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CASE STUDY

Interceptor Replacement / Waste Management

Service Yard

Client

CONFIDENTIAL

Project Background

Envirotreat was invited to tender for works involving the replacement of a surface water interceptor tank in an active service yard.

The works were tendered and procured through the client's preferred environmental consultant.

Envirotreat was successful in the tender submission both in terms of **project quality** and **cost** and appointed as Principal Contractor for the works.

The scope of works involved:

- Exposure of the existing surface water interceptor tank
- Provision of a "pump around" solution protem
- Excavation and removal of the existing interceptor tank and associated contaminated soils (including a WM3 assessment)
- Excavation and assessment of further soils (including a WM3 assessment) to accommodate the replacement interceptor tank under temporary works
- Installation of the replacement tank
- Making good the concrete slab in the service yard

Removal Works

The existing interceptor tank comprised of three brick chambers. It was evident that the mortar between the bricks at the outlet end had eroded causing the interceptor to fail.

The faulty interceptor tank is shown in Figure 1 below.

Figure 1 – Faulty Interceptor Tank

The soils located in close proximity to the faulty interceptor were considered to be contaminated – these soils were excavated and stockpiled pending testing and offsite disposal.

Replacement Works

The new interceptor (SPEL Puraceptor P125 2C/SC) was 2.7m diameter and 8.58m in length. This replacement tank was significantly larger than the original faulty tank which required the excavations to be extended, both vertically and laterally.

The tank specification was based on design criteria supplied by the client's consultants. The SPEL Puraceptor is designed for use in stringent applications where the maximum hydrocarbon concentration in the outlet must not exceed 5mg/l. The Puraceptor is fitted with a special automatic closure device which shuts the separator down when the oil contained within the tank exceeds the maximum oil threshold. The Puraceptor incorporates a low maintenance coalescer unit which 'polishes' the final effluent after 90% of the hydrocarbons and silt have been separated out. The system also benefits from an automatic oil alarm / monitoring system. It is designed for long life usage.

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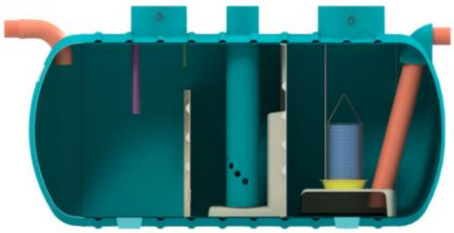
The internal structure of the Puraceptor is shown in Figure 2 below.

Figure 2 – SPEL P125 2C/SC Interceptor Tank



Temporary works were required to install the new tank. These works were necessary as there was an identified requirement to excavate to a depth of at least 3.2mbgl – this was below expected groundwater levels therefore the tank could not be installed without the works. Envirotreat commissioned MGF to design the temporary works with Envirotreat taking responsibility for the day-to-day assessment. The temporary works are shown in Figure 3 below and included the installation of sheet piling and preparation of the base to receive the tank.

Figure 3 – Temporary Works

Excavated soils were excavated and assessed to be non-hazardous by laboratory testing and WM3 assessment.

Once the temporary works had been completed the replacement interceptor was brought to site.

The tank was then craned into position by Bryn Thomas Cranes (under a contract hire agreement). This is shown in Figure 4 below.

Figure 4 – Craning in Interceptor Tank

Once installed the tank surrounds were backfilled and the tank was then commissioned in accordance with the manufacturer's requirements. The installed interceptor tank is shown in Figure 5 below.

Figure 5 - Installed Interceptor Tank

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Boreholes were installed to monitor groundwater contamination levels post remediation. Satisfactory results were obtained and the groundwater is showing considerable and ongoing improvement following installation of the replacement interceptor tank.

Once fully tested the service yard was reinstated as shown in Figure 6 below.

Figure 6 – Service Yard Reinstatement

The installed automatic oil alarm / monitoring system has confirmed that the system is operating in accordance with manufacturers specification. The system is shown in Figure 7 below.

Figure 7 – Automatic Oil Alarm / Monitoring System

Offsite disposal of excavated concrete and soils was effectively managed by Envirotreat. The waste materials were disposed of following comprehensive testing / WM3 assessment and comprised the following:

- 35 tonnes of concrete taken to a local recycling facility (17 01 01)
- 190 tonnes of borderline hazardous soils taken to a local soil recycling facility for treatment and reuse (17 05 03)
- 140 tonnes of non-hazardous soils taken to a local soil recycling facility for reuse (17 05 04)

Conclusions

Envirotreat successfully completed the removal of the faulty interceptor tank and the installation of the replacement interceptor. This involved temporary works due to the need to excavate and install the tank below groundwater levels.

Envirotreat cost-effectively managed the off-site disposal of excavated concrete and soils, ensuring that all materials were disposed of fully in accordance with legislative requirements.