David Sainsbury

Principal Geotechnical Engineer / Managing Director

David is a principal geotechnical engineer with 28 years operations, research and consulting rock mechanics experience. He has significant experience in caving and subsidence assessment, open pit slope stability analysis, underground life-of-mine planning and design, and backfill and barricade specification and design. David's expertise and experience includes numerical stress analysis in multiple modelling codes. In addition to his numerical analysis skills, David also has a significant amount of experience in practical geotechnical applications and advice for operating mines.
He has acted as Lead Geotechnical Consultant for cave propagation, subsidence and infrastructure stability studies at the Chuquicamata, Palabora, Cadia East, Northparkes, and Henderson caving operations. He is also a member of the Rio Tinto, Technical Audit and Assurance review board for the Oyu Tolgoi and Kennecott Underground Mines.

David is a registered Professional Engineer of Queensland (RPEQ), and is a member of Engineers Australia, National Engineers Register (NER).

Qualifications

- Ph.D. (Mining Geomechanics), 2003, The University of New South Wales, Australia
- MScTech. (Engineering Geology, Environmental Geology, Hydrogeology), 2000, The University of New South Wales, Australia
- BEng. (Geological Engineering), 1996, Royal Melbourne Institute of Technology University (RMIT), Australia

Recent Project Experience

2024 Rio Tinto, Kennecott Underground Projects, USA
Technical Audit and Assurance review board member

2024 Evolution Mining, Cowal Underground Mine, NSW
Investigation of LOM extraction strategy at Evolution Mining's Cowal Underground Project, NSW, Australia

2024 BHP, Olympic Dam Mine, SA
Investigation of cemented aggregate fill exposure and access stability at BHP's Olympic Dam Mine, SA, Australia

2024 Mandalay Resources, Costerfield Mine, VIC
Investigation of LOM extraction strategy at Mandalay Resources, Costerfield Mine, VIC, Australia

2024 BHP, Prominent Hill Mine, SA
Investigation of paste fill exposure stability at BHP's Prominent Hill Mine, SA, Australia

2023 Rio Tinto, Oyu Tolgoi Mine, Mongolia
Technical Audit and Assurance review board member

2023 Newcrest, Havieron Mine, WA
Pre-feasibility investigation of LOM seismicity behaviour at Newcrest Mining Ltd's Havieron Project, WA, Australia

2022 Palabora Mining Company, Palabora Lift 2, South Africa
Assessment of Production Level performance at PMC's Palabora Lift 2 Block Cave Mine.

2021 Newcrest, Ridgeway Deeps Lift 2 Mine, NSW
Investigation of cave propagation and subsidence behaviour at Newcrest Mining Ltd's Ridgeway Deeps Lift 2 Mine, NSW, Australia

2020 Newcrest, Cadia East Mine, NSW
Investigation of LOM subsidence behaviour at Newcrest Mining Ltd's Cadia East Mine, NSW, Australia

2020 Palabora Mining Company, Palabora Lift 2, South Africa
Cave propagation and subsidence assessment at PMC's Palabora Mine.

2019 Codelco, Chuquicamata Mine, Chile
Technical Lead for the investigation of cave propagation behaviour, subsidence and underground infrastructure performance.

2018 Resolute Mining Ltd, Syama Mine, DR Congo
Technical Lead for the investigation of cave propagation behaviour, subsidence and underground infrastructure performance.

2018 Newcrest, Cadia East Mine, NSW
Investigation of cave propagation behaviour at Newcrest Mining Ltd's Cadia East Mine, NSW, Australia

2017 Palabora Mining Company, Palabora Lift 2, South Africa
Feasibility study level assessment extraction level performance at PMC's Palabora Mine.

2013 Rio Tinto Oyu Tolgoi Mine, Mongolia
Pre-feasibility and feasibility study level assessment of extraction level performance.

2012 Freeport McMoran, Henderson Mine, Colorado, USA
Pre-feasibility and feasibility study level assessment of caving and extraction level performance.

2012 Resolute Mining Ltd – Carpentaria Gold, Mt Wright, QLD
Assessment of cave propagation and infrastructure damage.

2010 Newcrest, Cadia East Mine, NSW
Pre-feasibility and feasibility study level caveability assessment and assessment of separate cave interaction.

2006 Rio Tinto, Northparkes E48 Mine, NSW
Numerical caveability assessment of Northparkes Mines Ltd's E48 Mine, NSW, Australia.

2005 BHP, Koala Mine, Canada
Numerical caveability assessment of BHP Billiton Diamonds Inc.'s Koala Mine, NWT, Canada.

2004 Rio Tinto, Northparkes E26 Mine, NSW
Numerical modelling analysis and ground support design of undercut and extraction-level development at Northparkes Mines Ltd's E26 Lift 2 Mine, NSW, Australia.

Recent Publications

Sainsbury, BL, Sainsbury, DP, Osorio, A, Carroll, D & Lett, J. (2022) A coupled modelling approach for discontinuous subsidence at the Cadia East mine, in Y Potvin (ed.), Caving 2022: Fifth International Conference on Block and Sublevel Caving, Australian Centre for Geomechanics, Perth, pp. 797-804.

Shiels, A and Sainsbury, D (2020) Crown pillar extraction with paste underhand stoping, UMT 2020: Proceedings of the Second International Conference on Underground Mining Technology, Australian Centre for Geomechanics, Perth, pp. 217-230,

Sainsbury, D, Sainsbury, B & Carroll, D (2018) Back-analysis of PC1 cave propagation and subsidence behaviour at the Cadia East Mine, in Y Potvin & J Jakubec (eds), Proceedings of the Fourth International Symposium on Block and Sublevel Caving, Australian Centre for Geomechanics, Perth, pp. 167-178.

Sainsbury, D. P., Sainsbury, B., Paetzold, H-D. Lourens, P and Vakili, A. (2016) Caving-induced Subsidence Behaviour of Lift 1 at the Palabora Block Cave Mine, in MassMin 2016: Seventh International Conference and Exhibition on Mass Mining, Sydney, 9–11 May. AusIMM.

Sainsbury, D. P. and Loring, D. M. (2013) "Analysis of Extraction Level Performance at the Henderson Mine", in Ground Support 2013 (Proceedings, Second Seventh International Symposium on Ground Support in Mining and Underground Construction, Perth, Australia, May 2013). Y. Potvin, Ed. Perth: Australian Centre for Geomechanics.

Sainsbury, D. P., B. L. Sainsbury, M. P. Board and D. M. Loring. (2011) “Numerical Back-Analysis of Structurally Controlled Cave Initiation and Propagation at the Henderson Mine,” in CD Proceedings, ARMA 45th U.S. Rock Mechanics / Geomechanics Symposium (San Francisco, June 2011), Paper No. ARMA 11-321.

Sainsbury, B. L., D. P. Sainsbury and M. E. Pierce. (2011) “A Historical Review of the Development of Numerical Cave Propagation Simulations,” in Continuum and Distinct Element Modeling in Geomechanics — 2011 (Proceedings, 2nd International FLAC/DEM Symposium, Melbourne, February 2011), Paper 02-01, pp. 23-36. D. Sainsbury et al., Eds. Minneapolis: Itasca International Inc., 2011.

Sainsbury, D. P., B. L. Sainsbury and L. L. Lorig. (2010) Investigation of Caving Induced Subsidence at the Abandoned Grace Mine, Transactions of the Institutions of Mining and Metallurgy, Section A, Mining Technology, 119(3), 151-161