



TAILINGS AND MINE WASTE 2020



November 15-18, 2020 | Virtual Event

Tailings and Mine Waste 2020

Listing of Accepted Papers and Presentations

Last Updated: October 5, 2020

Keynote Abstracts

Tailings Dam Safety - Have We Resolved the Crisis?

Norbert R. Morgenstern

Global Ramifications of the Brumadinho Tailings Dam I Failure

David Williams

Theme: Design and Operation

A Comparative Study of Methods used to Determine the Factor of Safety

Hugo Brandão, Rodrigo de Oliveira, Luiza Almeida, & Guilherme Pinto

Stability Assessment of a Tailings Dam with Frozen Tailings

Paul Bedell, Maria "Mavi" Sanin, & Chris Hiemstra

Deformation and Cracking of an Upstream Gold TSF Embankment Due to Yielding of Underlying

Rynier Shields, Martin Rust, Danie Brink

Internal Erosion Assessment for Existing Mining Dams

Cori Creba, Fatemeh Yazdandoust, & Chris Johns

Modeling Slope Instability Due to Undrained Creep

Ross Boulanger & Tyler Oathes

Dynamic Effective Stress Analysis of a Centerline Tailings Dam – Case Study

Paola Torres, Jorge Macedo, & Solange Paihua

Seismic Stability Assessment of Upstream Raised TSF on the African Rift Belt

Michelle Theron

Numerical Modelling of a Mine Waste Dump-heap Leach Pad with Different Constitutive Models

Myzael Valdivia, Roberto Quispe, Jesus Negrón, Renzo Ayala & Denys Parra

Field Water Release and Consolidation Performance of XUR Treated Fluid Fine Tailings

S. Jeeravipoolvarn, E.J. Wu, S.A. Proskin, A. Junaid & G. Freeman

Consolidation Modeling for Design of Complex In-pit Tailings Storage Facility

Sudhir Tripathi, Jordan Scheremeta, Jeff Coffin, & Jason Reiva

Calibration of Tailing Consolidation Parameters using Field Measurements

Nicholas Brink & Zygi Zurakowski

Sand Capping Trial on Frozen Centrifuged Tailings Deposit

E.J. Wu, S. Jeeravipoolvarn, S.A. Proskin, A. Junaid & G. Freeman

Hydrographs for Tailings Dam Breach Analysis – A Review of Common Estimation Methodologies

Mark G. Walden & Nicholas T. Rocco

An Overview on Methodologies for Tailings Dam Breach Study

Shielan Liu & Michael Henderson

Effect of Different Tailings Dam Environments and Conditions on Phreatic Conditions

Luke Clarkson, Todd Armstrong, & David J. Williams

Lupin Mine – A Case Study in Adaptive Tailings Management

Alvin Tong, James McKinley, & Karyn Lewis

Theme: Filtered Tailings

The Impact of Thickening on Fast Filtration of Tailings

Kenneth Rahal & Todd Wisdom

Filtered Tailings Facilities and Upset Conditions

Nicholas Kent & Mary-Jane Piggott

Enhancing Vacuum Belt Filter Dewatering to Adapt to Finer Tailings Grind – A Case Study

O. Whatnall, K. Barber & P. Robinson

Decoupling the Effects of Ultrafine Solids and Residual Bitumen on the Filterability of Oil Sands Tailings

Dong Wang, Hongbiao Tao, Kaipeng Wang, Xiaoli Tan & Qi Liu

Theme: Geochemistry

Geochemical Characterization of Sulfurized Tailings and Waste Rock of a Graphite Mine

Veronik Lord, Benoît Plante, Isabelle Demers, & Martine Paradis

Innovative Leachate Treatment using Passive Biochemical Reactors

Jamie Robinson, Jason Dodd, Ian Andrews, James Gusek, L. Josslyn & Eric Clarke

Innovative Field Characterization Method for Self-heating Potential of Sulphidic Paste Backfill

Bret Timmis, Valerie Bertrand, David Brown, Chris Lee, & Matthew Stewart

Large-scale Instrumented Column Test to Assess Oxidation and Leachate

Chenming Zhang, David J. Williams, Ximing Lei, Sebastian Quintero & Tony Ferguson

Theme: Geosynthetics and Liners

Hydraulic Conductivity of Geosynthetic Clay Liners to Synthetic Mine Waste Leachates

Anna Norris, Neelufar Aghazamani, Joel Conzelmann, Joseph Scalia, & Charles Shackelford

Successful Tailings Dewatering Design Using Multi-Linear Drainage Geocomposites

Pascal Saunier, Jacek Mlynarek, Rob Stafford, & Andy Jung

New Lighter, Longer GCLs for Mining Applications

Michael S. Donovan, Barbara Gebka, & Dennis Wind

Theme: Geotechnical Engineering

Variability in Sand Characteristics – A Case Study at LKAB Mine Tailings Facility in Sweden

Karin Engström, Sara Töyrä, Sophie Danilov, & Roger Knutsson

TAILENG Mine Tailings Database

Jorge Macedo, Jonathan Bray, Scott Olson, Chris Bareither, & Cody Arnold

Use of High Performance Fibres to Enhance Tailings

Sebastian Quintero Olaya, Chenming Zhang, David J. Williams, Ximing Lei, Zicheng Zhao & Marcelo Llano-Serna

Specimens Size Effect on the Compressive Strength of Geopolymerized Mine Tailings

Nan Zhang, Ahmadreza Hedayat, Linda Figueroa, Héctor Gelber Bolaños Sosa, Juan José González Cárdenas, Guido Edgard Salas Álvarez, Victor Benigno Ascuña Rivera

A Rapid Measurement Method to Determine Hydraulic Conductivity of Tailings Under Self-Weight Consolidation

Yagmur Babaoglu & Paul H. Simms

Exploring the Effects of Side Wall Friction in a Slurry Consolidometer Test

H.F.T. Barnard & V. Venter

Evolution of Shear Strength and Consolidation Behavior of Mine Tailings from a Slurry to a Soil State

Kathy Tehrani, David J. Williams & Alexander Scheuermann

On the Performance of Two Advanced Constitutive Models in Capturing the Element Response of Tailings

Renmin Pretell, Francisco Humire & Katerina Ziotopoulou

Managing the Liquefaction Potential of Compacted Tailings Sand at Suncor

Ying Zhang, Ayman H. Abusaid, Gordon W. Pollock, Jason Rhee & Ryan Moore

Effect of Shear Strain Rate on Undrained Shearing Resistance of a Clean Silica Sand Measured in Direct Simple Shear Tests

Jiarui Chen, Scott M. Olson, Soham Banerjee, & Mandar M. Dewoolkar

Assessment of Liquefaction Triggering for Upstream Tailings Dams Using Limiting Equilibrium Methods

Gordan Gjerapic and Dobroslav Znidarcic

3D DEM Undrained Tests to Elucidate Liquefaction Onset in Granular Media

Eduardo Martin, Colin Thornton, & Stefano Utili

Theme: Imaging and Spatial Analysis

EO4RM: Earth Observation best practices for the mining of Raw Materials

Ton Peters, Stephen Wheston, Margreet van Marle, Brendan Morris, & Zoltan Bartalis

Creating TSF Histories using Modern Commercial and Declassified Cold War Satellite Photos

Gerry Mitchell, Jim Turner, & Sam Rivett

Theme: New Technologies

Improving Behavior of Gold Mine Tailings using Microbes Compared with Adding Cement, for Closure of In-pit Tailings

Hernan Cifuentes & David J. Williams

Glass from Tailings

Priscilla P. Nelson, Katharina Pfaff, Seetharaman Sridhar, and D. Erik Spiller

Integrated Storage Facility – A New Concept for Mine Waste Storage

David Saiang, Martin Torovi, Robert D.Y. Warigen & Edward Wiruk

Nano Meso Inorganic Technology: Bind & Contain RCRA 8 Metals & Stabilize Mine Tailings

T.J. Brammer & M.A. Stone

Theme: Reclamation and Remediation

Geochemical and Hydrological Lags and Impact on Covers on PAG Mine Wastes

David J. Williams

Influence of Residual Sulfide Content and Mineralogical Composition of Desulfurized Tailings on Performance as Reclamation Cover

Isabelle Demers, Hamza Berrouch, Benoît Plante, & Thomas Pabst

Hydrologic Predictions of Water Content and Oxygen Concentration in a Geowaste Test Pile

Mohammad H. Gorakhki, Christopher A. Bareither, Joseph Scalia & Greg Butters

Gas Transport Inside Co-disposal of Desulfurized Tailings and Sulfidic Waste Rocks

Cheng Huang, Liang Ma, Zhong-Sheng Liu, Eben Dy, Kidus Tufa, Elizabeth Fisher, Jianqin Zhou, Mireille Goulet, Kevin Morin & Martine Paradis

Theme: Regulations

All Hands on Deck! - A Semi-Quantitative Attempt to Characterize the Impending Qualified Tailings Professional Resource Shortage

Christopher N. Hatton, D. Louise Spencer, Christopher A. Bareither & Kelly J. Ward

Developing Trigger Action Response Plans (TARPS) in a Changing Regulatory Environment

Michael G. Davis

Preparation of an ISO Standard for Mine Closure and Reclamation Planning

Dirk Van Zyl, Michael Nahir & Ian Hutchison

Mineral Industry in Armenia: Management Issues and Perspectives for Tailings Retreatment

Vicken Aprahamian, Harutyun Movsisyan, Alexander Arakelyan & Alen Amirkhanian

Theme: Risk Informed Design

Risks of Dormancy: Reducing Tailings Risk after Operations, before Closure

Jeremy E.S. Boswell, John C. Sobkowicz & Amy K. Rentz

Reducing Long Term Risk at the Candelaria Tailings Storage Facility

Antonio Sotil, Victor Soto & Ken Brouwer

Risk-Based Prioritization of Improvement Plans for Critical Infrastructure

Karen M. Chovan, Michel R. Julien, Édouard Masengo, Édouardine-Pascale Ingabire, Michael James, Thomas Lépine & Pascal Lavoie

Improved Tailings Dam Design and Management through Smarter Modeling

Josh Moncrieff

The Factor of Safety and Probability of Failure Relationship

Franco Oboni & Cesar Oboni

Boosting a More Efficient Tailings Dam Risk Management Service through an Innovative IoT Ecosystem

Andrea Bartoli, Denis Guilhot, & Xavier Vilajosana

Automated Hazard Mapping of Tailings Storage Facility Failures

Sally Innis, Negar Ghahramani, Nahyan M. Rana, Scott McDougall, Steven G. Evans, W. Andy Take & Nadja Kunz

The Effect of Assumed Residual Strength on Remediation Cost of a Typical Tailings Dam

E. Sarantonis, M. Etezzad & M. Ghafghazi

Theme: Site Characterization and Monitoring

Variable Penetration Rate CPT Testing for Mine Tailings Characterization

J.T. DeJong & K.C. Green

Tailings Characterization using Cone Penetration Testing and Machine Learning
Iman Entezari, Dallas McGowan & James Sharp

CPT Dynamic Pore Water Pressure and Liquefaction Potential in Tailings Sand at Suncor
Ayman H. Abusaid, Ying Zhang, Gordon W. Pollock, Ryan Moore & Jason Rhee

Evaluation of Shear Wave Velocity and Void Ratio in Mine Tailings using the Field Velocity Resistivity Probe
Iván A. Contreras, Jason W. Harvey, Mathew D. Walker, Jacob D. Sharpe & Aaron T. Grosser

Tailings Dam Monitoring: Time for an Integrated System Approach
Luciano Oliveira

Permanent Geoelectrical Monitoring of Tailings Dams using the Autonomous G.RE.T.A. System
G. Tresoldi, A. Hojat, Leopoldo Cordova & Luigi Zanzi

Mine Tailings Surveying after the Brumadinho Dam Failure
Gerry Mitchell, Jim Turner & Sam Rivett

Recent Geotechnical Monitoring Results Reflect Operational Improvements at the Newmont Peñasquito
Eduardo J. García Romero & Vianney V. Sosa Dávila

Theme: Water Management

Tailings Dewatering – Analysis of Cases to Understand Trends in Capex and Opex
Mark Wallgren, Jason Palmer & Elio Tomini

Consideration of Polymers to Create a More Cost-Effective and Sustainable Approach to Contaminated River Sediment Remediation
Raymond Guang & Doug Reid-Green

Incorporating Lime Treatment as Part of Innovative Mine Water Treatment Strategies
Kristina Minchow, Bridgette Hendricks & Ryan Schipper