**Minnesota Pollution Control Agency**

**Spreadsheet Instructions**
**August 2008**

**Getting Started:**
1) **_Insert_** Disk
2) Open disk – **_Double Click_** on My Computer – CD Drive
3) **_Double Click_** on the appropriate file.

**Quick Instructions:**
➢ Input all required information in yellow or blue boxes.
➢ Automatically calculated numbers are in orange boxes.
➢ Automatically calculated final answers are in green boxes.
➢ Orange and green boxes are password protected.

**Geometric Mean Calculation Worksheet – Fecal Coliform**

1) Convert all "single zero" values to "1".
2) Drop all "<" symbols and use actual value.
3) For all "TNTC" values, contract lab for actual result.
4) Select appropriate "Number of Samples Taken" column in blue boxes.
5) Input fecal test results in the yellow boxes underneath number of samples taken.
6) Push "enter" key after entering the last result.
7) Answer → Geometric Mean (green box).

**Pump Calibration Worksheet – Both Circular and Rectangular Wet Wells**

1) Input the diameter or dimensions of the wet well.
2) Input the drawdown distance in feet and inches.
3) Input the drawdown time in minutes and seconds.
4) Input the refill distance in feet and inches.
5) Input the refill time in minutes and seconds.
6) Answer → Pumping Rate (green box).
7) Input pumping rate into Trial #1 space and for more accurate results, repeat procedure twice more for an average. Input those results in Trial #2 and Trail #3. Average of three results is in green box.

**Pond Discharge Calculation Worksheet**

**Step #1   Calculate Storage Needed**
1) Input the number of days to the next discharge window plus 5% (example: 180 days +5% = 189 days).
2) Input the anticipated average daily flow in million gallons per day for the above number of days.

**Step #2   Calculate Storage Available**   (for all ponds - primary and secondary)
3) Input the maximum allowable depth of the pond in feet.
4) Input the actual depth of the pond in feet.
5) Input the size of each pond in acres.

**Step #4   Calculate Total Feet Needed to Discharge**
6) Input size of pond being discharged from.
7) Answer → Total Feet Needed to Discharge (green box).

**Dilution Ratio Worksheet**

1) Input the size of the secondary pond
2) Input the average depth, in feet per day, discharged.
3) Input the average stream width and depth in feet.
4) Input the distance the float traveled in feet
5) Input the time it took to travel that distance in seconds.
6) Answer → Dilution Ratio (green box)

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**Desktop Water Balance Worksheet**

1) Input months
2) Input total influent and effluent flow for each month in million gallons.
3) Input rainfall and snowfall for each month.
4) Input first week's pond depth readings for each month to the nearest tens of a foot (**not feet and inches**), except last month which is the last week's readings.
5) Input acres of each pond.
6) Input total days for water balance; typically 365 days.
7) Input average wet weather design flow in gallons per day.
8) Answer noted (in green box) is estimated seepage rate (green box) in both million gallons per acre per day and gallons per acre per day. If the pond was built before 1975, acceptable seepage rate must be less than 3500 gallons per acre per day and after 1975, 500 gallons per acre per day. Both of these rates are subject to a + or – 1000 gallons per acre per day.

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**Pump Readings Worksheets**

Note: There are a total of four worksheets for this topic. Two are to be used only when the third meter is independent of the other two. This one is called "Pump Readings- Independent Third Meter". The other two are used when the third meter runs with the other two. This one is called "Pump Readings." There are also separate spreadsheets for when your meter readings are in minutes and when they read in hours.

1) Input meter readings for each day for all three situations:
   i. Pump #1
   ii. Pump #2
   iii. Pump #1 and # 2 running together
      1. Your permit requires you to have a third meter when both pumps run together.
2) <u>On the first day of the month you must input the hours (or minutes) between the last reading of the previous month and the first reading of the month you are recording.</u>
3) Input month.
4) Input facility name.
5) Input calibrated pump capacity of each pump, included the capacity when both pumps run together.
6) The daily and total hours, along with the flow for each pump, are listed in orange boxes.
7) The actual daily flow calculations for each of the pumping situations, along with the total daily flow are listed in the green columns.
8) The total flow and average flow for the month are also noted in the green boxes in the lower right box.