

Mining and Mineral Resources

Environmental Science Week 15

November 30th – Dec. 3rd

UNIT 5 TEST December 16th CH 16 - 19

11/30 Minerals and Mineral Resources CH 16.1

Obj. TSW learn about minerals, how they are formed and why they are valuable. P. 54 NB



1. What is a mineral?
2. Compare and contrast a metal and a nonmetal with examples of each.
3. Describe three processes by which ore minerals form.



HW – Read CH 16. Write 1 page
Notes Page 55 NB Due Thursday
Quiz CH 16 & 17 next week
UNIT 5 Test December 16th

Backfilling of Open Pit Metallic Mines



Mining in CA p. 57 NB

- Sand & Gravel, Perlite
- [Mining for Gold](#)
- [Yuba Gold](#)

Managing Oil Gas & Mining - Africa

- Read the article above.
- How does this Progress Report for “Managing Oil, gas, and mining” in Africa meet the Triple Bottom Line? Balance between Society, Environment and Economic?
- Write an AXES paragraph and be ready to share out.
- Page 57 NB

Activity: Maps in Action P. 426 Page 59 NB

Mineral Production in the United States

Top 10 mineral Commodities Produced in the United States.

- Read the Map Skills

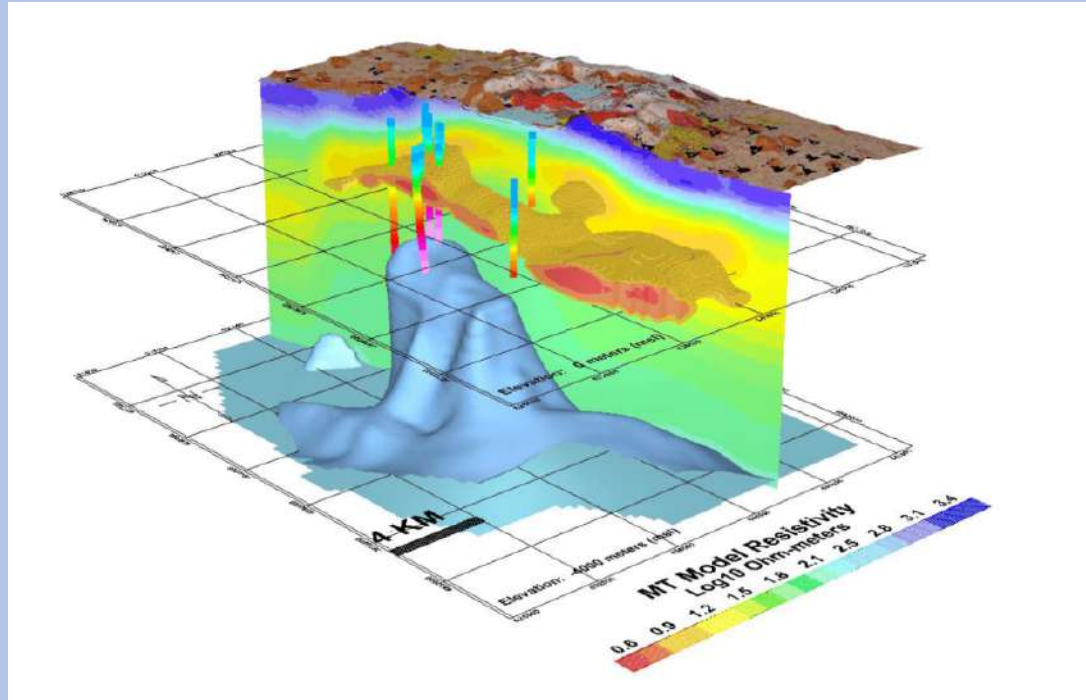
1. **Using a Key.** Find California on the map. Which of the top 10 minerals commodities were produced in CA in 2009?
2. Which state(s) did not have any top 10 mining commodities in 2009?
3. **Evaluating Data.** Gold, Copper, Iron Ore and Molybdenum are metal in the top 10 mineral commodities produced in 2009. Reading the key to the right on page 426, What percentage of total 2009 production value do these metals represent? Which states were the principal producers of these metals in 2009?
4. Stone, sand, and gravel are collectively known as **aggregates**. What percentage of the total 2009 production value do aggregates represent? Which states were the major producers of aggregates in 2009?
5. Which states produced salt in 2009?

Activity: Where are Metals and minerals mined? p. 59NB

- Choose a metal &/or mineral from Figure 1.1
- Explain why it is a metal &/or a mineral.
- Research your metal or mineral: Where is it mined?, How is it mined? What is the economic value of it.?
- Aluminum, Copper, Iron Ore, Lead, Zinc, Clays, Phosphate, Salt, Other Metals

12/1 Mineral Exploration & Mining CH 16.2

Obj. TSW learn how minerals are found, and how they are extracted. P. 56NB



1. How do Mining company's explore for minerals?
2. Describe three methods of subsurface mining.
3. Describe tow methods of surface mining.

[International Mining](#)

12/2 Mining Regulation & Mine Reclamation CH 16.3

Obj. TSW understand the impact mining has on the environment, laws to mine and reclaim that land to it's original condition. P. 58 NB



Above: Nabarlek pit in 1980 and the pit and evaporation ponds after rehabilitation in 1996.

Below: Treatment plant, ore stockpile, evaporation ponds and air strip in 1982 and after rehabilitation in 1996.

Photos Above: Australia's Nabarlek uranium pit in 1980 and the pit and evaporation ponds after rehabilitation in 1996.

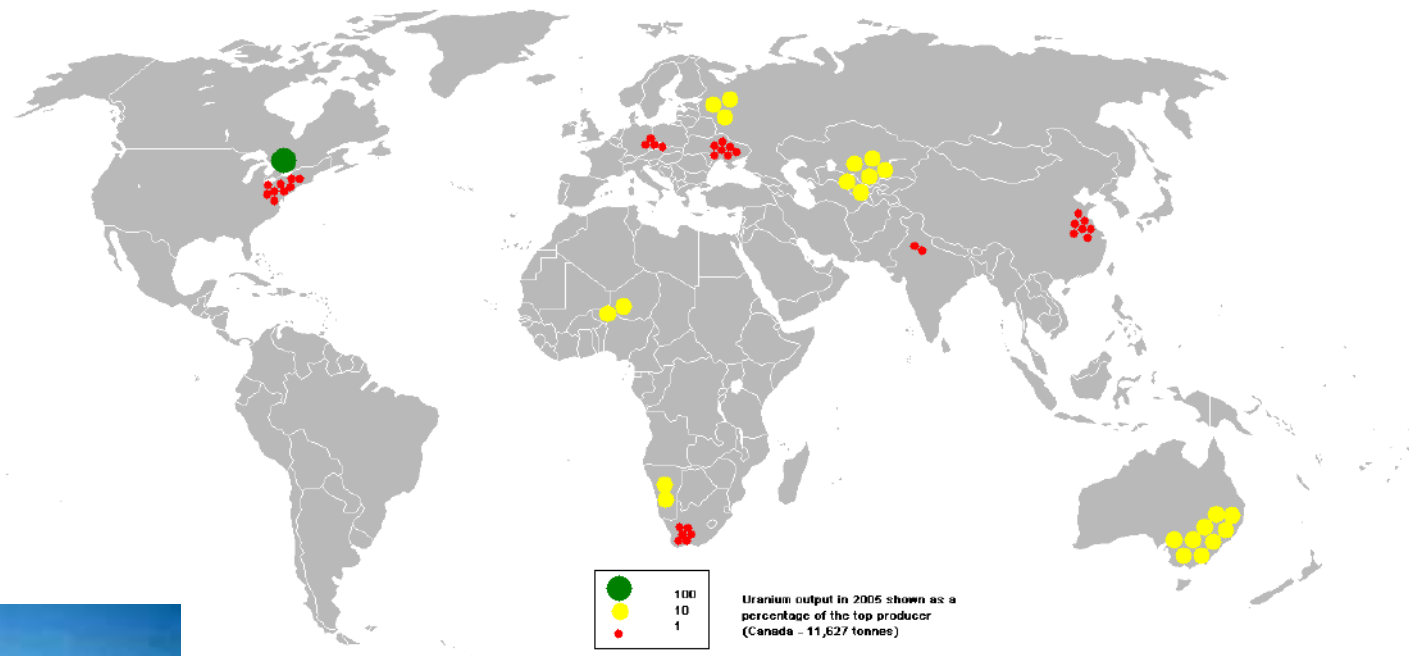
Photos Below: Treatment plant, ore stockpile, evaporation ponds and air strip in 1982 and after rehabilitation in 1996.

1. List 7 important potential environmental consequences of mining.
2. List the four Federal laws that relate to mining and the reclamation of mined land.
3. Describe reclamation in your own terms.

Chocolate Chip Mining Activity

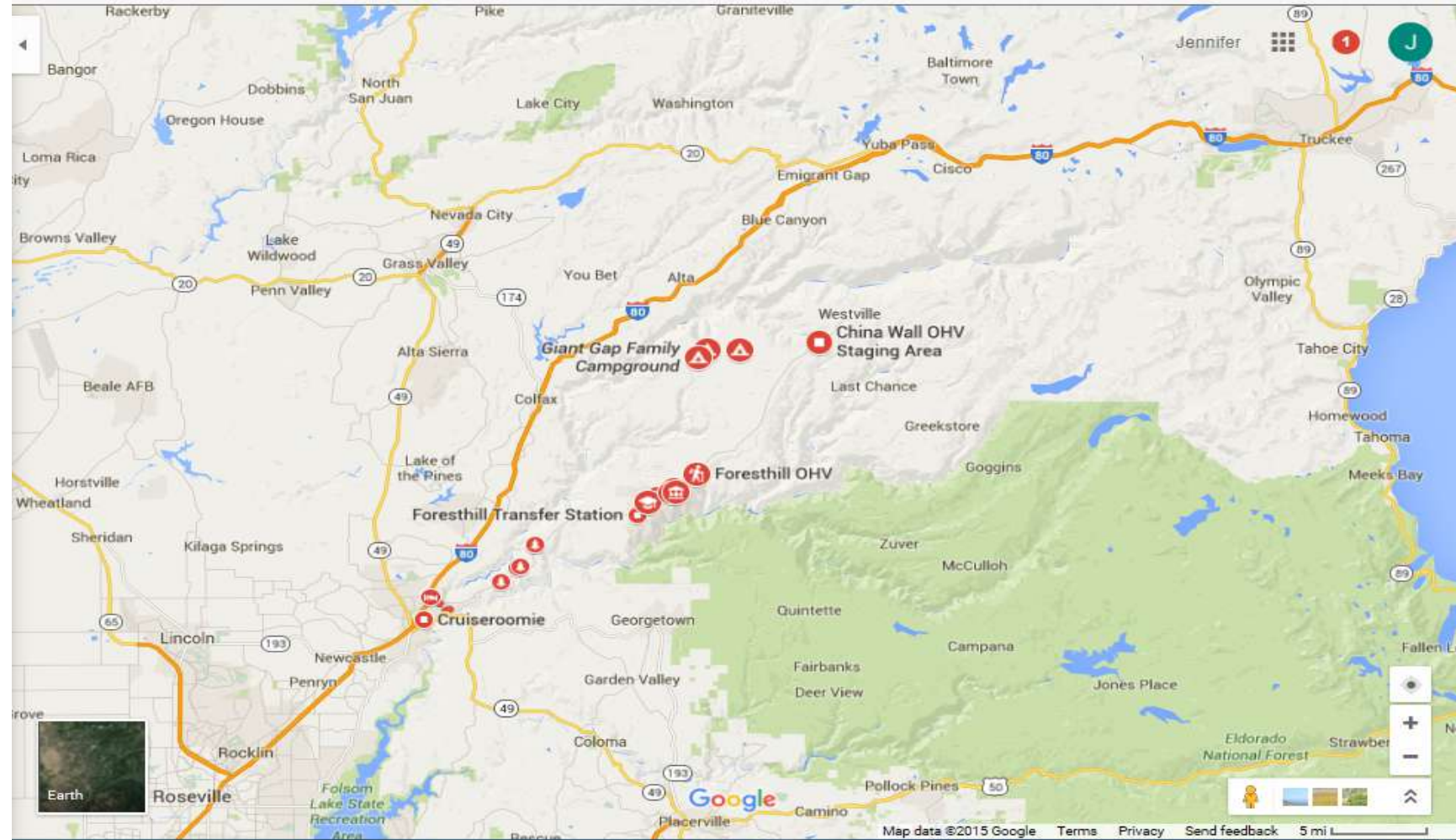
- [Mining and Land Reclamation](#)

Uranium Mining



Hydraulic Mining in the California Goldfields

- Forest Hill, CA



12/3 Review of Mining and Mineral Resources CH 16

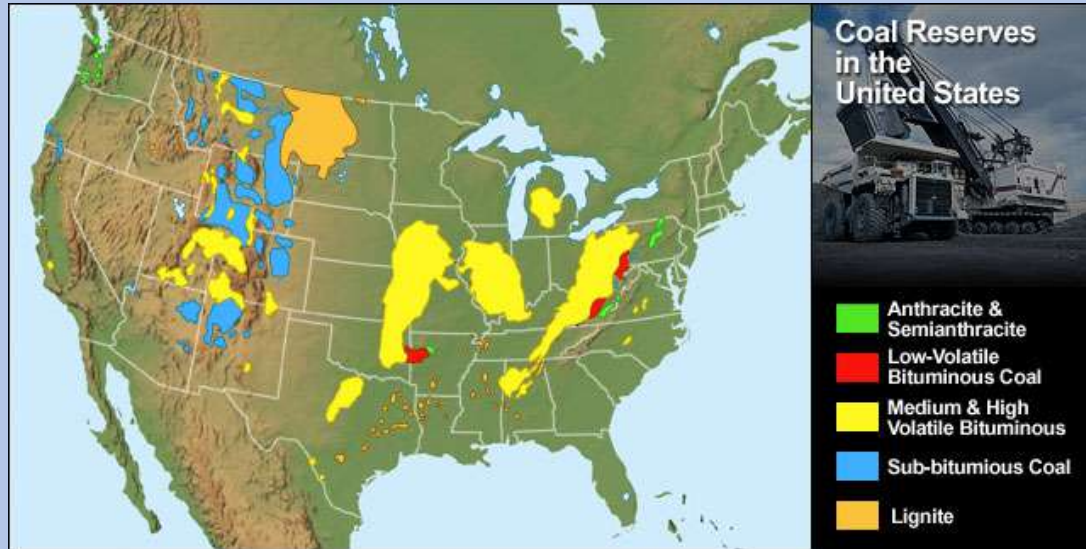
Obj. TSW read about the social and environmental consequences of mining. P. 60 NB



1. Read the article Gold from Ghana. P. 427 ES BK.
2. Explain some social and environmental consequences of mining.
3. What are some strategies that you think would help reduce the environmental damage caused by gold extraction?

12/4 Nonrenewable Energy CH 17.1

Obj. TSW learn about our energy resources and how they are limited. P. 62 NB



1. List the 5 factors that determine a fuels application.
2. Use Figure 1.3 in CH 17, How a Coal-Fired Power Plant Works. Explain the steps taken to ensure we have electricity when we flip the light switch.
3. Name our 3 Fossil Fuels.
Where in the United States are our Fossil Fuels deposited?