

The Price of Gold: Lithosphere Minerals & Downstream Effects



<https://www.youtube.com/watch?v=7V8NKbaWIXM>

1. The old mine mentioned in the video as the source of the spill was originally a gold mine. Gold is a metal and like all metals this means it is also a **mineral**.

a) What is the geological definition of a mineral?

A mineral is a solid inorganic material that occurs naturally and has a regular organized crystal structure that is always the same.

b) What are the four characteristics that we use to identify and classify different types of minerals?

-Colour	-Transparency
-Hardness (Mohs Scale)	-Streak on porcelain

2. Colorado is known for its mountains and rivers that run down them. The rocks that form these mountains were compressed, twisted and heated up when the mountains were formed.

a) With this in mind what type of rocks do you expect to find in Colorado?

Metamorphic rocks that have been affected by the heat and pressure

b) What are the other two rock types and where can they be found?

Igneous	Sedimentary
-Near active or extinct volcanoes -Places where magma/lava has cooled into rock	-Deep beneath ocean shores -Limestone cave systems underground -Ancient river beds and deltas

3. Chemical spills that leak or pour into river systems can have terrible effects on human communities along those rivers. The link below is a map of the St. Lawrence Seaway.



<http://www.canoe.ca/nfflotilla2000Images/map.jpg>

- a) If a similar accident were to occur near Montreal, which of the following communities would be affected by the chemical spill?

City/Town	Affected by Spill (Yes/No)
Quebec City	YES
Toronto	NO
Sept-Îles	YES
Trois-Rivières	YES
Cornwall	NO
Valleyfield	NO

- b) Why were some of these locations affected while others weren't even though they're all located along the same body of water (the St. Lawrence Seaway)?

Rivers flow downhill in a specific direction. If a chemical or pollutant spills into the river it affects communities and locations downhill (or downstream) of the site of the spill.

If the spill had happened in a lake where the water doesn't have a strong directional flow it could affect everything in or alongside that lake.