WSS FluidControl Cleans Up Cuttings and Recovers Diesel from Cuttings in Bolivia

Challenges

- Operating thermal treatment of cuttings under extreme weather conditions and in remote locations of the rainforest and mountain areas.
- The fully operational site to be relocated on the average of every four months during the contract period.

Well Information

- Location: Remote location in Bolivia

Solution & Results

- Mobilization of a fully skid mounted Hot Oil Thermal Unit to be transported by truck between drilling locations.
- 24/7 operation to keep up with time line.
- Equipment operating efficiency above 90% on average.
- Reuse of recovered oil in mud system and for the process burner reducing the need of hauling diesel to the site.
- Final water treatment for rehydrating the solids after treatment.

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In the third quarter of 2009, National Oilwell Varco was invited to bid on a package of thermal treatment of stored oil-based mud (OBM) cuttings and future OBM cuttings from remote locations for a large IOC in Bolivia. The former contractor had failed his obligations. The equipment was to be sent to various drilling locations and operated in the “footpath” of the drilling rig during the contract period. The drilled OBM cuttings were collected in the in-ground pits and covered against heavy rainfalls in the area. The treatment sites were designed and operated by NOV.

The equipment and services offered were based on the expertise of NOV as the largest Original Equipment Manufacturer (OEM) of thermal treatment systems with more than 20 years of manufacturing and operational experience.

The package offered included:

- Cuttings management and handling at the treatment sites.
- Operation of skid mounted Thermal Desorption Unit including collection and storage of recovered oil and water.
- Recovery of valuable base oil for reuse in the OBM mud.
- NOV Portable Power Generators to power all the equipment.
- Associated tankage and pipework, excavator and ancillary equipment to complete the above processes.
- Mobilization and demobilization of the complete treatment site approximately every 4 months.

The Results

The NOV Soil Recovery A/S model 500 Hot Oil Thermal Desorption Unit (HTDU) was installed initially in the third quarter of 2010, and a few months later, the unit moved to a new location.

On average, the value of the recovered oil per day during operation was about $3,200. The energy provided to the whole operation (including generators) was less than 40/liter diesel per MT cuttings treated. The mobile HTDU plant has a capacity of up to 2.5 MT/h input, with the average being 1.5 to 2.0

MT/h depending primarily on the water content of the cuttings. The HTDU can treat OBM and SBM cuttings.

The thermal treatment is a continuous process, and an instantaneous loading from the pit and the even in-feed by excavator is required to operate the unit. The plant itself is fully automatic and comprehensive production data is filed and reported. The recovered base oil is returned to the client and the recovered water is sprayed over the cleaned solids which are left on the site and buried in the original cuttings pits with less than .50% ooc or tph.

The complete package offered is built into standard container sized loads to facilitate mobilization, site installation and operation.