EQUIPMENT FAILURE DURING PERFORATING RESULTS IN NEAR MISS

WHAT HAPPENED:

While removing the spent perforating gun from the hole after perforating the 5th stage of a horizontal hydraulically fractured completion, the wire rope parted from the rope socket allowing the gun to fall to the ground. There were no injuries or damage.

The lubricator had been lifted from the wellhead and positioned 50 feet (15.24 meters) above the ground to lower the 30 foot (9.14 meters) long spent perforating gun. The gun was lowered out of the lubricator to within 1 foot (30.5cm) of the ground when the rope socket failed thus allowing the gun to drop vertically to ground level and then fall over onto the ground.

WHAT CAUSED IT:

- Re-heading of the wireline is normally done every 8-10 runs during normal service windows. This time period might be too long of an interval. The procedure failed to identify that the perforating gun could fall over if the rope socket failed.

CORRECTIVE ACTIONS: To address this incident, this company did the following:

- The company reminded all personnel that Pre-Job Safety Analyses and discussions that identify job steps, hazards and specific persons responsible to implement hazard controls should continue to be standard operating procedure. JSA’s must incorporate the below procedures.
- The company established a new requirement of re-heading the wireline after 4 runs.
- The company modified the standard operating procedure so that, after lifting the lubricator off the wellhead it will be lowered to within ~15 feet (4.6 meters) of the ground prior to positioning the lubricator to lower the gun; this will reduce the risk of the gun falling flat to the ground by containing it within the lubricator should the line part from the rope socket.
- The company emphasized that only necessary personnel are in the area around each completion activity. In this case, once the lubricator is positioned it will be raised and the gun lowered while only those wireline personnel needed to stab the gun into the lay down carrier will be allowed under the lubricator. All others will be to the side and aware of the gun’s position until it is safely on the ground. This is particularly true for those under or near any suspended loads or high pressure operations.
- The company instructed all departments and regions to disseminate this Safety Alert to all perforating crews during pre-job safety meetings and post it in the completions trailers so that they are aware of the dropped object hazard.