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Monitoring fluid level of drilling mud pits and tanks

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Challenge

Martin-Decker Totco, a division of National Oilwell Varco, located in Cedar Park, Texas (USA), produces control and information systems for the high quality oil and gas drilling equipment packages manufactured by its parent company, Varco.

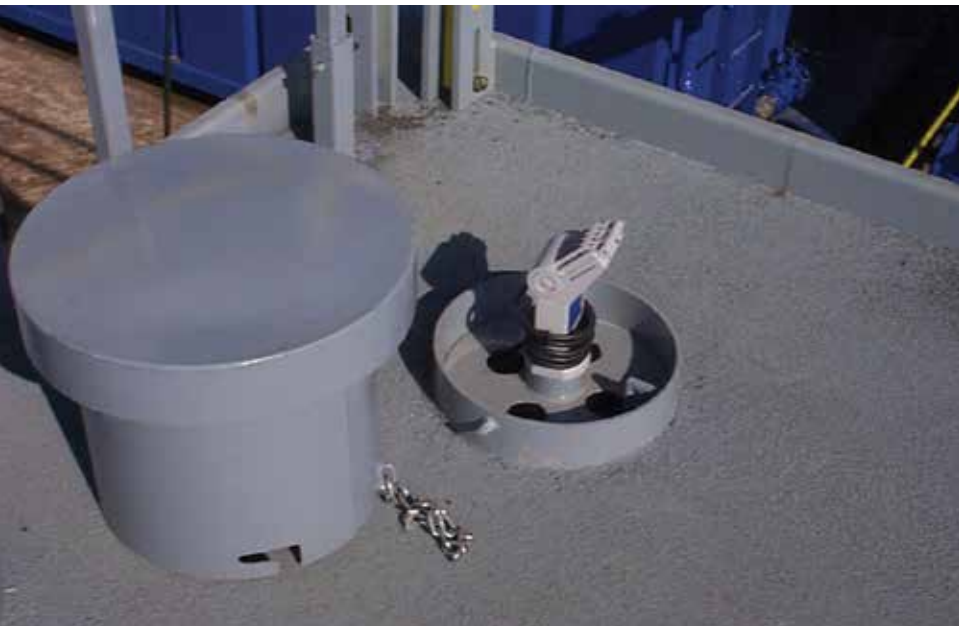
M/D Totco has tried various technologies, including mechanical floats, to monitor the fluid levels in drilling rig mud pits or tanks. Drilling mud is an essential component in drilling, and precise monitoring of the total mud volume in a rig's drilling fluid circulating system is essential for safe, efficient drilling.

Drilling fluid or "mud" is pumped down through the drill pipe where it blows out through nozzles in the drill bit. The mud then flows back up the hole to the surface, clearing the hole

by carrying the formation cuttings along with it. The mud lubricates the drill pipe and cools the drill bit. The weight of the mud column prevents formation fluids from entering the wellbore, preventing a "blowout." Through hydrostatic pressure, it also helps prevent caving. An increase in fluid levels may indicate gas, oil, or other fluids have entered the wellbore. If drilling fluid levels decrease, circulation is being lost to the formation. Left unchecked, either situation could result in a blowout.

Mud tanks are generally square or rectangular inter-connected steel tanks used on offshore oil rigs to contain the large volumes of drilling mud flowing through the drilling fluid circulating system. On land rigs, these tanks are called mud pits, a throw back to the days when earthen pits were dug to contain drilling mud.

Answers for industry.



The ultrasonic Probe provides reliable, effective monitoring of fluid levels in drilling rig mud pits or tanks.

Solution

"It is always difficult to find a sensor that will work properly in conditions involving piping obstructions and agitators, but we found a reliable and cost-effective solution with the Milltronics® Probe," said Fritz Schooley, Marketing Communications Manager with M/D Totco.

The Probe uses non-contacting ultrasonic technology so it does not become fouled with material, and parts do not get clogged and are not subject to wear and tear. With no moving parts, it is virtually maintenance free.

The Probe has advanced echo processing that ignores moving agitator blades and locks onto the targeted material level instead of obstructions. With its 2-inch NPT connection, it is simple to mount. It can be installed and calibrated regardless of material levels within a vessel. One unit works with all vessel sizes. Its range goes from less than one foot to more than 16 feet. There is an Intrinsically Safe version available for FM Class I, Division 1 applications.

Benefits

M/D Totco now has a reliable level measurement solution for monitoring drilling mud. They no longer rely on electro-mechanical devices that are subject to wear and tear, and this greatly reduces maintenance or replacement costs associated with those products.

Most important, they can provide their customers with precise monitoring of a critical drilling variable, enhancing both safety and drilling efficiency.

Because the Probe works with any size of vessel, it is easy to order and reduces stocking requirements.

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