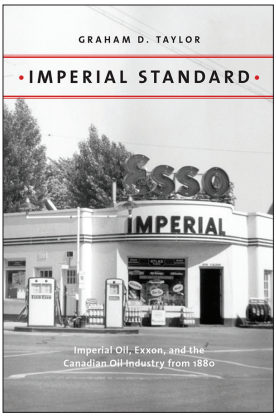

IMPERIAL STANDARD: Imperial Oil, Exxon, and the Canadian Oil Industry from 1880

Graham D. Taylor

ISBN 978-1-77385-036-8

Acknowledgement: *We acknowledge the wording around open access used by Australian publisher,* **re.press**, *and thank them for giving us permission to adapt their wording to our policy* http://www.re-press.org

GRAHAM D. TAYLOR

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•IMPERIAL STANDARD•

ENERGY HISTORIES, CULTURES, AND POLITICS

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ISSN 2562-3486 (Print) ISSN 2562-3494 (Online)

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No. 1 *Imperial Standard: Imperial Oil, Exxon, and the Canadian Oil Industry from 1880*
Graham D. Taylor

UNIVERSITY OF CALGARY
Press

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Energy Histories, Cultures, and Politics Series
ISSN 2562-3486 (Print) ISSN 2562-3494 (Online)

University of Calgary Press
2500 University Drive NW
Calgary, Alberta
Canada T2N 1N4
press.ucalgary.ca

Library and Archives Canada Cataloguing in Publication

Title: Imperial standard : Imperial Oil, Exxon, and the Canadian oil industry from 1880 / Graham D. Taylor.
Names: Taylor, Graham D., 1944- author.
Description: Series statement: Energy histories, cultures, and politics ; 1 | Includes bibliographical references and index.
Identifiers: Canadiana (print) 20190072881 | Canadiana (ebook) 20190072903 | ISBN 9781773850351 (softcover) | ISBN 9781773850368 (open access PDF) | ISBN 9781773850375 (PDF) | ISBN 9781773850382 (EPUB) | ISBN 9781773850399 (Kindle)
Subjects: LCSH: Imperial Oil Limited—History. | LCSH: Petroleum industry and trade—Canada—History.
Classification: LCC HD9574.C24 I478 2019 | DDC 338.2/72820971—dc23

The University of Calgary Press acknowledges the support of the Government of Alberta through the Alberta Media Fund for our publications. We acknowledge the financial support of the Government of Canada. We acknowledge the financial support of the Canada Council for the Arts for our publishing program.

Alberta Government Canada Canada Council for the Arts Conseil des Arts du Canada

Copyediting by Kathryn Simpson
Cover image: Imperial Oil Service Station, Oshawa, Ontario, September 1954. Glenbow Archives, IP-12-26-33, Imperial Oil Collection.
Cover design, page design, and typesetting by Melina Cusano

Table of Contents

EPILOGUE: SINCE 1980

APPENDICES

Illustrations

MAPS

FIGURES

Acknowledgements

This is not an "official" history of Imperial Oil Ltd. I received no financial support from Imperial Oil, Exxon/Mobil or any of their affiliates, nor for that matter did I seek or receive funding from the Social Sciences and Humanities Council of Canada or any other source. In writing this history I have used material that is available to any researcher, including most particularly the Imperial Oil Ltd. and Royalite records at the Glenbow Museum and Archives in Calgary and the Exxon/Mobil records at the Dolph Briscoe Center for American Studies at the University of Texas at Austin. I would like to acknowledge my appreciation to those companies for having made their business records available to the public.

This is also not a "definitive" history. The records of Imperial Oil are among the largest business archives in Canada, surpassed only by those of the Hudson's Bay Company and the country's transcontinental railways. These records are indeed a vast treasure trove for researchers on a wide range of topics—ranging from the history of the company's large tanker fleet to the technological achievements of its research scientists, and much else in between—and I hope other scholars will find them valuable in understanding Imperial's role in the history of our country. My intent was to sketch the general history of Imperial Oil and its role in that history and to focus on some particular features of the company that are of relevance to the evolution of multinational enterprises as significant players in the world's economic, political, and natural environment over the past two centuries.

This project originated over forty years ago. When I first came to Canada in the 1970s one major controversy (in addition to the status of Quebec) focused on the role of foreign-owned corporations in the Canadian economy. Critics charged that these foreign multinationals

undermined Canada's industries, stifled innovation and entrepreneurship, and depleted the country's natural resources. Defenders countered that these companies brought much-needed capital, technology, and management skills, which all contributed to the dramatic growth of the Canadian economy after the Second World War. The debate featured much rhetoric, reams of statistics, and media stories that celebrated their achievements or condemned their depredations.

It seemed to me that as a historian what I could contribute to this ongoing debate was analysis of how multinationals in Canada actually operated in practice: to what extent did parent firms determine not just the strategies but day-to-day functioning of the Canadian companies they owned or controlled? In the longer run did the relationship between the parent firm and subsidiaries evolve over time, as theorists such as Raymond Vernon maintained, from close control to a more diverse, autonomous model? Or was foreign domination so complete that it could only be constrained by government measures to limit and regulate these companies? Or indeed was there some other, more suitable model?

In these years the study of business enterprise was undergoing a transformation as historians such as Alfred D. Chandler Jr. and others explored the internal workings and evolution of large-scale enterprises and highlighted the relationship between corporate strategies and organization. I had the good fortune to discuss my interest and research in Canadian business with Dr. Chandler; I benefited from his advice, and perhaps benefited even more from my conversations with Mira Wilkins, the most accomplished historian of multinational business in our time.

In order to achieve my aim of observing business relationships "from the inside," I sought to find companies whose internal records were available to research, which limited the range of my work to some extent, but allowed for more in-depth analysis. Over the years I developed "case studies" of Canadian affiliates of multinationals, mostly American or British, including Canadian Industries Ltd., Bell Canada, Vickers of Canada, and Great Canadian Oil Sands (now Suncor).

One of the objects of my quest was the "great white whale" of foreign-owned businesses in Canada: Imperial Oil, affiliated since 1899 with Standard Oil of New Jersey (Exxon, now Exxon/Mobil), which was not only one of the largest companies in the country, but one of the most enduring,

and one whose significance was felt throughout Canadian history, comparable in many respects to the Hudson's Bay Company and the Canadian Pacific Railway. In the late 1980s I was able to get access to the records of Imperial Oil in the early twentieth century, relating to the presidency of Walter Teagle, who went on to become the chief executive of Standard Oil for many years. When I learned that the Imperial Oil records were available at Glenbow Museum and Archives, I set out to fulfill that quest.

There were several people whose advice and assistance were particularly valuable to me in this endeavour. Robert Taylor-Vaisey had been the corporate archivist at Imperial for many years and in that capacity had systematically organized the company records. When Imperial Oil decided to move its headquarters from Toronto to Calgary, Taylor-Vaisey played a major role in arranging for the disposition of the company records at Glenbow. When I began my work on Imperial, I met with him several times and benefited from not only from his knowledge of the archives but also his insights into the history of the company.

My thanks also go to Douglas Cass, the director of the Glenbow Archives, who is himself an expert on the history of the Canadian oil industry, and who took a great interest in my project, introducing me to various other researchers whose input has also been valuable. I received inestimable help in locating and retrieving relevant material from two archivists at Glenbow responsible for the organization and maintenance of the Imperial Oil records: Tonia Fanella and particularly Lynette Walton who was always prepared to spend extra time chasing down documents I requested. All of the staff at the Glenbow Archives were helpful and courteous, even when working under apparently perpetual financial constraints.

I appreciate the help I received from a wide range of fellow researchers I encountered in writing this book. David Finch provided valuable information about the history of Turner Valley and the Alberta oil industry, through both his books and conversations with me. I had numerous discussions with Debbie McLeod Knall about the career of her grandfather, John McLeod, with Imperial Oil and Royalite. Joyce Hunt shared information about her research on the early history of the oil sands. David Breen provided insights on company-government relations in the Alberta oil industry based on his extensive research and publications on the subject. Timothy Cobban shared research materials on the early history

of Imperial Oil in Ontario, drawing on his valuable work, *Cities of Oil*. Professors Stephen Bocking of Trent University and Sean Kheraj of York University provided guidance into the history of environmental law and policies in Canada. I received encouragement from Professor Geoffrey Jones of the Harvard Business School and Dr. Matthias Kipping, Richard E. Waugh Chair in Business History at York University, to seek ways of integrating my work on Canadian business into the growing literature on the history of multinational enterprises. In addition, I appreciate the careful review of my manuscript by the two anonymous peer reviewers for the University of Calgary Press whose comments stimulated me to provide more clarity in explaining the structure and value of my work to the wider audience of historians of Canada and the oil industry.

Perhaps my greatest debt is to Earle Gray, without question the "dean" of historians of Canadian oil, who in addition to providing many insights based on more than half a century of covering the industry, also read every chapter in this book in draft form and made many suggestions as well as providing useful advice on the geology and technology of oil and gas in an effort to correct my misconceptions. Gray is still very active in the field, and we traded drafts of my book for commentary on chapters on his current project, *Fossil Fire*, which will be a valuable contribution to the history of the fossil fuel industries and their impact on the environment.

Finally, my thanks to my wife, Deborah, who not only put up with frequent and extended visits to Calgary, but also provided much help with my research, going through sixty-odd years worth of the tedium of minutes of the board of directors of Imperial Oil, and locating pertinent articles in the *Imperial Oil Review* covering an almost equally long time period. As partial compensation, we spent weekends taking in the remarkable diversity of Alberta, from (melting) glaciers north of Lake Louise to dinosaurs in Drumheller.

Of course I accept responsibility for any errors of omission or commission in this work.

Graham D. Taylor
Professor Emeritus, Trent University
Peterborough, Ontario
August 1, 2018

INTRODUCTION

For one hundred and thirty years, from its establishment in 1880 to 2010, Imperial Oil Company Ltd. was the largest petroleum company in Canada; in 2009, Suncor merged with Petro Canada and Imperial fell to second place. Even so, in 2018 Imperial remained among the top ten non-financial companies in Canada, ranked by revenues and assets. The third ranked company, Enbridge, had been a subsidiary of Imperial when it was the Interprovincial Pipeline Company.[1]

During those years Imperial Oil was the largest company in terms of assets, revenues, and net earnings, towering over others in the Canadian oil and gas sector. In 1948, for example, even before the impact of the Leduc discovery took effect, Imperial's sales revenue and net profits were twice the size of its two largest competitors, British-American Oil (later taken over by Gulf) and Texaco Canada (which Imperial acquired in 1991). Even in the 1990s, Imperial's sales and assets were equal to those its two major rivals, Shell Canada and Petro Canada. Its share of the gasoline market in Canada fell from the 60 per cent position it held in the early 1950s, but it still accounted for one-third of that market.[2]

Not only was it Canada's largest petroleum company, it was also in the proximity of—if not always "present at the creation" of—virtually every major event in the industry after 1900. When demand shifted from kerosene to gasoline in the early 1900s, Imperial acquired patents to the most efficient thermal cracking processes. In 1920 the Northwest Company, an Imperial subsidiary, drilled the first oil well in northern Canada. When gas (and some oil) was discovered in the Turner Valley in Alberta, Imperial arrived shortly thereafter, bought up the largest gas company, and its subsidiary, Royalite, made the largest oil find there in 1924. During the Second World War, Imperial developed oil fields and a refinery in the

Northwest Territories of Canada as part of the war effort. And all this was before Leduc in 1947.

Imperial built the first oil pipeline linking the Alberta oil fields to central Canada in the early 1950s. At one point the company held between one-third and one-half of the assets of every oil pipeline in the country. When the oil sands began to be exploited in the 1960s–70s, Imperial was a founding member of the Syncrude consortium; a decade later Imperial developed its own project at Cold Lake.

Over this same period—from 1899 to the present—between two-thirds and three-quarters of the equity in Imperial Oil has been held by Standard Oil of New Jersey (later Exxon, now Exxon-Mobil). In 2018 Exxon-Mobil was ranked the second largest company in the United States by *Fortune* magazine. In terms of revenues it was surpassed only by the discount retail giant, Walmart. In the same year it was ranked the third largest petroleum company in the world, trailing the surging China National Petroleum Company and its erstwhile rival, Royal Dutch Shell. Exxon-Mobil remained a global power in the industry, serving markets on virtually every continent, and even in a world crowded with government-owned oil producers it maintained reserves in North and South America, Africa, East Asia, and Australia.[3]

Imperial Oil was both one of the largest companies in Canada, which had played a major role in shaping the country's petroleum industry, and a not inconsequential part of one of the world's largest multinational companies: in 2018, it accounted for close to 10 per cent of the $205 million (USD) revenues of Exxon-Mobil. The relationship between Imperial and Exxon was also one of the most enduring examples of a parent company and a foreign affiliate. In 1929 Imperial Oil was the third largest non-financial corporation in Canada. Eighty-nine years later, only five of the twenty largest firms had survived at all, and Imperial was the only company whose status as a foreign-owned entity remained virtually unchanged.[4]

In 1949, Exxon had partially or wholly owned affiliates in virtually every part of the world outside the Soviet Union—many of them larger and more significant to the company than the operations of Imperial Oil in Canada. By the early twenty-first century, although Exxon was ambitiously seeking access to the republics of the former Soviet Union, many of its largest affiliates—particularly in the Middle East and Latin America—had

been swept away by nationalizations, and its ventures into new territories in Africa and Asia were fraught with risk, not only in a financial sense but also in terms of the safety of its employees. The survival of Imperial Oil through the (relatively restrained) controversies in Canada over "foreign multinationals" in the 1970s and 1980s contrasted sharply with upheavals in other parts of Exxon's empire. More recently, however, the emerging scientific consensus linking carbon emissions from fossil fuel production to climate change posed challenges to both companies—and particularly to Imperial Oil, whose future had been tied to the development of Alberta's oil sands.[5]

This history of Imperial Oil is intended to address its role as one of the major shapers of Canada's petroleum industry—arguably as important for the nation's economic development in the twentieth century as was the Canadian Pacific Railway in the nineteenth century and the Hudson's Bay Company in the years before Confederation. At the same time I wish to present its dual status as an integrated oil company in Canada and an integral part of the system of continental and then global expansion and dominion that Exxon pursued from its emergence in 1880.

The literature on multinational enterprises is enormous. Even the literature on the history of multinational enterprises is formidable: one recent overview of the field listed over three hundred publications, of varying scope and scale.[6] Many of the works on particular companies focus on the development of the parent firm, its reasons for expansion (or contraction), and its perspective on strategies and organizational evolution. There are of course exceptions, including the multivolume history of Standard Oil of New Jersey, which reviews the development of affiliates and subsidiaries in some depth and has been of inestimable value to this study of Imperial Oil.[7]

Of somewhat more recent vintage are studies that focus on the role and evolution of subsidiaries per se, rather than adjuncts to a larger organization. From this perspective the subsidiary has been analyzed in terms of its relationship to the host country's political and economic environment, cooperative as well as competitive linkages with local businesses, its role in organizations that feature a networked as well as a hierarchical structure, and the development of subsidiary-specific strategies that extend beyond following the lead or direction of the parent company.[8] This approach provides useful insights into the workings of multinational

enterprises, but many of these studies reflect analyses of the operations of companies during the 1980s–90s, with features that may be time-bound. In contrast, my approach seeks to view the evolution of a subsidiary over a longer period with changing conditions.

This study is structured as a narrative, tracing the history of the Imperial Oil company and its role in the evolution of the Canadian petroleum industry. At the same time, it seeks to provide an analysis of the relationship between Imperial Oil and the American company that controlled it from 1899 by addressing a series of questions:

- What circumstances led Standard Oil to enter the Canadian market? Since this expansion involved a merger (in effect a takeover) of Imperial Oil, what factors led Imperial to join the American company?
- What was the relationship between Imperial and Standard after the merger? Did it extend beyond financial control through majority ownership? Did Standard exercise control over the management of operations?
- What events marked turning points in the relationship between the companies? Were these the result of strategic decisions made by the parent company (Standard Oil) or developments within the subsidiary (Imperial) or external factors, or a combination of these elements? Did these changes reflect a longer-term alteration of the conditions of the industry as a whole?
- Was there a transfer of technological and managerial capabilities between the parent company and the subsidiary? Were there transfers in the opposite direction? To what extent did Imperial develop its own initiatives and organizational capabilities?
- What was the role and status of Imperial Oil within the larger system of divisions and affiliates controlled by Standard Oil/Jersey Standard/Exxon over time? To what extent was

Imperial able to develop and execute strategies for its own objectives separate from those of the parent company?

- To what extent were the operations of Imperial Oil affected by competitive (and other) conditions in the Canadian market? To what extent did developments in the international economy affect the operations and objectives of Standard Oil, Imperial, or the relationship between them?

- In what ways did measures by either the US or the Canadian government (or provincial governments) in such areas as trade, taxation, labour relations, financial rules, and environmental regulation affect the operations of either or both companies and the relationship between them? In what areas did differences in the legal, policy, and political environment between the US and Canada affect the operations of either or both companies?

In tracing the history of Imperial Oil and its relationship with Jersey Standard/Exxon, I have drawn substantially on the records of Imperial Oil at the Glenbow Museum and Archives in Calgary, Alberta. The minutes of the board of directors from 1899 and the executive committee of the board from 1951 were very valuable in providing insights into the perspectives of Imperial's executives as they dealt with events affecting the Canadian oil and gas industry and the expectations of the majority owner in New York (and more recently, in Texas).

Because of the forty-year rule applied to these particular records, I was unable to access them beyond 1978. My original intention was to end the detailed history in 1980 and provide a brief epilogue with an overview covering events after that time. As I proceeded, however, the need for an expanded epilogue seemed clear, as a number of significant developments affected the company over that forty-year period, including the second energy crisis of 1980–81 and the rise and fall of the Canadian government's National Energy Policy (NEP); Imperial's acquisition of one of its main competitors, Texaco Canada, in 1989–90; and the emergence of environmental issues and particularly the controversy over the relationship

between carbon emissions and climate change that roiled the industry from the late 1990s on. In this part, I have drawn on the company's annual reports and related materials, on coverage of developments in the business and petroleum industry media, and works on Exxon, including in particular the history of that company by Joseph Pratt and William Hale that covers the period from 1973 to 2005.[9]

I have organized the book into four major sections:

- The first part (chapters 1 to 3), covering the period from 1880 to 1918, traces the parallel development of Imperial Oil in Canada and Standard Oil in the United States that formed the backdrop to Standard's takeover in 1899, through the reorganization of Imperial under Walter Teagle in 1914–18.

- The second part (chapters 4 to 6), which could be designated the "pre-Leduc era" from 1918 to 1947, covers a period in which Imperial was closely tied in with Jersey Standard's expansion into Latin America after the First World War, and the Canadian company embarked on a thirty-year quest to find oil in Alberta to replace its now-diminished capacity in Ontario.

- The third part (chapters 7 to 10), the "post-Leduc era" from 1948 to 1980, focuses on the expansion of Imperial's role as a major Canadian oil producer as well as its continuing role as the country's largest vertically integrated company in the industry, and traces its efforts at diversification into petrochemicals and related areas, and its involvement in the opening of the oil sands from the 1960s and northern oil and gas exploration in the following decade.

- The epilogue (chapters 11 to 13) carries the history forward beyond 1980, selectively focusing on government-company relations during the energy crises of the 1970s–80s, the consolidations of the 1980s–90s including Imperial's acquisition of Texaco Canada and the Exxon-Mobil merger,

and the emergence of environmental issues as a major concern for both Imperial and Exxon.

- The conclusion undertakes a review of Imperial's evolving linkages with Exxon in the context of the broader history of multinational enterprises in the nineteenth through twenty-first centuries, which hopefully will provide a useful contribution to the literature on parent-subsidiary relations.

PROLOGUE

Leduc, Alberta: February 13, 1947

The visiting dignitaries were scheduled to arrive around ten in the morning at the well site, named Leduc Number One after the nearby town: the mayor of Leduc, of course, and the mayor of Edmonton (among others); reporters and photographers; and most critically, Nathan Tanner, Alberta's Minister of Mines. There was some snow on the ground and the temperature was cold, but it was clear—a good sign.

Then, around 4 a.m., Murphy's Law kicked in: Vern Hunter, the chief driller on the well, discovered that a shaft on the cable's swabbing drum that removed excess mud had snapped inside the casing. It would have to be hauled out and replaced, which could take up to half the day. Hunter, who was sensitive about his nickname, "Dry Hole," had been doubtful about inviting official observers in the first place, even though the drill stem tests had indicated that Leduc Number One had a good reservoir of oil at 5,000 feet down. But the public relations department in Toronto wanted to put on a show, and it was hard to keep things secret at this point.

Hunter's boss, Walker Taylor, the head of western production for Imperial Oil, arrived at the site around 8 a.m. and assured Hunter he would try to keep the visitors out of his way. Travel arrangements from Edmonton for the officials were delayed for an hour but by early afternoon when they arrived a crowd had already gathered, including local farmers who had more than a passing interest in the event. Although the province of Alberta owned the subsoil mineral rights, landowners could make some money leasing rights of way to drillers.

By 4 p.m. the repairs were done and the cable began running again. Then a column of liquid and mud (used to lubricate the drilling) shot up

Figure 0.1. Leduc #1, 13 Feb 1947. Glenbow Archive IP-6f-18, Imperial Oil Collection.

fifty feet above the pit alongside the drill tower. A Calgary driller, George Coakley, shouted "Here she comes—it's oil!" A fire was lit in the pit that caused a dramatic flaring: a Hollywood moment for the photographers that was to appear in the local newspapers the following day. The flaring formed a giant smoke ring, which oil drillers regarded as a sure sign of success.

A couple of hours passed as the excess gas and mud was being cleared out and many onlookers headed home in the cold. Shortly after 6 p.m. the official ceremonies finally took place. Tanner, joined by Walker Taylor and Vernon Taylor—a geologist who would soon head up western operations for Imperial—turned a valve that released the oil into a storage tank, marking the beginning of Leduc Number One's production history.

No one admitted to having celebrated excessively in Edmonton that evening. The news stories were all positive, a public relations success for Imperial. But company officials were still cautious: one well did not necessarily prove a large field, although seismic information seemed to confirm it. A few days later a second well site, Leduc Number Two, proved temporarily disappointing. Over the next few months, however, four more wells had come in, and by September Imperial's president, Henry Hewetson, announced: "The Leduc field is now recognized as a major one. Our geologists estimate there are 50 million barrels of oil and there may be even more since we do not know the limit of the field yet."

Leduc was just the beginning, of course. In 1948 Imperial opened the Redwater field and a year later there was Golden Spike. By this time other oil majors had arrived in (or in some cases returned to) Alberta: Shell, Texaco, Petrofina, and Mobil, which discovered a field even larger than Leduc at Pembina in 1953. Pipelines sprouted east, west, and south; Calgary and Edmonton boomed, both laying claim to the title of "oil capital." Alberta was no longer a "have not" province. Canada became a net oil and gas exporter. Leduc also left its mark on the company that had found it. Imperial Oil—big, cautious, bureaucratic, risk-averse, the quintessential "Canadian" business enterprise—was transformed as well, in ways that few outside its stolid gray stone walls on St. Clair Avenue in Toronto may have anticipated.[1]

The Road to Leduc

In 1947 Imperial Oil was the largest petroleum company in Canada and one of the ten largest non-financial enterprises in the country. In every dimension it was more than twice the size of its nearest competitors. Imperial refineries were located in every major city in Canada from Halifax to Vancouver. Esso service stations dotted the landscape. Imperial commanded a fleet of tankers, many of which had served in transatlantic convoys in both the First and Second World Wars.

What Imperial did not have, however, was very much oil of its own in Canada. The Petrolia fields in Ontario, which had provided the base for Imperial's founding in 1880, had been declining steadily since the turn of the century. Gas and oil had been exploited in the Turner Valley in Alberta by an Imperial subsidiary, Royalite, since the 1920s but those fields were reaching their limits as well. The largest source of supply came from Ohio through the "Cygnet line," serving the markets of central Canada. A second pipeline, built in 1941, carried oil from Portland, Maine to Montreal. Imperial owned the storage facilities at Cygnet but the oil came from other companies, mostly controlled by Standard Oil of New Jersey (now Exxon/Mobil), the largest successor company to the old Standard Oil Trust of John D. Rockefeller after it was broken up by a US court order in 1911.

Cygnet symbolized another critical feature of Imperial Oil: more than two-thirds of its shares were owned by Jersey Standard. Esso was the brand name for Jersey Standard's products; major decisions (including the development program that led to Leduc) were ultimately submitted for approval in New York; and in many other aspects Imperial was part of a global network of affiliates that made Jersey Standard the largest corporation in the world. Ironically, Imperial had been established to be Canada's defender against the sprawling tentacles of the Standard Oil "octopus" in the 1880s. Imperial's owners were stalwart Conservative supporters of the National Policy tariffs on imported petroleum products and the name of the company was intended to demonstrate its fealty to the empire in which Canada was a dominion. But a number of problems beleaguered the company: Rockefeller's aggressive strategy surrounded Imperial with regional competitors (controlled by Standard Oil); output from the Petrolia fields

began to decline; and Imperial failed to acquire technology that would reduce the sulphur content of its product, which unhappy consumers called "skunk oil." The Liberals in Canada systematically dismantled the protectionist measures that had shielded Imperial from the Americans. By the end of 1898 Imperial's owners capitulated and the Standard Trust acquired control of a majority of the shares.

For more than a decade Imperial barely functioned, and was little more than a brand name. The Petrolia refinery was closed, the company records were removed to Buffalo, and the Standard manager there ran operations in Canada, rarely consulting the minority shareholders—who nevertheless did very well financially and so had few complaints. This situation changed, however, in the wake of the breakup of the Standard Oil Trust in 1911. Imperial was assigned to Standard Oil of New Jersey, which dispatched one of its rising stars, Walter Teagle, to reorganize the derelict Canadian operation.

Teagle was worried about threats from Jersey Standard's biggest rival, Royal Dutch Shell, and also envisioned Imperial as a vehicle for offshore activities if the US government continued to hound the American parent. New refineries were built, the Imperial sales force was overhauled, troubled labour-management relations were attended to, and Imperial's board was given a larger role in running the company, although Teagle colonized management with his own protégés. As Imperial's official historian John Ewing put it, Teagle "took Imperial from the vassalage in which had been since 1898 and gave it at least the status of a free man."[2]

Teagle, however, was a Jersey Standard "company man:" Imperial was expected to do its part as a cog in the larger wheel. During the First World War, Teagle arranged for Imperial to set up a subsidiary, International Petroleum Company (IPC), to develop oil production in Peru and Colombia. Ostensibly, IPC's output would supply Canada's oil needs, but in practice a substantial amount of the oil found its way to Jersey Standard's giant refinery in Bayonne, New Jersey. The IPC arrangement may have been intended in part to deflect South American nationalist opposition to the Standard Oil octopus. Once Teagle moved on to become chief executive of Jersey Standard in the 1920s, Imperial's strategic role diminished. In the 1930s Imperial and IPC became essentially "cash cows" for Jersey Standard: virtually all Imperial's earnings from its South

American operations were transferred to the parent company through dividend payments.

Nevertheless, Teagle supported Imperial's aspirations to find a secure oil supply within Canada. Initially his commitment was spurred by the machinations of Royal Dutch Shell: in 1918 that company had approached the Dominion government with a proposal: in return for full access to mineral rights on Crown lands, it would develop western Canadian oil resources and build pipelines to Ontario and Quebec. Little of substance came of this improbable scenario, but Teagle countered it anyway, setting up a subsidiary, the Northwest Company, to explore for oil in northern Alberta and procuring the help of T.O. Bosworth, one of Britain's leading geologists, to head the effort.

Bosworth mounted an ambitious operation, with expeditions ranging from the Calgary region (where natural gas and some crude oil had been discovered in the Turner Valley in 1914) to the Mackenzie River delta, but the results were frustrating. The expeditions were beset with perils: Bosworth feuded with other geologists; there was at least one suicide; an experiment at aerial surveying ended in near disaster. Everitt Sadler, one of Teagle's associates at Exxon, ridiculed the undertaking as "politically motivated"—i.e., to keep Canadian officials happy. There may have been some truth to this view—in 1921 Imperial Oil persuaded the Canadian government to write off the company's expenses on exploration in the west against its mineral leasing fees. But Teagle never imposed a veto on Imperial's exploratory ventures despite its dismal record: Imperial Oil folklore has it that the company drilled 133 "dry holes" before 1947. This was an exaggeration—drillers found some natural gas but only one potentially large oil well.

The most stalwart exponent of western exploration was Ted Link, an American-born geologist who had joined Bosworth's expedition in 1919 as a graduate student at the University of Chicago. During the following summer Link and his group discovered oil near Fort Norman in the Northwest Territories. Although the output was small, Link believed the formations in the area held great promise. "This is the biggest oil field in the world," he told a reporter from Edmonton, "stretching all the way to the Arctic coast."[3] Imperial followed up on this discovery and developed five wells around Fort Norman in the 1920s, but ultimately decided that

the site was too remote and the problems of transportation too challenging to merit further expansion.

During the Second World War, however, the US Army approached Imperial with a proposal to reopen the wells near Fort Norman. Fearing a Japanese invasion of the Alaskan islands in 1941–42, the Americans wanted to build a pipeline from Norman Wells to Whitehorse in the Yukon to connect up with an equally ambitious highway between the Yukon and Alaska. When the Japanese threat receded the project foundered amidst US congressional hearings featuring charges of waste, bureaucratic mismanagement, and the malign influence of oil companies. Although the pipeline and the "Alcan highway" were completed, the refinery built at Whitehorse fell into disuse after the war.

Link's hopes for a massive expansion of Imperial's exploration in western Canada were frustrated in the 1920s; nevertheless, he continued to play an important role in the company, and became chief geologist in 1946. By this time pressures were once again mounting for another effort to find oil in western Canada. Postwar demand for auto fuel was sure to increase; the cost of importing oil from the United States was expected to rise with the weakened Canadian dollar; and International Petroleum's wells in Colombia were likely to be nationalized by 1950, cutting off that already limited source. Link became part of a team headed by Dr. O.B. Hopkins of Imperial's board of directors to decide on a strategy for exploration.

Imperial's president Hewetson laid out the alternatives: if the exploration option failed, the company would turn to an alternative-fuel technology, the Fischer-Tropsch process developed in Germany during the 1920s that could convert natural gas to oil, which would of course be more costly and still leave Imperial dependent on imported oil. Hopkins's group produced a report that endorsed one more exploratory venture in Alberta, using improved seismic technology and probing deeper than previous drilling, which had focused on the "Cretaceous" level (3000–4000 feet) from the age of dinosaurs to what was (hopefully) a "Devonian reef" at about 5000 feet containing the remains of much older organic matter. The Leduc area was actually on the edge of the prospective "Devonian reef" but early tests revealed "anomalies," and drilling ultimately led to success.[4]

After Leduc

Leduc's success posed as many challenges to Imperial as failure might have, all of them expensive. There was no refinery near Leduc. As the oil sands companies would discover a generation later, the oil was remote from its markets and transport costs would be formidable. With other companies flocking to Alberta, Imperial would have to expand its exploration investment to keep ahead. Most of Imperial's net earnings over the previous decades had been passed on to its shareholders (principally Exxon); but now Exxon was not prepared to provide capital on the scale required—it had even larger demands on its resources to develop big new fields in South America and the Middle East.

Hewetson moved quickly to address the refining and transport issues. Imperial bought (back) the Whitehorse refinery built in the Second World War by the US Army, dismantled it and shipped it to Edmonton—by July 1948 it was in operation. The Canadian government quickly approved an interprovincial pipeline that would ultimately carry Albertan oil to Wisconsin and then ship it to Imperial's largest refinery in Sarnia, Ontario. The Interprovincial Pipeline Company (now Enbridge) was moving oil by the autumn of 1950. For Imperial, however, the costs of moving so rapidly were high, and financing the projects became the central issue facing the board of directors.

The first step, in the autumn of 1947, was to issue $24 million (CAD) in debenture bonds—a first for Imperial, which had relied on Jersey Standard for financing since 1899. The Royal Bank of Canada quickly took up the subscription, but it proved at best a stopgap. Before the end of the year Hewetson was seeking a longer-term solution, which led to a review of Imperial's other investments and subsidiaries.

The largest of these was International Petroleum with its oilfields in Peru and Colombia. In this case Imperial's dependence on Jersey Standard proved to be a blessing, for the parent company took over the South American properties for $80 million (CAD). In retrospect this was a puzzling decision for Jersey Standard: Colombia was already threatening to nationalize IPC`s fields, and would do so in 1951; Peru followed suit a decade later. For Imperial, however, this was a win-win situation, as it

could disengage from increasingly troubled overseas operations and focus on developing its Canadian fields.

A second subsidiary and also a somewhat difficult one was Royalite in Alberta. Imperial had taken over that company in 1921 to give it a surreptitious foothold in the Turner Valley oil and gas fields. Although Royalite struck oil in Turner Valley in 1924, for various reasons—the cost of transportation to central Canada, the objections of Alberta politicians to "exporting" their oil—it remained principally a supplier of the local western regional market. In recent years Royalite had become almost a competitor with Imperial in the search for oil beyond Turner Valley. In 1948 Imperial tried to buy out the minority shareholders in Royalite in order to get better control over its operations. When this move failed, Imperial simply sold off its interests for $14 million (CAD).[5]

Today Imperial Oil remains one of the largest oil companies in Canada. Exxon-Mobil still holds more than a two-thirds ownership of the company. In critical ways, however, it changed substantially in the aftermath of Leduc. Imperial became a truly integrated oil company, with its own domestic source of supply. It became more "Canadian," jettisoning the entangling commitments overseas that had been a key feature of its history before 1947. While it remained part of the Exxon network, these features returned Imperial to its original national role. At the same time, Imperial became more "entrepreneurial"—before 1947 many of the executives were managers involved in running a company that functioned like a utility: refining, transporting, and selling oil products that came from somewhere else. After Leduc, Imperial focused on exploration and development of resources, and leadership passed to those whose perspectives were shaped by experiences in the new oil fields of Alberta, and later the Arctic and the oil sands. For that generation, the exploitation of Canada's northern environment became essential to the future of Imperial Oil.