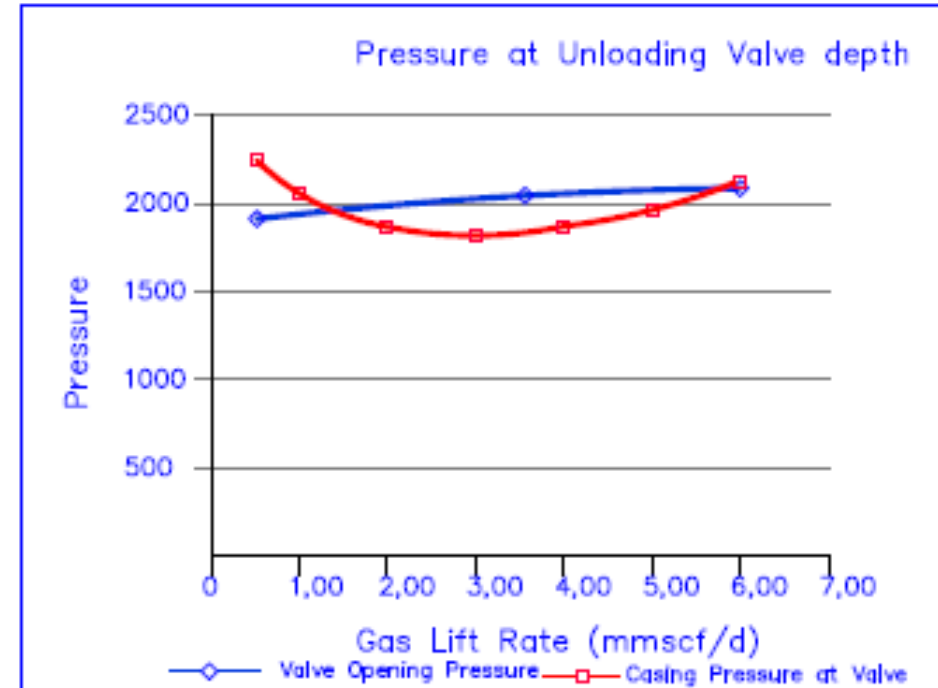
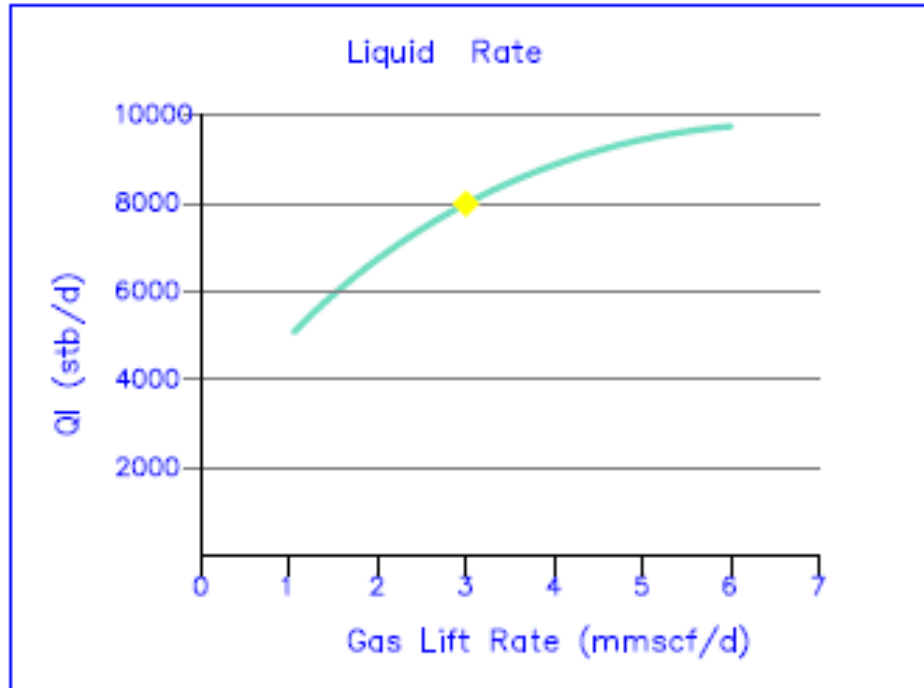


GAS LIFT

“Gas lift is considered one of the most forgiving forms of artificial lift and even a poorly designed installation will normally gas lift some fluid. Therefore the main issue with gas lift is not whether it will work, but how efficient and effective it will be. Sub optimal performance can be undetected and unstable well performance is often solved by choking the well back thus reducing production.”

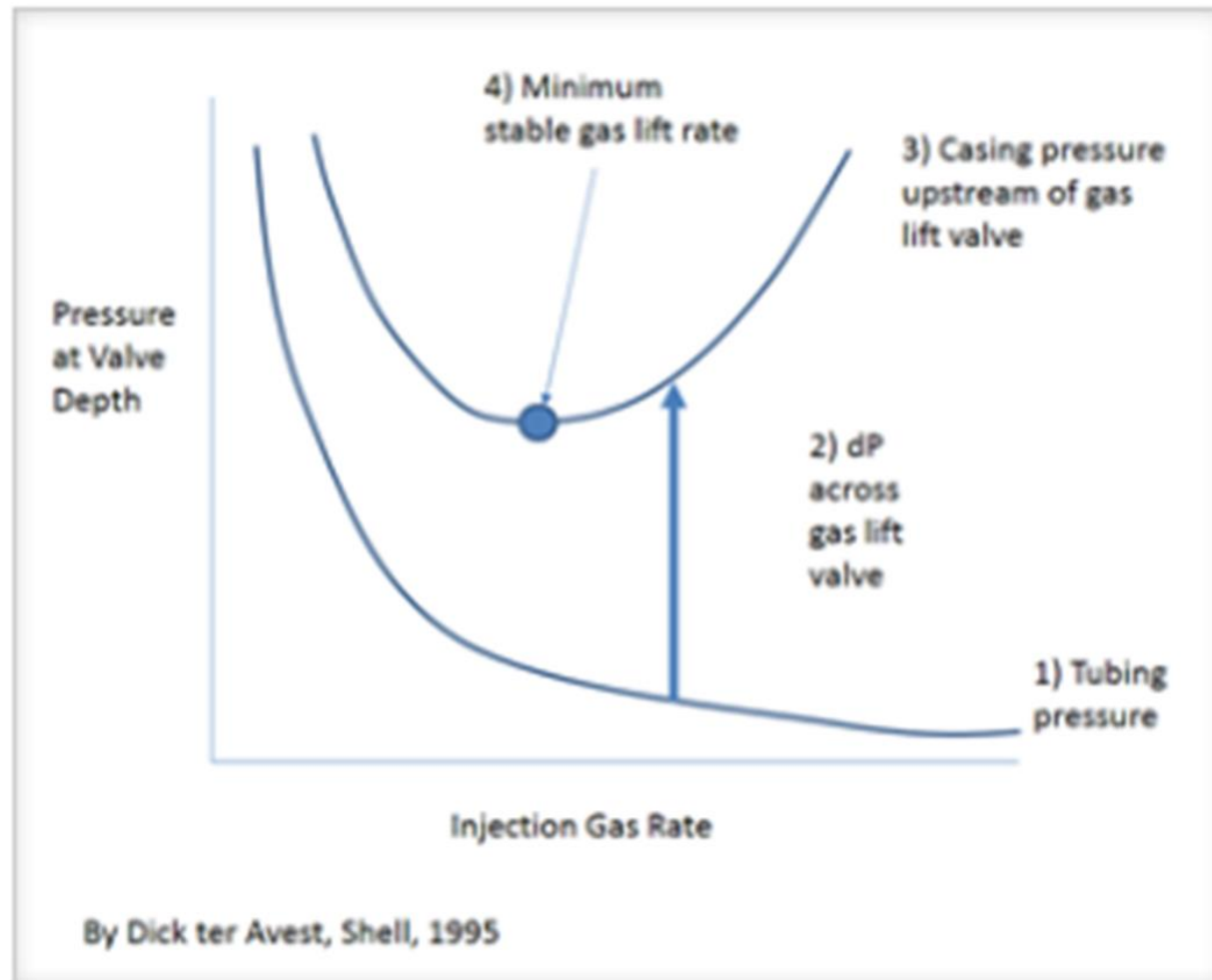
Hrvoje Galic

MAXIMUM AND OPTIMUM GL RATE

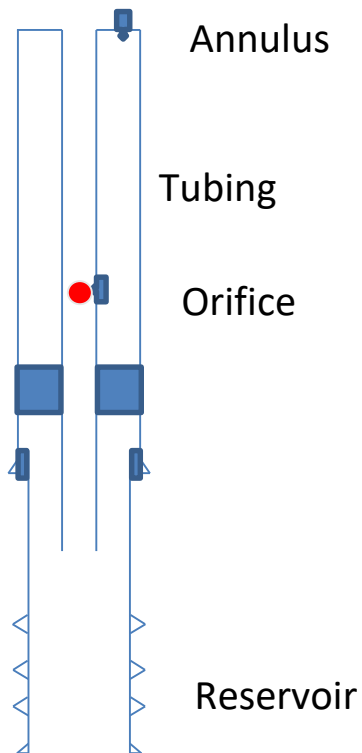


This well can't reach its maximum rate before the unloading valve reopens.

MINIMUM GL RATE

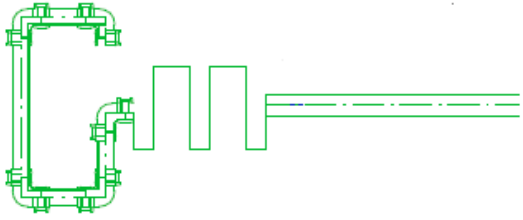


ASHEIM STABILITY CRITERIA



$$F_1 = \frac{\rho_{gsc} B_g q_{gsc}^2}{q_{Lsc}} \frac{J}{(EA_i)^2} > 1$$

$$F_2 = \frac{V_t}{V_c} \frac{1}{gD} \frac{p_t}{(\rho_{fi} - \rho_{gi})} \frac{q_{fi} + q_{gi}}{q_{fi}(1 - F_1)} > 1$$



TEMPERATURE

- A Temperature Estimate is very important for unloading valve operations;
- During initial unloading a well is normally filled with brine (cold);
- During subsequent kick offs the well is filled with hot fluid;
- Underestimation of the top valve temperature may prevent the opening of the unloading valve and stop the unloading sequence.