



CASE STUDY

INTRODUCTION

Title: Uncontrolled flow of gas from a well.
Location: On-land
Loss/ Outcome: Snapping of flow line, injury to 1 person.

BRIEF OF INCIDENT

An incident of uncontrolled flow of gas and condensate occurred in well during activation of old drilled well that was subdued with 11.2 ppg mud with the arrangement of one high pressure cementing unit and one water tanker to supply water to pumping unit. Several attempts were made to activate the well by pumping through the annulus and return from tubing and vice versa. Flow line was connected to waste pit. Finally, when the pumping of water was done through tubing and return was taken from annulus, viscous mud observed in flow line along with slight gas. Suddenly gas flow increased. One person attempted to close the annulus valve but flow line parted near annulus valve and could not be closed due to which gas flow from flow line became uncontrolled. Around 1,600 persons from the nearby area over a 2 km radius were evacuated to a safe distance. One person was injured during this operation.

OBSERVATIONS/ SHORTCOMINGS

- ❖ As per well activation plan, flow back line was to be made up of steel tubulars. But in actual, flow back line was made up of MS pipe and local welding was done to connect MS pipe (threaded joint) with the annulus valve.
- ❖ Flow back line was not anchored.
- ❖ No choke manifold and flare stack was available.
- ❖ Separator was not used during well activation job.
- ❖ Potentially high well pressure after well activation was not considered and accordingly suitable arrangements were not made.
- ❖ Breathing apparatus was not made available at the well site during activation job.

REASONS OF FAILURE/ ROOT CAUSE

- ❖ Well activation job was not being carried out as per the plan.
- ❖ MS pipe with locally fabricated joint was used in flow back line in place of high pressure steel tubular with standard joints, which parted away due to high gas pressure.
- ❖ Flow back line was not anchored.
- ❖ There was no choke manifold connection between the X-mass tree and flow line.

Provided for information purpose only. This information should be evaluated to determine if it is applicable in your operations, to avoid recurrence of such incidents.

RECOMMENDATIONS

- ❖ Well activation shall be planned considering all possible hazards and their mitigation measures.
- ❖ Flow backline shall be made up of high-pressure steel tubular.
- ❖ The flow line shall be suitably anchored to prevent whiplash in the event of gas flow during activation.
- ❖ Choke manifold shall be connected between the flow line and X-mass tree.
- ❖ Separator, gas flare line and flow back measuring tank shall be included in the list of minimum equipment required prior to well activation.
- ❖ ERP shall be prepared in advance and emergency mock drill shall be carried out.
- ❖ The availability of breathing apparatus and firefighting arrangement shall be ensured before the commencement of the activation job.
- ❖ All wells shall be temporarily abandoned as per OISD-STD-175.



Celler Pit View



Flow Line to Waste Pit

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