

# FluidControl Waste Management Reduces Environmental Impact in West Africa

### Challenges

- Provide a system that fits within limited available space
- Follow environmental regulation particular to drilling environment by achieving zero liquid discharge
- Reduce suspended solids in recycled fluids to below 20 mg/L (20 ppm) and Biochemical Oxygen Demand (BOD) to below 30 mg/L (30 ppm)

### Well Information

- IOC
- Location: Fernan Vaz Lagoon, Gabon, West Africa

### Solution & Results

- Proposed waste management system fit for mobile swamp barges
- Decreased suspended solids and BOD, resulting in improved water quality suitable for discharge to the lagoon
- Reduced environmental and commercial impact by transporting only solids to shore



Restricted by spatial constraints in a sensitive drilling environment, NOV provided an operator a waste management solution that exceeded environmental regulation in West Africa.

Waste management for a well in the Fernan Vaz lagoon required a unique approach. The operator needed a solution capable of handling a high volume of cuttings generated by drilling large hole sections. Additionally, the emphasis on environmental regulation of the site by Gabon made zero discharge a necessity, and space was limited on the swamp barge configuration. NOV FluidControl proposed a waste management system fit for a swamp barge. Processing equipment would be spread over different barges, one of which would be designated primarily for NOV FluidControl equipment. Two barges were mobilized to allow for a continuous flow of treated cuttings. The goal was to reduce the volume of liquid waste generated. Recycle the water for fresh mud mixing and rig cleaning. The stabilized solids were transported to shore and used for road construction or site reclamation. All of this was done in an environmentally safe and cost effective manner.

The setup included two drying shakers placed between the cuttings chute and cuttings holding tanks to improve dryness before volume reduction. A screw conveyor directed the cuttings to a half-moon tank for stabilization. Stabilized material was transferred to shore for disposal via a mobile barge fitted with a front loader. Mud was collected in half-moon tanks for dewatering. A flocculant box and a BRANDT™ HS-3400 centrifuge were used as a part of the dewatering process. The sludge was collected with a screw conveyor and sent for stabilization. After the oily water tank separator process, clarified water was stored inside tanks. After dewatering, water was treated in a tank for oxygenation and then went through filtration to meet local regulatory requirements. Reducing suspended solids decreased BOD accordingly, making the water fit for reuse and recycling. Zero incidents were recorded during the installation, operation and maintenance of the equipment. To learn more about how NOV can meet your waste management needs, contact a NOV FluidControl representative.

#### Equipment included:

- Seven half-moon tanks (four for liquid recovery, two for stabilization process, one for underflow processing)
- Four tanks for water treatment
- Two drying shakers
- Two filter pods
- Two centrifuges
- Dewatering unit
- Water oil tank separator
- Three screw conveyers

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