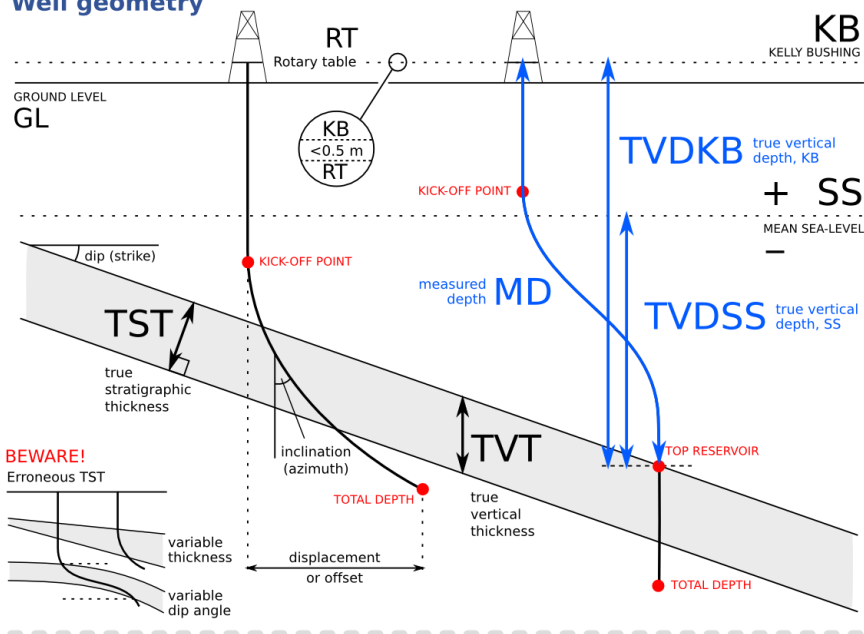
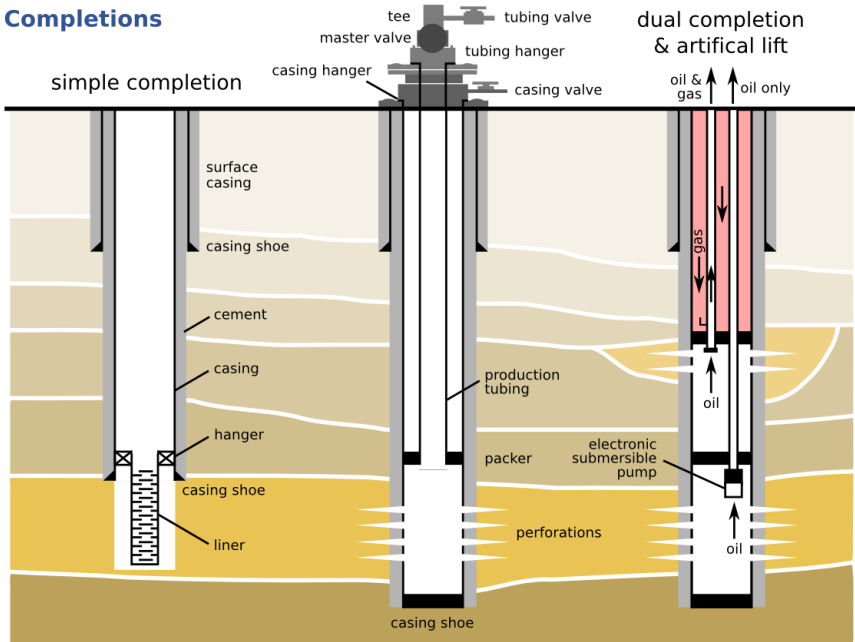


Well geometry



Completions



Volumetrics Stock tank oil initially in place

$$STOIP = A \times T \times G \times N : G \times \phi \times S_0 \times \frac{1}{B_0}$$

Typical B_0 : high GOR oil 1.4, low GOR oil 1.2, bitumen 1.05

Area A, mean thickness T, Geometric correction factor G, Net to Gross N:G, porosity ϕ , saturation S, volume factor B

Darcy equation Fluid flux in $m^3 \cdot m^{-2} \cdot s^{-1}$

$$F = \nabla P \cdot k / \mu = v \cdot \phi$$

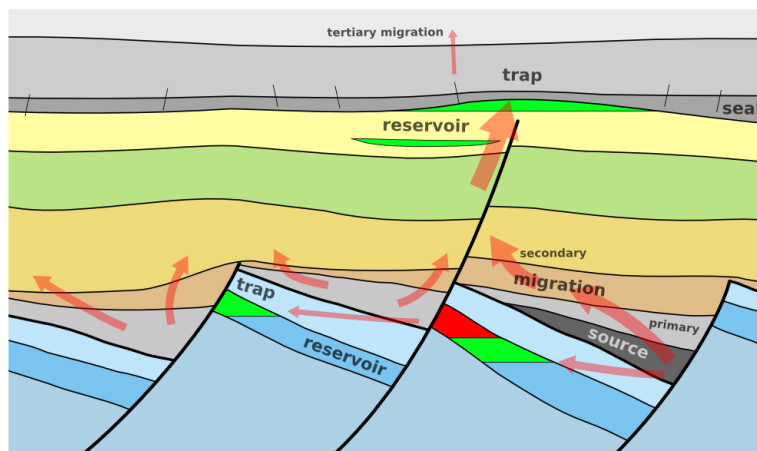
Fluid flux or Darcy velocity F, pressure gradient ∇P , permeability k, viscosity μ , absolute velocity v, porosity ϕ

Oil companies

Please take with a pinch or two of salt

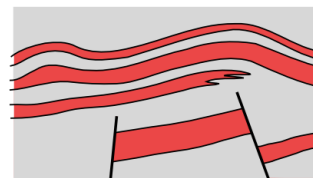
Company	Country	Production	Reserves	Res/Prod	Revenue	Net	Staff
Saudi Aramco	Saudi Arabia	9.5 Mboe/d	306000 Mboe	32.2 y	USD 403 B	USD ? B	75000
ExxonMobil	USA	4.2	12600	8.2	464	49.1	107000
BP	UK	3.8	12100	8.6	380	28.9	97600
Royal Dutch Shell	Netherlands	3.7	6700	5.0	484	37.6	104000
Chevron	USA	2.7	7100	7.2	272	23.9	65000
Total	France	2.4	10400	11.9	315	16.8	96400
ConocoPhillips	USA	1.6	8300	14.0	184	12	29800
Statoil	Norway	1.9	5300	7.6	98	7	30000

Conventional petroleum system



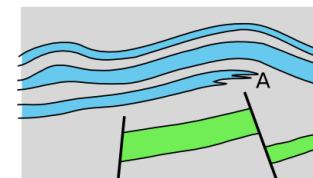
Categories

One petroleum system

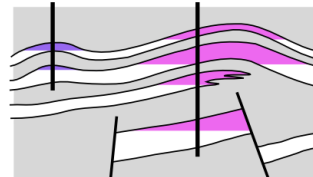


Two plays

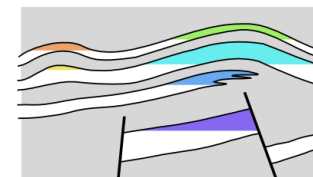
Depending on the circumstances, you might count sand A as a third



Two prospects



Six segments



Gravity & density

$$API \text{ gravity} = 141.5 / \rho - 131.5$$

for density ρ [g/cm^3] @ 15°C

Conversion factors

The barrel of oil equivalent is a unit of energy, not volume. 1 boe = ca. 6.1 GJ. It is, however, used as a pseudo-volume, especially to compare oils with different gravities, or oil with gas volumes. There are no standard conversion factors.
http://subsurfwiki.org/wiki/Volume_conversion

from	to	x by
ft	m	0.3048
m	ft	3.281
in	mm	25.40
mile	km	1.609
acre	ha	0.4047
ha	acre	2.471
sq mi	ha	259.0
sq mi	km ²	2.590
sq mi	acre	640.0
bbbl	m ³	0.1590
m ³	bbbl	6.290
scf	m ³	0.02832
m ³	scf	35.31
boe ^[1]	Btu	ca. 5.80 x 10 ⁶
scf	Btu	ca. 1050
scf	boe	ca. 1.79 x 10 ⁻⁴
boe	scf	ca. 5600 ^[2]
lb	kg	0.4536
Pa	Nm ²	1
bar	kPa	100
psi	kPa	6.895
at ^[3]	kPa	98.07
atm	kPa	101.3
Torr	kPa	0.1333

- ↑ See note above
- ↑ Some sources round to 6000.
- ↑ http://en.wikipedia.org/wiki/Technical_atmosphere

Trivia

Number of wells drilled since 1859	7 million	
Percentage of well in the United States	50%	
Number of producing wells worldwide	1 million	
Average production of US oil wells	20 bpd	
Average production of Middle East oil wells	7000 bpd	
Number of producing fields worldwide	40 000	
Number of drilling rigs worldwide	5000	
Annual global oil consumption	30 Gboe	
Annual discovery rate	4–8 Gboe	
Cumulative global consumption	1050 Gboe	
Conventional global reserves	Campbell & Laherrère 1998	850 Gboe
Conventional global reserves	BP Statistical Review 2007	1208 Gboe
Conventional global reserves	Various sources Wikipedia 2011	>1240 Gboe
Conventional global reserves	USGS 2000	2311 Gboe
Unconventional global reserves	Highly uncertain	1900 Gboe