

# Tank Dewatering Density Measurement Avoids Product Giveaway and Water Treatment Costs

## RESULTS

- Increased safety for personnel
- Reduce operational costs
- Avoid process upsets
- Avoid penalties from environmental agencies

## APPLICATION

Storage tanks hold hydrocarbon feedstocks, intermediates and finished products. Over time, water separates and collects in the tank. Water is drained from storage tanks to reduce corrosion problems and to avoid a water hit to the process unit, which can cause a significant unit upset. Manual or other methods of controlling the water draw-off can result in free Hydrocarbon product in the discharge. Free hydrocarbon product increases the cost of wastewater treatment. Environmental regulations may impose penalties for designing water draw conveyance and treatment systems that allow free product in the water draw-off discharge, exceeding \$125,000.

## CUSTOMER

Refinery in the Northwestern United States

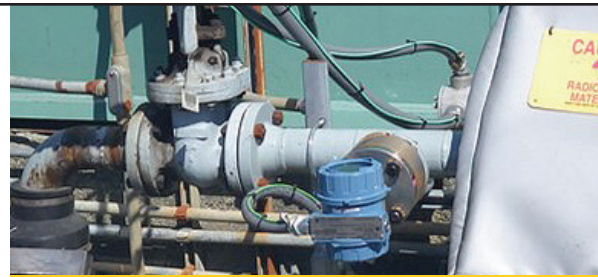
## CHALLENGE

Nuclear density meters have been used to measure and control the water draw from the storage tanks. Nuclear source is hazardous and heavily regulated. The costs associated with owning and maintaining a nuclear source include: licensing, documentation, specialized training, and leak testing.

The customer wanted to reduce their dependence on nuclear instrumentation while increasing safety for their personnel.

## SOLUTION

The customer installed a Micro Motion® Fork Density Meter (FDM) on a crude oil storage tank to provide a safe and accurate on-line density measurement of the water to detect hydrocarbon contaminants. The discrete output from the FDM allowed seamless transition to the on/off motor control valve with minimal wiring modifications. Wireless THUM was later installed to monitor and track the concentration of



*Avoid upset conditions and penalties.*

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## REFINING

water-to-oil at the control board. When density levels drop to pre-set parameters, the control system closes a valve, minimizing hydrocarbon carryover to the water treatment system. As a result of installing the Fork Density Meter (FDM), the customer was able to avoid upset conditions and penalties from environmental agencies (potential fine of \$125,000) and annual operating costs per nuclear device of \$15,000 per year per device due to training, documentation, licensing, and leak testing.



*Micro Motion Fork Density Meter (FDM) offers rugged, accurate density and concentration measurement with wireless capabilities when installed with a Wireless THUM.*

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