

A Town Called Asbestos

Environmental Contamination,
Health, and Resilience in a
Resource Community

JESSICA VAN HORSSSEN

FOREWORD BY GRAEME WYNN



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Library and Archives Canada Cataloguing in Publication

van Horssen, Jessica, author

A town called Asbestos : environmental contamination, health, and resilience in a resource community / Jessica van Horssen.

(Nature, history, society)

Includes bibliographical references and index.

Issued in print and electronic formats.

ISBN 978-0-7748-2841-3 (bound). – ISBN 978-0-7748-2843-7 (pdf)

ISBN 978-0-7748-2844-4 (epub)

1. Asbestos (Québec). 2. Asbestos (Québec) – History. 3. Asbestos (Québec) – Economic conditions. 4. Asbestos mines and mining – Québec (Province) – Asbestos. 5. Asbestos mines and mining – Environmental aspects – Québec (Province) – Asbestos. 6. Asbestos mines and mining – Health aspects – Québec (Province) – Asbestos. Asbestos industry – Québec (Province) – Asbestos. 8. Asbestos industry – Political aspects – Québec (Province) – Asbestos. I. Title. II. Series: Nature, history, society

FC2949.A82V35 2016

971.4'573

C2015-905843-0

C2015-905844-9

Canada

UBC Press gratefully acknowledges the financial support for our publishing program of the Government of Canada (through the Canada Book Fund), the Canada Council for the Arts, and the British Columbia Arts Council.

This book has been published with the help of a grant from the Canadian Federation for the Humanities and Social Sciences, through the Awards to Scholarly Publications Program, using funds provided by the Social Sciences and Humanities Research Council of Canada.

UBC Press

The University of British Columbia

2029 West Mall

Vancouver, BC V6T 1Z2

www.ubcpres.ca

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FOREWORD

The Long Dying

Graeme Wynn

THE TENTH VOLUME in a highly acclaimed series of crime-fiction stories by Quebec author Louise Penny begins with former police inspector Armand Gamache settling into his retirement. Living happily in a modest village nestled in the forested, rolling hills between Quebec and Vermont, he revels in morning walks with his wife and dog, and the pleasure of sitting on a hilltop bench to read in the sunshine. Occasionally, he takes the opportunity to gaze down at the settlement of Three Pines below, huddled next the river, “as though held in the palm of an ancient hand. A stigmata in the Québec countryside. Not a wound, but a wonder.” Readers of *The Long Way Home* soon learn that the Gamache house fronts on to the little green of this picturesque village. Clad in white clapboard with a large verandah in front, and a terrace and large neglected garden out back, it is something of a magnet in the social life of Three Pines. Here Armand and Reine-Marie entertain friends, inviting them on summer Friday afternoons to settle into Adirondack chairs on the lawn and enjoy white wine and morsels of “smoked trout on rye.” Then, as dusk arrives, tea lamps are lit, making it appear as though “large fireflies had settled in for the evening.” The village had “the rhythm, the cadence, of a piece of music.” So much was right with this world that even weeds became glories: the “tall, effusive bouquet” that brightened the inside of the Gamaches’ home was made of purple loosestrife, bishop’s weed, and bindweed.¹

This idyll was not for long, however. Asked by a neighbour for help in locating her estranged artist husband, Gamache embarks on a journey that carries him into the province’s harsh backcountry and brings him face to

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face with the heart of darkness. On a boat along the St. Lawrence, bound for the lower North Shore ("A coast so forbidding, so hostile it was fit only for the damned"), the detective and his companions begin to suspect a devious plot to cause death by unconventional means, when a white powder is discovered in a tube that once held a painting or a blank canvas.² The air of fundamental decency and goodness associated with Three Pines gives way to a sense of iniquity and terror as the detective identifies the substance and quizzes a young science teacher on her way to Blanc Sablon about its properties.

Suspecting that the powder might be asbestos, the group learns that it is dangerous if inhaled. "How long does it take to kill someone?" they ask. "Depends," says the teacher, "it does take a while for the effects to be noticed." Well then, said Gamache, "would the person necessarily die, if he inhaled it?" Immediately concerned, the teacher looked quizzically at her interrogators. "No," Gamache smiled reassuringly. "But if we had, then what? Would we die?" Hmmm, said the teacher, "you might. It's one of those tricks of fate. Not all asbestos miners developed lung disease. Some people exposed only incidentally did." And so the questions continued, until Gamache summed up what he had learned: "Asbestos is deadly." Nothing was certain, "but there was a pretty good chance that whoever handled ... [the] asbestos-infected paintings would inhale it and eventually die." Earlier, an Internet search for information about the substance had revealed that "it had seemed a godsend to a hardscrabble region [of Quebec where it was mined]. Natural, plentiful. It was both an insulator and a fire retardant. Asbestos would save the region and save lives. It was magic." But it was not enchantment that Gamache confronted on his journey into another hardscrabble region, the territory described by John Cabot as the land God gave to Cain; it was murder, the very crime for which Cain had been cursed by God.³

Asbestos intrudes into Louise Penny's book as a mysterious, toxic substance, but it is more important as an idea that helps knit together good and evil, magic and malevolence, despair and redemption, brokenness and grace. It augments and amplifies the message of the little volume that Gamache reads on his hilltop bench: "There is a balm in Gilead, / To make the wounded whole. / There's power enough in Heaven, / To cure a sin-sick soul."⁴ For Jessica van Horsen, by contrast, asbestos is both a material substance (fibrous chrysotile, the progenitor of the deadly powder that worried the detective so) and (with a capital A) a real place, a town called Asbestos, not far from Gamache's Three Pines in the *Estrie* (Eastern Townships) region of Quebec. Her book knits these two versions of asbestos

together into an arresting and important account of how economic, political, geological, and social circumstances, the restraint of information, and the denial of risk led to the long slow death of a community and many of its people.

A Town Called Asbestos is, quite remarkably, the first book-length study to consider the environmental history and geography of this storied and troubled place. Rooted in government and corporate archival sources, local newspaper reports, and town council minutes, as well as a rich array of other reports and published material, the volume before you traverses the blurred boundaries between humans and the natural environment, and explores, to revealing effect, “the intimacy between life and labour” in a single-resource town. It details how residents of Asbestos thought of themselves and their community and fought – proudly and staunchly – for the survival of both through the rise and fall of the industry on which they depended. But it is also unflinching in revealing how many of those who struggled and persisted here against great odds fell prey, in time, to asbestos-related diseases, the full effects of which remained undisclosed for decades after they were known. Measuring their circumstances against the comfort Gamache found in the Gilead refrain, it is sobering to recognize that ignorance was the only balm available to these “unknowing test mice in a giant living laboratory,” the sick and wounded souls of *A Town Called Asbestos*, few of whom would ever be made whole again (van Horssen, this volume).

By describing Three Pines as a wonder, Gamache encourages us to think of Asbestos, by contrast, as a stigmatic wound marking the bodies of the land, people, and society that provide the central axes of van Horssen’s account of this part of eastern Quebec. Here, rolling Appalachian hills once clothed by forest are ripped asunder in the quest for chrysotile, and a mammoth open pit, thousands of metres in circumference and hundreds deep, is expanded inexorably to consume parts of the town housing those who work its depths. Here people carry the signs of close and prolonged exposure to asbestos fibre, signs often undetected and unrecognized until the coughing and shortness of breath that might have a dozen causes are identified by medical science as marks of mesothelioma or asbestosis. Here too, in this story of resource exploitation, society bears the consequences of inadequate regulation in a world devoted to economic expansion built on the bedrock of corporate profits. These are the marks of the Western world’s crown of thorns.

This is a compelling story. It has never been told in quite this way or, specifically, for this particular place. But it is also, at base, an old and fam-

iliar tale, one that draws on and echoes prominent and recurring themes in the environmental (and economic and social) history of the modern world. Van Horssen's interest is clearly focused on Asbestos, but her account – which engages broad intellectual horizons and sharpens understanding of the human condition – ranges widely across disciplines, their literatures, and the face of the earth. This is the story of a town, its people, and its major industry. But the nature of that industry created environmental problems for the town; afflicted its citizens with illnesses that were the focus of a growing body of international medical research; linked this small place in Quebec to communities elsewhere through commodity chains and corporate ties; and embroiled Asbestos, its citizens, the Johns-Manville company, and eventually the governments of Quebec and Canada, in a global debate about the morality of continuing to utilize asbestos. This, then, is a timely reminder that the modern world is a tangled web of connections among farms, factories and consumers, companies and politicians, actions and reactions, and that – as environmental historian Brett Walker has noted in his book on the toxic archipelago of Japan – “our lives depend on these relationships – and are imperiled by them as well.”⁵

A half century and more ago, Rachel Carson drew attention to the toxic implications of one of these interconnections – the slow build-up of synthetic chemical pesticides in the bodies of living beings. Developed by scientists to kill pests that ravaged crops and spread disease, these substances (such as DDT) did exactly the work for which they were intended but much more besides as they entered the food chain. Because most pesticides are relatively persistent in the environment (DDT has a half-life of fifteen years), Carson argued that their indiscriminate use would have lasting and detrimental effects as the twinned processes of bioaccumulation and biomagnification raised their concentrations to levels that were fatal to birds and fish and threatened human health.⁶

Silent Spring, the book that brought this message to the world, drew its title from a poem by John Keats and began with a wonderful evocative essay that both encapsulated and distorted its essential argument.⁷ “There was once a town in the heart of America where all life seemed to live in harmony with its surroundings,” wrote Carson in “A Fable for Tomorrow.” Species-rich forests, “great ferns and wildflowers,” birds and fish in abundance, foxes barking in the hills, and deer “half hidden in the mists of the fall mornings” as they ghosted across the checkerboard of fields that surrounded prosperous farms, these were the elements of this calm and pleasant place, just as they had been since the first settlers arrived many years before. But they were no more. A “strange light [had] crept over

the area,” animals sickened and died, farmers and their families took ill, and a strange stillness lay over the land as no birds sang. Neither witchcraft nor enemy action had caused this transformation. “The people had done it themselves.” Earlier in the year they had sprayed a “white granular powder” that fell “like snow upon the roofs and the lawns, the fields and streams.” Mere weeks had turned that fair town in the heart of America from idyll to wasteland, from wonder to wound.

But the stillness that Carson feared and anticipated to such telling effect would not envelop the land overnight. DDT is sub-lethal to species other than insects, and its effects on bird populations are felt through shell-thinning and reproductive failure rather than sudden, mass death. *Silent Spring* is about the long-game; it deals with slow-moving processes that work incrementally to produce calamitous repercussions on a time scale stretching across years and decades. Carson’s “Fable” is a powerful caution emphasizing the “grim specter” of environmental harm caused by human hubris – but it compresses time to achieve its effect. Faced with the challenge of portraying the “pervasive but elusive” consequences of what literary scholar Rob Nixon calls “slow violence” – by which he means the ravages wrought by climate change, deforestation, the aftermaths of oil spills, the release of radioactive substances into the atmosphere, and other slowly unfolding environmental crises – Carson used her fable as an opening gambit, to drive home the essence rather than the specific substance of her argument.⁸

Asbestos, the substance, perpetrated slow violence in Asbestos, the town – as well as in many other locations beyond – and van Horssen’s book contributes, quietly, to understanding the workings of that insidious process that Nixon characterizes “from a narrative perspective” as “invisible, mutagenic theater ... slow-paced but open-ended” and lacking “the tidy closure ... imposed by the visual orthodoxies of victory and defeat.”⁹ *A Town Called Asbestos* is, in essence, an account of the exposure of relatively poor and politically marginalized people to the slow-acting ravages of almost invisible fibres that degrade many of their bodies and generate a sense of uncertainty and foreboding about the future. It is the story of local economies, communities, and ecologies subject to the slings and arrows of fluctuating fortunes dictated by distant markets, remote corporate leaders, and politicians from afar. Through these pages we come to understand one of the cruel ironies that Nixon associates with slow violence: that it mostly goes unremarked, first because it is incremental in effect and complicated to explain, which makes it a difficult subject for media that “venerate the spectacular” and prefer “sound-bite” explanations;

and second, because its very gradualness takes it off the radar of politicians and policy makers focused on the immediate and newsworthy. Centred though they are in eastern Quebec, the developments traced here also reveal that slow violence is generally as much the consequence of choice as of time – that few things “just happen,” and that the courses on which events unfold always depend, to some degree, on the decisions and (in)actions of those involved in them.

Silent Spring was a landmark book, one of the most important pieces of environmental writing ever produced. It did much to change North American attitudes toward nature, driving home the fundamental ecological message that everything is connected to everything else, crystallizing emergent concerns about the systemic spread of radioactive substances, such as Strontium 90; the damaging effects of new drugs, such as thalidomide; and spawning the modern environmental movement.¹⁰ For its admirers, it “altered the balance of power in the world,” and ensured that “no one since would be able to sell pollution as the necessary underside of progress so easily or uncritically.”¹¹ But there are limits to what any book can do, and the history recounted in *A Town Called Asbestos* suggests that admiration for Carson’s achievements should be less sanguine.¹²

One of the most chastening observations to fall from Rob Nixon’s reading of postcolonial literature from an environmental perspective, and the close linkage between environmental degradation and the oppression of the poor revealed by this, is that “slow violence provides prevaricative cover for the forces that have the most to profit from inaction.”¹³ Reflecting on the ways in which this occurred in the global south over the last thirty years, Nixon notes that deception and misrepresentation have been integral to the evasive tactics that have created space to stall. Here he has the doubt-disseminators of Big Oil, Big Coal, and Big Tobacco firmly in his sights – the lobbyists, consultants, media plutocrats, and right-wing think-tanks that deal in ambiguous, confusing, and false information to create a climate conducive to inaction. These are the “bewilderers,” those whom Frantz Fanon saw standing alongside self-proclaimed moral teachers and counselors to “separate the exploited from those in power” in capitalist countries, much as the policeman and the soldier, the rifle butt and napalm, served to segregate natives from settlers in the colonies.¹⁴ In *Asbestos*, the deceptions may have been less complete, less blatant, and less orchestrated than those choreographed by merchants of doubt in the neoliberal world order.¹⁵ But Johns-Manville; their local white-collar employees; and municipal, provincial, and federal politicians all found some benefit, and a degree of cover, in the claim that some level of pollution was an inescapable

consequence of maintaining jobs and profits (and the often less-than-forceful actions to minimize it that ensued).

Pathos and tragedy are significant themes in van Horssen's history of Asbestos but they are not all she wrote. There are important positive dimensions to this story, which endows the people of the community with that most fundamental and admirable of human characteristics: resilience. Against the odds, in the face of difficulties and indignities of various sorts, they battled on. At times they were misguided; at others, in stubborn denial of what others could see and believed to be against their best interests. But the mine meant work, a paycheque, and the chance to own a house and enjoy the comforts of home. As Gamache learned, these things "seemed a godsend" in this hardscrabble region. Even after much had gone sour, jobs were lost, and the long-term effects of asbestos exposure were clearly evident in elevated cancer rates and newly public medical reports, long-time residents were reluctant to deny the magic that asbestos had wrought in the area. In 1997, four men from the community ran a marathon in France to show that there was nothing wrong with their lungs, and a decade after that many townspeople rallied against changing the name of the town to Trois Lacs or Phoenix because they felt that to do so would be to "tell the world that we are ashamed of our product."

Naïve, poignant, even pitiable though they may seem, such gestures are important because they force us to ask "Why?" Reading *A Town Called Asbestos* and wondering why people delude themselves in the face of overwhelming evidence challenging their convictions, we might find some explanation in the importance society attaches to getting ahead or hanging on – to self-reliance. And we might extend this thread to reflect on the power of expectations, on the way "responsibilities" are ingrained and shaped by prevailing discourse and so on.

Asking "Why?" again, we might ponder the moral and emotional dimensions of this story without reducing it to the sort of high melodrama that turns on simplified versions of the actors and the issues. Indeed, there are complex, difficult matters at stake here. As other studies have noted, failures to recognize and act on the deleterious effects of the mineral are not always wilful. Asbestos fibres are microscopic – "one million fibrils can be lined up in one inch" – and their impact on human health remains latent for decades. But van Horssen makes it clear that the silences surrounding asbestos pollution in Quebec cannot be attributed largely or entirely to such "material constraints." There is ample evidence that institutional inertia, corporate concealment, and a weak regulatory environment allowed the asbestos hazard to go unaddressed far longer than might

or ought to have been the case. So, for example, Johns-Manville company officials, unwilling to sacrifice profits for the health of workers, insisted that they could control the asbestos dust problem, and no health officials insisted on rigorous scrutiny of their claims.¹⁶ But why, we must ask, were opportunities for such behaviour created and then allowed to prevail? Why is it that companies have been able to put profits before people (and the environment) in their calculus of significance? Might it have anything to do with the observation, made by van Horssen, that effective campaigns against asbestos only began when Western society came to understand the risks it posed to the public at large—and the implication that some people – miners? the poor? – are “disposable,” or hardly worth society’s concern?

Finally, this book might lead readers to ask why, in a country as affluent as Canada, politicians and governments were willing to dissemble and deny to keep asbestos production afloat. Why were national and provincial leaders willing to stand on the world stage and deflect pressures to stop extraction, or pretend that Canadian asbestos really was magically “inert” and benign, when this meant risking, if not literally sacrificing, the lives of citizens? Surely there were alternatives. Then as now, it was and is inappropriate to defer to the economy, profits, and prosperity as the reasons for inaction. We should not forget that the long dyings continue. A recent report in the *Globe and Mail* noted that “about 152,000” Canadian workers are currently exposed to asbestos and that such exposure was “the single largest on-the-job killer in Canada, accounting for more than a third of total workplace death claims approved last year [i.e., 2013] and nearly a third since 1996.”¹⁷ Other countries have banned asbestos just as they have acted more decisively than has Canada on a number of other vexing environmental and social-justice concerns. Should not this story of asbestos in Quebec lead us to ask whether there are parallels in the ongoing development of the oil and gas industry in Western Canada even as scientific evidence of the global perils of greenhouse gas emissions mounts, and there are troubling signs of detrimental health outcomes for residents downstream and downwind of the oil sands?

Recognizing that deception and misunderstanding are important elements of *The Long Way Home*, even as its plot turns on the ways in which artists (and others) can lose their souls in the pursuit of greatness, one reviewer found a lesson in that book. “Those who manage to find a balm for their past wounds, move forward in their lives.” Pain and struggle may persist but they are able to “keep walking on into the light of a new and brighter day.” By contrast, “those who cling to the scars of the past die in

the shadows.”¹⁸ In the assessment of another reader, Gamache drew his own life lesson from his long career in the Sûreté du Québec: “People must be saved ... from the brutality of others and sometimes from themselves.”¹⁹ Both, it seems to me, are lessons reaffirmed in the pages of *A Town Called Asbestos*, and they and this book are worth reading (and remembering) for that, as we grapple with what Edward Said once called “the normalized quiet of unseen power.”²⁰

INTRODUCTION

Introducing Asbestos

WHAT'S IN A NAME? At the start of my research on Asbestos, Quebec, in December 2007, G. Claude Thérout of the Société d'Histoire d'Asbestos took a piece of raw asbestos from his pocket and threw it onto the table between us. "You want to know Asbestos? Now you know it."¹ Looking at the table in shock, I asked, "Aren't you afraid of getting sick?" At the start of my research, before I had begun to realize the connection the townspeople felt with asbestos, this was an understandable question. It was also a naive one. A retired history teacher who had put himself through university by working at the massive opencast Jeffrey Mine located in the centre of town, Thérout handled the mineral with a familiarity passed down to him through generations who had made Asbestos their home.

From the late nineteenth century until the 1970s, the Western world became increasingly reliant on fireproof materials made from asbestos. The town of Asbestos grew in size and influence alongside this demand. As industry increasingly added asbestos to building materials, auto parts, and household appliances, medical professionals and company officials discovered its harmful effects on human health, but they did not inform the general public or asbestos workers of the risks.

The town of Asbestos was completely dependent on this deadly industry for its survival. Because of this dependence, townspeople developed a unique, place-based understanding of their local environment, the risks they faced living next to the giant opencast asbestos mine, and their place

within the global resource trade. The local–global tensions that define this history can help us understand the broad problems and possibilities other resource communities have faced, and continue to face today.

A BRIEF OVERVIEW

The resource town of Asbestos is located in the Eastern Townships of Quebec, Canada, halfway between Montreal and Quebec City, north of Sherbrooke and south of the St. Lawrence River (see Figure 1). It is the site of the Jeffrey Mine, once the largest opencast chrysotile asbestos mine in the world, long owned by the industry leader, the American Johns-Manville Company (JM). By examining the history of Asbestos, this book offers new perspectives on the ways in which bodies of land, human bodies, and the body politic converge in resource communities at both local and global levels.

The history of Asbestos is rooted in the mineral that lies beneath the town. The term “asbestos” encompasses six different types of the mineral found throughout the world, whose chemical makeup varies with the deposit’s origins and era of formation. The white chrysotile asbestos found in places like North America, Russia, Zimbabwe, China, and Brazil was formed in serpentine rock. The five other mineral types – amosite, athophyllite, crocidolite, tremolite, and actinolite – were formed in amphibole rock.² Some of these possess longer fibres that are more easily woven than chrysotile, but all occur as a fibrous rock that can be broken apart by hand until it resembles raw cotton. Asbestos was added to a variety of goods to improve their resistance to burning, rust, and decay.³ The chrysotile found in Asbestos (see Figure 2) is composed of magnesium, silicon, and oxygen ($\text{Mg}_3\text{Si}_2\text{O}_5[\text{OH}]_4$)⁴ and is able to withstand temperatures in excess of 3000°F. Once considered both magical and modern because of its fireproof qualities, asbestos also causes cancer and other deadly diseases.

Although its “magical” qualities were known in the nineteenth century, the first boom in asbestos production did not occur until the First World War, when the mineral was used in soldier’s uniforms and firefighting equipment. After the war, it became a key component in reconstruction efforts. International demand for asbestos was fuelled largely by society’s desire for modern conveniences: fire-retardant housing materials, fireproof clothing, long-lasting cement structures, and safe and durable automobile

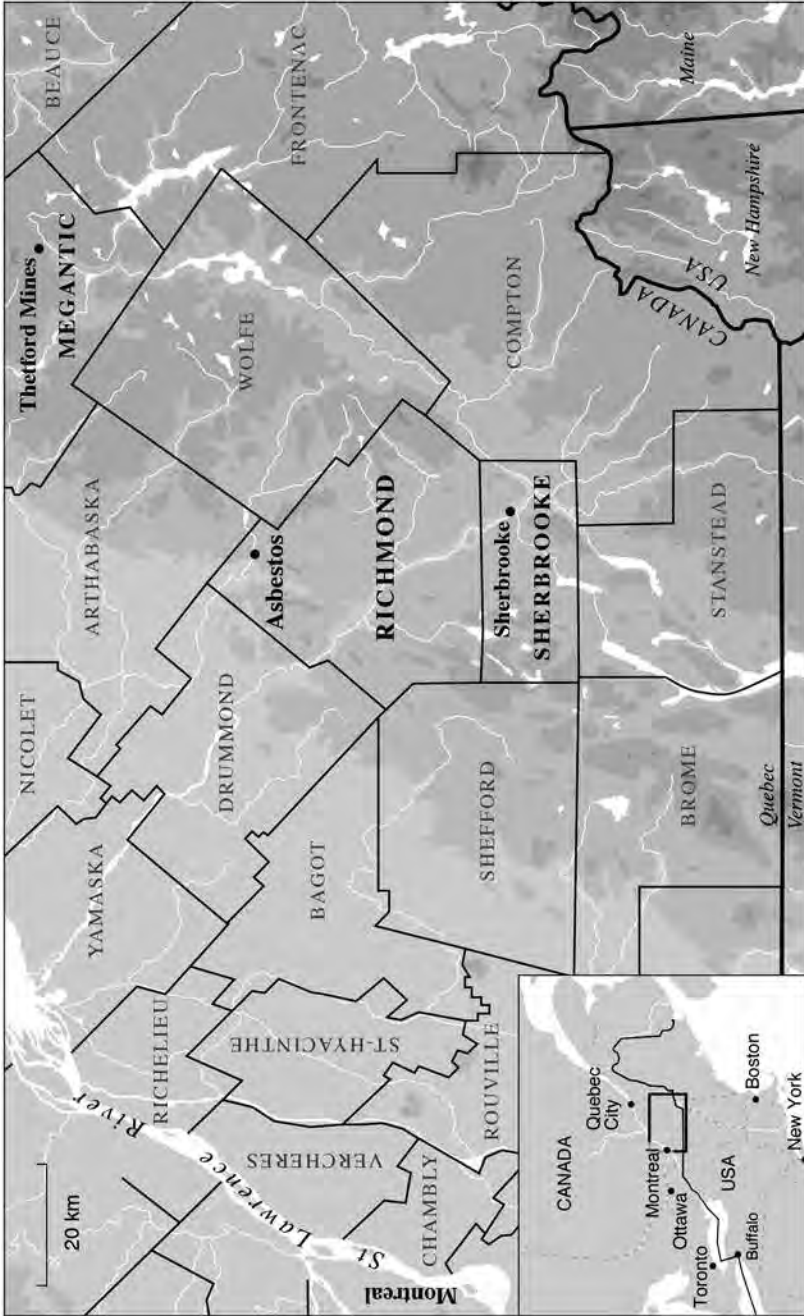


FIGURE 1 Map of the Eastern Townships, 1924
 Source: Adapted from ETRC by Eric Leinberger



FIGURE 2 Canadian chrysotile asbestos
 Source: W.G. Clark Fonds, ETRC

parts. Asbestos promised safety for those who used it and profits for those who sold it. Chrysotile asbestos from Quebec once made up 95 percent of the global trade in the mineral (see Figure 3); the Jeffrey Mine produced most of this supply.⁵ To fully appreciate how these production levels influenced both land and people in Asbestos, the following chapters situate the community and its industry within a local-global framework of large-scale environmental change, contamination, and resilience during the twentieth century.

While the Jeffrey Mine remained partly active until 2012, I use 1983 – the year Johns-Manville sold the mine after declaring bankruptcy – as a key date in its history and as the end date for this study. As geographer David Robertson writes, “all mines eventually cease to be profitable . . . In the majority of historic mining areas, however, remote locations and poorly diversified economies have ensured economic stagnation and decline following mine closure.”⁶ When I first began examining Asbestos in 2005, I considered 1983 to be the year the town collapsed, for without Johns-Manville operating the Jeffrey Mine, the town – and the industry – went into sharp, terminal decline. But as my research and study developed, I began to understand how survival and resilience play a central role in resource communities, which are so vulnerable to local and global changes.

Reading the volume *Questioning Collapse*, edited by Patricia A. McAnany and Norman Yoffee, further convinced me that survival was an important element in the history of Asbestos. McAnany and Yoffee posit that while corporations and industries may collapse, societies never do. Instead, “when closely examined, the overriding human story is one of survival

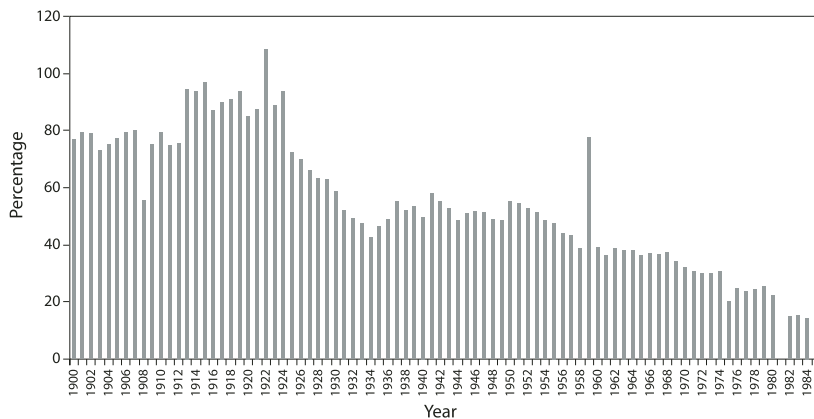


FIGURE 3 Quebec asbestos production as a percentage of world production, 1900–85

Note: There is a discrepancy in the figure for 1922, which reads as 108 percent of global supply, which is obviously incorrect, although I have found no data to suggest which number is wrong, so I have left it as is.

Source: The Quebec data is based on data provided by the Reports on Mining Operations (1898-1936) and on the Mining Industry of the Province of Quebec (1937-2000) (<http://www.mern.gouv.qc.ca/mines/desminesetdeshommes/index.jsp#annexe>), compiled by Marc Vallières. I have converted the short tons on the list to metric tons to more easily compare with the world data, which was provided by the United States Geological Survey, Circular 1298, Robert L. Virta, “Worldwide Asbestos Supply and Consumption Trends from 1900 through 2003, 2006 (<http://pubs.usgs.gov/circ/2006/1298/c1298.pdf>) 32-34.

and regeneration. Certainly crises existed, political forms changed, and landscapes were altered, but rarely did societies collapse in an absolute and apocalyptic sense.”⁷ This study shows that in the resource community of Asbestos, where the people and the land are so closely linked, the redefinition of the Jeffrey Mine from profitable to hazardous forced community members to adapt in order to ensure their survival.

There were other asbestos mines in the world, and other asbestos-producing companies, but for much of the twentieth century, none of them were as large or as far-reaching as the Jeffrey Mine and JM. The tons and tons of asbestos fibre that Jeffrey Mine workers extracted each day were shipped to factories around the world to be turned into household and industrial goods. This was a remarkable movement of community land, and the following chapters will highlight these changes alongside an analysis of the medical and political history of Asbestos to show how utilitarian perspectives on local environmental use influenced the global industry.

The history of Asbestos reveals local residents engaged in a constant struggle for balance between the community and the mine, while maintaining a commitment to both. This balance was affected by the interactions between the working-class French Canadian majority and the anglophone managerial elite, and between both and the natural world, and gave character and purpose to the land, the people, and the politics of Asbestos. While townspeople were often divided, their actions and reactions were rooted in their commitment to using the local environment to the fullest possible extent, and this raises questions about how the boundaries between people and the natural world dissolve in resource communities to shape a character that is unique to place.

So this book examines the local character of Asbestos and – echoing the insights of geographers Anthony C. Gatrell and Susan J. Elliott – shows that “people help to create places, and in turn people are shaped by the places they inhabit.”⁸ This includes how a community adapts to environmental change and contamination in order to survive. By structuring its analysis around bodies of land, human bodies, and the body politic, *Asbestos* folds together the environmental, medical, and political history of the town to show how its people understood place, self, and risk as they focused almost entirely on the success of the Jeffrey Mine, and the dangers – industrial and environmental – that residents confronted each day.

BODIES OF LAND

There were three interconnected physical realities in Asbestos: the mineral, the Jeffrey Mine, and the land on which the community was built. These I term bodies of land. The global demand for the mineral encouraged high extraction levels at the Jeffrey Mine, which periodically expanded into the community, displacing both homes and businesses.

Historical studies of land have been fundamental to the field of environmental history, in which the relationship between culture and the natural world is a key pillar. Environmental historian Richard White has urged scholars to re-examine the connection between work and nature, asserting that through labour, humans and the natural world become inseparable.⁹ This book extends this idea by showing that bodily knowledge of nature is gained not only by those who work directly with it, such as the men and women at the Jeffrey Mine, but also by those who live around it. The people of Asbestos knew the land through work, but men, women, and children, young and old, also knew it intimately simply by living in the community:

hearing the sounds of the machines in the pit, seeing and breathing the asbestos dust that hovered over neighbourhoods, experiencing the terror of rocks crashing through their homes during blasting, and using the mine as a focal point of celebration, community spirit, and play. In much the same way that the rapid industrialization of British Columbia's timber industry turned the forest into a giant factory without a roof,¹⁰ the Jeffrey Mine was a factory in the heart of the community. Johns-Manville constantly introduced new technologies to improve extraction rates and meet the rising international demand for asbestos. Far from distancing the workers from the resource they were extracting (as scholars have found occurring in other locales¹¹), these new technologies and a booming global market strengthened and politicized the connection between people and the natural world.

HUMAN BODIES

Pride and risk combined to define the community of Asbestos. The following chapters show how the connection between people and land can negatively affect human bodies – those of Jeffrey Mine workers and those of members of the broader community of Asbestos – and how those affected have confronted or ignored this reality. Medical histories too often separate the disease from the body.¹² By analyzing the lived experiences of those whose health the mineral directly affected, and of those who had to reconcile the dangerous land on which they worked with the community land on which they lived, this book humanizes the three main diseases caused by asbestos: asbestosis, lung cancer, and mesothelioma.

Asbestosis results from the inhalation of microscopic asbestos fibres over an extended period. Typically, those fibres build up in and harden the lining of the lungs, preventing them from expanding and contracting as they should. This leads to death by suffocation. Lung cancer is more commonly known, but because of the disease's association with tobacco, historically, industry-funded medical professionals who examined Jeffrey Mine workers were often able to attribute their lung disease to smoking cigarettes, not asbestos exposure¹³ – much to the advantage of asbestos companies. Mesothelioma is another asbestos-related cancer; it manifests itself in the linings of major organs, resulting in a fast-progressing, rarely curable disease. Skin, breast, ovary, and colon cancer are among the other diseases the mineral causes. All of these are extremely painful, can take between fifteen and thirty years to develop, and require an uncertain dose/

longevity of exposure to develop. This means, simply, that *any* exposure to asbestos can be dangerous to human health.

Rachel Carson's *Silent Spring*, published in 1962, is widely celebrated as one of the first books to elucidate the connection between human health and environmental contamination. Since then, scholars of global industries have attempted to bring large corporations that are responsible for environmental contamination to account. Matters of risk and health have historically been viewed in terms of class. People seem to expect miners to get sick, as if it is part of the job, and this plays into traditional stereotypes about working-class populations and lifestyles. This understanding has its roots in the Victorian era, when medical professionals and company officials began to regulate working-class culture through health reform.¹⁴ For much of the history examined in the following chapters, companies, courts, unions, and the media knew that asbestos was harmful to human health, but the mineral was so important to Western society that the industry survived well beyond initial reports of public risk and disease.

All of this allowed JM to use the community of Asbestos as a perfectly contained test laboratory, with citizens unknowingly acting as lab mice. In *Asbestos*, I provide a close examination of how townspeople slowly came to know about the risks they were subject to and how they internalized this knowledge to help the community – and the Jeffrey Mine – survive.

THE BODY POLITIC

A local understanding of risk and of the connections between humans and the natural environment also defined the body politic in Asbestos. This was a community sharply divided by class into three factions: Jeffrey Mine workers; middle-class community leaders; and upper-class company officials. A rich literature on risk illuminates how the community reacted to the mineral's negative health effects. Major works by Mary Douglas and Ulrich Beck encourage us to think of risks as political entities around which societies see and shape themselves.¹⁵ Furthermore, risk is not a stagnant or finite thing – rather, it operates on a sliding scale, with severity determined by people, place, and time. A risk that a miner deems acceptable to himself may not, even in his estimation, be acceptable for his children. The people of Asbestos were aware of the dangers the mineral posed to their bodies well before it became a public issue, but they chose

to attempt to manage the risks rather than reject the industry that gave the community purpose.

The local commitment to community survival in Asbestos was articulated in lived experience. Historian Joy Parr explains this process when she writes that “bodies are not only being *conditioned* by circumstances, they are also enduring reservoirs of past practice, which *actively influence* subsequent responses.”¹⁶ So my focus on bodies in this book, and on the unconscious knowledge they can reveal, relies on Parr’s concept of embodiment and distinguishes this study from other histories of mining communities. My highlighting of the women at the Jeffrey Mine and the agency the community exercised when it came to decisions on environmental development also distinguishes this study from many other mining histories.¹⁷

Rather than simply bowing to the will of a distant corporate headquarters, the people of Asbestos insisted again and again on keeping issues surrounding land and people local. Thus, they resented any action that breached the community’s borders. This book, too, will remain mostly within the community’s borders as it details a local history of this global industry. I will be arguing that land, health, and politics in this small Québécois town contributed to the asbestos industry’s exponential rise, as well as its thundering collapse.

NECESSARY BOUNDARIES

This book shows that place matters when we consider the reasons for, and effects of, large-scale environmental change and contamination. Environmentally, medically, and politically, there is something unique and hitherto unexamined about Asbestos. The mine is the source of the community’s pride and sorrow, success and decline, but to those from outside Asbestos, the town is widely known for two other reasons.

First, Asbestos was the scene of a dramatic strike between February and June 1949, a strike that some historians contend launched Quebec’s Quiet Revolution, a socio-political movement in which the province’s French Canadian majority became increasingly secular, gained control of the province’s major industries and businesses, and rallied their political strength to bring about major changes in Quebec and the rest of Canada.¹⁸ These changes – and the strike itself – were, of course, not limited to Asbestos, but by examining the tension between the working-class

francophone majority and the anglophone elite who filled managerial roles at the Jeffrey Mine, this study will be examining key themes of the Quiet Revolution relevant to other resource communities in the province, such as Shawinigan and Abitibi-Témiscamingue.

The principal publication to emerge from the 1949 strike was Pierre Elliott Trudeau's edited collection, *La Grève de l'amiante*, published in 1956. In his introduction, Trudeau wrote that "it is the date, rather than the particular place or the industry that is decisive."¹⁹ This book shows that Trudeau was wrong: the people, the place, and the industry involved in the 1949 strike were what made the dispute matter, not just in the history of Quebec but also in the history of Canada and the history of international trade and labour. Aside from a local history produced for the town's centenary in 1999, and a short article on the encroachment of the Jeffrey Mine on the town in 1967, this book is the first in-depth study of the community that focuses on more than the five-month strike of 1949, and it is the only one that examines the subject from the perspective of environmental history.

The strike was a local conflict with global ramifications because the industry had international reach and also because those involved in publicizing it became major figures in Québécois and Canadian political history. Maurice Duplessis, who often plays the villain's role in these accounts, was Quebec premier for eighteen years and had a powerful impact on the province's development. Jean Marchand, secretary for the Confédération des travailleurs catholiques du Canada (CTCC) union, slept in the homes of workers during the strike and went on to become a federal cabinet minister, a senator, and a Companion of the Order of Canada. Gérard Pelletier, a university friend of Marchand and reporter for the influential Montreal newspaper *Le Devoir*, became a federal cabinet minister, a Canadian ambassador, and a Companion of the Order of Canada. Pierre Trudeau, who briefly joined Pelletier in Asbestos, was prime minister of Canada for fifteen years. André Laurendeau and Pierre Laporte wrote for *Le Devoir* on the provincial implications of the strike and later served in the Quebec legislature.

The role of these historical figures in the 1949 strike has turned Asbestos into a place of symbol and myth regarding the state of Quebec on the eve of the Quiet Revolution. This book brings the community and the reasons for the miners' labour militancy back into the history of the strike to show how a local perspective can tell a broader history about resource towns, industrialization, health, risk, and political influence. The history of

Asbestos concerns much more than a labour dispute, and only Chapter 5 focuses on the 1949 strike, offering a play-by-play analysis of the conflict as it unfolded and irrevocably changed the community.

Second, Asbestos is widely known because from 1983 until 2012, the town received financial and political support from federal and provincial governments to keep the Jeffrey Mine, and therefore the town, alive, despite the mineral's known adverse effects on human health.²⁰ In other words, Canada exploited its generally positive international image to cast shadows over medical reports proving the dangers of asbestos, to avoid strict regulation of chrysotile in global markets, and to sell the mineral to developing countries, where workers and other citizens were neither adequately informed about the risks nor protected from them.

These aspects of the asbestos trade are not addressed in this study, which finds its end point in its examination of how environment, health, and politics contributed to the rise of Asbestos, followed by its decline in 1983, when Johns-Manville left the community after filing for bankruptcy the previous year. This is not to diminish the role Canada played in keeping the deadly industry alive for over thirty years after Western markets for the mineral had collapsed, and after the dangers of asbestos became widely known. With their stories of government officials making suspect alliances and continuously prioritizing industry over human health, the chapters that follow suggest that recent aspects of this story are a haunting echo of long-established patterns of behaviour.

I contend that 1983 was the end of an important era in Asbestos, marked by massive profits and corporate deceit but also by community pride. The Jeffrey Mine was the biggest of its kind in the world for much of the twentieth century, Johns-Manville was the largest asbestos-producing company during this same time period, and the community of Asbestos connected the two. By returning scholarly focus to the community of Asbestos, I hope this book offers new analysis of how environmental change, contamination, and collapse affect resource towns, emphasizing the local-global connections and tensions that industry brings to a community, and that community brings to the world.²¹

THIS BOOK IS ABOUT the interaction of bodies of land, human bodies, and the body politic. Chapter 1 traces the origins of the asbestos industry in Quebec, the opening of the Jeffrey Mine, and the founding of the town by examining geological shifts, human migration, and the development of a community reliant on a single resource. It shows how these elements

interacted in Asbestos before the First World War, during which New York's H.W. Johns-Manville Co. purchased the Jeffrey Mine and thereby changed the character of the community.

Chapter 2 is the first of three focusing on the 1918–49 period between the arrival of JM in Asbestos and the strike of 1949. In this chapter, I focus on the changes JM made in Asbestos by expanding the boundaries of the mine, introducing new technologies for industrial efficiency, and convincing local residents that production came before people and that residents needed to make sacrifices for the community's survival.

Chapter 3 examines environmental contamination and health between the wars. It relies on confidential medical reports detailing the spread of asbestos-related disease in the community and shows how JM prevented this knowledge from reaching workers and the general public. It also situates Asbestos within historical literature on industrial health and hazards²² and examines how JM gained power over medical evidence – and the bodies of their workers – by allying itself with medical researchers and insurance companies to present the most benign view possible of the risks asbestos posed to human health.

One of the most fascinating aspects of the community of Asbestos is its commitment to the Jeffrey Mine despite the risks associated with it. In Chapter 4, we see that this commitment was linked to a sense of ownership. JM was powerful, but the people of Asbestos demonstrated their autonomy through strikes and protests whenever they saw the company developing the Jeffrey Mine in ways with which they disagreed. This chapter also illustrates the agency of community members despite the constraints that come with living in a single-resource, single-company town, and shows how invested they were in the changes that benefited or threatened their survival.

Labour historians have long viewed the 1949 strike in Asbestos as a turning point in the history of the working class in Canada and of the Quiet Revolution in Quebec. By focusing on land, health, and community during the conflict, Chapter 5 examines the strike as a turning point, but a profoundly local one, rooted in issues of land use, environmental health, and power. This chapter examines how the conflict changed the local population's understanding of themselves and the land.

Again pulling apart the historical perspectives in Asbestos, Chapter 6 focuses on how land was used, changed, and understood in the community between the 1949 strike and 1983, when JM sold the Jeffrey Mine. It provides an in-depth analysis of large-scale landscape change as production

levels increased at the Jeffrey Mine and as the community surrounding it made physical and ideological sacrifices to facilitate the industrial transformation of the environment.

In Chapter 7, I examine how growing public awareness of asbestos-related disease affected Jeffrey Mine workers and other members of the community. As the industry rapidly declined around them, Jeffrey Mine workers became its biggest advocates, minimizing the risks it posed and using their own bodies to show they were unaffected by asbestos-related disease. Much of this was based on the false information about the mineral's effects that JM had provided its employees for decades, but it also reveals significant working-class agency in Asbestos. Jeffrey Mine workers were increasingly exposed to reports that proved asbestos was dangerous to them and the general public, but as the industry collapsed, many of them chose to diminish the risks and their own bodily knowledge for the sake of community survival.

In the final chapter, I examine how local residents negotiated the challenges generated by the industry's decline between 1949 and 1983. Through an analysis of local, national, and international efforts to keep the Jeffrey Mine open and the population of Asbestos employed in the late 1970s and early 1980s, I show both the vulnerability and the resilience of resource communities confronting industrial collapse and environmental contamination. How townspeople dealt with this physical reality was directly informed by their history over this time period.

Each of these chapters begins with a brief look at Asbestos today, to show how the past is reflected in the present. As a whole, this book offers a chronological examination of the ways environmental change, contamination, and resilience have added texture and depth to the histories of Asbestos and the global asbestos trade. This book explores the blurring of the boundaries between humans and the natural environment and highlights the local-global relationship between resource industries and international trade networks. Along the way, it illustrates how radical landscape change and environmental risk collided in Asbestos; it also broadens our understanding of how resource communities negotiate and accept risk by creating place-based definitions of health and survival.

Through cyclical booms and busts, "asbestos" became not simply what the local population mined or where they were, but a commitment to place, people, and community. In the process of working the Jeffrey Mine and establishing a community around it, the people of Asbestos entered into a relationship of mutual exchange with the land, shaping it and being

shaped by it. How does a community take shape around a constantly growing open pit mine? How do communities develop a local understanding of health? Who defines risk and danger, and how? Can a small resource community influence global trade policy? How do international borders and networks complicate local self-determination? This book answers these questions as it examines the history of the Jeffrey Mine and the community that surrounded it.

I

Creation Stories: Asbestos before 1918

THE APPALACHIAN MOUNTAINS surrounding the community of Asbestos act as a striking balance point to the opencast Jeffrey Mine, which is located in the centre of town. Indeed, it is difficult to avoid either as you walk the streets of the community today, especially once you realize that both were created by the same geological shifts and collisions millions of years ago. Asbestos fibre was born of geological friction and heat. Asbestos the place would follow suit, being created and re-created with the friction and heat of clashing cultures, ideologies, and aspirations. The asbestos deposits of southeastern Quebec were shaped by the breakup of the hypothesized supercontinent Rodinia at the beginning of the Precambrian period 750 million years ago. Major tectonic shifts pushed mountain chains that were once part of the ocean floor into the land mass that was to become North America during the Devonian period between 410 and 355 million years ago, creating the Appalachian Mountains, a range extending from Greenland to the southern United States, passing through what was to become Asbestos. The intense heat and friction of this process chemically reconstituted the serpentinite rock at this particular site, and in its recrystallization, the chemical composition was changed and veins of asbestos fibre were formed.¹

The Jeffrey Mine resulted from a geological quirk. Most of the world's asbestos is found in veins, usually several metres in length, arrayed along a linear plane. This meant that a number of mines were often established beside one another to access entire deposits. By contrast, the asbestos deposit near the town of that name was found in circular veins forming

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a rounded knoll of marketable asbestos. This deposit could be exploited, in its entirety, by opencast extraction at a single pit that became the Jeffrey Mine.

Scientific interest in the geology of this area began with the founding of the Canadian Geological Survey (CGS) in 1842. William Edmond Logan, a British-educated Montrealer and the first head of the survey,² was fascinated by the geological past of the region. In his first survey report on Quebec, he offered a detailed description of the area that would become Asbestos. Fellow surveyor Alexander Murray also examined the geological history of the region, searching for rocks and minerals of economic value. Noting the presence of green serpentine rock that would be excellent for ornamental architecture, Murray wrote that it would be of value only “when free from veins of asbestos [*sic*].”³ The mineral had little practical application and no economic value.

The GSC was pessimistic about the region’s agricultural prospects. Even so, the colonial government built railways through the region, which led to dramatic social, economic, and environmental change. With the opening of the Grand Trunk Railway in 1852, people flocked to the region to settle and farm along the line, which bypassed the future site of Asbestos by four miles. At the time, other parts of Lower Canada were facing a population crisis. By 1862, the Eastern Townships had a population of 200,000, largely due to the influx of French Canadians.

In the 1870s, workers constructing the Quebec Central Railway, which ran through the Eastern Townships on its way from Lake Huron to Quebec City, uncovered significant amounts of asbestos near the community of Thetford. The discovery came at an opportune time, for American manufacturers were starting to specialize in asbestos-based building products to meet a growing demand in the industrializing United States.⁴ As the nineteenth century ended, different factions of the Eastern Townships’ population – English, French, upper class, working class – fought over who controlled the land. Asbestos was often central to this struggle.

For many years, geologists and industry experts had considered the deposits at Thetford, 100 kilometres from Asbestos, to be the largest in the world. Industry leaders and workers looking for employment soon came to know this area as the “asbestos belt.”⁵ Because of the CGS’s detailed descriptions of the region, the mineral was easily identifiable to those without geological training. This was how gentleman farmer William H. Jeffrey discovered the mineral in the late 1870s. He convinced Charles Webb, who owned the land, to go into business with him. It is not clear how the two met, nor is it clear how exactly Jeffrey discovered the asbestos

deposit on Webb's land. However, once the discovery had been made, Jeffrey controlled the mine operations and Webb controlled the budget. While neither knew the full extent of the deposit, Jeffrey and Webb's efforts in 1879 began a major redefinition of the land on which they would help establish the town of Asbestos.

AN ENVIRONMENTAL REVOLUTION, 1879–99

A year after Jeffrey's discovery of asbestos, the *Acte général des mines* du Québec established new mining regulations to ensure that the government received a portion of any profits that came from the land.⁶ In 1881, the year in which the Quebec government appointed Joseph Obalski as director of mining services, Jeffrey and Webb employed fourteen men – seven French Canadians and seven English Canadians – to clear the land and begin mining asbestos.⁷ The work was slow and arduous.

Carving out the opencast Jeffrey Mine involved a real physical struggle with the land. Operations only took place in the summer, when the earth was neither frozen by the cold nor flooded by the thaw.⁸ A crew would clear the surface soil with picks, shovels, and the occasional ox-driven scraping cart until they uncovered the bottle-green serpentine rock, which contained veins of asbestos between five and twenty feet down. Workers would then blast free large pieces of rock surrounded by asbestos veins.⁹ They would then bring the chunks of rock to the cobbing shop, where boys broke it apart with hammers and sorted the asbestos fibres according to length.¹⁰

The dangers involved in blasting large rocks out of the ground meant that the population growing around the Jeffrey Mine understood physical risk.¹¹ Health care was not a primary concern for the workers carving out the Jeffrey Mine, and regional access to doctors was limited. Miners had to accept the risks that came with their occupation; if they were injured, there was a chance they would die. The biggest health threat associated with asbestos at this time was the act of mining itself; there was no awareness of the specific dangers asbestos posed to human health.

In the nineteenth century, the medical profession in Quebec was deeply divided along linguistic lines. The province was the first in Canada to form a regulated medical society, but until 1843, McGill University was the only institution in Quebec allowed to grant medical degrees, and it did so only in English.¹² The *Association des médecins de langue française de l'Amérique du Nord*, established in 1902, oriented itself towards the

medical community in France, not North America, and because the Catholic Church was responsible for establishing and running hospitals and clinics in Quebec, medical knowledge was often overpowered by religious ideology.

Besides being dangerous, extracting fibre from the Jeffrey Mine was time-consuming. Because market prices for asbestos were based on fibre length – with the longest being the most valuable – opencast mining provided the best access to full veins of the mineral. It also had a tremendous ecological impact on the land. In 1880s Canada, opencast mining had strong, practical advantages over underground. Engineer Fritz Cirkel explained to the Canadian Department of Mines that opencast pits allowed for easier supervision, made total extraction of the asbestos fibre possible due to the lack of underground structural pillars, and provided clean air for workers to breathe.¹³ The disadvantages of opencast mining, Cirkel explained, were that it was difficult to remove barren serpentine rock, operations were often halted because of poor weather, and there was a limited amount of space where waste rock and fibre could be dumped. Because of the amount of surrounding farmland available to them, Jeffrey and Webb committed to the opencast method, and a community grew around the expanding pit. All of this shaped how the local population understood themselves and their local environment.

By 1884, a post office had been built close to the Jeffrey-Webb mine with a sign on the front of it reading “Asbestos.”¹⁴ The fact that a government agency gave the community an English name rather than the French equivalent, “amiante,” suggests the extent to which anglophone land-ownership and connections dominated the increasingly francophone region. This was certainly the case at the anglophone-run Jeffrey Mine, which by 1886 the CGS described as “a mine of considerable extent [that] has been operated for several years . . . This industry has already grown to large proportions, and bids fair to become one of the most important in the Dominion.”¹⁵ Surveyors and prospectors in the 1880s scoured the region for untapped asbestos deposits with which to earn their fortunes, as it seemed Jeffrey and Webb had.

The Jeffrey Mine was thriving, and went from employing fourteen men working only during the summer months in 1881, to seventy men working all seasons and extracting fifteen tons of the mineral each week in 1885.¹⁶ This created a less transient community at Asbestos than was common in the region's other resource towns. The miners' families, who once lived four miles away in Danville, slowly moved to Asbestos as the community took shape near the mine. Fifteen tons a week was enough to ensure that the

Jeffrey Mine – and the community growing around it – was economically viable, but that amount paled by comparison to the extraction levels at the mines near Thetford, where the real asbestos fever was centred. According to the CGS, in 1885 the four mines at Thetford employed 250 men at “the largest and most important operations” in the region and extracted 1,100 tons during the summer months alone.¹⁷ The Jeffrey Mine was decidedly second-rate in comparison and was often referred to as “the small mine near Danville” long after Asbestos was incorporated as a village in 1899.

Enthusiastic about the riches its borders contained, Canada showcased the Dominion’s natural resources, including asbestos, at the 1886 Colonial and Indian Exhibition in London, England. Referring to the Thetford display, the official report noted that there was great interest in the industry, and several mines were sold during the event.¹⁸ This was a positive reception, but the properties sold were far from Asbestos, and surveyors believed that although the Jeffrey Mine’s output was considerable, it was also limited. The true value of the deposit at Asbestos had yet to be discovered.

The Jeffrey Mine contained veins of asbestos that were much smaller than those at Thetford, and those veins were strangely broken up throughout the deposit. This resulted in shorter, less valuable fibres. Because the value of asbestos in the late nineteenth century was based on fibre length (longer fibres meant quicker processing and spinning into a wool-like yarn), Thetford’s mineral was more desirable. Furthermore, the area surrounding the Jeffrey Mine was still being used for farming, which restricted the industry’s expansion even as land ripe for industrialization was being purchased elsewhere at \$5 an acre.¹⁹ Because of these constraints, the CGS stressed that “there is no apparent reason why [asbestos] should not be found in paying quantity at other points, and it is possible that subsequent exploration will largely extend the area where profitable mining operations can be carried on.”²⁰

Quebec’s Director of Mines was equally optimistic. Since his appointment in 1881, Joseph Obalski had been visiting mines throughout Quebec and promoting the province’s minerals on the international markets. Because Obalski was an engineer and not a geologist, his publications differed somewhat from those of the CGS, though they shared an overall excitement about the asbestos industry, which extracted 6,000 tons of fibre in 1889.²¹ The Jeffrey Mine contributed 207 tons to this total, and 400 tons the following year, but these were insignificant figures compared to those coming from Thetford, which mined 4,803 tons in 1890.²²

The increase in the amount of asbestos extracted by miners in the Eastern Townships fuelled Obalski’s excitement over the industry’s importance to

the economic future of Quebec. He wrote that the people of the region produced more asbestos than anywhere else in the world, because of the abundance of the mineral and the region's sophisticated transportation network. He also expressed his enthusiasm for the industry: a "remarkable fact . . . is that, while the production has increased with the demand, prices have also risen, so that, of late years, asbestos lands have been eagerly sought after. This is owing to the new uses which are being daily discovered."²³ Rising prices and demand for asbestos led to an increase in the number of prospectors in the region, who hoped to take advantage of the land and the market.

The Jeffrey Mine was profitable, but by 1887 ambition had exceeded ability. Jeffrey cut back the number of men he employed at the pit. The industry had stagnated in Quebec, partly because it focused only on extracting the raw mineral, which workers then packaged and sent to the more industrialized United States or Great Britain for further processing. This limited the type of employment and extent of returns in the mining communities of the region. Mine owners and government officials were not interested in what happened to the asbestos after workers extracted it, and CGS geologists constantly urged the development of more asbestos pits, not processing plants. Plans to industrialize the region focused on natural resources in their raw form. Factories did not yet figure into how people saw and used the land. With a clear focus on mining the raw mineral, engineers in the region's asbestos industry developed new extraction technologies to boost the amount of rock being taken from the mines.²⁴

The first mechanization of the industry came in the late 1880s with the introduction of compressed air and steam power for drilling blasting holes and hoisting ore in Thetford. This new technology helped the mines there thrive. Meanwhile, production at the Jeffrey Mine dwindled. When Obalski visited in 1889, he noted that the pit, which contained mostly short fibre, was roughly 100 feet deep and located on the plateau of a knoll about 180 feet above the surrounding area. The thirty-five workers at the mine did not use any mechanized technology, and they no longer worked in the winter.²⁵ In 1885, Jeffrey and Webb had employed seventy men, who had extracted over 700 tons of asbestos annually by working yearlong. Four years later, operations had not advanced technologically and production had declined to 325 tons annually. Half the workforce had moved on, transportation costs from Asbestos to the Grand Trunk were high, and the mine was poorly managed.

Neither Jeffrey nor Webb was an engineer or a geologist, and their understanding of the land at Asbestos was rudimentary. Their lack of

knowledge was indicative of an industry-wide misunderstanding of the deposit. In his 1897 book on global asbestos deposits, British geologist Robert H. Jones described Jeffrey and Webb:

It must not be supposed, that [their] want of knowledge was in any way blameable, because if this were so, then it must be said that all those commercial and scientific men who had, year after year, examined the property, or viewed it mineralogically, were equally so. Nothing of the peculiar nature and quality of the serpentine in which [they] worked was then known.²⁶

Those who ran the Jeffrey Mine – and the surveyors and engineers who studied it – did not yet understand the uniqueness of the land at Asbestos.

Despite the dwindling fortunes of the Jeffrey Mine, and of others, surveyors and prospectors continued to search the region for profitable asbestos deposits. The Canadian economy suffered a depression from 1873 to 1896, and the Dominion had only its natural resources on which to rely. Seeing an opportunity, in 1887 the CGS stressed that key regions needed to be surveyed again to reassess the value of the resources found there, especially asbestos.²⁷ Although some mines were failing, the rising value of the mineral in international markets drew prospectors back to the Eastern Townships for another look. The result was an asbestos rush that left many financially ruined and the land torn apart.

Obalski urged caution to those in search of asbestos, noting that the presence of serpentine rock did not automatically mean the mineral would be found nearby,²⁸ but prospectors continued to dig up the land near serpentine outcroppings in the hope of finding the valuable fibre. Failed mines soon scarred the region's landscape. In 1892, American asbestos manufacturing companies amalgamated as the H.W. Johns Manufacturing Co. and began scouring the region for a viable mine that could feed its operations. The company did not hone in on the Jeffrey Mine at this time, because, just a year after *Canadian Mining and Mechanical Review* had described it as “one of the best” producers of asbestos, the Jeffrey Mine went bankrupt.²⁹ Mere months before this, a visiting reporter had described “between 600 and 700 people, all dependent on the mine,” in Asbestos, where two farmhouses and a small school had stood only six years before.³⁰

One reason for the failure of the Jeffrey Mine was its owners. Webb took a backseat in the business, while Jeffrey was not well connected in the industry and chose not to belong to the Asbestos Club, an association of the region's mine owners who met monthly to discuss new technologies

and forge new connections. The Asbestos Club was an important factor in the success of the Thetford mines because it facilitated the exchange of knowledge and extraction techniques. It also created a strong community identity among local miners, regardless of the company they worked for. Isolated by distance and by Jeffrey's character – he was described as “somewhat obstinate and self-willed, and strictly a man of the old school – independent in his ideas, by no means highly educated, and never much inclined to move out of the old grooves”³¹ – the mine at Asbestos languished.

The four-and-a-half to five tons of asbestos extracted daily from Jeffrey's mine failed to meet the \$4,000 monthly payroll.³² When Jeffrey and Webb went bankrupt, people quickly left Asbestos. The locals became part of the region's transient workforce, flocking to new pits when they opened, then retreating back to the more stable mines at Thetford when they closed, with families being left behind during periods of instability. As new resource extraction ventures increasingly industrialized the land, worker transiency became widespread and industries rose and fell according to market demand.

Mine closures were common in late-nineteenth-century Quebec. Many industry leaders blamed these failures on the provincial government's management of the land.³³ According to Honoré Mercier, premier from 1887 to 1891, provincial revenue belonged to the francophone population, not to the anglophone colonizers who controlled industrial development. The success of the province was rooted in its ability to do what it wished with its natural resources and reap the resulting profits. Implementing what *Canadian Mining and Mechanical Review* deemed a “race and revenge” style of governing, in 1890, Mercier imposed a 3 percent tax on the output of Quebec mines and mandated the repossession of mining land that had lain idle for more than two years. This was widely unpopular with industry leaders, who believed it would “convert the Quebec mining men into straight anarchists,”³⁴ and the bill was repealed under the new government in 1892.

Despite the government's attempts to change land and resource management in Quebec, the Jeffrey Mine did not remain closed for long. In 1893 the neighbouring Danville Slate Co. bought the seventy-five acres of land given up by Jeffrey and Webb. Industry reports indicated that this “property is one of exceptional value, and will be exploited vigorously.”³⁵ A new workforce of young French Canadians drawn from the overcrowded farms of their fathers came to Asbestos as operations resumed.

French Canadians soon came to dominate the workforce, and the new manager, Feodor Boas, understood the land quite differently than Jeffrey, Webb, or any of the engineers and geologists who had previously studied the deposit. British geologist Robert H. Jones wrote that Boas was “not an asbestos man, nor did he make any pretence to a knowledge of mineralogy, but all throughout the province he was highly esteemed for his uprightness, shrewdness, and sound common sense.”³⁶ His way of looking at the land created an asbestos revolution in the community.

Along with the pit, the Danville Slate Co purchased all the waste rock that had been taken from the mine over the previous fifteen years. Jeffrey had considered this to be useless rock that hindered the mine’s success, but Boas saw it as the source of its future wealth. He discovered what Jeffrey had not: the piles of waste that workers had taken from the Jeffrey Mine since 1881 were actually piles of asbestic: asbestos fibres that industry experts thought had little value because they were too short to be woven.³⁷ The presence of asbestic was one reason why Jeffrey, who prided himself on his strict grading system while being unaware of the wealth he was discarding, struggled, and why geologists did not believe the mine was as valuable as the pits around Thetford.

Although asbestic could not be woven into cloth, it could be added to lead paint to fireproof walls and applied to roofing shingles to contain fires in urban areas. The once paltry demand for asbestic had risen so much in international markets by the time Boas discovered it in Asbestos that for years he had the workforce focus exclusively on the piles of waste that surrounded the pit. Boas found that once the surface rock was removed, up to 90 percent of the Jeffrey Mine was long asbestos fibres surrounded by asbestic.³⁸ This meant that most of what was being taken from the pit could be sold with little waste. This transformed the land into a place of extraordinary value, surpassing that of the deposits at Thetford.

Because of the demand for asbestic, employment at the Jeffrey Mine grew and old employees mixed with new as the population of Asbestos doubled in size. During Boas’s first year in Asbestos, he employed 150 men; by 1895, he had increased this workforce to 400.³⁹ The village became home to 1,100 people, and a chapel was built to accommodate the growing community. As other mines in the region failed, the Jeffrey Mine’s success increased exponentially.

The discovery of asbestic at the Jeffrey Mine coincided with a boom in the market for the product, and with a “golden age of capitalism” in Quebec based on the rapid growth of industries that exploited the province’s natural



FIGURE 4 Jeffrey Mine workers being lifted out of the pit by derrick cables, 1890
 Source: WG Clark Fonds, ETRC

resources.⁴⁰ This growth was international in reach, with companies from around the Western world buying into new industries. These changes could all be seen at the Jeffrey Mine, which quickly grew to become the most profitable asbestos mine in the province (see Figure 4). According to Jones,

this mine never till now attained any special significance, [but] it has suddenly sprung into great importance, attaining also considerable scientific interest ... In the shortest possible space of time, it has stepped in front of all the other mines previously named, and effectually [*sic*] revolutionized the whole asbestos industry, by bringing the use of the important mineral it deals with within the reach of the whole world. Many very important mines throughout the district are in consequence of the discoveries here, now closed.⁴¹

By 1896, the Jeffrey Mine was the province's leading producer of asbestos.

The dramatic increase in both population and production in Asbestos at the end of the nineteenth century altered the community and how people understood it. As the community took root, the revitalized local population built stores, churches, and blocks of new homes. No one believed that this mining town would go bust again.

To help ensure this, Boas continued his efforts to make the mine profitable. In 1896 he applied for a US patent for his invention of asbestic wall plaster. He found that when mixed with quicklime, asbestic forms a plaster that “is fireproof to the highest degree and will not crack or curl under the action of heat ... It is also ... a bad conductor of sound. As it is stronger than any other plaster, it is not necessary to have as thick a coating applied as usual, and additional economy, with a reduction of weight on the building, result.”⁴² Boas’s asbestic plaster helped revolutionize the building industry at the turn of the twentieth century; hospitals, schools, and homes were soon coated with the fireproof, soundproof, long-lasting mineral.

Boas stressed the economic benefits of his invention: “This waste material accumulates at the mines and around the factories, and is a trouble and expense to the industry. Many attempts have been made to utilize this waste, but previous to my invention without success. My invention therefore provides a useful outlet for this waste material.”⁴³ Overseas contracts committed the Jeffrey Mine to extracting 5,000 tons of fibre a year. New uses Boas found for the mine’s output complemented other innovations and assured community members that they had a prosperous future. Those new uses also increased the value of the Jeffrey Mine, and the British Asbestos and Asbestic Co. purchased it from its local owners, bringing the mine’s output to a much larger market. During the late nineteenth century, many British manufacturing companies were investing heavily in asbestos mines in places like Canada and South Africa, and the change in ownership at the Jeffrey Mine was in line with this trend. A company-built rail line connected the pit to the Grand Trunk in 1897 and further confirmed the stability of the town for the three hundred employees and their families who had made Asbestos their home.⁴⁴

The rise in the use of electricity in industry and in urban centres at the end of the nineteenth century further boosted the Jeffrey Mine’s prosperity. Fireproof insulation made of short asbestic fibres, combined with a layer of Boas’s asbestic wall plaster, specifically targeted the problem of urban fires. Electricity and asbestos, both readily available in Quebec due in part to the burgeoning hydroelectricity industry, grew rapidly side by side as asbestos insulation was used around wires and in walls. This helped turn Asbestos from a transient mining camp into a permanent community,

marked by the construction of a five-storey, electrified mill for processing the fibre post-extraction.⁴⁵ The community was incorporated as a village of seven hundred acres in 1899, largely due to the stability Boas had brought to the mine.

RAPID GROWTH, 1900–18

The turn of the century brought change to Asbestos as the mineral gradually became an industrial necessity and international demand rose dramatically.⁴⁶ New York's H. W. Johns-Manville Co. began to establish firm links with the British Asbestos and Asbestic Co. and the Jeffrey Mine. The company was formed in 1901 when New York's H. W. Johns Manufacturing Co. merged with Wisconsin's Manville Covering Co. under the name Johns-Manville (JM).⁴⁷ Both firms specialized in manufacturing products for the construction industry; H. W. Johns was already a leading producer of asbestos-based products. The company had previously purchased property near Thetford that proved to be of little value, and it was looking for a mine that would guarantee its factories a steady supply of the mineral. One of the new company's first initiatives, in 1901, was to purchase a controlling share of the Asbestos and Asbestic Co., which owned the Jeffrey Mine. By 1898, most of the fibre Jeffrey Mine workers extracted was going directly to JM in the United States for processing. By this point, the United States was the leading manufacturer of asbestos-based goods.⁴⁸

Closer ties to the American industry meant that the Jeffrey Mine grew rapidly early in the twentieth century, and the village grew in tandem with it. By 1905, Asbestos was a town of 10,000 and its output was valued at \$2,162,528. The mine's rectangular pit was now 1,200 feet long, 175 feet wide, and 175 feet deep. This configuration exposed a variety of zones and allowed multiple crews to access the fibre at the same time.⁴⁹ Close to 80 percent of what workers extracted could be sold.⁵⁰ The Jeffrey Mine became renowned for its production levels at a time when asbestos mining was the most profitable industry in Quebec and the Eastern Townships provided 80 percent of the world's supply.

The town of Asbestos underwent constant change during these years of heightened production levels. No longer a mere mining camp, by 1908 the community had electricity, telephone lines, an impressive 35,000 feet of wooden sidewalks, and new homes suitable for large families. These were all signs of a growing, permanent community that had no fear of a potential downturn in the industry: asbestos – and Asbestos – were here



FIGURE 5 The Jeffrey Mine and the town of Asbestos, Quebec, 1909
 Source: ETRC Photo Collection, ETRC

to stay. The town council pledged to do everything in its power to facilitate continued industry growth, and declared its intention to help make the “Village of Asbestos a prosperous centre that will become the City of Asbestos, and the open pit, the largest asbestos mine in the world.”⁵¹

By 1909, the Jeffrey Mine comprised a series of eight- to fifteen-foot-high benches cut into the sides of the pit, which were worked on by several crews twenty-four hours a day.⁵² The mine was rapidly becoming a giant open-air factory, and its workers were essential tools in the industrialization of the land (see Figure 5). The newly structured pit and vast mineral deposits carried output above the \$2,500,000 per year mark.⁵³ According to the *Sherbrooke Daily Record*, the area’s leading newspaper, asbestos was “king,” more important than gold and silver, and the mineral from the Jeffrey Mine was of the highest quality.⁵⁴

The industry’s impressive revenues and reputation contributed to changes in government environmental policy at the beginning of the twentieth century. In the nineteenth century, Quebec had sold resource rights to

private companies, with asbestos prospectors buying land for two to three dollars an acre.⁵⁵ The provincial government had also imposed a maximum 3 percent tax on the market value of any mineral extracted in Quebec. However, the increase in mining activities throughout the province led the government to increase its price for land; further payments were then required for such things as exploration permits, miner certificates, and royalties. In this way, the government generated considerable revenue. Despite these changes, the British Asbestos and Asbestic Co.'s profits continued to soar, largely because of its increasingly close relationship with JM, which seemingly had an insatiable appetite for the mineral.

The industry was booming, but wages were not. Companies were able to keep wages low because the labour supply was abundant, especially in the asbestos industry.⁵⁶ In 1912, in response to this discrepancy, thirty-six workers at Asbestos joined six hundred other provincial miners on a weeklong strike for higher wages and job security. On average, miners in the province made \$1.50 to \$1.75 a week, up from \$1.00 between 1883 and 1900 and \$1.25–\$1.50 between 1900 and 1905. Unskilled workers at the Jeffrey Mine earned \$1.10–\$1.60 a week depending on gender, seniority, and job duties.⁵⁷ With their numbers growing from 750 in 1897 to 2,909 in 1913, Jeffrey Mine workers chose not to align with a union, fearing that labour collectives would destabilize the industry.⁵⁸ This anti-union attitude was strong throughout the province, but especially in the asbestos industry, which was known internationally for having rich mineral deposits that contributed 82 percent of the global supply, as well as for a docile working class.⁵⁹

The demand for asbestos generated by the First World War had a significant impact on the Jeffrey Mine, the people who worked it, and the community around it. Prosperity brought major changes: the road to Danville was paved, and the first cement sidewalks were poured. The town also established a new and larger cemetery and relocated 431 coffins from the original site, partly to free it up for mine expansion.⁶⁰ Moving the cemetery was not a pleasant task, but it was one the community was willing to undertake if it meant giving the industry room to grow.

At the outbreak of the First World War, the *Canadian Mining Journal* acknowledged the importance of the mineral when it reported that “the marked increase in disastrous fires is directing more attention every day to the need of fireproof building materials that can be relied upon.”⁶¹ Canadian production rose to 139,751 short tons in 1916, worth \$5,211,157. That same year, JM purchased the Jeffrey Mine fully from the Asbestos



FIGURE 6 Stripping the land at the Jeffrey Mine, 1905

Source: WG Clark Fonds, ETRC

and Asbestic Co. Having combined mining with manufacturing, the company quickly became one of the world's leading asbestos firms. JM modernized operations at the Jeffrey Mine, where workers had long been loading raw asbestos by hand into horse-drawn dumpcarts.⁶²

The Asbestos and Asbestic Co. had installed twenty-one derricks around the open pit. These tall, mast-like structures anchored a pulley system that hauled four- by six-foot train carriage boxes full of men and mineral out of the mine (see Figure 6). By 1918, JM had introduced steam shovels and a new railway line running from the bottom of the pit to the Grand Trunk at Danville, making derricks obsolete.⁶³

With wartime technological advances, the company turned the Jeffrey Mine into a modern and efficient enterprise. In 1918, the *Canadian Mining Journal* reported that “now the architect, builder, steam-fitter and electrician recognize asbestos as a splendid material for resisting weather, fire, acids and other agencies of destruction, and they use it for very many purposes. The variety of uses is fast increasing and scarcely a month passes

without some new application being found ... Now it is a necessary article of commerce.”⁶⁴ JM was technologically advanced, economically connected, and cutthroat in its management style. The international aspirations, ideology, and reach of the company reshaped the land, the people, and the community of Asbestos.