – on a stand-alone, facility-by-facility basis – is at least partially to blame for these high pollution loadings [around Aamjiwnaang]. There is no consideration given to the potential cumulative or synergistic impacts on human health or the environment in locales where emitters are clustered together."[18]

Nevertheless, the highly politicized nature of the approval process for new petrochemical plants on occupied Ojibwe land means that many are still being approved in the interest of "economic development." After citizen groups in Mississauga and Oakville successfully campaigned against the construction of a natural gas power plant in their community, Eastern Energy forced the provincial government to allow it to relocate the project to Sarnia.[19] In addition, two new refineries are currently being considered for construction near Aamjiwnaang, including a Shell light natural gas (LNG) processing unit[20] and the so-called Sarnia-Lambton Advanced Bitumen Energy Refinery (SABER).[21]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HEALTH IMPACTS:

WHAT WE KNOW AND WHAT WE DON'T

"That cumulative issue is the main issue in Aamjiwnaang. But there needs to be an ongoing monitoring of the worst offenders of those pollutants, and benzene being the top one, I think. My grandson died as a result of leukaemia. He is not with us anymore. He was 13. I don't know where my grandson took a deep breath or took several deep breaths but benzene would be the cause of that Leukemia."

Wilson Plain, Aamjiwnaang resident, speaking in VICE documentary *Canada's Toxic Chemical Valley*

The toxicity of petroleum processing has been evident since the the oil industry's birth.

Hydrogen sulfide, a gas released during refinement of Ontario's high-sulphur bitumen into asphalt and kerosene, led to frequent unconsciousness and death among 19th-century refinery workers.[22] Worse, when crude oil was discovered in 1858, on-site refineries simply dumped the liquid residue of the refinement process into the ground and nearby streams, a practice which likely persisted for decades.[23] Prospectors and settlers living near the refineries would nevertheless drink from petroleum-polluted streams, for lack of a cleaner water source.[24]

In the 1930s, the law firm of LeSueur, LeSueur & Dawson explained to Indian Agent Peter Gardiner that the Aamjiwnaang community had filed a complaint against Imperial Oil

> "respecting some oil which had escaped into the Vidal Street Drain…On investigation following the pipeline break, it was found that the line had become corroded apparently as a result of the acid content contained in the water coming from the property of the Dominion Alloy Steel Corporation…the acid in the water killed fish which come up the stream in the Spring Season and that some cattle had died after drinking the water…"[25]

In addition, it has been apparent for years to medical professionals that employees of the Chemical Valley petrochemical complex have some of the highest rates of rare cancers in the nation.[26]

Despite this well-documented history of negative environmental and health impacts, it was not until 2008 that the Ontario Ministry of the Environment (MOE) established an air monitoring station in the Chemical Valley, in response to ongoing pressure from Aamjiwnaang community members.[27] Previously, the MOE did not even monitor wind speed and direction in the Chemical Valley, information which is crucial to survival in the event of a toxic release and to holding individual refineries accountable for the immediate impacts of their carelessness.

Given the historical and ongoing lack of adequate government monitoring and regulation of the environmental situation in Aamjiwnaang and surrounding communities, community members have had to to take it onto themselves to report releases and spills, take samples, and pay for air and water tests.[28] The expense and lengthy process of getting laboratory test results means that we still know very little about the true nature and severity of pollution in Aamjiwnaang.

We do know, however, that the chemicals regularly released into the air and water by the petrochemical refineries surrounding Aamjiwnaang include mercury, lead, cadmium, manganese, aluminum, benzene, nitrogen dioxide, sulfur dioxide, polycyclic aromatic hydrocarbons (PAHs), brominated flame retardants, perfluorinated chemicals (PFCs), and polychlorinated biphenyls (PCBs), all of which are known neurotoxicants, carcinogens, and/or endocrine disruptors.[29] Hydrogen sulfide was even used by the British as a chemical weapon in World War I.

EcoJustice, an Ontario-based charitable organization that advocates for environmental human rights, estimates that the total mass of pollutants released annually by the 63 refineries and petrochemical operations in the Valley nears 131 million kilograms.[30]

Because there are so few places in the world where human beings are allowed to come into contact with such high concentrations of these chemicals, there are very few studies on the long-term health impacts of exposure. Even the few studies that do exist are not necessarily

familiar to medical professionals, making it difficult for community members experiencing health problems to be properly diagnosed and treated.

In January 2013, for instance, several children ended up in hospital after being exposed to a release of "sour water" (waste water from the petrochemical process containing a cocktail of chemicals including benzene, mercaptan, and hydrogen sulfide) near their daycare center, situated only hundreds meters from Shell's Corunna petrochemical refinery.[31] Up to 33 other community members were also affected, but since the release had not yet been reported by Shell, doctors initially diagnosed the children from the daycare with flu, only to realize after they were released from hospital that they were likely reacting to exposure to hydrogen sulfide.[32]

In addition, while community members have been aware for some time that there is a skewed birth ratio among Aamjiwnaang residents, a 2005 study carried out by a team of university and community researchers has determined that the birth ratio of female to male infants is 2:1, most likely as a result of hormonal imbalances caused by environmental contaminants.[33]

Local plants and animals are also affected by environmental pollution in the Chemical Valley. Dogs known to have drunk water from ditches on Aamjiwnaang reserve lands have subsequently given birth to dead and deformed puppies.[34] The consumption of fish caught on the reserve is a potential source of elevated levels of mercury and other heavy metals in some community

members' bodies,[35] and turtles in the Saint Clair River demonstrate sexual abnormalities similar to those among Aamjiwnaang's human residents.[36] Talfourd Creek and Inkejig Pond, two of the largest bodies of water on the reserve, have been declared toxic by the Aamjiwnaang Band Council (see photo this page). Formerly central to traditional gatherings and ceremonies, Inkejig Pond is now off limits since even touching the water can cause boils on the skin.[37]

AAMJIWNAANG AND CANADA'S ENVIRONMENTAL RACISM

"When you look at a map of Canada and you look at all the Inuit, Metis and First Nations communities in this vast landscape, and then you overlay a map of all of the most toxic and harmful and unsustainable industries - oil and gas, forestry, mega mining, hydroelectric mega dams - they are all within 20-30km of our home communities. Environmental racism is very much a daily reality that Indigenous peoples in Canada are facing."

Clayton-Thomas Mueller, Indigenous activist, speaking in *Cloudmakers*, a grassroots documentary

Environmental racism is a comparatively recent concept. Its arose in the 1970s and 80s as activists, academics, and regulators in the then-newly established environment ministries of the industrial world struggled to find a way to explain why environmental contamination seemed to be most severe near working class and minority communities.

In different countries, environmental racism takes different forms. In the United States, the most extreme cases occur in areas surrounding African-American communities, with a classic example being the creation in the 1980s of hazardous waste disposal sites in Warren County, South Carolina, widely credited with sparking the environmental justice movement.[38] By 1990, concern for

environmental equity became enshrined in the mission of the US Environmental Protection Agency.[39]

In Canada, environmental racism is still underexplored by academia and is not recognized by Environment Canada, but is known by many Indigenous people to be a fact of life in their communities.[40]

It is important to trace the phenomenon of environmental racism back to the colonial history of Canada. Sovereign Indigenous nations saw their economic and political systems forcibly destroyed by European colonizers. We have briefly outlined above what this process looked like on Ojibwe Anishinaabe territory.

Forced onto reserve lands which are often too small in area to support traditional hunting and gathering practices, subject to generations of forced removal of children to residential schools, and forbidden for significant periods access to legal counsel and even the right to leave reserve land by Indian Act racism, many Indigenous communities were not well equipped to fight industrial development on their traditional territories.

What this all adds up to is a situation in which settlers benefit from the vast array of consumer goods and cheap energy produced from Canada's natural resources, while First Nations and working class communities suffer the negative health impacts of the industrial activity that creates those goods and energy. Oil refineries are never located in white, middle class communities, for instance, because those communities have access to monetary

resources and the attention of major media outlets and politicians. They can fight back when corporations want to locate hazardous industry in their neighborhoods.

A classic example of this is the relocation of the new Eastern Energy natural gas power plant from Mississauga to Sarnia. Even though they will be the ones consuming the energy from the new power plant, Mississauga suburbanites didn't want to deal with the clouds of toxic emissions that are a byproduct of cheap natural gas power production. They used their abundant time, energy, connections, and wealth to force the provincial government to intervene, actually halting the power plant construction process and costing the provincial government up to $500 million in damages to Eastern Energy.[41] The government approved a relocation of the project to Sarnia. Working-class Sarnia and Aamjiwnaang residents, too busy keeping tabs on spills, leaks, and emissions from the 63 petrochemical plants already located in the Chemical Valley and lacking the time, wealth, and connections of Mississaugans, couldn't halt the relocation, even though they won't even be consuming Eastern Energy's electricity output.

This pattern has been repeated across the continent: rich, predominantly white settlers enjoy the high quality of life of an advanced industrial society, while people of color and Indigenous populations labor for and live near the toxic industrial centers on which middle- and upper-class comfort depends.

Despite this, Indigenous resistance to industrial development in Canada has been fierce and ongoing. Inspiring examples (among many others) include Cree and Innu resistance to hydroelectric dams on their traditional territory in so-called Québec;[42] Mi'kmaq resistance to hydraulic fracturing for natural gas near Elsipogtog in so-called New Brunswick;[43] Dene and Cree organising around the tarsands in so-called Alberta;[44] and of course Ojibwe resistance to the toxic Chemical Valley.

Environmental racism is a known evil in Canada, and an evil that is being fought.

WHY AAMJIWNAANG MATTERS

"We can't keep moving away from companies because it's a never ending process of needing more natural resources. The companies that are built right next door to us are going to be there until the job is done. And when the job is done we wont have the choice to go somewhere else for clean water because there will be no clean water. We can't run away from the damage it's doing to the land everywhere. There's more Shell refineries, there's more Suncor refineries, we just happen to live right next to both of them"

Vanessa Gray, Aamjiwnaang & Sarnia Against Pipelines, speaking in a video for the Aamjiwnaang Water Project

While Chemical Valley is an extreme example of environmental racism, it is not in an way an exception to the colonial rule. The development of the petrochemical industry on stolen Ojibwe land is a very clear illustration of the way extractivist colonial economies operate. Land is stolen and occupied, resources are extracted, the extracted resources get fed back into the system of occupation and extraction.

Even if we don't live there, we have to care about Aamjiwnaang, because the goal of the extractivist colonial mentality is to turn all land into Aamjiwnaang. Profit-seeking corporations don't want the extractivist cycle to stop.

If you need another illustration of this, consider the term "overburden," employed by the mining and petroleum industries. "Overburden" is defined as the material that lies above an area of economic or scientific interest.[45] In *Ontario's Petroleum Legacy*, a book which we have had to cite repeatedly in this zine for lack of studies of Canada's petroleum industry written from an anti-colonial perspective, the author refers to Alberta's tarsands as lying under "overburden" 80 to 160 meters thick.[46] In the case of the tarsands, "overburden" refers to the virgin boreal forest of Alberta (occupied Dene, Cree, and Métis territory). That is, to the soil, plants, trees, and watersheds that support human and animal life.

Currently, 767 square kilometers of "overburden" have been decimated in so-called Alberta, and 92,000 more have been leased for eventual decimation.[47] Much of the oil that is extracted from underneath this "overburden" ends up in Chemical Valley for refinement and processing.[48]

Any system that can reduce to disposable "overburden" the land on which all human beings depend for survival and with which all human societies have a spiritual connection is worth resisting.

Aamjiiwnaang is resisting, and Aamjiwnaang's resistance is a fight for a decent life, in which we can actually breathe clean air and drink clean water.

ENDNOTES AND FURTHER READING

Resources cited in the text, by section:

HISTORY OF THE CHEMICAL VALLEY

1. For a useful account of the Ojibwe treaty process from an Anishinaabek perspective, consult Heidi Stark (2010) Respect, Responsibility, and Renewal: The Foundations of Anishinaabe Treaty Making with the United States and Canada. American Indian Culture and Research Journal: 2010, Vol. 34, No. 2, pp. 145-164. For maps of Canadian treaty areas, consult this page of the website of Aboriginal Affairs and Northern Development Canada: http://www.aadnc-aandc.gc.ca/eng/1100100032297/1100100032309

2. The full text of the treaty can be found on this page of the website of Aboriginal Affairs and Northern Development Canada: http://www.aadnc-aandc.gc.ca/eng/1370372152585/1370372222012#ucls21

3. Journalist and filmmaker Monica Virtue has begun research into a series of convoluted thefts of Aamjiwnaang reserve land in the early 20th century. She has published a summary of her research and a useful timeline on her website: http://monicavirtue.com/portfolio-items/the-steel-company-and-the-1184-acres-stolen-from-aamjiwnaang/

4. For a basic introduction to the history and provisions of the Indian Act and some of its impacts on Indigenous communities, consult UBC's Indigenous Foundations database at the following web address:
http://indigenousfoundations.arts.ubc.ca/home/government-policy/the-indian-act.html

5. Link to Ammjiwnaang First Nation Profile on Aboriginal Affairs and Northern Development Canada's website: http://pse5-esd5.ainc-inac.gc.ca/fnp/Main/Search/FNReserves.aspx?BAND_NUMBER=172&lang=eng

6. Given the limited number of resources on the topic, much of our account of the development of the Canadian petroleum industry is reliant on Earle Gray's Ontario's Petroleum Legacy, published in 2008 in Edmonton by the Heritage Community Foundation

(this citation pp. 2-5). Please note however that Earle Gray is an industry insider and is writing from the perspective of glorifying the petroleum industry.

7. Ontario's Petroleum Legacy pp. 40-42

8. Ontario's Petroleum Legacy pp 66-67

9. For a basic account of the history of road construction in Canada, consult the article "Roads and Highways" by C.W. Gilchrist in The Canadian Encyclopedia (available online at http://www.thecanadianencyclopedia.ca/en/article/roads-and-highways/). For a more detailed account of early road development in Upper Canada from a settler perspective, consult Andrew F. Burghardt (1969) The Origin and Development of the Road Network of the Niagara Peninsula, Ontario, 1770-1851. Annals of the Association of American Geographers 1969: Vol. 59, No. 3, pp. 417-440.

10. By way of illustration, Lynn Gehl, an Algonquin Aninishinaabe-kwe, has estimated the total amount of monetary wealth extracted annually from occupied Algonquin Anishiaanbe territory, located a few hundred kilometers from Aamjiwnaang and encompassing the so-called Capital Region; link to her blog article here: http://www.lynngehl.com/black-face-blogging/the-wealth-of-algonquin-land

11. Ontario's Petroleum Legacy p. 76

12. For an account of the success of Polymer Corp. and its galvanization of the petrochemical industry in Canada, consult Matthew J. Bellamy's Profiting the Crown: Canada's Polymer Corporation, 1942-1990. McGill-Queens University Press: Montreal and Toronto, 2007). Please note however that this resource is written from the perspective of glorifying the petrochemical industry.

13. For a list of petrochemical operators in the Chemical Valley and their history in the region consult this .pdf brochure published by the Sarnia-Lambton Economic Partnership: http://www.sarnialambton.on.ca/documents/S_L_PETROCHEM_BROCH.pdf

14. The website of the Canadian Energy Pipeline Association includes a useful timeline of pipeline development in Canada: http://www.cepa.com/about-pipelines/history-of-pipelines

15. Ontario's Petroleum Legacy pp. 65-67

16. As in the account of Sandy Kinar recorded in VICE documentary

Canada's Toxic Chemical Valley (https://www.youtube.com/watch?v=UnHWZE0M_-k) and quoted at the beginning of the "History of the Chemical Valley" section of this zine.

17. Names of companies and dates of establishment in the Valley taken from the Sarnia-Lambton Economic Partnership brochure: http://www.sarnialambton.on.ca/documents/S_L_PETROCHEM_BROCH.pdf

18. Full text of the Environment Commissioner's report can be found here: http://www.eco.on.ca/index.php/en_US/pubs/annual-reports-and-supplements/2014-managing-new-challenges

19. Globe & Mail article on the relocation of the Eastern Energy gas plant can be found here: http://www.theglobeandmail.com/news/national/firm-at-centre-of-gas-plant-scandal-in-hot-water-again/article23759071/

20. Local media outlet The Sarnia Observer reported on the Shell natural gas unit here: http://www.theobserver.ca/2013/03/05/shell-to-build-liquified-natural-gas-unit

21. The Observer also reported on the SABER facility here: http://www.theobserver.ca/2015/02/10/ministry-of-energy-officials-will-meet-with-sarnia-lambton-bitumen-upgrader-group-in-march

HEALTH IMPACTS: WHAT WE KNOW AND WHAT WE DON'T

22. Ontario's Oil Legacy p. 24

23. Ontario's Oil Legacy, footnote p. 31

24. As noted in a 19th-century newspaper account, cited in Ontario's Oil Legacy p. 32

25. As cited by Monica Virtue in the article on land theft in Aamjiwnaang published on her website: http://monicavirtue.com/portfolio-items/the-steel-company-and-the-1184-acres-stolen-from-aamjiwnaang/

26. This Globe & Mail article galvanized a flurry of media attention around Chemical Valley rare cancer rates in the early 2000s: http://www.theglobeandmail.com/news/national/dying-for-a-liing/article1084962/?page=all

27. For a description of the station and what it monitors, consult: http://www.aamjiwnaangenvironment.ca/monitoring.html

28. For accounts of citizen-led environmental monitoring in the context of limited government regulation, consult http://www.idlenomore.ca/the_chemical_valley and http://www.cbc.ca/news2/background/aboriginals/health.html; compare also the account of Ada Lockridge, an Aamjiwnaang community member, recorded in the VICE documentary Canada's Toxic Chemical Valley, available for streaming on YouTube: https://www.youtube.com/watch?v=UnHWZE0M_-k

29. This list was compiled on the basis of two academic studies into chemical exposure among residents of Aamjiwnaang and Sarnia: Basu, N., Cryderman, D.K., Miller, F.K., Johnston, S., Rogers, C., Plain, W. 2013. Multiple Chemical Exposure Assessment at Aamjiwnaang. McGill Environmental Health Sciences Lab Occasional Report 2013-1 (available at: http://sitemaker.umich.edu/aamjiwnaang/files/report-aamjiwnaang_biomonitoring_2013-v4-final.pdf) and Atari, D.O., Luginaah, I., Xu, X., Fung, K. 2008. Spatial Variability of Ambient Nitrogen Dioxide and Sulfur Dioxide in Sarnia, "Chemical Valley," Ontario, Canada. Journal of Toxicology and Environmental Health, Part A: Current Issues, 21 (74), 1572-81.

30. The full text of the EcoJustice report can be found here: http://www.environmentalhealthnews.org/ehs/news/2012/2007-study.pdf

31. The following links all contain accounts of the 2013 Shell sour water release: http://www.ecojustice.ca/charge-laid-against-shell-canada-for-refinery-spill-in-chemical-valley/
http://www.sarniathisweek.com/2013/01/27/thirty-three-aamjiwnaang-residents-ill-from-shell-spill
http://www.desmog.ca/2013/01/29/shell-leak-sheds-light-life-canada-s-chemical-valley

32. As related by Christine Rogers, Ammjiwnaang resident and mother of children affected by the 2013 release, in VICE documentary Canada's Toxic Chemical Valley (available for streaming on YouTube: https://www.youtube.com/watch?v=UnHWZE0M_-k)

33. The sex ratio study was carried out by Constanze MacKenzie, Ada Lockridge, and Margaret Keith. Full citation: MacKenzie, C.,

Lockridge, A., Keith, M. 2005 Declining Sex Ration in a First Nation Community. Environ Health Perspect. 2005 Oct; 113(10): 1295–1298. A CBC account of the study is available here: http://www.cbc.ca/news/canada/windsor/first-nations-exposed-to-pollutants-in-chemical-valley-1.2438724

34. For an account of the dead and deformed puppies, consult a local media account here: http://www.aamjiwnaangenvironment.ca/News%20Archive/Toxic%20Creek%20Worries%20Band%20043005.pdf

35. The transmission of environmental contaminants from local food sources to humans is addressed in the 2013 chemical exposure study by Basu, N.,et al cited above.

36. For a local account of deformed fauna, consult http://www.aamjiwnaangenvironment.ca/News%20Archive/A%20toxic%20creek%20runs%20through%20it%20091804.pdf; for an academic study of abnormalities in turtles in the Saint Clair river, consult Ashpole, S.L., Bishop, C.A., Brooks, R.J. Contaminant residues in snapping turtle (Chelydra s. serpentina) eggs from the Great Lakes-St. Lawrence River basin (1999 to 2000). Arch Environ Contam Toxicol. 2004 Aug; 47(2): 240-52.

37. For an account of boils as a result of touching water on the Aamjiwnaang reserve, consult: http://rabble.ca/blogs/bloggers/making-waves/2012/05/visit-ground-zero-great-lakes

AAMJIWNAANG AND CANADA'S ENVIRONMENTAL RACISM

38. For an account of the Warren County movement by Robert D. Bullard, known as the grandfather of the environmental justice movement, consult his book Dumping in Dixie: Race, Class, and Environmental Quality (an excerpt is available here: http://www.ciesin.org/docs/010-278/010-278chpt2.html)

39. The first report of the EPA's Environmental Equity Workgroup is available here:
http://www.epa.gov/environmentaljustice/resources/reports/annual-project-reports/reducing_risk_com_vol2.pdf

40. For a few useful academic accounts of environmental racism in Canada, consult the following links:
Ontario context: http://www.cehe.ca/sites/default/files/Miller_ENSC501.pdf
Canada-wide context: http://www.cpsa-acsp.ca/papers-2010/Jacobs.pdf
Comparison of US and Canadian contexts: http://www.cprn.org/documents/50875_EN.pdf

41. Useful coverage of the so-called gas plants scandal can be found in this Globe & Mail article: http://www.theglobeandmail.com/news/politics/ontario-liberals-gas-plants-scandal-everything-you-need-to-know/article23668386/

42. An academic account of Cree resistance to hydroelectric dams is available here: http://spectrum.library.concordia.ca/975729/1/MR40833.pdf

43. Grassroots index of resources on Elsipogtog available here: http://apihtawikosisan.com/2013/10/resources-on-elsipogtog/

44. Grassroots list of Indigenous resistance to tarsads in Alberta available here:
http://yinkadene.ca/index.php/resources/backgrounder_on_the_first_nations_anti_tar_sands_delegation_to_ottawa

WHY AAMJIWNAANG MATTERS

45. One definition of overburden can be found on the infomine website: http://xmlwords.infomine.com/xmlwords.htm

46. Ontario's Petroleum Legacy p. 74

47. Figures on the extent of tarsands exploitation taken from the website of the Pembina Institue:
http://www.pembina.org/oil-sands/os101/alberta

48. A useful account of efforts to trace oil from extraction in the Alberta tarsands to refinement in Sarnia can be found here:
http://www.tarsandswatch.org/files/TarSandsToxicTrail_0.pdf


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NO MORE
CHEMICALS
IN THE VALLEY
TAR
SANDS

CHEMICAL VALLEY DOCUMENTARIES

INDIAN GIVERS by The Kijig Collective:

A grassroots documentary focusing on the larger colonial context of the Chemical Valley and cultural revival in Aamjiwnaang:
https://www.youtube.com/watch?v=pot411GJzdM

CLOUDMAKERS by Rachel Deutsch:

An informative and poetic documentary privileging the first-hand accounts of Amjiwnaang residents:
https://vimeo.com/57193686

CANADA'S TOXIC CHEMICAL VALLEY by VICE:

An overview of the current state of the environmental racism situation in the Chemical Valley, with some historical background:
http://www.vice.com/en_ca/video/the-chemical-valley-part-1

TAKE ACTION

Aamjiwnaang Water Project

Aamjiwnaang community members are fundraising to have samples from multiple bodies of water in the Aamjiwnaang area analyzed for contamination. This will be one of the first water tests undertaken independent of industry influence and it will enable to community to get more complete information on what is actually in the water. Donate here:
https://www.indiegogo.com/projects/aamjiwnaang-water-project/x/7515501

Toxic Tours

Aamjiwnaang & Sarnia Against Pipelines (ASAP) organizes Toxic Tours on an annual basis to raise awareness about the Chemical Valley. For more information on the next Toxic Tour, visit ASAP's website:
http://aamjiwnaangsolidarity.com/

Stay Informed and Updated

ASAP Facebook page:
https://www.facebook.com/AamjiwnaangSarniaAgainstPipelines/timeline
ASAP Twitter handle: @TakeActionASAP