

**SEATTLE CHEMICAL INDUSTRIES
ENGINEERING DEVELOPMENT LABORATORY
SEATTLE, WASHINGTON 98195**

TO: Team B

FROM: Engineering Management

SUBJECT: Pump Characteristics

We have just received two surplus pumps from our Alcohol Production Division. As a small division with a limited budget, we sometimes use surplus equipment in our operations. We would like to know where and how these pumps might be used. Unfortunately, we do not have information on their operating characteristics. It appears that one is positive-placement and the other is centrifugal, but that's all we know.

Prepare a report including a general description of the pumps and their operating characteristics. Specifically, measure the operating curve over the widest possible flow range. Plot flow rate vs. head and power consumption for at least three speeds including the maximum, as in Fig 10-29 on page 10-25 of Perry's 7th edition. On a separate graph, plot the efficiency vs. flow rate at each speed. Estimate the maximum efficiency and give the corresponding operating conditions. Are these reasonable for such pumps?