

# Red Pennant Geoscience

Red Pennant Communications Corp.

## MICHAEL (MIKE) O'BRIEN

### PRINCIPAL CONSULTANT

B. Sc. (Hons), Dip Data Statistics, M. Sc. Eng., FAusIMM, FSAIMM, P.Geo. APEGBC

Mike is a mining industry professional highly experienced across the spectrum of exploration and mine geology, geostatistics and resource estimation, and management. Mike has a reputation for innovative problem-solving and strategic thinking, focusing and integrating short term actions with long term goals. Mike has carried out numerous third party and due diligence reviews and audits. He was the secretary and chairman of the SAMREC Codes Committee from 1999-2011 contributing to the development of reporting codes; he has a deep knowledge of international mineral resource and mineral reserve reporting.

### COMMODITIES/DEPOSIT TYPES

<b>Gold</b>	Epithermal, orogenic, IRG, Wits	<b>Silver</b>	Epithermal, vein, disseminated
<b>Copper</b>	Porphyry, VMS	<b>Nickel</b>	Magmatic, laterite
<b>Lead-Zinc</b>	Mississippi Valley, Oxide Replacement	<b>Uranium</b>	Wits

### LICENSES & MEMBERSHIPS

P.Geo. (BC, Canada), Pr.Sci.Nat. (South Africa), F.S.A.I.M.M., F.Aus.I.M.M., F.G.S.S.A., Pilot Certificate – Basic Operations, Small Remotely Piloted Aircraft Systems, Transport Canada

### COUNTRIES WORKED IN

Canada, South Africa, Brazil, Ghana, Namibia, DRC, Russia, Kazakhstan, Kyrgyzstan, Uzbekistan, Colombia, Peru, United States, Ireland, Australia, Argentina

### LANGUAGES (OTHER THAN ENGLISH)

Afrikaans, elementary Russian & Portuguese

### SOFTWARE

Leapfrog Geo and Edge, Datamine Studio, Isatis, SGeMS, Snowden Supervisor, R

### EXPERIENCE

**2019 - Present Principal Consultant and Director, Red Pennant, Vancouver, Canada**

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**2018 - 2019 Technical Director: Geology and Mineral Resources, Ausenco, Vancouver, Canada**

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**2014 - 2018 Senior Principal Consultant, Seequent/Aranz Geo/Quantitative Group, Vancouver**

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**2013 - 2014 Principal Technical Specialist, AMEC Inc, Vancouver**

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Resource estimation and geology modelling

**2011 - 2014 Chief Geologist, Tetra Tech Inc, Vancouver, Canada**

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Peer review of technical reports, Mineral Resource estimation, geological modelling, training, mentoring

**1999 - 2011 Manager Mineral Resources & Mine Geology, AngloGold Ashanti Ltd, Johannesburg**

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Mike O'Brien



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Technical leader for Resource Estimation and Mine Geology, initially in South Africa, and at various times in Ghana, Australia, CIS and N & S America. Due diligence and M&A team technical member and corporate reviewer for resource models

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**1995 - 2011 SAMREC Committee Member, SAIMM**

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Secretary of the SAMREC Committee, which developed the SAMREC and SAMVAL Codes for Public Reporting (mandatory for listing on the Johannesburg Securities Exchange (JSE) and equivalent to and developed from the JORC Code). Chairman of the SAMREC Committee 2009-2011.

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**1991 - 1998 Divisional Ore Evaluation Analyst, Anglo American, Johannesburg, South Africa**

Geostatistical Mineral Resource estimation and geological modelling

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**1990 - 1991 Resident Geologist, President Brand Gold Mine, Welkom, South Africa**

Head of Geology Department of a large (7 Shafts) deep-level underground gold mine.

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**1988 - 1990 Technical Assistant to the Consulting Geologist, Anglo American Corporation, Gold & Uranium Division, Johannesburg, South Africa**

Provided technical assistance to the Consulting Geologists to manage the geology discipline across the gold mines of Anglo American.

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**1986 - 1988 Section Geologist, Vaal Reefs Exp & Mining, Klerksdorp, South Africa**

Deputy head of a large Geology Department Servicing several deep-level underground gold mining operations.

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**1981 - 1986 Mine Geologist, Vaal Reefs Exp & Mining, Klerksdorp, South Africa**

Operational shaft geologist, underground mapping, structural interpretation, borehole logging, managing technical staff.

