Liquid production rate = qL

Sum of oil surface flowrate $q_O^{\uparrow}$ and water surface flowrate $q_W^{\uparrow}$: $q_L^{\uparrow} = q_O^{\uparrow} + q_W^{\uparrow}$.

Symbol	Metric unit	Oilfield unit
$q_L^{\uparrow}$	cmd	bpd

It is related to Total sandface flowrate q_t as:

(1) $$q_L^{\uparrow} = \frac{q_t}{B_w Y_W + \left[(B_o - R_s B_g) + (B_g - R_v B_o) Y_G\right] \cdot (1 - Y_W)}$$

where

q_t	Total sandface flowrate
$B_w,\ B_o,\ B_g$	formation volume factors between separator and sandface pressure/temperature conditions
$R_s,\ R_v$	Solution GOR and Vaporized oil ratio at sandface pressure/temperature conditions
$Y_W^{\uparrow} = \frac{q_W^{\uparrow}}{q_L^{\uparrow}}$	Production Water Cut
$Y_G^{\uparrow} = \frac{q_G^{\uparrow}}{q_O^{\uparrow}}$	Production Gas-Oil-Ratio

Starting with definition of Total sandface flowrate (Total sandface flowrate = qt:1) and substituting the expression of Oil surface flowrate, Gas surface flowrate, Water surface flowrate through Liquid production rate one arrives to (1).

See Also

Petroleum Industry / Upstream / Subsurface E&P Disciplines / Well Testing (WT) / Flowrate Testing / Flowrate

[Well & Reservoir Surveillance]

[Surface flowrates] [Oil surface flowrate] [Gas surface flowrate] [Water surface flowrate]

[Sandface flowrates] [Oil sandface flowrate] [Gas sandface flowrate] [Water sandface flowrate] [Total sandface flowrate]