

Dr Peter J. Pollard – Consulting Economic Geologist Curriculum Vitae

NAME: Peter John Pollard
NATIONALITY: Australian
CURRENTLY RESIDING: Brisbane

PERMANENT ADDRESS: Pollard Geological Services Pty. Ltd.
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EDUCATION: PhD James Cook University 1986
BSc (Hons) James Cook University 1979
B. App. Sci. Canberra CAE 1974

OVERVIEW

More than 30 years research and consulting experience on intrusion-related mineralizing systems including copper-gold porphyry (e.g. Grasberg, Escondida Norte, Oyu Tolgoi, Ok Tedi, Sar Cheshmeh district), tin-tungsten-molybdenum-bismuth-gold (e.g. Herberton, Zaaipplaats, Timbarra, Mongolia), iron-oxide copper-gold-uranium (e.g. Olympic Dam, Carajas, Cloncurry, Chile, Mexico, Mauritania) gold-silver systems (low-sulphidation, high-sulphidation, mesothermal) and a variety of other mineralization styles.

Experienced board member of public and private companies. Presenter of short courses on ore deposit geology to industry for more than 20 years, together with numerous conference presentations and significant experience presenting to analysts, shareholders and board members. Qualified person (NI43-101 and JORC) with strong technical and scientific writing skills – scientific reports, company technical reports and prospectuses. Reviewer of papers for international journals.

CURRENT AND RECENT BOARD AND ADVISORY ROLES:

Non-executive director and chairman of Asiamet Resources Limited (TSX-V – ARS; AIM - KLG) 1/7/13 to present

Non-executive director Firesteel Resources Inc. (TSX-V – FTR) – 4/9/13 to present

Non-executive director G4G Capital Corp (TSX-V - GXG) – 2008 to 2015

Member of the Editorial Board of Economic Geology 2011-2015

Director of private companies since 1988.

CONSULTING EXPERIENCE

Consultant to exploration and mining companies worldwide since 1985 principally in copper, gold, tin and rare-metals:

☐ ***Porphyry and high sulphidation Cu and Au (including skarn) deposits:***

Major assignments at Escondida Norte, Chile (Minera Escondida), Grasberg, Kucing Liar and Wabu Indonesia (P.T. Freeport Indonesia), Oyu Tolgoi and Kharmagtai, Mongolia (Ivanhoe Mines, Mongolia), Ok Tedi and Townsville, Papua New Guinea (Ok Tedi Mining Limited), Los Humos, Mexico (Peñoles), Sar Cheshmeh district, Iran (NICICO), Siberia and Russian Far East (Intergeo).

Other assignments in China (Billiton), USA (Kennecott Exploration), Mongolia (Asia Gold), Indonesia (Newcrest, Asia Gold, Kalimantan Gold, P.T. Pasifik Masau), Peru and Chile (CVRD), Mexico (Peñoles), Philippines (fcf minerals), Australia (MIM, Newcrest), Kazakhstan (Frontier, Multiplex) and Vietnam (Triple Plate Junction).

☐ ***Iron-oxide copper-gold deposits:***

Major assignments in the Cloncurry district, Australia (various), Carajas district, Brazil (CVRD, Codelco), Chile, Peru, Canada (Rio Tinto), Mexico (Codelco, Peñoles), Zambia (Zambezi Resources) and Mauritania (Alecto Minerals plc).

☐ ***Gold-silver systems***

Experience in a variety of precious metal systems including greenstone-hosted, intrusion-hosted, Witwatersrand-style, mesothermal and epithermal systems in Mauritania (Kinross), Australia (Homestake), South Africa (Anglovaal), Ethiopia (Minerva Resources), Ghana (G4G Resources), Indonesia (Kalimantan Gold, Newcrest), Kazakhstan (Frontier), Columbia, USA and Saudi Arabia (Private equity)

☐ ***Tin-tungsten and rare metals systems:***

Major assignments in Australia, Indonesia, Thailand, Malaysia, China, Canada, South Africa, Mongolia and Bolivia with various companies and international agencies (Rio Tinto, Billiton, Preussag, Rand Mines, Ausex Resources, Kara Minerals, Eumerella Resources, United Nations, South East Asia Tin Research and Development Centre, Geological Survey of Canada). Other assignments: Spain and Myanmar.

☐ ***Sediment- and volcanic hosted base metals deposits:***

Australia (BHT deposits), Angola (Renaissance Capital), South Africa (Anglovaal), D.R. Congo (Vale), Indonesia (Kalimantan Gold).

Principal advisory activities include:

- ☐ Target generation at regional and local scale
- ☐ Project evaluation and design of exploration and drill programs
- ☐ Independent expert reports
- ☐ Rapid assessment in outcrop and drill core of mineralization styles and structural controls as a guide to exploration

- ☐ Detailed paragenetic studies of rock suites and/or drill core to determine the evolution of hydrothermal alteration and mineralization as a guide to targeting exploration
- ☐ Characterization of gold grains from petrographic studies of mineralized samples
- ☐ Petrological studies of rock suites and geochronology of intrusive rocks and mineralizing systems using Ar-Ar, Re-Os, U-Pb and other dating techniques

SHORT COURSE PRESENTATION

Regular presenter since 1985 of short courses on a range of industry interests, including ore textures and breccias, porphyry Cu-Au systems, tin-tungsten and rare-metal systems, iron-oxide copper-gold systems, gossans and leached outcrops, and skarn and carbonate replacement deposits. These short courses have been designed using practical examples collected from my global geological and exploration experience over the past 30 years and include materials from significant deposits in Africa, South America, North America, Asia, and Australia.

Clients for these courses have included:

Anglogold (Peru)
 ADIMB (Brazil)
 Asia Gold (Mongolia)
 BHPBilliton (Australia, China, Chile)
 Codelco (Chile, Mexico, Brazil)
 Freeport (Indonesia)
 Homestake (Chile)
 Ivanhoe (Mongolia)
 Newcrest (Indonesia)
 Newmont (Indonesia)
 Normandy (Australia)
 Olympic Dam Operations (Australia)
 Peñoles (Mexico)
 Phelps Dodge (Chile, Philippines)
 Rio Tinto (Chile, Peru, Bolivia)
 NICICO (Iran)
 SEATRAD Centre (Malaysia, Thailand, Indonesia)
 US Geological Survey (USA)
 Triple Plate Junction (Vietnam)
 Vale (Brazil, Chile, D.R. Congo)
 as well as public presentations (Australia, Canada, Peru, United Kingdom).

POSITIONS

1988-present: Director Pollard Geological Services Pty. Ltd.

Providing consulting services and training courses to minerals exploration and mining companies worldwide.

1984-1997: Research Scientist

Research scientist at James Cook University, Australia working on intrusion-related mineralizing systems including tin-tungsten, copper-gold, tantalum-niobium-lithium and beryllium-rare earth elements.

- ☐ Produced approximately 70 research papers in journals including Economic Geology, Mineralium Deposita, Exploration and Mining Geology, Lithos and Precambrian Research
- ☐ 1994-1997 Leader of AMIRA project 438 – Cloncurry Base Metals and Gold investigating IOCG and BHT mineralization in the Cloncurry district, NW Queensland. 15 sponsor companies and cash budget of more than \$1.3 million.
- ☐ 1984-1992 Chief Investigator and Research Associate grants from the Australian Research Council for major studies at the Zaaiplaats tin mine (South Africa) and the Yichun tantalum mine (China).
- ☐ 1989-1993 Leader International Geological Correlation Program project 282 – Rare-metal Granitoids
- ☐ Supervised Australian and International Students at Honours (10), Masters (7), and PhD (6) level.
- ☐ Regular lecturing to James Cook University, School of Earth Sciences MSc and BSc Honours programs.
- ☐ Visiting scientist at Carleton University, Ottawa, Canada (1988).
- ☐ Editor of special issues of Economic Geology (rare-metal deposits) and the Australian Journal of Earth Sciences (Cloncurry IOCG)

1977-1984: Undergraduate (Flinders University), Honours (JCU) and PhD student (JCU).

1975-76: Mine and exploration geologist

Anglovaal Transvaal Consolidated Investment Company Limited, South Africa. Mine geologist Hartebeestfontein Gold Mine (Witwatersrand style), copper exploration in the Limpopo Mobile Belt, northern Transvaal

1970-74 Undergraduate student at Canberra College of Advanced Education

PROFESSIONAL AWARDS AND RECOGNITION:

2005: Barlow Medal presented by the Canadian Institute of Mining and Metallurgy for the best paper of 2003 in Exploration and Mining Geology (with Pat Williams).

1998-2008: Adjunct Senior Research Fellow, School of Earth Sciences, James Cook University.

1990-1993: Australian Research Council Chief Investigator

1987-1989: Australian Research Council Research Associate

1984-1986: Australian Research Council Research Associate

1981: French Government Scientific and Professional Scholarship spent at Centre de Recherche Pétrographiques et Géochimiques, Nancy, France (1981-82).

1982: William Frencheville Prize presented by the Institution of Mining and Metallurgy (United Kingdom) for the best paper by a student

1979: James Cook University Postgraduate Research Award – 3 year PhD scholarship

1978: Getty Oil Company bursary presented to the student with the best undergraduate record

Reviewer of research papers for:

American Mineralogist
Australian Journal of Earth Sciences
Bulletin Société Géologique de France
Canadian Mineralogist
Earth Science Reviews
Economic Geology
Journal of Geochemical Exploration
Journal of Southeast Asian Earth Sciences
Lithos
Mineralium Deposita
Mineralogical Magazine
Mineralogy and Petrology
Ore Geology Reviews
Resource Geology

PROFESSIONAL MEMBERSHIPS:

Fellow of the Society of Economic Geologists
Member of the Australasian Institute of Mining and Metallurgy (Chartered Professional)
Member of the Geological Society of Australia
Member of the Society for Geology Applied to Mineral Deposits

LANGUAGES

Excellent spoken and written English, intermediate level spoken French

PUBLICATIONS:

Pollard, P.J., 2014. Grade distribution of the giant Ok Tedi Cu-Au deposit, Papua New Guinea - a discussion. *Economic Geology* v. 109, p. 1489-1494.

Pollard, P.J., 2006. An intrusion-related origin for Cu-Au mineralization in iron oxide copper gold (IOCG) provinces. *Mineralium Deposita* v. 41, 179-187.

Baker, T., **Pollard, P.J.**, Mustard, R., Mark, G. and Graham, J.L., 2005. A comparison of granite related tin, tungsten and gold-bismuth deposits: Implications for exploration. *Society of Economic Geologists Newsletter* April 2005, no. 61, p. 5 and 10-15.

Pollard, P.J., Taylor, R.G. and Peters, L., 2005. Ages of intrusion, alteration and mineralization at the Grasberg Cu-Au deposit, Papua, Indonesia. *Economic Geology* v. 100, p. 1005-1020.

Oliver, N.H.S., Mark, G., Cleverley, J.S., **Pollard, P.J.**, Fu, B., Marshall, L.J., Rubenach, M., Williams, P.J., and Baker, T., 2004. Modeling the role of sodic alteration in the genesis of iron-oxide-copper-gold deposits: eastern Mt Isa Block, Australia. *Economic Geology* v. 99, p. 1145-1176.

Mark, G., Foster, D., **Pollard, P.J.**, Williams, P.J., Tolman, J., Darvall, M., and Blake, K., 2004. Stable isotope evidence for magmatic fluid input during large-scale Na-Ca alteration in the Cloncurry Fe oxide Cu-Au district, NW Queensland, Australia. *Terra Nova*, v. 16, p. 54-61.

Williams, P.J., Fu, B., **Pollard, P.J.**, Baker, T., Margotomo, W., Ryan, C.G., van Acherberg, E., Mernagh, T., Condliffe, E., and Yardley, B., 2003. Fluid inclusion geochemistry of the Grasberg Cu-Au porphyry. *Transactions of the Institution of Mining & Metallurgy (Section B: Applied Earth Sciences)*, v. 112, p. 195-196.

Pollard, P.J. and Taylor, R.G., 2003. High-sulphidation Cu-Au mineralization in the Ertsberg District, Irian Jaya - implications for genetic models. Contribution No. 61, *Proc. Magmas, Fluids & Porphyry - Epithermal Deposits Symposium*. Economic Geology Research Unit, James Cook University, pp. 60-65.

Mark, G. and **Pollard, P.J.**, 2003. Contrasting composition of metasomatic and metamorphic scapolite in the Eastern Fold Belt, Northwest Queensland, Australia. In Eliopoulos, D.G. et al., (Eds.), *Mineral Exploration and Sustainable Development*. Millpress, Rotterdam, p. 1083-1086.

Lenharo, S.L., **Pollard, P.J.**, and Born, H., 2003. Petrology and textural evolution of granites associated with tin and rare-metals mineralization at the Pitinga mine, Amazonas, Brazil. *Lithos* v. 66 p. 37-61.

Fu, B., Williams, P.J., Oliver, N.H.S., Guoyi Dong, **Pollard, P.J.**, and Mark, G., 2003. Fluid mixing versus unmixing as an ore-forming process in the Cloncurry Fe oxide-Cu-Au district, NW Queensland, Australia: Evidence from fluid inclusions. *Journal of Geochemical Exploration*, v. 78-79, p. 617-622.

Fu, B., Williams, P.J., Oliver, N.H.S., **Pollard, P.J.**, Baker, T., Margotomo, W., Xu, Z., Qiu, J., Hu, W., and Ren, Q., 2003. Fluid inclusions in porphyry copper-gold deposits: Examples from Grasberg, Indonesia and Shaxi, East China. *EGRU Contribution 61, Magmas, Fluids & Porphyry - Epithermal Deposits Symposium*. Economic Geology Research Unit, James Cook University, p. 1-12.

Fu, B., Baker, T., Margotomo, W., Mernagh, T.P., **Pollard, P.J.**, Ryan, C.G., Ulrich, T., and Williams, P.J., 2003. Copper carried in CO₂-bearing vapor? Microanalytical characterization of fluid inclusions from the Grasberg porphyry copper-gold deposit, Irian Jaya, Indonesia. *Geochimica et Cosmochimica Acta* v. 67 (18S), p. A105.

Pollard, P.J. and Taylor, R.G., 2002. Paragenesis of the Grasberg Cu-Au deposit, Irian Jaya, Indonesia: results from logging section 13. *Mineralium Deposita* v. 37, p. 117-136.

Oliver, N.H.S., Mark, G., Rubenach, M.J., **Pollard, P.J.**, Williams, P.J., and Marshall, L.J., 2001. Albitization as a chemical precursor to ironstone-Cu-Au mineralization in the Cloncurry district – geochemical and isotopic evidence. In Mark, G., Oliver, N.H.S. and Foster, D.R.W. (eds.) *Mineralization, alteration and magmatism in the Eastern Fold Belt, Mount Isa Block, Australia: Geological review and field guide*. Geological Society of Australia Specialist Group in Economic Geology Publication No. 5, p. 64-84.

Williams, P.J., Dong, G., Ryan, C.G., **Pollard, P.J.**, Rotherham, J.F., Mernagh, T.P. and Chapman, L.H., 2001. Geochemistry of hypersaline fluid inclusions from the Starra (Fe-oxide)-Au-Cu deposit, Cloncurry district, Queensland. *Economic Geology* v. 96, p. 875-883.

Williams, P.J. and **Pollard, P.J.**, 2001. Australian Proterozoic iron oxide-Cu-Au deposits: An overview with new metallogenic and exploration data from the Cloncurry district, northwest Queensland. *Exploration and Mining Geology* v. 10, p. 191-213.

Perring, C.S., **Pollard, P.J.** and Nunn, A.J., 2001. Petrogenesis of the Squirrel Hills granite and associated magnetite-rich sill complex: Lightning Creek prospect, Cloncurry district, northwest Queensland. *Precambrian Research* v. 106, p. 213-238.

Mark, G., Foster, D.R.W., Oliver, N.H.S., Richmond, J.M., **Pollard, P.J.**, and Tolman, J., 2001. The role of magmatism in regional sodic-calcic alteration in the Cloncurry district, north Australia. In Mark, G., Oliver, N.H.S. and Foster, D.R.W. (eds.) *Mineralization, alteration and magmatism in the Eastern Fold Belt, Mount Isa Block, and Australia: Geological review and field guide*. Geological Society of Australia Specialist Group in Economic Geology Publication No. 5, p. 46-63.

Davis, B. K., **Pollard, P.J.**, Lally, J.H., McNaughton, N.J., Blake, K., and Williams, P.J., 2001. Deformation history of the Naraku Batholith, Mt Isa Inlier, Australia: implications for pluton ages and geometries from structural study of the Dipvale Granodiorite and Levian Granite. *Australian Journal of Earth Sciences* v. 48, p. 113-129.

Pollard, P.J., 2001. Sodic (-calcic) alteration associated with Fe-oxide Cu-Au districts: an origin via unmixing of magmatic-derived H₂O-CO₂-NaCl±CaCl₂-KCl fluids. *Mineralium Deposita* v. 36, p. 93-100.

Perring, C.S., **Pollard, P.J.**, Dong, G., Nunn, A.J. and Blake, K.L. 2000. The Lightning Creek sill complex, Cloncurry district, northwest Queensland: a source of fluids for Fe-oxide Cu-Au mineralization and sodic-calcic alteration. *Economic Geology* v. 95, p. 1067-1089.

Pollard, P.J., 2000. Evidence of a magmatic fluid and metal source for Fe-oxide Cu-Au mineralization. In Porter, T.M. (ed.) *Hydrothermal iron oxide copper-gold & related deposits*. Australian Mineral Foundation, Glenside, p. 27-41.

Lenharo, S.L.R., **Pollard, P.J.** and Born, H., 2000. Cassiterite and cryolite mineralization in albite granite, Pitinga, Brazil. 31^o International Geological Congress, Rio de Janeiro, August, 2000. Extended abstract in CD-ROM.

Lenharo, S.L.R., **Pollard, P.J.** and Born, H., 2000. Matrix rock texture in the Pitinga topaz granite, Amazonas, Brazil. *Revista Brasileira de Geociências*. Special volume 30, p. 238-241.

Xu, G. and **Pollard, P.J.**, 1999. Origin of CO₂-rich fluid inclusions in synorogenic veins from the Eastern Mount Isa Fold Belt, NW Queensland and their implications for mineralization. *Mineralium Deposita* v. 34, p. 395-404.

Lenharo, S.L.R., Born, H., and **Pollard, P.J.**, 1999. Petrologic evolution and emplacement of the mineralised Pitinga Granites, Brazil. Fourth Hutton Symposium on the origin of granites and related rocks, Clermont-Ferrand, France. Documents du BRGM, 290, p. 236.

Williams, P.J., Dong, G., **Pollard, P.J.**, Perring, C.S., Ryan, C.G. and Mernagh, T.P., 1999. Fluid inclusion geochemistry of Cloncurry (Fe)-Cu-Au deposits. In Stanley et al. (eds.) *Mineral deposits: Processes to processing*. Balkema, Rotterdam, p. 111-114.

Williams, P.J., Dong, G., Prendergast, K. and **Pollard, P.J.**, 1999. Metasomatism and metal mobility in Broken-Hill-type deposits. In Stanley et al. (eds.) *Mineral deposits: Processes to processing*. Balkema, Rotterdam, p. 999-1002.

Perring, C.S., **Pollard, P.J.**, Dong, G., Nunn, A.J. and Blake, K.L., 1999. Metallogeny of the Lightning Creek Cu-Au prospect, Mount Isa Inlier, Australia. In Stanley et al. (eds.) *Mineral deposits: Processes to processing*. Balkema, Rotterdam, p. 413-416.

Mark, G., Darvall, M., Tolman, J., Foster, D.R.W., Williams, P.J. and **Pollard, P.J.**, 1999. Magmas and regional Na-Ca alteration, Cloncurry district, Australia. In Stanley et al. (eds.) *Mineral deposits: Processes to processing*. Balkema, Rotterdam, p. 385-388.

Belkasmi, M., Cuney, M., **Pollard, P.J.**, Bastoul, A. and Boushaba, A., 1999. Chemistry of micas from the Ez-zirari topaz granites, central Morocco. In Stanley et al. (eds.) *Mineral deposits: Processes to processing*. Balkema, Rotterdam, p. 309-312.

Belkasmi, M., Cuney, M. and **Pollard, P.J.**, 1998. Columbite-tantalite from the Ez-zirari P-poor, Montebraz and Yichun P-rich rare metal granites: genetic implications. *Acta Universitatis Carolinae - Geologica* v. 42, p. 3-6.

Pollard, P.J., Mark, G. and Mitchell, L.M., 1998. Geochemistry of post-1540Ma granites in the Cloncurry district, northwest Queensland. *Economic Geology* v. 93, p. 1330-1344.

Pollard, P.J., 1998. Preface. Thematic issue on the geology and mineral deposits of the Cloncurry district, northwest Queensland. *Australian Journal of Earth Sciences* v. 45, p. 327.

Mark, G., Phillips, G.N. and **Pollard, P.J.**, 1998. Highly selective partial melting of pelitic gneiss at Cannington, Cloncurry District. *Australian Journal of Earth Sciences* v.45, p. 169-176.

Dong, G. and **Pollard, P.J.**, 1997. Identification of ferropyrosmalite by Laser Raman microprobe in fluid inclusions from metalliferous deposits in the Cloncurry district, NW Queensland, Australia. *Mineralogical Magazine* v. 61, p. 291-293.

Taylor, R.P. and **Pollard, P.J.**, 1996. Rare earth element mineralization in peralkaline systems: The T-zone REE-Be-Y deposit, Thor Lake, Northwest Territories, Canada. In Jones, A.P., Wall, F. and Williams, C.T (eds.), *Rare earth minerals: chemistry, origin and ore deposits*, Mineralogical Society Series 7, London, Chapman, p. 167-192.

Mayes, D. and **Pollard, P.J.** (eds.), 1995. *Geology and copper-gold deposits of the Ertsberg (Gunung Bijih) mining district, Irian Jaya*. Contributions of the Economic Geology Research Unit, James Cook University of North Queensland 53, 63p.

Pollard, P.J., 1995. Geology of rare metal deposits: An introduction and overview. *Economic Geology* v. 90, p. 489-494.

Pollard, P.J., Nakapadungrat, S. and Taylor, R.G., 1995. The Phuket Supersuite, SW Thailand: Fractionated I-type granites associated with tin-tantalum mineralization. *Economic Geology* v. 90, p. 586-602.

Yin Lin, **Pollard, P.J.**, Hu Shouxi and Taylor, R.G., 1995. Geological and geochemical characteristics of the Yichun Ta-Nb-Li deposit, Jiangxi Province, south China. *Economic Geology* v. 90, p. 577-585.

Boullier, A-M., Charoy, B. and **Pollard, P.J.**, 1994. Fluctuation in porosity and fluid pressure during hydrothermal events: textural evidence in the Emuford district, Australia. *Journal of Structural Geology* v.16, p. 1417-1429.

McNaughton, N.J., **Pollard, P.J.**, Groves, D.I. and Taylor, R.G., 1993. A long-lived hydrothermal system in Bushveld granites at the Zaaipplaats tin mine: lead isotope evidence. *Economic Geology* v. 88, p. 27-43.

McNaughton, N.J. and **Pollard, P.J.**, 1993. Cassiterite: potential for direct dating of mineral deposits and a precise age for the Bushveld Complex granites: comment. *Geology* v. 21, p. 285-286.

Taylor, R.G. and **Pollard, P.J.**, 1993. Mineralized breccia systems: Methods of recognition and interpretation. Contributions of the Economic Geology Research Unit, James Cook University of North Queensland v. 46, 31p.

Taylor, R.P., and **Pollard, P.J.**, 1992. Study of the peralkaline granite-syenite contact in the Thor Lake area, NWT and its relationship to T-zone mineralization and alteration. Project summaries: Canada-Northwest Territories Mineral Development Subsidiary Agreement 1987-1991, Geological Survey of Canada Open File 2484, p. 123-125.

Raimbault, L., Charoy, B., Cuney, M. and **Pollard, P.J.**, 1991. Comparative geochemistry of Ta-bearing granites. In Pagel, M. and Leroy, J.L. (eds.) *Source, transport and deposition of metals*, Balkema, Amsterdam, p. 793-796.

Pollard, P.J. and Taylor, R.P., 1991. Petrogenetic and metallogenetic implications of the occurrence of topaz-Li-mica granite at the Yichun Ta-Nb-Li mine, Jiangxi Province, south China. In Pagel, M. and Leroy, J.L. (eds.) *Source, transport and deposition of metals*, Balkema, Amsterdam, p. 789-791.

Belkasmı, M., Cuney, M., Raimbault, L. and **Pollard, P.J.**, 1991. Chemistry of micas from the Yichun rare-metal granite (SE China): A comparison with Variscan examples. In Pagel, M. and Leroy, J.L. (eds.) Source, transport and deposition of metals, Balkema, Amsterdam, p. 729-732.

Pollard, P.J., Taylor, R.G., Taylor, R.P. and Groves, D.I., 1991. Petrographic and geochemical evolution of pervasively altered Bushveld granites at the Zaaipiaats tin mine. *Economic Geology* v. 86, p. 1401-1433.

Pollard P.J., Andrew, A.S. and Taylor, R.G., 1991. Fluid inclusion and stable isotope evidence for interaction between granites and magmatic-hydrothermal fluids during formation of disseminated and pipe-style mineralization at the Zaaipiaats tin mine. *Economic Geology* v. 86, p. 121-141.

Taylor R.G. and **Pollard, P.J.**, 1990. Exploration for primary deposits of tin and tungsten in north Queensland. In K.R. Glasson and J.H. Rattigan (eds.), *Geological aspects of the discovery of some important mineral deposits in Australia*, Australasian Institute of Mining and Metallurgy Monograph 17, p. 253-257.

Taylor, R.G. and **Pollard, P.J.**, 1990. Tin and Tungsten exploration in Australia. In K.R. Glasson and J.H. Rattigan (eds.), *Geological aspects of the discovery of some important mineral deposits in Australia*, Australasian Institute of Mining and Metallurgy Monograph 17, p. 219-223.

Charoy, B. and **Pollard, P.J.**, 1990. Albite-rich, silica-depleted metasomatic rocks at Emuford, northeast Queensland: mineralogical, geochemical and fluid inclusion constraints on hydrothermal evolution and tin mineralization. *Economic Geology* v. 84, p. 1850-1874.

Pollard, P.J., Golding, S.D., Witt, W.K., Milburn, D. and Taylor, R.G., 1990. Reconnaissance oxygen isotope study of tin-bearing granites and associated alteration/mineralization, Herberton Tinfield, northeastern Queensland, Australia. In Herbert, H.K. and Ho, S.E. (eds.), *Stable isotopes and fluid processes in mineralization: Geology Department & University Extension, University of Western Australia Publication 23*, p. 324-332.

Pollard, P.J., Taylor, R.G. and Tate, N.M., 1989. Textural evidence for quartz and feldspar dissolution as a mechanism of formation of Maggs Pipe, Zaaipiaats tin mine, South Africa. *Mineralium Deposita* v. 24, p. 210-218.

Pollard, P.J., 1989. Exploration for granite-hosted tantalum deposits - an approach via district analysis. In Möller, P., Cerný, P. and Saupé, F. (eds.): *Lanthanides, tantalum and niobium* (Berlin, Springer-Verlag), p. 263-270.

Pollard, P.J., 1989. Geologic characteristics and genetic problems associated with the development of granite-hosted deposits of tantalum and niobium. In Möller, P., Cerný, P. and Saupé, F. (eds.): *Lanthanides, tantalum and niobium* (Berlin, Springer-Verlag), p. 237-253.

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R.P. and Strong, D.F. (eds.), Recent advances in the geology of granite- related mineral deposits, Canadian Institute Mining Metallurgy Special Volume 39, p. 86-95.

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Pollard, P.J., Pichavant, M. and Charoy, B., 1987. Contrasting evolution of fluorine- and boron-rich tin systems. *Mineralium Deposita* v. 22, p. 315-321.

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