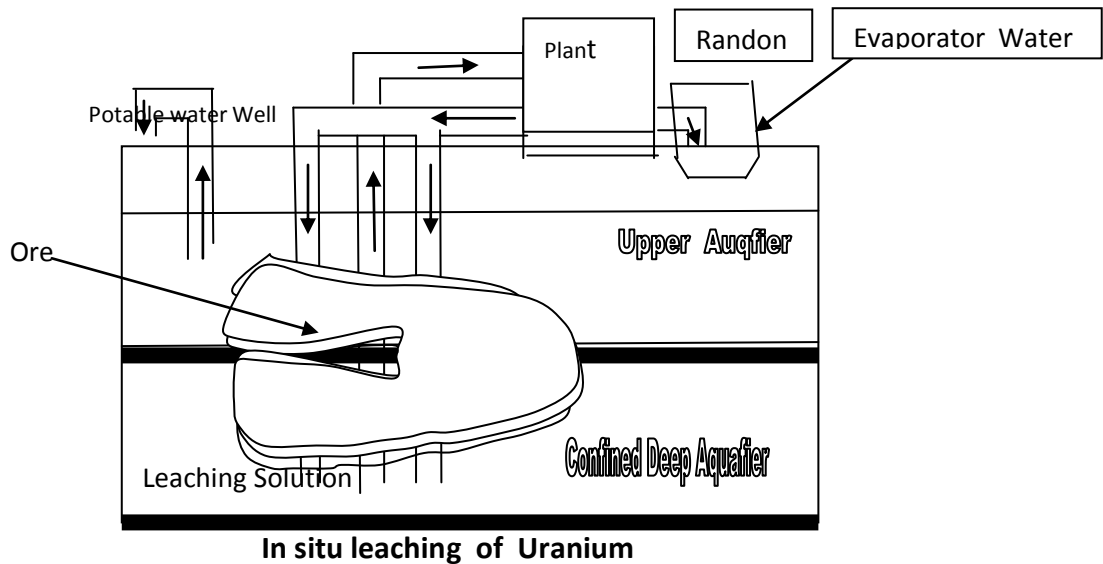


## 1. URANING MINING

Open pit mining is used where uranium deposits are very close to the surface. Underground mining are used for deep deposit of uranium mostly greater than 120 meters deep. Both excavation and in situ techniques are used to recover uranium ore.

Open pit mines requires large hole on the surface and the wall of pit must be slope in order to prevent collapse. Therefore quantity of the material must be removed is more in order to access the ore. Under ground mines have small surface disturbance and quantity of the material must be removed is less than in the case of open pit mine.



In situ leaching (ISL) only supplies maximum proportion of the world uranium needs. In this technique oxygenated groundwater is circulated through very minute porous ore body to dissolve the uranium and bring it to the surface. But the leaching may be with slightly alkaline or acid to keep the uranium in solution. The uranium is then recovered in mill from the solution conventionally. ISL facilitates to recover uranium from the low grade ore is economical than other method.

The leaching agent oxygen with sodium carbonate is injected through wells into the ore body to dissolve the uranium. The leach solution is pumped from there to processing plant and there ion exchange separates the uranium. Additional purification is done and dried the uranium oxide in yellow cake is formed. It contains 80% of uranium is placed in drums

## 2. Uranium Milling

It is a chemical plant which extract uranium from the mined ore. Most of mines will have milling plant also. One mill may handle ores from many mines. The ore brought to the conventional mill through truck is crushed and leached. The leaching agent may be sulphuric acid or alkaline solution. The leaching agent extracts vanadium, selenium, iron, lead and arsenic along with uranium.

Conventional mills that extracts 90 to 95 % of uranium from ore. Mill are established in low populated area only usually. Millin produces a uranium oxide concentrate and shipped from there. It is called by name yellow cake and it contains more than 80% uranium. The original ore may contain 0.1% uranium only.