



Lanes Group Case Study

Rail culvert traverse

Project:
Rail culvert traverse

Client:
Amco

Sector:
Rail

Location:
Crewe, Cheshire

Lanes Group is the largest independent supplier of specialist underground pipeline and utility services in the UK. We have a national network of 23 depots providing a comprehensive range of high quality, innovative utility, drainage and maintenance services for domestic, commercial and public-sector customers.

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Challenges and achievements

- Successful major traverse of a large culvert
- Demonstrates Lanes Group's ability and capacity to carry out large-scale confined space operations
- Demonstrates Lanes Group's commitment to best practice health and safety.

Overview

Lanes Group was commissioned to carry out a major traverse of a culvert linked to the West Coast Main Line in Cheshire. The culvert had been identified as a source for diesel fuel polluting a brook. Lanes' had to identify where, in the culvert, the diesel was coming from.

The project

Gresty Brook runs under the West Coast Main Line, one of the busiest railway lines in the UK. Environmental monitoring showed that diesel fuel was contaminating the brook.

Amco believed the fuel was coming from a rail culvert, so commissioned Lanes Group to carry out a major traverse of the 609-metre-long pipe to find the source.

As with any major traversing operation, scoping and planning the project was key to its success.

The first step was to survey the structure using a Panaramo 3D optiscanner camera. The survey found there was no structural damage to the culvert, and that the water levels were safe for access.

The traverse was then broken down into six 100m sections, to be made from six different access points along the pipe. This meant each member of the team spent a minimum amount of time in the culvert.

Separate site visits were also conducted by a management team to confirm there were no other issues or implications that needed to be considered.

Before work began each day, a full risk assessment was carried out. All equipment was checked and tested. Test certificates were also brought to the site.

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The project continued

The traverse team

Each nine-person team completed a 100m section of the culvert, which measured 2.1m x 1.85m and changed in size at a number of locations.

This team included a Lanes manager, present at all times to oversee the eight-person operation.

Team deployment

- Two people walking through and inspecting the culvert
- One person at the bottom of each manhole
- Two people on the surface at each of the access and egress points, to operate winches.

Training and preparation is key

Every team member had attended a confined spaces training course run by Mines Rescue Service, a leading provider for this specialist training.

Every team member was also PTS (Personal Track Safety) trained, and worked under the supervision of a Rail COSS (Controller of Site Safety).

Safety equipment

- Full breathing equipment, as a strong smell of diesel had been identified during scoping
- Intrinsically safe lighting and radio equipment
- Rescue stretcher
- BA board – to log air supply for breathing apparatus and times of use
- 4 breathing apparatus sets
- 30 compressed air tanks
- Harnesses and lifelines, sourced from a specialist provider
- Network Rail PPE
- Chemical suits
- Waders

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Project results

After carrying out CCTV surveys and a walk-through with a camera, the precise source of the leak was still not established.

The next step was to use marine booms, combined with chemical reagents. Sections of the culvert were tested to isolate the source of the leak.

Combined with further investigation, this allowed the connection responsible for the diesel pollution to be identified.

So the culvert could be entered more safely in the future, the Lanes team installed chainage tiles at 10 metres intervals.

The project was completed in two weeks.

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