QUADBEAM TECHNOLOGIES

~ Specialists in process suspended solids & turbidity ~

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Product Loss Monitoring in Dairy Factories

Product spills both large and small are a fact of life in every dairy factory and town milk treatment plant. These spills are now more difficult to detect because of the recent trends towards reducing the number of plant operators employed in the wet areas.

The Cost of Loss

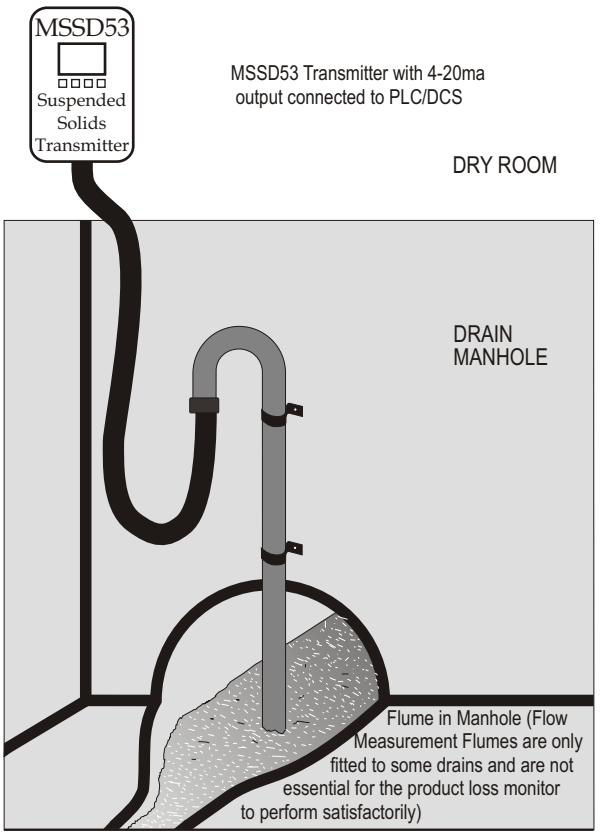
Another factor, which is common to many town milk treatment plants, is that few have their own wastewater treatment plants and rely instead on the local municipal waste water treatment plant to clean up their plant waste. The cost of lost product is huge with acknowledged losses of 10,000 to 40,000 litres of product in a typical spill. The clean up cost can be even larger 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 have resorted 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 it is detected is often unknown, it is not known 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

Fortunately there is a proven solution to the problem of milk product losses. The Quadbeam Product Loss Monitor immediately identifies when milk products have been discharged to the drain. The S20 immersion sensor used in our Product Loss Monitors uses proven Quadbeam Technology which compensates for changes due to ageing of the optical components and also build up on the sensor surface. The sensors are mounted in a guard assembly in the bottom of the drain with the guard fingers resting on the bottom of the drain. The sensor is connected via a 10m (33 ft) cable to a MSSD53 Transmitter which provides a proportional 4 to 20 ma signal that is usually connected to a DCS or PLC system.

TYPICAL PRODUCT LOSS INSTALLATION IN A DRAIN



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. 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.

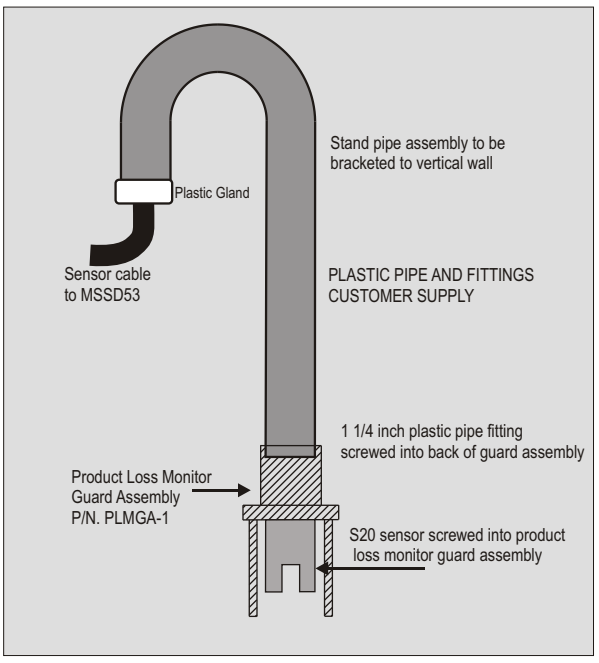
It's That Simple!

Does it all sound too simple! Well, the Quadbeam Product Loss Monitor is simple to install and pays for itself many times over the first time that it detects a product spill. Refer to application note "AN02 Calibration Guide for Product Loss Monitors".

We have supplied more than 200 Quadbeam S20 sensors to the New Zealand Dairy Industry as Product Loss Monitors.

Remember what the last spill cost you and then decide if the relatively small cost for a Quadbeam Product Loss Monitor is a cost effective purchase for your company?

PRODUCT LOSS MONITOR GUARD ASSEMBLY



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