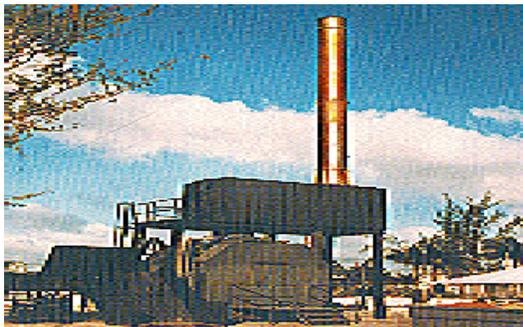
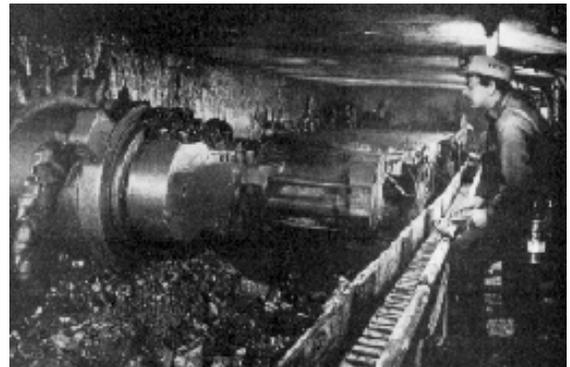


# WHAT ARE POLYCYCLIC AROMATIC HYDROCARBONS?

***Polycyclic Aromatic Hydrocarbons, or PAHs, are a group of chemicals that are formed during the burning of coal, oil, gas, garbage, tobacco or charbroiled meat. PAHs occur naturally or can be man-made.***

## Properties of PAHs

- ▶ Colorless, white, or pale yellow-green solid
- ▶ Evaporate quickly into the air when heated
- ▶ Attach strongly to soil and other particles
- ▶ Break down slowly
- ▶ Do not dissolve easily in water
- ▶ Do not burn easily



## Common PAHs

- ▶ Anthracene
- ▶ Benzo(a)pyrene
- ▶ Chrysene
- ▶ Fluorene
- ▶ Pyrene

# DISTRIBUTION OF POLYCYCLIC AROMATIC HYDROCARBONS

## How do PAHs get in the Environment?

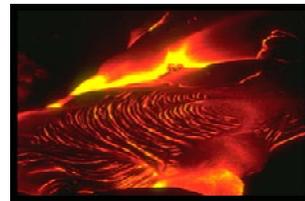
PAHs are released to the environment through natural and man-made processes. Man-made sources contribute far more PAHs to the environment than natural sources.

### Man-made Sources

- Burning of wood
- Vehicle exhaust
- Grilled/smoked foods
- Cigarette smoke
- Asphalt roads/Parking lots
- Roofing/coal tar products
- Agricultural burning

### Natural Sources

- Forest fires
- Volcanoes



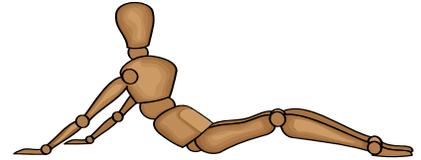
## PAHs in the Environment

- ▶ PAHs stick tightly to soil particles.
- ▶ Some PAHs evaporate into the air from soil or surface waters.
- ▶ PAHs in air settle to the ground where they are deposited on soil, plants, or in lakes and streams.
- ▶ PAHs stay very close to the surface of the ground or move to lakes and streams by a process called erosion.
- ▶ PAHs that enter lakes or streams settle to the bottom and are buried in sediments.

# EFFECTS OF PAHs

## PAHs IN THE BODY

- ▶ Breathing ambient air
- ▶ Cigarette smoke
- ▶ Eating food containing PAHs or grilled meats
- ▶ Drinking water or milk containing PAHs
- ▶ Breathing air at work sites



## EFFECTS ON LABORATORY ANIMALS



- ▶ Tumors occur in some animals exposed for long periods of time.
- ▶ PAHs have been shown to have an effect on the immune system of some animals.
- ▶ EPA considers PAHs to be probable human carcinogens (cancer-causing substances).

## KNOWN HUMAN EFFECTS



- ▶ Individuals breathing or having skin contact with PAHs combined with other chemicals over a long period of time, have developed cancer.
- ▶ There are no known studies to indicate that PAHs alone can cause cancer in people.
- ▶ There are no other known health effects of PAHs.