



Eaton to South Bunbury Waste Water Pressure Main Trenchless Installation

Client:
Water Corporation

Location:
Bunbury WA

Construction Period:
Apr 15 – Sep 15

Project overview

In order to ensure the ongoing serviceability of the Eaton area, the sewage flows from the Monash Boulevard Waster Water Pumping Station (WWPS) were required to be redirected from the Kemerton Waste Water Treatment Plant (WWTP) to the South Bunbury WWTP. To allow this redirection, an 18 kilometre pressure main had to be constructed by the Water Corporation's Engineering Services Construction Branch.

DM Civil was successful in the bid to complete the trenchless installation of a number of main road and rail crossings for the project. The works consisted of the installation of 597 metres of DN500 PE product pipe. This was sleeved into a combination of DN600 reinforced concrete jacking pipe and DN750 steel casing. A further 100 metres of DN630 PE was sleeved into a DN800 concrete jacking pipe and mild steel casing.

A variety of trenchless techniques was used for the project including:

- Four crossings installed by slurry microtunnelling;
- Five crossings installed by guided boring;
- Two crossings installed by auger boring and
- Two crossings installed by horizontal directional drilling.

With auger boring, slurry microtunnelling and guided pilot boring methodologies being utilised, the diversity of DM Civil's Trenchless Technology fleet proved beneficial.

Significant achievements and benefits

Varied ground conditions were encountered across the project including clay, rock and sand. These materials were intersected above and below the groundwater table. DM Civil utilised a range of trenchless methods to adapt to these ground conditions while ensuring that industry best practice was met.



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With the support of specialist civil construction teams, preparatory works including launch and receive pit construction, were carried out ahead of the trenchless drives. Efficiencies gained by this demarcation of tasks allowed the trenchless crews to concentrate on drilling operations alone, throughout the project. This programming advantage resulted in the practical completion of the project ahead of schedule and ensured that the client had all connection points in place on demand. This then gave flexibility to the order of construction for the overall project.

DM Civil's Akkerman Guided Boring Machine (GBM) also contributed to the completion of the project ahead of programme. This machine combined two methodologies DM Civil had employed for many years. This was pilot displacement boring and pipe jacking. The GBM was custom built to suit the requirements for a machine capable of installing several pipe sizes in a variety of ground conditions which, in turn produced increased production rates.

Throughout the project, as is the case with many trenchless installations, pipe installation was required in areas where conventional pipe laying techniques were not possible. This was due to the presence of existing critical infrastructure, such as railroads and MRWA controlled roads. DM Civil demonstrated the ability to complete high risk tasks in close proximity to these assets. This was achieved without incident and without impacting on existing infrastructure operations.

The diversity of the DM Civil trenchless fleet enabled the appropriate methodology to be selected for each location and ground condition. This resulted in the project being completed ahead of schedule and in the most cost effective manner.

Contact DM Civil to discuss your trenchless technology projects.

GUARANTEED PERFORMANCE

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