# CASE STUDY

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# Case Study - Ferrochrome Smelter South Africa

## Measuring task

Determination of slurry density in the thickener underflow at the Ferrochrome Smelter plant in South Africa:

| | |
|---|---|
| Pipe diameter: | 75 mm (three inch) |
| Pipe material: | HDPE 90 SDR9 68.6mm |
| Solids: | 60 – 80 %wt |
| Density: | 1.400 – 1.600 g/l |
| Temperature: | 15°C – 30°C |

## Instrument used

The ultrasonic Slurry Density Meter (SDM) of Rhosonics. This instrument was used in the thickener underflow where previously sampling was conducted.


## Challenge

The customer gave the assignment to remove manual sampling from the thickener underflow and replace this with an online density measurement tool. One of the main requirements was that it had to be a radiation-free / non-nuclear density tool, due to all the environmental regulations.

## Solution

The Rhosonics Slurry Density Meter is a good solution for this measuring task, because of its reliable, stable, and real-time density measurement results. In addition, the Slurry Density Meter is non-nuclear which means that it is friendly to human health and to the environment. This led to not having to increase the level of training of the personnel, no need for an RSO (Radiation Safety Officer) on site, and there were no licensing and associated costs needed.

## Results

- An immediate on-line density measurement
- Greater control of the process enabling the production of a more consistent product
- No licences, permits or specialized personnel necessary for the SDM thanks to the ultrasonic technology instead of nuclear source
- Payback time of approximately two years e.g., reduction of labour costs, hours spend on manual sampling, RSO training, and radiation leakage tests (done by an external company)

## For further information

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