

EZ-CUTTER, THE SOLUTION MINING DEDICATED CUTTER: II. PARTICULAR CUTTING CONFIGURATIONS AND PRACTICAL CASE STUDY

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Abstract

Developing underground cavities often requires moving or cutting pipes. The EZ-Cutter, an innovative solution to cut pipes inside a conductive fluid, does not involve handling of dangerous explosives or hazardous products. It builds a clean sharp cut fully compatible with subsequent wireline survey operations. Extensive laboratory and field tests were carried out in Europe during the last semester, industrially validating the method with over 90% success rate in brine wells. Significant progress has been made regarding operating times, range of tubing diameters and grades the tool is able to operate on.

However, in many cases, pipes are in poor condition and subject to physical strains: they can be highly corroded, deviated, deformed, under compression and sometimes found with internal deposits. Studying these different configurations is important to increase success probability and choose the cutting method that fits best the field conditions.

Deformed pipes or compression constraints can increase the difficulties in cutting tubings. In fact other methods have been unable to provide clean cuts under some of these specific conditions. The EZ-Cutter has undergone some modifications in order to tackle these cases, thus allowing a sharp and clean cut under any condition, opening new perspectives in cavity monitoring and leaching methods.

Key words: Well Casing, Well Logging, Storage Cavern, Cavern Operation, Corrosion, Safety, Well Tubing, Cut, Brine Production, Leaching Strings, Compression, Ovalization, Well Intervention.