

Problem:

The surface of the water in a reservoir is 128 feet above a hydrant. What will the static pressure on the hydrant created by the head?

Solution:

Static pressure is defined by the formula:

$$p = \rho gh = 1000 \frac{kg}{m^3} * 9.8 \frac{m}{s^2} * 128 * 0.3 m = 376.3 \text{ kPa}$$

Answer: $p = 376.3 \text{ kPa}$.