

Chapter 12, Figure 12-1

Trail in the Alps where “The Iceman” was found



Chapter 12, Figure 12-2
The Iceman



Chapter 12, Figure 12-3
Ötzi's Tools

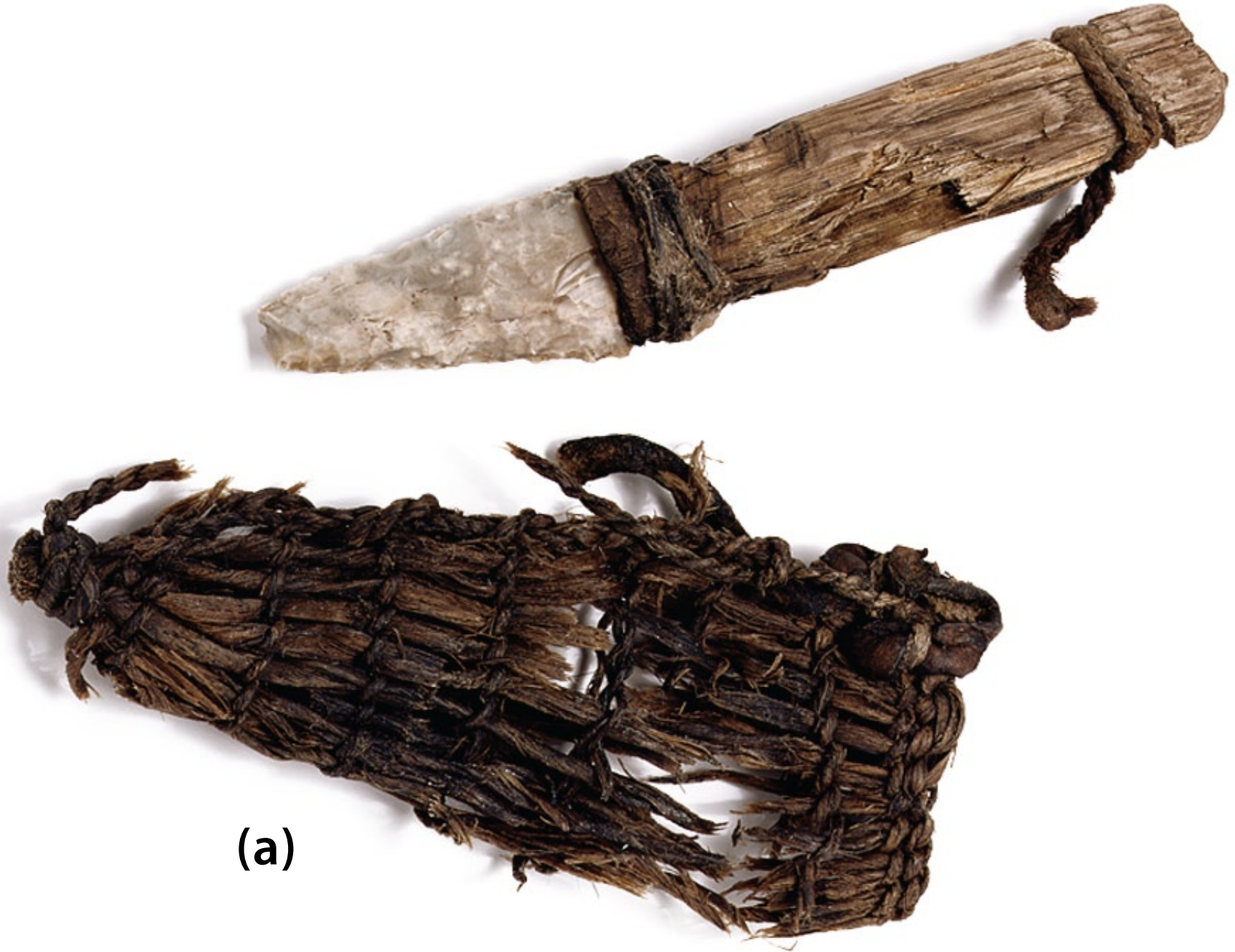


(a)

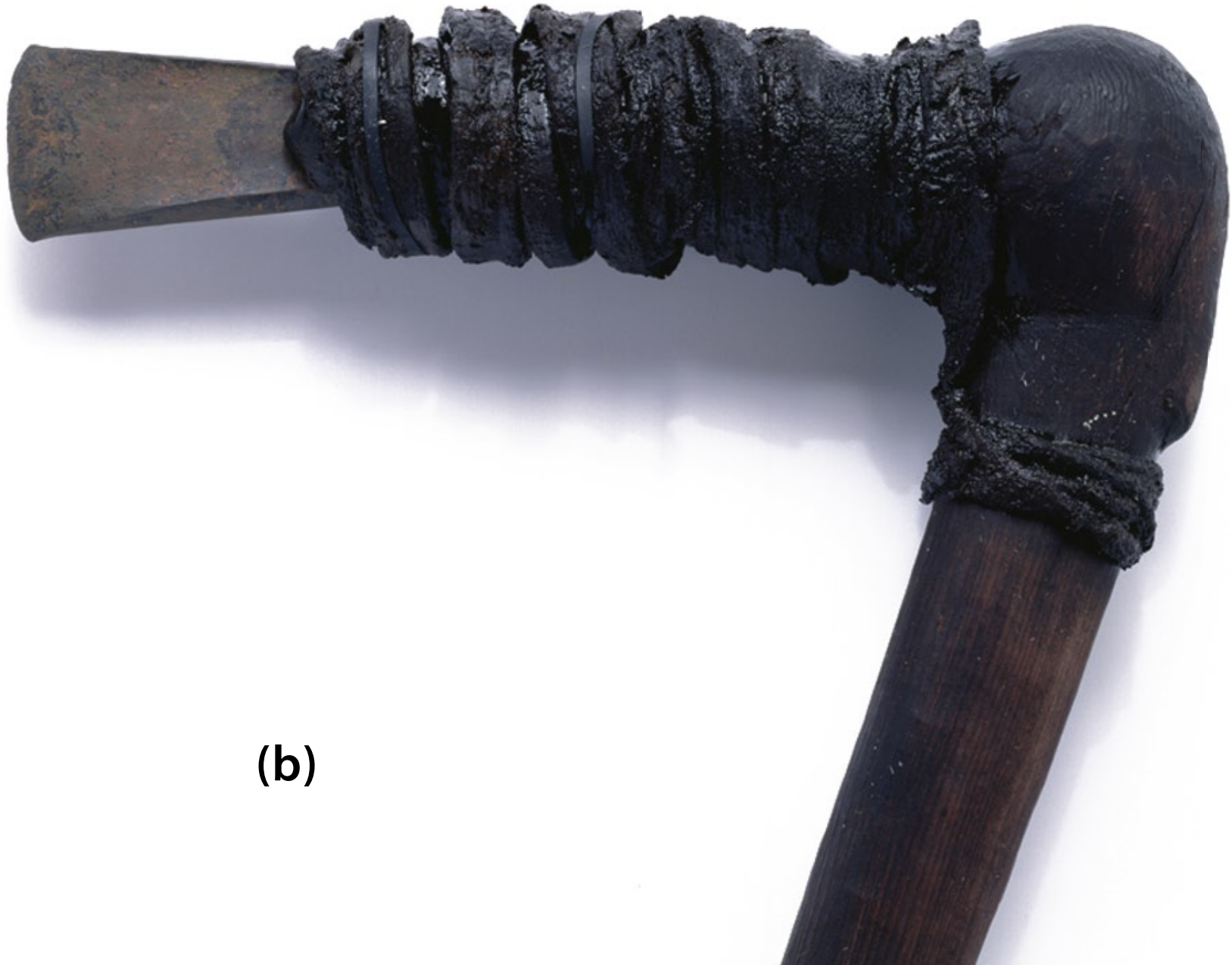


(b)

Chapter 12, Figure 12-3a



(a)



(b)

Chapter 12, Figure 12-4
A Stone Age Hand Ax



Chapter 12, Figure 12-5
Early Metal Use





(a)

Chapter 12, Figure 12-5b



(b)



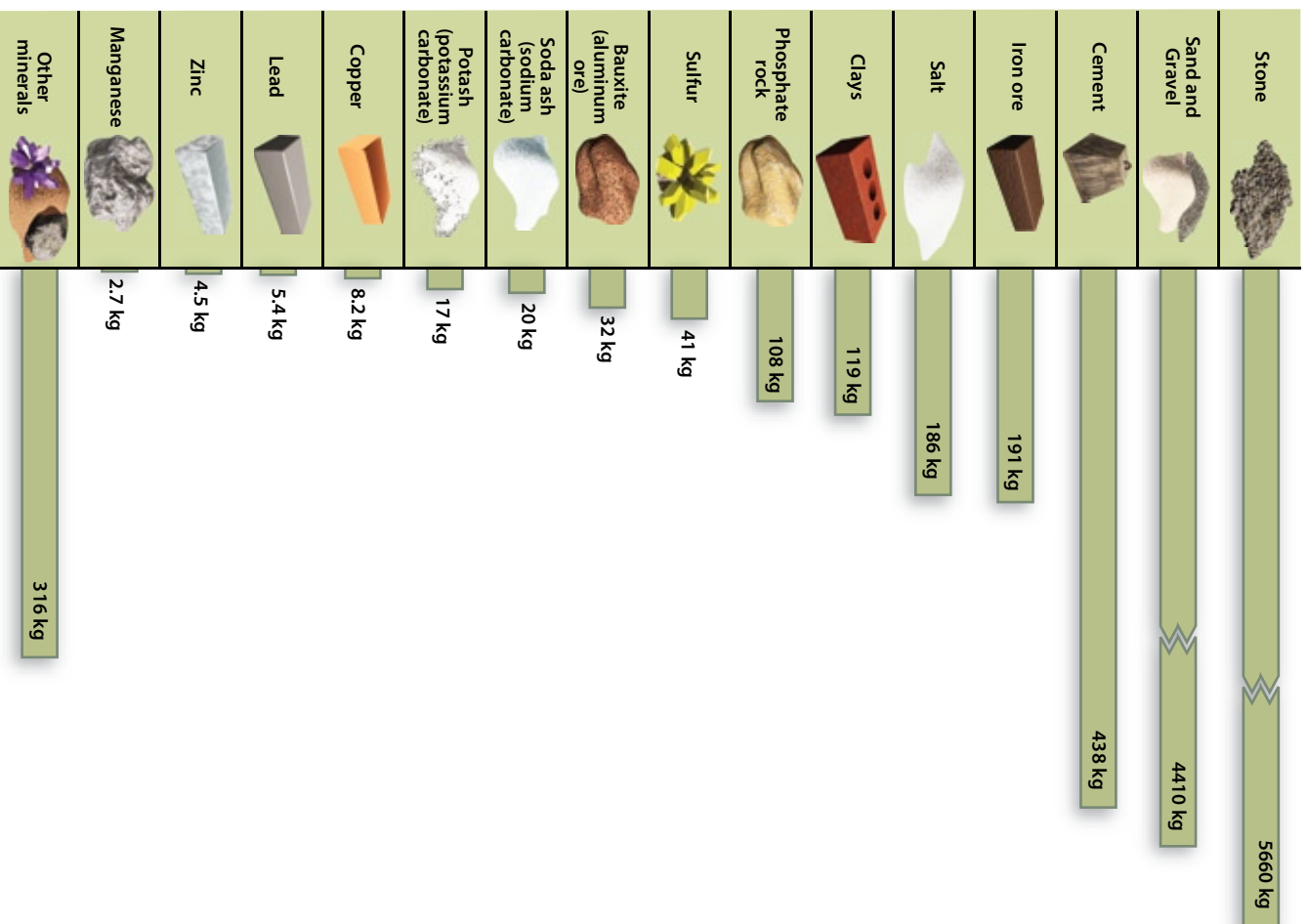
(c)



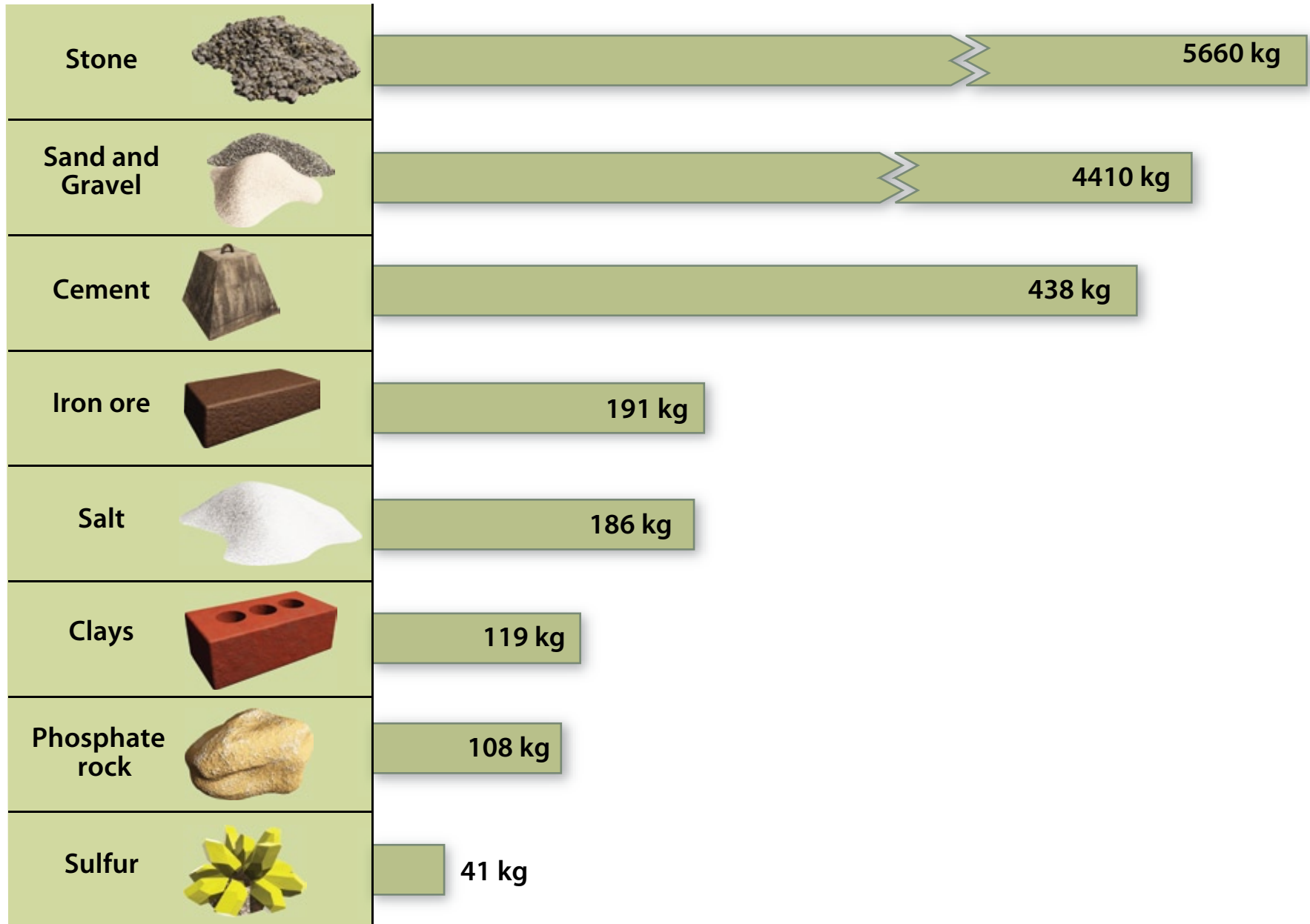
(d)

Chapter 12, Figure 12-6

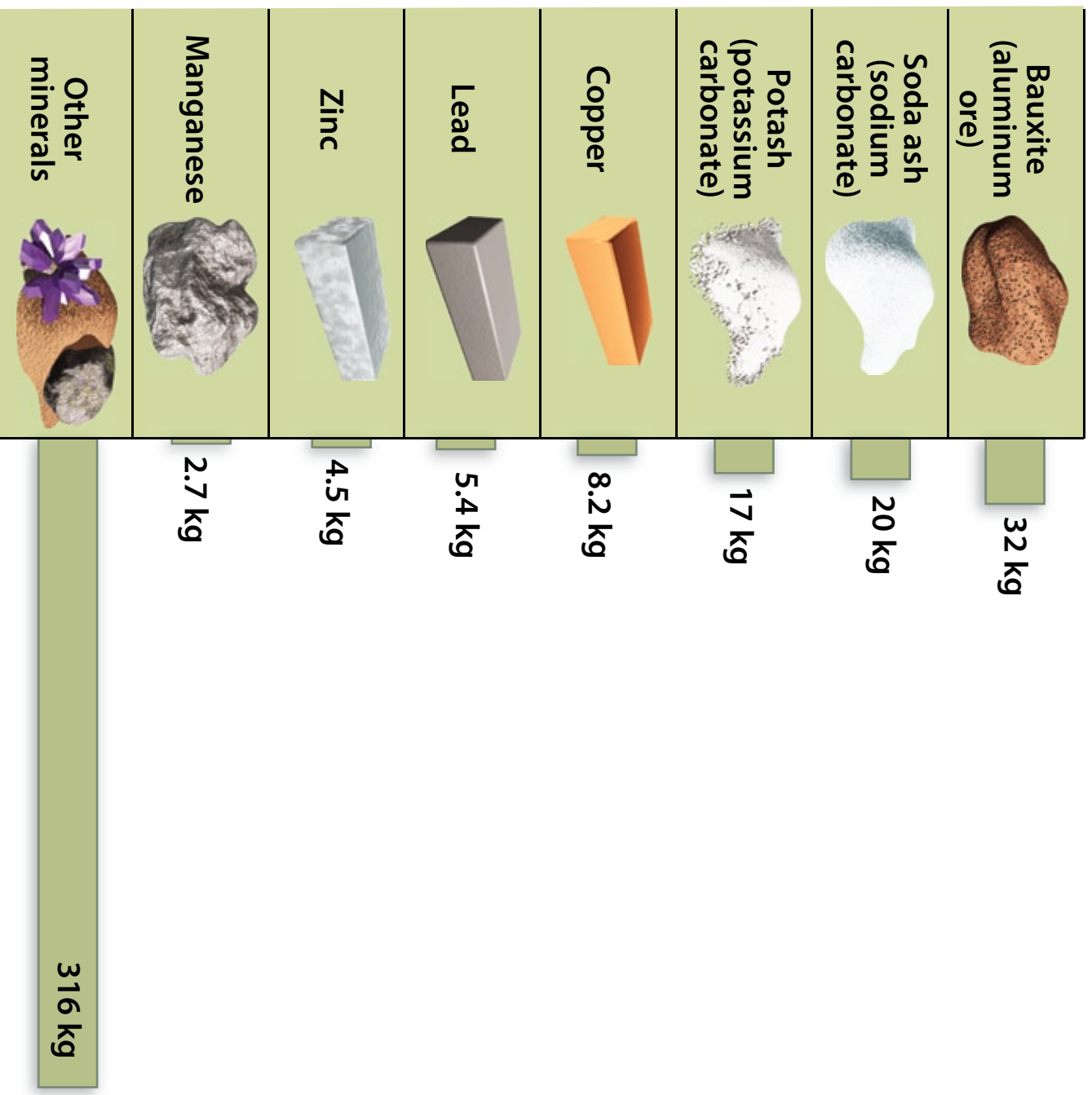
Mineral Use in the United States

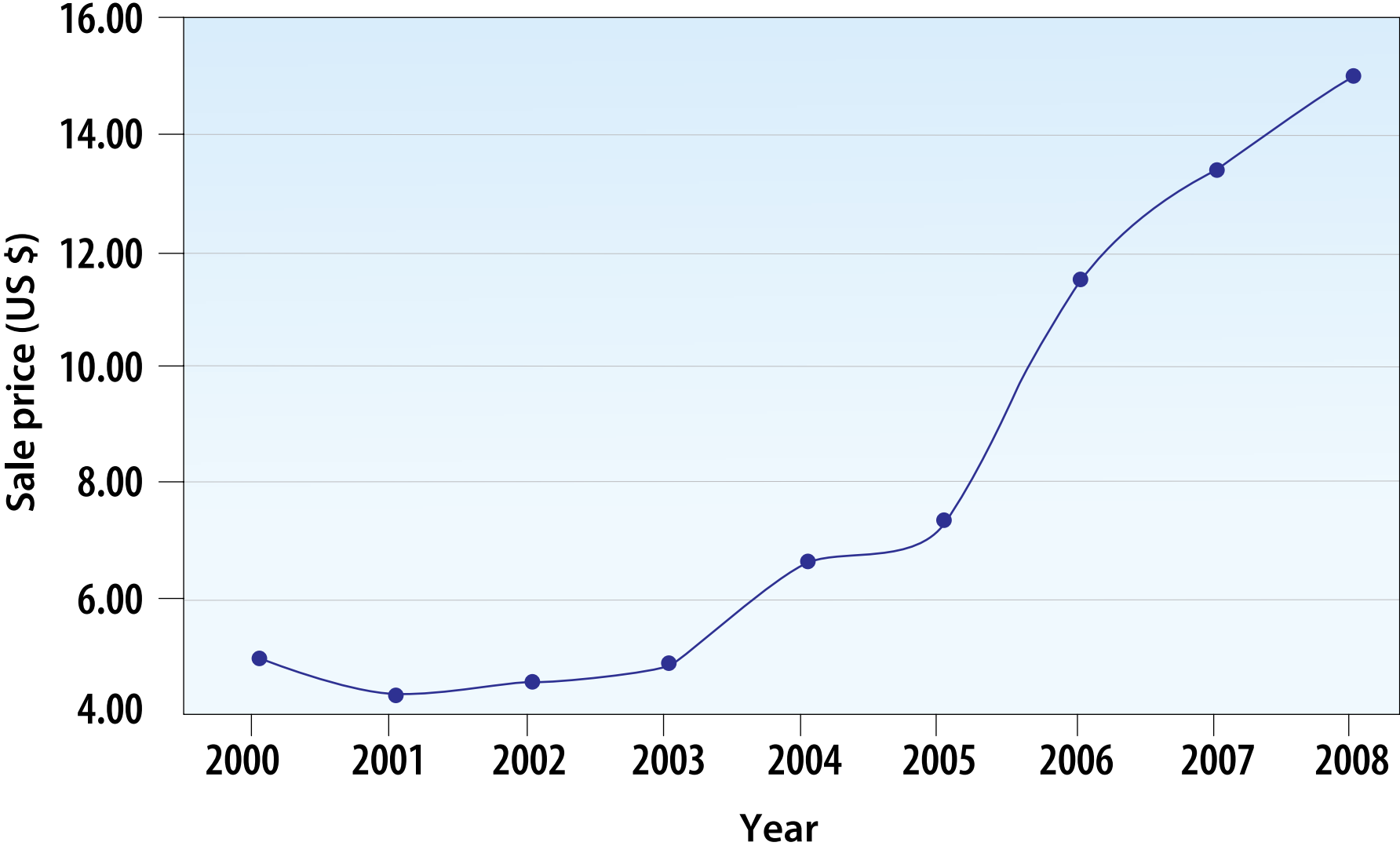


Chapter 12, Figure 12-6a



Chapter 12, Figure 12-6b





Chapter 12, Figure 12-7
A Copper Mine on Cyprus



Chapter 12, Figure 12-8
The Bingham Canyon Mine in Utah



Chapter 12, Figure 12-8a



Chapter 12, Figure 12-8b



Chapter 12, Figure 12-9
The Red Dog Mine in Alaska



Chapter 12, Figure 12-10
A Gold-Bearing Vein in the Mother Lode Region of California



Chapter 12, Figure 12-10a

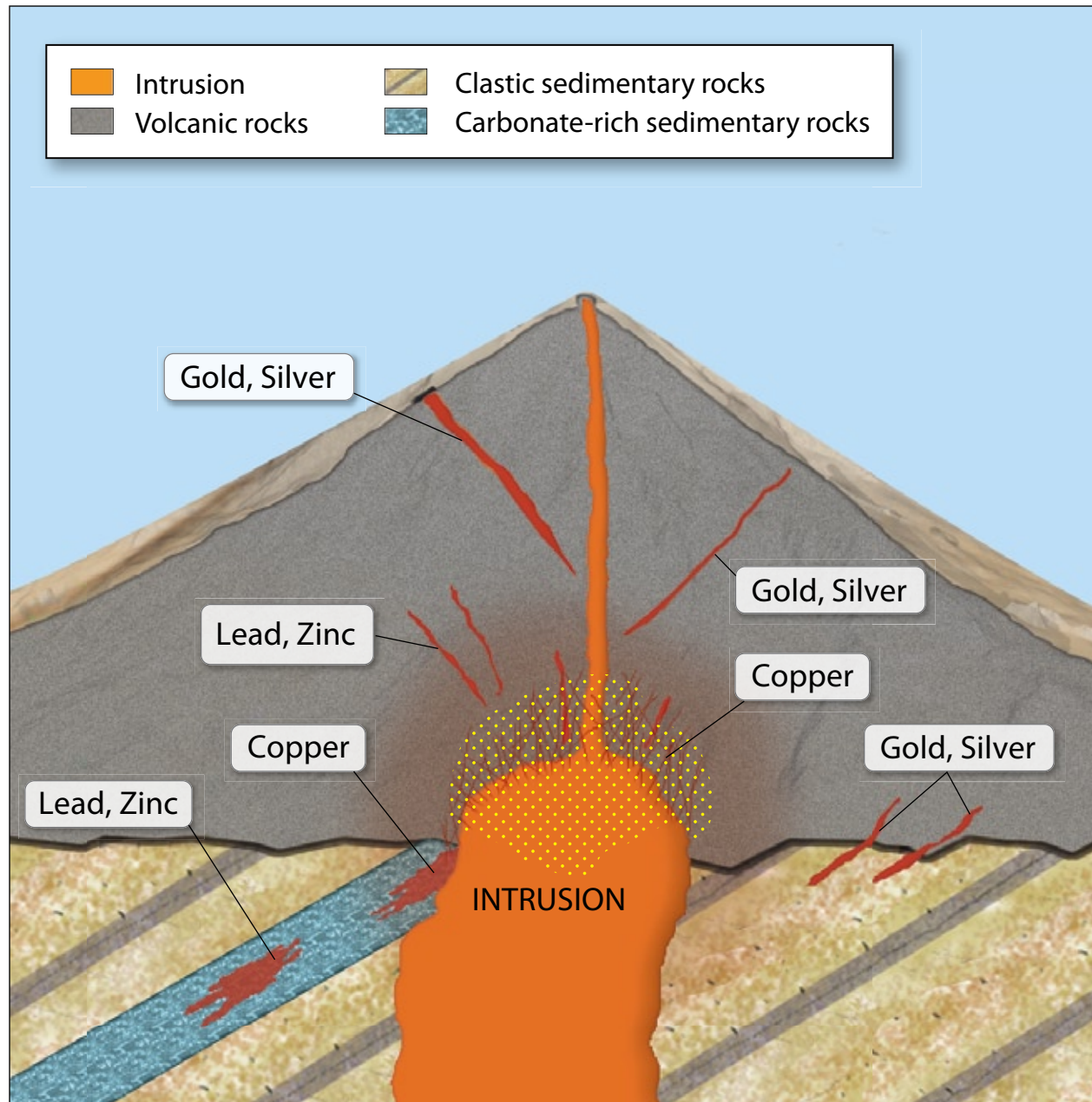


(b)



Chapter 12, Figure 12-11

Ore Deposits That Can Form in Stratovolcanoes



Chapter 12, Figure 12-12
Mineral Exploration



Chapter 12, Figure 12-13
An Exploration Trench



(a)



(b)

Chapter 12, Figure 12-13a



(a)

Chapter 12, Figure 12-13b



(b)

Chapter 12, Figure 12-14
A Mineral Exploration Drill Rig



Chapter 12, Figure 12-15
An Exploration Camp in Alaska





Chapter 12, Figure 12-16

Open-Pit Mining

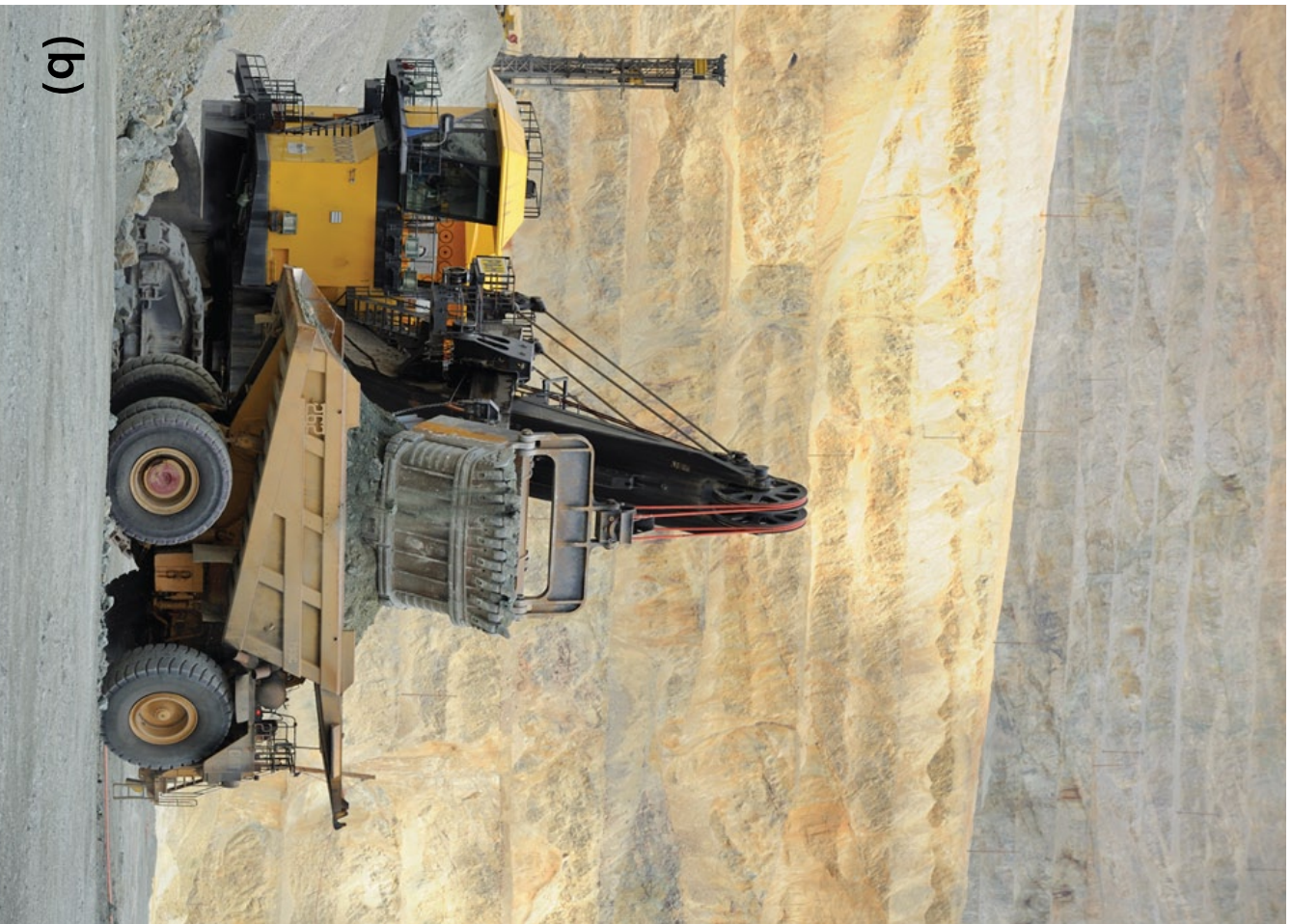


Chapter 12, Figure 12-16a



(a)

Chapter 12, Figure 12-16b



(b)



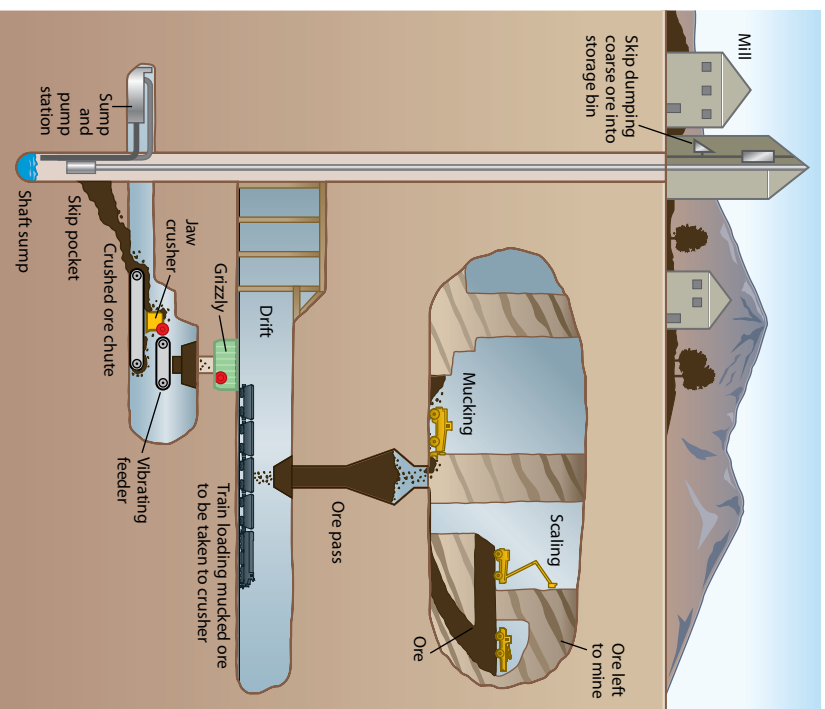
(c)

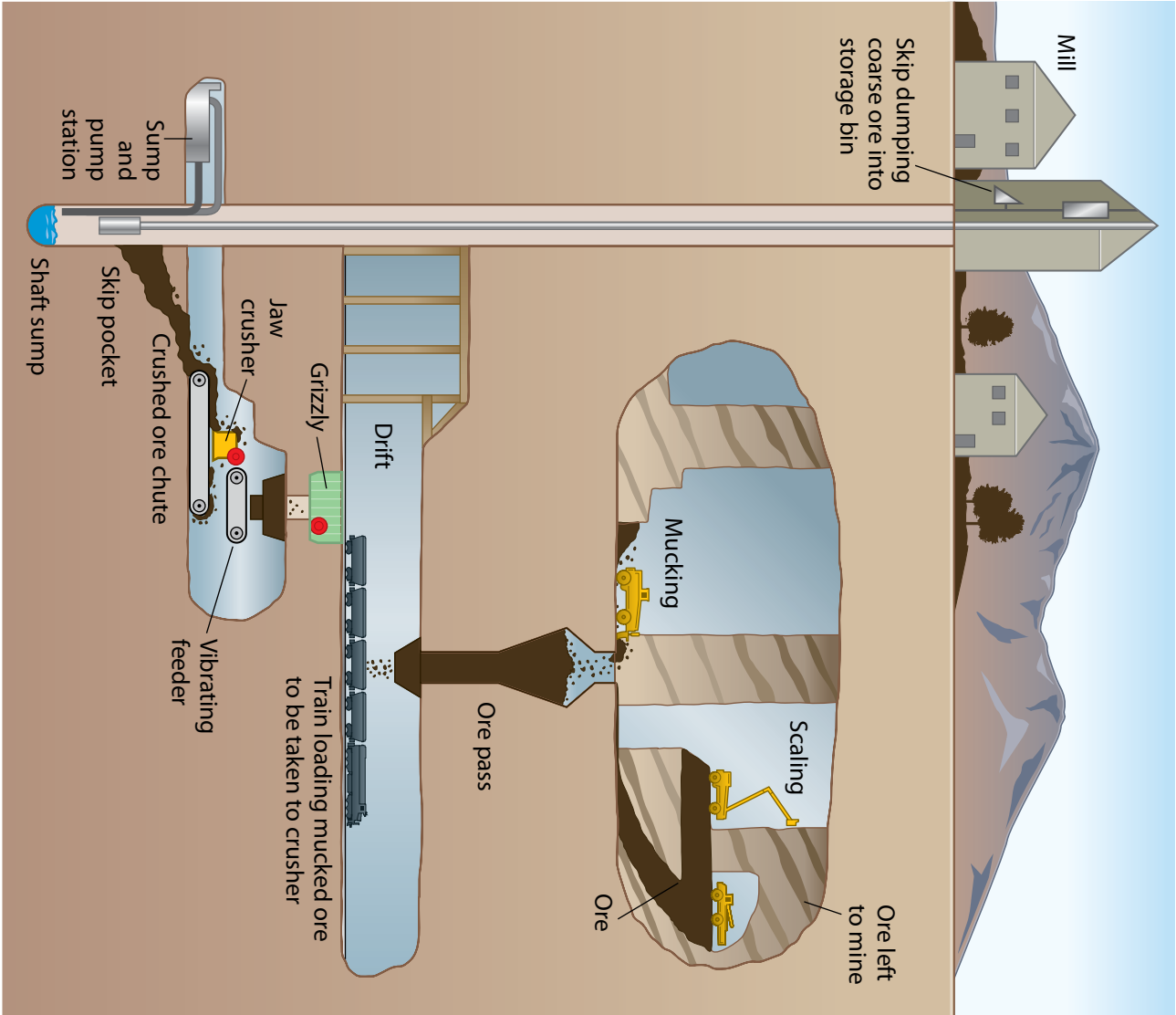
Chapter 12, Figure 12-17

Open-Pit Mines Produce Huge Quantities of Waste Rock



Chapter 12, Figure 12-18





(a)

Chapter 12, Figure 12-18b



(b)

Chapter 12, Figure 12-19
Abandoned Mine Land



Chapter 12, Figure 12-20

Bodie, California, an 1800's mining town that is now a state park



Chapter 12, Figure 12-21

Large cylinders (ball mills) hold steel balls that grind ore as the mill rotates



Chapter 12, Figure 12-22
Flotation



(a)



(b)

Chapter 12, Figure 12-22a



(a)



(b)

Chapter 12, Figure 12-23

Tailings Disposal



(a)



(b)

Chapter 12, Figure 12-23a



(a)

Chapter 12, Figure 12-23b



(b)

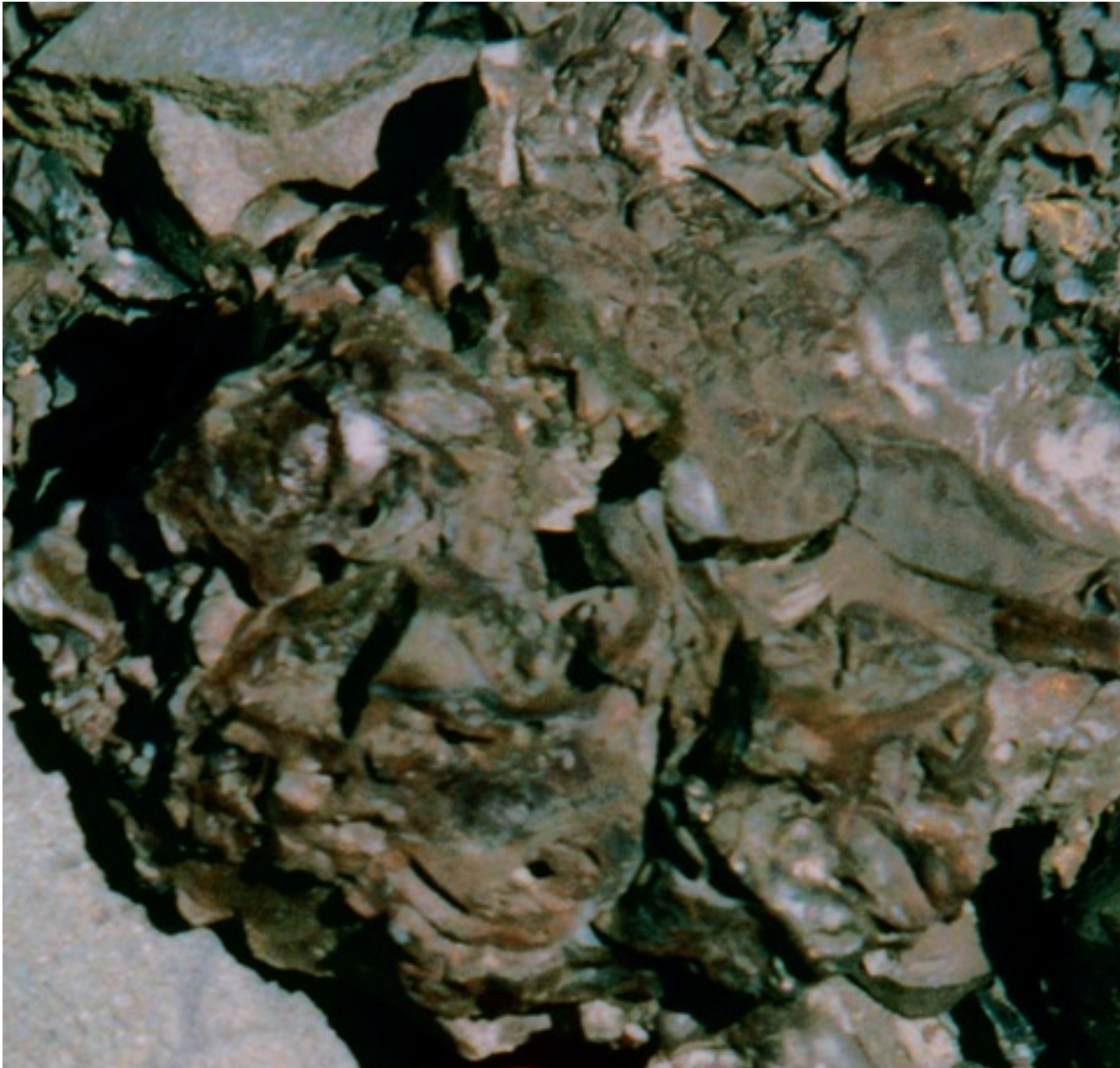
Chapter 12, Figure 12-24
Heap Leach Operation for the Recovery of Gold



Chapter 12, Figure 12-25
Slag Is the Principal Solid Waste Produced by Smelting



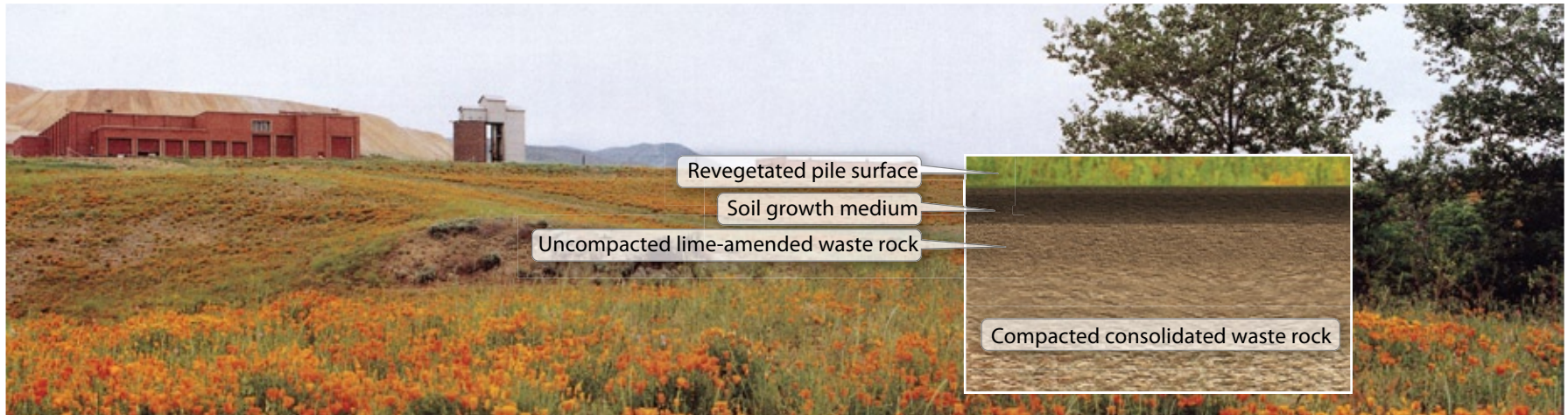
Chapter 12, Figure 12-25a



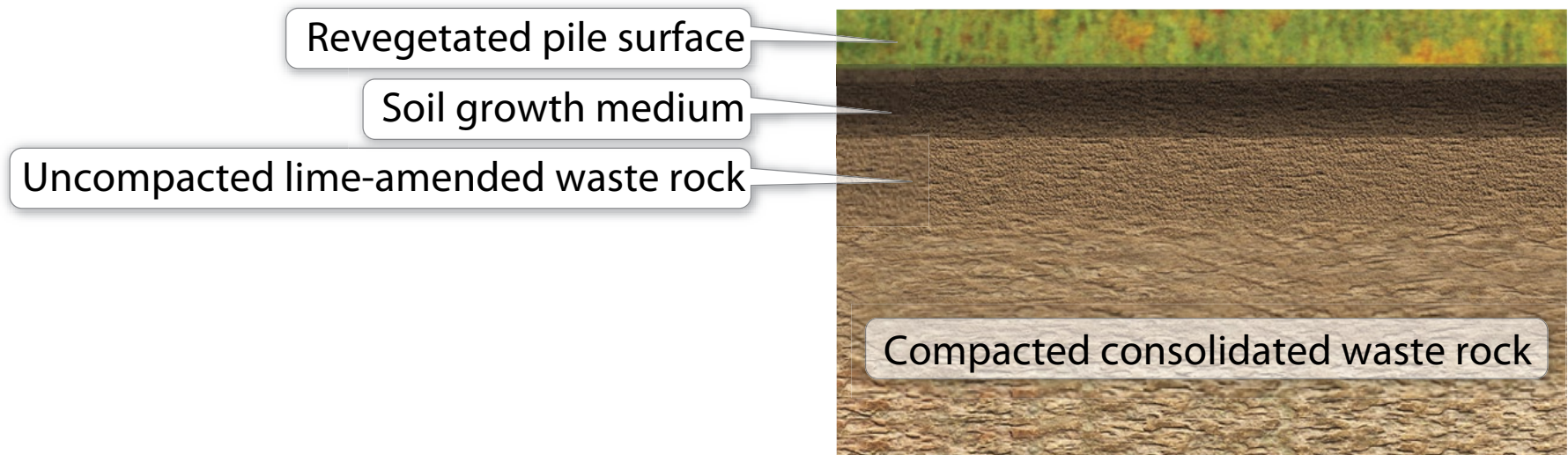
Chapter 12, Figure 12-26
The Baia Mare Spill



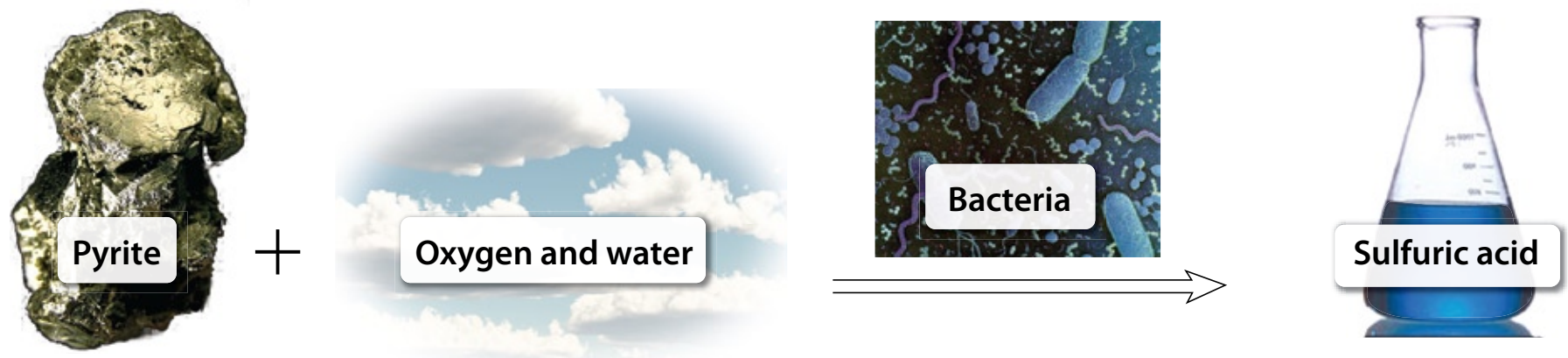
Chapter 12, Figure 12-27
A Typical Reclamation Cover Design



Chapter 12, Figure 12-27a



Chapter 12, Figure 12-28
Generation of Acid Rock Drainage



Chapter 12, Figure 12-29
The Berkeley Open Pit at Butte, Montana



Chapter 12, Figure 12-30
ARD Being Released from a Mine Adit



Chapter 12, Figure 12-31
A Water Treatment Plant for ARD



Chapter 12, Figure 12-32

Reclaimed Tailings



(a)



(b)

Chapter 12, Figure 12-32a



(a)

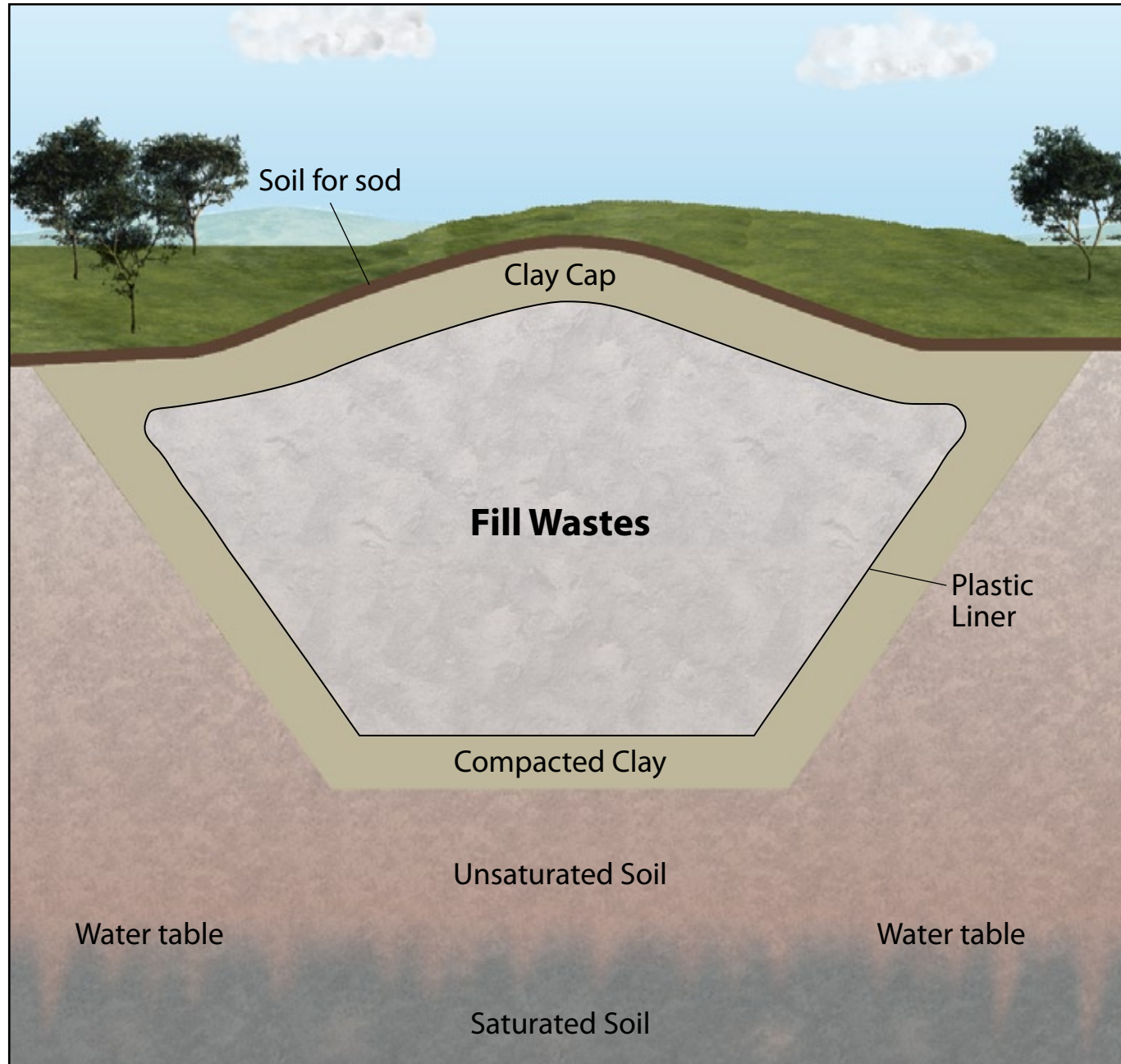
Chapter 12, Figure 12-32b



(b)

Chapter 12, Figure 12-33

A Repository Design for Metal-Bearing Soil



**TABLE 12-1 USEPA SCREENING LEVELS FOR POTENTIALLY
HAZARDOUS CONCENTRATIONS OF METALS
IN RESIDENTIAL SOILS (PPM)**

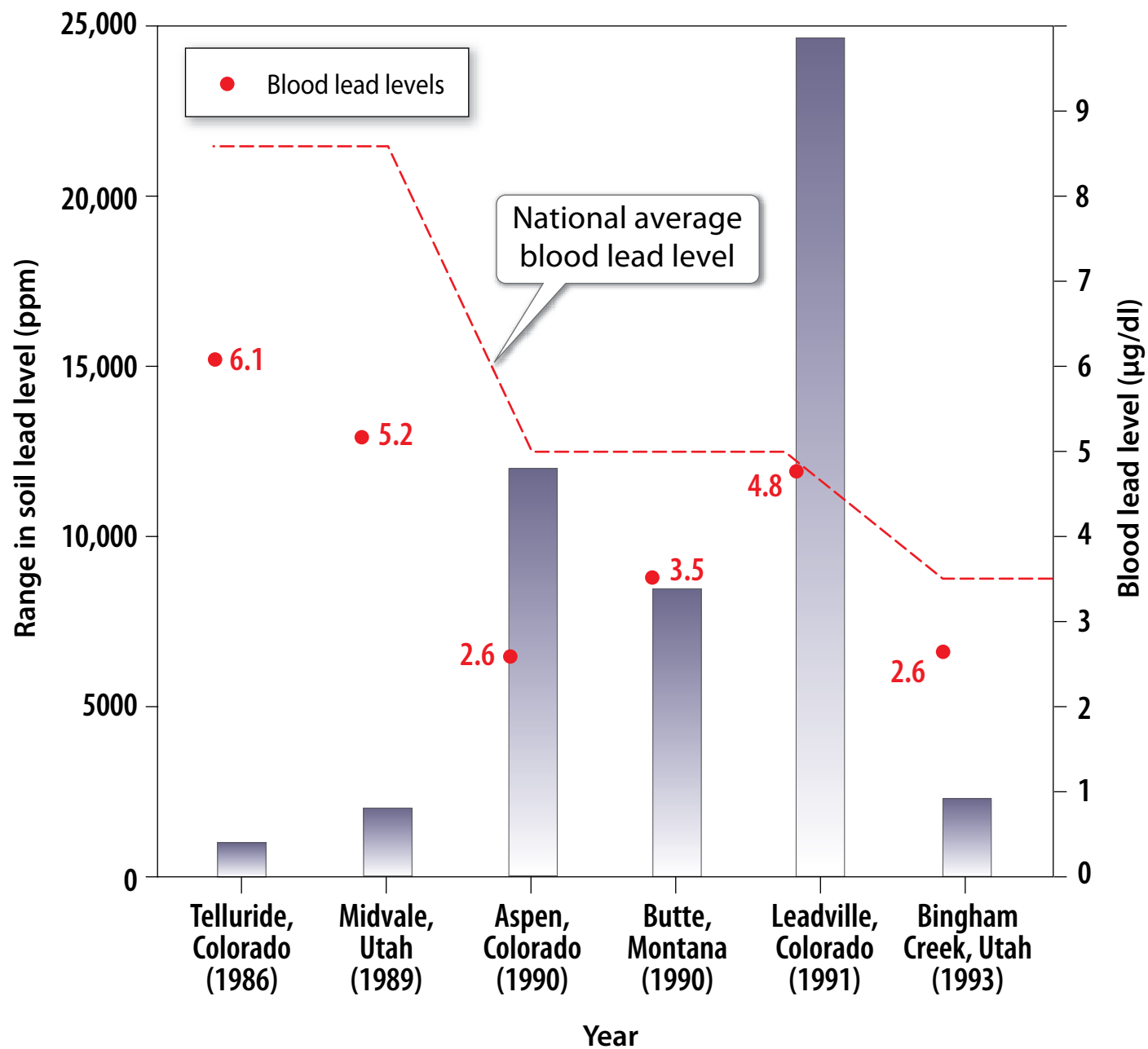
Arsenic	Cadmium	Lead	Silver	Zinc
0.4	39	400	390	23,000

Chapter 12, Figure 12-34
Removing Lead-Bearing Residential Soil



Chapter 12, Figure 12-35

Blood and Soil Lead Levels in Mining Communities



Chapter 12, Figure 12-36
A 1900's smelter in Idaho



Chapter 12, Figure 12-37
The Kennecott Smelter Near Salt Lake City, Utah



Chapter 12, Figure 12-38
The Recent Price of Copper

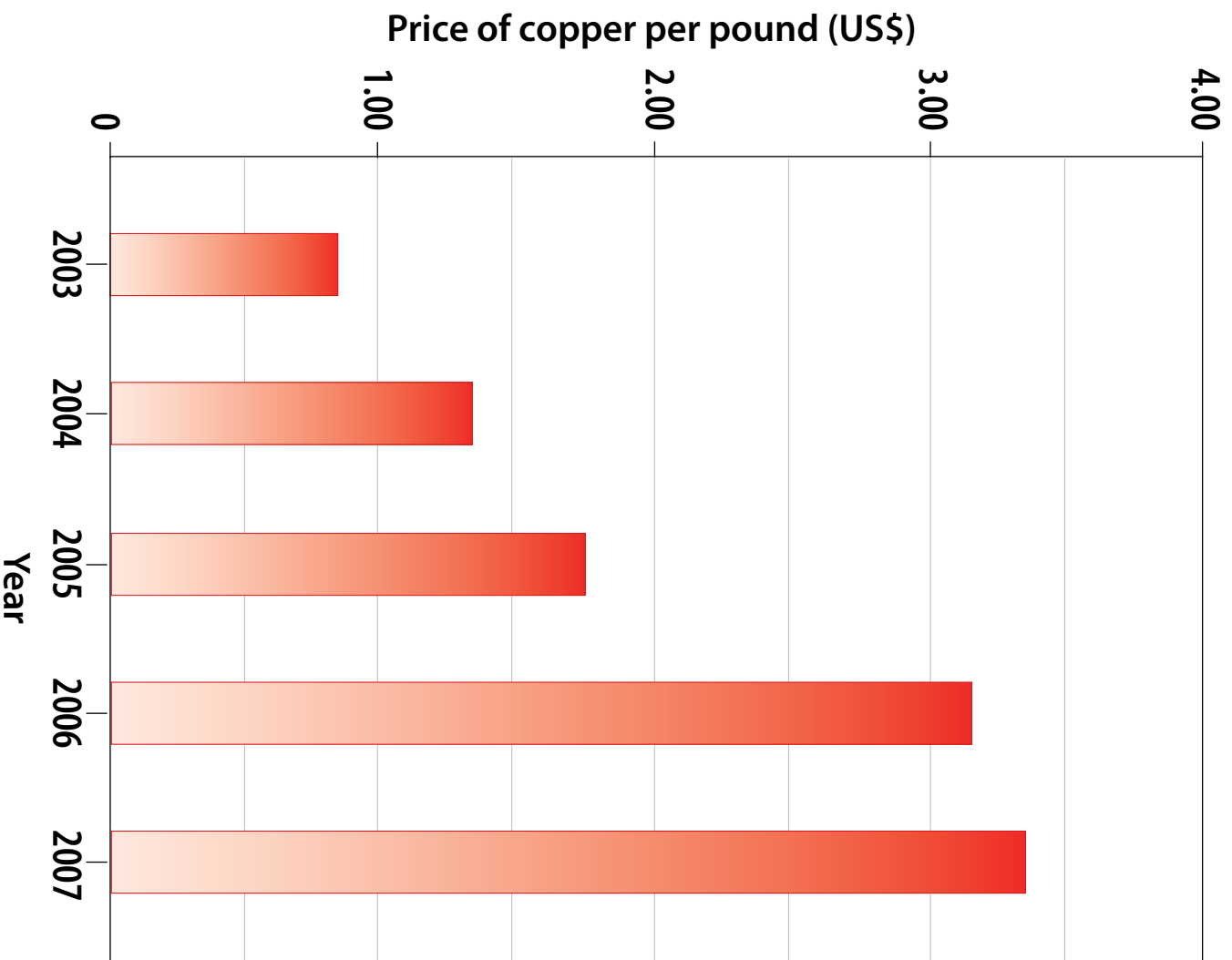


TABLE 12-2 TOP RECYCLED METALS IN THE UNITED STATES, 2006

Commodity	Value	Percent of total annual consumption
Iron (and steel)	\$36,100,000,000	55%
Aluminum	\$21,800,000,000	40%
Copper	\$20,800,000,000	31%
Nickel	\$ 6,100,000,000	35%
Lead	\$ 2,680,000,000	70%

Chapter 12, Figure 12-39

The Raglan Nickel Mine in Nunavik Territory, Quebec



Chapter 12, Figure 12-40

An Inuit Family from Nunavik, Canada, and Their Catch





