

TREFOREST 19" BURST

Emergency repair to existing 19" Cast Iron water main

Overview:

Site Location:	>> Treforest 19" Burst
Client:	>> Welsh Water

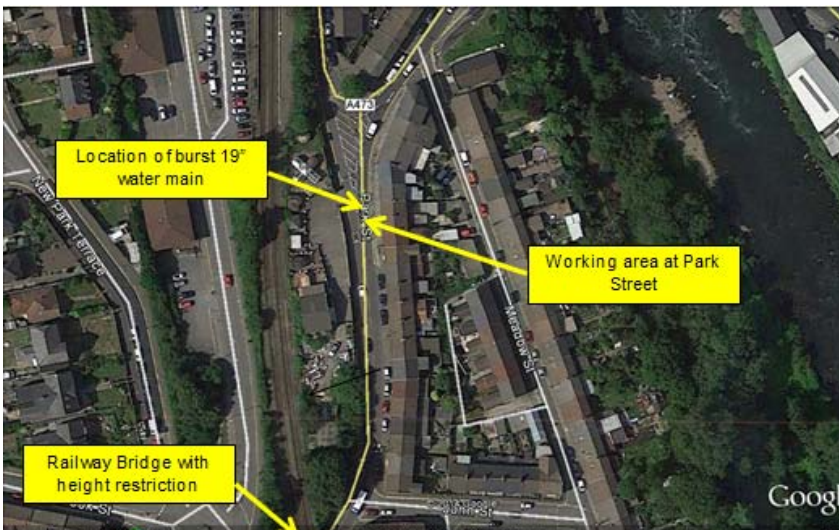


A 19" High Pressure cast iron water main had burst in a carriageway at Treforest. The trunk main feeds many thousands of Properties, Schools, Universities and Local Businesses.

Although it's classed as a burst and in this case a lead joint had blown out of the existing coupling, water is still flowing through the pipe and reaching the consumer. It was decided by DCWW to carry out the repair by installing flow stops and an overland rider. The benefit of this method is the water is not turned off and as a result no customers are effected.

The work was carried out in the highway of Park Street, Treforest. The access to the working area was via the A473. This formed part of the site access into the working area and also formed part of our compound. As the road was the main artery serving the University Of Glamorgan and the Local Town it could not be closed.

Consideration was taken to the local conservatory business which was opposite our working area together with the local residents living in the street. Our main priority was to keep disruption to a minimum. All deliveries of plant and materials were co-ordinated for either an evening or weekend delivery.



Aerial view of the site showing site restrictions, i.e., low bridge approaching construction area, terrace houses within 2m of burst water main, one way system approaching University of Glamorgan.



Location of burst main at Park Street



Junction of Park Street / Forest Road



LEWIS

TREFOREST 19" BURST

Emergency repair to existing 19" Cast Iron water main

Scope of work:

- A series of trial holes were carried out on the existing 19" water main to determine pipe depth, diameter and material.
- To excavate down on the existing main approx 14m away from leak location to install double flow stop tee's and equalisation tee's. **Pressure in main was between 19 - 21 BAR**
- Concrete in flow stop tee's and equalisation tee's approx 40m3 of concrete was used to restrain the main.
- UTS our approved sub-contractor was engaged to install and drill a series of under pressure tees on the existing water main to enable the insertion of the double flow stops.
- Install a welded steel overland rider that was coupled up to the flow stop rigs each side of the leak.
- Chlorination of overland rider
- Simultaneously insert the flow stops each side of the leak, so water is isolated through the existing water main. Water flows were then turned so it flowed through the temporary overland rider.
- Camera existing 19" main to locate position of leak
- On complete isolation of the main a muffler was then welded over the blown lead joint on the existing collar of the pipe.
- Turn flows back into repaired main and charged up
- Remove overland rider
- Remove flow stop rigs
- Reinstate
- De-Mobilise



Sheet piling to South connection point.



Temporary works installed at the North Connection. High pressure gas and water main present within the excavation. Single flow stop and equalisation tee fully installed.



Temporary welded steel overland rider



LEWIS

Lewis Civil Engineering Ltd, Mwyndy Cross Industries, Cardiff Road, Pontyclun, Rhondda Cynon Taff. CF72 8PN

Telephone: 01443 449 200 Fax: 01443 449 201

Website: www.lewis-ltd.co.uk E-mail: enquiries@lewis-ltd.co.uk