

NEW GRAFTON CORRECTIONAL CENTRE WATER SUPPLY PIPELINE

OIL/GAS | SEWER | STORMWATER | POWER | **WATER** | TELCO

PROJECT OVERVIEW

The NSW Government, in partnership with the Northern Pathways Consortium, delivered a new correctional centre in Lavadia, Northern NSW, that will accommodate 1,700 inmates to help meet the state's increasing inmate population. As a part of this project, the NSW Government provided utilities to the site including water, power and telecommunications. Infrastructure NSW oversaw the delivery of the extended Avenue Road upgrade and water main construction project (enabling works) who had contracted Seymour Whyte to carry out the work.



LOCATION

Ulmarra NSW



CLIENT

Seymour Whyte



PIPE

315mm PN16 HDPE



GEOLOGY

Soft Alluvial Soils



LENGTH

2,115 metres



TECHNIQUE

HDD

SCOPE OF WORKS

UEA was awarded a design and construct contract for two significant HDD installation, which required the construction of a water pipeline to feed the new correctional centre main water supply. The scope included:

- Design of trenchless crossings through narrow easements in soft alluvial soils and flood prone areas
- Surveying of pipe alignment and property boundaries
- Welding and stringing of 2,115 metres of 315mm PN16 HDPE pipe
- Installation via HDD of two significant crossings:
 - 1,150 metre Property Crossing (under creek)
 - 965 metre Creek Crossing

CHALLENGES

Due to the existing low ground levels of this pipeline at the underbores, UEA had to design and setup the HDD compounds to reduce the risk of flooding on the project, as well as the potential impacts on the adjacent ecological community. Due to the constraints on the design, both underbores were completed across active waterbodies using walkover tracking systems. Despite the depth and tight alignment consisting of back to back bends, UEA delivered the pilot bore via conventional walk over techniques – making it the longest HDD installed using this technique at the time. While the pilot bore was being completed, an above ground drill mud return line was installed to efficiently transport and process the drill mud for reuse during the reaming stages of the project. Additionally, the overall length of the pipe string needed to be managed in preparation for installation into the borehole. A vacuum lift system was used to manage the 55 tonnes of PE pipe during the welding process.



Grafton HDD Underbore 1



Grafton HDD Underbore 2

COMPLETION

The New Grafton Correctional Centre Water Supply Pipeline HDDs were completed on time, within budget and without any safety incidents. The use of HDD technologies through the environmentally sensitive areas and narrow easements on the project allowed the pipeline construction to continue without delay to the project or disruption to the community.