



MANZI'S NEWS



A Newsletter for Manzi's Buddies

September 2017

Acid Mine Drainage

Hi Friends

Tell me, how was winter for you the past few months? I really enjoyed my winter as it was not as cold as I thought it would be. How did you spend your school holidays? Let me tell you all about mine.

During the holidays, I decided to do some research on a topic that is very important with reference to the environment. Can you guess what the topic is?

Can't guess? Well the topic I wanted to research was: Acid Mine Drainage (AMD).

What is Acid Mine Drainage?

It is the flow of acidic (low pH) water, that has been in contact with metal and air from old and current mining areas, into either surface or groundwater systems. (pH is a measure of how acidic or alkaline a substance is.)



Credit: wikipedia.org

What causes Acid Mine Drainage?

Acid mine drainage is caused when water flows over or through materials bearing sulphur to form acidic solutions in the water.

Although acid rock drainage occurs naturally within some environments as part of the rock weathering process, it is badly influenced by mining and other large construction activities, usually within rocks containing an abundance of sulphide minerals.

Areas where the Earth has been disturbed (example: construction sites, sub-divisions, and transportation corridors) may create acid rock drainage. In many places, the liquid that drains from coal stocks, coal handling facilities, coal washeries, and coal waste tips can have too much acid and it is treated as acid rock drainage. Mining itself creates a bad impact on the environment and affects all life in the environment in general.



Credit: Urban Sprout



Credit: Futureterrains.org

How does Acid Mine Drainage affect our day to day life and our precious Earth ?

Problems associated with Acid Mine Drainage are that the minerals like iron (Fe), copper (Cu), Arsenic (As) and many more are making the water unsafe to use for animals, invertebrates and plants that depend on the affected rivers, dams, lakes, wetlands, ponds and other water bodies.

These minerals will eventually get to the food chain that we all depend on. This means that eating fish from the river may make one sick or eating plants that were watered with water from the affected water bodies could also make one sick.

Is there a Solution to Acid Mine Drainage?

Acid mine drainage can be controlled but it is very expensive to do so. A few examples of solutions are: the construction of wastewater treatment plants; construction of wetlands; covering wastewater pipes; relocation of wastewater; etc. My personal opinion is that prevention is better than cure and that the mining industry should look at the importance that nature has to offer us and weigh them against self enrichment.

Mining minerals is the only reason we are sitting with some unusable natural resources because of the low pH found on some land and water bodies affected by acid mine drainage.

Activity

From the animals below, choose one fresh water animal you want to be and try to answer the questions below.

Fish, Mayfly, Otter, Crab, Hippopotamus, Terrapin, Frog, Crocodile or Snail.

Name of the animal: _____

What water conditions do you think you need to have a healthy life in the river?

Can you as that animal please explain your concerns to mining industries of how acid mine drainage affects your day to day life?

What solution can you give mining industries to solve the acid mine drainage problem?

**MY EARTH, YOUR EARTH!
SO LET US USE IT AND SHARE IT RESPONSIBLY.**

Bye bye till next time
Love
Manzi

