Munmorah Power Station Water Treatment Plant.

Location
Munmorah, NSW

Client
Delta Electricity

Duration
26 months

Project overview

Liberty Industrial is carrying out the removal of Munmorah Power Station, a 1400 megawatt coal-fired power station including four 350 megawatt steam-driven turbo-alternators, two 155 metre high chimney stacks, boiler house, coal handling plant and conveyors and 2.3 km of ash lines. The project is the largest power station demolition project to be carried out in Australia to date.

Munmorah Power Station operated for approximately 50 years and during that time some contamination of the site occurred. Two known contaminated areas onsite are managed under the MMPS Environmental Protection Licence (EPL759). Liberty Industrial liaises closely with the client to ensure all aspects of the EPL licence are met, including access to monitoring wells for quarterly monitoring.

The management of the light non-aqueous phase liquid (LNAPL) contamination is of the highest priority for both the client and EPA. During the period between closure of the power station and awarding of the tender the LNAPL plume had entered the cable tunnel network. The LNAPL plume consisted mainly of a diesel contamination (hydrocarbon) from storage tanks located on the Power Station. This resulted in approximately 830,000L of contaminated water to be treated and removed from site.

Liberty Industrial was awarded the de-watering and water treatment variation by the client Generator Property Management (GPM Co). An innovative solution of installing poly lines to existing infrastructure, utilisation of existing pits for storage and combination of Oil Water Separator (OWS) and the Oleology Water Treatment System (WTS) to remove the LNAPL contamination from the water. For the demolition project to be kept on track, tight deadlines had to be met, to ensure that the programmed blast dates for Boilers 1 and 2 went ahead.

Excellent results were obtained from the combination of the OWS and WTS. All treated water was stored in the dust pit and then pumped to the Ash Water Dam via the installed poly pipe system. The combination of the OWS and the WTS resulted in Total Recoverable Hydrocarbon levels well below the level of 5ppm required by the client. Levels of less than 1ppm were produced on most occasions. Water testing regime consisted of both laboratory results and use of hydrocarbon test strips.

Seven metals of significance (Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Zinc) were also found to be lowered as a result of the water treatment. The reduction in the concentration of these metals in the treated water is most likely the result of lowering of any suspended particles in the water by the WTS. This project was delivered on time and within budget by Liberty Industrial, and highlights Liberty’s ability to create innovative water treatment systems, compliance to EPL licencing requirements.