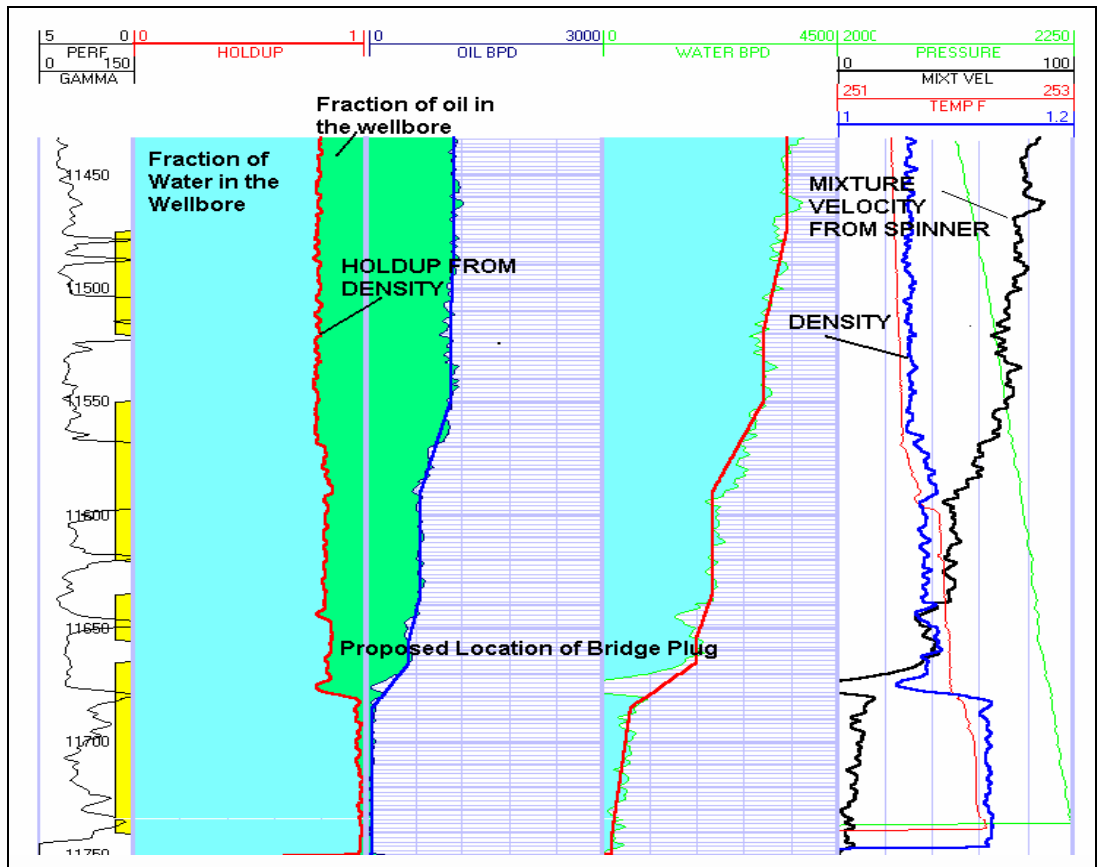




# Production Logging Case History

## NUCLEAR FLUID DENSITY USED TO CALCULATE DOWNHOLE WATER HOLDUP

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Perf	Cumulative Water	Zonal Water	Water Contribution	Cumulative Oil	Zonal Oil	Oil Contribution	Water Cut
Depths	STBPD	STBPD	%	STBPD	STBPD	%	%
TOTAL	3527.39			1326.25			72.68
11475-11520	3527.39	496.96	14.09	1326.25	143.76	10.84	77.56
11550-11620	3030.42	906.82	25.71	1182.49	366.74	27.65	71.20
11635-11655	2123.60	270.20	7.66	815.75	169.01	12.74	61.52
11665-PBTD	1853.41	1853.41	52.54	646.74	646.74	48.76	74.13

In this water flood production well the oil company were planning to shut off the lowest zone which was believed to have watered out. A PL job was done to check if the zone was fully watered out. An interpretation of the log showed that the bottom zone is producing 49% of the oil and all the other zones are producing water (as evidenced by the high gamma ray counts with RA scale). If the shut off job had gone ahead the water cut would still be about 70% and oil would have been left in the ground. This log illustrates the high resolution of the Sondex Radioactive Density tool – the density scale is from 1.0 to 1.2 g/cc.