

Using Dynamometer Data

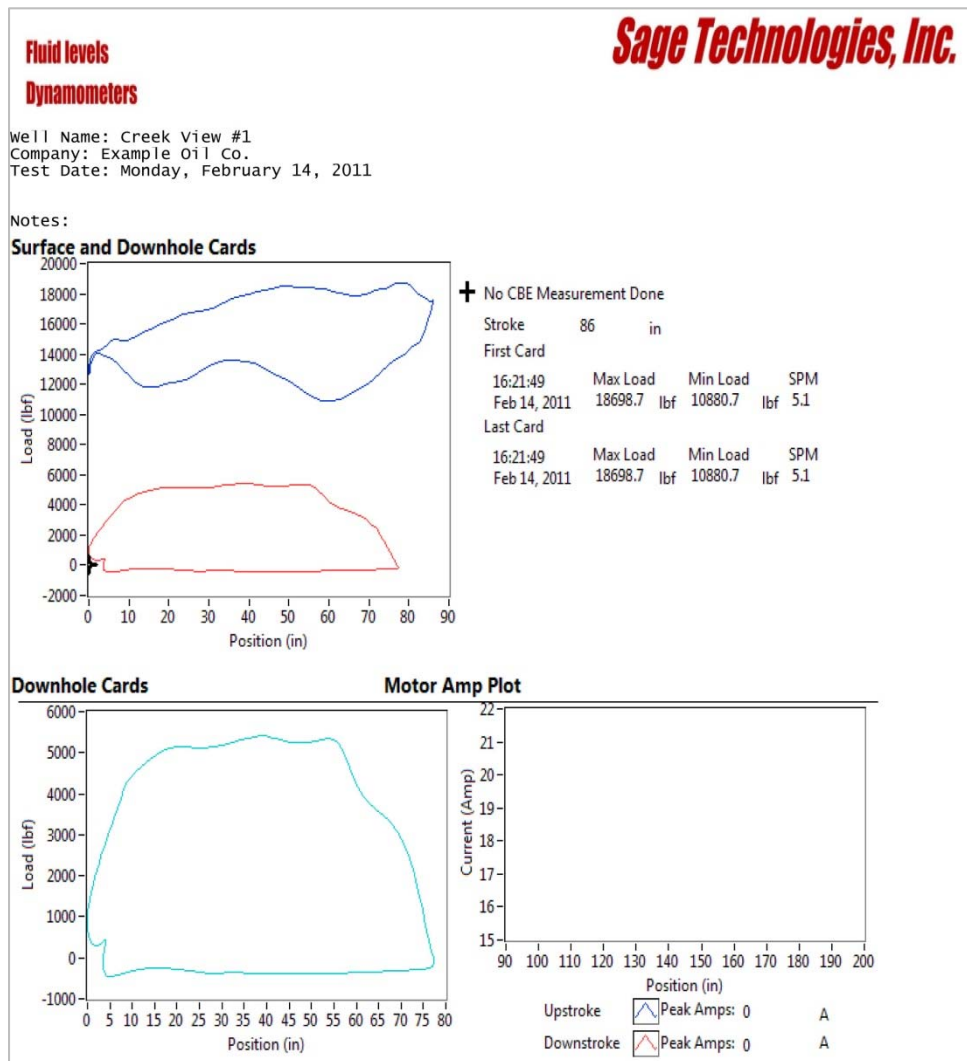
Example 2: Worn Plunger – Worn Traveling Valve

A well has been recompleted up hole and a new pump has been run. The production does not match expectations. Well data is as follows:

Perforations: 7976 to 8257
 Tubing anchor: 8267
 SN: 8237
 Pump: RHBL 1 ¼” x 16’ stroke through pump

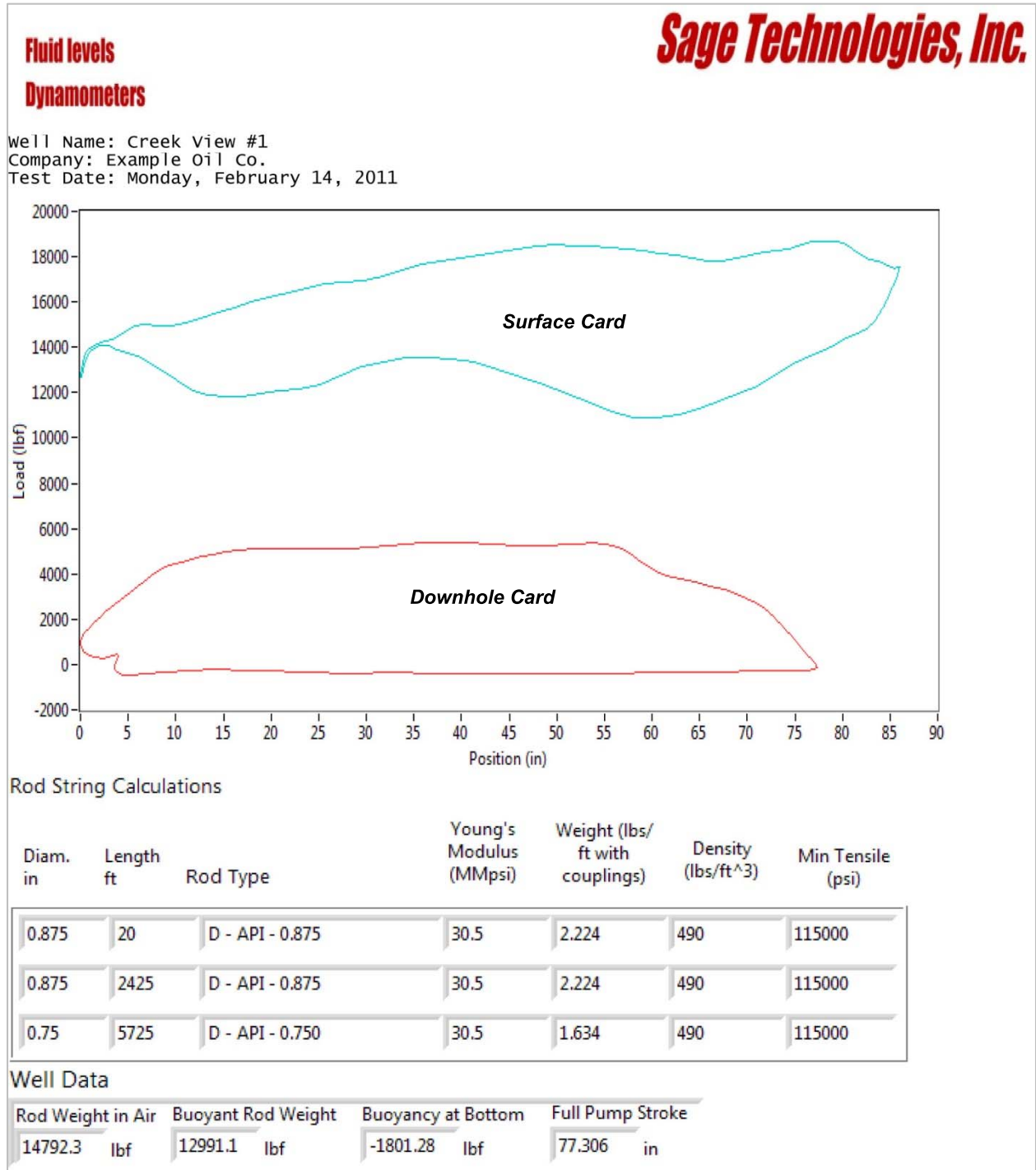
Current Production: 2 oil
 1 water
 15 mcf

Well is running on Ajax gas engine. Fluid Level is shot and fluid found at 6231 ft.
 The high fluid level with such small current production is indicative of pump problems.
 A dynamometer is run on the well.



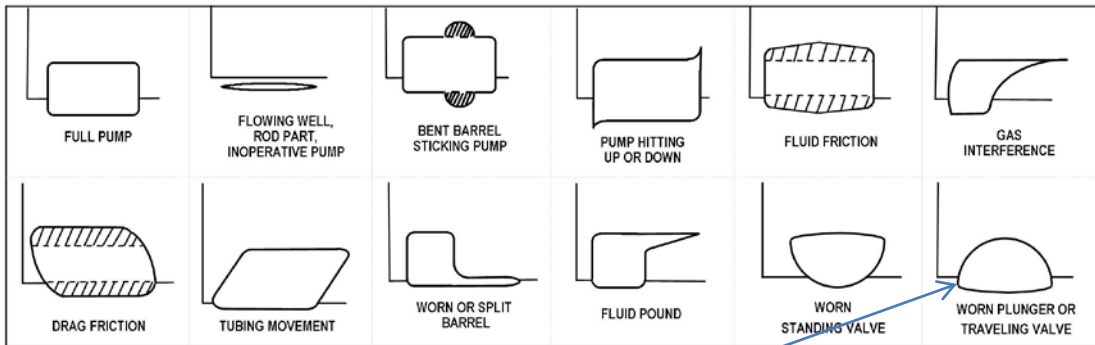
Example from AFL IV with Dynamometer report

The downhole card shape as shown below indicates a worn plunger or worn traveling valve.

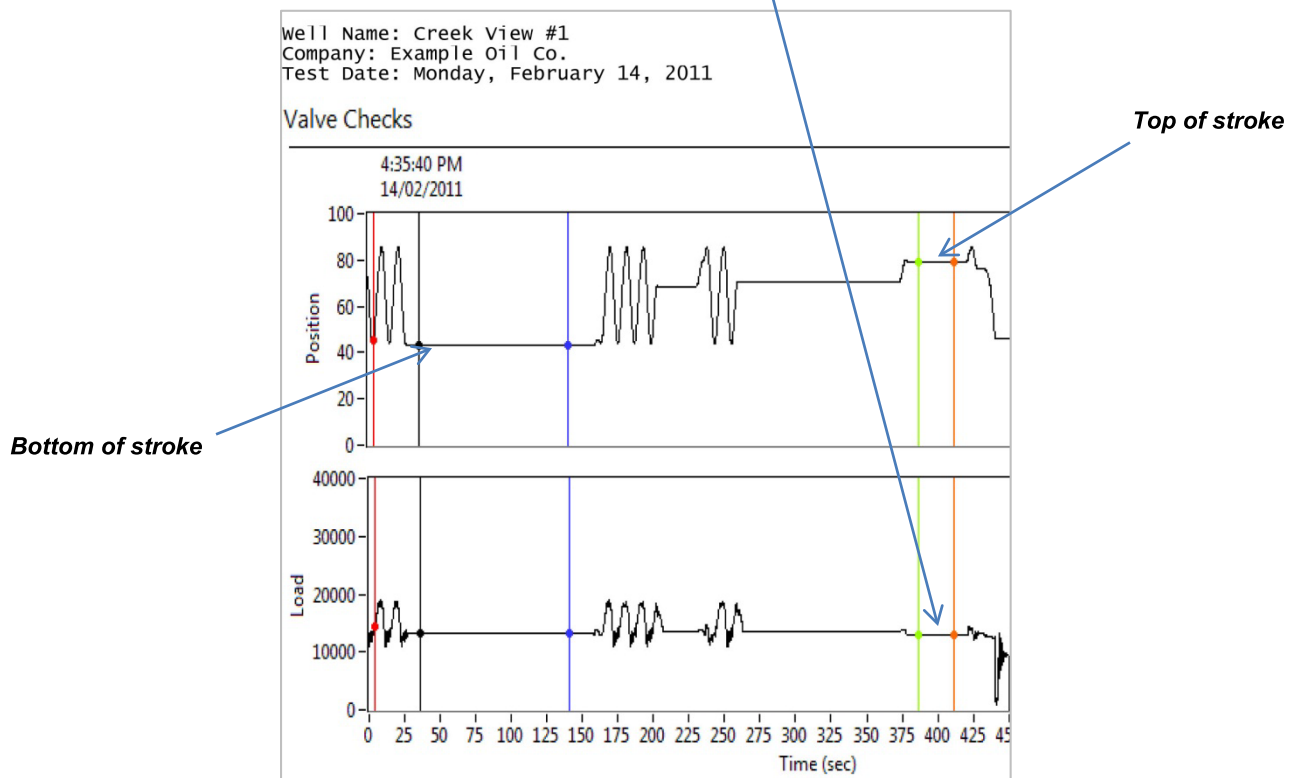


Example from AFL IV with Dynamometer report

Typical Downhole Dynamometer Card Shapes



After identifying the appropriate downhole card shape, a valve check test is run to confirm valve problems. Valve check shows that no load is held on the **upstroke**, signaling a damaged traveling valve.



Example from AFL IV with Dynamometer report

Analysis:

Even though new pump has been run during completion, it is evident that there has been damage. Pump is pulled and damage confirmed. Damage had been caused by inadequate clean-up after acid job.

Final well production: 6 oil
1 water
25 mcf

This is a 4 bbl/day increase in oil production, or a 200 % production increase. Many marginal wells can benefit from closer inspection.