



Targeted Liquid Manure Application Irrigator Field Record Sheet Instructions

Marsha Campbell Mathews, Farm Advisor
University of California Cooperative Extension, Stanislaus County

An important part of nutrient management planning is keeping good field records during liquid manure applications. Recorded field information will be used to calculate nutrient applications. One irrigator field record worksheet should be completed for *each* irrigation event. An irrigation event is when all fields in a block are irrigated. This may need to be adjusted for situations where irrigation is continuous. Typically, one line within the worksheet is used per field although some users prefer to track each check separately.

Setting Targets

Use the first part of the data sheet (columns to the left of the black line) to provide information to the irrigator for targeting applications using a flow meter and throttling valve. After you have decided the amount of nitrogen you wish to apply, use the gpm targeting charts to determine the needed flow rate (gpm) of liquid manure that will supply that target based on liquid manure concentration and anticipated run time. Write the target gpm on the worksheet in the "target gpm" space provided for use by the irrigator to adjust the flow.

If the needed liquid manure flow rate is too low for the pump and pipeline system to deliver, you may want to run the manure pump only during the last portion of the irrigation set. If each set or check in a field runs the same length of time, write the hours that the pump needs to run during each check in the "hours or % run time" column. If the checks or sets in that field have different run times, write the % of time that the pump should run and the irrigator will need to adjust the pump run time according to each individual anticipated set time.

Be sure to record the assumed run time used to calculate the target flow rate so that flow rates can be altered if run times turn out to be significantly different than the expected time used in the original calculation. Keeping records of any assumptions used in calculating the targets can also be helpful when troubleshooting problems if the actual application rate turns out to be very different from the target.

Recording Actual Data

Use the second half of the worksheet (to the right of the black divider) to record what actually happened during the irrigation event. Record the beginning totalizer reading (in thousand or hundred gallons) in the “meter start” column and the ending totalizer reading in the “meter end” column.

The “actual gpm” column can be used if pump output is being used to estimate application volumes. If you are relying on pump output, accurate starting and ending times are especially important to record. If you are using a flow meter, it is still recommended that you record the approximate gpm along with the run times to provide a way to confirm that totalizer numbers were written down correctly.

If your liquid manure pump run time and the total irrigation run time are not the same, it is very important to write down the start and end time for each of them separately. The total irrigation run time is used to calculate the amount of fresh water applied, and the manure pump run time is used to calculate or confirm the amount of liquid manure that was applied. Accurately recording the manure pump run time is essential if the pump output (gpm) method of tracking liquid manure applications is being used.

Weather Conditions

Use the upper right hand side of the worksheet to note the weather conditions for the day before, day of and the day after the irrigation. Conditions should be recorded with an estimated temperature as well as notations for windy, fair, cloudy, dry or rain.

In general, the better the information and detail that is recorded in the field during the irrigation event, the easier it will be to determine the nutrients and water applied for crop management and regulatory reporting.

Information in this document was compiled by CDQAP to assist dairy producers in understanding and complying with the General Order Waste Discharge Requirements for Existing Milk Cow Dairies (Central Valley Regional Water Quality Control Board Order R5-2007-0035). Effort has been made to ensure accuracy, but these summaries are not official regulatory guidance and are not legal advice. Producers are advised that these summaries are not intended to be a substitute for producers reading the complete order and consulting their own legal counsel to ensure compliance with the waste discharge requirements. Should any information here conflict with the General Order and/or official information provided by the Regional Board, Board-provided information takes precedence.

