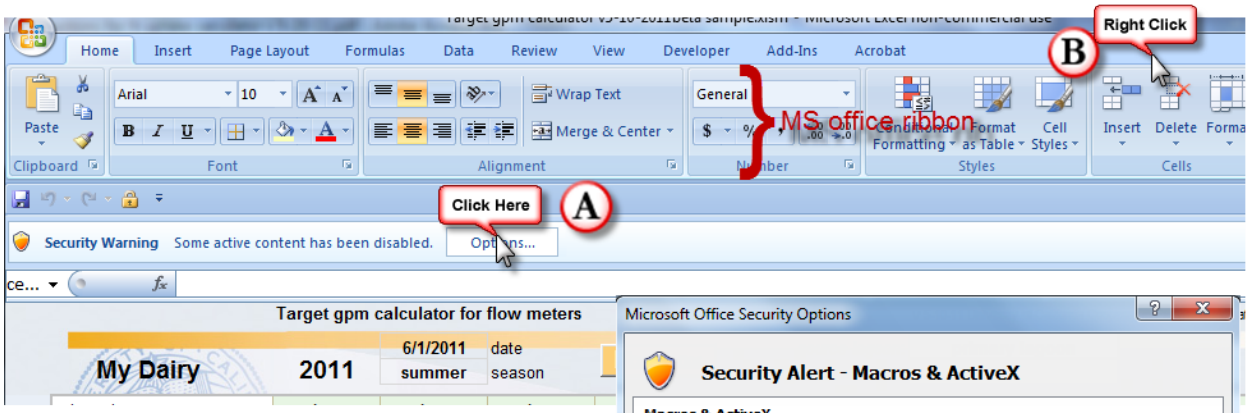
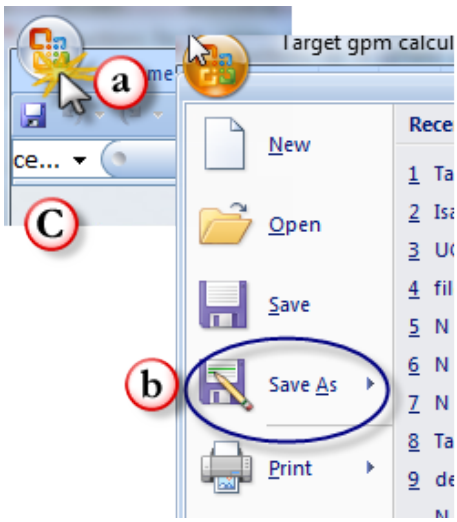
Using the Application Targeting for Flow Meters Spreadsheet

1. Enable the macro functions and save the file to a new name.
   You will not be able to use the toolbox functions unless you enabled macros when you first opened the file. If you did not, close the file and re-open it, this time enabling the macros.



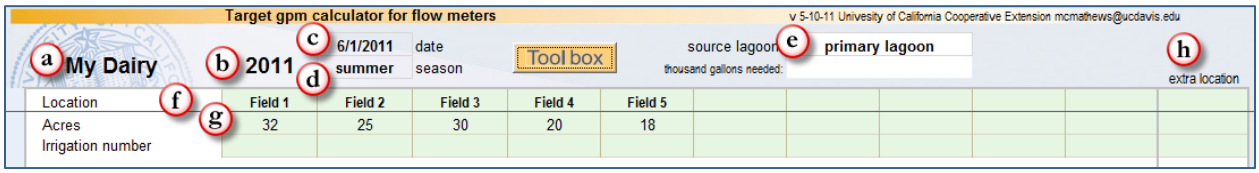
A. Click on the "Options" button that appears when you first open the file
   a. Select "enable this content" from the popup menu. Don't worry, if you down-loaded the file from the manure.ucdavis.edu website, it won't harm your computer.
   b. Select "OK" to return to the program

B. OPTIONAL
   The ribbon menu at the top of the screen takes up a lot of space and you will probably not need to use it when running this spreadsheet.
   You can hide it by right-clicking in the space indicated and selecting "minimize the ribbon". You can un-hide it by right-clicking again in the same space.



C. Save the file with a new file name by
   a. pressing the windows logo in the top right corner
   b. select "save as" then give the file a new name, such as "Corn 2011".

2. Enter basic information for up to ten fields or locations that will be irrigated at the same time.



a. My Dairy
Replace this text with the name you want to use for this set of locations

b. Year
Replace if different

c. Date
Change this date to the date of first day of the currrent irrigation

d. Season
Enter a crop or crop season, such as “summer” or “corn”

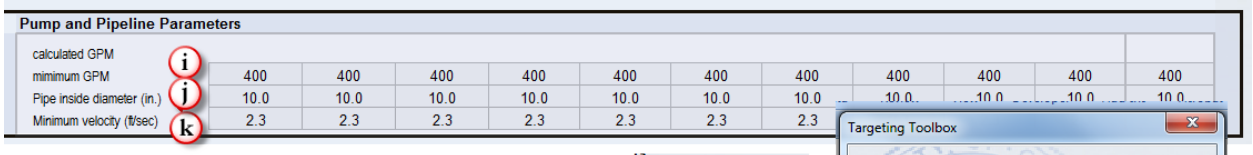
e. Source lagoon
The name of the lagoon that will be used for this irrigation

f. Location
Type a name of each field, check or irrigation set.

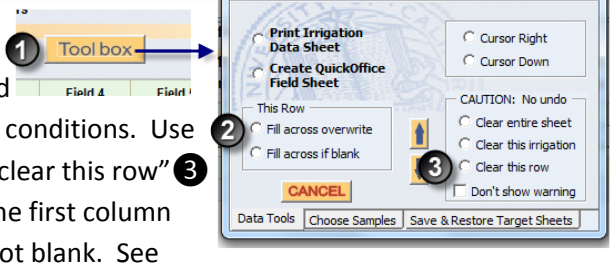
g. Acres
The number of acres associated with each location

h. Extra location
Serves as a “scratch pad” when you don’t want to overwrite existing parameters. This “location” will not be included on the field data sheet.

Scroll down to the bottom of the page to the “Pump and Pipeline Parameters section”



Change the defaults for the mimimum pump GPM (i), lagoon transfer pipe inside diameter(j), and minimum lagoon pipeline velocity (k) to match your conditions. Use the shortcut tools in from the toolbox ❶ such as “clear this row” ❸ and “fill across” ❷ , which writes the contents of the first column into all the other columns where the field name is not blank. See “Target Application Tool for Flow Meters: Line by Line Definitions” for more information on setting these parameters.



This would be a good time to press the “save” button in the top right corner of the sheet!

3. Set up this irrigation

Location	Field 1	Field 2	Field 3	Field 4	Field 5
Acres	32	25	30	20	18
Irrigation number (l)	1	1	1	1	1
Expected run time (hc (m)	12	8	10.5	8	8
Target lbs/A available (n)	40	40	40	40	40
Total N applied (lbs/A)					

l. Irrigation number

Enter "p" or "pre" for a preirrigation; 1, 2, 3 etc. for an in-season irrigation

m. Expected run time

The number of hours the fresh water irrigation is expected to take for this location

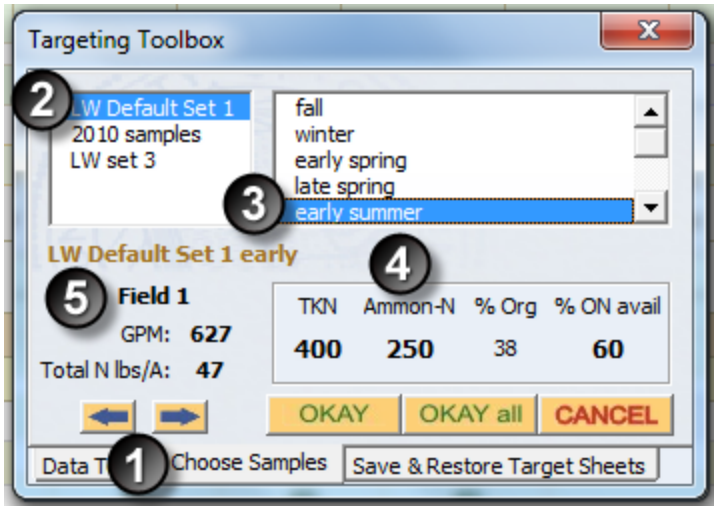
n. Target lbs/ac available N

Enter the amount of AVAILABLE nitrogen you wish to apply. The TOTAL amount of nitrogen you will need to apply in order to supply the crop with that amount of available nitrogen will be calculated when lagoon concentration information is entered. Total nitrogen will appear just below the available nitrogen value you entered.

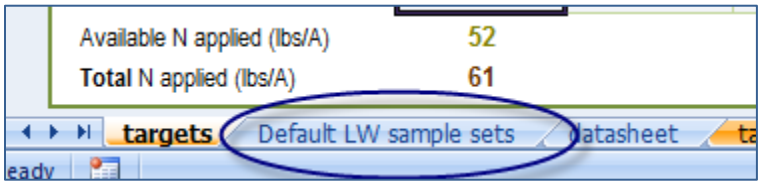
Don't forget you can use the "fill across" tools from the toolbox to fill in the data for the remaining fields once you have the first field set up.

Choose a liquid manure concentration to use with this irrigation. You may enter the concentrations by hand or use the "default samples" tab ❶ on the toolbox to select from your default sample list.

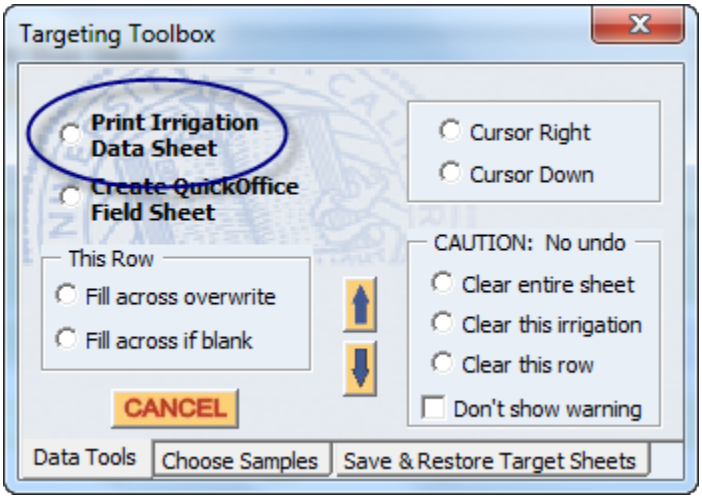
From the toolbox, select a default sample set ❷ and then a sample from that set ❸. The name and comments for that sample will be shown, ❹ along with the analyses for that sample. A preview of the target gpm and the total amount of nitrogen that will be applied in order to obtain the desired available nitrogen rate will be displayed. ❺ Use the arrow keys to preview results for each field. If you are satisfied with the results, press "okay" to transfer the sample date to the selected field, or "okay all" to transfer the data to all fields in this irrigation.

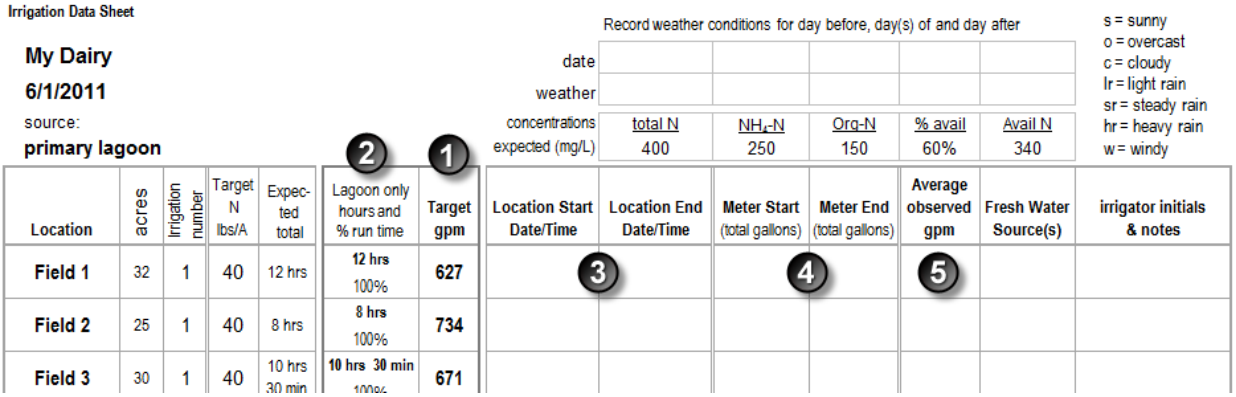


See "Target Application Tool for Flow Meters: Line by Line Definitions" for more information on selecting samples and for setting up default concentrations on the "Default LW sample set" page, accessed by clicking on the tab on the bottom of the worksheet.



4. Print the datasheet using the toolbox





Irrigation Data Sheet

My Dairy

6/1/2011

source:

primary lagoon

Record weather conditions for day before, day(s) of and day after

s = sunny
o = overcast
c = cloudy
lr = light rain
sr = steady rain
hr = heavy rain
w = windy

date				
weather				
concentrations expected (mg/L)	total N 400	NH_4-N 250	Org-N 150	% avail 60%
	Avail N 340			

Location	acres	Irrigation number	Target N lbs/A	Expected total	❷ Lagoon only hours and % run time	❶ Target gpm	Location Start Date/Time	Location End Date/Time	Meter Start (total gallons)	Meter End (total gallons)	Average observed gpm	Fresh Water Source(s)	irrigator initials & notes
Field 1	32	1	40	12 hrs	12 hrs 100%	627	❸		❹		❺		
Field 2	25	1	40	8 hrs	8 hrs 100%	734							
Field 3	30	1	40	10 hrs 30 min	10 hrs 30 min 100%	671							

Use the throttling valve to adjust the flow rate until the meter reads the target application rate ❶. If the target application rate is too low to prevent damage to the pump, the amount of time to run the lagoon pump on each field or check is given in the "lagoon only hours and % run time column ❷. Record the Start and End times for each location ❸ and the meter totalizer beginning and ending readings when the water is changed from one field to the next.❹. It's a good idea to also

record the average actual gpm❺ for each field as a double check in case a totalizer number isn't recorded correctly or on time.

A flow meter readout will display both the flow rate (gpm) and the totalized flow (hundred or thousand gallons). The flow rate is like the speedometer, it tells how fast the water is being applied The totalizer is like the odometer, it tells how many gallons have passed through the meter. Ask your supplier how to access these readings if they are not already displayed.

Questions or comments contact:

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