

# Reliable Detection of Sediment Build-up in a Separator

## RESULTS

- Pump corrosion and abrasion avoided
- Complete material certification achieved for on-site inspections
- Easy installation using existing flanges



*The Rosemount 2140 provided the solution to the problems of pipeline corrosion and pump abrasion caused by sediment build-up.*

## APPLICATION

Monitoring of sand build-up in a four phase separator tank

## CUSTOMER

China Oil HBP Science & Technology Co. Ltd, Sichuan, China

## CHALLENGE

As a process of shale gas extraction, the customer uses a four phase separator for de-sanding the mixture of oil, gas, and water. The level of sand in the separator needs careful monitoring to ensure it does not cause pump abrasion due to sand being drawn into the pumps. The contents of the separator include both solids and liquids, which are layered in a completely different physical state. The customer required a device that would detect the level of sand build-up in the separator and provide an alarm when the sand reached a certain level. The media also contains hydrogen sulphide, so a corrosion resistant measurement technology was needed to fulfill the requirements of NACE® MR0175. A DPDT output was also required to control the pumps.

## SOLUTION

A Rosemount™ 2140 Vibrating Fork Level Detector was installed in the separator. The diagnostics in the device include a “wet sand” setting which enables it to detect sediment build-up in the tank at a critical point before risk of it being drawn into the pumps.

The customer used a two-in. flanged process connection on the vessel so there was no need to change the original flange connection, which simplified the installation.

The Rosemount 2140 has a 4-20mA output, which enabled the customer to install a secondary device to achieve the required DPDT



Rosemount 2140 Wired HART® Vibrating Fork Level Detector

## OIL & GAS

output, as well as utilizing the HART output.

The Rosemount 2140 fulfills the requirements of NACE MR1075, which provides robust reliable measurement of media in the corrosive H<sub>2</sub>S-containing environment experienced by the customer.

Emerson provided material reports, pressure test, NACE MR1075 certificate for end-user on-site inspection.

## RESOURCES

### Rosemount 2140 Level Detector

[Emerson.com/Rosemount/2140](https://www.emerson.com/Rosemount/2140)

### Emerson Automation Solutions Industries

[Emerson.com/Industries/Oil&Gas](https://www.emerson.com/Industries/Oil&Gas)

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