IIT(BHU) VARANASI

STUDENT'S NOTES

COURTESY:-MAYANK

DRIFT

Generally drift is gallery connecting two seams.

***Drift** is a more general mining term, meaning a near-horizontal passageway in a mine, following the bed (of coal, for instance) or vein of ore. A drift may or may not intersect the ground surface. This kind of mining is done when the rock or mineral is on the side of a hill. A drift follows the vein, as distinguished from a crosscut that intersects it, or a level or gallery..*

GALLERY

***Gallery** - A horizontal or a nearly horizontal underground passage, either natural or artificial.*

Gallery along dip direction is called DIP GALLERY.

Gallery along perpendicular direction is called LEVEL GALLERY

PANEL

***Panel is a** coal mining block that generally comprises one operating unit.*

It generally has two stages

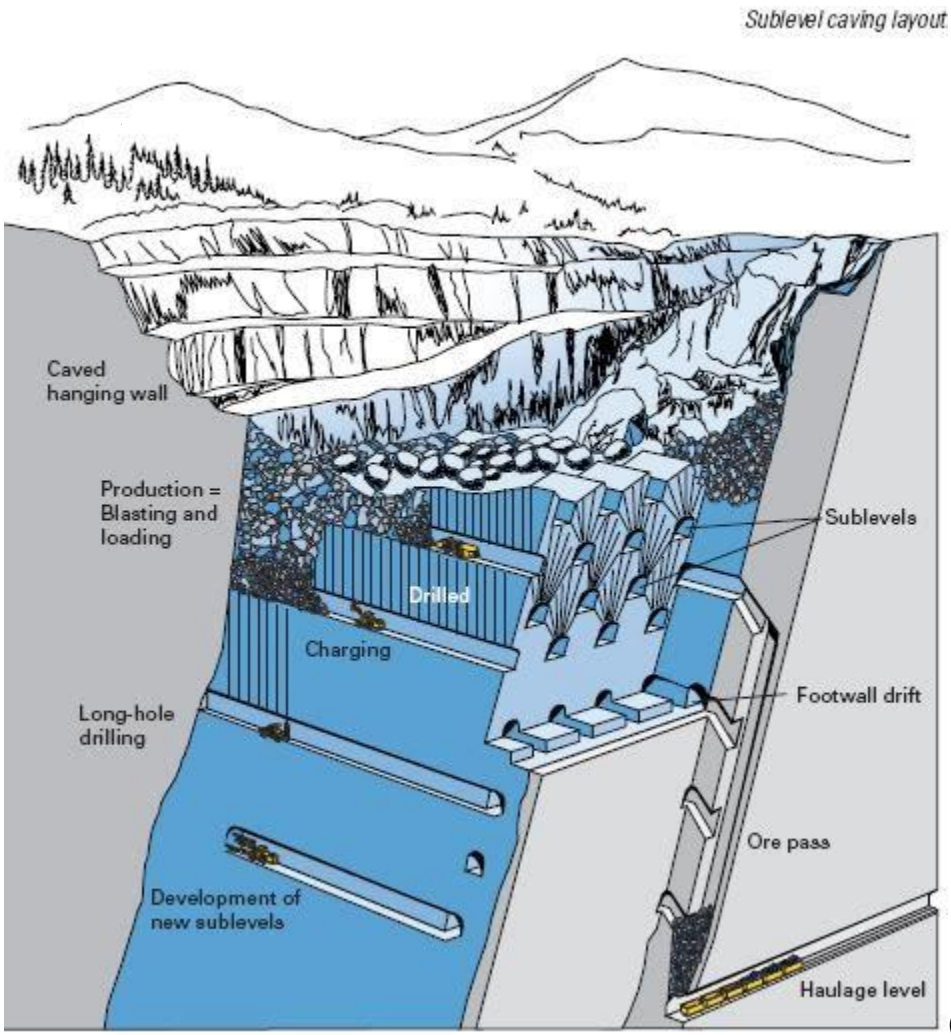
I} Gallery formation which is the development stage.

II}Depillaring stage that is to extract pillars.

BARRIER PILLARS

Barrier pillars are solid blocks of coal left between two mines or sections of a mine to prevent accidents due to inrushes of water, gas, or from explosions or a mine fire

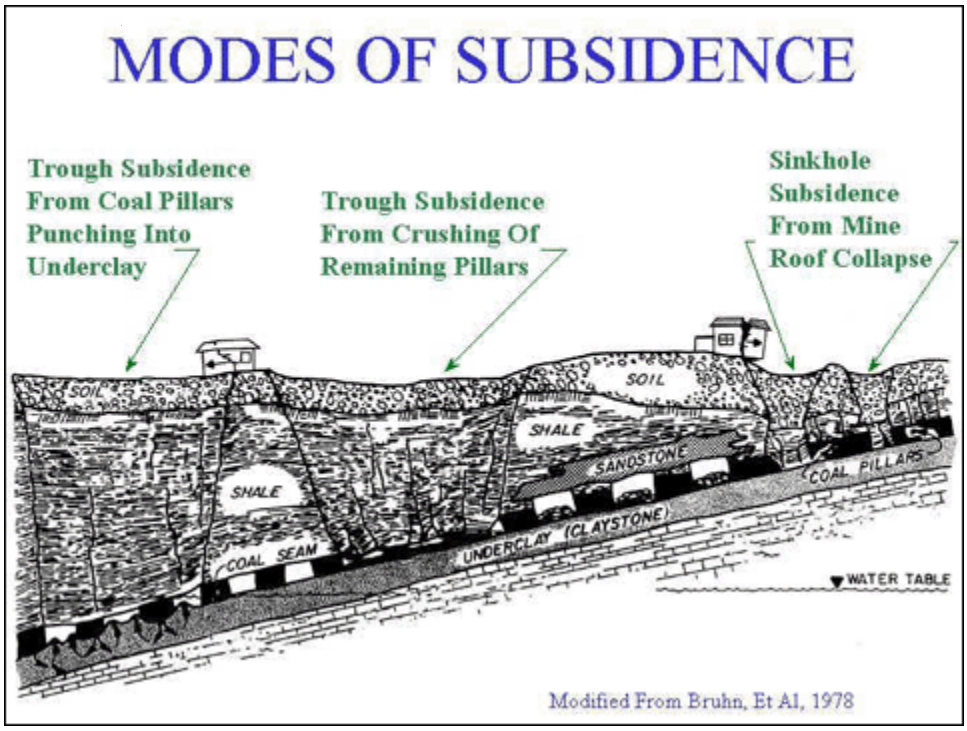
CAVING



caving

Caving *requires a rock mass where both orebody and host rock fractures, under controlled conditions. As the mining removes rock without backfilling, the hanging wall keeps caving into the voids. Continued mining results in subsidence of the surface where sink holes may appear. Continuos caving is important, to avoid creation of cavities inside rock, where a sudden collapse could be harmful to mine installations*

SUBSIDENCE



Mine subsidence *can be defined as movement of the ground surface as a result of readjustments of the overburden due to collapse or failure of underground mine workings. Surface subsidence features usually take the form of either sinkholes or troughs.*

Sinkhole subsidence is common in areas overlying shallow room-and-pillar mines. Sinkholes occur from the collapse of the

*mine roof into a mine opening, resulting in caving of the overlying **strata** and an abrupt depression in the ground surface. The majority of sinkholes usually develop where the amount of cover (vertical distance between the coal seam and the surface) is less than 50 feet. This type of subsidence is generally localized in extent, affecting a relatively small area on the overlying surface. However, structures and surface features affected by sinkhole subsidence tend to experience extensive and costly damages, sometimes in a dramatic fashion. Sinkhole subsidence has been responsible for extensive damage to numerous homes and property throughout the years.*

***Sinkholes** are typically associated with abandoned mine workings, since most active underground mines operate at depths sufficient to preclude the development of sinkhole subsidence. In accordance with the current regulations, the Department will not authorize underground mining beneath structures where the depth of overburden is less than 100 feet (30.5 m), unless the subsidence control plan demonstrates that proposed mine workings will be stable and that overlying structures will not suffer irreparable damage.*

***Subsidence troughs** induced by room-and-pillar mining can occur over active or abandoned mines. The resultant surface impacts and damages can be similar,*

however the mechanisms that trigger the subsidence are dramatically different. In abandoned mines, troughs usually occur when the overburden sags downward due to the failure of remnant mine pillars, or by punching of the pillars into a soft mine floor or roof. It is difficult, if not impossible, to predict if or when failure in an abandoned mine might occur, since abandoned mines may collapse many decades after the mining is completed, if the mine workings were not designed to provide long-term support.