

# Well-Klean<sup>®</sup> Case Study

**Name/Location of Well:** ABC Well – Prescott, AZ Area

**Description/Well Dynamics:**

Build Date: 2004  
Casing Diameter: 8"  
Well Depth: 396'  
Static Water Level: 190'

**Type of Casing, Slots and Intervals:** Steel casing, vertical slotted from 190' to 396'.

**Reason for Treatment:** Well was producing 180 GPM new in 2004. Production had gradually declined to approximately 140 GPM in 2014 - and 58 GPM in February 2015. A downhole video was taken revealing 30-50% blockage by what visually appeared to be mineral scale, iron oxidizing bacteria and related bio-films.

**Assessment/Recommendations:** Well-Klean<sup>®</sup> Pre-blend at 10% of well water volume with hydrogen peroxide biocide at 2,100 ppm - blended with Well-Klean Concentrate at 10% by volume of HP – Passivation and neutralization with soda water.

Hydrogen Peroxide:	5 gallons
Well-Klean Pre-Blend:	75 gallons
Sodium Bicarbonate:	35 pounds

**Actions Taken:** Applied 50% of the Hydrogen Peroxide/Well-Klean<sup>®</sup> Pre-blend to the well followed by 30 minutes of brushing (A) each 10' of the perforated casing. Bailed reddish/black substance (B) dead biomass and iron bacteria from the bottom of the well until retrieving a sample of clean gravel pack. Applied the remaining 50% of the biocide and cleaner, swabbing the perforated casing in an attempt to force the chemical through the vertical slots and into the gravel pack. Applied 30 minutes of swabbing for each 10' of the perforated casing. Let the chemical soak in the well for 18 hours. Above ground, blended Sodium Bicarbonate powder with water, applied the water solution of the mixture to well and swabbed each 10' of the perforated casing vigorously for 15 minutes. Installed pump. Well produced a milky looking residue for 10-15 minutes before clearing. Well was re-developed for another 2-3 hours by surging. Disinfectant was added and the well was returned back to service.

**Project Duration:** Start Monday February 16, 2015 – End Thursday February 19, 2015

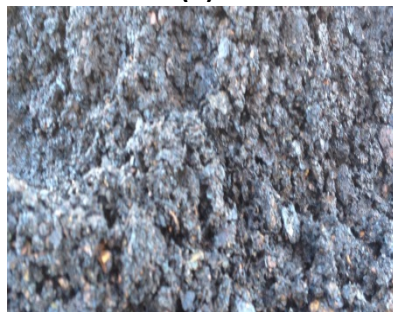
**Results:** Restored to 180 GPM (C). Static Water Level increased from 190' to 210'. Drawdown was reduced significantly.

**Photos:**

(A)



(B)



(C)

