

SAFETY & ENVIRONMENTAL ADVISORY

BC Oil & Gas COMMISSION

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Commission Issues Advisory Following Incident Investigation

The BC Oil and Gas Commission (Commission) is reminding operators Division 2 of the [Drilling and Production Regulation](#) contains regulatory requirements related to well control equipment, procedures, training and competency. Permit holders must ensure that reliably operating well control equipment is installed at all times and that site personnel have adequate training and competency to safely carry out well operations.

This follows an investigation into a March 2014 incident where approximately 9,400 cubic metres of sweet natural gas leaked from a well over five days, most of which was diverted to a flare stack before the leak was successfully repaired. The incident occurred following cementing operations on a natural gas well targeting the Montney formation. Drilling operations were complete, and production casing was installed in the well and cemented with nitrogen foam cement. The well is located in a remote area approximately 200 kilometres north of Fort St. John and there were no significant offsite or environmental impacts.

Approximately two-and-a-half hours after cementing was complete, the rig crew proceeded to partially unbolt the flange that secures the BOP (blowout prevention) stack to the well. Approximately three-and-a-half hours later, the well was de-pressurized at surface. Approximately 12 hours after cementing was complete, the well was found to be leaking gas. A hose was attached to the BOP stack in an attempt to de-pressurize the well and allow the leak to be repaired. The hose was not properly restrained when flow was diverted, and one worker was injured. Medical aid was provided at the scene and at the Fort St. John hospital.

The planned cement job included the pumping of nitrogen foam cement with a “cap” cement. The cap cement is a rapid-setting cement capable of providing pressure containment at surface while the foam cement cures. On arrival at the site, it was determined the cementing company did not have sufficient additives for the cap cement, so the decision was made to only pump the foam cement. Due to the job scope change, the cement setting time increased from six hours to 24 hours.

Key findings of the investigation are as follows:

- Removal of some of the BOP flange bolts while the well was pressurized allowed a leak path to develop. The bolts were removed prior to cement setting time elapsing.
- Depressurizing the well prior to the cement setting time elapsing compromised the cement integrity, allowing a natural gas leak to develop.

- The cementing job scope change was not adequately communicated to on-site personnel.
- Adequate assessment and control of hazards were not completed during initial attempts to control the natural gas leak.

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

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