



SUMMARY OF ACTIVITIES **2018:** **Minerals and Mining**

GEOSCIENCE BC SUMMARY OF ACTIVITIES 2018: MINERALS AND MINING

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Foreword

Geoscience BC is pleased to once again present results from our ongoing projects in our annual *Summary of Activities* publication. Following on from last year, we are publishing the papers in two separate volumes: *Energy and Water*, and this volume, *Minerals and Mining*. Both volumes are available in print and online via www.geosciencebc.com.

Summary of Activities 2018: Minerals and Mining

This volume, *Summary of Activities 2018: Minerals and Mining*, contains 12 papers from Geoscience BC-funded projects or 2018 scholarship recipients that are within Geoscience BC's strategic focus area of minerals. The papers are divided into three sections, based on Geoscience BC's strategic objectives of

- 1) Identifying New Natural Resource Opportunities;
- 2) Advancing Science and Innovative Geoscience Technologies; and
- 3) Facilitating Responsible Natural Resource Development.

In the first section, *Identifying New Natural Resource Opportunities*, Rioseco et al. discuss ongoing work interpreting structure, metamorphism and exhumation to provide context for mineral deposits in the interface between the Purcell Anticlinorium and the Kootenay Arc in southeastern British Columbia (BC). Simister et al. (including scholarship recipient Iulianella Phillips) provide an update on using microbial-community fingerprinting in mineral-deposit exploration, and scholarship recipient Luck (et al.) discusses the use of hydrocarbon-pathfinder techniques as a geochemical means to explore for Cu-porphyry and related deposits in BC. Kuppusamy and Holuszko examine rare-earth elements in BC coalfield samples, and present preliminary characterization and extraction findings.

In the *Advancing Science and Innovative Geoscience Technologies* section, Bouzari and Hart identify key features of zircon that are indicative of porphyry-fertile plutons in BC. Scholarship recipients Binner (et al.) and Graham (et al.) highlight mineral-deposit studies of the IKE and Iron Cap deposits, respectively. Scholarship recipient Miller (et al.) presents preliminary lithological descriptions, stratigraphic sequences and structural work near the Big Bulk Au-Cu porphyry system and Red Mountain Au deposit in northwestern BC. Finally, Mackay et al. give an update on using Roben Jig technology to clean coal, this year's refinement of the washing capabilities benefiting from a rare single-seam run at an operating industrial-washing plant that enabled a direct comparison with the laboratory results.

Finally, in the *Facilitating Responsible Natural Resource Development* section, Fraser introduces two new Geoscience BC-supported projects that will tackle microbial health and biodiversity as part of mine-site reclamation. Scholarship recipient Vanderzee (et al.) presents carbon-sequestration research focused on the Baptiste minesite in central BC.

Geoscience BC Minerals and Mining Publications 2018

In addition to the two *Summary of Activities* volumes, Geoscience BC releases interim and final products from our projects as Geoscience BC reports. The following thirteen Minerals and Mining reports were published in 2018:

- Eleven technical papers in the *Geoscience BC Summary of Activities 2017: Minerals and Mining* volume (Geoscience BC Report 2018-01)
- **Midas High Resolution Magnetic and Radiometric Survey: Search Project Phase III**, by CGG (Geoscience BC Report 2018-03)
- **Producing Clean Coal from Western Canadian Coal Fields Using the Water-Based Roben Jig**, by M. Mackay, R. Leeder, L. Giroux, M. Holuszko, H. Dexter and D. Thomas (Geoscience BC Report 2018-03)
- **Enhancing Geochemical Precision by Analyzing the Clay Fraction in Till: Cost-Benefit Study from the TREK Project Area, British Columbia**, by P.W.G. van Geffen and E.B. Bluemel (Geoscience BC Report 2018-05)
- **Advanced Processing of the TREK Project Geochemical Data: Identifying and Enhancing Geochemical Anomalies in the TREK Project Area Using Sediment Transport Modelling Combined with Multimedia and Multivariate Data Analysis**, by D. Sacco, R. Lett, W. Jackaman and B. Elder (Geoscience BC Report 2018-07)
- **Merging Geological, Seismic Reflection and Magnetotelluric Data in the Purcell Anticlinorium**, by F.A. Cook (Geoscience BC Report 2018-09)

- **Adding Value to Regional Till Geochemical Data through Exploratory Data Analysis, TREK Project Area, Central BC: Final Results**, by E.B. Bluemel (Geoscience BC Report 2018-10)
- **Geology of the Greenwood Map Sheet (NTS 082E/02)**, by T. Höy (Geoscience BC Map 2018-11)
- **Geology and Mineral Potential of the TREK Area, Northern Interior Plateau, Central British Columbia, Parts of 1:250,000 NTS Sheets 093B, C, F and G**, by J.J. Angen, C.J.R. Hart, R.S. Kim and M. Rahimi (Geoscience BC Report 2018-12)
- **Integrated Assessment of Regional Stream-Sediment Geochemistry for Metallic Deposits in Northwestern British Columbia (Parts of NTS 093, 094, 103, 104), Canada**, by CSA Global Canada Geosciences Ltd. (Geoscience BC Report 2018-14)
- **A Compilation of Quality Control Data from Geoscience BC Regional Geochemical Survey (RGS) Initiatives**, by W. Jackaman (Geoscience BC Report 2018-15)
- **Mineralogical and Geochemical Characteristics of Porphyry-Fertile Plutons: Guichon Creek, Takomkane and Granite Mountain Batholiths, South-Central British Columbia (NTS 092I, P, 093A, B)**, by F. Bouzari, C.J.R. Hart, T. Bissig and G. Lesage (Geoscience BC Report 2018-17)
- **Detrital Gold as a Deposit-Specific Indicator Mineral by LA-ICP-MS Analysis**, by D.A. Banks, R.J. Chapman and C. Spence-Jones (Geoscience BC Report 2018-21)

All releases of Geoscience BC reports and data are published on our website and are announced through our website and e-mail updates. Most final reports and data can also be viewed or accessed through our Earth Science Viewer at <http://www.geosciencebc.com/s/WebMaps.asp>.

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