Qualifications of the Bronozian Consultants, Independent Reviewers of Lydian's Amulsar Gold Project in Armenia

Andrea Gerson, PhD, Blue Minerals Consultancy

Dr. Andrea Gerson is the Managing Director of BMC. She is an Honorary Professor at the Research School Earth Sciences, ANU, an Honorary Professorial Fellow at the Department of Physics, Melbourne University and an Adjunct Professor at Centre of Excellence in Ore Deposits at the University of Tasmania. She obtained her PhD from the University of Strathclyde (Scotland) in 1991 and thereafter was an Exxon Research Fellow at King's College (London, UK) until she joined the Ian Wark Research Institute, University of South Australia in 1993. She was the Director of the Applied Centre for Structural and Synchrotron Studies (2004–2010) and then lead the research group Minerals and Materials Science & Technology within the Mawson Institute. In 2015 she left UniSA to form Blue Minerals Consultancy. Andrea has 185 internationally peer reviewed publications and over 7,000 citations. Her research and consultancy focus is on the geoechemistry, leaching mechanisms and kinetics of sulfide minerals, ores and wastes. She has 25 years' experience working in this area and had worked with numerous mining companies on analytical approaches and solutions that are intractable to traditional approaches.

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Roger Smart, PhD, Blue Minerals Consultancy

Dr. Roger Smart is Senior Consultant in BMC and Emeritus Professor in Minerals and Materials Science and Technology, University of South Australia where he founded the SA Surface Technology Centre in 1987 and was Deputy Director of the Ian Wark Research Institute from 1995 to 2002. He graduated from the Universities of Western Australia (BSc Hons) and East Anglia UK (PhD). At UniSA, he has led teams on the AMIRA P260, Fine Grinding and five 3-year Acid Rock Drainage prediction and control projects (2002-2017) sponsored by 25 mining companies as well as more than 30 single company projects. He has published more than 300 peer-reviewed scientific papers and book chapters. Since 1998, the primary focus of this research, development and publication has been in minerals processing, acid mine drainage prediction and control.

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Ann Maest, PhD, Buka Environmental

Ann Maest is an aqueous geochemist with Buka Environmental in Boulder, Colorado, USA. She has over 25 years of research and professional experience and specializes in the environmental effects of hardrock mining, the fate and transport of natural and anthropogenic contaminants, and geochemical testing methods. She has evaluated more than 150 Environmental Impact Statements for large-scale mines in the United States, Latin America, Asia, and Africa and provides training to government agencies on EIS evaluation, the environmental effects of mining, and best practices. The results of her research have been published in peer-reviewed journals including *Applied Geochemistry*, *Canadian Journal of Fisheries and Aquatic Sciences*, *Chemical Geology*, *Applied and Environmental Microbiology*, and *Environmental Science and Technology*. After completing her PhD, Dr. Maest was a research geochemist in the U.S. Geological Survey's National Research Program, where she conducted research on metal-organic interactions, metal and metalloid speciation, and redox geochemistry in surface water and groundwater systems. She has served on several National Academy of Sciences committees and a Board related to earth resources and has been an invited speaker at universities and national and international fora, including presenting on technical challenges and solutions for the mining sector at the United Nations. Ann holds a PhD in geochemistry and water resources from Princeton University.

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Andre Sobolewski, PhD, Clear Coast Consulting

Dr Sobolewski has 27 years of professional experience with the assessment of environmental impacts from proposed mining developments and the design, construction and investigation of mine water treatment systems. He has been involved in over 50 mine water treatment projects, including the design of full-scale treatment plants at Minera Yanacocha (Peru), treatment wetlands at Minera Antamina (Peru), Campbell Mine (Ontario), confidential abandoned mine (Colorado), and design of the passive bioreactor at the Tulsequah Chief Mine (BC). He has worked at several gold mines, including the heap leach operations at Beal Mountain and Brewery Creek Mines and at Minera Yanacocha, and open pit and underground operations at Campbell, DeLamar, Golden Sunlight, Musselwhite, Nickel Plate, Red Lake Mines. Dr Sobolewski co-authored a number of authoritative works, including the *Technical Guide for the Environmental Management of Cyanide in Mining*, for the Mining Association of BC, the *Guidelines for the Prediction and Mitigation of Potential Direct Environmental Effects from Effluent and Waste Rock Management of Major Hard Rock Mining Projects* for YESAB. André taught four courses on the biological treatment of contaminated mine water and he taught the course Advanced Passive Bioreactor Design and Operation at the IMWA 2017 Finland conference.

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