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Water Use and Savings on Large Dairy Farms

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Abstract Text:

Neighbors are concerned that the water use by large dairy operations will affect their water supplies. Dairy planners need good information on water use in developing water supply and distribution. Thirteen water meters were installed to monitor the different flows on a modern, large dairy farm to determine total use and where the water is being used. Points monitored include cow consumption, parlor washing, cleaning of bulk tank and milking system, employee use. The information has proven very important in managing water use on the farm. During the first year of monitoring, the cow consumption ranged from 16.1 to 32.4 gallons per cow and the waste water use ranged from 6.8 to 8.3 gallons per cow. Water metering allowed identifying places to save water and problems with equipment. The water flow for the well water plate cooler was reduced from 42 gpm to 21 gpm without affecting the temperature of milk leaving the cooler. A 6 gpm leak that was under a concrete floor was identified as soon as it started. The information was used to train the staff on proper washing of the parlor to keep water use to a minimum. Other problems identified by water metering were CIP cleaning and a failing boiler. Based on this research, recommendations on placement of water meters was developed.

Impact Statement:

The project helped define the actual water use on a large dairy farm. An important part of the project was identify where and how water use could be reduced. The continuous metering also allowed for identifying problems when they first develop, e.g. a 6 gallon per minute leak under a concrete floor. The project also allowed the identification of the major metering points to assist in managing water use on the farm.