

# Donald J. Birak

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## PROFESSIONAL EXPERIENCE:

### 2014 to Present

- Consulting Geologist – Birak Consulting LLC.
- Member – Board of Directors of Blackwolf Copper and Gold.  
Member of Environment, Health, Safety and Technical Committee.  
Member of Compensation Committee.
- Member – Board of Directors of Revival Gold Inc.  
Member Technical, Health, Safety and Environment Committee  
Member Audit Committee
- Past member of Board of Directors for;  
Dolly Varden Silver Corporation  
Guyana Goldstrike

Currently consulting for public companies with precious metal projects in the Americas.

Co-authored updated (2022) NI 43-101 technical report for Andean's Bolivian operations.

Prepared the first two NI 43-101 technical reports for the Silver Sand project in Bolivia for New Pacific Metals Corp.

### February 2004 to October 2013

**SENIOR VICE PRESIDENT - EXPLORATION**, Coeur Mining, Inc. (formerly, Coeur d'Alene Mines Corporation).

Responsible for global Greenfields and Brownfields exploration. Served as corporate-level qualified person, to help ensure compliance with Canadian and US securities regulations with respect to exploration and mineral resources and reserves reporting.

- Promoted a culture of safety and environmental stewardship within all exploration teams resulting in several regional and international awards.
- Established standards for performance and reporting of exploration results to ensure compliance with appropriate regulations – US, Canada, Australia.
- Consistent discoveries and development of new mineral resources and reserves at operating properties.
- Designed and managed exploration in the Americas and in Tanzania.

- Lead Team discovery of the Joaquin and Independencia, epithermal silver and gold deposits in Argentina and Mexico, respectively.
- Oversight of mine geology programs at all mine sites.
- Contributed to acquisition opportunity identification and evaluation.
- Part of senior management team presenting periodic operating results to analyst community and shareholders.
- Assisted with company's initial listing on Canadian (TSX) stock exchange.

**July 1998 to February 2004**

**VICE PRESIDENT - EXPLORATION**, AngloGold North America Inc. and,  
**CONSULTING GEOLOGIST**, Minorco SA (later to March 1999)

Design and management of Greenfields and Brownfields exploration programs in North America. Oversight of mine geology and mineral resources and reserves estimation and reconciliation as company Competent Person for North American operations.

- Mineral Resources and Ore Reserves doubled at Cripple Creek, Colorado mine.
- Discovery of new gold deposits in the Cripple Creek district.
- Expanded AngloGold presence into Nevada and Alaska, USA and Ontario, Canada.
- Managed creation of a multi-disciplinary model of the formation of sediment-hosted gold deposits to drive new exploration initiatives in the Great Basin.
- Assisted with successful sale of non-core assets and acquisition of key lands in operating areas.
- Represented the company as Member of the Board of Trustees of the Northwest Mining Association.

**August 1995 to July 1998**

**VICE PRESIDENT - EXPLORATION**, Independence Mining Co. Inc.

Design and management of Greenfields and Brownfields gold exploration programs in the United States. Oversight of mine geology and mineral resource estimation. Oversight responsibility for copper, zinc and nickel exploration at Hudson Bay Mining & Smelting Co. Ltd., Canada.

- Discovery and development of Burns North, Lee Smith, Dash East and West Mahala sediment-hosted gold deposits in the Jerritt Canyon District, Nevada,
- Oversight on definition of the Triple Seven massive sulfide deposit in Manitoba.

**January 1992 to August 1995**

**VICE PRESIDENT - EXPLORATION**, Hudson Bay Mining and Smelting Co. Ltd.

Design and management of copper, zinc and nickel exploration programs in Canada. Oversight of mine geology and mineral resource and reserve estimation. Discovery of the

Triple Seven, Konuto Lake and Photo Lake copper/zinc massive sulfide deposits in the Flin Flon/Snow Lake Greenstone belt of Manitoba.

- Received the “**Bill Dennis Prospector of the Year**” award from the Prospectors and Developers Association of Canada (PDAC) in March 2001, along with company exploration team responsible for the discoveries of the Triple-7, Photo Lake and Konuto Lake deposits.
- Developed new Greenfields exploration program in British Columbia with focus on base metals and gold.
- Represented the company as member, and as Chair, of the Exploration Committee of the Mining Association of Manitoba.

**January 1991 to January 1992**

**EXPLORATION MANAGER**, Independence Mining Company Inc.

Exploration for gold deposits in northeastern Nevada, USA. Supervision of mine geology activities at the Jerritt Canyon and Big Springs mines, including mineral resource and reserve modeling.

**March 1978 to January 1991**

**CHIEF MINE GEOLOGIST and Exploration Geologist** (to March 1980), Independence Mining Company Inc. and Freeport-McMoRan Gold Company (predecessor to IMCI).

Management of mine geology activities at the Jerritt Canyon Joint Venture gold mining operation. Mineral resource and reserve reconciliation. Short- and long-range mine planning ore projections. Optimum cutoff grade calculation. Grade control implementation and operation. Responsible for rock mechanics data input to the open pit mine designs in the district.

- Discovery of the Murray, SSX, and MCE Carlin-style gold ore deposits in the Jerritt Canyon District, Nevada.
- Integral part of development of the Jerritt Canyon District from exploration stage to 8,000-tpd production level.
- Defined the first stratigraphic sequence of the Hanson Creek Formation; one of the major hosts to gold mineralization.
- Defined Life-of-Mine ore type metallurgical responses, based on geologic characteristics - an early implementation of the concept of “*geometallurgy*” - and assisted in the evaluation of alternate ore processing technologies, which lead to implementation of patented, whole-ore, fluid bed roasting to replace chlorination for non-oxidized ore.
- Assisted in evaluation of new mining opportunities in China and Australia.
- Built an integrated economic and geostatistical model for grade control.

### **Other Experience**

Uranium exploration in northern, Michigan and Wisconsin, USA

Zinc exploration in south-central (Tri-State) USA

### **EDUCATION:**

**Master of Science in Geology.** Bowling Green State University, Ohio, USA (1978).

- Selected as "**Outstanding Geology Graduate Student**".
- Thesis topic: Petrology of the Middle Precambrian Rocks; Groveland Iron Mine, Iron Mountain, Michigan.
- Selected as "**Outstanding Geology Alumni - 2012**".

Intermediate level Spanish skills.

### **PROFESSIONAL AFFILIATIONS:**

- Registered Member - **Society for Mining, Metallurgy and Exploration** (SME).
- Fellow - **Australasian Institute for Mining and Metallurgy** (AusIMM).
- Fellow - **Society of Economic Geologists** (SEG).
  - Member of the Investment Committee and Budget committees
  - Past President and Trustee of the Society of Economic Geologists Foundation (SEGF).
  - Past Chairperson of the Fundraising Committee of SEGF.

### **PUBLICATIONS/PRESENTATIONS:**

**Birak, D. J.**, and Hawkins, R. J., 1985, The geology of the Enfield Bell Mine and the Jerritt Canyon district, Elko County, Nevada, in Tooker, Edwin W., ed., Geologic characteristics of sediment- and volcanic-hosted disseminated gold deposits, search for an occurrence model: U.S. Geological Survey Bulletin 1646, p. 95-106.

**Birak, D. J.**, 1986, Exploration and Geologic Development of the Jerritt Canyon Gold Deposits, Elko County, Nevada, USA, in Gold '86, An International Symposium on the Geology of Gold Deposits, proceedings volume, A. James MacDonald, editor, pages 488 – 496.

Barr, D. S., **Birak, D. J.**, McCord, T. H., and O'Neil, G. R., 1987, The various forms of refractoriness in Nevada gold ores, Process Mineralogy VII, proceeds from The Metallurgical Society of A.I.M.E. annual meeting, Denver, Colorado, p. 81.

Hofstra, A. H., Northrop, H. R., Rye, R. O., Landis, G. P., and **Birak, D. J.**, 1988, Origin of sediment-hosted disseminated gold deposits by fluid-mixing – evidence from jasperoids in the Jerritt Canyon gold district, NV, USA, in Geol. Soc. of Australia, Bicentennial Gold '88, extended abstracts No. 22, p. 284.

Hofstra, A. H., Leventhal, J. S., Northrop, H. R., Landis, G. P., Rye, R. O., **Birak, D. J.**, and Dahl, A. R., 1991, Genesis of sediment-hosted disseminated-gold deposits by fluid mixing and sulfidization: Chemical-reaction-path modeling of ore-depositional processes documented in the Jerritt Canyon district, Nevada, *Geology*, v.19, pages 36-40.

Hofstra, A. H., Daly, W. E., **Birak, D. J.**, and Doe, T. C., 1991, Geologic framework and genesis of Carlin-type gold deposits in the Jerritt Canyon district, Nevada, USA, *Brazil Gold '91*, E.A. Ladeira, ed., pages 77 – 88.

**Birak, D. J.**, Doe, T. C., and Stevens, D. L., 1992, North Generator Hill Gold Deposit, Jerritt Canyon district, Nevada, *SME Mining Engineering Handbook*, 2<sup>nd</sup> Edition, Volume 1, Case Studies Section 5.8.2, pages 366 - 376.

**Birak, D.J.**, Cruzat, A., Nasi, C., and Romo, C., 2007, Cerro Bayo and Martha, high grade, epithermal silver and gold deposits in Patagonia, presentation to the Prospectors and Developers Association of Canada annual meeting, 31 pages.

**Birak, D. J.**, Maslowski, M., Molina, C., Melchor, A., and Figueroa, H., 2010, Geology and exploration history of the Palmarejo silver and gold district, Chihuahua, Mexico, *Society of Economic Geologists Guidebook Series*.

**Birak, D. J.**, Cruzat, A., and Romo, C., 2012, Geology of the Joaquin Silver and Gold Deposit, Santa Cruz, Argentina, presentation to the Society of Economic Geologists, Integrated Exploration and Ore Deposits Conference, Lima, Peru, 21 pages.

**Birak, D. J.** and Earnest, D., 2016, Best Practice in Mineral Exploration, presentation to SME annual meeting, Phoenix, Arizona, USA.

**Birak, D. J.** and Earnest, D., 2016, Exploration best practices: Success and compliance, abstract and presentation to Geological Society of America – Rocky Mountain Section meeting, University of Idaho, Moscow, ID., USA.

**Birak, D. J.** and Earnest, D., 2020, The U.S. Securities and Exchange Commission's New Regulation S-K 1300, Disclosure Requirements for Mining Registrants; What Every Minerals Geologist Needs to Know, abstract and paper in *Geol. Soc. of Nevada Symposium Proceedings*.

- Presented at Geological Society of Nevada 2022, Reno, NV, USA.