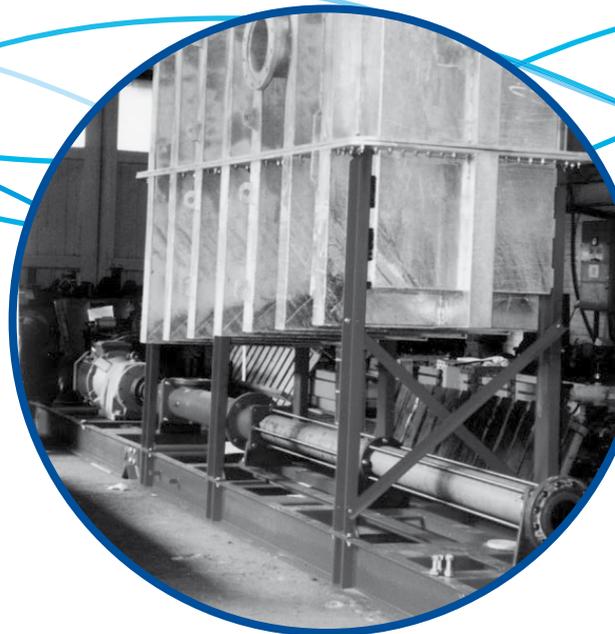


## Make Mine A Mono® NOV



Mono® NOV has designed and constructed a complete mine de-watering system to cope with highly abrasive liquid at a uranium mine in Niger, West Africa.

Engineering company Krebs invited Mono to tender for the job at the Cominak owned Akouta mine in an effort to cut heavy maintenance costs caused by excessive wear to the installed centrifugal pumps. Additional expense was generated during operation of the centrifugal pump system, which pumped water in stages, each demanding a separate pumping station and holding tanks.

The new £1/4 million system is built around three cast iron, high pressure progressing cavity pumps. They are capable of transferring water from three 5m<sup>3</sup> capacity holding tanks at a rate of 40m<sup>3</sup>/h, at 40 bar pressure, 240m to the surface and a further 3km to a settling lagoon.

Mono's scope of supply not only included the pumps but also three sets of holding tanks, all inter-connecting pipework and valve systems assembled onto the appropriate baseplate. Each element of the de-watering system was assembled prior to despatch and then dismantled and packed for shipment to Niger. The system will be re-assembled down the mine once all the individual items have been received.

The system is designed to operate automatically and continuously if required and a number of pump protection devices have been built in to minimise repairs and downtime. These include remote over pressure relief valves, backed by high pressure switches, and low pressure

switches to prevent damage should the system run dry.

The construction of the pump successfully combats the effects of the abrasive mine water, which carries dust and stone particles in suspension up to 200 microns in size, and has an overall solids content of 0.5%.

The pumps at Akouta, feature Mono's unique Flexishaft, which provides a single component link between the rotary motion of the drive shaft and the eccentric motion of the helical rotor. The reduced number of moving parts in the drive train eliminates wear and makes lubrication unnecessary.

The simplicity of the Flexishaft drive, and consequently the overall pump design, means that the pump is easily dismantled and assembled when routine maintenance is required. To further reduce wear problems, the shaft and rotor have both been constructed in stainless steel, protected by ceramic coating, while the Flexishaft is made from a stainless steel material, covered with an abrasion and corrosion resistant coating.

Pump:	Industrial progressing cavity pumps
Product:	Water
Capacity:	Up to 40m <sup>3</sup> /h per pump
Pressure:	40 bar
Pump speed:	406 rpm
Drive:	Fixed speed gearbox
Prime mover:	75kw motor



Mono Pumps Ltd  
Martin Street, Audenshaw  
Manchester, M34 5JA England  
T. +44 (0)161 339 9000  
E. [info@mono-pumps.com](mailto:info@mono-pumps.com)  
[www.mono-pumps.com](http://www.mono-pumps.com)

**Mono® NOV**

One Company, Unlimited Solutions