

CONTENTS

FOREWORD	5
INTRODUCTION	13
CHAPTER 1: MACHINES IN SURFACE CLEARING AND TEST EXCAVATION. Speeding up identification of site boundaries and excavation potential.....	21
Surface clearing.....	22
Clearing with bulldozer or grader.....	22
Blading.....	23
Backdragging.....	24

Clearing with plows or disking machines.....	26
Clearing with mowers.....	26
Site sampling.....	27
Auger sampling.....	28
Hand augers.....	29
One-man augers.....	29
Two-man augers.....	31
Vehicle-borne augers.....	35
Auger record form.....	43
Trencher sampling.....	54
Backhoe sampling	57
Screening in test excavation.....	59
CHAPTER 2: SITE EXCAVATION USING MACHINES. Rapid, efficient, and controlled machine use.....	63
The Backhoe.....	63
Operation of the backhoe.....	65
Attachable backhoes.....	72
Case backhoes.....	73
Mounting and maintenance of a backhoe unit.....	74
Tractor-mounted backhoe.....	76
Other types of backhoe.....	78
The skid steer loader.....	79
Controlled excavation with skid steer loaders.....	88
The ramp.....	90
The trench.....	91

Practical considerations.....	100
Transporting the loader.....	100
Safety.....	102
Excavation with tractor-mounted loaders.....	102
Renting vs. buying tractor-mounted loaders.....	103
Excavation with track mounted front-end loader.....	104
Excavation with a road grader.....	104
Excavation with bulldozers.....	108
CHAPTER 3. LARGE-SCALE SCREENING.	
Mass recovery of objects.....	115
Mass recovery of objects.....	115
The screening operation.....	115
Screen design.....	116
Processing and water supply.....	120
Pumping pond complex.....	120
Water pumps.....	123
Water sources.....	126
Piped-in water.....	126
PVC pipeline and connections...	129
Natural water supplies.....	132
Trucked-in water.....	132
Collecting and sorting specimens.....	134
CHAPTER 4. CONCLUSIONS.....	139
ACKNOWLEDGMENTS.....	145
REFERENCES.....	147
GLOSSARY.....	149
APPENDIX.....	171
AUTHOR INFORMATION.....	175