

# Oil Producer Decreases Delivery Costs Through Improved Process Control using Probe End Projection

## RESULTS

- Reduced delivery costs
- Reduced operations and maintenance costs
- Decreased safety risks



## APPLICATION

Perlite storage tank level measurement:

**Application Characteristic:** Low dielectric (1.35) and heavy coating.

## CUSTOMER

Onshore oil producer in the United States

## CHALLENGE

This customer experienced difficulties measuring perlite levels in their water treatment facility. Perlite is the primary purifier in this company's water filtration system, so consistent measurement in the storage tank is critical.

A build up of perlite on level measurement probes caused the previous technology to inaccurately read the level measurement in their 24-ft. (7.3 m) perlite storage tank. Perlite easily coated the previously installed capacitance measurement probes, resulting in unreliable measurements over time.

Due to the unreliable measurement, the technicians resorted to manual measurements to provide indication of whether the water filtration pumps were working, which ensured the slurry mix process was functioning properly. This manual measurement required technicians to obtain a safe work permit, strap on a safety harness, and climb a slippery 40-ft. (12.2 m) ladder once a week. This process was time consuming and increased safety risks. The company's perlite supplier is 200 miles away (322 km), so the unreliable measurement also incurred high procurement costs due to uncoordinated deliveries and partial loads.

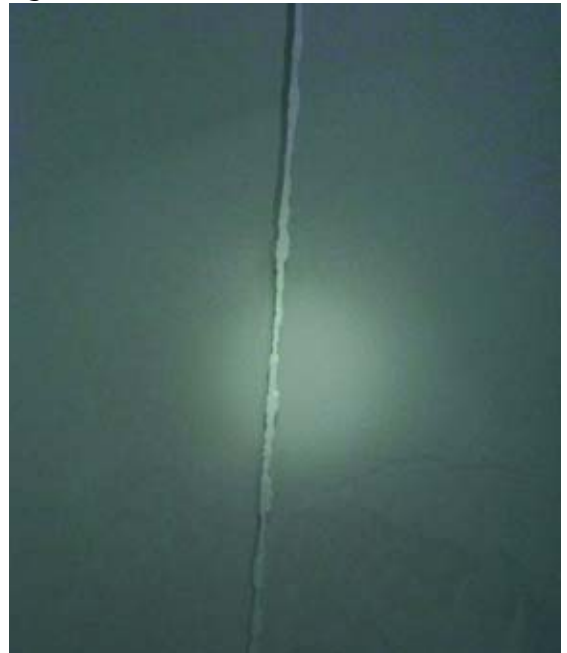
## SOLUTION

The Rosemount 5300 High Performance Guided Wave Radar was installed on the customer's 24-ft. (7.3 m) perlite storage tank. The Rosemount 5303 with a flexible single lead probe was ideal for this application because it functions in very low dielectric solids (Perlite: 1.35). The probe end projection functionality allowed for repeatable measurements even though the surface pulse was too weak to be detected.

*“The Radar probe allows us to observe the draw of perlite from the tank, which indicates if the slurry mix process is functioning properly.”*

Automation Field Specialist

Figure 1



*The Rosemount 5303 single flexible probe coated with perlite*

**ROSEMOUNT**<sup>®</sup>

For more information:  
[www.rosemount.com](http://www.rosemount.com)

  
**EMERSON**<sup>™</sup>  
Process Management

Figure 2 is an echo curve of the propagation signal inside the perlite storage tank. The figure shows that the surface level can be measured despite having no surface pulse.

The implementation of the Rosemount 5303 with probe end projection provided a reliable measurement, resulting in more coordinated deliveries, and therefore reduced order frequency and decreased delivery costs. Additionally, this customer improved process control by monitoring its slurry mix process, thereby eliminating manual measurements and the associated operating costs and safety risks.

**RESOURCES**

**Rosemount 5300**

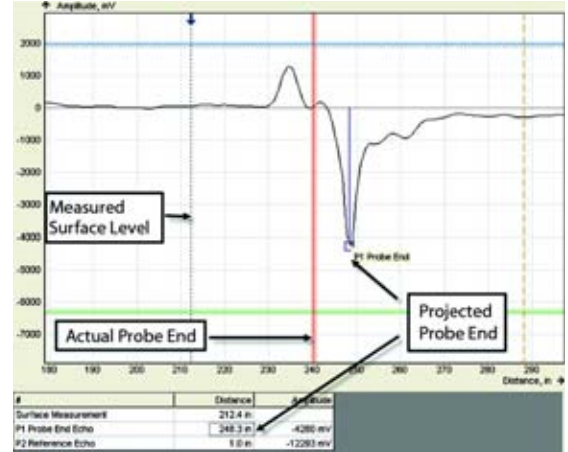
<http://www.emersonprocess.com/rosemount/products/level/m5300.html>

**Emerson Technical Note - Guided Wave Radar in Solid Level Applications**

<http://www.emersonprocess.com/rosemount/document/notes/00840-2300-4811.pdf>

*The Probe End Projection functionality allowed for repeatable measurements even though the surface pulse was too weak to be detected.*

Figure 2



Rosemount RadarMaster plot of perlite storage tank with probe end projection function activated

The Emerson logo is a trade mark and service mark of Emerson Electric Co. Rosemount and the Rosemount logotype are registered trademarks of Rosemount Inc. All other marks are the property of their respective owners.

Standard Terms and Conditions of Sale can be found at [www.rosemount.com/terms\\_of\\_sale](http://www.rosemount.com/terms_of_sale)

**Emerson Process Management**  
 Rosemount Division  
 8200 Market Boulevard  
 Chanhassen, MN 55317 USA  
 T (U.S.) 1-800-999-9307  
 T (International) (952) 906-8888  
 F (952) 949-7001  
[www.rosemount.com](http://www.rosemount.com)

**Emerson Process Management**  
 Blegistrasse 23  
 P.O. Box 1046  
 CH 6341 Baar  
 Switzerland  
 Tel +41 (0) 41 768 6111  
 Fax +41 (0) 41 768 6300

**Emerson FZE**  
 P.O. Box 17033  
 Jebel Ali Free Zone  
 Dubai UAE  
 Tel +971 4 811 8100  
 Fax +971 4 886 5465

**Emerson Process Management**  
 Emerson Process Management Asia Pacific  
 Private Limited  
 1 Pandan Crescent  
 Singapore 128461  
 T (65) 6777 8211  
 F (65) 6777 0947  
[Enquiries@AP.EmersonProcess.com](mailto:Enquiries@AP.EmersonProcess.com)



For more information:  
[www.rosemount.com](http://www.rosemount.com)

