

Mine Planning & Equipment Selection

10th International Symposium on Environmental Issues and Waste Management in Energy and Mineral Production 2007

December 11-13, 2007
Bangkok, Thailand

Volume 1 of 2

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571
www.proceedings.com

ISBN: 978-1-60560-327-8

Some format issues inherent in the e-media version may also appear in this print version.

Copyright (2007) by Mine Planning and Equipment Selection
All rights reserved.

For permission requests, please contact Mine Planning & Equipment Selection
at the address below.

Mine Planning & Equipment Selection
Box 68002 Crowfoot Post Outlet
Calgary, Alberta T3G 1YO Canada

Mine Planning & Equipment Selection

10th International Symposium on Environmental Issues and
Waste Management in Energy and Mineral Production
2007

TABLE OF CONTENTS

VOLUME 1

Work Conditions in Transition: A Study of Work Culture and Gender Issues in a Changing Technical Context	1
<i>L. Abrahamsson, J. Johansson</i>	
Environmental Impacts of Artisanal and Small Scale Gold Mining in Developing Countries	17
<i>K.K Ail, E.Y. Baafi</i>	
Compost Bioremediation of Hydrocarbon-contaminated Soil Inoculated with Organic Manure.....	23
<i>H.I. Atagana</i>	
Mining and the Environment in Argentina: Analysis of Controversial Cases	45
<i>J.C. Avila</i>	
Using GIS-based Weights-of-evidence Method for Assessing Mining Induced Rockfall	52
<i>E.Y. Baafi, H. Zahiri</i>	
Technology for Water-fuel (water in oil type) Emulsion Preparation for Boilers of Heat Generating Installations	60
<i>A.M. Balabyshko, R.Y. Poderni</i>	
Reducing Energy Usage Through the Strategic Application of Pre-concentration to Underground Hard Rock Mines.....	65
<i>A.S. Bamber, B. Klein, M.J. Scoble</i>	
Selection of Plant Species in Mine Reclamation Plans by AHP Method: Case Study Sungun Copper Mine.....	82
<i>A.H. Bangian, M. Osanloo</i>	
Energy Consumption in Cement Industry	93
<i>A.U. Bochenczyk, L. Gawlik, E. Mokrzycki</i>	
Developing Environmental Concepts for Vietnamese Coal Mines	99
<i>K. Broemme, H. Stolpe, M. Tran</i>	
Evaluation of the Vegetation Function in the New Landscape Units After Brown Coal Mining	105
<i>H. Broumova, K. Novotna, E. Pecharova</i>	
Study of the Settling Characteristics of Tailings using Nuclear Magnetic Resonance (NMR) Technique	115
<i>S.C.M. Cabrera, J. Bryan, B. Komishke, A. Kantzas</i>	
Waste Rock Dump Capping Strategy and Soil Moisture Probe Research for Closure at Chatree Gold Mine.....	130
<i>Y. Chundung, T. Pratummin, F. Tromans, A. Pearce, P. Macey, A. Watson</i>	

In Situ Soil Remediation with HP Waterjet	145
<i>R. Ciccu, M. Cigagna, B. Grosso, P. Tronci</i>	
The Unique Landfill Site and the Mine Void Backfilling As Solutions for the Environmental Safety of the Abandoned Mine Areas	153
<i>M. Cigagna, B. Grosso, P.P. Manca, P. Tronci</i>	
Modelling and Assessment of Water Quality Data Influenced by Gold Mining in the Central Rand, South Africa.....	166
<i>E.M. Cukrowska, H. Tutu</i>	
Assessing the External Costs of Fossil Fueled Power Plants for Policy Purposes: Transferred Vs. Site-specific Values.....	171
<i>D. Damigos</i>	
Whole-body Vibrations in Mining Remediation Activities	184
<i>V. Dentoni, G. Massacci</i>	
Fundamentals and Results of Use of Biodiesel in Large Mobile Mining Fleets.....	196
<i>C. Drebenstedt, J. Jauer</i>	
Dust Emission in Dependence on Cutting Parameters in the Process of Mechanical Rock Destruction.....	205
<i>C. Drebenstedt, Q. Van Phan</i>	
Neutralisation of Acid Mine Tailings Using Red Mud Bauxite: Long-term Evaluation	215
<i>J. Duchesne, M. Paradis</i>	
Modeling Tools for Development of Tailings Management Plans	227
<i>T. Eldridge, M. Barrientos, M. Musse, M. Silva</i>	
Environmental Impact Assessment on the Restoration Plan of Reclaimed Farmland Landscape in Coal Mining Areas	235
<i>M. C. Fu, Z. Q. Hu</i>	
Permeable Reactive Barriers Using Red Mud to Treat Acid Mine Effluents.....	244
<i>K. Fytas, M.E. Desjardins, D. McConchie</i>	
Sources and Utilization of Coal Combustion Products in Poland.....	256
<i>K. Galos, J. Szlugaj, E. Lewicka, J. Kamyk</i>	
Employment of the Geo-tubes for the Sustainable Water Management in the Excavation Waste Processing.....	264
<i>E. Garbarino, M. Cardu</i>	
Mine Water Management in Pongkor Underground Gold Mine, Bogor, Indonesia.....	286
<i>R.S. Gautama, G.J. Kusuma, F. Ismaya</i>	
Utilization of Waste Products of Extractive Industries	297
<i>L. Gawlik, U. Lorenz</i>	
Ecological Impact Assessment, Rehabilitation and Pollution Control in a Proposed Gold Mining Area in Guizhou Province , China.....	305
<i>G. Hao, Y. Yin, J. Ping, M. Liying</i>	
Waste Dump Site Selection in Open Pit Mines Using Fuzzy MADM Algorithm.....	317
<i>A. Hekmat, M. Osanloo, M.A. Shirazi</i>	
Sorption and Desorption of Zinc from Illite and Silica.....	326
<i>A.K. Hindu, J. Takemura, H. Nakajima, M. Zhang</i>	
The Hongsa Project in Laos Technical Assistance for a Bankable Feasibility Study	335
<i>L. Hofmann, S. Blunck, S. Krehla</i>	

Further Deepening Of The Mae Moh Lignite Mining Operation / Thailand.....	340
<i>L. Hofmann, S. Krehla</i>	
Industrial Hygiene in Underground Mines: Using a Software to Teach Sampling Strategy.....	343
<i>W.S. Iramina, S.M. Eston, I.K. Tachibana, A.L. Beltrame</i>	
Applying of SWOT Analysis for the Evaluation of Sustainable Development of the JIU VALLEY	353
<i>S. Irimie, I.I. Irimie</i>	
Local, Regional and Global Initiatives Addressing Environmental Management Issues in the Mining Sector	363
<i>A.P. Jarvis, J.M. Amezcaga, P.L. Younger</i>	
Use of Numerical Modeling to Prediction of Thermal Regime of Tailings Deposits in Cold Regions.....	372
<i>F.F. Junqueira, T.L. Eldridge, M. Musse, M. Barrientos, L. Grondin</i>	
Using the “dry-tomb” Technique in the Remediation of Heavily Contaminated Land.....	384
<i>D. Kaliampakos, D. Damigos, T. Karachaliou</i>	
A Characterization Study on Sodium Borohydride (NaBH₄) Hydrogen Storage Medium.....	399
<i>A. Kanturk, M. Sari, O. Dere, S. Piskin</i>	
Agricultural By-products as Mercury Adsorbents in Gas Applications.....	407
<i>K.T. Klasson, L.L. Boiher Jr., I.M. Lima, W.E. Marshall</i>	
The Removal of Arsenic from Water Using Natural Iron Oxide Minerals.....	413
<i>S. Aredes, B. Klein, M. Pawlik</i>	
Recycling of Seyitomer-kutahya Thermal Power Plant Coal Combustion Wastes	430
<i>S. Koca, R. Ucar, H. Kocac</i>	
Life Cycle Modelling of Fossil Fuel Power Generation with Post Combustion CO₂ Capture.....	439
<i>A. Korre, Z. Nie, S. Durucan</i>	
Sandpit Lakes As New Ecosystems in the Trebon Basin Biosphere Reserve (Czech Republic).....	455
<i>O. Krivackova, H. Cizkova, L. Pechar</i>	
The Contribution of Industrial Minerals to the Reduction of Environmental Impacts Abrasive Blast – Cleaning in Ship Repairing	470
<i>D. Labrakis</i>	

VOLUME 2

New Technology for Utilization of Waste Residues for GHG Abatement and Environment Protection in Thailand	483
<i>K. Laohalidanond, C. Wirtgen</i>	
Use of RS and GIS Techniques in Mining Site Soil Erosion Monitoring: A Case Study in Huojitu, China.....	493
<i>C. Li, S. Tang, Z. Hu, J. Kang, W. Xiao</i>	
Development of Coal-water Slurry (CWS) in Countries Rich in Coal But Poor in Oil.....	505
<i>W. Lisheng</i>	

Strategy of Reconstruction of Ecological and Aesthetic Functions of the Kladno Region Landscape in Disturbed by Hard Coal Mining	514
<i>M. Martis, V. Zdrazil, I. Kasparova, E. Pecharova</i>	
Problems and Measures on the Heavy Metals Contained Sludge Generated by Amd Treatment in Japan	525
<i>N. Masuda, S. Nagae</i>	
Energy Profit Ratios and Economic Values of Non-conventional Oil Development	535
<i>G. Mogi, Y. Adach, M. Koike, W. Al-Bedaiwi</i>	
Future of Coal Mining Areas	559
<i>R. Munteanu</i>	
Inactivation Methods Used for Extinguish the Spontaneous Combustions, Used to the Mining Units in Jiu Valley	563
<i>G. Mununar, A. Sink, D. Surulescu, C. Jujan</i>	
Isotopic Effects Using for Exploration of Coal, Ore, Oil and Gas Deposits.....	570
<i>S.K. Myrzaliyeva</i>	
Realization of Sustainable Society: Recycle of Demolished Concrete Waste	576
<i>T. Nawa</i>	
Passive Treatment of Highly Contaminated Acid Mine Drainage in Batch Reactors	593
<i>C.M. Neculita, G.J. Zagury, B. Bussiere</i>	
Development of a Process Integration Tool for an Iron Ore Upgrading Process System	605
<i>S. Nordgren, J. Dahl, M. Larsson, B. Lindblom, S. Savonen, K. Tano</i>	
Acid Rock Drainage Management at PT. Kaltim Prima Coal And Its Relationship With Water Quality Regulations in Indonesia	615
<i>C. Nugraha, I. Manege, H. Shimada, T. Sasoka, M. Ichinose, K. Matsui</i>	
Environmental Problems Caused By Istanbul Subway Excavation and Suggestions for Solution	623
<i>I. Ocak</i>	
Overcoming Bureaucratic Obstacles to the Re-use of Metallurgical Slag – a South African Case Study	635
<i>S.H.H. Oelofse, C.J.L. Adlem, J. Hattingh</i>	
The Pollution and Destruction Threat of Gold Mining Waste on the Witwatersrand - a West Rand Cased Study	642
<i>S.H.H. Oelofse, P.J. Hobbs, J. Rascher, J.E. Cobbing</i>	
Study on a Model of assessing the Effect of Green-House Gasses from Spontaneous Combustion in Xinjiang Coal-Field	653
<i>Z. Qiang, C.X. Tan</i>	
Waste Rock Dump Capping Strategy and Soil Moisture Probe Research for Closure at Chatree Gold Mine.....	661
<i>Y. Chundung, T. Pratummin, F. Tromans, A. Pearce, P. Macey, A. Watson</i>	
The Formation of Dust depending on the Cutting Parameters during the Destruction of Rock by Cutting	676
<i>Q.V. Phan, C. Drebenstedt</i>	
Vitrification of Industrial Waste with Production of Supremax Glass and Flat Glass.....	687
<i>M.B. Piskin, E.M. Derun, N. Tugrul, I.M. Turkkal</i>	

Comparative Application of Environmental Bonding in Mining	700
<i>R. Poulin, M. Jacques</i>	
Chatree Gold Mine Tailings Storage Facility Rehabilitation Study	708
<i>T. Pratummin, Y. Chundung, A. Pearce, F. Tromans, P. Macey</i>	
Metal Balance in Thermal Treatment of CCA-contaminated Soils	719
<i>R. Ronkko, D. Nordmark, J. Kumpiene, A. Lagerkvist</i>	
Determining Environmental Effects of Utilising Or Disposing Pulverised Fly Ash from UK Power Stations	724
<i>M. Zandi, N.V. Russell</i>	
Lifecycle Carbon Dioxide Emission by Nickel Recovery from Wastes	732
<i>M. Sagisaka, T. Onoye, K. Tashiro, K. Kobayashi, K. Tahara, O. Kitamura</i>	
Improvements in the Cyanide Destruction Process at Chatree Gold Mine	739
<i>W. Saranrittichai</i>	
Fly Ash Utilisation at Mines Reclamation	749
<i>P. Sasek, P. Schmidt, J. Mann</i>	
Laboratory investigation of Hydrogen Cyanide (HCN) Gas Formation from Cemented Paste Fill (CPF) samples	754
<i>H.A. Saw, E. Villaescusa</i>	
Asian Prospects of Coalbed Methane As a Clean Energy Resource	767
<i>S. Shimada</i>	
Effect of Flyash Type on Fluidability of Flyash Cement	775
<i>H. Shimada, T. Sasaoka, K. Matsui, M. Ichinose, S. Fujita, J. Gottfried, M. Iino, Y. Yoshida</i>	
New Acoustic Spirometers in Miners Breathing Protection Problems	786
<i>S. Shkundin</i>	
Assessing Stability of Waste Dump – a Case Study	793
<i>T.N. Singh, K.S. Bard, N. Purwar, S. Gupta, K. Sarkar</i>	
Acid Coal Mine Drainage in the Arctic	804
<i>J. Sondergaard, B. Elberling, G. Asmund, C. Gudum, K.M. Iversen</i>	
Innovative Methods to Deal with Acid Mine Drainage	805
<i>P.K. Tandia, B. K. Pal</i>	
A Case Study of a Landslide During the Post - Coal Mining Reclamation and Forestation Processes	821
<i>N. Tokgoz</i>	
Geochemical Assessment of Heavy Metals Accumulation and Fractionation in Fluvial Sediments of the Central Rand Goldfield, South Africa	832
<i>H. Tutu, M.B. Ndasi, E.M. Cukrowska, T.S. McCarthy, M.J. Viljoen</i>	
Indonesian Energy Intensity: It's Convergence toward Energy Intensity in Asia Pacific Developed Countries	842
<i>A.P. Wibowo, F.A. Rosyid</i>	
Development of an Environmentally Friendly Technology for the Carbonization of Low Rank Coal and Biomass	853
<i>C. Wirtgen, D. Gajic, S. Weber, S. Schmidt, P. Gerling</i>	
Hardpan Formation in Sulphidic Tailings: Column and Humidity Cell Tests	865
<i>A. Xenidis</i>	
Study on Safety Variety Division of Subsidence Area of Coal extraction	877
<i>L. Xitao, B. Yan, H. Zhenqi, H. Chaohua</i>	

Neutralization of Waste Water generated in Concrete Cutting Using Waterjet	882
<i>C.H. Yeo, J.G. Kim, J.J. Song</i>	
Application of Injection Material for Offshore Structures Using Flyash-Surfactant Mixtures	898
<i>Y. Yoshida, H. Shimada, M. Iino, T. Sasaoka, K. Matsui, M. Ichinose, S. Fujita, M. Mineshita, T. Mizunuma</i>	
Utilization of the Bottom Ash from Thermoelectric Power Plant as Stabilization Materials in Dredged Ground	910
<i>K. Jong-Yun, H. Sang-Jae, L. Nam-Woong</i>	
In Vitro Oral Bioavailability Testing in Human Health Risk Assessment of Metal Contaminated Soils.....	918
<i>G.J. Zagury</i>	
Effluent Control at Pongkor Gold Mine.....	926
<i>A. Zamzam</i>	
Dynamic Changes of Ecological Footprint of a Mining City in China: a Case Study of Wu'an City	936
<i>J.J. Zhang, M.C. Fu, H. Zeng</i>	
Case Study of Geological Environment Remediation and Planning in Shanjia Village Coal Mine.....	947
<i>Y. Zhao, W. Liu, S. Tang</i>	
Eco-environmental Damage Assessment for Resource-exhausted Coal Mine Areas Based on GIS of MTG, China	957
<i>H. Zhenqi, W. Linlin</i>	
Resource Recovery from Waste - Phosphogypsum Waste in Poland	967
<i>K. Zygmunt, K. Joanna, G. Ma-gorzata</i>	
Author Index	