

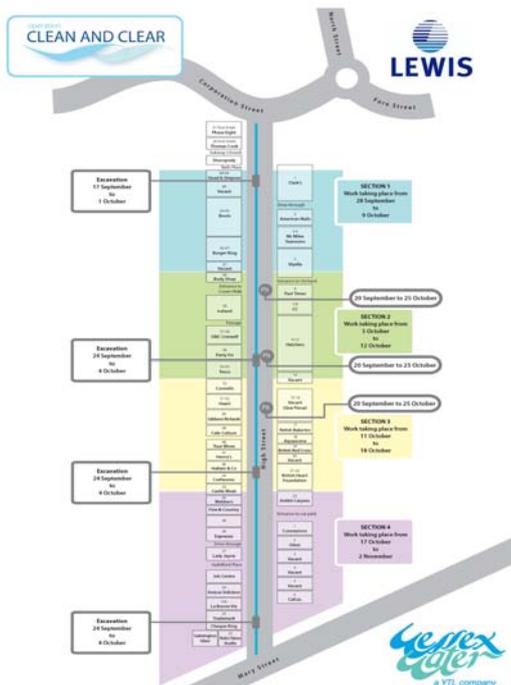
Bridgwater Mains Refurb

Overview:

Site Location:	>> Bridgwater, Somerset
Client:	>> Wessex Water
Contract Value:	>> £1,308,000.00
Project Duration:	>> 15 Months



Bridgwater Trunk Mains Renewal was primarily located within the centre of Bridgwater, with numerous standalone projects being required to solve the discolouration, iron levels and quality issues. The Project was phased to allow clean water to be bought through the town whilst Ice Pigging between work zones ensured main cleanliness on sections where no physical work had been undertaken. The schemes undertaken by Lewis involved pipebursting, sliplining, and insertion techniques with new connections and Rotork valve installations.



The Bridgwater Trunk Mains Project included numerous standalone schemes with the combined aim of improving water quality and security of supply. Significant problem areas had been identified within Bridgwater, and each necessitated an individual solution whilst facilitating a timescale and sequence which would permit a mains

- Ice Pigging Enabling Contract
- Rail crossing Culvert
- Pipebursting, Slip lining & Open Cut large diameter Trunk mains
- Network shutdown's and Valve Installation programme
- Potable Water Strategic Customer Maintenance works

The Lewis element of works on Bridgwater were split into eight key sections. These sections spanned the life of the Project and formed all of the key areas to maintain and facilitate flow management and control. The initial section of works, which was the Ice Pigging contract was the first significant scheme of its type and involved Ice swabs being flushed through the entire Bridgwater Trunk main with diameters of up to 450mm. The key benefit of Ice Pigging was that it would provide an enhanced swab through the lines, clearing Iron debris, whilst minimising supply interference to the end users. Key Under Pressure Tee and In-line Valve Stops were installed to allow the Ice to be inserted and drained through and purpose built large diameter washouts constructed to allow silt and dirty water removal disturbed through the process. Inevitably there were Key customers to whom clean potable water was a necessity, and Gerber Juice Company Ltd was certainly one of these. A producer of high quality fruit drinks, the production site required a clean, potable and secure water supply 24hrs a day, seven days a week and without interruption. To facilitate this we undertook a clean water logistical tankering supply. This logistical plan involved the use of 40 tankers and enabled us to maintain a 35litre/second supply for a full 24hr period whilst their incoming main was cleansed, swabbed and tested. Fabricated manifolds and secure tagging and control procedures satisfied both Wessex and the customer that their production would remain unaffected.

Bridgwater Mains Refurb

Pipebursting, Sliplining and Open Cut formed the largest value element of the scheme with new and refurbished mains installed between 300 and 700mm diameter. Specific difficulties necessitated a single 500m length of 630mm PE sliplined through an existing main using our 1000G Pipebursting machine and a similar operation under a culvert crossing beneath a rail line. Directional drilling utilising our own equipment completed the mains renewal element of the scheme.



Lewis were challenged with developing the method on all key work areas and at all high risk points of the project. Our Client's confidence in us allowed us to lead the Design Team and develop failsafe details and procedures. A key process in Bridgwater was to understand the Network and in particular the Operation's Team constraints and concerns. A key benefit within Lewis is that it is a focused Water Delivery Company. Each of its employee's has developed through the Company and understand the impact of their works on the customer and the Network. This knowledge and ability to understand a Network allowed innovative approaches to problems to be implemented. Firstly, by introducing Ice Pigging for the mains cleansing process and secondly in the installation of in-line Valve Stops/Under Pressure Tee's/Planned shuts/Re-zoning and ultimately the phased commissioning of the main.

By understanding the entire process Lewis bring the buildability advice and guidance to the design team and allow a 'right first time' solution. The Management Team employed by Lewis offered confidence to the Operations Team and client that they had a Contractor who understood their business and similarly, the Customers and end users were reassured that their problems and concerns had been understood and were being managed. Extensive Public Relations exercises accompanied by Public Exhibitions ensured the public were aware of the works and understood the benefit they would bring to the quality of water. They also provided interested parties the opportunity to meet and challenge the direct delivery Team and the rewards of this could not have been underestimated as works progressed without complaint through the delivery phases.

Bridgwater Trunk Mains was a difficult and challenging project that was delivered without impact on its customers. Each work area was carefully assessed, and the Teams understanding of the Network ensured a well thought out, planned and executed scheme. Sliplining, open cut, directional drilling and pipe bursting ensured delivery of the main work elements progressed well whilst the more difficult connections, mains cleansing programme and Customer continuity issues posed probably the larger challenge. The Scheme itself was delivered with exemplary H&S Standard's and was testimony to early involvement and an aligned Project Delivery Team.



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