Environmental Management Services

Interceptor Service & Repair Case Study

Summary

We were commissioned to undertake a service and integrity inspection on an interceptor with a capacity of 250,000 litres and filtering all storm water from an 85 acre site.

Due to the lack of a suitable maintenance regime the interceptor had fallen into disrepair and during the integrity inspection several failures were found including structural failures and issues with the coalescers.

We undertook GRP repairs to the interceptor walls and refurbished and replaced the coalescers leaving the interceptor in full working order.

GPT Environmental Management Services

Initial Inspection

We were commissioned to undertake a service and integrity inspection on an interceptor with a capacity of 250,000 litres and filtering all storm water from an 85 acre site.

British standard BS EN 858-2:2003 recommends maintenance of interceptors by qualified personnel at least every 6 months and a general inspection to be conducted at maximum intervals of 5 years including inspecting the tightness and structural condition of the system. However the interceptor had not been maintained in over 15 years.

During our initial inspection we discovered that the lack of any maintenance since its installation had resulted in a build-up of 50 cm (approximately 8 tonnes) of silt and 20cm (approximately 5000 litres) of oil.

Our discharge analysis showed that the TPH levels leaving the interceptor were substantially above the 5ppm threshold, discharging directly into an adjacent river.

During the audit we used a forklift to carefully remove the coalescers and inspected them on the surface. We found that of the 5 coalescers 1 had become unattached and was sunk in the chamber; the remaining 4 were heavily saturated in oil and all 5 needed removal and refurbishing.

We recommended a full service and integrity inspection in order to remove the oil and silt, inspect the structural integrity of the interceptor and replace the faulty coalescers.

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Interceptor Service

Once the tanker had emptied as much as possible from the surface a confined space entry team entered the interceptor with full breathing apparatus where they jet-washed the walls and checked the chambers structural integrity.

The internal structure of the interceptor was found to have multiple breaks. As well as the structural issues the interceptor's Oregon hose was found to be faulty and the oil skimmer was not functioning.

The faulty coalescers were jet-washed to remove as much of the contaminants in the filter media as possible and the resulting oil water mix was tankered away. The coalescers, Oregon hose and oil skimmer were safely removed.

The first stage was to skim the 5000 litres of oil from the surface by pumping it into IBC's, allowing it to be recycled, reducing disposal costs. 90% of the clean water (200,000 litres) was then pumped to the foul system.

The remaining contents (the silt, a small amount of water and trace amounts of oil) were removed by a vacuum tanker and sent for disposal as hazardous waste.

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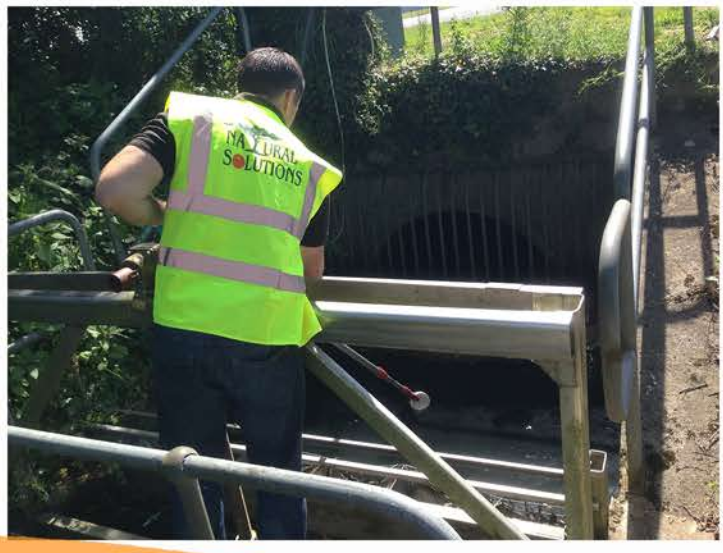
Interceptor Repair

The coalescers and oil skimmer were refurbished and replacement hose was ordered. We also arranged for an employee from the interceptor manufacturer to form part of the GRP repair team to ensure the repairs were up to manufacturer's standards.

Once everything was in place to facilitate effective repair of the interceptor our confined space and breathing apparatus team re-entered the interceptor. They performed GRP repairs to the internal structure of the interceptor and installed the refurbished coalescers, hose and skimmer.



The interceptor was then recharged leaving it in full working order. We sampled the interceptor's discharge periodically over the next month to verify the interceptor was working with full functionality and discharging only clean water.