

16.0 (TAB C) ET2000 (500 SERIES) CONTROLLER PROGRAM DATA

Controller Program Data: Controller Program Data is four interlaced screen setups that allow you to program all required schedule information for a particular controller. The four screens are comprised of Controller Schedule, Controller Flow, Controller Weather, and Controller Setup.

16.1 ET2000 (500 SERIES) CONTROLLER SCHEDULE

Controller Schedule: Controller Schedule is used to program start times, water days, stop times, program tagging, and station setup.

Note: It is highly recommended to always retrieve Program Data before you make any changes so that you do not send old data back to the controller.

1. In the toolbar at the top of the screen select **Program Data** and then scroll down to the words **Controller Schedule** and click on it (Figure 16.1.1C).

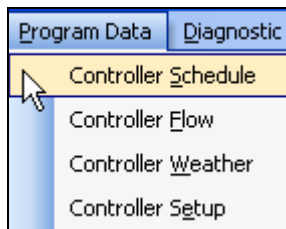


Figure 16.1.1C

Note: This will take you to the “Program Data” screen (Figure 16.1.2C).

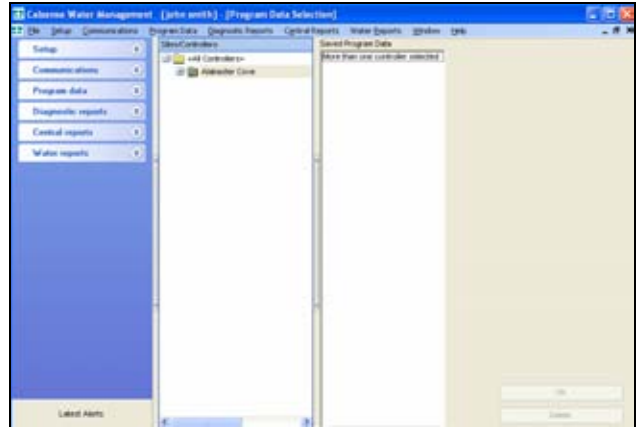


Figure 16.1.2C

2. Next select a controller by clicking on it to highlight (Figure 16.1.3C).

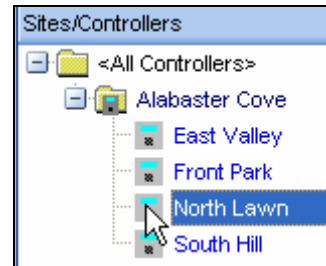


Figure 16.1.3C

Note: If any historical Program Data is saved and available for you to view it will appear in the “**Saved Program Data**” window.

3. Select the most recent date in the “**Saved Program Data**” window by clicking on it (Figure 16.1.4C).

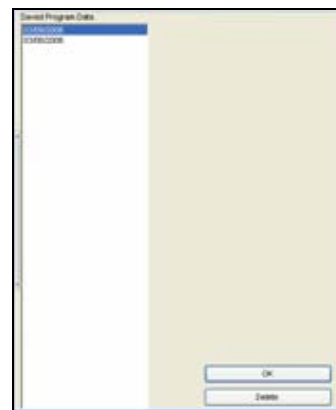


Figure 16.1.4C

Delete: Clicking on **Delete** button will delete the highlighted date choice.

CAUTION:

Once the data is deleted it cannot be recovered.

Note: Clicking on the **OK** button will take you to the **Controller Schedule** screen (Figure 16.1.5C).

Note: If **no Saved Program Data** exists you will have to use Speed Communications to retrieve the latest Program Data from this controller.

SEE SECTION 16.9 FOR MORE DETAILS

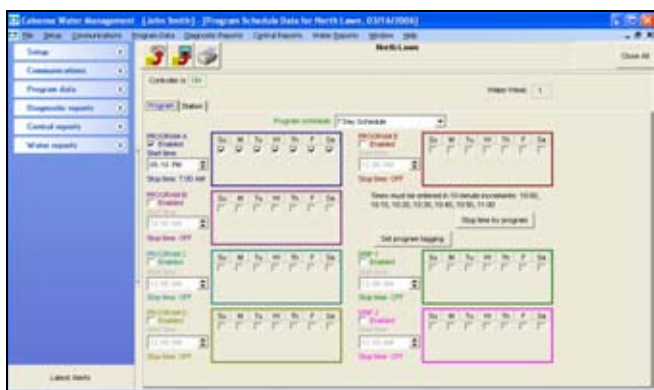


Figure 16.1.5C

- You will automatically start in the **Program** tab section of **Controller Schedule** (Figure 16.1.6C).

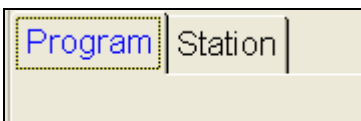


Figure 16.1.6C

- In the **Program Schedule** box using the drop down arrow to the right choose which type of schedule that you want (Figure 16.1.7C).



Figure 16.1.7C

Note: To simplify matters we will use a seven day schedule throughout this section.

- Next check the **Enabled** box for each program that you want to use (Figure 16.1.8C).

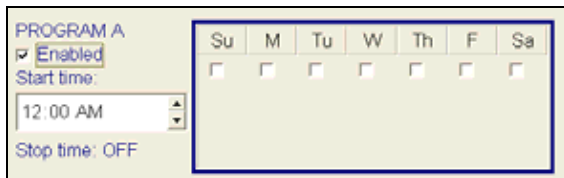


Figure 16.1.8C

- Check a box for each day of the week that you want the program to irrigate on (Figure 16.1.9C).

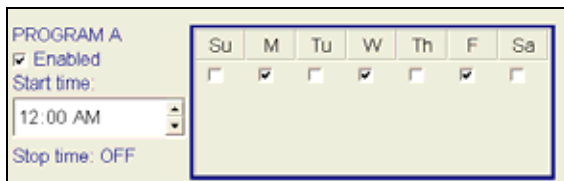


Figure 16.1.9C

- Click on the **Start time:** box and use the **UP** and **DOWN** arrows to set the time that you want this schedule to begin (Figure 16.1.10C).

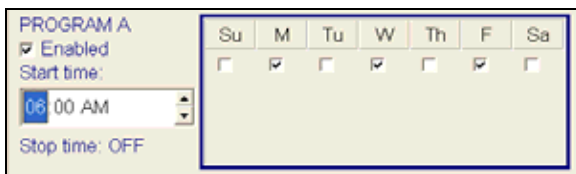


Figure 16.1.10C

Note: Schedule **Start time** must be in 10 minute increments.

Note: Follow these same steps for each of the programs that you want to activate. They are:

- Program A
- Program B
- Program C
- Program D
- Program E
- Drip 1
- Drip 2

Note: Any time that you change the schedule on the screen a reminder will appear under the controller name (Figure 16.1.11C).



Figure 16.1.11C

9. You can enter a name for each program by clicking on the **Set program tagging** button (Figure 16.1.12C).

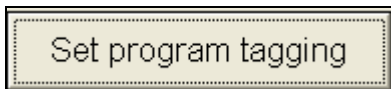


Figure 16.1.12C

Note: This will take you to the “**Set Program Tagging**” screen (Figure 16.1.13C).

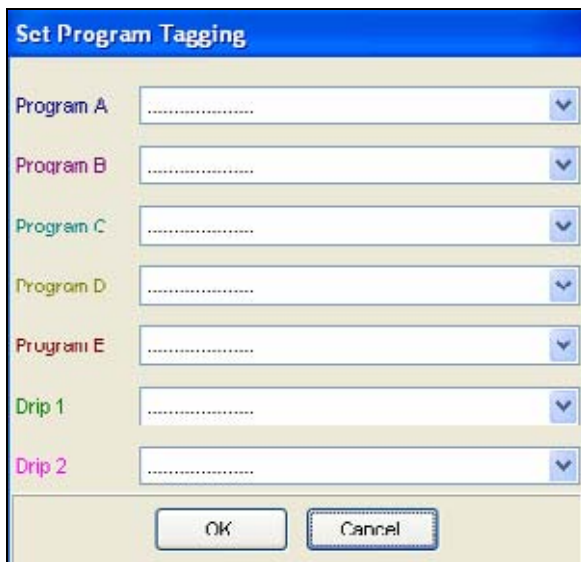


Figure 16.1.13C

10. By using the drop down arrow to the right you can choose a name for the selected program from a list provided (Figure 16.1.14C).

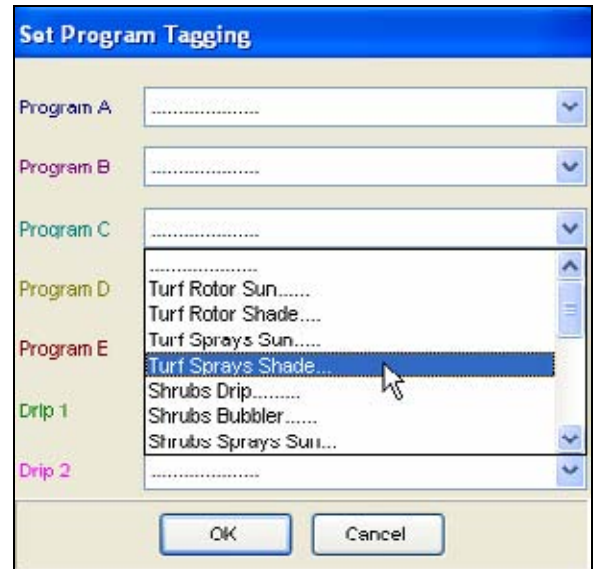


Figure 16.1.14C

11. Once you have chosen a name for each program that you are using click on the **OK** button.

Note: Click the **Cancel** button to exit out of this screen without changing anything.

12. You can set a stop time for each program by clicking on the **Stop time by program** button (Figure 16.1.15C).

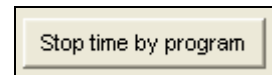


Figure 16.1.15C

Note: This will take you to the “**Stop time by program**” screen (Figure 16.1.16C).



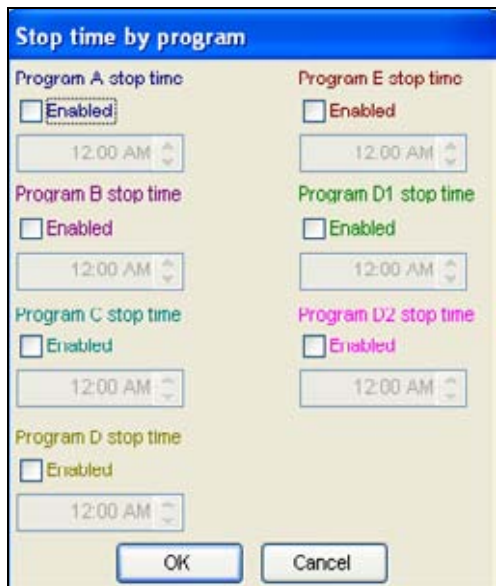


Figure 16.1.16C

13. You can set a stop time for each program by clicking on the **Program X stop time Enabled** button (Figure 16.1.17C).



Figure 16.1.17C

14. Click on the **Time** box and use the **UP** and **DOWN** arrows to set the time that you want this schedule to stop (Figure 16.1.18C).

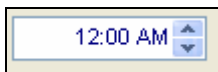


Figure 16.1.18C

Note: Schedule **Stop times** must be in 10 minute increments.

15. Click on the **OK** button to save changes.

Note: Clicking on the **Cancel** button will end this action without changing data.

16.2 ET2000 (500 SERIES) CONTROLLER SCHEDULE STATION ASSIGNMENT

1. In the **“Controller Schedule”** screen click on the **Station** tab (Figure 16.2.1C).

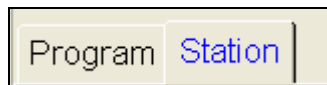


Figure 16.2.1C

Note: This will take you to the **Station** portion of the **“Controller Schedule”** (Figure (16.2.2C)).

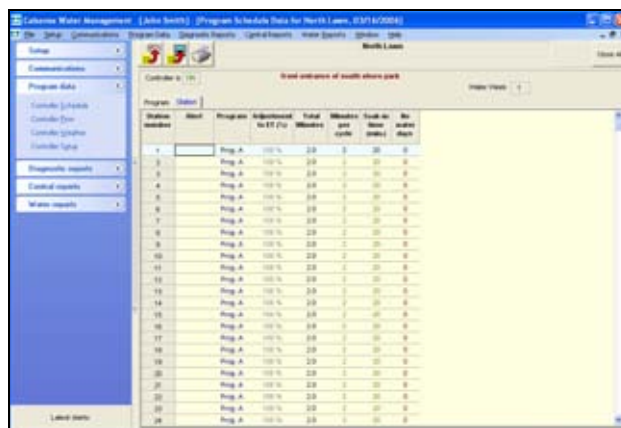


Figure 16.2.2C

Station Number: This column lists the stations in this controller in order from lowest to highest and is non-adjustable (Figure 16.2.3C).

Station Number
1
2
3
4

Figure 16.2.3C

Alert: This column will show a station specific alert in **RED**. Example: (No Flow, High Flow, Short, No Current) (Figure 16.2.4C).

Station Number	Alert
1	
2	
3	
4	HighFlow

Figure 16.2.4C

Program: Use the drop down arrow to select a program that you want each station assigned to (Figure 16.2.5C).

Note: A station can only be assigned to one program.

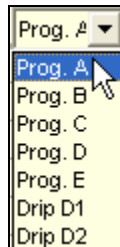


Figure 16.2.5C

Adjustment to ET (%): This box can only be adjusted if you are using ET. Adjusting this box will automatically adjust the total minutes. If you are not using ET the box will read 100% and cannot be adjusted (Figure 16.2.6C).

Adjustment To ET (%)
75 %
75 %
75 %
100 %

Figure 16.2.6C

Total Minutes: The total amount of irrigation time that will be applied in each 24 hour watering period. This box can only be adjusted if you are not using ET. Change the time by highlighting the box and typing in the information (Figure 16.2.7C).

Total Minutes
12.5
10.2
5.0
0.0

Figure 16.2.7C

Minutes Per Cycle: The amount of irrigation time applied in each cycle of a 24 hour watering period. This box allows you to fill in the amount of time that you want to apply to each irrigation cycle for that particular station (Figure 16.2.8C).

Minutes per Cycle
4
5
1
4

Figure 16.2.8C

Soak In Time (min.): The amount of time, (in minutes), between cycle starts (if there are multiple cycle starts). If there are no multiple cycle starts, this setting will be ignored by the program (Figure 16.2.9C).

Soak-in Time (min.)
5
10
5
5

Figure 16.2.9C

No Water Days: This column allows you to set an amount of consecutive days, starting from now, that you **do not** want this station to water (Figure 16.2.10C).



No Water Days
2
1
0

Figure 16.2.10C

Note: This screen will also indicate whether or not the controller you are looking at is currently ON or OFF (Figure 16.2.11C).

Controller is

Figure 16.2.11C

Note: You can double click on the **Controller is** box to change the status.

Note: On this screen you can also tell what water week you are in according to your schedule (Figure 16.2.12C).

Water Week:

Figure 16.2.12C

**16.3 ET2000 (500 SERIES)
 CONTROLLER FLOW**

Controller Flow: The Controller Flow screen is comprised of Flow Meter, Master Valve, Pump, and Mainline Break setup, Program Flow setup, and Station Flow rates.

1. In the toolbar at the top of the screen select **Program Data** then scroll down to **Controller Flow** and click on it (Figure 16.3.1C).

Program Data	Diagnostic
Controller Schedule	
Controller Flow	
Controller Weather	
Controller Setup	

Figure 16.3.1C

Note: This will take you to the “**Controller Flow**” screen (Figure 16.3.2C).

Figure 16.3.2C

2. Click on the **Type Of master valve** box and select from the drop down list the type of Master Valve that you have for this controller (Figure 16.3.3C).

Type of master valve

- Normally Closed
- Normally Opened
- Normally Closed

Figure 16.3.3C

Irrigation MLB (gpm): (Main Line Break) set this number above what your normal operating gallons per minute would be during irrigation (Figure 16.3.4C).

Irrigation MLB (gpm)

Figure 16.3.4C

Non Irrigation MLB (gpm): (Main Line Break) set this number above what your normal operating gallons per minute would be during non-irrigation periods (Figure 16.3.5C).

Figure 16.3.5C

- Now check the **Flow Meter** box if a flow meter is assigned to this controller (Figure 16.3.6C).

Figure 16.3.6C

- Use the drop down list to choose the type of flow meter that you are using (Figure 16.3.7C).

Figure 16.3.7C

The flow meter sizes are as follows:

- None In Use:** Select this if no flow meter is assigned to this controller.
- FM 1.00:** This is a one inch PVC flow meter.
- FM 1:00B:** This is a one inch brass flow meter.
- FM 1.25B:** This is a one and a quarter inch brass flow meter.
- FM 1.50:** This is a one and a half inch PVC flow meter.
- FM 2.00:** This is a two inch PVC flow meter.
- FM 3.00:** This is a three inch PVC flow meter.

Note: A (-F) option is required when two or more flow meters are connected to a single controller. Three flow meters per controller is the maximum.

Note: If you are using a flow meter that is larger than three inches, or is not predefined you will have to fill in the **Use your own K & Offset** box (Figure 16.3.8C).

Figure 16.3.8C

- If this **Controller is part of a flow on a loop system** check the box next to this statement (Figure 16.3.9C).

Figure 16.3.9C

- Enter the number of controllers in the flow on a loop system to include this controller (Figure 16.3.10C).

Figure 16.3.10C

Use system capacity to limit the number of stations on: Check this box if you want to limit the amount of stations that are on at a time by using your system capacity as a guideline. Your controller will not turn on more valves beyond your max flow (Figure 16.3.11C).

Figure 16.3.11C



Max flow with pump (gpm): This box requires the number of gallons per minute that you want the system to use as a capacity for multiple stations on at any given time with the pump on (Figure 16.3.12C).

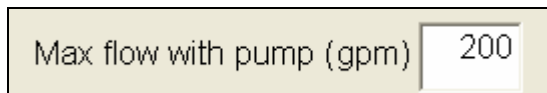


Figure 16.3.12C

Max flow without pump (gpm): This box requires the amount of gallons per minute that you want the system to use as a capacity for multiple stations on at any given time with the pump off (Figure 16.3.13C).

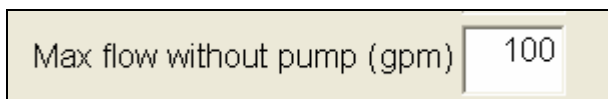


Figure 16.3.13C

When irrigating compare the flow rate to the expected: Check this box if you want to detect High Flows, Low Flows, and No Flows using station flow rates in the “Controller Setup” screen (Figure 16.3.14C).

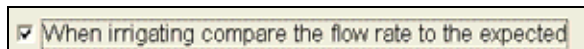
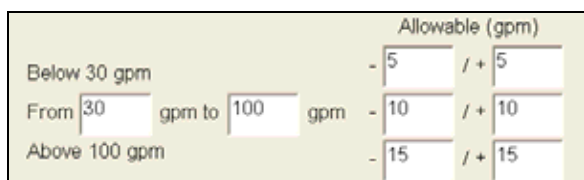


Figure 16.3.14C



	Allowable (gpm)	
Below 30 gpm	- 5	/ + 5
From 30 gpm to 100 gpm	- 10	/ + 10
Above 100 gpm	- 15	/ + 15

Figure 16.3.15C

Below: This section allows you to enter the fluctuation range for the low end of your normal operating flow. Use the (-) and (+) entries to set the range (Figure 16.3.15C).

Example:

If you set the below limit at 30 gallons per minute.

Then set your (-) limit at 5, and your (+) limit at 5.

You will be alerted if the pressure at the low end of the scale fluctuates by more than five gallons per minute in either direction.

That is less than 25 gpm or more than 35 gpm

From / to: This section allows you to set the fluctuation limits for the full range of flow. In this box you want to enter the normal operating range of water flow. Then in the (-) and (+) blocks enter the range of fluctuation that you deem normal (Figure 16.3.15C).

Example:

If you set the limit at 30 gpm to 100 gpm.

Then set your (-) limit at 10, and your (+) limit at 10.

You will be alerted if the pressure at the middle of the scale fluctuates by more than ten gallons per minute in either direction.

That is less than 20 gpm or more than 110 gpm

Above: This section allows you to enter the fluctuation range for the high end of your normal operating flow. Use the (-) and (+) entries to set the range (Figure 16.3.15C).

Note: You will want to set this allowable range up a little wider due to the amount of water flow.

Example:

If you set the above limit at 100 gallons per minute.

Then set your (-) limit at 15, and your (+) limit at 15.

You will be alerted if the pressure at the high end of the scale fluctuates by more than fifteen gallons per minute in either direction.

That is less than 85 gpm or more than 115 gpm

Program: This is a list of all the programs available in the controller. The settings to the right of each program are specific for that program (Figure 16.3.16C).

Program
Program A
Program B
Program C
Program D
Program E
Drip 1
Drip 2

Figure 16.3.16C

Pump usage: This column allows you to check a box for each program that is using a pump (Figure 16.3.17C).

Program	Pump usage
Program A	<input checked="" type="checkbox"/>
Program B	<input checked="" type="checkbox"/>
Program C	<input type="checkbox"/>
Program D	<input type="checkbox"/>
Program E	<input checked="" type="checkbox"/>
Drip 1	<input checked="" type="checkbox"/>
Drip 2	<input checked="" type="checkbox"/>

Figure 16.3.17C

Learn expected flow rates: This column allows you to check a box next to each program that you want to learn expected flow rates for. This is a one time operation that occurs at the beginning of irrigation. Once the flow rate has been successfully recorded in the “**Controller Setup**” screen the box will uncheck itself. This number will not change until the box is checked again (Figure 16.3.18C).

Program	Pump usage	Learn expected flow rates
Program A	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Program B	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Program C	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Program D	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Program E	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Drip 1	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Drip 2	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Figure 16.3.18C

Line fill time: This column allows you to set a delay time in seconds so that the controller will not check flow rates until the program stations irrigation lines have filled (Figure 16.3.19C).

Line fill time
60
60
60
60
60
60
60

Figure 16.3.19C

Valve close Time: This column allows you to enter the delay in seconds that the controller will want to check flow until the current valve has had a chance to close. This time can be extended to help with slow closing valves (Figure 16.3.20C).



Valve close time
60
60
60
60
60
60
60
60

Figure 16.3.20C

- Next using the drop down arrow for each box select the **High flow action** alert of your choice (Figure 16.3.21C).

High flow action
Alert/No Action
Do Nothing
Alert/No Action
Alert/Shutoff
Alert/No Action
Alert/No Action
Alert/No Action
Alert/No Action

Figure 16.3.21C

Note: Depending on which choice you make will depend on how you are notified and what action if any is taken. See the definitions below:

- Do Nothing:** This means that no matter what happens you will receive no alert and no action will be taken.
- Alert / No Action:** This means that you will be alerted if anything happens but the controller will take no action.
- Alert /Shutoff:** This means that the controller will alert you and also will shutoff the valve that has the alert.

- Use the same method to choose the **Low flow action** for each program (Figure 16.3.22C).

Low flow action
Alert/No Action
Alert/No Action
Alert/No Action
Alert/No Action
Alert/No Action
Alert/No Action
Alert/No Action
Alert/No Action

Figure 16.3.22C

Valves on at a time for program: This section has a drop down screen for each program consisting of the following choices. This feature allows you to set the quantity of valves you want to come on at a time per controller within the system (Figure 16.3.23C).

- 1 thru 4:** This choice allows you to set the limit of stations operating simultaneously within the given program.
- X:** This choice allows you to set the controller so that it irrigates to your system capacity, or electrical limit.

Valves on at a time for program
1
1
2
3
4
X
1
1
1

Figure 16.3.23C

Valves on at a time in system: This section is equipped with a pull down screen for each program consisting of the following choices. This lets you choose the quantity of valves that you want to set as a limit to come on at one time within a program shared by multiple controllers using *FlowSense®* (Figure 16.3.24C).

- **1 through 24:** This choice allows you to set the limit of valves operating simultaneously within the system.
- **X:** This choice allows you to set the controller so that it irrigates to your system capacity, or electrical limit.



Figure 16.3.24C

16.4 ET2000 (500 SERIES) CONTROLLER WEATHER

Controller Weather: Controller Weather includes ET, rain/wind, budget, crop coefficients and moisture sensor setup.

1. In the toolbar at the top of the screen click on **Program Data** then scroll down to the words **Controller Weather** and click on it (Figure 16.4.1C).

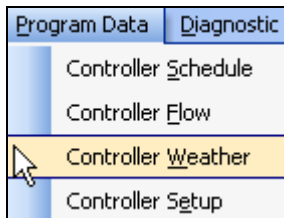


Figure 16.4.1C

Note: This will take you to the “**Controller Weather**” screen Figure 16.4.2C).



Figure 16.4.2C

EVAPOTRANSPIRATION

Note: When you first enter the “**Controller weather**” screen you will be on the **Evapotranspiration** tab.

2. If this controller is going to be connected to an ET gage check the **Is there an ET Gage and would you like to use it to calculate run times?** box (Figure 16.4.3C).

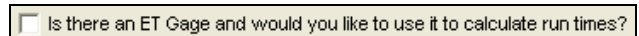


Figure 16.4.3C

3. Next check the **Log each pulse** box if you want them to show up in your alerts (Figure 16.4.4C).

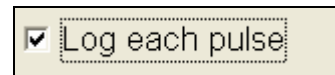


Figure 16.4.4C

Note: by using the **Max Percent Of ET** box you can set the controller to never go over a certain percentage of ET (Figure 16.4.5C).



Figure 16.4.5C

Example:
If your historical ET for January is .35 and your Max Percent Of ET is set at 150% then the controller will never let your %ET be greater than .52

- Click on the **Use 12 Month Schedule** if you want to set up an irrigation program for each month of the year (Figure 16.4.6C).

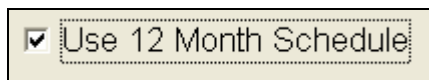


Figure 16.4.6C

CAUTION:

Checking this box will cause a box to open up at the top center of the "Controller Schedule" screen. You will have to go to that screen and fill out a schedule for each individual month. Keep in mind that if you skip filling out a month no irrigation will take place for that month (Figure 16.4.7C).



Figure 16.4.7C

- Next check the box next to each program that you want to **Irrigate Using ET Table On The Following Programs** (Figure 16.4.8C).

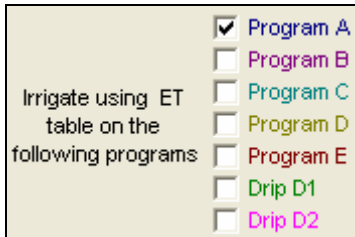


Figure 16.4.8C

- Now check each box that you want to **Use ET Averaging On The Following Programs** (Figure 16.4.9C).

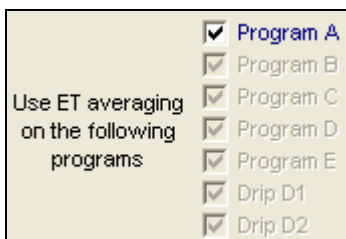


Figure 16.4.9C

- Enter your own ET numbers:** Check this box if you want to **Enter your own ET numbers** for each month (Figure 16.4.10C).

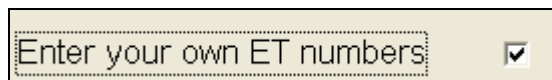


Figure 16.4.10C

Note: This will open up the month boxes so that you can enter your own ET numbers (Figure 16.4.11C).

Monthly historical ET						
Jan	Feb	March	April	May	June	
2.1	3.2	5.3	7.7	9.1	10	
July	Aug	Sep	Oct	Nov	Dec	Year
11	9.8	7.3	4.9	2.7	1.7	74.6

Figure 16.4.11C

Note: If not using your own ET numbers the County and City boxes will be available.

- Next use the drop down arrow for the **County** (Figure 16.4.12C).



Figure 16.4.12C

- Next use the drop down arrow next to the **City** within that county (Figure 16.4.13C).

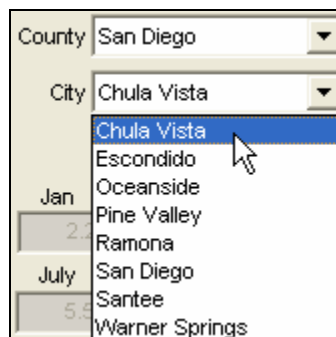


Figure 16.4.13C

Note: This will automatically adjust the ET numbers for each Month and the Year box (Figure 16.4.14C).

Monthly historical ET						
Jan	Feb	March	April	May	June	
2.6	3.5	5.6	7.5	9.7	10.3	
July	Aug	Sep	Oct	Nov	Dec	Year
9.9	8.2	7.4	5.6	3.4	2.4	76.02

Figure 16.4.14C

Note: the 28 Day ET Historical Table shows the ET averages for the last 28 days consecutively (Figure 16.4.15C).

28 day ET history table		
Date	ET	Code
3/15/2006	0.18	h
3/14/2006	0.18	h
3/13/2006	0.18	h
3/12/2006	0.18	h
3/11/2006	0.18	h
3/10/2006	0.18	h
3/9/2006	0.18	h
3/8/2006	0.18	h
3/7/2006	0.18	h
3/6/2006	0.18	h
3/5/2006	0.18	h
3/4/2006	0.18	h
3/3/2006	0.18	h
3/2/2006	0.18	h
3/1/2006	0.18	h
2/28/2006	0.18	h
2/27/2006	0.18	h
2/26/2006	0.18	h
2/25/2006	0.18	h
2/24/2006	0.18	h

Figure 16.4.15C

ET TABLE CODE DEFINITIONS

e – Edited, This means the (ET) number was edited at the controller by a user.

g – ET Gage This means the (ET) number was retrieved from actual real-time (ET).

h – Historical, This means the (ET) number was retrieved from the historical (ET).

c – Central, This means the central created the (ET) number due to the real-time (ET) being below the minimum (ET) allowed by the user.

RAIN / WIND

1. Select the **Rain / Wind** tab at the top of the screen.

Note: This will take you to the “**Rain / Wind**” screen (Figure 16.4.16C).

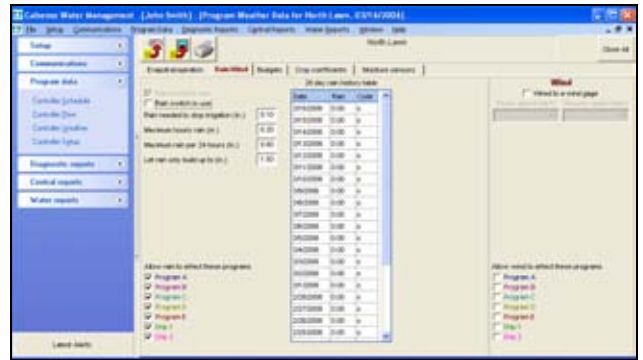


Figure 16.4.16C

Note: If a Rain Bucket (-RB) option is installed in this controller the **Rain Bucket In Use** box will be checked automatically (Figure 16.4.17C).



Figure 16.4.17C

2. If you are using a Rain Switch check the **Rain Switch In Use** box (Figure 16.4.18C).



Figure 16.4.18C

Rain Needed To Stop Irrigation (in): This setting determines how much rain must fall, before the controller will start accumulating rainfall values in the rain table. It also determines when to halt any ongoing irrigation. In Figure 16.4.19C .10 inches of rain will have to fall before any rain data starts to accumulate in the rain table.

Maximum Hourly Rain (in): This setting determines the maximum amount of rain that will be put in the rain table after a period of one hour of rain. In figure 16.4.19C a maximum of .20 inches of rain will be put into the rain table, no matter how much rain falls in a 1 hour period. The amount of rain from this setting, put into the rain table, will increase only until it reaches the next setting.

Maximum Rain per 24 Hours (in): This setting determines the maximum amount of rain that will be put into the rain table in a 24 hour period. In figure 16.4.19C a maximum of .60 inches of rain will be put into the rain table, no matter how much rain falls in a 24 hour period. The amount of rain from this setting, put into the table, will increase only until it reaches the next setting.

Let Rain Only Build Up To (in): This setting determines the maximum amount of rain that can be stored in the rain table. In figure 16.4.19C the controller will stop storing rain data in the rain table if the Maximum 24 Hour Total reached 1.50 inches of rain.

Rain Needed To Stop Irrigation (in.)	0.10
Maximum Hourly Rain (in.)	0.20
Maximum Rain per 24 Hours (in.)	0.60
Let Rain Only Build Up To (in.)	1.50

Figure 16.4.19C

- In the “**Allow Rain To Affect These Programs**” section check the box next to each program that you want rain to factor into (Figure 16.4.20C).

Allow rain to affect these programs	
<input checked="" type="checkbox"/>	Program A
<input checked="" type="checkbox"/>	Program B
<input checked="" type="checkbox"/>	Program C
<input checked="" type="checkbox"/>	Program D
<input checked="" type="checkbox"/>	Program E
<input checked="" type="checkbox"/>	Drip 1
<input checked="" type="checkbox"/>	Drip 2

Figure 16.4.20C

Note: the “**28 Day Rain History Table**” shows the rain averages for the last 28 days consecutively (Figure 16.4.21C).

Rain 28 day rain history table		
Date	Rain	Code
3/15/2006	0.00	o
3/14/2006	0.00	o
3/13/2006	0.00	o
3/12/2006	0.00	o
3/11/2006	0.00	o
3/10/2006	0.00	o
3/9/2006	0.00	o
3/8/2006	0.00	o
3/7/2006	0.00	o
3/6/2006	0.00	o
3/5/2006	0.00	o
3/4/2006	0.00	o
3/3/2006	0.00	o
3/2/2006	0.00	o
3/1/2006	0.00	o
2/28/2006	0.00	o
2/27/2006	0.00	o
2/26/2006	0.00	o
2/25/2006	0.00	o
2/24/2006	0.00	o

Figure 16.4.21C

RAIN TABLE CODE DEFINITIONS

o – Original, This value is zero (no usable rain) it has no effect on irrigation run times.

m – Below Minimum, The below minimum value is measured rain but not enough to offset irrigation run times or stop irrigation.

r – Usable Rain, This value is rain that is used to offset irrigation run times.

s – Shutdown, This means irrigation was stopped due to rain polling being shared with this controller.

p – Polling, This means weather sharing has either failed or has not occurred yet since polling shutdown occurred.

- If a Wind Gage (-WG) option is installed in this controller check the **Wired to a wind gage** box (Figure 16.4.22C).

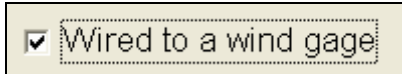


Figure 16.4.22C

Pause speed (mph): This is the wind speed, or above, at which you want all irrigation to temporarily pause (Figure 16.4.23C).

Resume speed (mph): This is the wind speed, or below, that you want the irrigation to resume at (Figure 16.4.23C).

Pause speed (mph)	Resume speed (mph)
15	15

Figure 16.4.23C

Allow wind to affect these programs: Check the box for each program that you want the wind settings to affect (Figure 16.4.24C).

Allow wind to affect these programs

- Program A
- Program B
- Program C
- Program D
- Program E
- Drip 1
- Drip 2

Figure 16.4.24C

BUDGETS

1. Select the **Budgets** tab at the top of the screen.

Note: This will take you to the “Budgets” screen (Figure 16.4.25C).

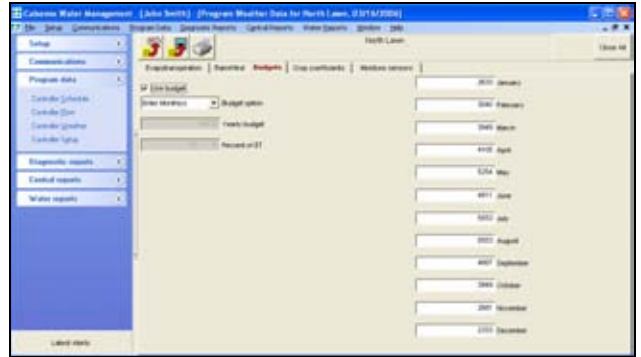


Figure 16.4.25C

2. Click on the **Use Budget** box if you want to use a budget (Figure 16.4.26C).

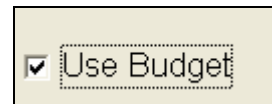


Figure 16.4.26C

3. Next use the drop down arrow next to the **Budget Option** box to select the type of budget desired (Figure 16.4.27C).

Enter Monthlys Budget Option

Enter Monthlys

Enter Yearly

Enter % of ET

Yearly Budget

Figure 16.4.27C

Enter Monthlys: This option allows you to enter your own budget gallons per month (Figure 16.4.28C).

15133	January
0	February

Figure 16.4.28C

Enter Yearly: This option allows you to set a budget number in gallons for the year (Figure 16.4.29C).



115433 Yearly Budget

Figure 16.4.29C

Note: This will automatically change all of the month entries based on ET (Figure 16.4.30C).

4288 January
6070 February

Figure 16.4.30C

Percent Of ET: This option allows you to set up a budget with your existing numbers multiplied by percent of ET. The numbers in the **Enter Yearly** and individual **Month** boxes will change automatically (Figure 16.4.31C).

150 % Percent Of ET

Figure 16.4.31C

CROP COEFFICIENTS

- Select the **Crop Coefficients** tab at the top of the screen.

Note: This will take you to the “**Crop Coefficients**” screen (Figure 16.4.32C).

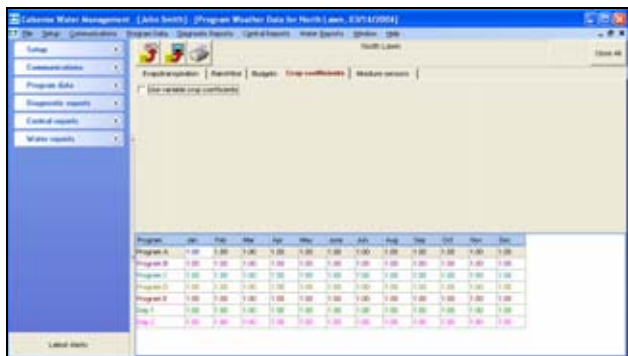


Figure 16.4.32C

- Click on the **Use Variable Crop Coefficients** button to use Crop Coefficients (Figure 16.4.33C).

Use Variable Crop Coefficients

Figure 16.4.33C

Note: This will allow you to enter a multiplier number, by program, for each month allowing you to alter calculated run times (Figure 16.4.34C).

Program	Jan
Program A	1.50
Program B	1.00
Program C	1.00

Figure 16.4.34C

Example:

If your Calculated Run time for program “A” Station 1 is 20.0 minutes then for the month of January the run time would now be 30.0 minutes. (1.5 times 20.0 minutes).

MOISTURE SENSORS

- Select the **Moisture Sensors** tab at the top of the screen.

Note: This will take you to the “**Moisture Sensors**” screen (Figure 16.4.35C).



Figure 16.4.35C

- If you are currently using Moisture sensors click the **Moisture Sensor In Use** box (Figure 16.4.36C).

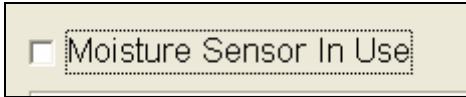


Figure 16.4.36C

Note: This will open up the “**Use Moisture Sensing On The Following Programs**” section (Figure 16.4.37C).

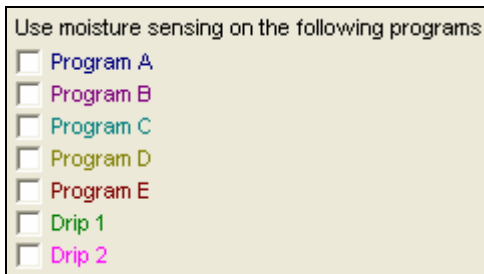


Figure 16.4.37C

- Place a check in each program box that you want to use moisture sensors on (Figure 16.4.38C).

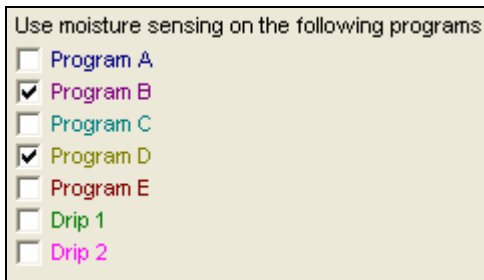


Figure 16.4.38C

Note: This will place all of the stations currently available in the “**Sensor Assignment**” Window (Figure 16.4.39C).

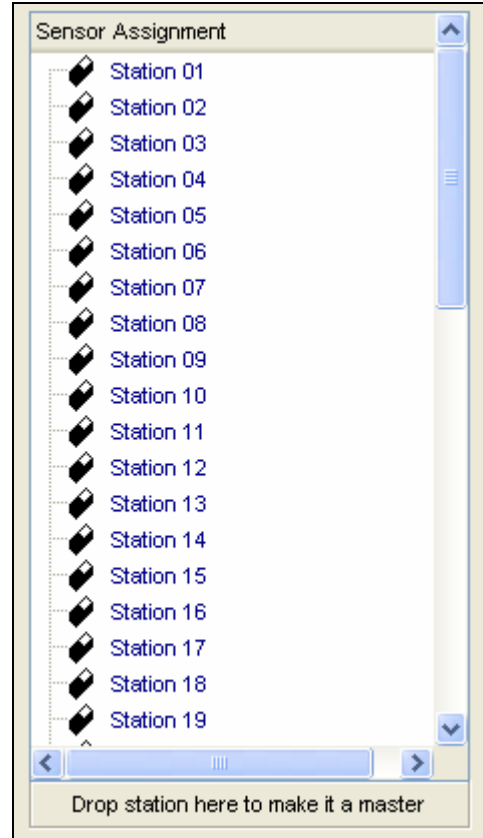


Figure 16.4.39C

Note: There are two different conditions that you can place a moisture sensor:

Master: A representative station for each different climate and plant material zone is given a sensor and is known as a master station (Figure 16.4.40C).

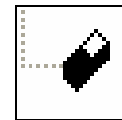


Figure 16.4.40C

Slave: Slave stations are stations without sensors and are assigned to a master station that shares similar water requirements (Figure 16.4.41C).

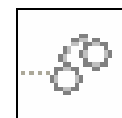


Figure 16.4.41C



Note: To assign stations as slaves to another station:

- Click on the station that you want to make a slave (Figure 16.4.42C)

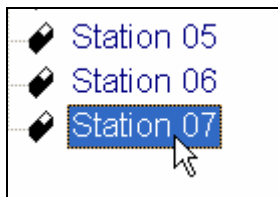


Figure 16.4.42C

- While holding down the left button of the mouse, drag this station to the one you want to slave it to (Figure 16.4.43C).

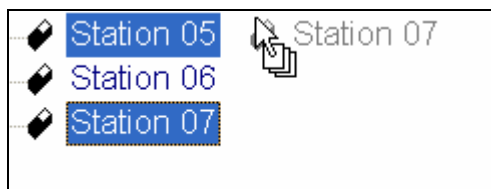


Figure 16.4.43C

- Release the left mouse button while the cursor on the screen is directly over the station that you want to assign the slave to (Figure 16.4.44C).

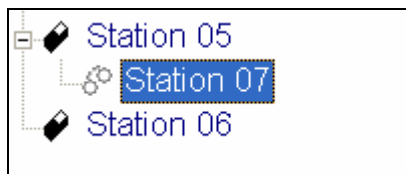


Figure 16.4.44C

Note: Master and Slave Moisture Sensors stations must be assigned to the same programs (Figure 16.4.45C).

The font color of each program helps you recognize which stations are assigned to which programs. A Master Station and all of his slaves must be on the same program.

Figure 16.4.45C

- To return a Slave station back to a Master just click on the slave and drag it to the bottom of the "Sensor Assignment" window. Release the mouse button when your cursor is on top of **Drop station here to make it a master** button (Figure 16.4.46C).

Drop station here to make it a master

Figure 16.4.46C

Max Water Days: This setting allows the user to override moisture sensing, that is the controller will irrigate whatever has been programmed by the user, no matter what the moisture reading is. This can be set from 1 to 31 days (Figure 16.4.47C).

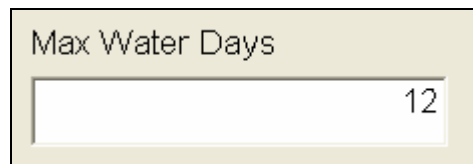


Figure 16.4.47C

Setpoint: This is the Moisture Sensor set point, (programmed by the user), it determines at what moisture reading the controller will stop program irrigation time. If the moisture sensor reading is more than the set point, irrigation time will continue until the moisture reading is less than the set point (Figure 16.4.48C).



Figure 16.4.48C

Last reading: This is the moisture sensors last reading, a new reading is taken before each irrigation cycle (Figure 16.4.49C).

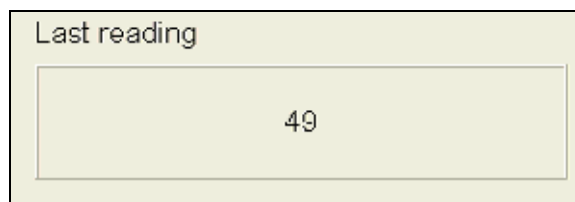


Figure 16.4.49C

16.5 ET2000 (500 SERIES) CONTROLLER SETUP

Controller Setup: Controller Setup includes station in use, flow rate, covered area, precipitation, and descriptions.

1. In the toolbar at the top of the screen click on **Program Data** then scroll down to the words **Controller Setup** and click on it (Figure 16.5.1C).

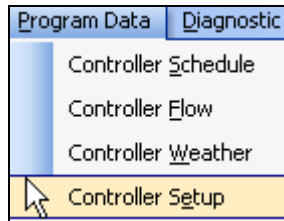


Figure 16.5.1C

Note: This will take you to the “**Controller Setup**” screen (Figure 16.5.2C).

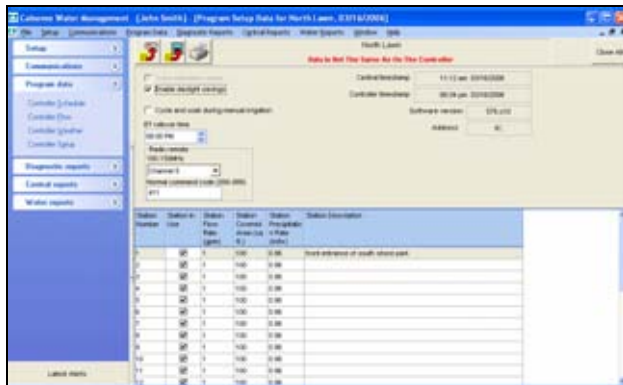


Figure 16.5.2C

Track Estimated Usage: This option is only available if you have **NO** flow meter assigned to this controller and you are **NOT** using (ET) or Budgets (Figure 16.5.3C).

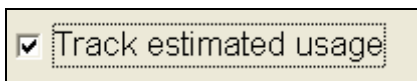


Figure 16.5.3C

Note: This option allows you to track your estimated water usage by filling out each stations estimated flow rate. Checking this box will open up the Station Flow Rate (GPM) column (Figure 16.5.4C).

Station Number	Station In Use	Station Flow Rate (gpm)
1	<input checked="" type="checkbox"/>	10
2	<input checked="" type="checkbox"/>	22
3	<input checked="" type="checkbox"/>	30
4	<input checked="" type="checkbox"/>	12

Figure 16.5.4C

Note: You will have to fill in the amount of water in gallons per minute that you estimate each station will use, or you can learn it if you have a flow meter installed.

Cycle and Soak during Manual irrigation: Checking this box will allow you to use Total Time, Minutes per Cycle, and soak in Time per station. If this box is not checked and a station is used to water manually it will irrigate the total time in one irrigation period (Figure 16.5.5C).

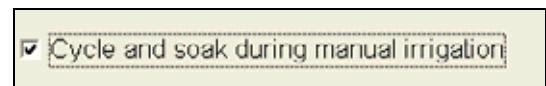


Figure 16.5.5C

2. Next check the **Enable Daylight Savings** box if you want the controller time to change along with daylight savings (Figure 16.5.6C).

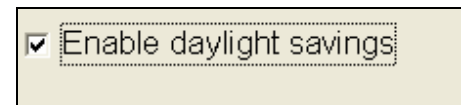


Figure 16.5.6C

Central Timestamp: This is the computers time when you received the Program Data (Figure 16.5.7C).

Controller Timestamp: This is the controller’s time when you received the Program Data (Figure 16.5.7C).



Figure 16.5.7C

Software Version: This is the current ROM version that the controller is running on (Figure 16.5.8C).

Software version:	576.o10
-------------------	---------

Figure 16.5.8C

Address: This is the current communications address for this controller (Figure 16.5.9C).

Address:	!!A
----------	-----

Figure 16.5.9C

Note: The communications address can only be changed at the controller and the last letter of the address must be capital A thru L.

ET Roll Over Time: This is the time when your controller will roll the days Et gage number into the ET table. Set the time by using the **UP** and **DOWN** arrows or by clicking on the block and entering the time. All (ET) pulses recorded during the day will be rolled over into the (ET) table (Figure 16.5.10C).

Note: Make sure that the (ET) roll over time occurs prior to the irrigation start times. This will ensure that your irrigation run time will be calculated using the most current ET data.

ET Rollover Time
08:00 PM

Figure 16.5.10C

Radio Remote: If you are using a Radio Remote select the channel from the drop down list that your hand held radios are tuned to (Figure 16.5.11C).

Note: The frequency will automatically appear directly below the words **Radio Remote** depending on which channel you select. There are nine channels to choose from (Figure 16.5.11C).

Radio Remote
160.150MHz
Channel 5
Normal Command Code (000-999)
111

Figure 16.5.11C

Normal Command Code: This is the code that you have selected to communicate via Radio Remote to this particular controller. Enter a three digit number that is different for each of your individual controllers. This is used to “activate” the radio remote on the controller (Figure 16.5.12C).

Normal Command Code (000-999)
111

Figure 16.5.12C

Station Number: This is the numerical sequence of stations and cannot be adjusted (Figure 16.5.13C).

Station Number
1
2
3
4

Figure 16.5.13C

Station In Use: This allows you to select the stations that you currently have connected to the controller, or gives you the ability to temporarily include or exclude stations from your station listing (Figure 16.5.14C).

Station Number	Station In Use
1	<input checked="" type="checkbox"/>
2	<input checked="" type="checkbox"/>
3	<input checked="" type="checkbox"/>
4	<input checked="" type="checkbox"/>

Figure 16.5.14C

Station Flow Rate: This is the rate at which the station flows at in gallons per minute. The controller can learn this flow over approximately seven irrigations (Figure 16.5.15C).

Note: The following (preceded by a *) are only visible if you are using ET.

Station Number	Station In Use	Station Flow Rate (gpm)
1	<input checked="" type="checkbox"/>	12
2	<input checked="" type="checkbox"/>	15
3	<input checked="" type="checkbox"/>	1
4	<input checked="" type="checkbox"/>	1

Figure 16.5.15C

***Station Covered Area (sq.ft.):** This is the amount of area that this station covers in square feet (Figure 16.5.16C).

Station Number	Station In Use	Station Flow Rate (gpm)	Station Covered Area (sq. ft.)
1	<input checked="" type="checkbox"/>	12	100
2	<input checked="" type="checkbox"/>	15	220
3	<input checked="" type="checkbox"/>	1	100
4	<input checked="" type="checkbox"/>	1	100

Figure 16.5.16C

***Station Precipitation Rate (in/hr):** This is the precipitation rate in inches per hour for this particular station (Figure 16.5.17C).

Station Number	Station In Use	Station Flow Rate (gpm)	Station Covered Area (sq. ft.)	Station Precipitation Rate (in/hr)
1	<input checked="" type="checkbox"/>	12	100	11.55
2	<input checked="" type="checkbox"/>	15	220	14.44
3	<input checked="" type="checkbox"/>	1	100	0.96
4	<input checked="" type="checkbox"/>	1	100	0.96

Figure 16.5.17C

Note: The precipitation rates for all types of sprinkler heads can be found in the manufacturers catalog.

Station Description: You can use this box to enter a brief description of where the station is located or what type of plant matter that it is irrigating (Figure 16.5.18C).

Station Number	Station In Use	Station Flow Rate (gpm)	Station Covered Area (sq. ft.)	Station Precipitation Rate (in/hr)	Station Description
1	<input checked="" type="checkbox"/>	1	100	0.96	North Parking Lot next to building 501
2	<input checked="" type="checkbox"/>	1	100	0.96	
3	<input checked="" type="checkbox"/>	1	100	0.96	
4	<input checked="" type="checkbox"/>	1	100	0.96	

Figure 16.5.18C

16.6 ET2000 (500 SERIES) CONTROLLER SCHEDULE SAVE PROGRAM DATA

Save Program Data: Saving Program Data will allow you to store the controller schedule that you are currently viewing. You only need to save if changes have been made. You can view this data by following the steps in section 16.1 “**ET Controller schedule.**”

1. Click on the **Save Program Data** icon located in the toolbar at the top of the screen (Figure 16.6.1C).



Figure 16.6.1C

Note: No further action is required. Your Data is saved under today’s date.

16.7 ET2000 (500 SERIES) CONTROLLER SCHEDULE SEND PROGRAM DATA

1. Click on the **Send Program Data** icon located in the toolbar at the top of the screen (Figure 16.7.1C).



Figure 16.7.1C

Note: A “**Communications screen**” will appear letting you know that you are communicating with the controller of choice (Figure 16.7.2C).

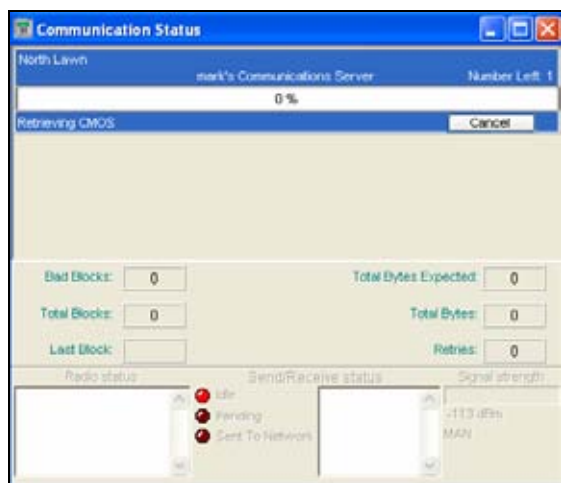


Figure 16.7.2C

Note: After the communication has taken place the “**Communications Completed**” screen will appear (Figure 16.7.3C).



Figure 16.7.3C

- Click on the **OK** button.

16.8 ET2000 (500 SERIES) CONTROLLER SCHEDULE PRINT PROGRAM DATA

Print Program Data: You can print a copy of your entire program data for a selected controller.

- Click on the **Print** icon located in the toolbar at the top of the screen (Figure 16.8.1C).

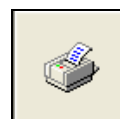


Figure 16.8.1C

Note: This will take you to the “**Controller Schedule Print**” screen (Figure 16.8.2C).



Figure 16.8.2C

**SEE “HOW TO PRINT REPORTS”
SECTION FOR MORE INFORMATION.**

16.9 ET2000 (500 SERIES) GET PROGRAM DATA

Get Program Data: The Get Program Data command is used to gather all of the programming information of a controller. The controller's program data is divided into four different categories, the Controller schedule, Controller Flow, Controller Weather, and Controller setup.

- In the toolbar at the top of the screen select **Communications** then scroll down to **Speed Communications** and click on it (Figure 16.9.1C).

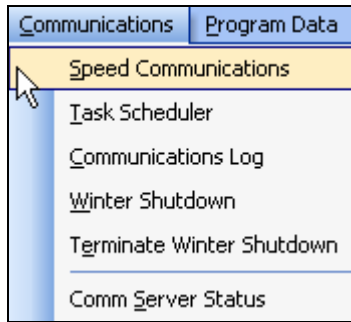


Figure 16.9.1C

Note: This will take you to the “**Speed Communications**” screen (Figure 16.9.2C).

Note: When using **Speed Communications** to call up a single controller the data will display after the communications have been completed. When communicating to a site or multiple controllers, the program data will not be displayed after the communications are complete.



Figure 16.9.2C

- Next click on the **Get Program Data** icon to the right of the screen (Figure 16.9.3C).



Figure 16.9.3C

Note: This will take you to the “**Program Data**” screens for this particular controller.

SEE SECTION 16.1 FOR MORE DETAILS

SECTION 16
(TAB C) ET2000 (500 SERIES) CONTROLLER PROGRAM DATA



A large, empty rectangular box with a thin black border, intended for the controller program data.

SECTION 16
(TAB C) ET2000 (500 SERIES) CONTROLLER PROGRAM DATA



A large, empty rectangular box with a thin black border, intended for the controller program data.