

## Oil and Mining Case Studies

### **Harouge - Harouge Oil Company, Amal Oil Production Facility 400 PE**

Harouge Oil Operations required a sewage treatment system at their 400 PE Amal site located in the Eastern Sirte basin, 50km north of the Aguila Oasis, Libya.



A modular HiPAF was the chosen solution; however, due to the remote location of this site, it would not be possible to de-sludge the sewage treatment plant on a six-weekly basis which most plants of this size require. To accommodate this, a robust aerobic digestion system (RADS) was installed to work in conjunction with the HiPAF. The HiPAF consisted of a primary settlement and sludge storage chamber, aerated biozone, humus tank and sand filter. The RADS was installed alongside the primary settlement and sludge storage chamber, so sludges could be airlifted from this into the RADS for further digestion. By including this process which reduces the volume of sludge by aerobic digestion, de-sludge intervals can be extended by a factor of four times.

### **London Mining – Iron Ore Mine 300 PE**

A significant find at an existing iron ore London Mining site at Marampa, Sierra Leone, led to an increase in production. The site had been serviced by its previous plant, but when staff numbers increased a larger plant was required to cope with the higher volume of flows and loads.

The mine is in a remote location and as such, demanded a plant that was easily transportable from the Freetown Docks upcountry to the Marampa location. WPL's HiPAF provided the ideal solution as the tanks, which can be made from GRP for below ground installations, are also available in readily transportable steel containerised plants for above ground applications. Not only are the above ground tanks well-suited to being transported, they are also rapidly put into service as there's no need for excavation or backfill.

### **Akakus - Production Facility 500 PE**

Repsol's production facility, based in the Sahara region, needed a system that would not only treat all the wastewater from the accommodation, engineering and office blocks, but would also treat this to a high enough standard to be reused for irrigation.

Having been treated by the HiPAF system, the final effluent meets World Health Organisation (WHO) irrigation consent standards and levels of faecal coliform not exceeding 100mpn per 100ml. Booster pumps are then used to pass this water through the sprinkler irrigation



system to reuse it in order maintain the green areas within the facility and to minimize the impact of sand storms regularly encountered in these areas.

In 2008/9 the amount of staff doubled in size and in order to meet these increased flows and loads a second stream was added to the existing plant.

### **Mobile Drilling Rig, for Oil Company in Libya 30-60 PE**

An oil company in Libya carries out a number of geological surveys each year in the Sahara region. Each of these mobile drilling camps comprises teams of typically 30-60 people who are at each location for two to three months.

A WPL HiPAF mounted on a specially constructed steel frame was chosen by the oil company, as it was easy to transport from one location to the next prospective site, could be swiftly put into operation upon arrival and had very low maintenance requirements.

Wastewater from the site's showers, toilets and kitchen blocks flows to a lifting station. From here, the sewage is driven via pump lifting stations into the plant for treatment. The treated effluent can then be safely sent into the ground for infiltration.

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