



# THRAXIS SUCCESS STORY

## OPTIMIZATION OF THRAXIS LEADS TO SIGNIFICANT REDUCTION OF SURFACE VIBRATIONS

Australia

EVERY TRIP  
COUNTS™

**\$15k**  
ESTIMATED COST  
SAVINGS

**1**  
SINGLE BIT  
RUN TO TD

TAQA's Thraxis incorporates a configurable spring stack to mitigate bit bounce, shock, vibration and erratic drilling. Thraxis can be used in a wide variety of drilling conditions to increase bit life and penetration rate as well as isolate the BHA from the nonuniform motion of the drill string while keeping the bit on bottom. The spring stack can be configured to fit any drilling application - from soft to formations with high compressive strengths. Thraxis is also compatible with all vibratory and axial oscillating tools.

### THE CHALLENGE THE SOLUTION

An operator was experiencing high vibration at the rig while drilling a 17.5" surface section. A shock tool was being utilized but it was placed far from the bit and had a preset spring configuration. The vibrations were causing a safety concern at surface as well as leading to poor drilling performance.

After analyzing the downhole drilling data, TAQA proposed placing Thraxis closer to the bit and changing the spring configuration by decreasing the stiffness. This would allow Thraxis operate with low WOB.

### THE RESULT

The 17.5" section had a significant reduction of surface vibration and the operator was able to drill to TD with a single BHA.



#### Before BHA optimization

#	Component	Length (ft)	Cum Length (ft)	lbs/foot	Weight (lbs)
1	17 1/2" PDC	1.60	1.60	478.00	764.80
2	Mud Motor	34.87	36.47	167.00	5823.29
4	17 5/16" Stabilizer	6.89	43.36	194.00	1336.66
5	9" MWD Sub	1.77	44.53	198.00	350.46
6	9" MWD	25.16	69.69	198.00	4981.68
7	9" MWD Sub	1.54	71.23	198.00	304.92
8	17 13/64" NM Stab	5.90	77.13	216.00	1274.40
9	Crossover	3.93	81.06	197.00	774.21
10	<b>8" Shock Sub</b>	<b>12.13</b>	<b>93.19</b>	<b>140.00</b>	<b>1698.20</b>
11	8.25" NMDC	27.23	120.42	148.00	4030.04
12	Filter Sub	7.94	128.36	148.00	1175.12
13	10 x 8" DC	297.98	426.34	140.00	41717.20

Buoyant Weight Below 8.00" Shock Sub: **17,517 lbs**

#### After BHA optimization

#	Component	Length (ft)	Cum Length (ft)	lbs/foot	Weight (lbs)
1	17 1/2" PDC	1.60	1.60	478.00	764.80
2	Mud Motor	34.87	36.47	167.00	5823.29
3	<b>9.50" Thraxis</b>	<b>13.87</b>	<b>50.34</b>	<b>218.00</b>	<b>3023.66</b>
4	17 5/16" Stabilizer	6.89	57.23	194.00	1336.66
5	9" MWD Sub	1.77	59.00	198.00	350.46
6	9" MWD	25.16	84.16	198.00	4981.68
7	9" MWD Sub	1.54	85.70	198.00	304.92
8	17 13/64" NM Stab	5.90	91.60	216.00	1274.40
9	Crossover	3.93	95.53	197.00	774.21
11	8.25" NMDC	27.23	122.76	148.00	4030.04
12	Filter Sub	7.94	130.70	148.00	1175.12
13	10 x 8" DC	297.98	428.68	140.00	41717.20

Buoyant Weight Below 9.50" Thraxis: **8,281 lbs.**