



Well, it's another well, or is this Saturday already?

Posted by [Heading Out](#) on September 10, 2005 - 7:58pm

Topic: [Supply/Production](#)

Tags: [tech talk](#) [[list all tags](#)]

Well it's another Saturday, and to make up for a few rather long posts this one should be relatively short as it moves us "techie-folk" toward a slightly different focus. For after all, here you are, sitting in the local "malt and cigar" shop, quietly bragging to your new and "very close" friends about how much money you're making from buying into that oil well, and they would like to get in on the action.

And if you have a good well, then the obvious next move is to drill a second well and get your friends involved. But how do you do that, and more particularly how close should a really good friend get?

You might be familiar with some of the early photos of the oilwells when the first boom first began, and they were drilled almost on top of one [another](#). There was an interesting ruling that came about at that time, and which has persisted since. It is called "**The rule of capture**" and essentially it says that whatever flows into your oilwell, regardless of where it came from, is yours. (`cos you "captured" it). So let's say that you live in a nice neighborhood in downtown San Diego, for instance. And under your neighborhood someone discovers there is a rich pool of oil. Well if your next door neighbor is a fast mover, he might drill his well and suck all the oil out of your particular bit of that pool, before you can blink, and yup! It's his (or hers).

So what do you do to counter this and get what's yours before it is half-inched? The obvious answer is to drill your own well, and (rather like two siblings drinking a soda through straws into the same glass) whoever sucks hardest gets the most. Which does all sorts of nasty things to the idea of holding a resource until it's value goes up - but then, that's the oil business.

Well over the last century that obsessive attitude has ameliorated a tad, and now when wells are drilled (particularly since they are a bit more expensive) we try and space them at intervals so that each gets to drain out to the point where it naturally runs out of ability to drain further. There are intricate mathematical equations for this (which I long ago deliberately forgot) but as a first rule of thumb the industry uses a baseline of 40 acres per well. Which means that if you were looking to drill a second well you might **step out** and drill the next well some 440 yds away from the first. (A quarter of a mile, for those of us who think that way). Which way would you go? Well that depends very much on the information that you managed to get from the well that you just put in. And this will rely on logs that you ran after drilling, and the map that you were given of the underground geology before you drilled the first well. Some of that information will relate to the permeability of the rock, and the quality of the oil. The lighter the oil and the higher the permeability then the further apart you may want to space the wells (given that they are becoming just a tad expensive these days). Generally in more favorable fields you may space at greater intervals (gas wells tend to be about a mile apart for example).

On the other hand, in some cases, having drilled a very well spaced set of wells you may discover that the permeability isn't quite as good as you had thought, and then you might go in and put wells at closer intervals than originally drilled, **infilling** the well pattern.

There is some discussion I have read recently, about the intent to do some of this in Algeria, where the initial wells are quite widely spaced. Putting wells closer also, obviously, improves immediate production at the expense of the long term - but when the world demands the oil

Of course, when drilling costs are going up as fast as they are, there should be another alternative , and that is where we will go next.

This is a series of highly informal posts that are aimed at giving some background to what goes into drilling and production from oilwells. Earlier posts in the series are:

[the drill](#)

[using mud](#)

[the derrick](#)

[the casing](#)

[pressure control](#)

[completing the well](#)

[flow to the well](#)

[working with carbonates](#)

As ever, if this is not clear, or if there is disagreement then please feel free to post, and I will try and respond.

Acknowledgement - the idea for this post came from browsing through "*The Petroleum Industry - A nontechnical guide*" by Charles Conaway, which gives a lot of the illustrations that I have not, so far, put into these posts, and is worth having a look at, if you are interested in this topic.

Technorati Tags: [peak oil](#), [oil](#)



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