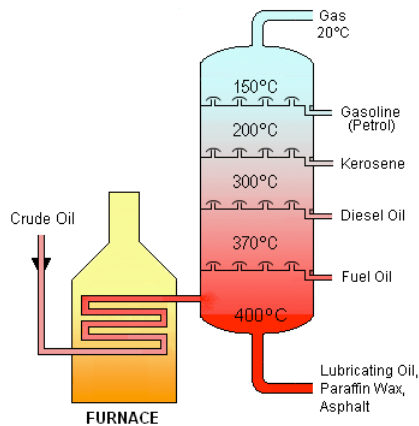


Sample FCAT readings and questions Grades 9-12

Crude oil is the name given to the dark, liquid petroleum extracted from inside the Earth that contains a variety of hydrocarbons. It is commonly bought and sold in the world markets in units known as “barrels”. The cost per barrel of crude oil has an important effect on the economy of nations. The consumer price of gasoline is directly proportional to the cost of crude oil.

Crude oil must be refined in order to be useful. The refining process is known as fractional distillation. In this process, crude oil is heated. As the temperature rises, certain hydrocarbons in the crude oil begin to vaporize off. These vapors can be condensed and collected. The substances collected include natural gas, gasoline, kerosene, diesel oil, lubricants, etc. The figure below shows what substances are collected at various temperatures.



Scientists have found uses for all of the various “waste products” of the crude oil refining process. But in years past, many of the assumed waste products were buried in an effort to dispose of them. As these buried hydrocarbons began to break down, they often caused environmental contamination to the neighboring soil and groundwater. Within the past several decades, communities have become aware of contamination sites in their own neighborhoods. Cleanup efforts are occurring in most communities today.

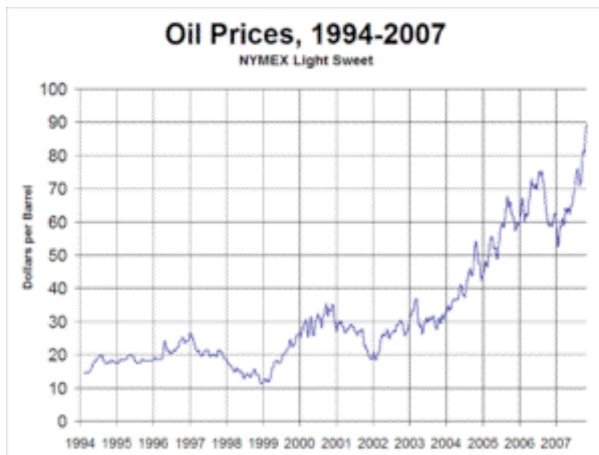
1. Which statement **best** explains the impact of crude oil waste products on the environment?

- A. Crude oil waste products can be refined into useful substances.
- B. Crude oil waste products may break down into hazardous substances.
- C. Crude oil waste products include kerosene, gas, and lubricating oils.
- D. Crude oil waste products are created by fractional distillation.

2. As crude oil is heated during fractional distillation, various hydrocarbons are released in the form of vapors that can be condensed and collected. Which hydrocarbons can be collected between 150 °C and 370 °C?

- A. Diesel oil, gasoline and paraffin wax
- B. Kerosene, gasoline and asphalt
- C. Kerosene, fuel oil, and gasoline
- D. Diesel oil, fuel oil and lubricating oil

Crude oil has shown a consistent increase in price per barrel since 1994. In January of 1999, the price of crude oil dipped to \$11 per barrel. At the end of 2007, the price per barrel approached \$100.



3. Which choice **most likely** explains the reason for the increase in the price of crude oil?

- A. Natural disasters have destroyed many pipelines and refineries.
- B. The cost of metal used to make barrels has dramatically increased.
- C. An increase in the use of crude oil in other nations is increasing demand.
- D. Crude oil is a nonrenewable resource and the supply will soon be gone.