

#31: Groundwater II

name:

Go to <http://formontana.net> and then click on picture # 35.

1. Find the definition for an “aquifer” (dictionary.com), and write it out in the space below.
2. What does the word “springs” mean if you are talking about groundwater?
3. What layer of rock is the aquifer that brings water to Giant Springs?
4. Explain what a “recharge area” is.
5. Where is the recharge area for Giant Springs?
6. What are the three conditions that make this an artesian situation?
7. What does the word “impermeable” mean?

Brush Lake

Go bask to <http://formontana.net> and then click on picture # 101.

8. Use our Montana Highway Map to find Bush Lake (about 20 miles southeast of Plentywood). What larger lake is located 12 miles southwest of Bush Lake? NOTE: This lake and Brush Lake were both formed the same way.

9. Before the ice age(s), the Missouri used to flow into the _____ Bay. Today, water in the Missouri River eventually ends up in the Gulf of _____ .
10. List the three layers of sediment from (oldest to youngest) that can be found in ancient river valleys in northeastern Montana.
11. Judging by the shape of Brush Lake (see photo on web page), describe the shape of the block of ice that once sat there.
12. How was it possible for a forest to grow on top of the block of ice? (Plants don't grow in ice!)
13. What do geologists call the depression that forms after the block of ice finally melted? NOTE: Many of the lakes in northeastern Montana, North Dakota, and Minnesota were formed this way.
14. Since water has been evaporating from Brush Lake for thousands of years, why hasn't it dried up?
15. What is left behind as the water evaporates from Brush Lake, and how did this material get into the water in the first place?

BERKELEY PIT

Go back to <http://formontana.net> and then click on picture # 31.

16. Before 1955 the mining in Butte was all done underground (there was not pit). How did they keep the mineshafts and tunnels from being flooded by groundwater?
17. When was the Berkeley Pit started and when did the mining of the pit stop?
18. Why has it been filling with water since the mining stopped?

19. Why is the water in the pit so acidic?

20. What is dissolved in the acidic water of the pit?

SEPTIC SYSTEMS

Go back to <http://formontana.net> and then click on picture # 32.

21. What are the three ways that our society deals with sewage (wastewater)?

22. What happens to the solid waste that goes into a septic tank?

23. What happens to the effluent?

24. Describe a situation where someone might be contaminating their well water with effluent from their septic system?

25. Nitrates from septic systems can cause two human health problems. What are these two problems?

26. **Click on the hot Link titled “How septic systems work”.** Click through the slides and read the captions. What three things are removed by the percolation process?

27. Use the Internet or another source to find out what “blue baby syndrome” is. Explain it in your own words.

28. When you flush the toilet where you live, does it go into a septic system, a lagoon, or to a sewage treatment plant?