EX NAME: ..... DATE: .....

CONTAMINATION AND POLLUTION

YOU WILL NEED:

wetrocks

1. Write down a list of possible sources of contamination.

Check with our list to see if there are ones that you have not thought of:
Industry: petrochemical industry,mining industry acid mine drainage, tailing dams, waste water disposal, solvents.
Agriculture: pesticides, herbicides, fertilisers, chemical spills. Home: Landfills, rubbish, petrol spills,
Natural: water moving through rocks and building up high concentrations of naturally occurring contaminants.
Some elements or chemical compounds are considered to be more hazardous than others.
Find out more about the following.

2. What are chlorinated hydrocarbons? List the chemical formulae of common chlorinated hydrocarbons.
What types of industries create these chemical compounds?
What is their main risk to human health?

3. Is chromium a dangerous element to human health?
What does "speciation" of chromium mean?
Does this make a difference to the risk of chromium to human health?
Who is Erin Brockovich? What is her connection to chromium contamination?

4. What is the chemical formula for atrazine?
What is (or was) it commonly used in?
What does "persistence" mean when it comes to chemical contaminants?
Why is "persistence" a concern?

Australian Government
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EX NAME: ..... DATE: .....

CONTAMINATION AND POLLUTION

YOU WILL NEED:

This is an extension of Exercise E6 "Groundwater Model"

You will now see how groundwater is sometimes made unfit to use when it is contaminated.
Squirt several drops of yellow food colouring onto the gravel. "Rain" on it again to make it seep down into the groundwater. The dye represents a chemical that can be dissolved in water and carried down to the aquifer with rain or snow.

Some of the contaminants that have been found in groundwater include; wastewater from a kitchen, bathroom, or laundry that went into a septic system, petrol leaking from an underground storage tank, spilled and buried waste (e.g. used car oil or poorly constructed landfill), fertiliser that was put on farm crops or animal waste from a poorly maintained animal feedlot, lawn and garden products especially if applied at the wrong time, wrong way, or in the wrong amount; and oil-based paints, strong cleaning supplies, insect or weed killers that were not disposed of properly. **Begin pumping again. Pretend the water is from your home well or the city well that supplies drinking water to your house.**

1. What is happening to the yellow contamination as you pump? Is it in your drinking water yet?

The water being pumped out will turn green as the "contaminant" comes through. In "real life" it isn't so easy to spot a contamination problem. Contaminated water might not look, smell or taste bad. In addition, it may be hard to find the source of the contamination. Groundwater moves much more slowly than it did in our model. (sometimes only centimetres a year). It may be years before the contamination becomes known. By then it may be too late to make the responsible people clean it up.

2. With a partner make a list of possible sources of contamination. Consider industry, mining, farming, home gardens and natural contaminants.

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