



CV OLIVIER BERTOLI

OB1 Geostatistical Consulting Pty Ltd (trading as OB1 Geostat') provides geostatistical resource evaluation and consulting to the mining sector for a wide range of commodities which includes: Precious and Base Metals, Mineral Sands, Diamonds, Iron Ore and Coal deposits.

OB1 Geostat' relies on the sound application of geostatistical techniques in a timely and efficient manner in constant collaboration with resource geologists with strong focus on a clear communication of outcomes to mine planning engineers, financial analysts and site and/or corporate management.

OB1 Geostat's director is Olivier Bertoli.

Personal Details

Name: Olivier François Bertoli
Date of Birth: 4th January 1972
Citizenship: French and Australian
Languages: French, English. Reading understanding of Italian and Spanish.



Career Summary

Olivier high level training in applied mathematics, mining engineering and geostatistics from the Paris School of Mines is broadened by more than 10 years practical experience as a professional geostatistician. These include 5 years as Technical Director of Quantitative Geoscience Pty Ltd (www.quantitativegeoscience.com).

Olivier has expert knowledge of the geostatistical software toolbox Isatis (developed by Geovariances), and is specialised in staff training in the form of hands-on co-piloting sessions. Olivier has extensive experience in advanced geostatistical modelling: 2D methods, non-linear methods (Uniform Conditioning, Service Variables and MIK), conditional simulations, multivariate analysis and non-stationary modelling.

Olivier maintains very strong links with Geovariances (www.geovariances.fr) and the Centre for Geostatistics in Fontainebleau (www.cg.ensmp.fr) as part of OB1 Geostat's R&D's strategy.

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Work History

March 2001 – December 2005

Principal Geostatistician, Quantitative Geoscience, Perth WA and Brisbane QLD.

Olivier worked for 5 years with QG providing consulting advice on all aspects of resource definition and estimation with particular expertise in advanced non-linear geostatistics, non stationary modelling, multivariate geostatistics and conditional simulations. Olivier ensured internal geostatistical QA/QC at QG and in that regard was in charge of maintaining links with Geostatistical Research Centers in particular the Centre for Geostatistics in Fontainebleau. Olivier performed consulting in gold and copper (with particular experience in porphyry style Cu-Au deposits), working on non-gold estimation (lateritic Nickel, Cobalt, Lead, Zinc, Uranium, Manganese, Coal, Diamond and Iron ore deposits) and grade control.

Main tasks included:

- > Continuous improvement of resource/reserve modelling practices for BHP Billiton Mitsubishi Alliance (Business Improvement Organisation): conducting geostatistical resource management for South Walker Creek and drill spacing optimisation at Poitrel (QLD).
- > Anglo Coal Australia Technical Services (Brisbane – QLD). Specific experience modelling coal seam thickness and quality variables at Moranbah North and Theodore North (Central Queensland). Confidence Interval building via the use of the Discrete Gaussian Model for key variables at Moranbah North.
- > Risk Assessment and Risk mapping for a Nickel Underground mine via the use of Conditional Simulations (CS) (Leinster Nickel Operations – BHPB, WA): use of the CS model to assess specific economic risks to the operation (ore/waste boundary location, mapping of internal Massive Sulphides in disseminated orebody).
- > Resource Modelling: on site assistance with resource modelling practices for Xstrata (Mt Isa Mines – QLD). Specific experience modelling lead and zinc in an open cut (black star project).
- > Geostatistical resource modelling of nickel massive sulphides mineralisation using 2D approaches (1A Shoot, Leinster Nickel Operations – BHPB, WA).
- > Geostatistical assistance with resource modelling of 2D gold resources: Cracow Deposit (Newcrest, QLD); (Vivienne Deposit, Agnew Gold Mine, Gold Fields WA).
- > Technical Review work of QG's Audit team of Boddington gold recoverable resource models (Boddington gold mine – WA).
- > Bi-variate modelling of recoverable resource in a porphyritic gold-copper deposit using Conditional Co-simulation for Newcrest Mining (Cadia Hill - NSW).
- > Geostatistical resource modelling of the Lihir gold mineralisation using Uniform Conditioning (Lihir Gold Mine, PNG). Multiple Reconciliation Studies.
- > Risk Analysis and Confidence Interval building via the use of Conditional Simulations for a Diamond Ore body (Argyle Diamonds, WA).

February 1998 – January 2001

Consultant, GEOVAL (division of SRK consulting), Perth WA

Performing geostatistical consulting work for gold, copper, manganese, nickel and cobalt deposits.



Main tasks included:

- > Metallurgical modelling of sulphides in a porphyritic gold-copper deposit using IK (Indicator Kriging) for Newcrest Mining (Cadia Hill - NSW).
- > Bench height and selective mining units (SMU) sensitivity study at Cadia Hill (Newcrest Mining - NSW).
- > Grade Control modelling of a gold-copper mine based on stochastic conditional simulations for Newcrest Mining (Cadia Hill - NSW).
- > Geostatistical estimation of resources of a manganese deposit (Gemco/Samancor – Groote Eylandt, NT).
- > Geostatistical estimation of resources of a lateritic nickel-cobalt deposit (Moneo Metals - New Caledonia).
- > Geostatistical resource modelling of a gold shear zone hosted gold mineralisation (WMC Ltd. – St Ives, Argo pit, WA).
- > Teaching on site Applied Mining Geostatistical seminar (Newcrest Mining - Cadia Hill, NSW).

January 1997 – January 1998

Sales and User-Support Engineer, Reservoir Modeling Group, Beicip-Franlab (part of IFP group)

Main tasks included:

- > Training of clients to the use of high-tech reservoir characterisation products (Heresim and Interwell).
- > Performing consulting studies based on the advanced use of the software in various environments: carbonate (North Sea, Canada) and silico-clastic (Venezuela).

July 1995 to October 1996

Mine Planning Engineer/Geostatistician, GEOVAL, Perth WA
Performing programming and project work for gold, uranium and iron deposits.

Main tasks included:

- > Stockpile grade variability study (mine planning and programming) for Hamersley Iron (Paraburdoo, WA).
- > Non linear geostatistical resource evaluation for uranium (Westmoreland Joint Venture, Qld) and gold (Boddington Gold Mine, WA - Bendigo Mining N.L, VIC) deposits.
- > Sampling strategy and quality control for coarse gold mineralisation (Bendigo Mining N.L, VIC).

March 1995 to June 1995

Mining Engineer - GROUPE VICAT (St Egreve, France)

Performing a mechanical excavation pre-feasibility study for a cement-stone underground quarry (rock mechanical characterisation and machine dimensioning).

July to September 1994

Mining Engineer - CTT (BOU AZZER, Morocco)



Qualifications

Ingénieur Civil de l'Ecole des Mines de Paris - ENSMP, 1995. Specialisation in underground mining and geostatistics.

Professional Affiliations

Australasian Institute of Mining and Metallurgy (AusIMM) Member.

Geostatistical Association of Australasia (GAA) Member.

Publications

- > Bertoli, M Job, J Vann and S Dunham, 2003. Two-Dimensional Geostatistical Methods — Theory, Practice and a Case Study from the 1A Shoot Nickel Deposit, Leinster, Western Australia. Proceedings of 5th International Mining geology Conference November 2003.
- > J Vann, S Jackson and O Bertoli, 2003. Quantitative Kriging Neighbourhood Analysis for the Mine Geologist – A Description of the Method with Woked Case Examples. Proceedings of 5th International Mining geology Conference November 2003.
- > S Jackson, D Fredericksen, M Stewart, J Vann, A Burke, J Dugdale and O Bertoli2003. Geological and Grade Risk at the Golden Gift and Magdala Gold Deposits Stawell, Victoria. Proceedings of 5th International Mining geology Conference November 2003.
- > J Vann, O Bertoli and S Jackson, 2002. An Overview of Geostatistical Simulation for Quantifying Risk. Proceedings of the Geostatistical Association of Australasia Symposium “Quantifying Risk and Error” March 2002.