



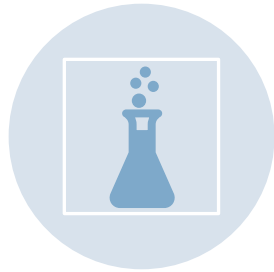
TULE BASIN
MANAGEMENT ZONE

**GROUNDWATER 102:
GROUNDWATER
QUALITY**

MODULE 2

What are Chemicals?

CHEMICALS



All living and non-living things are made up of chemicals (building blocks of nature)



There are natural and human made chemicals

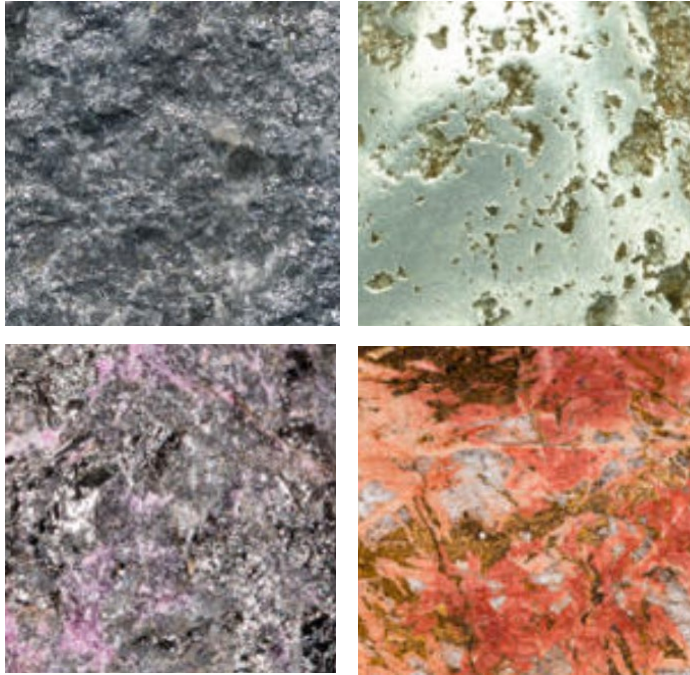


Depending upon the concentration, some are safe for human consumption, but many are not



Examples of chemicals: fertilizer, pesticides, gasoline, baking powder, or artificial sweetener

What are Minerals?



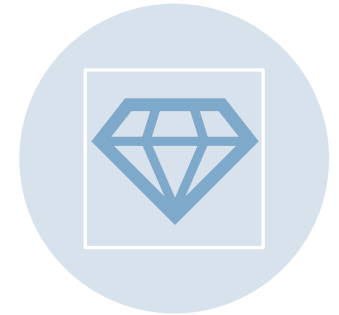
MINERALS



INORGANIC (NOT NATURALLY
MADE BY PLANTS, HUMANS, OR
ANIMALS)

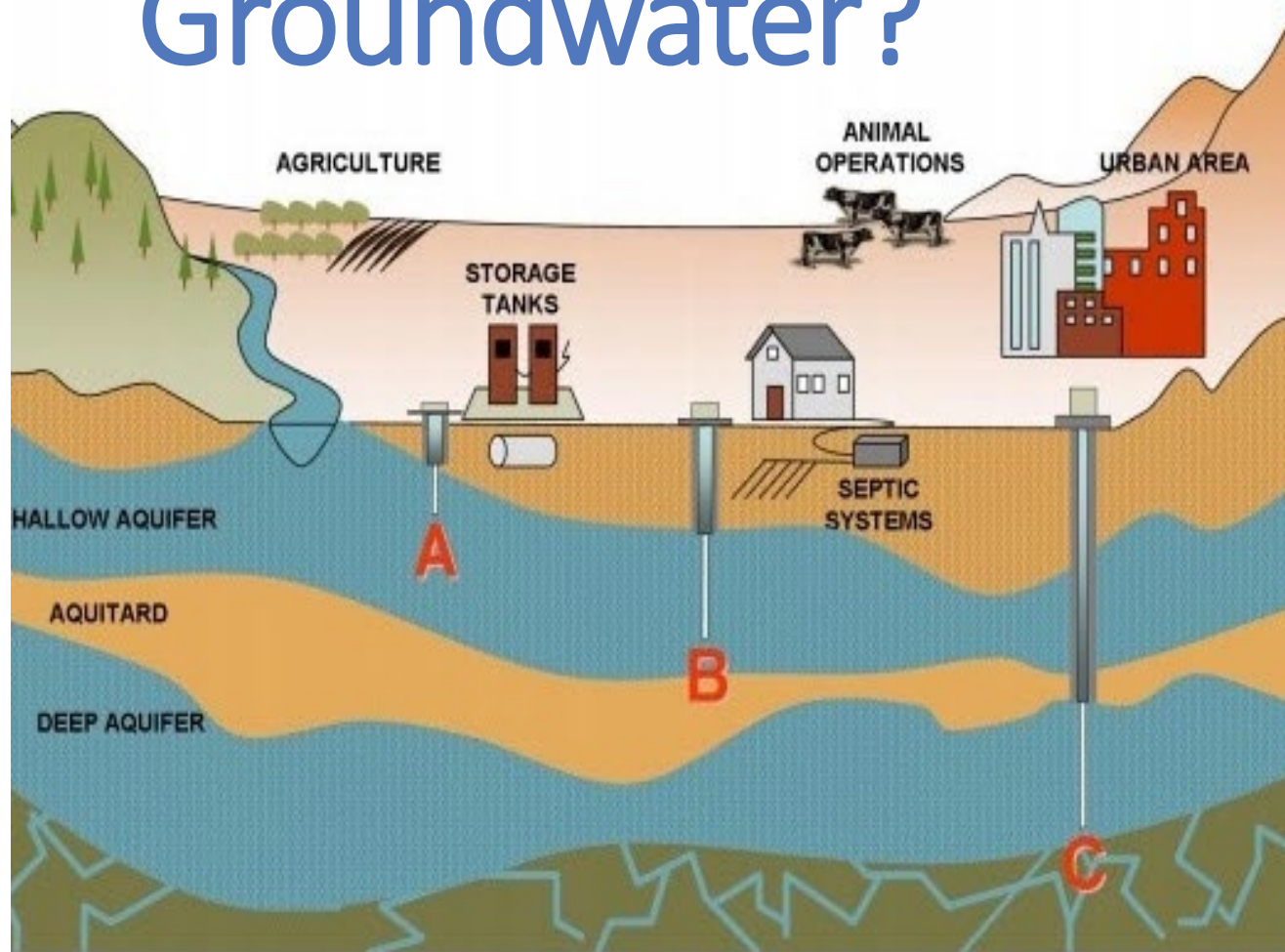


NATURALLY OCCURRING IN
SOLID FORM, BUT CAN BE
DISSOLVED BY WATER



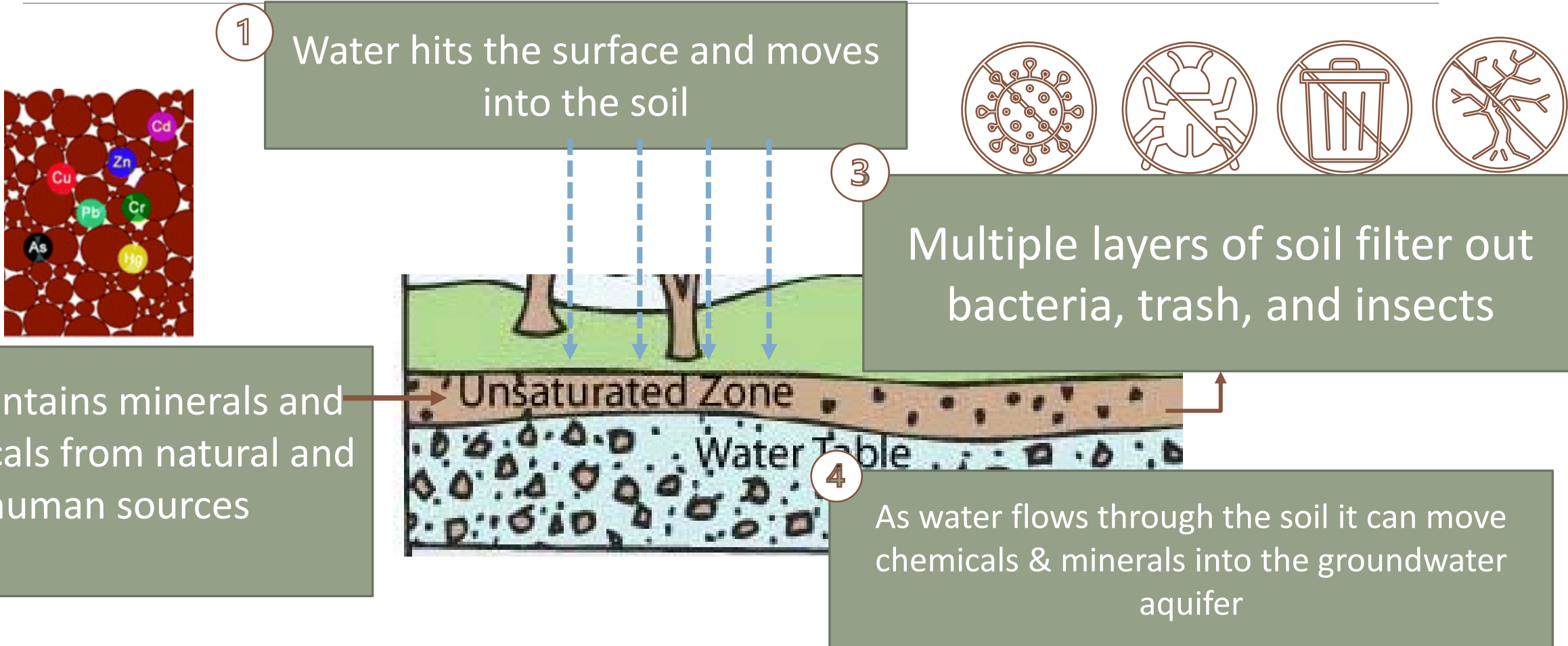
EXAMPLES OF MINERALS: SALTS,
CALCIUM, MAGNESIUM, IRON,
DIAMONDS, AND GOLD

How Do Chemicals End Up in Soil and Groundwater?



- Some chemicals/minerals occur naturally in the soil
- Septic systems, cities, animal operations, and agriculture are human activities that allow chemicals into the soil
- Chemicals in the soil can move into the groundwater and concentrate over time

What is in Groundwater?



Can Chemicals or Minerals in Groundwater be Harmful?

- Chemicals/minerals are not all bad or all good. Many are essential for our survival and others are harmful to our health.
- Different amounts or concentrations of a chemical or a mineral in water can change the water's color, smell, safety to drink, or hardness (i.e. leaves white mineral deposits on your showers).



Chemicals with Potential Health Impacts in Some Local Drinking Water Supplies



- Nitrate
- Perchlorate^{1,2,3}
- Trichloropropane (TCP)
- 1,2-Dibromo-3-chloropropane (DBCP)
- Arsenic
- Hexavalent Chromium
- Trichloroethylene (PCE)