

Application Note

Product Loss Monitoring in Dairy Factories - An Expensive Business!

Product spills both large and small are a fact of life in dairy factories and town milk treatment plants. These spills are now more difficult to detect because of the recent trend of reducing the number of plant operators employed in wet areas of dairies. Another factor common to many town milk treatment plants, is that few have their own wastewater treatment plants and rely on the local municipal waste water treatment plant to clean up their plant waste. The cost of lost product is huge with acknowledged losses of 10,000 to 40,000 litres of product in a typical spill.

The clean up cost can be very expensive with one USA dairy plant reporting that after a major spill they had a monthly BOD/TSS bill of US\$290,000 from the local publicly owned waste water treatment plant.

Until recently, with no easy way of being alerted to spills, many plants resort to "the solution to pollution is dilution" method. In this scenario "identified" product spills are washed down the drain with large volumes of water to dilute the waste. If the spill is identified quickly all this does is remove the peaks from the BOD charges. However, as the time from the start of the spill to the time of detection is often unknown, it is not always possible to know how much product has already been discharged to the drain. It is at best a hit and miss solution to an immediate problem and does nothing to eliminate future product losses and the associated clean up costs.



- **Treatment by dilution is not the answer to the problems of pollution.**
- **The answer is prevention!**

How to Prevent Product Loss - It's That Simple!

Fortunately there is a proven solution to the problem of milk product losses.

The LTH MSSD53SI Suspended Solids monitor and associated S20 Immersion sensor can immediately identify when milk products have been discharged to the drain.

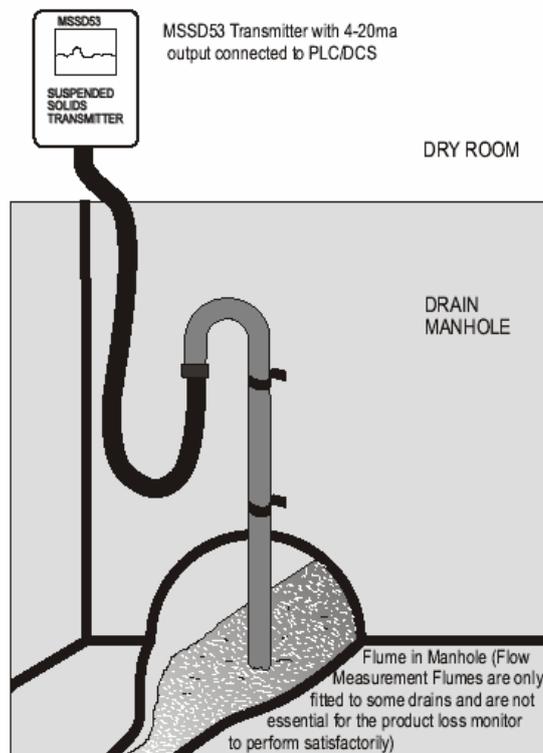
The S20 immersion sensor uses proven Quadbeam™ Technology which compensates both for changes due to ageing of the optical components and also build up on the sensor surface.

The sensors can be mounted in a guard assembly in the bottom of the drain with the sensor guard fingers resting on the bottom of the drain.

The sensor is connected via a 10m connection cable to a MSSD53SI Transmitter which provides a proportional 4 to 20 mA current output signal that is usually connected to a DCS or PLC system. Once the milk spill in the drain has been detected by the sensor, the operator has an audio / visual alarm "pop up" on the PLC screen that will allow him to identify and correct the spill before any significant amount of milk has been discharged.

By using the MSSD53SI and the S20 Immersion sensor product losses are minimised and the high BOD/ TSS charges are eliminated.

Once operators know that Product Loss Monitors are installed in the drains, the late Saturday night "accidental" discharges can then be eliminated and the waste milk is instead sent to product recovery, again increasing productivity.



Does it all sound too simple!

- The LTH MSSD53SI Suspended Solids Monitor is simple to install.
- The system pays for itself many times over the first time that it detects a product spill.
- Almost every Dairy Factory in NZ has at least one, with many having 6 to 12 sensors.
- There are also approximately 100 sensors in use in US milk processing plants

Remember what the last spill cost you and then decide if the relatively small cost for a MSSD53SI Suspended Solids Monitor and S20 series Immersion sensor is a cost effective purchase for your company?



These products comply with current European Directives

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