

Example 4

X = ...

Water flows steadily from reservoir (1) to reservoir (2) (**Real fluid**). Determine the discharge and the mean velocities. Draw energy grade line (**EGL**) and pressure grade line (**PGL**)

Known parameters:

$h = (1+0.1 \cdot X)$ m; $dh = 2$ m; $L = 10$ m; $H = 5$ m; $v_0 = 0.1$ m.s⁻¹; $D_1 = 0.2$ m; $D_2 = 0,25$ m;
 $p_{AT} = 1.013 \cdot 10^5$ Pa; $\rho = 1000$ kg.m⁻³;

Minor losses- coefficients: $K_{INLET} = 0.3$; $K_{ELB} = 0.2$; $K_{ENLARG} = 0.3$ (D_2);

Friction - coefficients: $f_1 = 0.015$; $f_2 = 0.02$;

