SAFETY ADVISORY 2011-03

June 22, 2011

Investigation Prompts Recommendations

FORT ST. JOHN — In August 2010, a blowout occurred during operations on a sweet natural gas well in the Jean Marie formation. While drilling the horizontal section of the well, drilling was halted. After several attempts to continue drilling, the decision was made to trip the drill pipe out of the well. While removing the bottomhole assembly from the well, gas escaped from the well and ignited. The blowout preventers were closed, but were unable to stop the gas flow. The fire destroyed the drilling rig and the well flowed for four days before control was regained.

The investigation identified the following:

- The mud motor[1] separated from the bottomhole assembly. The drilling rig crew was not aware that the mud motor had separated. Separation of the mud motor made the bottomhole assembly two metres shorter than expected.
- During normal operations, the rotating head seals against the outer diametre of the drill string. When the bottomhole assembly is removed from the well, it is raised above the blind rams and the well is sealed off by closing the blind rams. Once the well is isolated, the bottomhole assembly can be safely raised above the rotating head. In this case, because the bottomhole assembly was shorter than expected, it was raised above the rotating head before the blind rams were closed, allowing the well to flow to atmosphere.
- The fluid processing equipment was not fully isolated from the wellhead, allowing natural gas to flow back to the wellhead. This increased the fuel supply to the fire, possibly contributing to the failure of the blowout preventer.

RECOMMENDATIONS

If the drilling and bottomhole assembly are part of a well barrier[2], it is recommended that permit holders develop and implement procedures to test the integrity of the drillstring and bottomhole assembly prior to their removal from the wellbore.

When underbalanced or managed pressure drilling, ensure that the drilling fluid system is configured to prevent backflow in the event of a well control situation.

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[1] A mud motor is a hydraulic motor. Drilling fluid pumped through the motor causes rotation of the drill bit. Mud motors are used for directional drilling operations where it is not practical to turn the drill bit by rotating the drill pipe.

[2] "Barrier" means any fluid, plug or seal that prevents fluids from flowing unintentionally from a well or from a formation into another formation.

For oil and gas incidents and emergencies, please contact the Commission at: 1-800-663-3456 (24 hours).

Permit holders are reminded that section 12(1) of the Drilling and Production Regulation requires a permit holder to take all reasonable measures to prevent a loss of well control.

If you have any questions regarding this Safety Advisory, please contact:

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