



# WELL KILL EXECUTED ON H<sub>2</sub>S GAS BLOWOUT IN WEST TEXAS

LOCATION: WEST, TX



The subject well was undergoing some diagnostic activities, to attempt to locate a suspected hole in the production casing string. There was a workover rig on the hole, with a tapered tubing string and packer assembly. The rig crew was in the process of tripping out of the hole when the well began flowing. The pipe rams were closed and did not stop the flow. The rig was evacuated and Cudd Well Control was contacted to assist in regaining control of the well.

## SITUATION UPON ARRIVAL

The well was blowout through the annulus and exiting from the top of the rig BOP. The flow was heavily dispersed by the elevators, slips and traveling blocks and engulfed much of the location. The well was capable of producing up to 1100 ppm H<sub>2</sub>S. The well site was evacuated and a staging area was designated for the completion of all operations.

## INTERVENTION STRATEGY

The initial actions planned were to cut the tubing and allow it to fall into the well. The blocks would be raised to the top of the derrick, out of the flow of gas, and the slips and rig floor would be removed. This would be completed to alleviate the dispersion of the flow stream and allow for capping onto the rig BOPE. The rig would be removed after the well was capped and diverted.

## OPERATIONS

All pertinent equipment was ordered to complete the job and outside safety contractors were on location to provide adequate SCBA equipment for working in an H<sub>2</sub>S environment.

Prior to cutting the tubing, all wellsite debris was removed. This included a pump truck, several tanks and a hydraulic laydown machine. Several trailers were also moved off location to facilitate capping and diverting operations.

The tubing was cut using a dual abrasive jet cutting system and allowed to fall down the well. After successfully dropping the tubing, the blocks were raised to the crown by attaching a snatch-block to the fast line and pulling the line towards the front of the rig. The line was secured to hold the blocks in place. The slips were supported on the BOP stack by a small spool, attached to the stack. The slips and

the spool were removed, along with the rig floor. The flow stream was now vertical with minimal dispersion.

The well was capped with a single blind ram and a spacer spool. The capping stack was placed on the rig BOP and nipped up. The diverting manifolds and lines were installed and run to a flare pit for diverting.

After all diverting equipment and lines were in place, the blind rams on the capping stack were closed and the well was diverted to the flare pit.



The blowout recovery phase of the project required rigging up a snubbing unit, for fishing operations and running a kill string. During the rig up phase, production equipment was set up to produce the gas on emergency sales, until the kill was completed. Initial plans were made to locate the tubing fish, latch the fish and pump the kill through the kill string and fish.

A trip in the hole was made to attempt to locate the top of the tubing fish. The fish was not located at the anticipated depth in the hole. This brought forth concerns with the kill operations and the decision was made to kill the well at the current location. The well kill was designed and executed and the well was successfully killed.