Subjects: Surface Mining, Generally
Excavation, Generally

Reference: Nichols, Herbert L., Jr., Moving the Earth: The Work¬
1962, $25.00.

Data:
A comprehensive reference on all phases of excavation. Concerning
surface mining, the book has the material shown in Attachment 1.

It also contains extensive information on equipment:

Chapter 13 - REVOLVING SHOVELS (Includes draglines)
Chapter 14 - CONVEYOR MACHINERY (Includes bucketwheel
excavators)
Chapter 15 - TRACTORS AND BULLDOZERS
Chapter 16 - TRACTOR LOADERS
Chapter 17 - SCRAPERS
Chapter 18 - DUMP TRUCKS
Chapter 19 - GRADING AND COMPACTING MACHINERY
Chapter 20 - COMPRESSORS AND DRILLS
Chapter 21 - MISCELLANEOUS EQUIPMENT

Please send any additional references on this subject or other
minerals subjects to DSC (D-310). If the complete article or pub¬
lication is needed, DSC (D-310) will attempt to obtain a copy or a
loan for you.

FOR ADDITIONAL COPIES WRITE TO DIRECTOR, PORTLAND SERVICE CENTER, BOX 3861, PORTLAND, ORE., 97208
CONTENTS

Leaving the pillars • Pillar extraction • Limitations.

Stoping: 9-84
Gravity • Chutes • Draw point • Shrinkage stopes • Square set stoping • Backfilling.

Block caving: 9-88
Surface subsidence.

Forecasting rockfalls.

CHAPTER TEN • PIT OPERATION

Stripping overburden: 10-1
Need for stripping • Utilization of spoil • Regrading.

Sidecasting: 10-3
One-spot strip mining • Bulldozers • Scraper • Dipper shovel • Dragline • Stacker • Wheel excavator • Cable excavator • Double casting • Deep stripping • Grading spoil.

Haulaway stripping: 10-10
Stripping area • Cut slopes • Rate of removal • Stripping costs • Working at the edges • Dump location • Haul grades • Haul routes • Hillside dump • Dump operation.

Topsoil: 10-15
Testing • Preparation for stripping • Nitrogen deficiency • Packing soil • Piling • Loading from the pile • Loading from the field • Screening: Artificial topsoil • Storage • Restoring vegetation.

Peat (humus): 10-24
Characteristics • Digging • Curing • Processing.

Gravel, sand and clay: 10-27
Bank gravel • Sand • Occurrence • Processing • Clay.

Loading out-of-the-bank: 10-29
Bank height • Benching • Types of machinery • Production factors • Tractor loader • Skimmer • Dipper shovels • Clamshell • Dragline.

Level digging: 10-39

Surface water: 10-39
Rain • Runoff.

Ground water: 10-40
Digging under water • Drainage • Pumping.

Pit planning: 10-43
Zoning • Permits • Investigation • Market analysis • Capital • Selling without loading • Working space • Excavating patterns • Plant location.

Processing plants: 10-47
Portable • Fixed.

Hauling: 10-48

Selective digging: 10-49
Layers • Mixing • Pockets • Boulders.

Stockpiling: 10-50
Truck • Dozer • Clamshell • Drag scraper • Carrying scraper • Conveyor.

Refuse disposal: 10-54
Segregation • Burning • Spreading • Rats • Litter • Smell.

Sanitary fill: 10-55
Dug cell method • Covered fills.

CHAPTER ELEVEN • COSTS

Bookkeeping: 11-1
Balance sheet • Day book • Other records.

Definition of costs: 11-2
Overhead • Job overhead • Operating costs • Borderline costs • Personal expenses.

Receivables: 11-3
Importance • Liens • Bonds • Work