

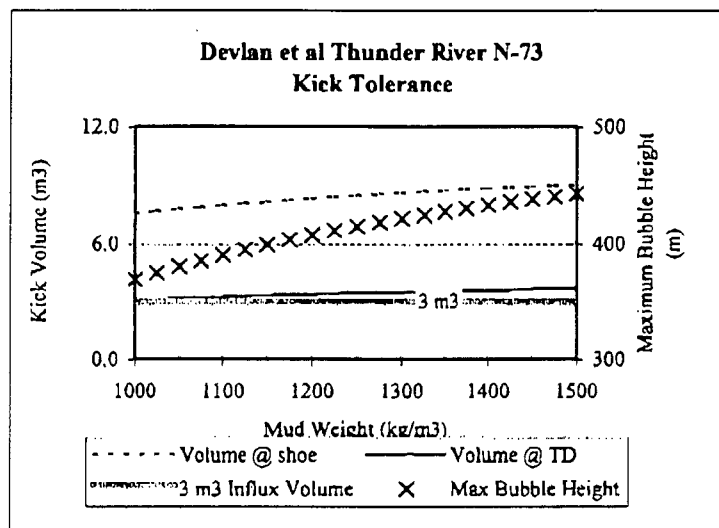


Codeco Consulting (2000) Inc.

Kick Tolerance Calculation

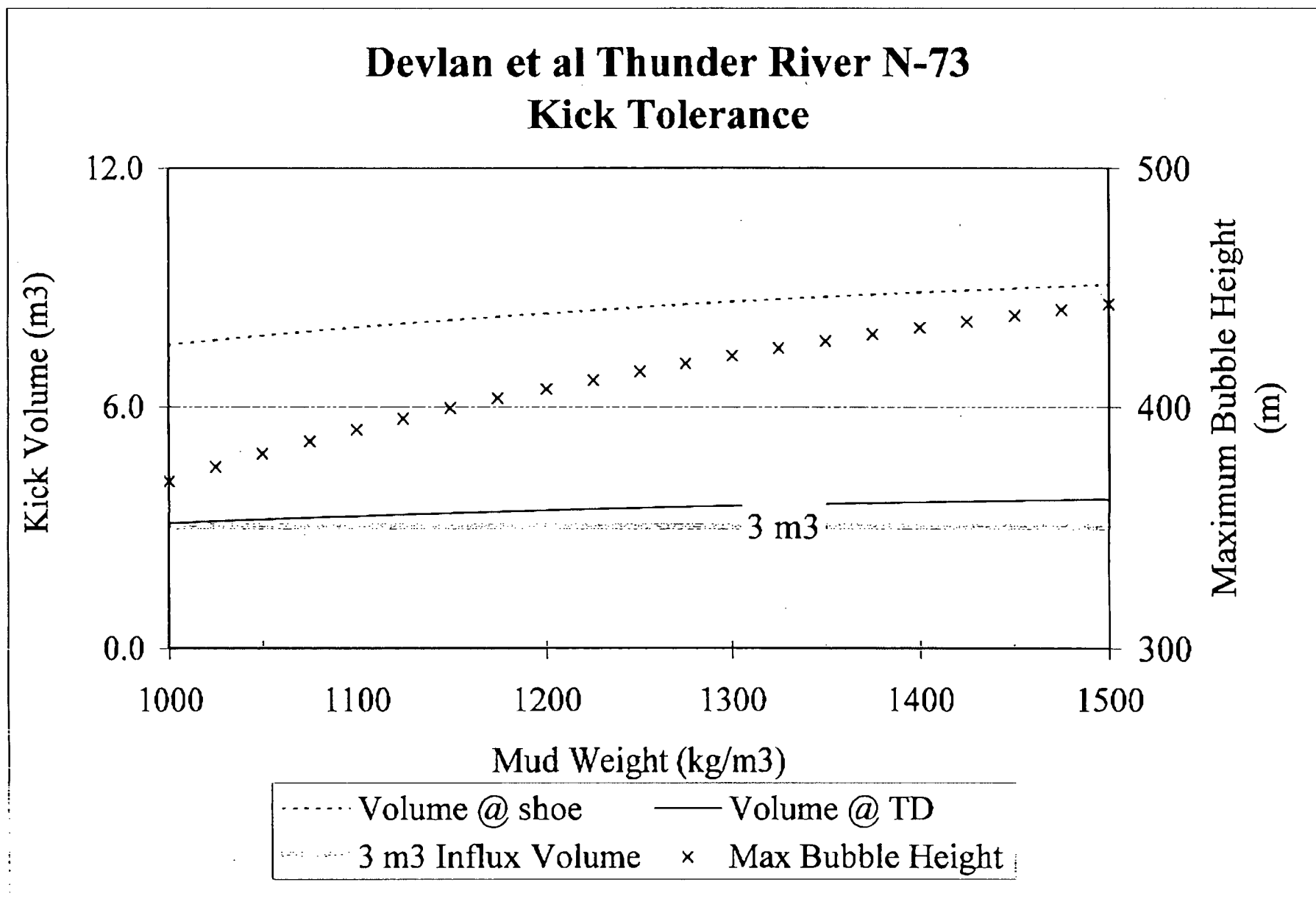
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Drill Pipe Size	101.60 mm
Drill Collar Size	171.45 mm
Bit Size	200.03 mm
DP Annular Volume	0.02332 m ³ /m
DC Annular Volume	0.00834 m ³ /m
Measured Frac Gradient at SC shoe	24.46 kPa/m
SC Setting Depth	314 m
MAHSCP Gradient (20% sf)	19.568 kPa/m
Pore Pressure Gradient	10 kPa/m
Ordovician	875 m
Gas Density	200 kg/m ³
Specified Kick Tolerance	3 m ³
3 m ³ Bubble Height (DP)	128.7 m
3 m ³ Bubble Height (DC)	359.8 m



MW (kg/m ³)	MAHSCP (kPa)	Hmax (m)	Kick Tolerance	
			Volume DP*	Volume DC
			(m ³)	(m ³)
1000	3064.0	369.24	7.6	3.1
1025	2987.0	375.05	7.7	3.1
1050	2910.0	380.52	7.8	3.2
1075	2833.0	385.67	7.9	3.2
1100	2756.0	390.54	8.0	3.3
1125	2679.0	395.15	8.1	3.3
1150	2602.0	399.51	8.2	3.3
1175	2525.0	403.65	8.3	3.4
1200	2447.9	407.59	8.3	3.4
1225	2370.9	411.33	8.4	3.4
1250	2293.9	414.89	8.5	3.5
1275	2216.9	418.29	8.6	3.5
1300	2139.9	421.54	8.6	3.5
1325	2062.9	424.63	8.7	3.5
1350	1985.9	427.60	8.8	3.6
1375	1908.9	430.44	8.8	3.6
1400	1831.9	433.16	8.9	3.6
1425	1754.9	435.77	8.9	3.6
1450	1677.9	438.27	9.0	3.7
1475	1600.9	440.68	9.0	3.7
1500	1523.8	442.99	9.1	3.7

* Corrected to point of influx



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Maximum Allowable Surface Holdback Pressure

