

Unweighted Productivity Plot = Unweighted J-plot

One of the [Productivity Diagnostics](#) methods based on correlation between [pressure drawdown](#) $\Delta p = p_e - p_{wf}$ and [total sandface flowrate](#) $q_t(t)$, where:

p_e	drain-area formation pressure as function of time τ
p_{wf}	bottomhole pressure as function of time τ

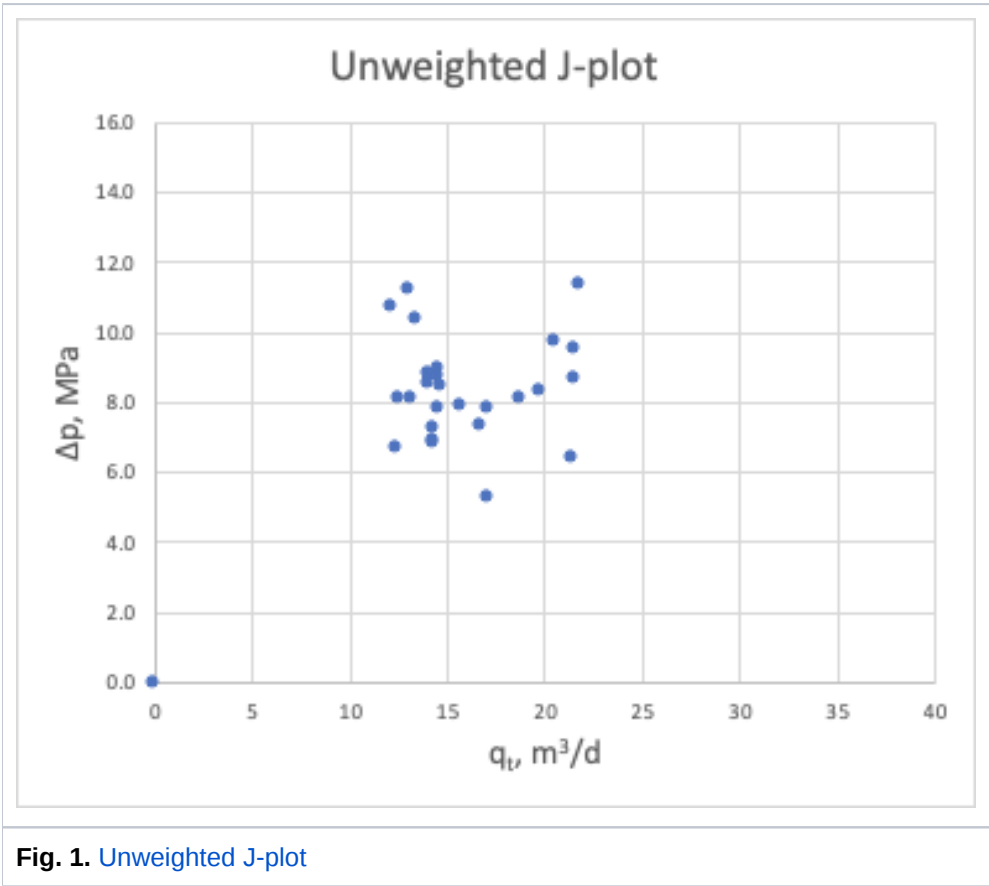


Fig. 1. Unweighted J-plot

It shows unit slope on log-log plot for [stabilized reservoir flow](#):

(1)
$$\Delta p(t) = J^{-1} q_t(t)$$

where

J	constant productivity index
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It is highly recommended to plot [sandface flowrates](#) rather than [surface flowrates](#) to achieve better linearity in correlation for [stabilized reservoir flow](#).

Although it is equally applicable to [producers](#) and [injectors](#), due to lack of [BHP](#) and [formation pressure](#) data availability for [producers](#) in most practical cases in the past the [normalized Hall plot](#) analysis was mostly applied for [water injectors](#).

Since the [BHP](#) and [formation pressure](#) data are not readily available for the same time moment the interpolation is required, which usually lead to a high degree of uncertainty.

More practical solutions are achieved via group of cumulative-based [Productivity Diagnostics](#) methods: [t-weighted J-plot](#), [q-weighted J-plot](#) and [Hall Plot](#).

See Also

[Petroleum Industry](#) / [Upstream](#) / [Production](#) / [Subsurface Production](#) / [Field Study & Modelling](#) / [Production Analysis](#) / [Productivity Diagnostics](#)