FluidControl Case Study

BRANDT™ FREEFLOW™ Positive Pressure System Successfully Delivers on Zero-Discharge Legislation

Challenges

- Ensure each client rig (2) is fully compliant with zero-discharge and total containment regulation, including treatment of waste once onshore before the December 2015 deadline.
- Significantly reduce manual handling and transfer of cuttings safely and efficiently.
- Provide a total containment solution that fits each of the two unique space constrained rig configurations and efficiently transfer waste to the platform supply vessels.
- Ensure a suitable and proven backup system is in place in case of any unplanned operational scenarios.

Well Information

- Location: West Africa
- Application: Offshore
- Major International Oil Company

Solution & Results

- Custom configuration of BRANDT FREEFLOW Positive Pressure System to transfer cuttings from the rig's solids control equipment directly to the platform supply vessels, eliminating the need for crane lifts and greatly increasing safety of operations.
- Successfully simulated emergency scenario of redirecting transfer of cuttings from Air Conveyors to boat, to Air Conveyors to Slider Storage Tanks.
- Effectively treated the drilling waste onshore using Hot Oil Thermal Desorption technology at a central facility ensuring that our client was FULLY compliant with the countries Zero-Discharge legislation.

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The NOV FluidControl cuttings transfer and containment solution enabled safe, effective and efficient management of our clients drilling waste as they transitioned to a Zero-Discharge drilling application offshore.

On this particular project the operator was required for the first time to have total containment, transfer and treatment of cuttings from the rig and required that the installation of this system be done while drilling on location. This situation provided several logistical challenges as these complex installations are typically done in shipyards prior to load out. Through constant project management and communication we were able to work alongside the operator and successfully execute the installations.

The BRANDT FREEFLOW Positive Pressure System is capable of transferring and storing drilled cuttings from below the shaker area to almost anywhere on the rig. In this scenario, the primary transfer and storage option was to transfer cuttings from the FREEFLOW air conveyor directly to skips located on a platform supply vessel. This allowed the cuttings to be offloaded in a single process. In case of an unscheduled maintenance or an emergency situation with the Platform Supply Vessel (PSV), the transfer of cuttings could be redirected to slider storage vessels on location within 15 seconds, preventing any NPT. Cuttings in the slider storage vessel can be directly transferred to the PSV once normal conditions resume.

Our custom system for the two client rigs and the two PSV's included:

- Screw Conveyers
- (2) Air conveyers / per rig
- (7) Slider tanks (3 on one rig and 4 on the other)
- (2) 900 CFM Compressors / per rig
- Port and starboard side Vee-Table 'hose holsters'
- Two sets of steel tracks per vessel
- Portable skip filling trolley fitted to each track.
- (89) 5MT skips / per PSV

Screw conveyers were installed to carry cuttings from the shakers to the air conveyers. The air conveyers were connected via 5" pipe to hose stations installed on the edge of the rig deck. The 5" bulk transfer hose was used to connect the rig side hose station to the port or starboard side Vee-Table 'hose holsters' on the vessels. A series of quick release pipework was installed on the PSV to route the cuttings from the 5" transfer line to the skip filling trolleys providing the capability to pneumatically transfer the cuttings directly to skips onboard the PSV. This system successfully endured drilling operations with average ROP of 120 ft/hr in a 17 ½" hole section.

Throughout the process, cuttings were never exposed after collection from shakers until they reached the onshore centralized waste treatment facility. The treatment facility is located approximately 200 M from dockside where (5) BRANDT Hot Oil Thermal Desorption Units (HTDU) process cuttings to meet the final discharge criteria (<1% oil on cuttings). Within the first two months of operations we have transferred over 3000MT of cuttings to shore from FREEFLOW operations. The HTDU unit typically recovers 1 bbl of oil/MT treated, resulting in 3000 bbl of oil returned to client.

Our system reduced the operators need for frequent lifts of a standard skip and ship operation, which increased the overall safety of operations. Additionally, it does not require the space necessary to accommodate large quantities of skips on the rig side. No downtime, spills or safety related incidents were encountered during the operation.

Contact an NOV FluidControl representative to learn more about BRANDT FREEFLOW Positive Pressure System and other waste transfer and containment needs.