

# Safety Alert

## Water main release - thrust block

3 September 2020

### Background information

- Piling works were planned to provide a foundation for temporary propping to a bridge.
- Ahead of this the proposed pile locations were being excavated to ensure no obstructions that could stop the piling.
- Excavation / investigation works were being progressed when a concrete structure was located below the surface.
- In some locations the depth of the concrete mass was only a 300mm thick strip, which was proven by drilling into it.
- At another location there was a larger, deeper mass which was irregular in shape and depth.
- At the time this was not perceived to be related to the existing water main due to its shape and finish. The intention was therefore to remove the obstruction from the location.
- During these works the concrete obstruction (now identified as a thrust block) was dislodged. This led to the water main in the vicinity coming away and the site flooding.
- The term thrust block refers to any type of element that will absorb, or take the thrust that occurs when a liquid is forced through a piping or conduit system and subjected to a change in direction, in this instance a water main.



Above: Typical example of thrust block in situ.

### Key learning:

- Position of the water main adjacent to the concrete had been determined from other known points (from trial holes) on the water main. The actual position should have been clarified once the block of concrete had been uncovered
- Assumptions were made that the concrete was waste from other construction work – we should never assume and this ties back to point 1 above
- Key learning – failure to STOP when change occurs. The full situation should have been assessed, advice sought as required from the site supervisory team, the work pack amended with the new way of working and working practice briefed.