



FUELS INDUSTRY
Association of South Africa

LEARNING FROM INCIDENT (LFI)

SAPREF – MOGAS Leak at Underground Joint

2024

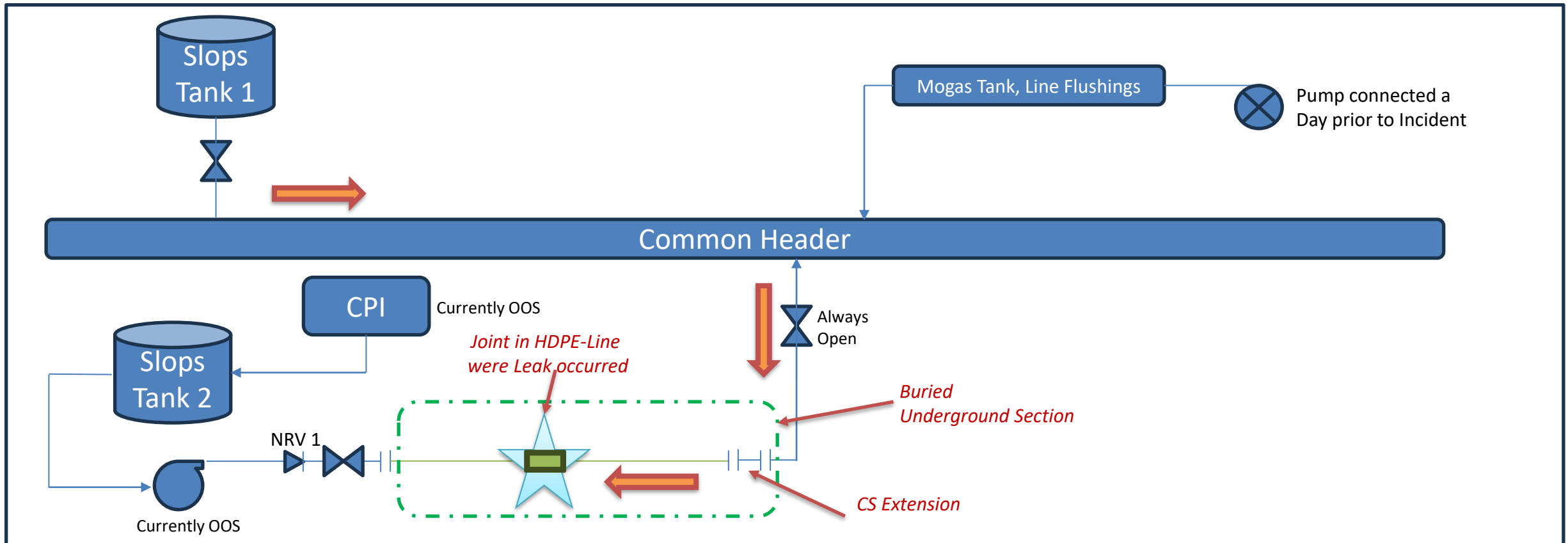


INCIDENT DESCRIPTION

BRIEF DESCRIPTION OF EVENT

At the CPI area Mogas was detected and seen bubbling in an adjacent area to the CPI. An excavation was carried out in the area to further investigate where the leak was coming from. It was discovered that the CPI Oil Recovery Pump outlet line developed a leak on a screwed HDPE fitting joint.

The line was isolated, and the leak subsided. An LOPC > 1000kg (1117 kg) was estimated over a period of 14 hrs.





INCIDENT ROOT CAUSE

CAUSES

- Piping/joint integrity failure either as a result of non-compliant joint or abrasion of piping/additional stress at joint interface as a result of movement or pulsation
 - Slops was being pumped into Tank 1 with diaphragm pump a few hours prior to the incident. It is assumed the pressure from this pump weakened the joint on the HDPE Piping.
- Its also suspected NRV1 failed resulting in reverse flow of Product from Tank 1 to Tank 2 resulting in the LOPC at the failed joint.



INCIDENT LEARNINGS

LEARNINGS

- Investigation uncovered a general lack of understanding of underground lineups – *Ensure that teams confirm the line up before use of a system. [Operations]*
- Previous suspected failure of NRV 1, No Maintenance record found to support a repairs - *Ensure that CAIRS and maintenance records are more descriptive, giving an indication of where the repair is made and what type of repair was made – especially for lines running underground. [Maintenance]*
- There was no management process followed for the installation of the HPDE piping. There was no explanation for why HDPE was selected in this service - *Ensure that all changes (except replace in kind) follow MOC governance [All]*
- The risks around the connection of a diaphragm pump on this system was not assessed - *Ensure that diaphragm pumps are not connected where there is a possibility of non-metallic piping present in the line-up and/or to ensure extra precautions are put in place to [Operations] :-*
 - (a) prevent reverse flow and,
 - (b) overpressure the system or,
 - (c) minimize piping movement.



FUELS INDUSTRY
Association of South Africa

Thank You

2024