

TECHNICAL PROGRAM

Live Streaming

Live sessions at Time Zone Santiago, Chile. UTC -3. English-Spanish interpretation available.

TUESDAY, SEPTEMBER 8

Workshops Available for Registered Participants (Free of Charge)

10:00 Evaluation of Physical Stability for Closure of Tailings Deposits

Imparted by Centro de Minería, Pontificia Universidad Católica de Valparaíso, Chile

12:30 Break

17:00 An Industry-University Research Consortium that Focuses on the Social Aspects of Mine Closure

Imparted by The Sustainable Minerals Institute, The University of Queensland, Australia

19:00 End of the Day

WEDNESDAY, SEPTEMBER 9

Inauguration Ceremony and Plenary Session 1

10:00 Words of Welcome

Mimy Mackenzie, Conferences and Publications Manager, Gecamin, Chile

Glen Corder, Associate Professor, Sustainable Minerals Institute, The University of Queensland, Australia

Juan Palma, Academic, Pontificia Universidad Católica de Valparaíso, Chile

Plenary Session 1

Chair: Jacques Wiertz, Associate Professor, Universidad de Chile

10:20 Integrated Closure: A Pathway to Opportunity

Joanne Heyes, Congress Chair; Head of Resource Engineering, BHP Technical Centre of Excellence, Australia

10:50 Integrated Mine Closure: From Guidance to Good Practice on the Ground

Aidan Davy, Chief Operating Officer, ICMM, UK

11:30 Mining Closure Law in Chile: Present and Future

Alfonso Domeyko, National Director, Sernageomin, Chile

12:00 Break

Authors Panel

12:30 Authors Panel Session 1
Design of Mining Operations for Closure

13:00 Authors Panel Session 2
Closure Risk Assessment

13:30 Break

16:00 Authors Panel Session 3
Mine Closure Regulations and Standards

16:30 Authors Panel Session 4
Chemical Stability of Mine Wastes

17:00 Authors Panel Session 5
Closure of Tailings Deposits

17:20 End of the Day

THURSDAY, SEPTEMBER 10

Plenary Session 2

Chair: Anna Littleboy, Professor, Sustainable Minerals Institute, The University of Queensland, Australia

10:00 Welcome and Program Update

10:10 Social Aspects and Stakeholder's Involvement in Mine Closure Planning
Katherine Nolan, Social Performance Principal, Anglo American, UK; and Úrsula Weber, Corporate Relations Manager and Social Development Copper, Anglo American, Chile

10:50 Temporary Closure: When External/Internal Conditions Require for a Pause in the Mine Plan
Paul Maidstone, Environment Manager, Glencore, Chile

11:30 Break

Authors Panel

12:00 Authors Panel Session 6
Mine Closure, Good Practices and Case studies

12:30 Authors Panel Session 7
Post Closure Land Use

13:00 Authors Panel Session 8
Post-Closure, Monitoring and Maintenance

13:30 Break

Panel Discussion**16:00 Panel****Design and Construction of the Closure Plan: A Task for All**

Chair: **Petri Salopera**, Country Manager Ecuador y Chile, Newcrest Mining, Ecuador

Introductory Presentation

Construyendo el cierre de faenas en Codelco

Eduardo Sanzana, Corporate Mine Closure Director, Codelco, Chile

Panelists:

Eduardo Sanzana, Corporate Mine Closure Director, Codelco, Chile

Gonzalo Padilla, Senior Specialist Asset Resource Management – Secondment, BHP, Chile

Alejandra Vial, Corporate Environment Manager, Antofagasta Minerals, Chile

Eva Tobar, Permit Manager, Lundin Mining, Chile

Jorge Campos, Senior Mining Consultant, Arcadis, Chile

17:30 End of the Day**FRIDAY, SEPTEMBER 11****Plenary Session 3**

Chair: **Doina Priscu**, Principal Engineer Mining Environment, Priscu and Associates Consulting Engineers, Canada

10:00 Welcome and Program Up-date**10:10 Closing and Rehabilitating Before the Closure: The Benefits of Progressive Mine Closure**

Kim Ferguson, Global Practice Lead Closure, BHP, Australia

10:50 Are We Asking Enough off the 'Right Questions' When We Use Modelling to Predict Closure Performance?

Mike O'Kane, President, O'Kane Consultants, Canada

11:30 Break**Authors Panel****12:00 Authors Panel Session 9****Reclamation and Rehabilitation****12:30 Authors Panel Session 10****Economic Evaluation and Funding of Closure Plans****13:00 Conference Balance and Final Comments**

Mimy Mackenzie, Conference Manager, Gecamin, Chile

Jacques Wiertz, Planning for Closure 2020 Program Director; Associate Professor, Universidad de Chile

On Demand

Pre-recorded presentations available from Monday, September 7 at 08:00 AM (UTC - 3).
Audio Available in English & Spanish.

Session 1: Design of Mining Operations for Closure	(6)
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Closure Plan, the Right Moment to Start

Ana Lima, Nexa Resources, Brazil

Integrating Closure to Life of Asset Planning through Anglo American's ICPS – Los Bronces Case Study

Eduardo Salfate, Golder, Chile; and Eduardo Loo, Anglo American, Chile

Knowledge Base: Using Digital Tools for the Data Integration at Mine Closure Management

Luanna Di Guimarães, Aika Miura, Antônio Gentini, Felipe Oliveira, Lucas Fonseca, Daniel Anton and Karin Formigoni, Arcadis, Brazil

Progressive Mine Closure – Define this Sustainable Development Practice for your Mine Rock Stockpile

Terryn Kuzyk, Miriam Clark, Chris Mills, Andrew Baisley and Mike O’Kane, O’Kane Consultants, Canada

GIS Planning for Mine Closure Management

Francisco Sepúlveda and Rodrigo Cádiz, Arcadis, Chile

Enabling Public Participation in Mine Closure Planning

Sarah Mackenzie, Kamila Svobodova, Jo-Anne Everingham and Kathy Witt, Sustainable Minerals Institute, The University of Queensland, Australia

Session 2: Closure Risk Assessment	(4)
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Risk-Based Management in Mine Closure – Practiced Examples in Brazil

Ana Taveira, Hace Consultoria, Assessoria e Treinamento, Brazil; and Luis Sánchez, University of São Paulo, Brazil

Reviewing the Impact Produced In Air Quality Due To Infrastructure Decommissioning and Mine Closure Activities

Valentina Zolezzi, Andrés López, Camila Soler and Javier Mancilla, Wood, Chile

A Rational Method of Risk Assessment for Mine Waste Storage Facilities

Michael James, Michel Julien, Pascal Lavoie, Edouard Masengo, Thomas Lepine, and Edouardine Ingabire, Agnico Eagle Mines, Canada; and Karen Choven, Enviro Integration Strategies, Canada

Integrating Operational Reports of Tailings Deposits with Mine Closure Risk Assessment: A Proposal for Sernageomin Report Contents

Andrés López, Valentina Zolezzi, Abraham Figueroa and Juan Carlos Torrejón, Wood, Chile

Session 3: Mine Closure Regulations and Standards

(4)

Implementation of Chile's Mine Closure Law: Critical Analysis of the Regulatory Framework. Challenges and Proposals

Paulina Riquelme, Jorge Brower and Ignacio Funes, Eelaw, Chile

Critical Comparison between International Standards and Chilean Practice related to Physical Stability of Mine Waste Dumps in Mining Closure

Daniela Puma, Priscilla Torres, Leonardo Dorador, Eloy Santos, José Campaña and Rodrigo Cádiz, Arcadis, Chile

Sernageomin Mine Closure Requirements on Medium and Large Mining Companies

José Correa and Andrés León, Sernageomin, Chile

Mining Closure Law in Chile: Present and Future

Alfonso Domeyko, Sernageomin, Chile

Session 4. Chemical Stability of Mine Wastes

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Ion Exchange Resistant GCLs for Exposed Liners and Capping for Mine Closure

Michael Donovan, Minerals Technologies, USA; and Dennis Wind and Barbara Gebka, CETCO, USA

Waste Rock Dumps and Tailings Facility Cover Depth Definition Using Numerical Models

Fernanda Baladrón, Kevin Vidal, José Miguel Espinoza and Arnaldo Santander, Golder, Chile; and Gabriel López, Minera Alumbrera, Glencore, Argentina

Reducing Uncertainties of Coverage Systems for Mine Waste Closure: Design and Modelling

Carla Gonçalves, Luanna Di Guimarães, Lucas Fonseca and Karin Formigoni, Arcadis, Brazil; and Mauricio Gómez, Arcadis, Chile

Challenges of Chemical Stability Analysis for Mine Closure

May-Lin Almendras and Carolina Gómez, Arcadis, Chile

Use of Mineral Resource Estimation Methods for NAG/PAG Waste-Rock Material Management

Óscar Benavente, Joled Nur and Lilian Valdebenito, SRK Consulting, Chile; and Francois Swanepoel and Yerko Delgado, Salares Norte, Gold Fields, Chile

Pilot-Scale Experiments of Waste Rock Cover Systems to Support Mine Closure Planning

Sheyla Palomino, Pablo Quesada, Alonso Huamán, Mariel Samanez, Melitza Cornejo-La Torre, Miguel Mendoza and Eduard Ruiz, Amphos 21, Peru; and María Medina and José Ruiz, Independent Mining Consultant, Peru

Session 5: Closure of Tailings Deposits**(4)****De-Characterization and Closure of TSF: Concepts of the Brazilian Legislation and International Criteria**

Débora Schaper, Ricardo Lessa and Antônio Freitas, Golder, Brazil; and Björn Weeks, Golder, Canada

Structured Decision-Making: Tailings to Landform Design for the Closure of Legacy Tailings Storage Facilities

Rahul Peroor, Sasha Schuck and Terry Braun, SRK Consulting, USA; and Trevor Chesal, BHP, USA

Draindown Estimation Analysis from Tailings Facilities Depending On Modeling Approach

Fernanda Baladrón, Kevin Vidal and José Espinoza, Golder, Chile

Tailings Storage Facility Decommissioning and Closure in Consideration of Erosion Risks

Neeltje Slingerland, Golder, Canada; Diego Barra, Golder, Chile; Chris Waygood, Golder, Australia; and Adam Auckland, Golder, Canada

Session 6: Mine Closure, Good Practices and Case Studies**(5)****Globe Progress Pit Closure Planning**

Stephanie Hayton, Duncan Ross, Jeff Nyenhuis and Megan Williams, OceanaGold, New Zealand; Luke Matheson, PDP, New Zealand; Calvin Wu, Engineering Geology, New Zealand; and Will Olds and Paul Weber, Mine Waste Management, New Zealand

Innovative Passive Mine Water Treatment Case Studies

Ryan Schipper, Golder, Peru; and Eric Blumenstein, Neal Gallagher and Paige Pruisner, Golder, USA

Passive Treatment for Elevated Iron and Arsenic in Circum - Neutral Mine Affected Water

Stephanie Hayton, Duncan Ross, Jeff Nyenhuis, Megan Williams and M. Clarke, OceanaGold, New Zealand; D. Trumm, Verum Group, New Zealand; Will Olds and Paul Weber, Mine Waste Management, New Zealand; and Travis Horton, University of Canterbury, New Zealand

Recovery of Byproducts from Pit Lake Waters

John Schubert, Chloe Grabowski and Julie Horan, HDR, USA; and Sriram Ananthanarayan, BHP, USA

Mine Closure – Special Civil Engineering for Effective and Permanent Closure of Mines

Peter Banzhaf, BAUER Spezialtiefbau, Germany

Session 7: Post Closure Land Use

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Feasibility Evaluation of Mining Post-Closure Uses Using Risk-Based Management Methodology

Fernanda Guabiroba, Alexandre Matos and Alessandro Nepomuceno, Kinross Brasil Mineração, Brazil; Ana Taveira, Hace Consultoria Assessoria e Treinamento, Brazil; Solange Sánchez, Baturité Consultoria, Brazil; and Luis Sánchez, University of São Paulo, Brazil

Multi-Criteria Decision Approach to Support Selection of Post Closure Land Use

Antônio Freitas and Ricardo Lessa, Golder, Brazil

The Challenges of Sustainable Use of Abandoned Underground Flooded Mines as Geothermal Resources

Ramón Díaz, Universidad de Concepción, Chile; and Paulino Fernández and Lorena Álvarez, Universidad de Oviedo, Spain

Thinking Beyond Closure: Why Bother?

Anna Littleboy, Guy Boggs, Glen Corder, Fiona Haslam-McKenzie, Bruce Kelley, Jason Kirby and Bryan Maybee, Sustainable Minerals Institute, The University of Queensland, Australia

Mining as a Temporary Land Use: A Global Scoping Project on Transitions and Repurposing

Sarah Holcombe and Julia Keenan, Sustainable Minerals Institute, The University of Queensland, Australia

Session 8: Post-Closure, Monitoring and Maintenance

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Satellite InSAR Applications for Long-Term Displacement Monitoring of Closed Sites

Jonas von Ruetten, Jaime Corredor and David Holden, 3vGeomatics, Canada

Evaluation of the Terrestrial Vegetation Bioaccumulative Effect on the Trifolium Repens “Clover” and Calamagrostis Sp. “Ichu” Species in Abandoned Mining Areas

Lizardo Cahuana and Osvaldo Aduvire, SRK Consulting, Peru

Assessment of the Erosional Performance of a Semi-Arid Rehabilitated Mine Site and Development of a Predictive Model

Jon Pelletier and Nathan Abramson, University of Arizona, USA; Terry Braun, David Ludwick and Rahul Peroor, SRK Consulting, USA; Satya Chataut, BHP, USA; and Evan Howard, Landloch Pty, Australia

Developing Geomorphic Design Guidelines for Closure Landforms at the Mount Polley Mine

James Ogilvie, Rowland Atkins and Katy de Rego, Golder, Canada; and Gabriel Holmes, Mount Polley Mining Corporation, Canada

Session 9: Reclamation and Rehabilitation**(4)****Pilot Restoration Project in Lomas Ecosystems for the purpose of Closing the Operations of the Cristina Quarry**

Julio César and Marisela Huamán, J. Cesar Ingenieros & Consultores, Peru; and David Cueto and Juan Carlos Mesías, UNACEM, Peru

Reclamation and Soil Coverage Assessment through Satellite Imagery

Silmara Silva, Fernanda Guabiroba, Alexandre Araújo, Alexandre Matos, Osmar Ferreira and Alessandro Nepomuceno, Kinross Brasil Mineração, Brazil; and Kele Craveiro and Vinicius Rissoli, Santiago & Cintra Consultoria, Brazil

Indigenous Groups, Mined Land Rehabilitation and Mine Closure: Exploring the Australian Terrain

Rodger Barnes, Sarah Holcombe and Joni Parmenter, Sustainable Minerals Institute, The University of Queensland, Australia

Ecosystem Carbon Storage in the Mining and Smelter Impacted Landscape of Sudbury, Ontario, Canada

Peter Beckett, Michael Preston and Nathan Basiliko, Laurentian University, Canada; and Marc Hebert, Collège Boréal, Canada

Session 10: Economic Evaluation and Funding of Closure Plans**(2)****Importance of Asset Closure Planning in the Long-Term Viability of a Mining Business**

Jussara Januário and Fabiano Mendanha, Vale, Brazil

Review of Financial aspects of Chile's Mine Closure Law: Challenges and Proposals

Jorge Brower, Paulina Riquelme and Ignacio Funes, Eelaw, Chile