

# **PALM PAPER, KINGS LYNN** NORFOLK

## **Horizontal Directional Drilling**

**CONTRACT NO.**  
**D538**

**PROCESS**  
**DIRECTIONAL DRILLING**

**GROUND CONDITIONS**  
**CLAY / PEAT**

A E Yates Trenchless Solutions Ltd were contracted to install various ducts in the Palm Paper Factory by HDD. These installations were in 3 different areas. The first area was just to the side of the factory to bring a new feed into the area. We were contracted to supply drill and install 3 ducts in separate bores running parallel to each other under a deep ditch. These ducts were 180mm SDR11 black ducts 2 for communications and 1 for electricity. This crossing was originally looked at as an auger bore, A E Yates Trenchless Solutions suggested that the crossing may be suited to an HDD, this eliminated the need for deep shafts either side of the ditch, ground water problems and the cost of a thrust wall. This crossing was completed within a day and a half.

The second area was inside the factory grounds, this was also a 3 x 180mm SDR11 Crossing for electric and communications ducts under the main entrance road to minimise disruption to the access for the recycling plant. Due to the number of services and drains running across the road, traditional open cut methods was not going to be an option. The length of the drill was around 90m, each duct installation was completed with 500mm separation between the ducts. This minimised the diameter of the bore to install the ducts. The first 2 areas were completed using an 18ton pulling power rig, this was to reduce the area required for set up.

The 3rd area to drill was over 230m in length, this was to install a free issue steel high pressure gas pipe. This required our larger 50 ton drill rig, this allowed the added extra of more drill rods required to complete the length rather than the pullback required for the weight of pipe to be installed. The drilling on this crossing should have been straight forward but after 100m into the pilot we were suffering with interference to the locating equipment. We have the latest in locating technology in the world but something in the ground was reacting with the signal. After much deliberating we dropped a small pit onto the head to find that we were in the remains of an uncharted tip. There was metal all over the place in the ground and our drill head was wrapped in steel rope from the tip. Once this was removed the signal was regained and the drilling commenced. Further on in the pilot process, several large concrete structures were found to be buried along with more steel wire and tubes. This turned into a very complex and challenging pilot stage.

Once the pilot bore was

