Preface

General Mine Design Considerations

Underground Mining Methods and Applications

General Planning of the Noncoal Underground Mine

Planning the Underground Mine on the Basis of Mining Method

Cost Estimating for Underground Mines

Mineral and Metal Prices: Mechanisms, Instability, and Trends

Room-and-Pillar Mining of Hard Rock

Mining Methodology and Description: The Immel Mine

The Viburnum Trend Underground--An Overview

Pillar Extraction and Rock Mechanics at the Doe Run Company in Missouri 1991 to 2000

Modifications of the Room-and-Pillar Mining Method for Polish Copper Ore Deposits

Underhand Room-and-Pillar Mining as Applied at the Aurora Mine, Charcas Unit, Grupo Mexico

Underground Mining of Frozen Placers

Room-and-Pillar Mining of Soft Rock

Mining at IMC Potash Carlsbad

Mississippi Potash, Inc.'s, Underground Operations

Advanced Mine-Wide Automation in Potash

Closed-Circuit Mechanized Cut-and-Fill Mining at PCS New Brunswick Division

Longwall Mining of Hard Rock

Underground Mining at Impala Platinum, Ltd., in the Northwest Province of South Africa

Mining Practice for Intermediate-Depth, Narrow Tabular Ore Bodies with Particular Reference to the Free State and Klerksdorp Goldfields

Extraction of a Wide Ore Body at Depth in the SV2/3 Area at Placer Dome Western Areas Joint Venture

Shrinkage Stoping

Shrinkage Stoping at the Mouska Mine

Shrinkage Stoping Practices at the Schwartwalder Mine

Sublevel Stoping

Ground-Stability-Based Mine Design Guidelines at the Brunswick Mine

Stoping at the Pyhasalmi Mine

Narrow Ore Mining in Zinkgruvan, Sweden

Mining Operations at Pea Ridge Iron Ore Company-A Case Study

Sublevel Stoping at the Williams Mine

Sublevel Open Stoping-Design and Planning at the Olympic Dam Mine

Cannington Mine-30 Million Ounces of Silver per Year from a 300-m Cube

Sublevel Stoping at Echo Bay's Lamfoot Mine, Republic, Wash.

Sublevel Open Stoping at El Soldado Mine: A Geomechanic Challenge

Underground Mining in the Kola Peninsula, Russia
Underground Mining Operations at the McArthur River Uranium Mine  p. 281
Cut-and-Fill Mining  p. 287
Raglan, Underground Production in an Arctic Environment  p. 289
Mining of PGMs at the Stillwater Mine  p. 299
Mechanizing Sunshine Mine Operations  p. 309
Underhand Cut-and-Fill Mining at the Lucky Friday Mine  p. 313
Pasminco Broken Hill Mine  p. 319
Rock Support in Cut-and-Fill Mining at the Kristineberg Mine  p. 325
Underhand Cut-and-Fill Mining at the Murray Mine, Jerritt Canyon Joint Venture  p. 333
The Carlin Underground Mine  p. 339
Underhand Cut-and-Fill at the Barrick Bullfrog Mine  p. 345
Case Study: Strathcona Deep Copper Mine  p. 351
Evolution of Undercut-and-Fill at SMJ's Jouac Mine, France  p. 355
Sublevel Caving  p. 359
Underground Iron Ore Mining at LKAB, Sweden  p. 361
Sublevel Caving Update at INCO's Stobie Mine  p. 369
Longitudinal Sublevel Caving, Big Bell Mine  p. 371
Theory and Practice of Very-Large-Scale Sublevel Caving  p. 381
Sublevel Caving: A Fresh Look at this Bulk Mining Method  p. 385
Panel Caving  p. 395
Henderson Mine  p. 397
Palabora Underground Mine Project  p. 405
Block Caving Lift 1 of the Northparkes E26 Mine  p. 411
Preundercut Caving in El Teniente Mine, Chile  p. 417
Premier Diamond Mine  p. 425
Block Caving the EESS Deposit at P.T. Freeport Indonesia  p. 431
Finsch Mine: Open Pit to Open Stoping to Block Caving  p. 439
Cave Mining-The State of the Art  p. 455
Foundations for Design  p. 465
Rock Mass Properties for Underground Mines  p. 467
The MRMR Rock Mass Classification for Jointed Rock Masses  p. 475
Use of Numerical Modeling for Mine Design and Evaluation  p. 483
Pillar Design to Prevent Collapse of Room-and-Pillar Mines  p. 493
The Stability Graph Method for Open-Stope Design  p. 513
Noranda's Approach to Evaluating a Competent Deposit for Caving  p. 521
Rock Support in Theory and Practice  p. 535
Rock Bolting for Underground Excavations  p. 547
Cable Bolting  p. 555
Shotcrete as an Underground Support Material  p. 563
Shotcrete Linings in Hard Rock  p. 569
The Role of Shotcrete in Hard-Rock Mines  p. 579