



Uncontrolled release of LPG at mine camp

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What happened?

While conducting civil works at the camp, an excavator contacted a 140 kPa, 63 mm polyethylene (PE) LPG reticulation main (the gas system). The gas system is reticulated around the camp to provide gas for hot water and cooking facilities. The gas system was isolated at the LPG tank and the damaged sections repaired.

Initial investigations have identified that the gas system was re-energized; however, it may have not been purged, tested for gas tightness and/or commissioned in accordance with the preferred safety requirement i.e. AS/NZS 5601.1 Gas Installations.

Key issues

An investigation is being undertaken; however, preliminary enquiries indicate:

1. Underground services may not have been adequately identified using either site drawings or other survey techniques.
2. Person(s) who are unfamiliar with high risk environments or large reticulated LPG gas pipework repairs, may have performed the repair work.
3. The gas system did not have adequate localised isolation points fitted to facilitate the safe isolation of the gas supply to the damaged section/s in the event of an incident/emergency.
4. It is possible that the gas system was re-energized e.g. pressurised with fuel gas and put back into service, without being purged, tested for gas tightness and commissioned and without procedures developed and implemented in accordance with the preferred safety requirements.

Recommendations



- Always check and verify the location of underground services before starting any excavation work.
 - Check that plans showing service locations are accurate and up-to-date.
 - Verify the location of underground services using appropriate detection equipment or other survey techniques.
 - Ensure that there are adequate provisions to isolate the gas system in the event of an incident/emergency or for maintenance requirements.
- Always ensure that there is access to suitable qualified personnel, repair equipment and spare parts to facilitate emergency repairs.
 - Specialised tools and equipment are available to facilitate repairs.
 - A selection of approved and fit for purpose pipe and fittings on hand at all times.
 - Licensed and competent personnel are available to undertake repairs.
- Develop and implement procedures to safely conduct gas work in accordance with the preferred standards.
 - Ensure that the gas system is purged to avoid the possibility of an explosive air/gas mixture existing or forming in the gas system.
 - Ensure that the section of the gas system that has been repaired has been tested and is gas tight.
 - Ensure that the gas system has been re-commissioned correctly.

Legislative obligations

The installation and operations of Fuel gas e.g. LPG and Natural Gas (CSG) systems in Queensland are regulated under the *Petroleum and Gas (Production and Safety) Act 2004* (P&G Act) no matter their location (i.e. on a coal mine lease).

Owners and operators of gas systems have obligations under the P&G Act and the Petroleum and Gas (Safety) Regulation 2018 (P&G Reg) to:

- Have a suitably qualified person perform gas work.
 - A suitably qualified person in this respect must be a Gas Work Licence/Authorisation Holder.
 - Designing, installing, testing and commissioning gas systems
 - Certifying gas system installations and modifications e.g. repairs
- Maintain the gas systems in a fit for purpose and compliant manner.
- Address any safety concerns with the gas systems as soon as practicable.
- Report gas related incidents as per the P&G Act Reg.





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Issued by the Queensland Department of Natural Resources, Mines and Energy

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