

Production Analysis = PA

One of the [Subsurface E&P Disciplines](#), related to long-term analysis of [production/injection history](#) and its correlation with [bottom-hole pressure](#) measurements and/or [formation pressure](#) from [well tests](#).

The key objectives of [Production Analysis](#) is to understand the historical flowrate dynamics (and its components [water cut \$Y_w\$](#) and [gas-oil-ratio GOR](#)) in the context of [Well-Reservoir System \(WRS\)](#) and predict its future dynamics in response to other [dynamic variables](#).

Unlike [Well Tests](#) which normally last for few hours or few weeks, [Production Analysis](#) usually covers a time period from few months to many years.

Some properties of [Well-Reservoir System \(WRS\)](#) can be assessed through both [Production Analysis](#) or [Well Tests](#) (for example, [Productivity Index](#) and [drainage volume](#)) and some other properties are specific to either [Production Analysis](#) (for example, [Watercut Diagnostics](#)) or [Well Tests](#) (for example, [skin-factor](#)).

[Production Analysis](#) is usually split into the following categories by objectives:

Analytical Production Forecast	Well Flow Performance (WFM)	WOR Diagnostics	Waterflood Diagnostics	WRC Diagnostics
Analytical Recovery Forecast	Productivity Diagnostics	GOR Diagnostics	Gasflood Diagnostics	Reservoir Diagnostics

and into three categories by the mathematical methodology:

Empirical Production Data Analysis	Statistical Production Data Analysis	Physical Production Data Analysis
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See also

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

[[Primary production analysis \(PRIME\)](#)] [[Statistical Production Data Analysis](#)] [[Productivity Diagnostics](#)]

[[Recovery Factor \(RF\)](#)] [[Depletion Factor \(DF\)](#)] [[Watercut Diagnostics](#)] [[GOR Diagnostics](#)]

[[Instantaneous Voidage Replacement Ratio \(IVRR\)](#)] [[Cumulative Voidage Replacement Ratio \(CVRR\)](#)] [[Voidage Replacement Balance \(VRB\)](#)]

[[Pressure Deconvolution](#)] [[Capacitance Resistance Model \(CRM\)](#)] [[Pressure-Rate artificial neural network \(PRANN\)](#)]

References