

MINISTRY OF ENERGY AND MINES

MINISTRY OF FORESTS, LANDS AND NATURAL RESOURCE OPERATIONS

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EXPLORATION AND MINING in British Columbia 2011





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Ministry of Energy and Mines
Mines and Mineral Resources Division
British Columbia Geological Survey

Ministry of Forests, Lands and
Natural Resource Operations
Regional Geologists

Front Cover:

Willow Creek mine expansion located about 40 kilometres west of Chetwynd. (Photo credit: Kirk Hancock)

Back Cover:

Brucejack Lake camp situated lakeside to the Brucejack Lake, owned by Pretium Resources. (Photo credit: Gayle Febbo)

Canadian Cataloguing in Publication Data

Main entry under title:

Exploration and Mining in British Columbia –
1998-

Annual.

Continues: Exploration in British Columbia. ISSN
0823-2059

ISSN 1491-4646 = Exploration and Mining in
British Columbia

1. Mines and mineral resources – British Columbia – Periodicals.
2. Prospecting – British Columbia – Periodicals.
3. Geology, Economic – British Columbia – Periodicals.
4. British Columbia. Mines Branch

TN270.B74

622'.1'09711

C99-805843-3

VICTORIA
BRITISH COLUMBIA
CANADA

January 2012

FOREWORD

INTRODUCTION

Exploration and Mining in British Columbia 2011 represents the latest annual documentation of the activities of the province's exploration and mining industry. The record goes back to 1874 when the *Annual Report of the Minister of Mines* (Figure 1) first went to print and has evolved through various formats over the years. The volume provides a region-by-region perspective with an in-depth look at significant projects in British Columbia. Readers who wish to acquire a general picture of the mining and exploration industry in British Columbia may find the *British Columbia Mines and Mineral Exploration Overview* (Figure 2) to be a useful publication.

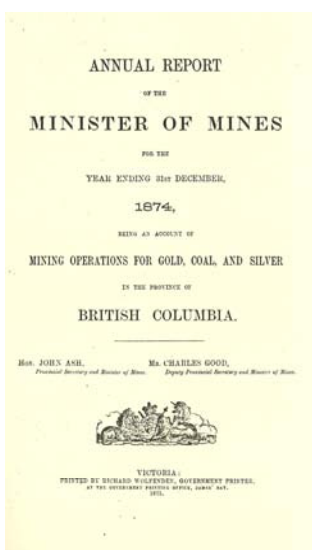


Figure 1. The duty of the collection of information on the Province's mining industry goes back to 1874 when the *Annual Report of the Minister of Mines* first went to print.

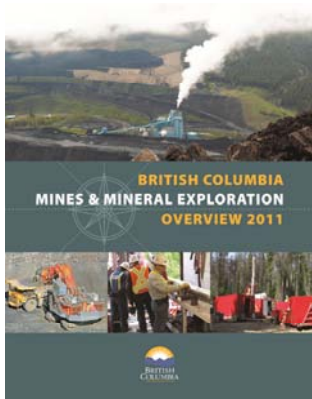


Figure 2. *British Columbia Mines & Mineral Exploration Review 2011* is a companion volume to this publication and provides a more generalized overview of the Province's mining and exploration industry.

The province's exploration sector for coal, metals and industrial minerals is large and by necessity the reviews and summaries contained in this volume tend to be focused on the larger and/or more advanced projects. To learn about other projects, readers are encouraged to contact the appropriate regional geologist. Contact information is given below.

Readers are also encouraged to use this publication in concert with the online geological databases accessible through the BC Ministry of Energy and Mines' Internet site (<http://www.empr.gov.bc.ca/Mining/Pages/default.aspx>). The Ministry's well known MapPlace is a gateway to mineral and coal inventories (MINFILE; COALFILE); assessment reports; tenure; geology; geochemistry; and geophysics.

Information in *Exploration and Mining in British Columbia 2011* has been compiled and written by the province's regional geologists, contractors, and the BC Mineral Development Office under the guidance of the Chief Geologist of the BC Geological Survey.

BC's Regional Geologists and the Mineral Development Office

During the past year three of five of the Regional Geologist positions have been filled with new staff that have been challenged to meet publication deadlines or provide local knowledge that experience will eventually afford them. Contractors provided both seed information and final drafts of the Skeena and Omineca/Northeast chapters. The net effect is portions of some chapters have not benefitted from the Regional Geologist insights this document usually conveys. This will change as new staff settle into their roles and connect with the industry and its activity.

Regional geologists are located in Vancouver (Bruce Northcote), Smithers (Jeff Kyba), Kamloops (Jim Britton), Prince George (Paul Jago) and Cranbrook (Dave Grieve) (Figure 3). They work with

the BC Ministry of Energy and Mines and Geological Survey Branch to provide geological and mineral industry expertise and to promote mineral exploration and development in the province. As regional experts they also support various functions of the natural resource sector agencies as well as the Ministry of Forests, Lands and Natural Resource Operations, where their positions currently reside.

Regional geologists' roles and responsibilities include:

- fostering sustainable exploration, development and use of the province's mineral and coal resources;
- providing clients with up-to-date technical information and professional advice about known and potential mineral and coal deposits;
- providing geological and mineral resource information to project review or land-use decision-making processes;
- monitoring the status of the mining industry and the development of infrastructure required for mineral resource development;
- working on field projects and surveys, compilations, promotional brochures and deposit models; and
- contributing information to maintain and update geosciences databases (*e.g.* MINFILE).

Regional Geologists Contact Information			
Northwest – Smithers	Jeff Kyba	250-847-7787	Jeff.Kyba@gov.bc.ca
Northeast/North-Central – Prince George	Paul Jago	250-565-4159	Paul.Jago@gov.bc.ca
South-Central – Kamloops	Jim Britton	250-371-3903	Jim.Britton@gov.bc.ca
Southeast – Cranbrook	Dave Grieve	250-426-1758	Dave.Grieve@gov.bc.ca
Southwest – Vancouver	Bruce Northcote	604-660-2713	Bruce.Northcote@gov.bc.ca
BC Mineral Development Office – Vancouver	Bruce Madu	604-660-3332	Bruce.Madu@gov.bc.ca

Methodology

Compilation of *Exploration and Mining in British Columbia* presents certain challenges. Deadlines demand manuscript submission before all information from programs carried out later in the year is available, and before some programs are even complete. It is also difficult to garner information on all programs that have occurred. In particular, critical grassroots exploration that leads to many new discoveries may be difficult to track because it typically occurs below *Mines Act* permit thresholds.

Regional geologists maintain contact with their industry peers throughout the year, and ideally are able to visit them at project sites to view outcrops and drill core and to discuss results and progress. A significant amount of information is gleaned from corporate press releases, websites and reports. Late in the year informal surveys are conducted to gather as much of the statistical information as possible, but in some instances the authors use their professional judgement to provide reasonable estimates.

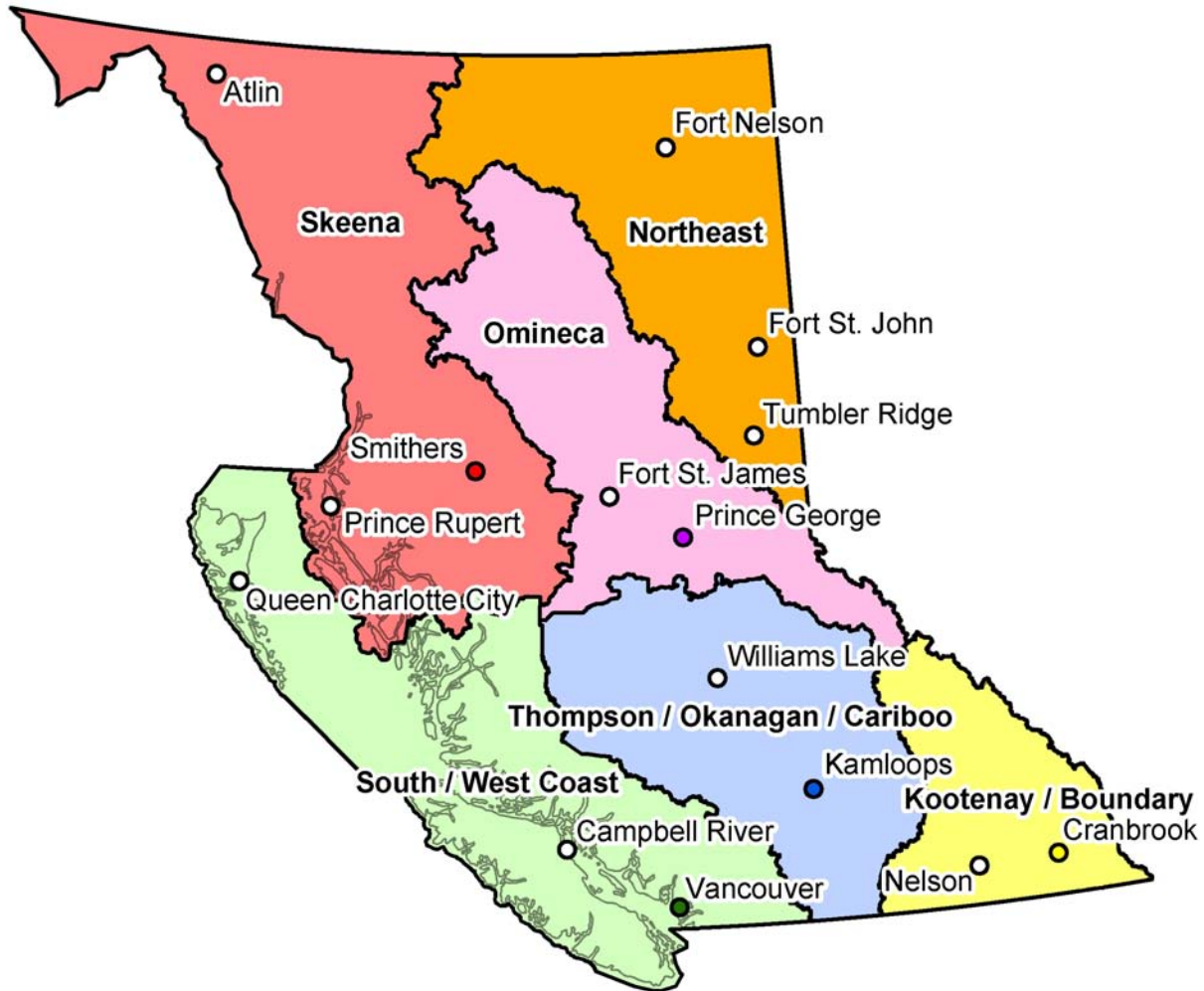


Figure 3. The locations of the various regions referred to in this publication and the locations of many of the cities and towns in the province.

Exploration expenditures are broken down by category: grassroots exploration, early-stage exploration, advanced exploration, mine evaluation, and mine lease exploration. Grassroots exploration commonly does not require permitting and the activities and expenditures assigned to this category are less likely to be reported. Early-stage exploration involves focused activities often based on a deposit model. It may include geophysics, geochemistry, trenching and drilling. Advanced-stage exploration is concerned with resource definition emphasizing drilling and bulk sampling, but may include baseline environmental studies, economic pre-feasibility work and exploration of secondary targets. Mine evaluation begins with the firm commitment to develop a resource, and usually coincides with a pending application to government to open a mine; it tends to concentrate on the environmental, social, engineering and financial assessments of a project. Mine lease exploration represents work on a mining property beyond known reserves; it may have characteristics of early-stage or advanced exploration.

Since the exploration expenditures include some estimates, final dollar figures for each region are rounded to the nearest whole million.

ACKNOWLEDGMENTS

The cooperation of the industry in providing information and access to project sites is always welcomed and sincerely appreciated. The staff authors also wish to thank John DeGrace, Gayle Febbo and Mireille Pelletier (Blue Metal Resources) for accepting the invitation to contract research and write portions of the volume. Paul Wojdak, emeritus Regional Geologist, provided editorial commentary and oversight for the Skeena region. Robin Chu produced the new series of compilation maps used throughout the publication. Compilation and layout of the volume was completed by George Owsiacski and Garry Payie of Total Earth Science Services.