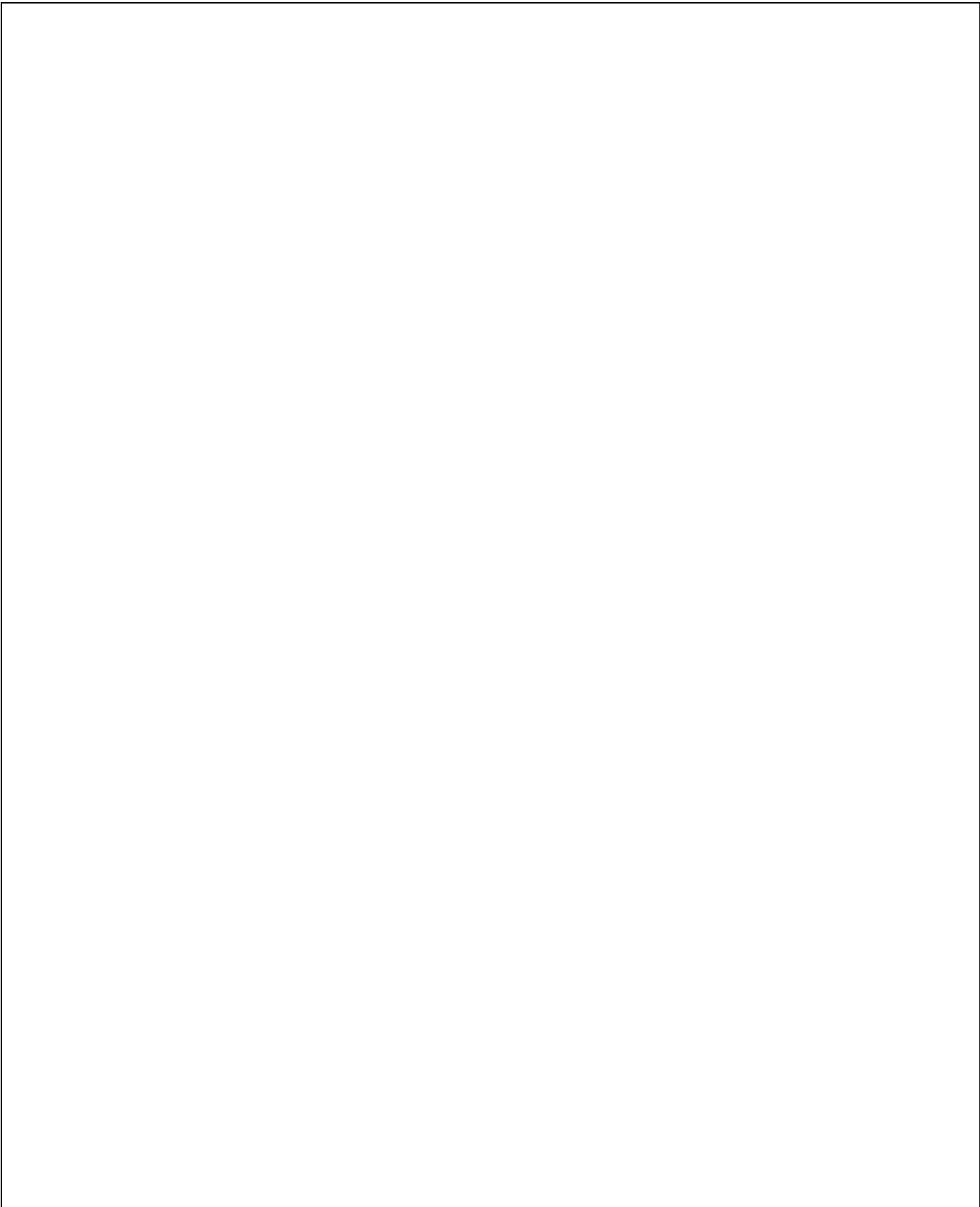


CC4



COMMAND CENTER WATER MANAGEMENT MANUAL



 **INTRODUCTION**

The Calsense CC4 Command Center Water Management Manual is a detailed packet of tutorial information designed to help install and use the Calsense Command Center software. This specific manual covers software versions 4.3 to 4.4 Please call Calsense directly at 1(800)-572-8608 or 1-(760)-438-0525 for further information when needed. Additionally, a list of office locations of Calsense representatives and distributors can be found at the end of this section.

 **CALSENSE PHILOSOPHY**

Calsense is the premier resource for quality irrigation controllers, water and labor saving accessories, and advanced management software. With nearly two decades of experience in the industry, our focus is on water conservation, labor savings, and irrigation control. We're committed to providing our customers with a powerful water management system that works and is easy to use.

Our success is based on manufacturing quality products that are innovative, designed to address our customers' needs and that are supported by excellent factory service and training. The end result for our customer is true water management and the Calsense advantage.

 **CALSENSE SERVICE**

Calsense specializes in water management systems that are easy to use and provides to our customers the strongest after-sale factory training and field service program available in the irrigation industry. Calsense responds quickly to customer needs and engineers products to reflect those needs. It is our consistent hands-on education in the field, with specialized quality products that work, that produces the success Calsense customers' experience.

Our professional field service technicians help maintenance personnel learn the complete operations of all Calsense products, including our central computer software called Command Center. The reporting capabilities of the software complete with charts and graphs are powerful management tools.

Water usage summary reports provide clear feedback to the operator as to meeting clear water management objectives, and can be used to foster accountability for the amount of water used.

Bridging the gap between landscape maintainer, water manager, and irrigation designer, Calsense provides complete water management systems that work, along with all information needed at each phase of each specific project. Water management products and principles, in this way are used effectively to achieve everyone's common goal of *"working together to manage water"*.

 **HOW TO CONTACT CALSENSE**

CALSENSE

2075 Corte del Nopal, Suite P
Carlsbad, CA 92011
Phone: 1-(800)-572-8608
Phone: 1-(760)-438-0525
Fax: 1-(760)-438-2619

David Byma, President
Rick Capitanio, VP of Sales
Richard Wilkinson, Field Service Manager

Product Representatives

Erin Hagen - Southern CA / Specifications Sales
Jim Cox – Southern CA
Bob Moxley – Southern CA
Ian Clarke – Northern CA
Kevin Schasel – Pacific Northwest US
David Rippe – Southeastern US
Mark Huntzinger-Southern CA

Field Service Representatives

Steven Duff – Southern CA
Eric Hanson – Southern CA
David Meehan – Southern CA
Joe Perez – Southern CA
Jennifer Gregoris – Northern CA
Jim Jordan – Northern CA
Bill Bellinger – Communications Specialist
Kevin Schasel-Pacific Northwest US
Dave Rippe- Southeastern US
Matt MacCloskey- Texas, Oklahoma

Product & Technical Support

1-800-572-8608
Mark Davis

CALSENSE DISTRIBUTORS

IRRIGATION STATION

Phone: 1-(800)-730-7246
1-(800)-356-2458
Locations: Oklahoma
Texas

JOHN DEERE LANDSCAPING INC.

Phone: 1-(800)-426-4680 ext (8) sales
Locations: Southern California
Northern California

EWING IRRIGATION PRODUCTS

Phone: 1-(800)-343-9464
Locations: Southern California
Northern California
Arizona
Georgia
Nevada
New Mexico
Colorado
Louisiana
Alabama

J HAROLD MITCHELL

Phone: 1-(800)-675-7305
Locations: Southern California

M & M BOYS

Phone: 1-(909)-371-1296
Locations: Southern California

MAJOR IRRIGATION

Phone: 1-(619)-283-6527
Locations: Southern California

HORIZON

Phone: 1-(800)-445-9399
Locations: Oregon
Washington

SMITH PIPE & SUPPLY

Phone: 1-(805)-498-6744
Locations: Southern California

IMPERIAL SPRINKLERS

Phone: 1-(714)-792-2920
Locations: Southern California

Or, contact Calsense at 1-(800)-572-8608 to locate a distributor branch near you



 **COMMAND CENTER DESCRIPTION**

The Calsense Command Center software is a centralized based computer system designed to make easy work of complete irrigation control. It's self-prompting program is specifically designed for easy operation and requires no prior computer operating experience. Problem areas are pinpointed in a complete daily ALERT report as to cause and exact location, enabling maintenance crews to handle them effectively.

The Command Center system can send and receive information to and from any Calsense irrigation controller to which it is linked. It can receive daily ET from a Calsense ET gage (ETG) and rainfall from a Calsense Rain Bucket (RB-1) and send it to other field controllers. The irrigation controllers use this information to calculate station run times automatically.

Each irrigation controller's program may be viewed and adjusted from the Command Center software. However the stand alone controller can still be operated in the field. Calsense provides several flexible options for the communication between the central computer and the field units. The software is compatible with local radio, digital radio, Ethernet, fiber optic modem, GPRS, CDPD, phone modem and hardwired communications options. The central system is capable of using any combination of one or more of these communication methods.

 **COMMAND CENTER FOR WINDOWS**

For ET1, ET2000, and ET2000e controllers

Command Center for windows version 4 is the latest version of Command Center. It is mouse driven, and controller data is displayed in an easy to read format. It supports ET1 and ET2000 controllers with all communications options, such as telephone, direct wire, local radio, and digital radio. Some communication options are not available on older model controllers. Group alerts, group functions, local radio communications, and improved reporting capabilities are provided.

 **CENTRAL COMPUTER SOFTWARE**

The central control software shall have the following characteristics:

1. Run on any IBM compatible computer with minimum of 128 MB of memory available for program operation.
2. Compatible with all Calsense ET-driven and moisture sensor-driven controllers.
3. Functions with any combination of hardwired, phone, Ethernet, GPRS, fiber optic modem, digital radio or local radio communication.
4. Does not conflict with other software programs running on the same computer.
5. Allows direct real-time access to run stations, run programs, check for flow, check master valve operation, and turn controllers on or off.
6. Prints alerts each day based on operator-set data filters. This feature prints only program changes and problem flags selected by the operator.
7. Automatically creates permanent files each time log or program data is uploaded.
8. Allows all program data, log data, summary data and alert data for each controller to be selectively printed by controller or group.
9. Automatically uploads weather data from ET gage or weather station, and Tipping Rain Bucket and re-distributes to all field units.
10. Capacity to operate more than 9,999 controllers.
11. Intuitive Windows-based menu driven format requires no special training to operate.
12. Water usage data is automatically retrieved monthly from each controller and written to a text files for easy placement into Windows graphing programs.
13. Allows user to view and / or override any changes made at irrigation controllers.
14. When used with digital network radio, the central computer can roam throughout the United States without changing frequencies.
15. Failure of the central control system or communications shall not affect normal, water management operation of irrigation controllers.



 **CENTRAL COMPUTER
SPECIFICATIONS**

The Calsense Command Center software can be used with an IBM compatible computer. Calsense recommends, although it is not required, that the central computer be dedicated for irrigation control in order to achieve efficient monitoring of the system. The central computer shall have the following characteristics:

1. IBM PC or 100% compatible, 80586(Pentium) minimum 600 Mhz.
2. Windows 95 / 98 / XP / NT 4.0 (SP4) / 2000 (ME not supported)..
3. Minimum 128MB of RAM (256 MB RAM recommended).
4. Minimum 150 MB hard disk space (10 GB recommended) for data storage.
5. 3.5" Floppy Drive (double-speed CD-ROM drive recommended).
6. Two serial ports and one parallel port.
7. 15" monitor (17" recommended).
8. 256 color VGA video (True-Color recommended).
9. 9600 baud modem (28.8 K or faster recommended).
10. Microsoft compatible mouse.
11. Microsoft compatible printer recommended.
12. Calsense Command Center central software.

HOW TO USE THIS MANUAL

Each section of this manual contains information conveyed in different formats. A definition, along with an example is shown below:

Section Heading: Any time a new section starts it will begin with a section heading:

Example

3.0 COMMUNICATIONS SETUP

Sub-Section Heading: This will occur when two or more sub-headings appear in a section.

Example

MANUAL PROGRAM 1&2

Section Description: This will be a brief, one paragraph description of the material that is about to be covered.

Example

The ET2000 access control setup is used for assigning access levels and login codes for field personnel. When login codes are sent to the controller, only personnel with an assigned login code will have access to the controller's programming and operating features. Access Levels can only be created and sent to a controller with Command Center software.

Step: A step is an action that needs to be physically accomplished in order of sequence. Step 1 must be carried out prior to step 2 and so on.

Example

1. In the toolbar at the top of the screen select **Setup** and then scroll down to **ET2000 access control setup** and click on it (Figure 12.0.2).

Button or Selection: This is a visual prompt to click or select a choice from the screen or area that you are currently in. They will be in blue font and appear exactly as shown in the screen.

Example

2. When finished with this section click on the **OK** button to save new data.

Figure: A figure is a picture, or drawing used to visually aid you in completing a step.

Example



Figure 12.0.2



Note: This is a piece of information used to let you know something without requiring you to take any physical action.

Example

Note: ET2000 controllers are shipped from the factory set to Level 0. The entire controllers programming is accessible and no Login code is necessary.

Definition: A single word or phrase followed by a detailed explanation.

Example

Duration: The amount of time the station will run.

Window or Screen Name: This will let you know which screen, window, or section of a screen or window that you are supposed to be working in.

Example

This will bring up the “**Access Control Selection**” screen (Figure 12.1.14).

List of Options: This can be a description of multiple items, or a number of options to choose from.

Example

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**
- **Program F**
- **Drip 1**
- **Drip 2**

Direction to another Section: This is a visual signal to inform you that the subject you are currently reading about is covered in more detail in another section.

Example

SEE SECTION 28.2 FOR MORE DETAILS

Caution: This is a warning that once you complete the next step information or data will be deleted, or unrecoverable.

Example

CAUTION:

Once deleted this entry cannot be recovered.

INCORPORATING CHANGES TO THIS MANUAL

Changes: Changes are technical updates to this existing manual. Full sections or individual pages may need to be replaced. This is due to updated information, or information that is no longer required.

- Manual Changes will be numbered starting with **Change 1** and increase numerically.
- Each affected page will have the change number in the lower left hand side of the page. (See Item 1 next page).
- Changes must be incorporated in numerical sequence. (i.e. change 1 must be incorporated prior to change 2).
- A thin black bar to the left of an area will signify that a change has been incorporated. The information within the black bar has now been updated, or replaced with new information. (See Example below, and also item 2 next page).

Example:

(This is how the text reads prior to the Change incorporation).

1. Select the “**User Settings**” tab to edit the user’s Login, password, and options that you want the user to be able to access. Just check each box that you want the user to be able to perform.
2. Next click on the “**User Details**” tab this will allow you to edit all of the user’s pertinent information and access level. (Figure 1.8).

Note: None of these areas are mandatory for running Command Center.

(This is how the text reads after the Change has been incorporated).

1. Select the **User Settings** tab to edit the user’s Login, password, and options that you want the user to be able to access. Just check each box individually that you want the user to be able to perform.
2. Next click on the **User Details** tab this will allow you to edit all of the user’s pertinent information and access level. (Figure 1.1.8).

Note: None of these areas are mandatory for running Command Center.

- The List of Changes, directly after the Table of Contents will show every affected Manual Section and the latest change number incorporated. (See example page in this Section).

These manual change packets will be available for download at our company website.

www.calsense.com

Or will be available by mail to original owners, or purchasers of the Command Center software.



3. Click on the **Edit** button.

Note: This will bring you to the “**User Information**” screen (Figure 1.1.7).

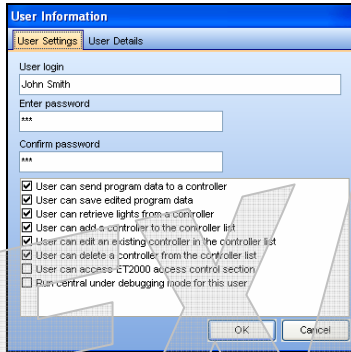


Figure 1.1.7

4. Select the **User Settings** tab to edit the user’s Login, password, and options that you want the user to be able to access. Just check each box that you want the user to be able to perform.

5. Next click on the **User Details** tab this will allow you to edit all of the user’s pertinent information and access level (Figure 1.1.8).

Note: None of these areas are mandatory for running Command Center.



Figure 1.1.8

ITEM 1

6. Click on the **OK** button.

Note: If you do not want to save any changes that you have made just click on the **Cancel** button.

1.3 DELETING A USER ON THE LIST

1. In the toolbar at the top of the screen select **File** and then scroll down to the word **Users** and click on it (Figure 1.1.9).

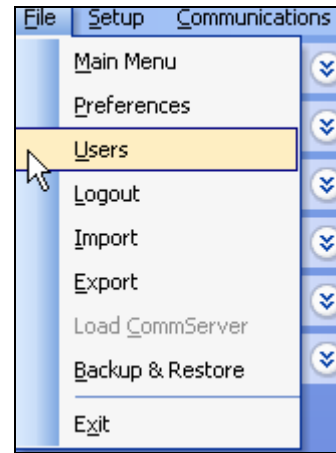


Figure 1.1.9

ITEM 2 This will bring you to the “**Users**” screen (Figure 1.1.10).

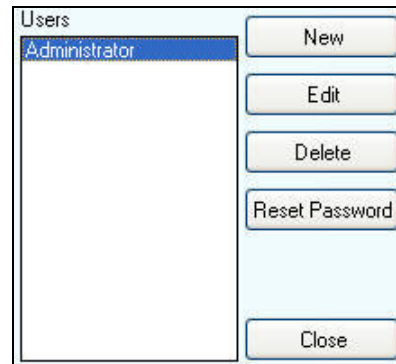


Figure 1.1.10

CHANGE 1

 LIST OF CHANGES

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ADMINISTRATOR / USER SETUP

Section 1.0 Step 1	CHANGE 1
Section 1.0 Figure 1.1.2	CHANGE 1
Section 1.0 Note	CHANGE 2

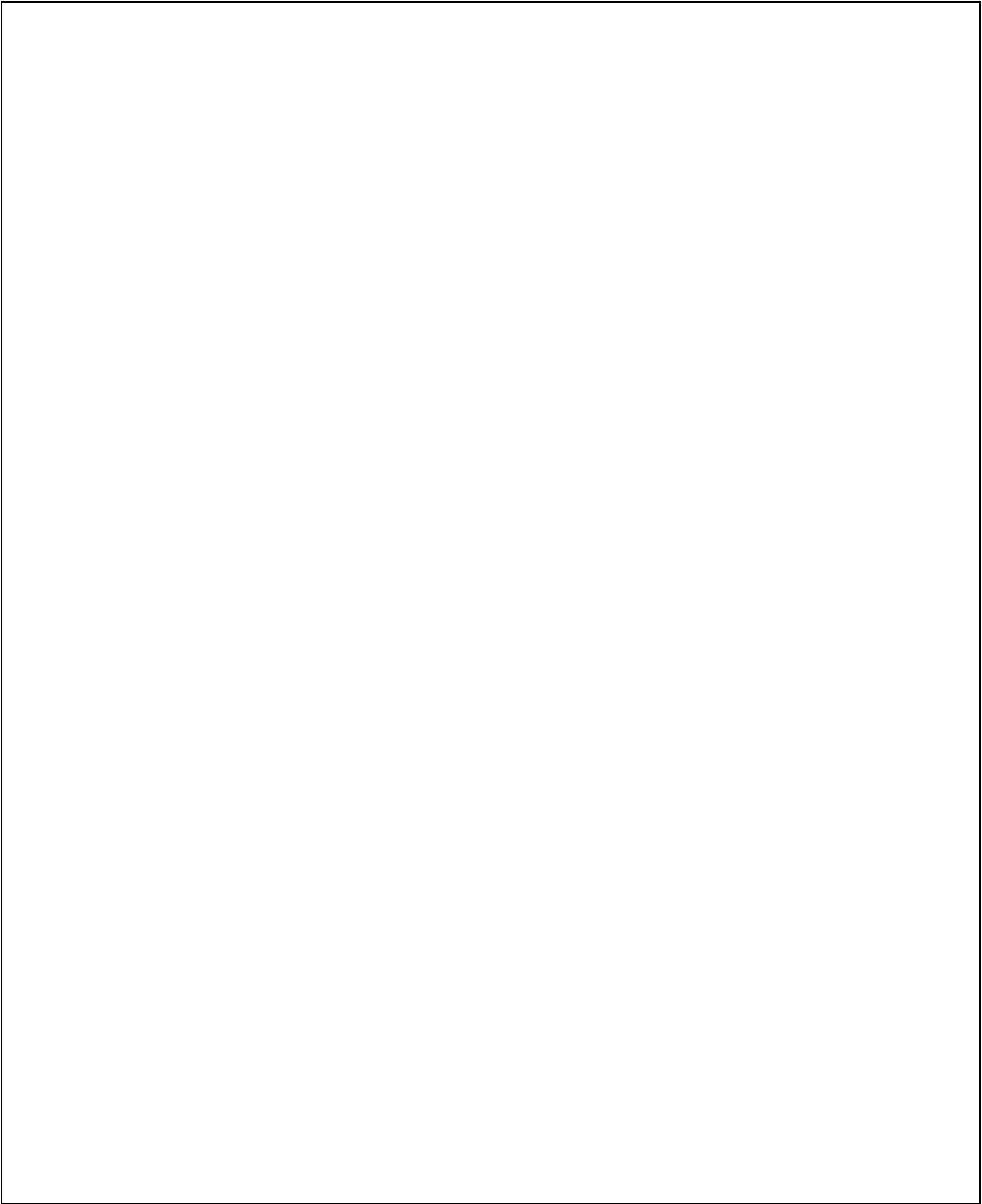
SECTION 2

PREFERENCES

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Section 2.3 Figure 1.1.3	CHANGE 3

EXAMPLE





HOW TO PRINT REPORTS

There are several reports you can generate via Command Center that you may want to print or display from time to time. These include Water Management, Water Usage, Station History, or Alerts to name a few. You can also use the print to file option to incorporate Report Data into a spreadsheet, word document, or other type of media format. This option allows the user to compile, and e-mail report data as well.

Each section of this manual, that has the ability to generate a report, will refer you to this section for instructions.

Each report screen will have a toolbar at the top of the screen (Figure 1).



Figure 1

You can view each page of the report by using the arrows at the top of the screen (Figure 2).



Figure 2

- The far left arrow will return you to the first page of the report.
- The arrow to the left of the page box will take you back one number.
- The arrow to the right of the number box will take you to the next page.
- The arrow to the far right of the number box will take you to the last page of the report.

1. You can also print this report by selecting the printer icon at the far left of the toolbar (Figure 3).



Figure 3

2. If you want to just print the page that you are looking at click on the **Print Current Page** button (Figure 4).



Figure 4

This will take you to the **Print** screen (Figure 5).

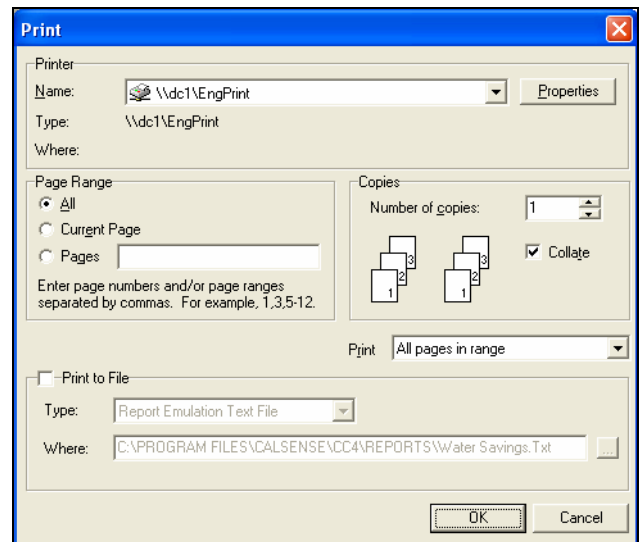


Figure 5

3. Select the printer that you want the report to print out to.
4. Select the Page Range that you want to print: **All**, **Current Page**, or **Pages**.
5. Next select the Number of **c**opies by using the **UP** and **DOWN** arrow to the right side of the number.
6. Check the **Collate** box if you want to collate your report.
7. Select whether to Print **All pages in range**, **Odd Pages**, or **Even Pages** using the Pull Down arrow.



8. Check the **Print to File** box if you want to export your Report Data into a document type format from the following list:

- *.PDF
- *.XLS
- *.DOC
- *.HTML
- *.RTF
- *.REF

Note: Some file format choices will only be available for certain types of reports.

Note: This will allow you to take the Report Data and incorporate it into a spread sheet, word document, or other type of document.

9. Next select the location that you want the report data to be stored in by clicking on the **Browse** button to the right of the location box (Figure 6).

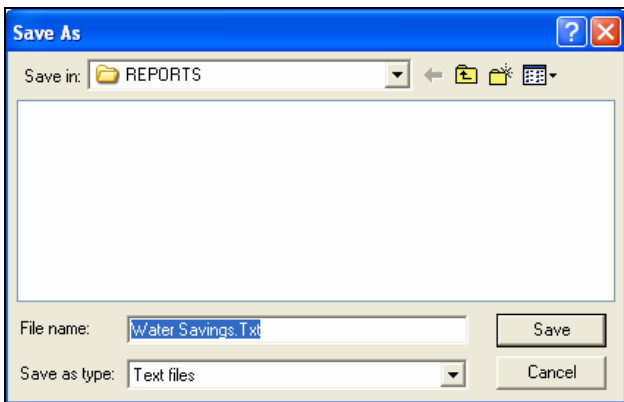


Figure 6

10. Type in the location or use the drop down arrow to select a pre-existing file.
11. Use the drop down arrow to select the Save as Type of file for Text Files, or All files.
12. Click the **Save** button to save the file, or click on the **Cancel** button to exit out of this screen without saving the information.

13. If you want to change the screen view of the report use the following:



This button will give you the Whole page view.



This button gives you the Page Width view.



This button gives you the Page percentage view. This is adjustable by using the number percentage box to adjust the size (Figure 7).

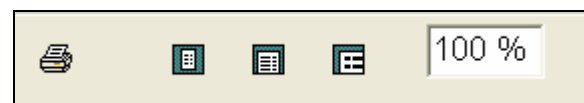


Figure 7

14. A window at the bottom of the screen will tell you how many pages there are to the report and which page you are currently on (Figure 8).

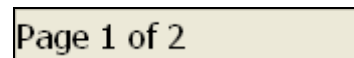


Figure 8

15. Click on the **Close** button to exit out of this screen (Figure 9).

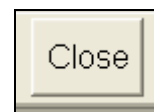
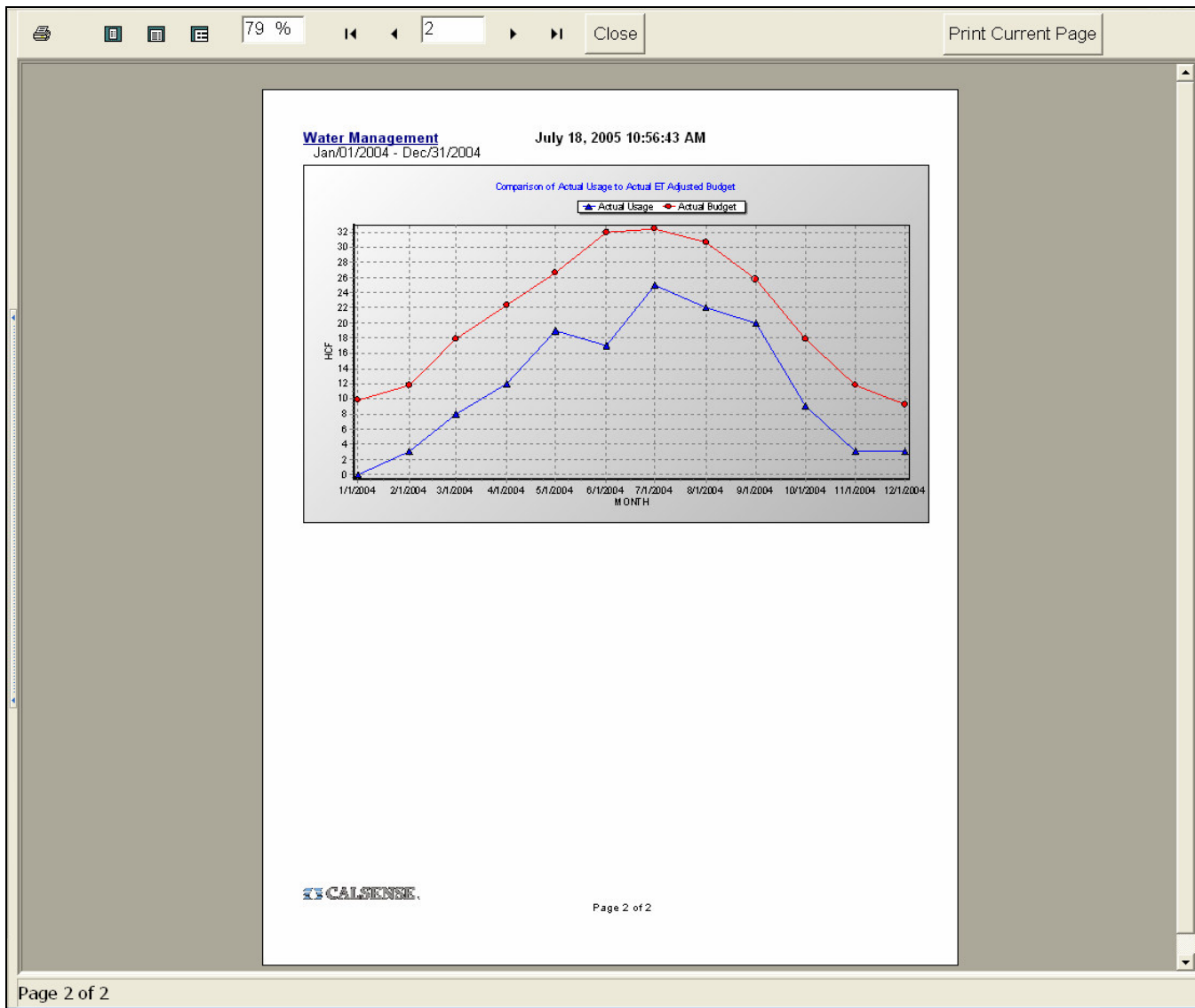


Figure 9

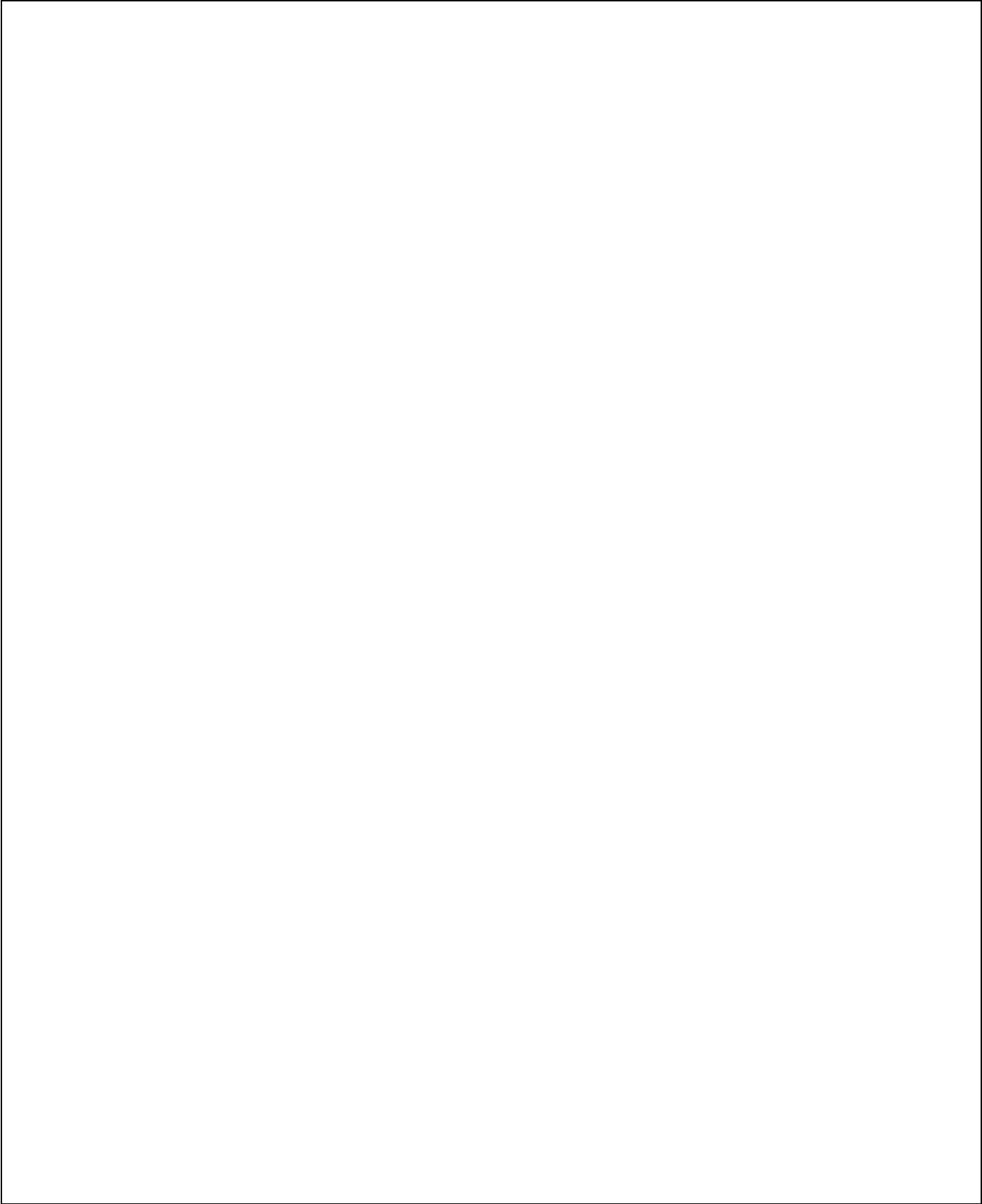
SEE LAST PAGE FOR EXAMPLE OF A REPORT



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EXAMPLE





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(WATER REPORTS)

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- 27.1 WATER USAGE REPORT
- 27.2 WATER USAGE REPORT CONTENTS

SECTION 28

CONTROLLER SUMMARY

(WATER REPORTS)

- 28.0 CONTROLLER SUMMARY
- 28.1 CONTROLLER SUMMARY REPORT
- 28.2 CONTROLLER SUMMARY REPORT CONTENTS



SECTION 29**STATION SUMMARY
(WATER REPORTS)**

- 29.0 STATION SUMMARY
- 29.1 STATION SUMMARY REPORT
- 29.2 STATION SUMMARY REPORT CONTENTS

SECTION 30**USER LOG SETUP**

- 30.0 USER LOG SETUP
- 30.1 USER LOG REPORT CONTENTS

SECTION 31**BACK UP AND RESTORE**

- 31.0 BACKUP AND RESTORE
- 31.1 BACKUP
- 31.2 RESTORE

SECTION 32**COMMUNICATIONS SERVER STATUS**

- 32.0 COMMUNICATIONS SERVER STATUS
- 32.1 COMMUNICATIONS SERVER STATUS SCREEN CONTENTS

SECTION 33**RRe INTERFACE**

- 33.0 RRe INTERFACE
- 33.1 PREFERENCES
- 33.2 REGIONS
- 33.3 CONTROLLERS
- 33.4 HELP

SECTION 34**POC SUMMARY
(WATER REPORTS)**

- 34.0 P.O.C. SUMMARY
- 34.1 P.O.C. SUMMARY REPORT
- 34.2 P.O.C. SUMMARY REPORT CONTENTS

 **LIST OF CHANGES**

CHANGE 1

SECTION 7 DIRECT ACCESS

Section 7.4 DIRECT ACCESS ET2000e Date incorporated 20 September 2006

SECTION 16 CONTROLLER PROGRAM DATA TAB D

Section 16.10 ET2000e (-F) option Date incorporated 20 September 2006

SECTION 33 RRe-INTERFACE

Entire section added to manual Date incorporated 20 September 2006

SECTION 34 P.O.C SUMMARY

Entire section added to manual Date incorporated 20 September 2006

MAKE SURE THAT CHANGE 1 HAS BEEN INCORPORATED INTO THIS MANUAL
PRIOR TO INCORPORATING CHANGE 2

CHANGE 2

SECTION 2 PREFERENCES

Section 2.0 Communication Tab Date incorporated 30 March 2007

SECTION 8 ALERT SETUP

Section 8.2 Alert Filters Thru 8.5 Alert Filters Date incorporated 30 March 2007

SECTION 16D ET2000e PROGRAM DATA

Section 16.1 Controller Schedule
(Addition of Program Priorities)

Section 16.3 Controller Flow (Flow checking section) Date incorporated 30 March 2007

SECTION 20 ALERTS

Section 20.0 ALERTS Date incorporated 30 March 2007



1.0 ADMINISTRATOR / USER SETUP

This section is used to setup login, password and type of user information.

When starting Command Center for the first time, you will need to login in under the Administrator account. Enter the User name shown below. You will need to call Calsense, or talk to a Field Representative to acquire the password.

When entering the password pay close attention to the Capitol letters “C” and “H” everything else should be lowercase (Figure 1.0.1). Once logged in, a new Administrator name and password should be entered.



Figure 1.0.1

Note: There are two types of user account levels, Administrator and Standard User.

Administrator: The Administrator adds users, creates passwords, and sets up access levels for Standard Users and assigns controllers to users.

Standard User: A Standard User is usually one who uses the Command Center program to manage a group of controllers under his/her charge. An example of a Standard User might be a person who only has access to the lights program of the controller, but does not have access to making any other programming changes to the controller that is shared by another user.

Note: A Standard User will have no access to the **Users setup**.

Note: After you login for the first time it is recommended that you change the password for the Administrator account.

1.1 ADDING A USER

1. In the toolbar at the top of the screen select **File** and then scroll down to the word **Users** and click on it (Figure 1.1.1).

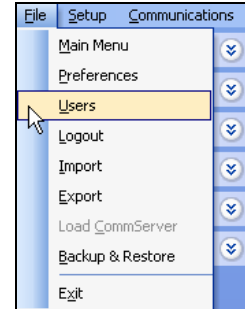


Figure 1.1.1

Note: This will bring you to the “Users” screen (Figure 1.1.2).

2. Click on the **New** button.

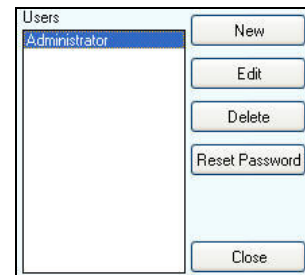


Figure 1.1.2

Note: This will bring you to the “User Information” screen (Figure 1.1.3).

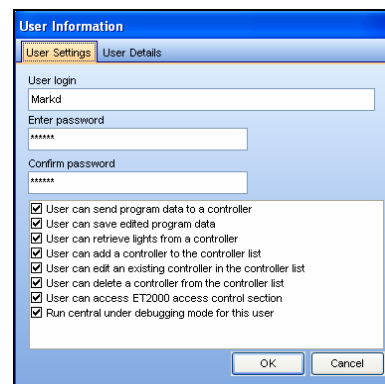


Figure 1.1.3

3. Select the **User Settings** tab.

Note: This will allow you to fill in the user’s Login, password, and options that you want the user to be able to access. Just check each box that you want the user to be able to perform.

4. Next click on the **User Details** tab at the top of the same screen (Figure 1.1.4).

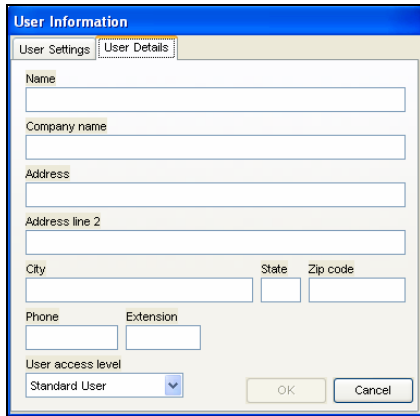


Figure 1.1.4

5. Fill in the appropriate boxes with user information and select User access level.
6. Click on the **OK** button.

Note: If you do not want to save any changes that you have made just click on the **Cancel** button.

1.2 EDITING A USER

1. In the toolbar at the top of the screen select **File** and then scroll down to the word **Users** and click on it (Figure 1.2.1).

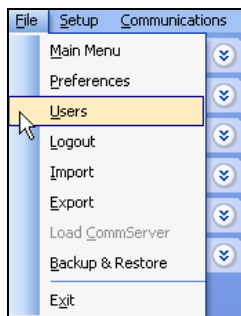


Figure 1.2.1

Note: This will bring you to the “**Users**” screen.

2. Highlight the user’s name that you wish to edit (Figure 1.2.2).

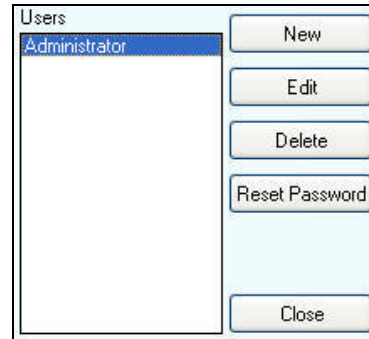


Figure 1.2.2

3. Click on the **Edit** button

Note: This will bring you to the “**User Information**” screen (Figure 1.2.3).

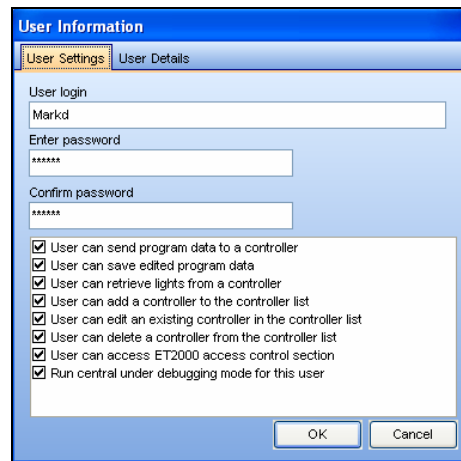


Figure 1.2.3

4. Select the **User Settings** tab to edit the user’s Login, password, and options that you want the user to be able to access. Just check each box that you want the user to be able to perform.
5. Next click on the **User Details** tab this will allow you to edit all of the user’s applicable information and access level. (Figure 1.2.4).

Note: None of these areas are mandatory for running Command Center. However this information appears at the top of all generated reports.

The 'User Information' dialog box has two tabs: 'User Settings' and 'User Details'. The 'User Details' tab is active. It contains the following fields: Name (text box), Company name (text box), Address (text box), Address line 2 (text box), City (text box), State (dropdown), Zip code (text box), Phone (text box), Extension (text box), and User access level (dropdown menu set to 'Standard User'). There are 'OK' and 'Cancel' buttons at the bottom right.

Figure 1.2.4

6. Click on the **OK** button.

Note: If you do not want to save any changes that you have made just click on the **Cancel** button.

1.3 DELETING A USER

1. In the toolbar at the top of the screen select **File** and then scroll down to the word **Users** and click on it (Figure 1.3.1).

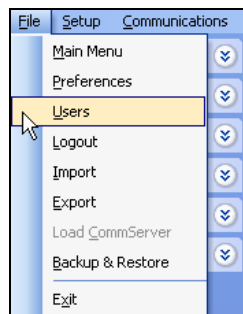


Figure 1.3.1

Note: This will bring you to the “**Users**” screen (Figure 1.3.2).

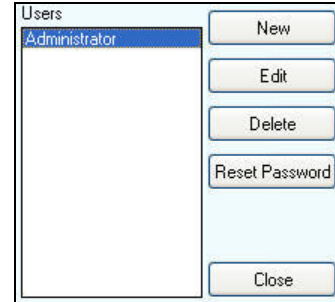


Figure 1.3.2

2. Highlight the user’s name that you want to delete.
3. Click on the **Delete** button.

Note: This will bring you to the “**Confirm**” screen (Figure 1.3.3).

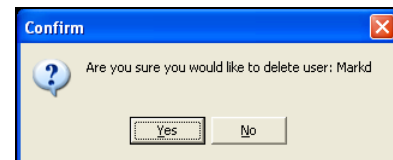


Figure 1.3.3

4. Select **Yes** if you want to delete the user, or select **No** if you do not want to continue. If **Yes** is selected the user highlighted will be deleted. If **No** is selected the user will remain unchanged.

Note: If you are done in this area click on the **Close** button.

1.4 RESETTING A USER’S PASSWORD

1. In the toolbar at the top of the screen select **File** and then scroll down to the word **Users** and click on it (Figure 1.4.1).

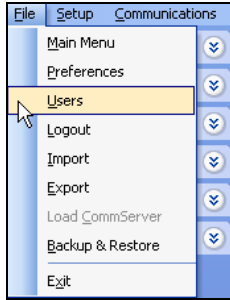


Figure 1.4.1

Note: This will bring you to the “Users” screen (Figure 1.4.2).

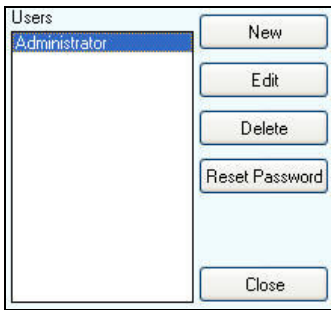


Figure 1.4.2

2. Highlight the user’s name whose password that you want to reset.
3. Click on the **Reset Password** button.

Note: This will bring you to the “Reset Password” screen (Figure 1.4.3).

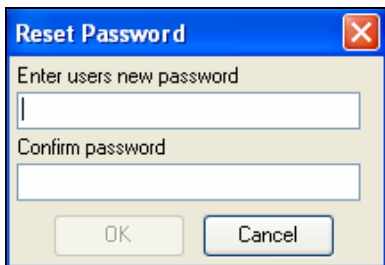


Figure 1.4.3

4. Enter user’s new password in the **Enter Users new Password** box.
5. Enter the very same password in the **Confirm Password** box.

6. Click on the **OK** button. This will take you back to the “Users” screen. The user’s password is now changed. If the OK button does not enable the two passwords entered **do not** match.

Note: Passwords are capital sensitive.

Note: If you do not want to change the users password click the **Cancel** button and no changes will be made. If you are done in this area, click the **Close** key.

1.5 LOGIN

Login: The login menu option in the toolbar is used when Command Center is already open and the prior user has used the logged out.

Note: The “User Login” screen will be present in the middle of the screen (Figure 1.5.1).

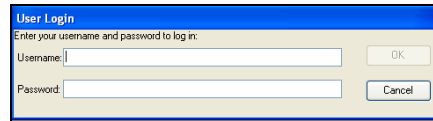


Figure 1.5.1

1. Click on the **Username** box and type in your login name (Figure 1.5.2).

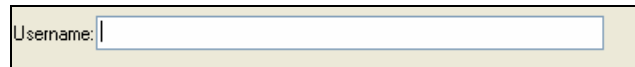


Figure 1.5.2

2. Click on the Password box and type in your password (Figure 1.5.3).

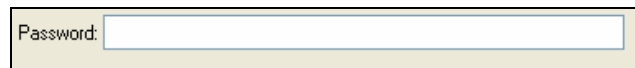


Figure 1.5.3

Note: The Password box is case sensitive, make sure that you are using capital letters if required.

3. Next click on the **OK** button.

Note: if you do not want to login click on the **Cancel** button.

1.6 LOGOUT

Logout: The logout option is used when you are through using Command Center but do not want to completely close it down.

1. In the toolbar at the top of the screen click on **File** scroll down to the word **Logout** and click on it (Figure 1.6.1).

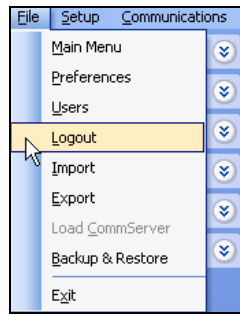


Figure 1.6.1

Note: This will bring up the “**User Login**” screen with your login in the Username box (Figure 1.5.1).

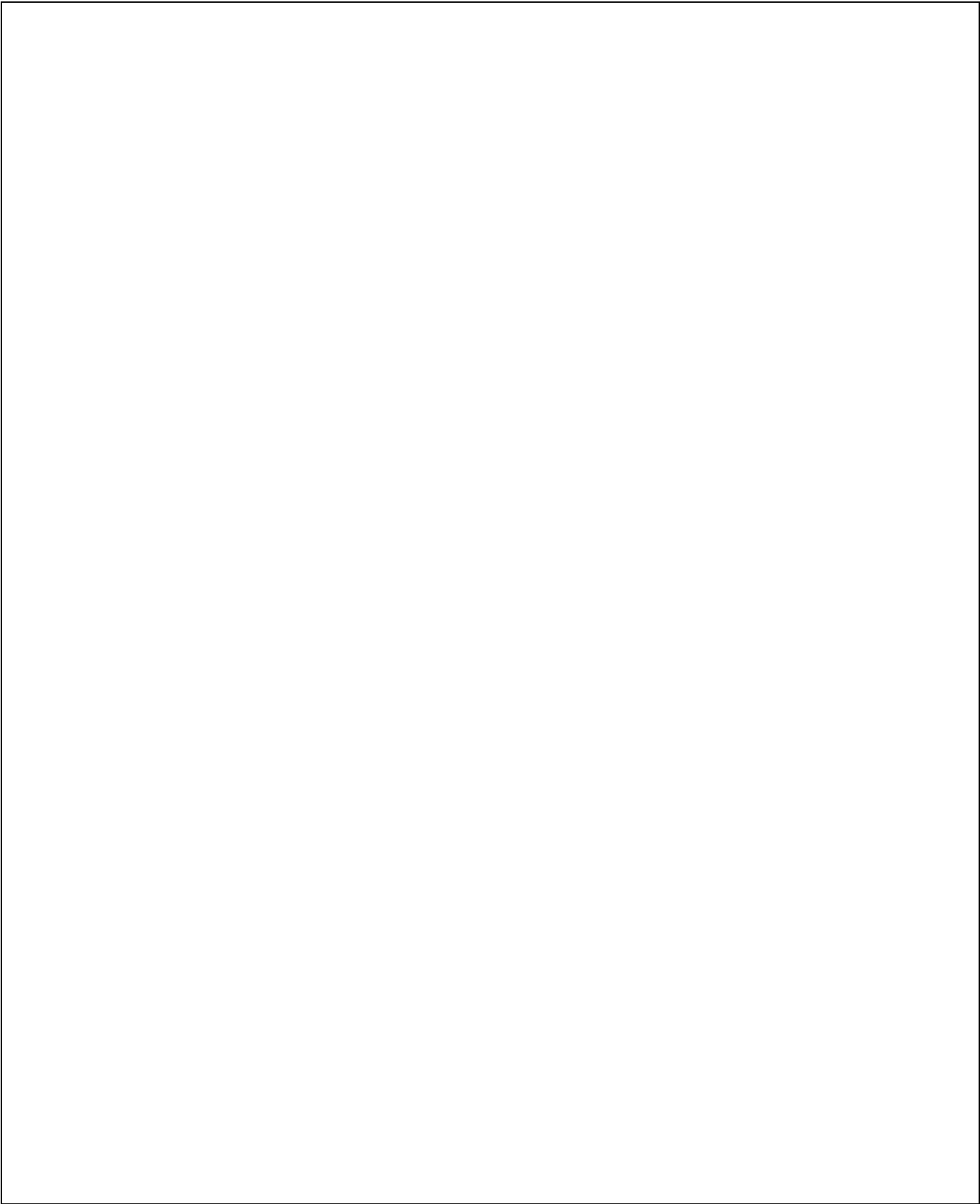
Note: At This point you can click on the **CANCEL** Button to completely close out of Command Center, or log back in at a later time by entering your password in the “**Password:** “ box and clicking on the **OK** button (Figure 1.5.1).

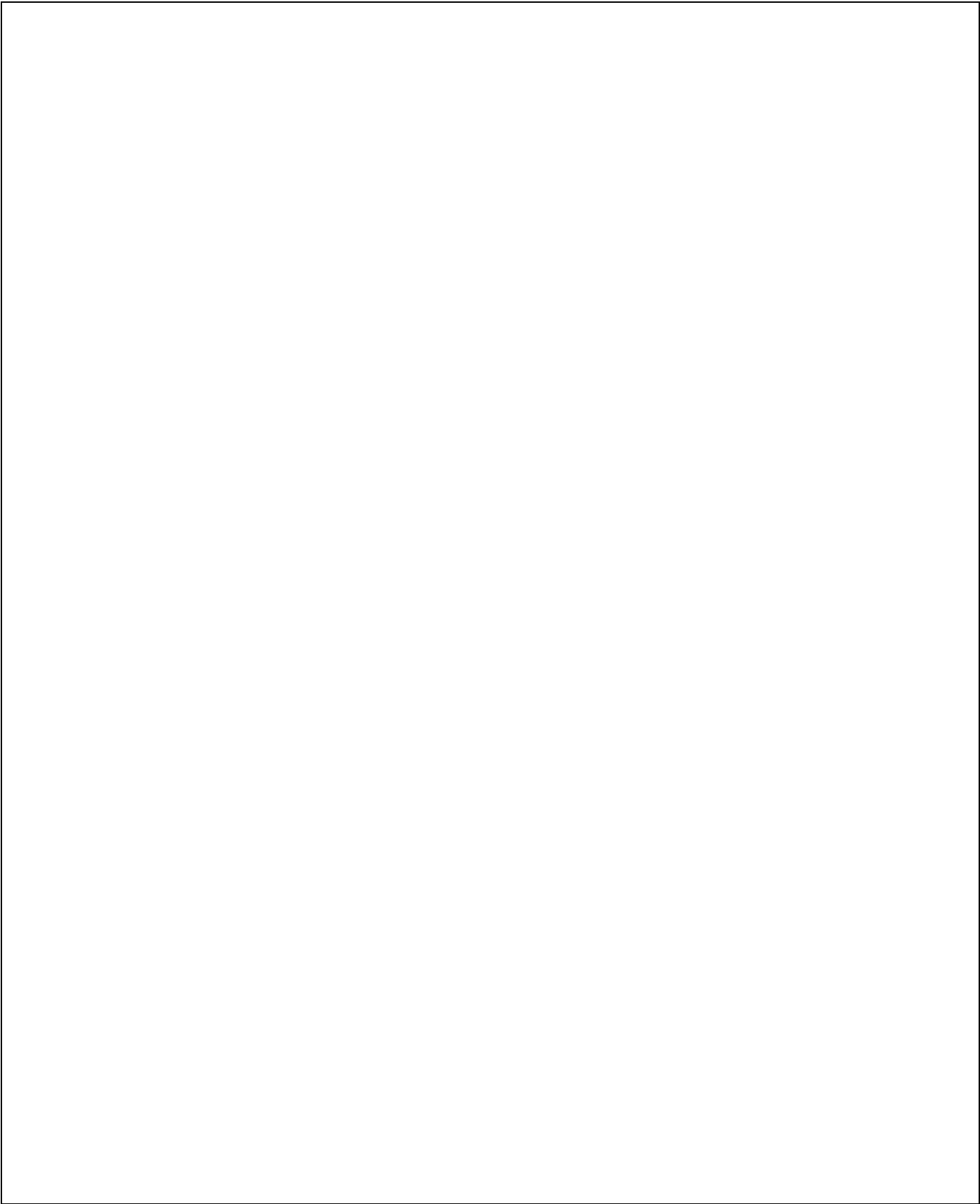
1.7 IMPORT

Import: Import is used to extract data from an older version of Command Center and incorporate it into the most recent version of Command Center. This should only be done with the help of a Calsense Field Representative, or call Calsense for assistance.

1.8 EXPORT

Export: Export is used to transfer your entire controller list and select controller data to another computer. This is used as a way to grant the user complete access to the controller list, with selected controller data to conserve memory space. This should only be done with the help of a Calsense Field Representative, or call Calsense for assistance.





2.0 PREFERENCES

The Preferences area of Command Center is used to enter all of the users information, Choose to compare ET values, set chart and report colors, miscellaneous information, Communication preferences, and client server setup.

1. In the toolbar at the top of the screen select **File** and then scroll down to the word **Preferences** and click on it (Figure 2.0.1).

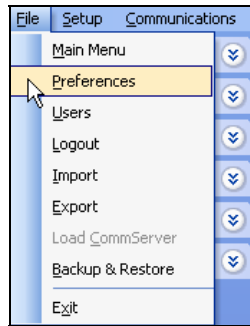


Figure 2.0.1

Note: This will bring you to the **“Preferences”** screen.

USER INFORMATION TAB

1. Click on the **User’s Information** tab (Figure 2.0.2).

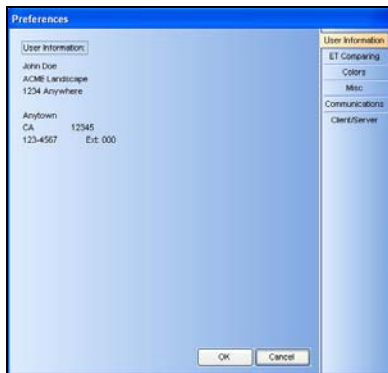


Figure 2.0.2

User Information: The User Information is used to identify the user who is currently logged into Command Center. This information cannot be edited

from this screen. It can only be edited from the **“User Information / User Details”** screen.

Note: (See Section 1.2). This information will appear in the header of all printable reports generated by Command Center.

Note: The current logged in users name will appear in the alert lines whenever communicating to an ET2000 500 series or ET2000e controller.

3. When finished viewing this area click on the **OK** button.

ET COMPARING TAB

1. Click on the **ET Comparing** tab (Figure 2.0.3).

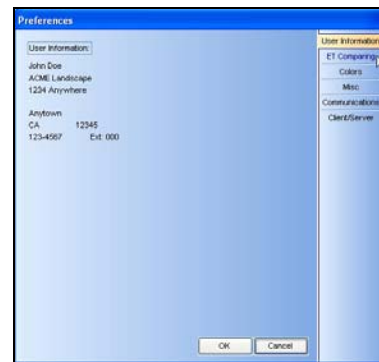


Figure 2.0.3

Note: This will take you to the **“Preferences”** screen for ET comparing (Figure 2.0.4).

Note: You must be logged in as an administrator to edit any information on this screen.



Figure 2.0.4

Compare Against Minimum ET Values When Sharing: Checking this box tells Command Center to compare the actual gage readings to the user specified minimum values.

Share Minimum Value: Checking a “**Share Minimum Value**” box will compare the actual gage reading to the minimum value set. If the gage reading is less than the minimum value, the minimum value will be used.

Note: The “**Compare Against Minimum ET Values When Sharing**” box. If the share minimum value is **not** checked the Central will share all ET Gage numbers down to 0.00. If checked the Central will never share an ET value below what you have set as the minimum for each month.

- When finished with this section click on the **OK** button to save new data.

Note: If you do not want to save any changes made in this area click on the **Cancel** button.

COLORS TAB

This screen is where you set up **Communication Success, Warning and Failure Colors:** These communication events are linked to the “**Communications Log**” under “**Central Reports**” and “**Communications**”. This is a log of the communications between the central computer and field controllers.

Also this screen is where you setup Actual Usage, Actual Budget, and Adjustment Budget colors: these colors are used in generated water reports.

Choosing different color schemes makes for easy identification of successes, warnings and failed communications while viewing the communication log.

- Click on the **Colors** tab (Figure 2.0.5).

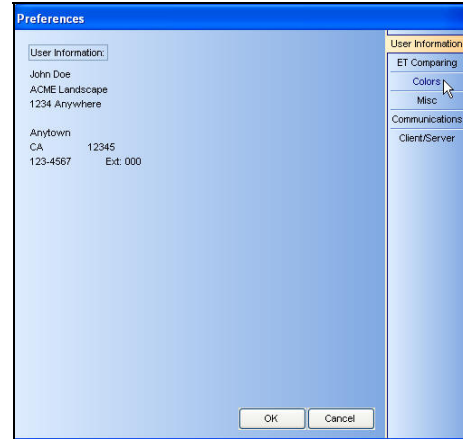


Figure 2.0.5

Note: This will take you to the “**Preferences**” screen for colors (Figure 2.0.6).

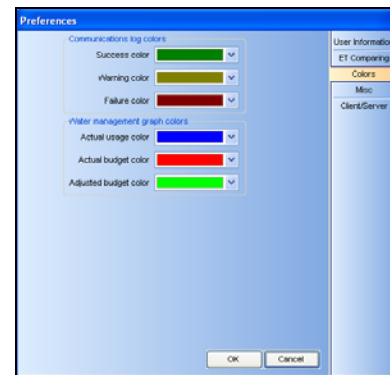


Figure 2.0.6

Water Management Graph Colors: There are twenty-two different colors to choose from. The colors selected will help in reading the graphs on the screen or when they are printed.

Note: Each color selected will denote the condition directly across from it when displayed on reports.

- When finished with this section click on the **OK** button to save new data.

Note: If you do not want to save any changes made in this area click on the **Cancel** button.

MISC TAB

1. Click on the **Misc** tab (Figure 2.0.7).

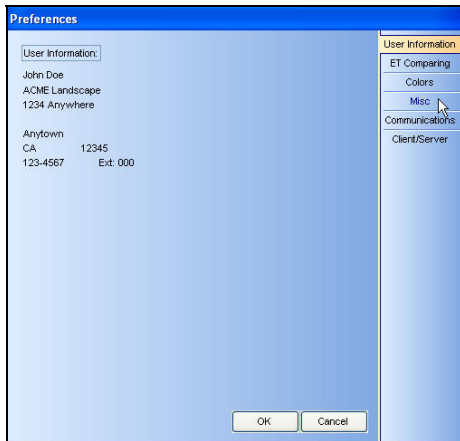


Figure 2.0.7

Note: This will take you to the “Preference” screen for Miscellaneous (Figure 2.0.8).

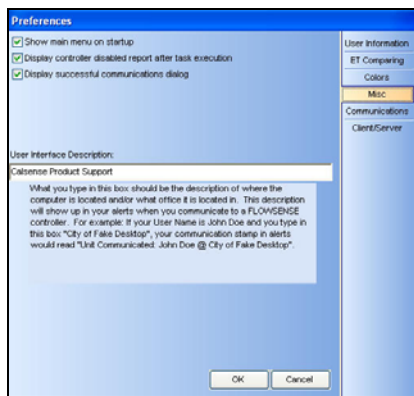


Figure 2.0.8

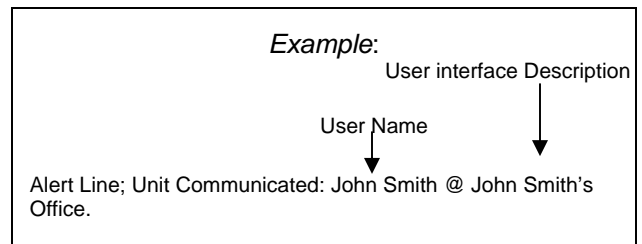
Show main menu on startup: Checking this box will display the six navigation buttons that include Setup, Communications, Program Data, Diagnostic Reports, Central Reports and Water Reports.

Display controller disabled report after task execution: Checking this box will display an alert after a task and will list any controller that has the “Communications Enabled” box unchecked in the “Site/Controller” list.

Display successful communications dialog:

Checking this box will show a dialog box showing completely unimpeded communications. Having this box unchecked will cause the “Completed Communications” dialog box not to appear.

User Interface Description: The description that is entered here should be the description of where the computer is located and/or what office it is located in. The following description will appear in the alert lines of an ET2000 (500 series controller) whenever a communications to the controller has occurred.



COMMUNICATIONS TAB

2. Click on the **Communications** tab (Figure 2.0.9).

Note: This will take you to the “Communications” screen for Miscellaneous (Figure 2.0.9).

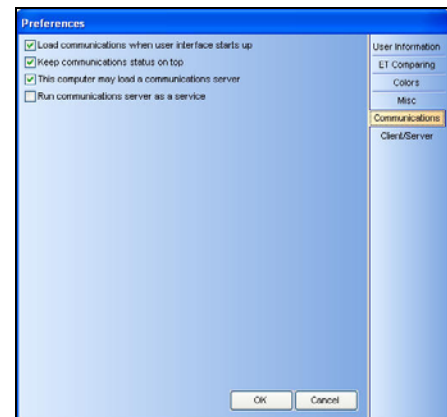


Figure 2.0.9

Load communications when user interface starts up: Checking this box will automatically load the communications scheduler upon start up of Command Center.

Keep communications status on top: Checking this box will keep the communications status box on top of all applications running at the same time. Un-checking this box will put the status box under the current applications running.

This computer may load a communications server: Under the Client Server environment a computer can run only the UI, checking the box will load the communications server. Un-checking the box will not load the communication server. In a non-Client Server (Local) environment this line will be checked and grayed out.

Run Communications server as a Service:

This setting will load the communications server as a service rather than an application. Services differ from applications in that they are started when Windows first boots up, rather than when a user logs in. This means that Tasks will execute whether a user is logged in or not. There have been cases in the past where Tasks would not fire off because a computer was restarted but no one was logged in. Running the communications server as a service will prevent this problem from occurring.

CLIENT / SERVER TAB

1. Click on the **Client / Server** tab (Figure 2.0.9).

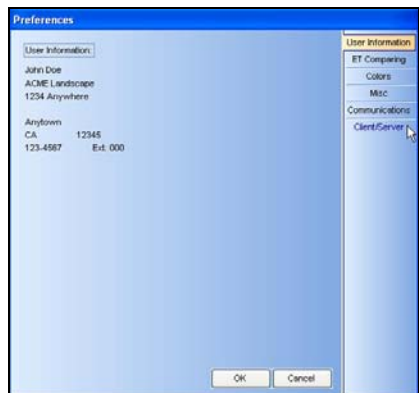


Figure 2.0.9

Note: This will take you to the “**Preference**” screen for Client / Server (Figure 2.0.10).

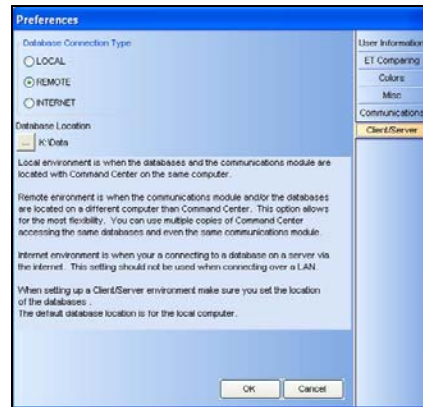


Figure 2.0.10

Client Server: Allows multiple users on different computers to access the same database stored at a shared location.

Database Connection Type:

- **LOCAL:** The Local environment is used when the databases and the communications module are located with Command Center on the same computer.
- **REMOTE:** The Remote environment is when the databases are stored at a shared location. Selecting **REMOTE** requires the purchase of Advantage Database Server software which is protected by copyright laws and is not to be installed without prior approval from Calsense. The setup of the server software requires the assistance of the customers IT department.
- **INTERNET:** The Internet environment is used for systems that are not physically connected to the network that the databases are stored on. It allows a user to remotely access the shared databases and retrieve stored information or use other computers to contact controllers. Selecting **INTERNET** requires that a system running the Advantage Database Server software is already running and accessible via the Internet.

Note: If you are running in Client Server mode and unable to run in the **REMOTE** setting contact Calsense for assistance.

Database Location: Click on the **browser** button this will take you to the “**Browse for Folder**” screen. This allows you to identify where your database is located (Figure 2.0.11).

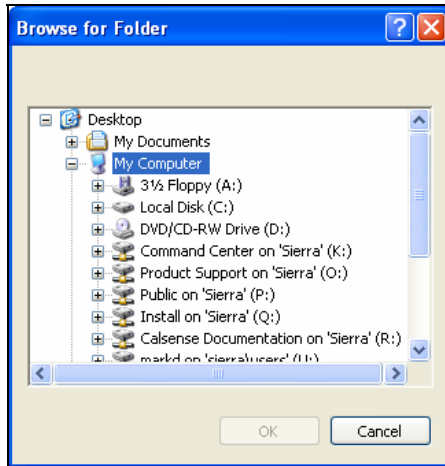


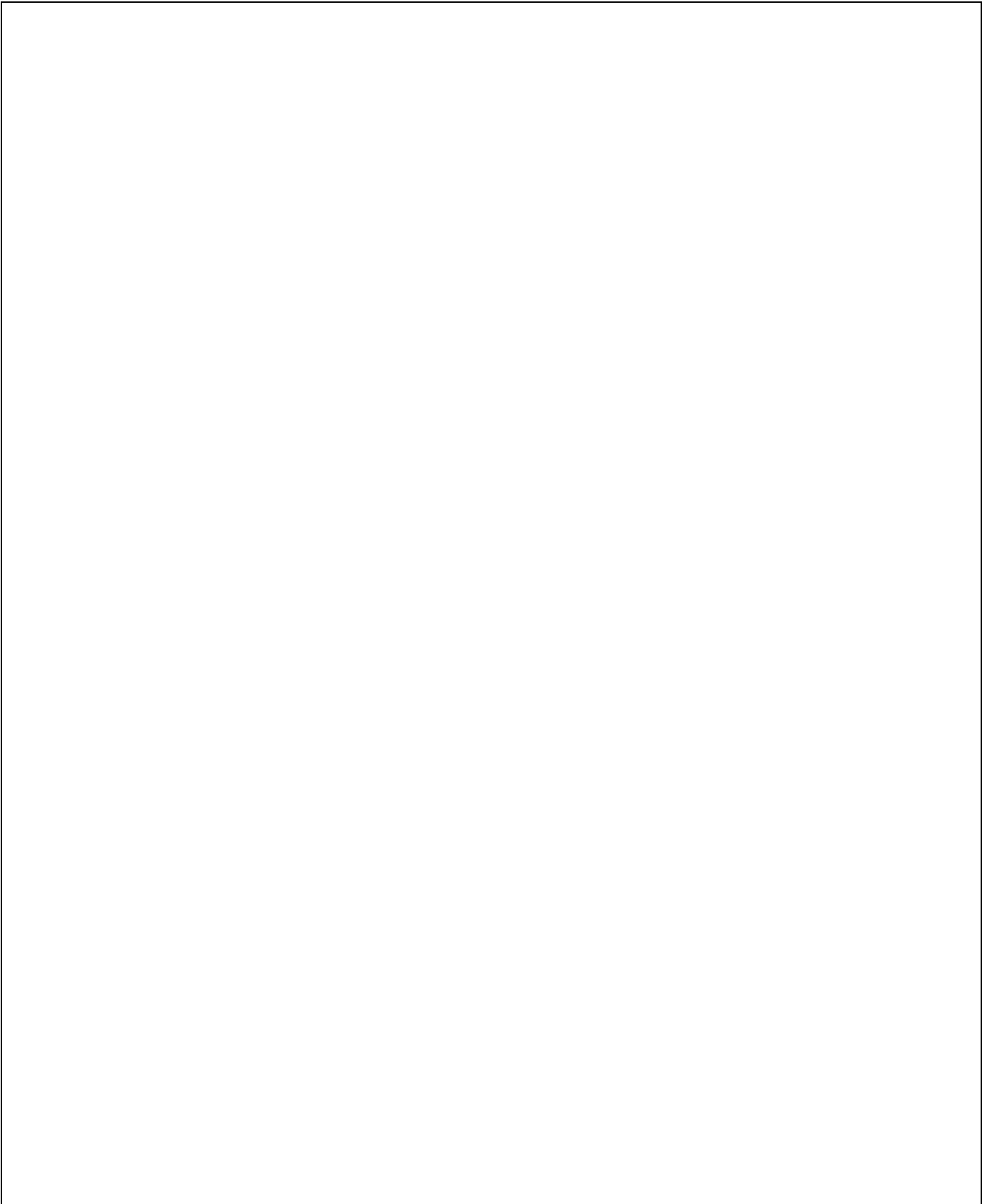
Figure 2.0.11

2. Once located click on the **OK** button.

Note: If you do not want to select a location click on the **Cancel** button to exit out of this screen.

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3.0 COMMUNICATIONS SETUP

Communications setup assigns the serial ports for the different types of communications that Command Center uses.


1. Right click the  globe icon found on the system tray. You may have to click on the left pointing arrow to expose the globe on the toolbar (Figure 3.0.1).



Figure 3.0.1

2. Click on **Settings** (Figure 3.0.2).

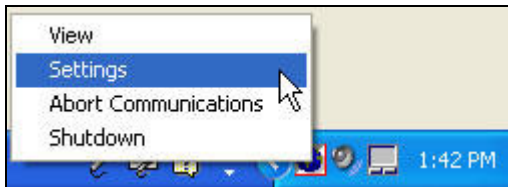


Figure 3.0.2

Note: This will take you to the “**Communications Setup**” screen, “**Ports**” tab (Figure 3.0.3).

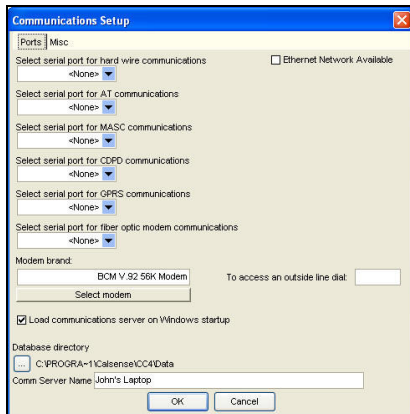


Figure 3.0.3

Note: Next you will have to select which type of communications you are using.

- **Select Serial Port For Hard Wire Communications:** Direct hard wire from the computer system to the controller.

Note: Direct hard wire with a laptop computer requires a Calsense direct wire cable only. Direct hard wire with a desktop computer communicating to a chain of –M controllers requires a Calsense PC line amplifier.

Click the **down** arrow. Select COM port. If not in use select **none**.

- **Select Serial Port For (AT) Communications:** Digital Radios using AT commands.

Click the **down** arrow. Select COM Port. If not in use select **none**.

- **Select Serial Port For (MASC) Communications:** Digital Radios using MASC commands.

Click the **down** arrow. Select COM Port. If not in use select **none**.

- **Select Serial Port For (CDPD) Communications:** Cellular Digital Packet Data.

Click the **down** arrow. Select COM Port. If not in use select **none**.

- **Select Serial Port For (GPRS) Communications:** General Packet Radio Service.

Click the **down** arrow. Select COM Port. If not in use select **none**.

- **Select Serial Port For Fiber Optic Modem Communications:** Fiber Optic Communications.

Click the **down** arrow. Select COM Port. If not in use select **none**.

Modem brand

Note: Modem Brand is used for Telephone communications.

5. Click **Select Modem**.
6. Click the **down arrow** on the device selection box and select the correct modem.
7. Click **OK**.

- **To Access An Outside Line Dial:** Enter the outside line number if required.
- **Ethernet Network Available:** Used if there is a connection to a Network for Ethernet communication to controllers.
- **Load Communications Server On Windows Startup:** In the event the computer is shut down, upon restart, the communications scheduler will reload. If not, there will be no scheduled tasks performed. Check the box to enable.
- **Database Directory:** Shows the location of the database files (Figure 3.0.4).



C:\PROGRAM~1\Calsense\CC4\Data

Figure 3.0.4

- **COMM Server Name:** The name entered is to identify this communications server from other communications servers across a network. When not part of a network the name entered should be the same throughout each terminal (The same COMM Server Name as the one on the terminal that has the communications port).

Example:

User interface Description

User Name

Alert Line; Unit Communicated: John Smith @ John Smith's Office.

8. Click on the **Misc** tab at the top of this screen.

Note: This will take you to the "Communications Setup" Miscellaneous screen (Figure 3.0.5).

CAUTION:

This section will require no action unless instructed to do so by Calsense. ALL settings are default settings.

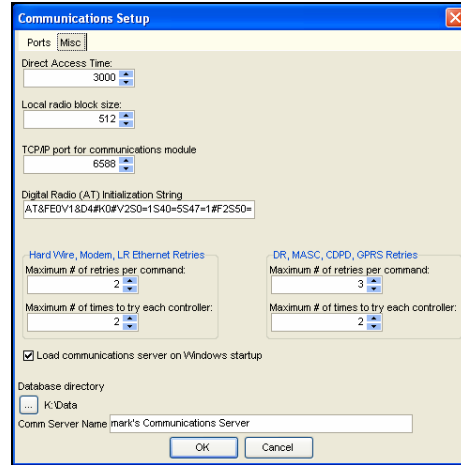


Figure 3.0.5

- **Direct Access Time:** Length of time used in direct access for timeouts. Typically not adjusted. Do not adjust unless instructed to do so by Calsense.
- **Local Radio Block Size:** Sets the data block size. The default block size is 512. Typically not adjusted. Do not adjust unless instructed to do so by Calsense.
- **TCP/IP Port For Communications Module:** Typically not adjusted. Do not adjust unless instructed to do so by Calsense.
- **Digital Radio (AT) Initialization String:** Typically not adjusted. Do not adjust unless instructed to do so by Calsense.

Hardwire, Modem, LR, Ethernet, DR, MASC, CDPD, GPRS Retries

- **Maximum # Of Retries Per Command:** This sets the number of retries per command the central will send the controller. The maximum number of retries can be set to 10. Calsense recommends setting the number of retries per command to 2.

Click the **UP** arrow to increase the number or the **DOWN** arrow to decrease the number.

- **Maximum # Of Times To Try Each controller:** If communications fail this is the amount of times the central will attempt to retry communications with the controller. Calsense recommends setting the number of retries per controller to 2.

Click the **UP** arrow to increase the number or the **DOWN** arrow to decrease the number.

- When done in this section click on the **OK** button. This will save any changes made in this area.

Note: If you do not want to save any changes that you have made in this area just click on the **Cancel** button.

3.1 VIEW COMMUNICATIONS


- Right click the  globe icon found on the system tray. You may have to click on the left pointing arrow to expose the globe on the toolbar (Figure 3.1.1).



Figure 3.1.1

- Click on **View** (Figure 3.1.2).



Figure 3.1.2

Note: This will take you to the “**Scheduled for Today**” screen (Figure 3.1.3).

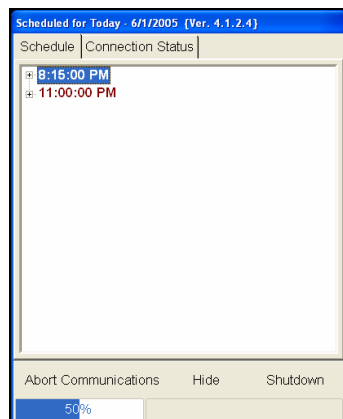


Figure 3.1.3

- This screen will come up showing the “**Schedule**” tab. Any communications tasks that are scheduled to take place from the minute that you logged in to Command Center until midnight the same day will appear in the window.

Note: Any tasks that have already taken place on the same day will not show in the window.

- If you click on the “+” signs next to the times the task name will appear directly under the time stamp. Clicking on the “-” key next to the Task name will shrink the task back to a time only (Figure 3.1.4).

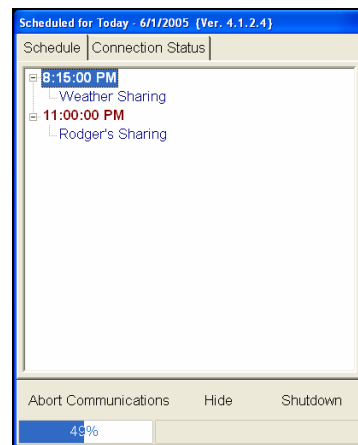


Figure 3.1.4

- While on this screen you can select from the following choices:

- Abort Communications:** This will terminate any communications currently taking place.
- Hide:** This choice will shrink the “**Scheduled for Today**” window back down to the Globe icon.
- Shutdown:** This will bring up the “**Confirm**” window (Figure 3.1.5).

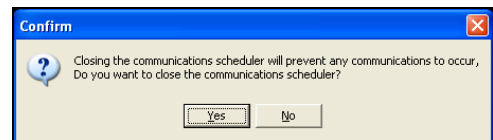


Figure 3.1.5



- Click on the **Yes** button if you want to Shutdown the Communications server. If you do not want to Shutdown the communications server click on the **No** button.
- Click on the **Connections Status** tab at the top of the “**Scheduled for Today**” screen.

Note: This will bring you to the “**Connection Status**” window (Figure 3.1.6).

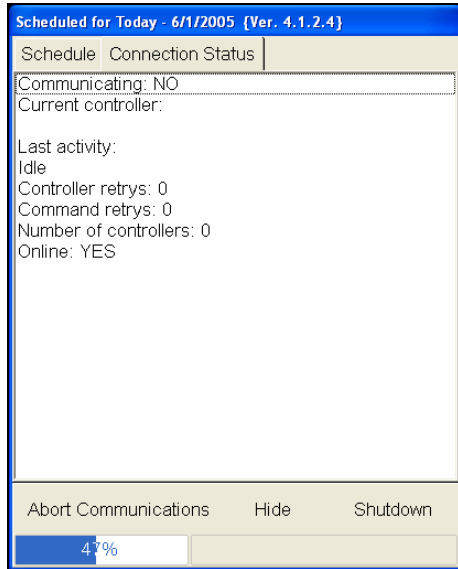


Figure 3.1.6

Note: This screen displays you the current information for communications that are currently in progress.

While on this screen you can select from the following choices:

- Abort Communications:** This will terminate any communications currently taking place.
- Hide:** This choice will shrink the “Scheduled for Today” window back down to the Globe icon.
- Shutdown:** This will bring up the “**Confirm**” window asking you if you are sure that you want to shutdown the comm. Server (Figure 3.1.7).

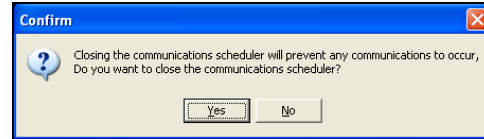


Figure 3.1.7

- Click on the **Yes** button if you want to Shutdown the Communications server. If you do not want to Shutdown the communications server click on the **No** button.

3.2 ABORT COMMUNICATIONS


- Right click the  globe icon found on the system tray. You may have to click on the left pointing arrow to expose the globe on the toolbar (Figure 3.2.1).



Figure 3.2.1

- Select **Abort Communications** and click on it (Figure 3.2.2).



Figure 3.2.2

- When you click on this option all communications currently taking place from this computer will be terminated.

Note: Any future scheduled tasks will not take place until the communications have been turned back on.

3.3 SHUTDOWN COMMUNICATIONS


1. Right click the  globe icon found on the system tray. You may have to click on the left pointing arrow to expose the globe on the toolbar (Figure 3.3.1).



Figure 3.3.1

2. Select **Shutdown** and click on it (Figure 3.3.2).



Figure 3.3.2

Note: When you click on this option the “**Confirm**” window will appear asking the following: (Figure 3.3.3).

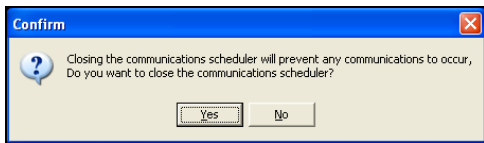
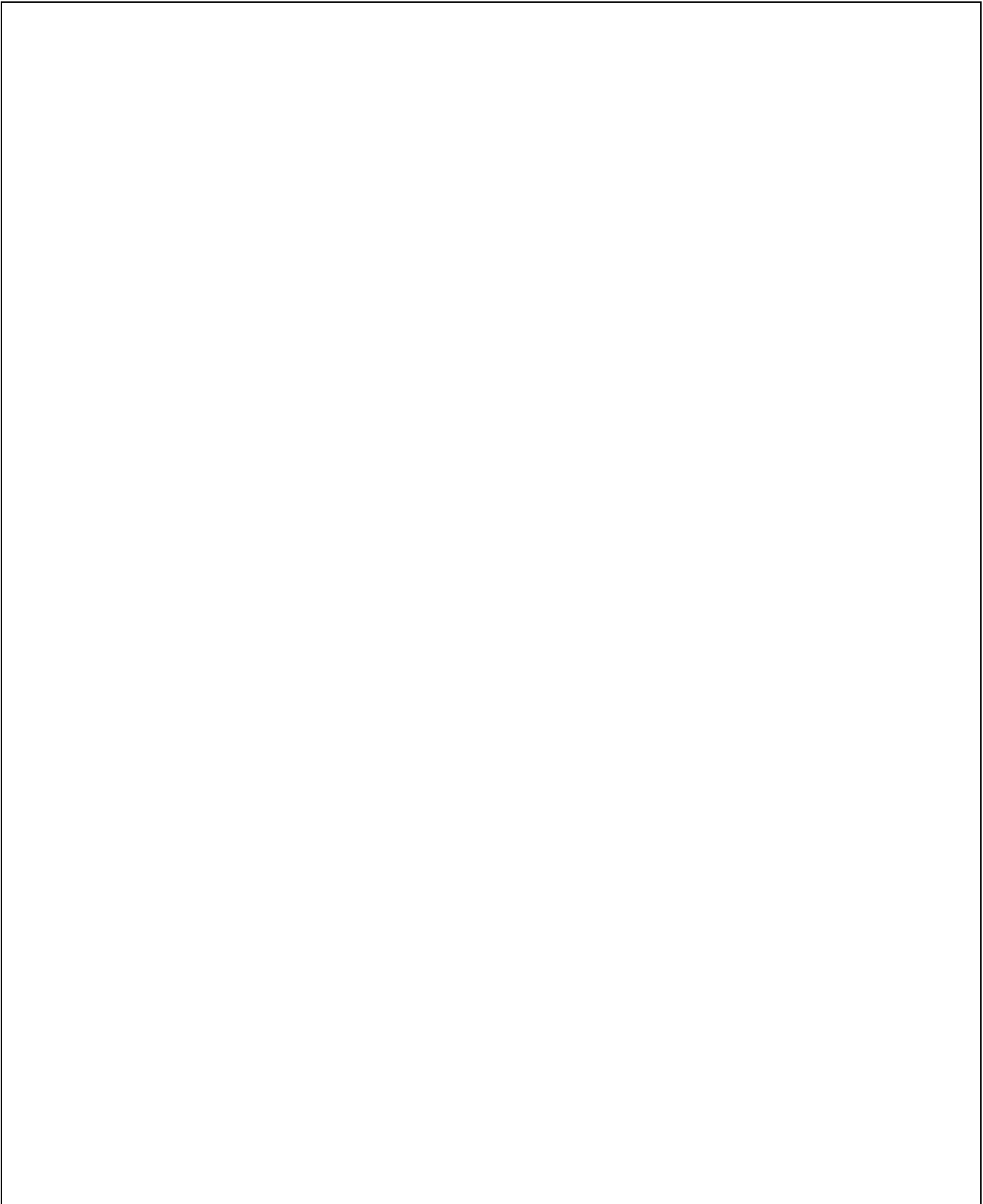
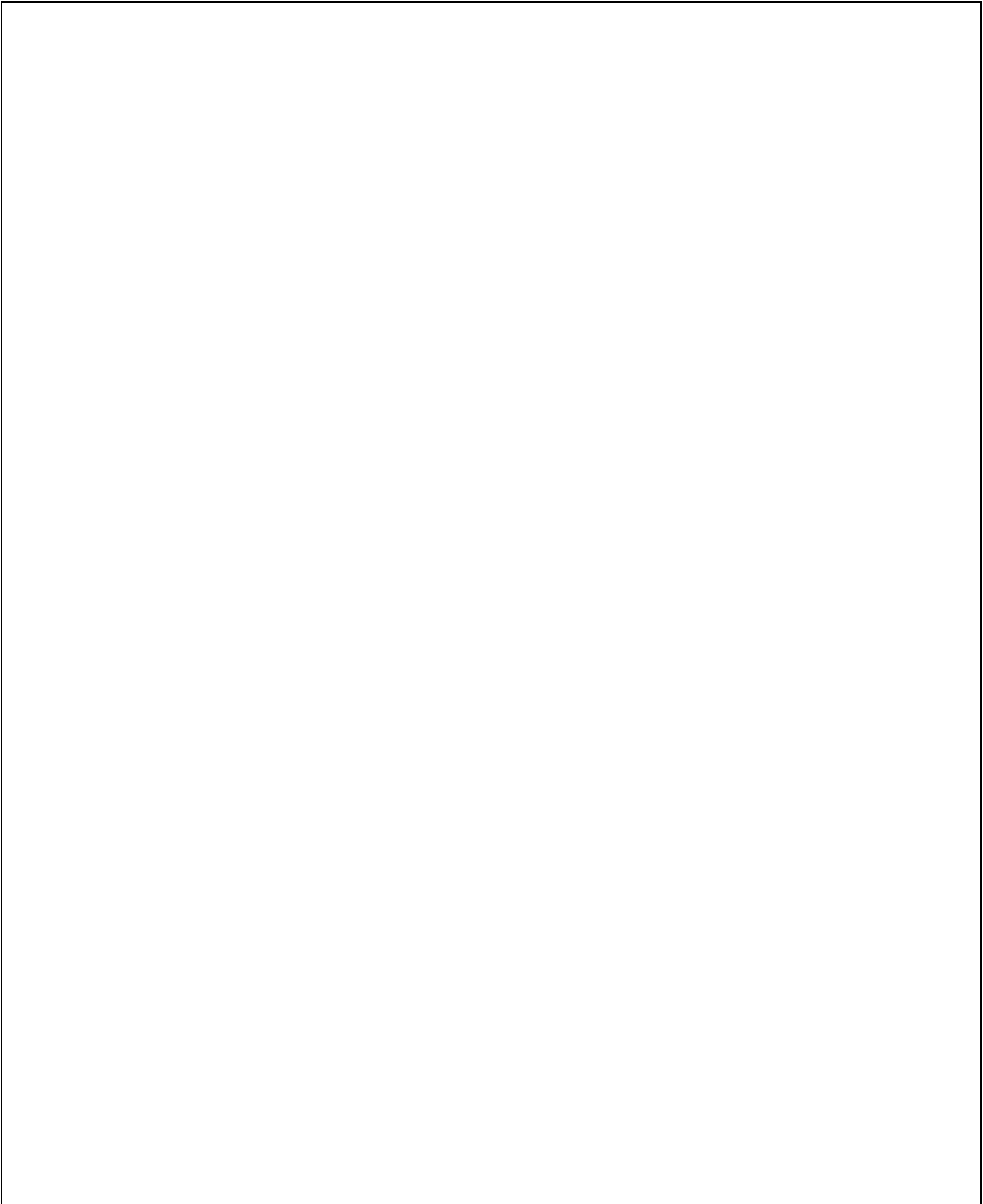


Figure 3.3.3

3. Click on the **Yes** button if you want to Shutdown the Communications server. If you do not want to Shutdown the communications server click on the **No** button.







4.0 SITE / CONTROLLER SETUP

The Site / Controller Setup area is used for entering the required communications information for the controllers that will be communicated with from the central.

1. In the toolbar at the top of the screen select **Setup**. Scroll down the list to **Site/Controller** setup and click on it (Figure 4.0.1).

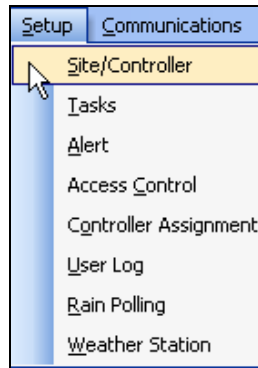


Figure 4.0.1

Note: This will take you to the “**Site/Controller Setup**” window (Figure 4.0.2).

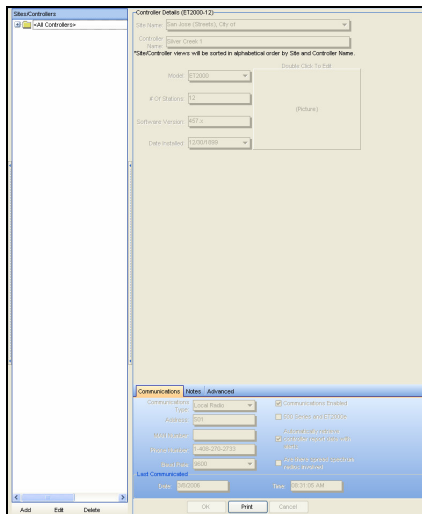


Figure 4.0.2

Sites/Controllers: The site/controllers column lists all the controllers entered into Command Center.

Controller Details: Controller details are where all the information for communicating to a controller is entered. Once a controller has been contacted by the central, the controllers’ part number will appear after the words Controller Details. Example: Controller Details (ET2000-24-R-L-G-RB-FL-RR)

Add: Add is used to add a new controller to the site/controller list.

- Selecting **ADD** will activate the “**Controller Detail**” screen.

Site Name: Site names are used to group a number of controllers together.

- Type a name in the site name box or select the down arrow and choose a name that has already been entered. (Example: Memorial Park)

Controller Name: Controller names are used to identify individual controllers in a site. (Example: Snack Bar)

Model: This box shows the model type of the controller. This section is grayed out and will change automatically when the controller is contacted for the first time.

of stations: This is the number of stations the controller is equipped with. This section is grayed out and will change automatically when the controller is contacted for the first time.

Software version: This is the current ROM version of the controller. This section is grayed out and will change automatically when the controller is contacted for the first time,

Date installed: Use this box to fill in the date that the controller was originally installed.

(Picture): A picture of the site or controller location can be uploaded and viewed.

Add a picture:

- Double click on the picture box.
- Click on the **Load** button.
- From the stored file location. Double click on the **picture** to load.

Remove a picture:

- Double click on the **picture** box.
- Click the **Clear** button.
- Click the **OK** button.

4.1 ADDING NEW SITES / CONTROLLERS

1. Click on the **Add** button at the bottom of the “**Site / Controller listing**” window (Figure 4.1.1).

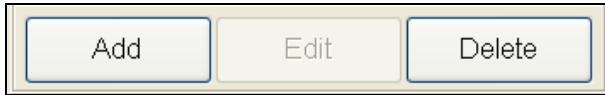


Figure 4.1.1

Note: This will enable the controller details information area to the right of the screen.

Note: Some areas may be grayed out and do not require any changes.

2. Click on the “**Site Name**” box to enter a new site name (Figure 4.1.2).

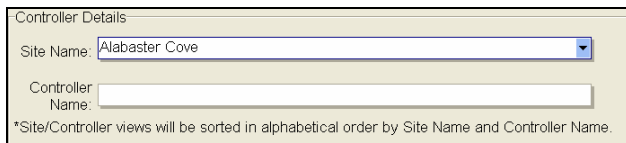


Figure 4.1.2

Note: By using the pull down arrow to the right of this box you can view and select site names already entered in to your list.

3. Type in a name that you want to give the entire group of controllers or site.
4. Next click on the box marked “**Controller Name:**” (Figure 4.1.3).

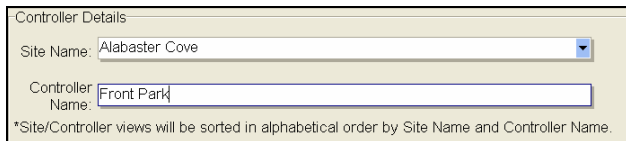


Figure 4.1.3

5. Enter a name for the controller so that it can be identified from a list.
6. Next fill out the **Date installed** box. This is to record the date the controller was installed on site (Figure 4.1.4).

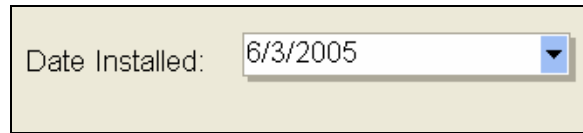


Figure 4.1.4

4.2 CONTROLLER COMMUNICATIONS SETUP

COMMUNICATIONS TAB

1. In the “**Communications Type**” box use the pull down arrow to select one of the ten different types of communications available (Figure 4.2.1)

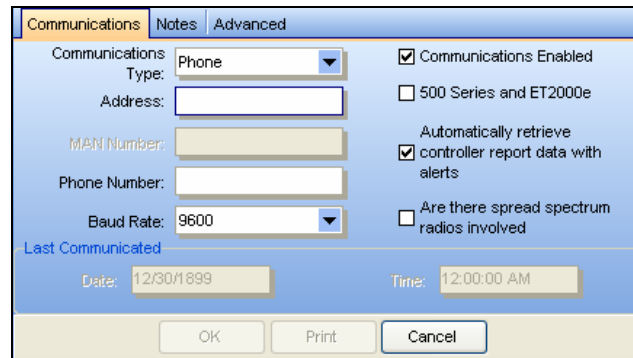


Figure 4.2.1

Communications Choices:

- **Phone:** (-M,-R,-MR) Used for phone or hard wire communications.
- **Local Radio:** (-ML,-LR,-MLR) Used for Local Radio.
- **Digital Radio (AT):** (-MD,-DR,-MDR) Used for digital radio using AT protocol.

- **Digital (MASC):** (-MD,-DR, -MDR) Used for digital radio using MASC protocol.
- **MDS:** Microwave Data System.
- **CDPD:** Cellular Digital Packet Data.
- **Ethernet:** (-ME,-EN,-MEN) Ethernet Network.
- **Spread Spectrum:** (-SR,-MSR,-MS) Spread Spectrum Radio.
- **GPRS:** (-MG,-GR,-MGR) General Packet Radio Service.
- **Fiber Optic Modem:** Fiber Optic Communications.

Contact Calsense at 1-(800)-572-8608 if you are unable to determine the controller's communication type.

Note: Next you will have to enter a communications address in the "Address" block.

2. Click on the "**Address:**" box and enter a three letter / number or symbol combination (Figure 4.2.2).

Figure 4.2.2

Address: The address is used to identify a particular controller's communication address. Controllers using communications options -LR, -SR, -ME, -MG, -MDR, -MLR, -MSR, -FOM, -MR or -M make it necessary to set a different communication address for each controller that is physically hard wired together sharing a single phone number, MAN number or radio.

It is not necessary to change the address if the communications option for the controller is a -DR, -EN, -GR, -R, or a stand alone controller using a

Calsense direct wire cable communicating through the front serial port of the controller.

Note: The controller's communications address shipped from the factory is !!!!. The controller's address can only be changed at the controller. The address listed here, in the central software, **must** match the address in the controller. If the addresses do not match the central **will not** communicate with the controller.

Note: ET2000 (500 series) controllers are shipped from the factory with a communications address of !!A.

TCP/IP Address / ID / IP / MAN Number or Phone Number: Depending on which communication type has been selected. One of the following will appear.

- TCP/IP Address: (CDPD) Cellular Digital Packet Data.
 - ID Number: (GPRS) General Packet Radio Service.
 - IP: Ethernet.
 - Man Number: (AT & MASC) Digital Radio.
 - Phone Number:
 - Phone
 - MDS
 - Local Radio or Spread Spectrum
 - Fiber Optic Modem
2. Select the TCP/IP, ID, and IP, MAN or Phone number box and enter the appropriate number.

Note: If hard wire communications is being used, no number is entered.

3. Check the appropriate boxes that apply to this controller and the environment that it is operating within.

Communications Enabled: Checking the box will enable "**task**" communications. This will generate an alert line "Communications Disabled for this controller, Enable in Controller Setup". This will also generate an alert line in the Communication Log, "Communications Disabled for this controller". Disabling the communications has no effect using any Speed Communications.

- Check the box to enable communications.
- Uncheck the box to disable communications.

500 Series: This box must be checked when the controller has 500 series firmware.

- Check this box if the controller has -FL firmware.

Note: To verify if a controller has 500 series firmware. At the controller, Press Main Menu / Setup / Communications. The ROM version will appear in the black strip upper right hand side of the screen.

Automatically retrieve controller report data with alerts: Checking this box will automatically retrieve report data every time the central retrieves alert data from a controller. This allows the user to accumulate data used to create water reports.

Note: Users which have a communication option which have a monthly fee should consider using a scheduled task in gathering report data where cost is a concern.

- Check the box to retrieve report data automatically.
- Uncheck box to disable report data retrieval automatically.

Are there Spread Spectrum radios involved: If there is an Spread Spectrum radio involved in a chain of controllers, each controller in the chain must have this box checked.

Last Communicated: Last Communicated displays the Date and Time of the last communication to the controller (Figure 4.2.3).

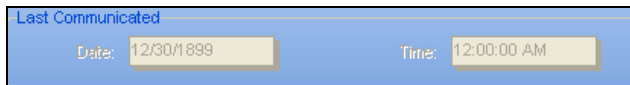


Figure 4.2.3

NOTES TAB

1. By clicking on the “Notes” Tab you will open up an area where you can enter additional information about the controller (Figure 4.2.4).

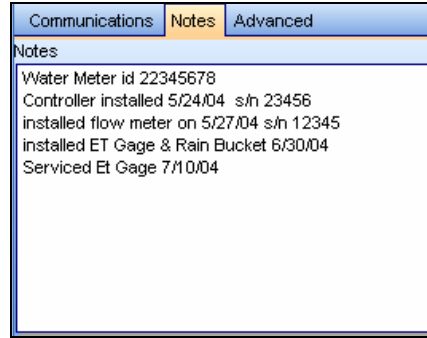


Figure 4.2.4

ADVANCED TAB

1. BY clicking on the “Advanced” tab you can change the following information:

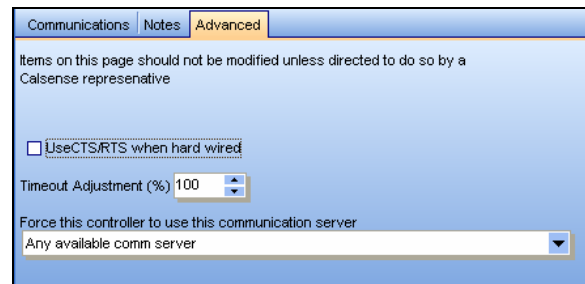


Figure 4.2.5

- Use CTS (Clear to send) / RTS (Request to send) when hardwired.
- Time out adjustment percentage.
- Force this controller to use this communications server (Figure 4.2.5).

CAUTION:

Items on the Advance tab should not be modified unless directed to do so by a Calsense representative.

Note: If you choose not to save any of the information for this controller click on the **CANCEL** button at the bottom of the screen.

2. Select the **OK** button at the bottom of the screen to save your controller information. The “Information” screen will appear stating “If you are using tasks remember to add this controller to the following types of tasks:”

- Weather Sharing
- Alerts gathering
- Reports gathering

See (Figure 4.2.6).



Figure 4.2.6

3. Click on the **OK** button to exit this window.

4.3 EDITING A CONTROLLER

1. From the "Sites/Controller" list select the Site you want to edit (Figure 4.3.1)

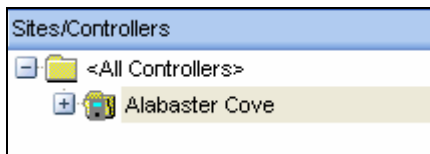


Figure 4.3.1

2. Click on the "+" sign to the left of the site name to reveal the controllers list assigned to this site (Figure 4.3.2).



Figure 4.3.2

3. Highlight the controller from the list that you want to edit.
4. Click on the **Edit** button at the bottom of this window (Figure 4.3.3).

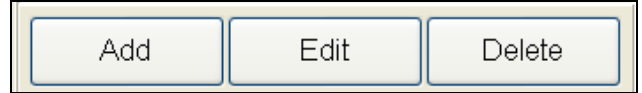


Figure 4.3.3

Note: Clicking this button will allow you to edit the existing data for this specific controller. Use the directions in Section 4.0 of this manual to go step by step through the effected fields.

5. Once you have edited the information click on the **OK** button to save any changes that were made (Figure 4.3.4).



Figure 4.3.4

Note: If you do not want to save the edited data click on the **Cancel** button. This will not alter any information that you currently have in the database.

4.4 DELETING A SITE / CONTROLLER

DELETING A SITE

CAUTION:

When deleting a Site, all information pertaining to the controllers within the site will also be deleted.

1. To delete a site use the "Site / Controller" window to find the Site.
2. Highlight the site name (Figure 4.4.1).

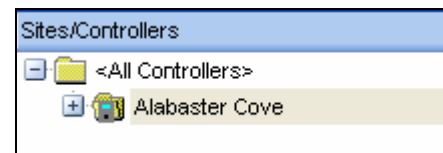


Figure 4.4.1



3. Click on the **Delete** button.

Note: This will bring up the “**Confirm**” screen (Figure 4.4.2).

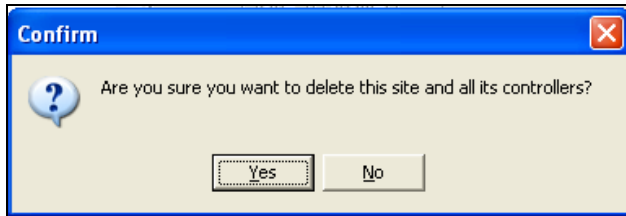


Figure 4.4.2

4. Click the **Yes** button if you want to delete this site.

Note: If you do not want to delete this site click the **No** button.

DELETING A CONTROLLER

CAUTION:

When deleting a Controller, all information pertaining to the controller will also be deleted.

1. To delete a controller use the “**Site / Controller**” window to find the Site that the controller is assigned to (Figure 4.4.3).

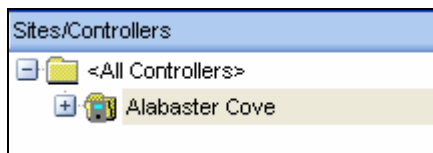


Figure 4.4.3

2. Click on the “+” sign to the left of the site name to reveal the controller list attached to this site (Figure 4.4.4).

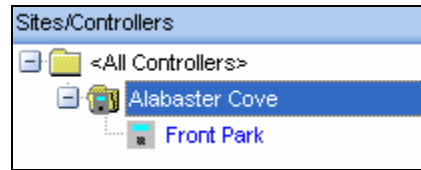


Figure 4.4.4

3. Highlight the controller from the list that you want to delete (Figure 4.4.5).

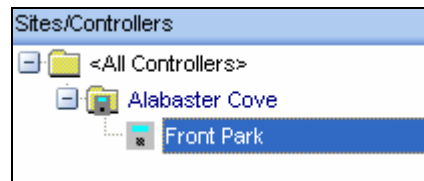


Figure 4.4.5

4. Click on the **Delete** button at the bottom of this window (Figure 4.4.6).

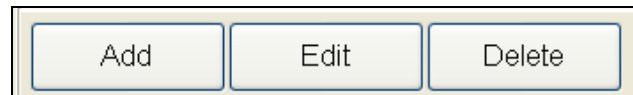


Figure 4.4.6

Note: Clicking this button will bring up the “**Confirm**” screen (Figure 4.4.7).

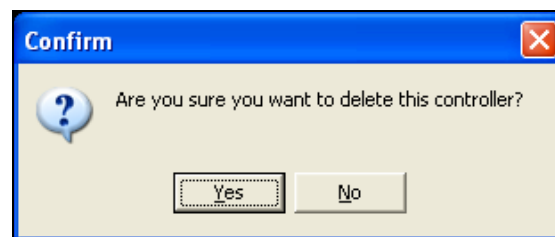


Figure 4.4.7

5. Click the **Yes** button to delete the controller selected.

Note: If you do not want to delete this controller or site from your list click the **No** button. This will not change any of your current settings.

4.5 PRINTING CONTROLLER INFORMATION

To **Print** controller information use the “**Site / Controller**” window to find the Site.

1. Select the site in the “**Site / Controller**” window (Figure 4.5.1).



Figure 4.5.1

2. Click on the “+” sign to the left of the site name to reveal the controller list attached to this site (Figure 4.5.2).



Figure 4.5.2

3. Highlight the controller from the list that you want to print (Figure 4.5.3).

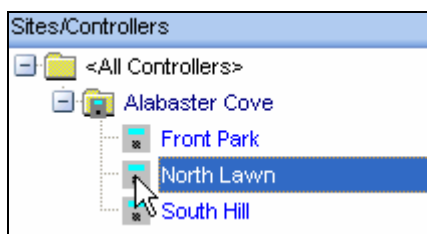


Figure 4.5.3

4. Then click on the **Print** button at the bottom of the “**Controller Details**” screen (Figure 4.5.4).

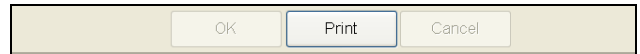


Figure 4.5.4

Note: This will bring you to the “Print” screen (Figure 4.27).

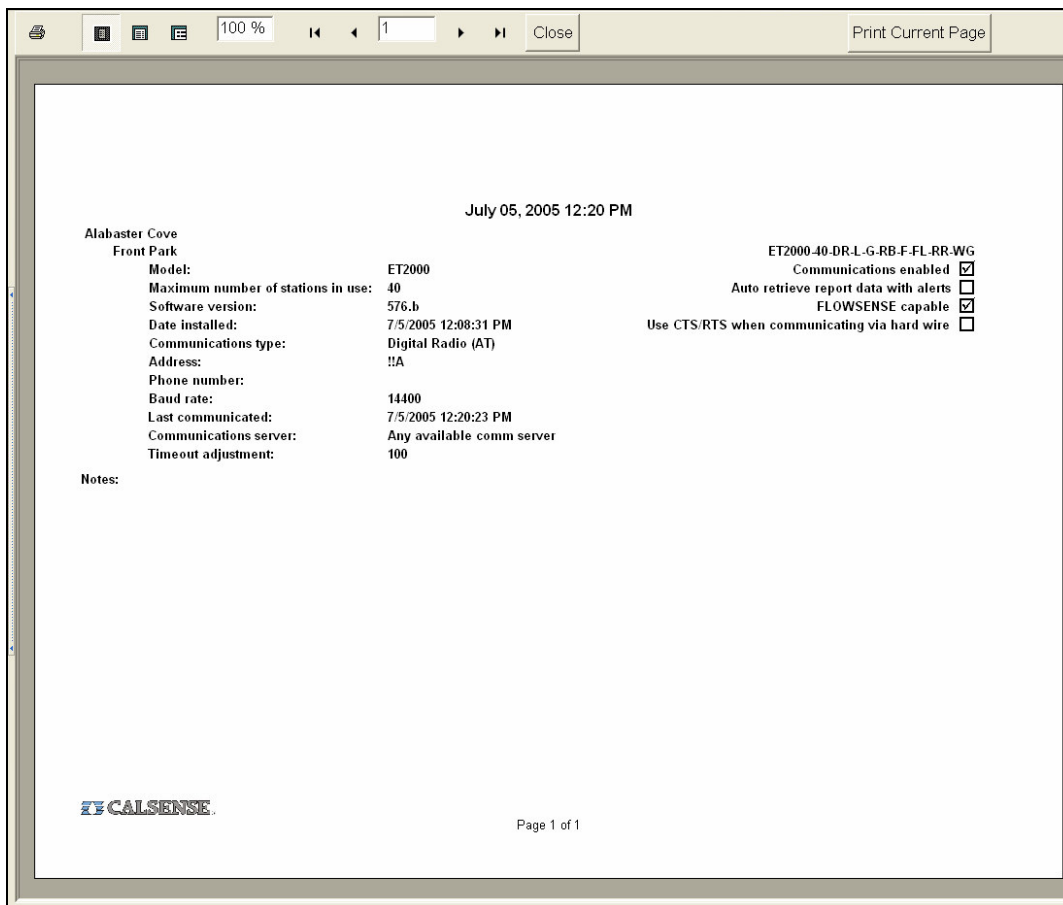
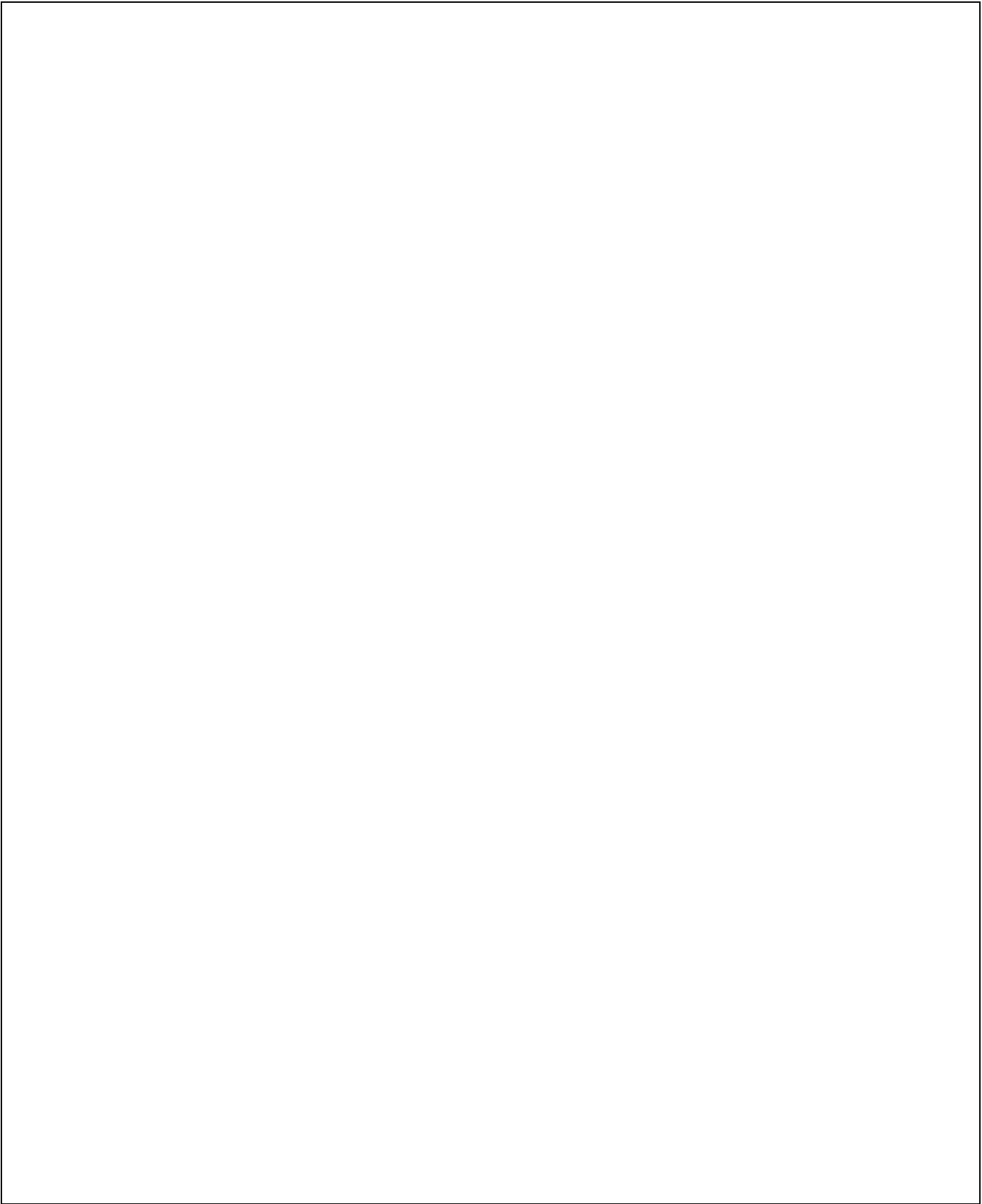


Figure 4.27

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



5.0 CONTROLLER ASSIGNMENT SETUP

Only a person with an **Administrator** level will be able to view and assign controllers to users. Anyone classified as a **Standard User**, **will not** have access to Controller Assignment or User Log when they login.

Controller assignment is a tool used by the Administrator to assign particular controllers or controller sites to a user. When a user logs onto Command Center, only the controllers that have been assigned to that user will be available.

1. In the upper toolbar select **Setup**. Then scroll down to **Controller Assignment** and click on it (Figure 5.0.1).

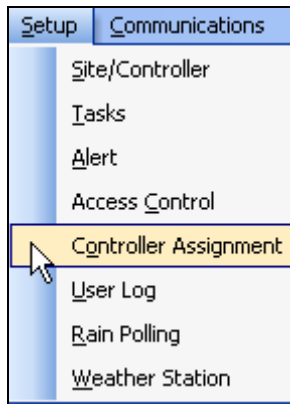


Figure 5.0.1

Note: This will take you to the “**Controller Assignment**” window (Figure 5.0.2).

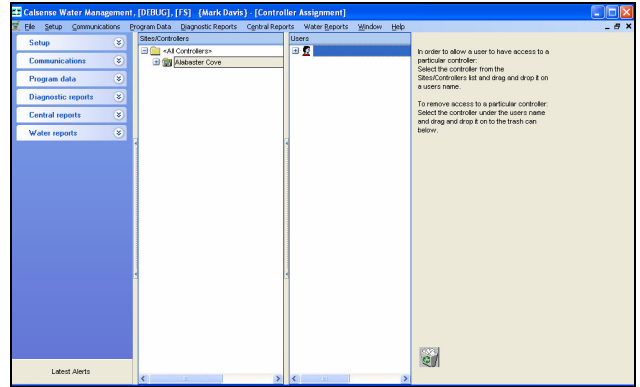
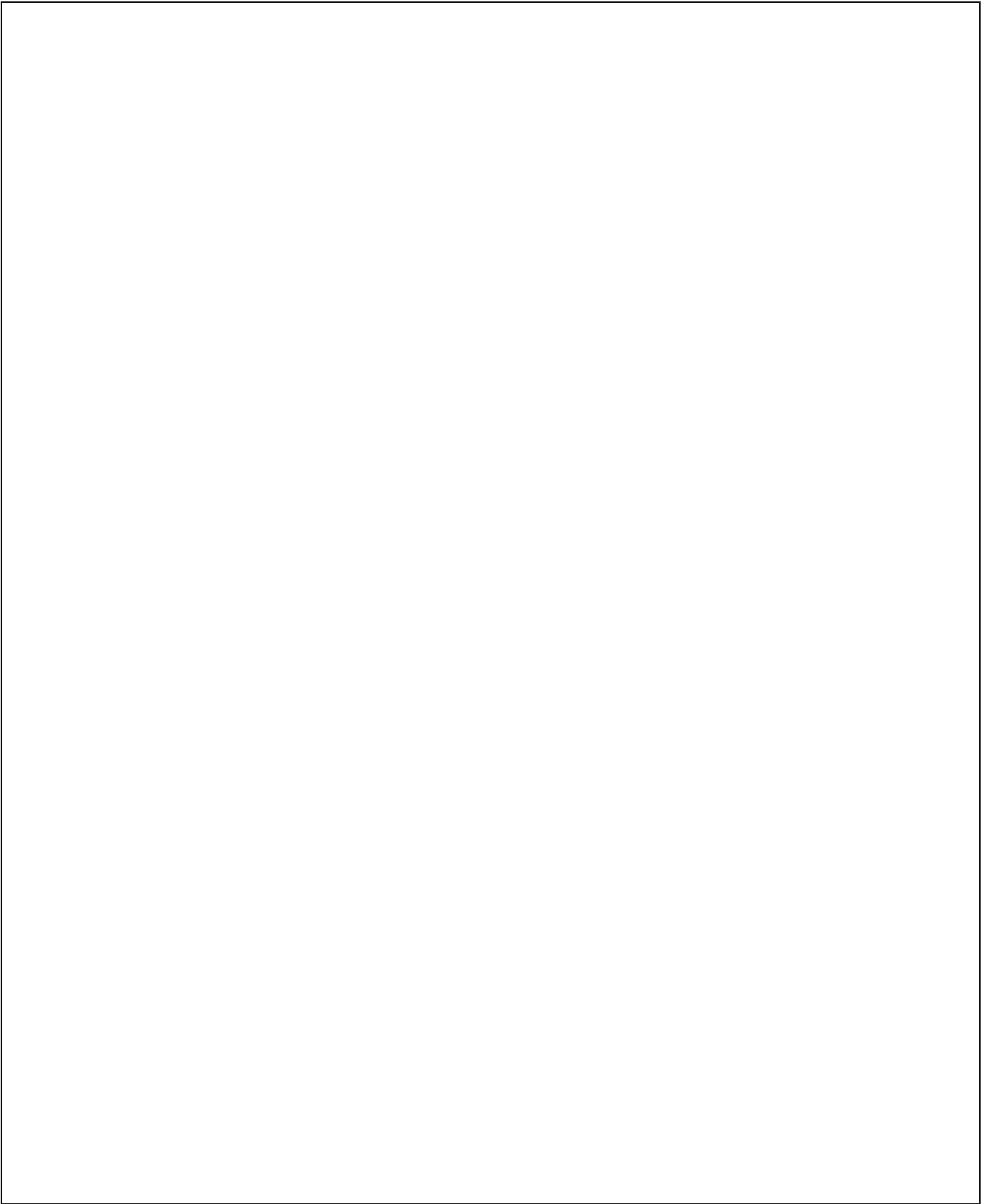


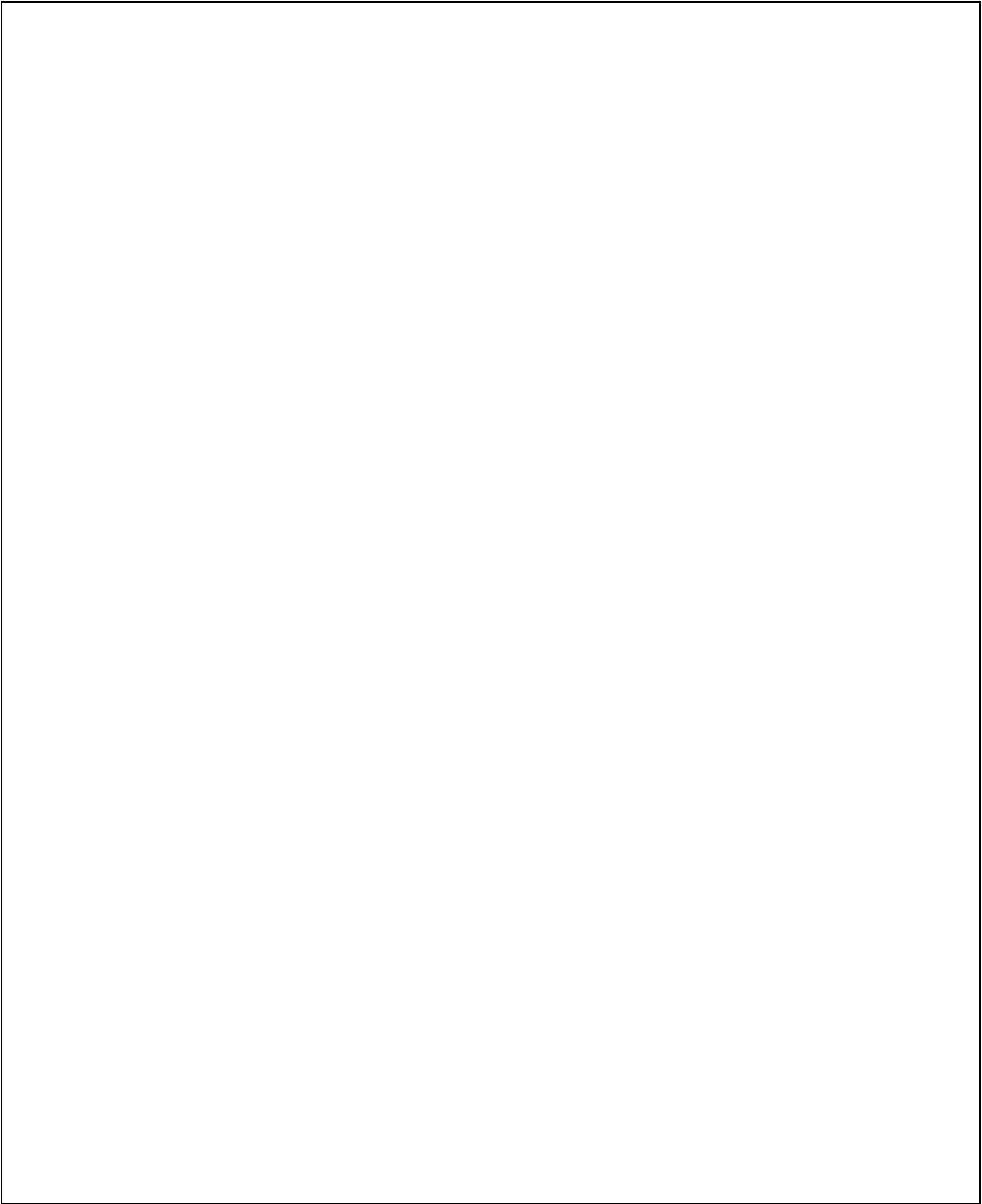
Figure 5.0.2

Adding Controllers: From the Controller List: Select an entire site or individual controllers within a site and drag the controller selections onto the User Name by keeping pressure on the mouse key until you reach the Users name. Release the button and the controllers should appear directly below the Users name.

Removing Controllers: Open the User and expand the Site List by clicking on the “+” sign. Select the controller or individual controllers within a site and drag it to the trash can at the bottom right hand corner of the screen. The same can be performed to remove an entire site by selecting the entire site and dragging it to the trash can.







6.0 SPEED COMMUNICATIONS

Speed Communications: Speed Communications is used to communicate with one or more controllers without building or scheduling a task. It performs a particular command now. Speed communications allows the selection of an entire site, multiple sites, multiple controllers from multiple sites or just a single controller.

Note: The following options are covered in this section:

- Send No Water Days. Section 6.5
- Controller On. Section 6.6
- Controller Off. Section 6.7
- Clear Main Line Break. Section 6.12
- Master Valve Override. Section 6.13
- Clear Hold Over. Section 6.14
- Set Time and Date. Section 6.15

All others options will direct you to the section that covers them in more detail.

- Get Alerts. Section 20.0
- Get Program Data Section 16.0
- Get Station History Section 21.0
- Get All Diagnostics Section 16.0, 20.0, 21.0
- Direct Access Section 7.0
- Get Manual Programs Section 17.0
- Send Access Control Codes Section 9.0
- Get Lights Section 18.0

1. In the toolbar at the top of the screen select **Communications** then scroll down to **Speed Communications** and click on it (Figure 6.0.1).

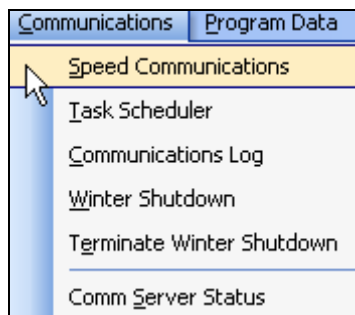


Figure 6.0.1

2. Select the Site / Controller that you want to perform the Speed Communications on from the **"Site / Controller"** window (Figure 6.0.2)

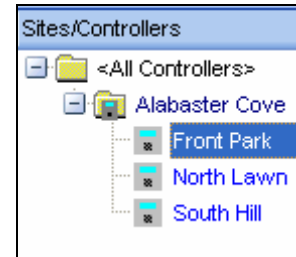


Figure 6.0.2

Note: Make sure that the controller or site that you want to perform the task on is highlighted. Then select the task from the list of icons to the right (Figure 6.0.3).

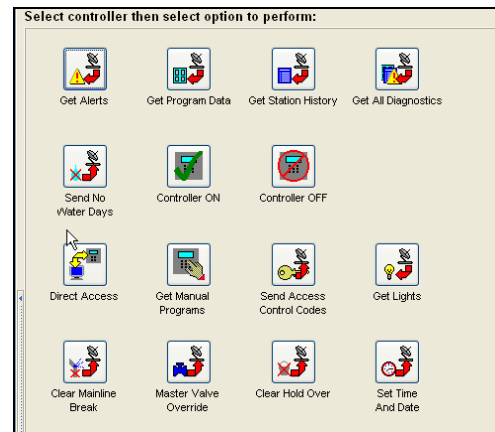


Figure 6.0.3

Note: When a controller is selected for a speed communication and the icon is grayed out, that option is not available on that model of controller.

6.1 GET ALERTS

Get Alerts: The Get Alerts command is used to gather the controller's diagnostic lines. The diagnostic report consists of all alert messages recorded by the controller in a given 24 hour period.

1. From the List of icons to the right of the **"Speed Communications"** screen select the **Get Alerts** icon (Figure 6.1.1).

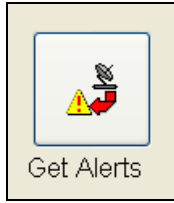


Figure 6.1.1

SEE SECTION 20.0 FOR MORE DETAILS

6.2 GET PROGRAM DATA

Get Program Data: The Get Program Data command is used to gather all the programming information of the controller. The controller’s program data is divided into four different categories, the controllers schedule, flow, weather, and setup.

1. From the List of icons to the right of the “Speed Communications” screen select the **Get Program Data** icon (Figure 6.2.1).

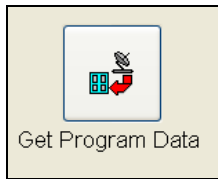


Figure 6.2.1

SEE SECTION 16.0 FOR MORE DETAILS

6.3 GET STATION HISTORY

Get Station History: The Get Station History command is used to retrieve the record of each stations irrigation activity for a given day(s). The station history report contains each stations Start date/time, Program assignment, Cycle repeats, Programmed minutes, Applied minutes, Applied gallons, Applied inches, High limit (GPM), Flow (GPM), Low limit (GPM), Hold over minutes, Manual/Test (GPM), Trip% (High & Low flow when using the learned mode.), Moisture sensor: Set point and last reading, Flag: a station alert.

1. From the List of icons to the right of the “Speed Communications” screen select the **Get Station History** icon (Figure 6.3.1).



Figure 6.3.1

SEE SECTION 21.0 FOR MORE DETAILS

6.4 GET ALL DIAGNOSTICS

Get All Diagnostics: The Get All Diagnostics command is used to gather in one communication set the controllers Alerts, Program Data and Station History Lines.

1. From the List of icons to the right of the “Speed Communications” screen select the **Get All Diagnostics** icon (Figure 6.4.1).



Figure 6.4.1

SEE SECTION 16.0, 20.0, and 21.0 FOR MORE DETAILS

6.5 SEND NO WATER DAYS

Send No water Days: No Water Days are used to skip an irrigation day(s) without changing the current irrigation scheduled. When the no water day(s) sent to the controller expires, the controller will resume irrigating the next regular scheduled irrigation day.

1. From the List of icons to the right of the “Speed Communications” screen select the **Send No Water Days** icon (Figure 6.5.1).

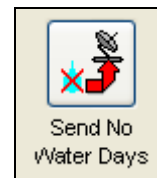


Figure 6.5.1

Note: ET2000 controllers (500 series) can select no water days by **All Stations, Program** or **Single Station**. When sending no water to a site that has ET2000 (500 series) controllers with ET1 or ET2000 (400 Series) controllers in the same site, No Water Days will be **All Stations ONLY**.

Note: A “No Water Days” window will appear asking: “Enter the number of days you would like to turn the water off for: (Name of Site / Controller)” (Figure 6.5.2).

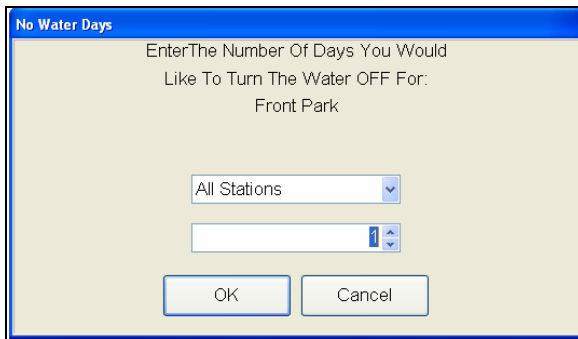


Figure 6.5.2

- There is a drop down arrow to the right of the first box. This box will allow you to choose All Stations, Certain Programs, or Individual Stations. Highlight the choice that you want and then move to the next box (Figure 6.5.3).

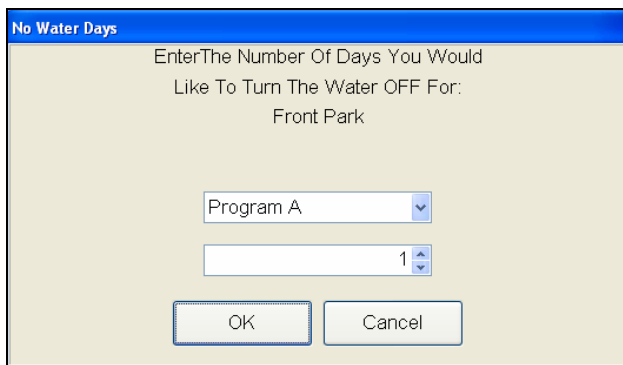


Figure 6.5.3

- Using the **UP** and **DOWN** arrow select the number of No Water Days 1-31 that you want to send to the controller(s) (Figure 6.5.3).

- Click on the **OK** button to send.

Note: If you do not want to send the No water Days to this controller click on the **Cancel** button.

Note: A communications screen will appear letting you know that you are communicating with the controller selected (Figure 6.5.4)

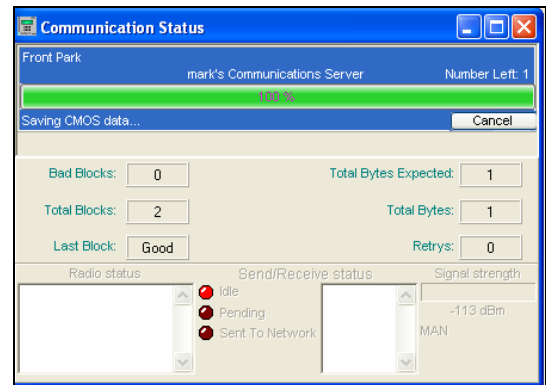


Figure 6.5.4

Note: After the communications task has taken place the “**Communications Completed**” screen will appear (Figure 6.5.5).

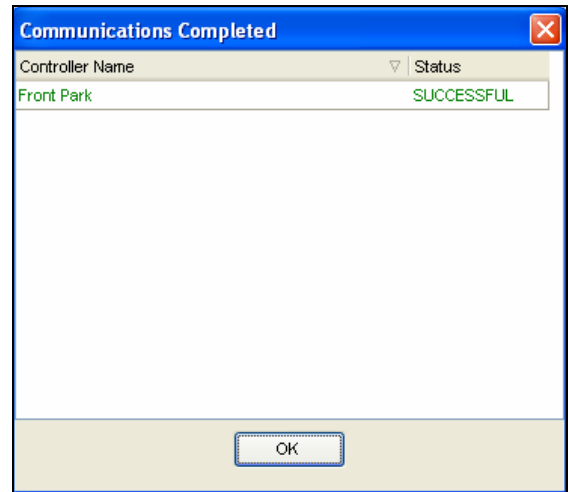


Figure 6.5.5

- Click on the **OK** button.

6.6 CONTROLLER ON

Controller ON: Turns ON a controller that is in the OFF mode.

1. From the Site / Controller List select the controller that you want to turn on. Make sure that it is highlighted (Figure 6.0.2).
2. From the list of icons to the right of the “**Speed Communications**” screen select the **Controller ON** Icon (Figure 6.6.1).

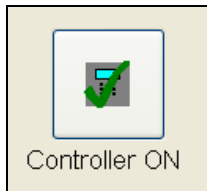


Figure 6.6.1

Note: A communications screen will appear letting you know that you are communicating with the controller of choice (Figure 6.5.4)

Note: After the communications task has taken place the “**Communications Completed**” screen will appear (Figure 6.5.5).

3. Click on the **OK** button.

6.7 CONTROLLER OFF

Controller OFF: Turn OFF a controller that is in the Auto mode.

1. From the Site / Controller List select the controller that you want to turn off. Make sure that it is highlighted (Figure 6.0.2).
2. From the List of icons to the right of the “**Speed Communications**” screen select the **Controller OFF** Icon (Figure 6.7.1).

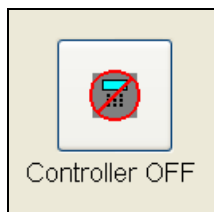


Figure 6.7.1

Note: A communications screen will appear letting you know that you are communicating with the controller of choice (Figure 6.5.4).

Note: After the communications task has taken place the “**Communications Completed**” screen will appear (Figure 6.5.5).

3. Click on the **OK** button.

6.8 DIRECT ACCESS

Direct Access: Direct access is a direct link to the controller in the field which provides a real time view of the controllers display screen and current activity. Direct access also allows the user to test and manually water stations, turn On/Off the controller and master valve override.

Note: Direct access does not support programming changes to the controller and is limited to only the highlighted keys on the keypad. Any keys that are grayed out on the keypad are not accessible.

Note: Direct access should be used as little as possible when your communication method has monthly usage fees.

1. From the List of icons to the right of the “**Speed Communications**” screen select the **Direct Access** Icon (Figure 6.8.1).

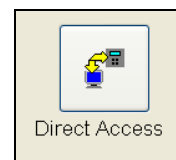


Figure 6.8.1

SEE SECTION 7.0 FOR MORE DETAILS

6.9 GET MANUAL PROGRAMS

Get Manual Programs: Provides an independent supplement to regularly scheduled irrigation. Typical use of Manual Programs might include over seeding, fertilizing and walk-thru.

1. From the List of icons to the right of the “**Speed Communications**” screen select

the **Get Manual Programs** Icon (Figure 6.9.1).

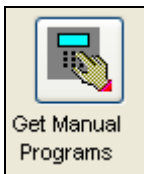


Figure 6.9.1

SEE SECTION 17.0 FOR MORE DETAILS

6.10 SEND ACCESS CONTROL CODES

Send Access Control Codes: The sending of Login Codes to ET2000 controllers is done by either using Speed Communications or by creating a Task and then scheduling that Task to be performed (See Section 8 Task Setup).

1. From the List of icons to the right of the “**Speed Communications**” screen select the **Send Access Control Codes** Icon (Figure 6.10.1).



Figure 6.10.1

SEE SECTION 9.0 FOR MORE DETAILS

6.11 GET LIGHTS

Get Lights: The lights program consists of a fourteen-day rolling schedule with two Start and Stop times per light output. The lights circuit outputs at the controller supply 28 volts to a relay to control various devices such as turning On/Off lights, gates or water features.

1. From the List of icons to the right of the “**Speed Communications**” screen select the **Get Lights** Icon (Figure 6.11.1).

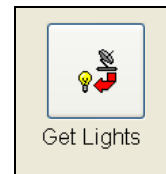


Figure 6.11.1

SEE SECTION 18.0 FOR MORE DETAILS

6.12 CLEAR MAIN LINE BREAK

Clear Mainline Break: A mainline break is when the controller detects a flow higher than the limit set for “during irrigation” or “all other times”. The Clear Mainline Break feature will contact the controller selected, clear the Mainline Break Alert.

CAUTION:

Before clearing a mainline break from the central, verify with someone on site that the mainline has been repaired or the condition that caused the mainline break has been identified and corrective action has been taken. In addition, it is **extremely important** that the mainline has been manually **refilled** and all air removed from the mainline and pressurized **before clearing** the mainline break from the central. **If not**, the in rush of the water could severely damage the mainline and valves in the system.

1. Select the Site / Controller that you want to perform the Speed Communications on from the “**Site / Controller**” window (Figure 6.0.2).
2. From the List of icons to the right of the “**Speed Communications**” screen select the **Clear Main Line Break** Icon (Figure 6.12.1).



Figure 6.12.1

Note: A communications screen will appear letting you know that you are communicating with the controller of choice (Figure 6.5.4).

Note: This command will take place without any confirmation screen. It will show up on your alerts page, and on the controller's alerts.

6.13 MASTER VALVE OVERRIDE

Master Valve Override: The master valve override is only available in the ET2000 500 series controller. It performs a Now Command from the central to open a master valve. The open time is adjustable from 0.10 (six minutes) to 48.00 hours.

1. Select the Site / Controller that you want to perform the Speed Communications on from the "Site / Controller" window (Figure 6.0.2).
2. From the List of icons to the right of the "Speed Communications" screen select the Master Valve Override Icon (Figure 6.13.1).



Figure 6.13.1

Note: This will bring up the Master Valve Override window asking: "What operation would you like to perform?" (Figure 6.13.2).



Figure 6.13.2

3. Using the drop down arrows select either **Open** or **Clear** (Master Valve for).

Open: Opens the master valve for the duration of time selected.

Clear: Clear command is used to cancel the master valve override at the controller.

4. Then choose the amount of time using the **UP** and **DOWN** arrows to the right of the number.
5. Click **OK** to transmit the data.

Note: Select **Cancel** if you do not want to enter this choice.

Note: A communications screen will appear letting you know that you are communicating with the controller of choice (Figure 6.5.4).

Note: After the communications task has taken place the "Communications Completed" screen will appear (Figure 6.5.5).

6. Click on the **OK** button.

6.14 CLEAR HOLD OVER

Clear Hold Over: Hold-over time is generated whenever scheduled irrigation crosses a Stop time. Rain also causes Hold Over. There are three choices when clearing hold-over time Clear All Hold Over, Clear by Program or Clear by Station.

1. Select the Site / Controller that you want to perform the Speed Communications on from the "Site / Controller" window (Figure 6.0.2).
2. From the List of icons to the right of the "Speed Communications" screen select the Clear Hold Over Icon (Figure 6.14.1).

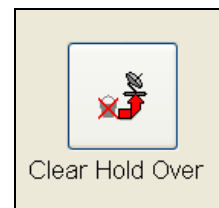


Figure 6.14.1

Note: This will bring up the Clear Hold Over window asking: "Select Hold Over To Clear" (Figure 6.14.2).

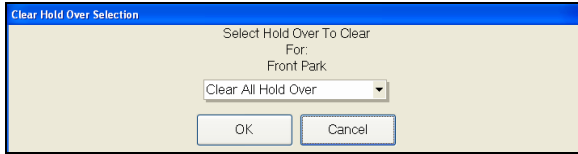


Figure 6.14.2

1. Using the drop down arrows select either Clear All Hold over, Clear Hold Over By Program, Clear Hold Over By Station.

Clear All Hold Over: This will clear **ALL** hold over pertaining to this controller.

Clear Hold Over By Program: Clear Hold Over By Program is used to only clear the hold over for all of the stations assigned to that particular Program.

Clear Hold Over By Station: Will clear the hold over for that station only.

2. Click **OK** to transmit the data.

Note: Select **Cancel** if you do not want to enter this choice.

Note: A communications screen will appear letting you know that you are communicating with the controller of choice (Figure 6.5.4).

Note: After the communications task has taken place the “**Communications Completed**” screen will appear (Figure 6.5.5).

3. Click on the **OK** button.

6.15 SET TIME AND DATE

Set Time And Date: Set time and date synchronizes the controllers’ time and date with the Central computers time and date.

1. Select the Site / Controller that you want to perform the Speed Communications on from the “**Site / Controller**” window (Figure 6.0.2).
2. From the List of icons to the right of the “**Speed Communications**” screen select the **Set Time And Date** Icon (Figure 6.15.1).

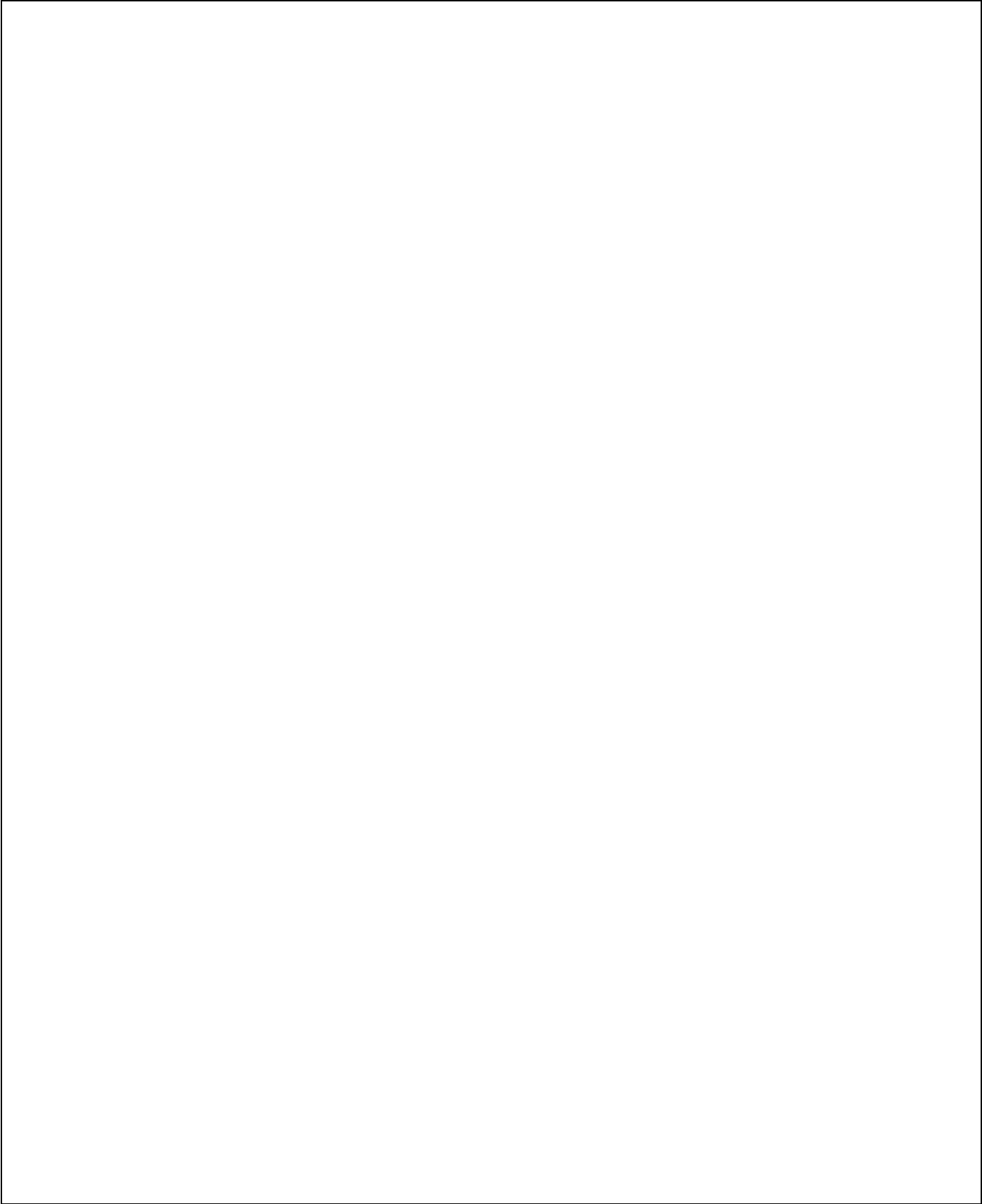


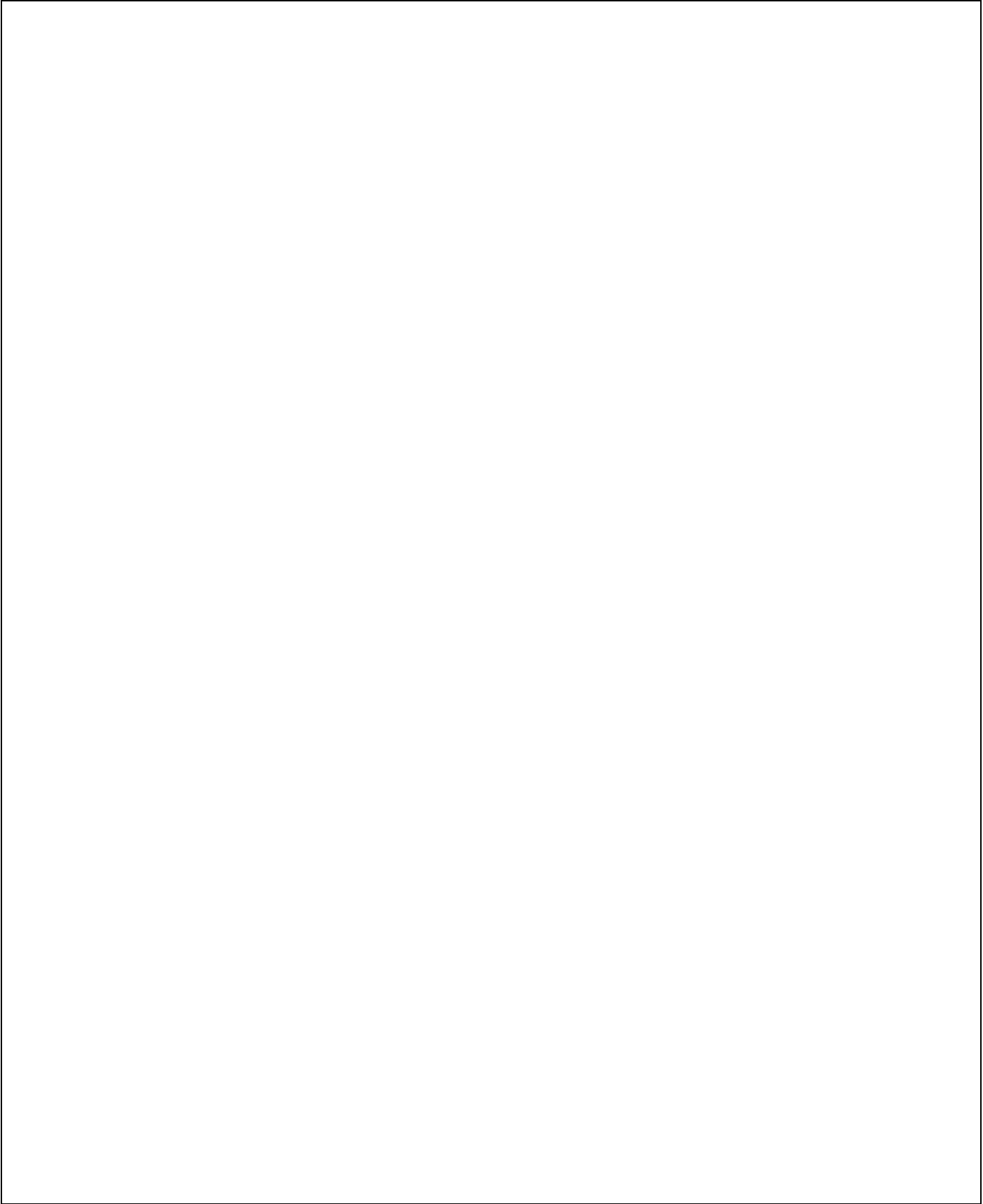
Figure 6.15.1

Note: A communications screen will appear letting you know that you are communicating with the controller of choice (Figure 6.5.4)

Note: After the communications task has taken place the “**Communications Completed**” screen will appear (Figure 6.5.5).

3. Click on the **OK** button.





7.0 DIRECT ACCESS

Direct Access: Direct access is a direct link to the controller in the field which provides a real time view of the controllers display screen and current activity. Direct access also allows the user to test and manually water stations, turn On/Off the controller and master valve override.

Note: Direct access does not support programming changes to the controller and is limited to only the highlighted keys on the keypad. Any keys that are grayed out on the keypad are not accessible.

1. From the toolbar at the top of the screen select **Communications** then scroll down to **Speed Communications** and click on it (Figure 7.0.1)

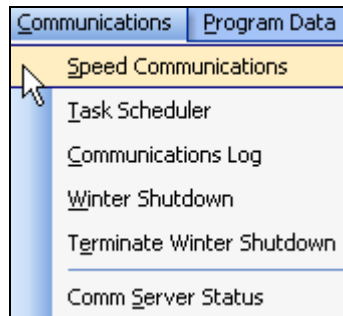


Figure 7.0.1

2. Select the Site / Controller that you want to perform Direct Access on from the “**Sites / Controllers**” window. Make sure that it is highlighted (Figure 7.0.2).

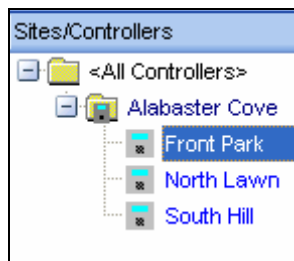


Figure 7.0.2

3. From the List of icons to the right of the “**Speed Communications**” screen select the **Direct Access** Icon (Figure 7.0.3).

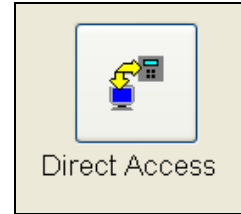


Figure 7.0.3

Note: A communications screen will appear letting you know that you are communicating with the controller of choice (Figure 7.0.4).

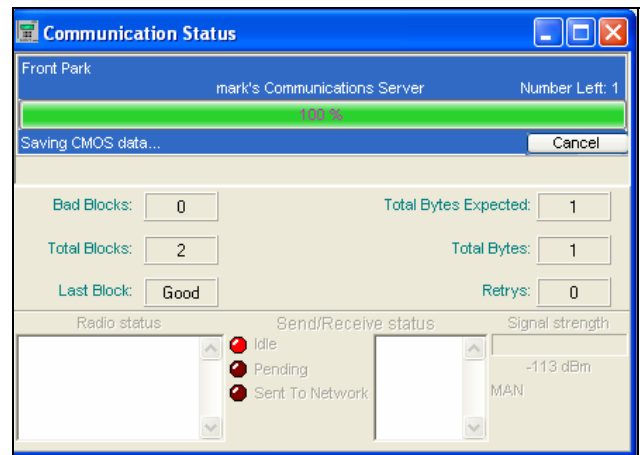


Figure 7.0.4

Note: After the communications has taken place the “**Communications Completed**” screen will appear (Figure 7.0.5).

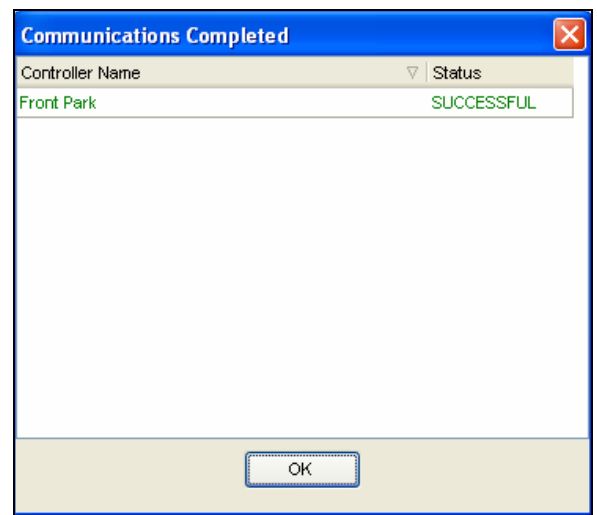


Figure 7.0.5

4. Click on the **OK** button.

For Direct Access:

- ET1 SEE SECTION 7.1**
- ET 2000 (400 SERIES) SEE SECTION 7.2**
- ET 2000 (500 SERIES) SEE SECTION 7.3**
- ET 2000e SEE SECTION 7.4**

7.1 DIRECT ACCESS ET1

Note: The ET1 Direct Access screen will appear (Figure 7.1.0).



Figure 7.1.0

Station Up/Down: Advances to the next or back to the previous station.

Master Valve: Will open, close, or test the master valve for the time set at the controller.

- Click the **DOWN** arrow to select what state you would like to place the master valve into (Figure 7.1.1).

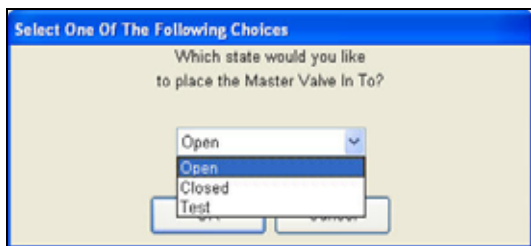


Figure 7.1.1

Note: To end master valve override select the **Clear** key or allow the time to expire.

Master Valve Test ET1 Controllers: This feature tests the opening and closing of the master valve

while a station is operating and requires that the controller be connected to a flow meter with the flow feature turned on.

- Using the **Manual** key, Select Manual Watering Type / Station. Click **OK** (Figure 7.1.2)

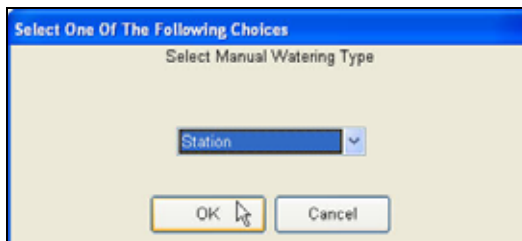


Figure 7.1.2

- Select a Station To Water. Click **OK** (Figure 7.1.3).

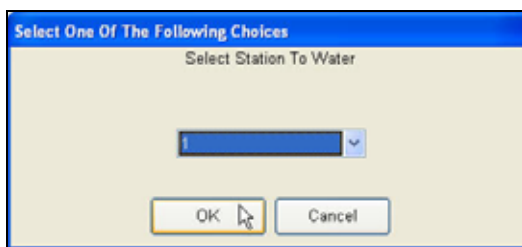


Figure 7.1.3

Note: Allow 30 seconds of time to pass to allow the stations flow to stabilize.

- With the station running, select the **Master Valve** key. Click on the **DOWN** arrow and select Test. Click **OK** (Figure 7.1.4).

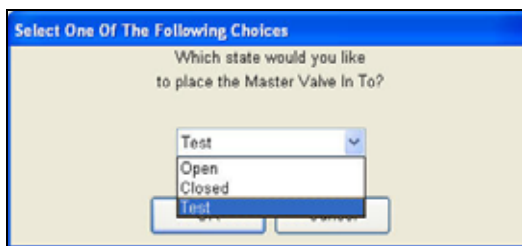


Figure 7.1.4

Note: If the master valve is operating properly, the flow rate on the station that was turned on will drop to 0 GPM's.



5. Select the **Clear** key to turn off the current station running.
6. Select the **Test** key and turn on the station used for the test to verify that water is flowing through the valve again. Select the **Clear** key to end the Test.

Irrigation On / Off: This will turn the controller to the ON or OFF mode.

Test: Testing irrigation with Direct Access should be used to check actual flow against the learned flow rate. Selection is done by Station only and is performed as a NOW command.

7. Select a single station only to test (Figure 7.1.5).

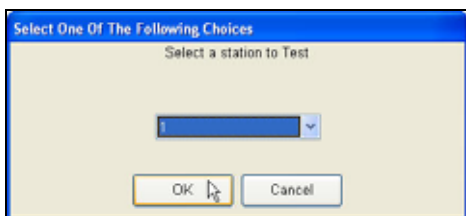


Figure 7.1.5

Note: The station test time is set for two minutes by default in the controller but can be adjusted at the controller.

Reset Flow: To reset a stations current flow rate to a new flow value.

Note: Controller must be connected to flow meter and the flow feature enabled.

8. Select **Reset Flow**. Enter a new flow value. Click **OK** (Figure 7.1.6).

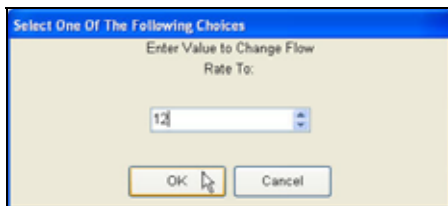


Figure 7.1.6

Manual: Manual watering with direct access can be done by Station, Program or All Station and is performed as a NOW command.

9. Select watering type. Click **OK** (Figure 7.1.7).

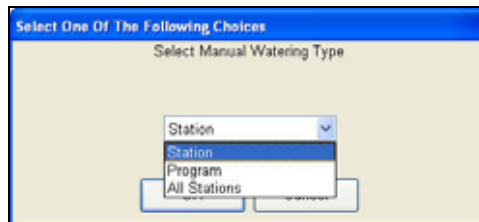


Figure 7.1.7

Note: Manual watering time for each station will be the total minute time assigned to that particular station at the controller.

Station #: Station # allows the user to advance to a particular station without scrolling through station up/down.

Display Update: Update of the current controller screen.

Clear: Clear is used to stop something that is currently running with direct access.

Quit: Exit direct access.

7.2 DIRECT ACCESS ET2000 (400 SERIES).

Note: The ET2000 Direct Access screen will appear (Figure 7.2.1).



Figure 7.2.1

Stop: Stop will end anything that is currently running.

Quit: Exit direct access.

Manual: Manual watering with direct access can be done by Station, Program or All Stations and is performed as a NOW command.

1. Click on the **DOWN** arrow to view the different screen selections. Click **OK** (Figure 7.2.2).

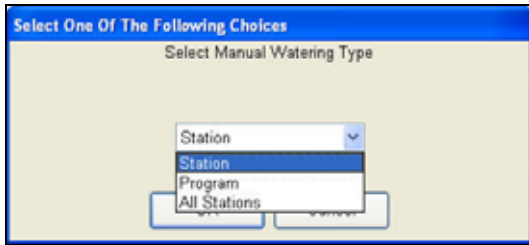


Figure 7.2.2

Note: Manual watering time for each station will be the total minute time assigned to that particular station.

On / Off: This will turn the controller to the ON or OFF mode.

Display Update: Update of the current controller screen.

Test: Testing irrigation with direct access should be used to check actual flow against the learned flow rate or the current draw on a particular station. Test can be performed by Station, Program or All Stations and is performed as NOW command.

2. Click on the **DOWN** arrow to view the different screen selections. Click **OK** (Figure 7.2.3).

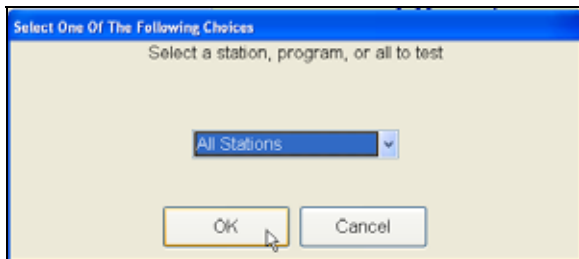


Figure 7.2.3

Note: The station test time is set for two minutes default in the controller but can be adjusted at the controller.

Station #: Station # allows the user to advance to a particular station.

Master Valve: Will open or close the master valve for the time set at the controller.

3. Click on the **DOWN** arrow to view the different screen selections (Figure 7.2.4).

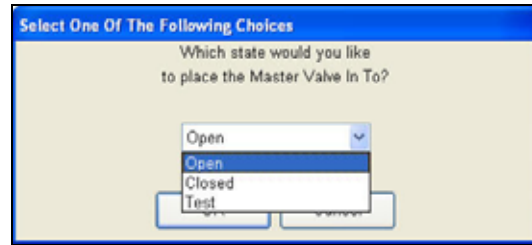


Figure 7.2.4

Master Valve Test: This feature tests the opening and closing of the master valve while a station is operating and requires that the controller be connected to a flow meter with the flow feature turned on.

4. Using the Manual key Select Manual Watering Type / Station. Click **OK** (Figure 7.2.5).

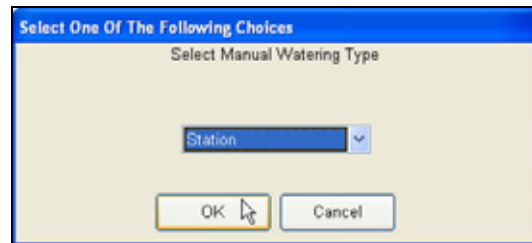


Figure 7.2.5

5. Select a Station number to water. Click **OK** (Figure 7.2.6).

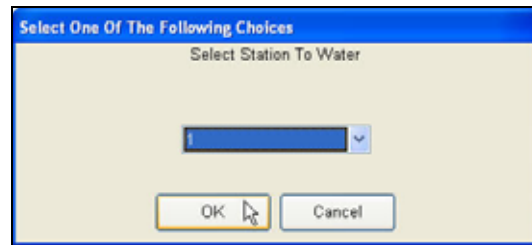


Figure 7.2.6

Note: Allow 30 seconds of time to pass to allow the stations flow to stabilize.

- With the station running, select the **Master Valve** key. Click on the **DOWN** arrow and select Test. Click **OK** (Figure 7.2.7).



Figure 7.2.7

Note: If the master valve is operating properly the flow rate on the station will drop to 0 GPM's.

- Select the **STOP** key to turn off the current station running.
- Select the **Test** key and turn on the station used for the test to verify that water is flowing through the valve again. Select the **STOP** key to end the Test.

Reset Flow: Resets a stations current flow rate to a new flow value.

- Click on the **DOWN** arrow to select a station. Click **OK** (Figure 7.2.8).

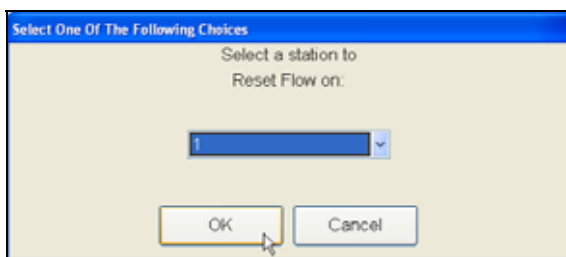


Figure 7.2.8

- Enter a new flow rate. Click **OK** (Figure 7.2.9).

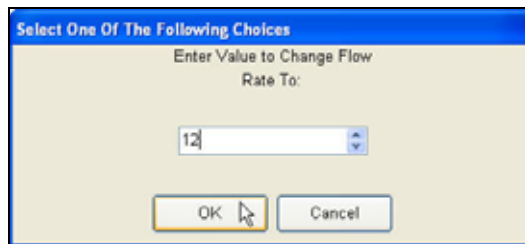


Figure 7.2.9

Go To Screen: The “**Go To Screen**” Allows the user to view the **Controller Status** and **Irrigation Activity** screen.

- Click on the **DOWN** arrow to view the different screen selections. Click **OK** (Figure 7.2.10).

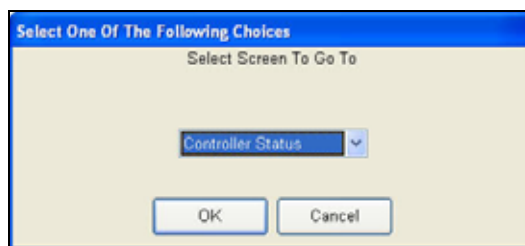


Figure 7.2.10

Note: Click on the **QUIT** button when finished with Direct Access.

7.3 DIRECT ACCESS ET2000 (500 SERIES).

Note: The ET2000 Direct Access screen will appear (Figure 7.3.1).

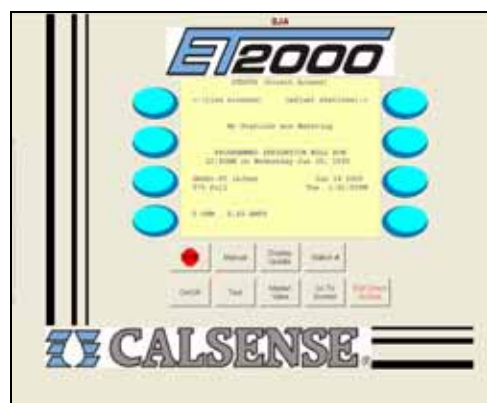


Figure 7.3.1

Stop: Stop will end something that is currently running with direct access.

On / Off: This will turn the controller to the ON or OFF mode.

Manual: Manual watering with direct access can be done by Station, Program or All Stations and is performed as a NOW command.

1. Select a watering type. Click **OK** (Figure 7.3.2).

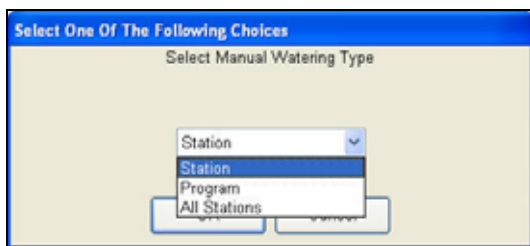


Figure 7.3.2

Note: Manual watering time for each station will be the total minute time assigned to that particular station at the controller.

Test: Testing irrigation with direct access should be used to check actual flow against the learned flow rate or the current draw on a particular station. Selection is done by Station only and is performed as NOW command.

2. Select a single station only to test (Figure 7.3.3).

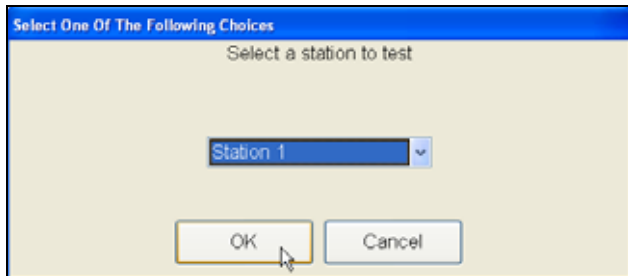


Figure 7.3.3

Note: The station test time is set for two minutes by default in the controller but can be adjusted at the controller.

Display Update: Update of the current controller screen.

Station #: The station # allows the user to advance to a particular station.

Master Valve: Is used to open a normally closed master valve set by the user (Figure 7.3.4)

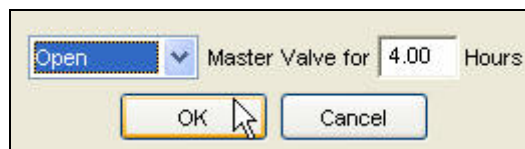


Figure 7.3.4

Go To Screen: Allows the Administrator and the Standard user to view the following screens:

- Controller Status
- Irrigation Details
- Irrigation Activity
- Real Time Flow

3. Click on the **DOWN** arrow to view the different screen selections (Figure 7.3.5).

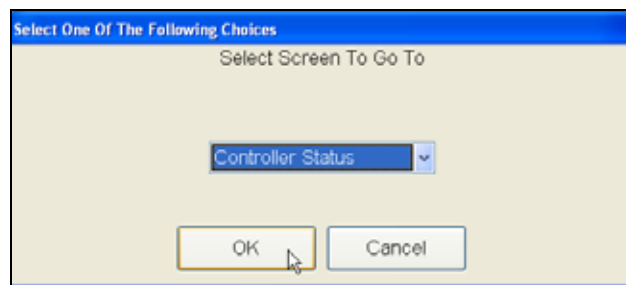


Figure 7.3.5

Note: Be sure to click on the **Exit Direct Access** button when finished with Direct Access.

7.4 DIRECT ACCESS ET2000e.

Note: The ET2000e Direct Access screen will appear (Figure 7.4.1).



Figure 7.4.1

Stop: Stop will end something that is currently running with direct access.

On / Off: This will turn the controller to the ON or OFF mode.

Manual: Manual watering with direct access can be done by Station, Program or All Stations and is performed as a NOW command.

4. Select a watering type. Click **OK** (Figure 7.4.2).

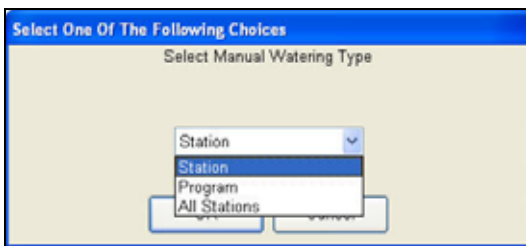


Figure 7.4.2

Note: Manual watering time for each station will be the total minute time assigned to that particular station at the controller.

Test: Testing irrigation with direct access should be used to check actual flow against the learned flow rate or the current draw on a particular station. Selection is done by Station only and is performed as NOW command.

5. Select a single station only to test (Figure 7.4.3).

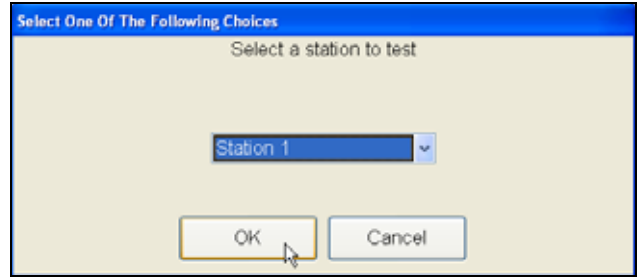


Figure 7.4.3

Note: The station test time is set for two minutes by default in the controller but can be adjusted at the controller.

Display Update: Update of the current controller screen.

Station #: The station # allows the user to advance to a particular station.

Master Valve: Is used to open a normally closed master valve set by the user (Figure 7.4.4)

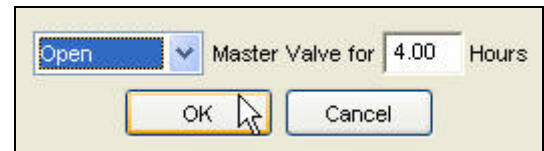


Figure 7.4.4

Go To Screen: Allows the Administrator and the Standard user to view the following screens:

- **Controller Status**
- **Irrigation Details**
- **Irrigation Activity**
- **Real Time Flow**

6. Click on the **DOWN** arrow to view the different screen selections (Figure 7.4.5).

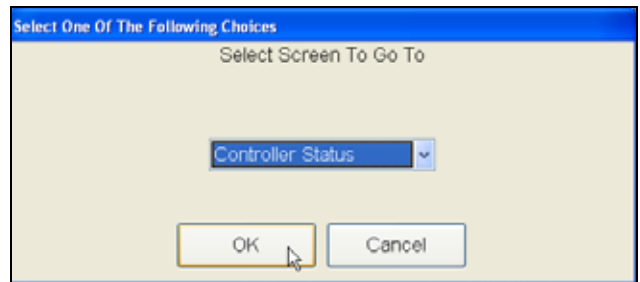
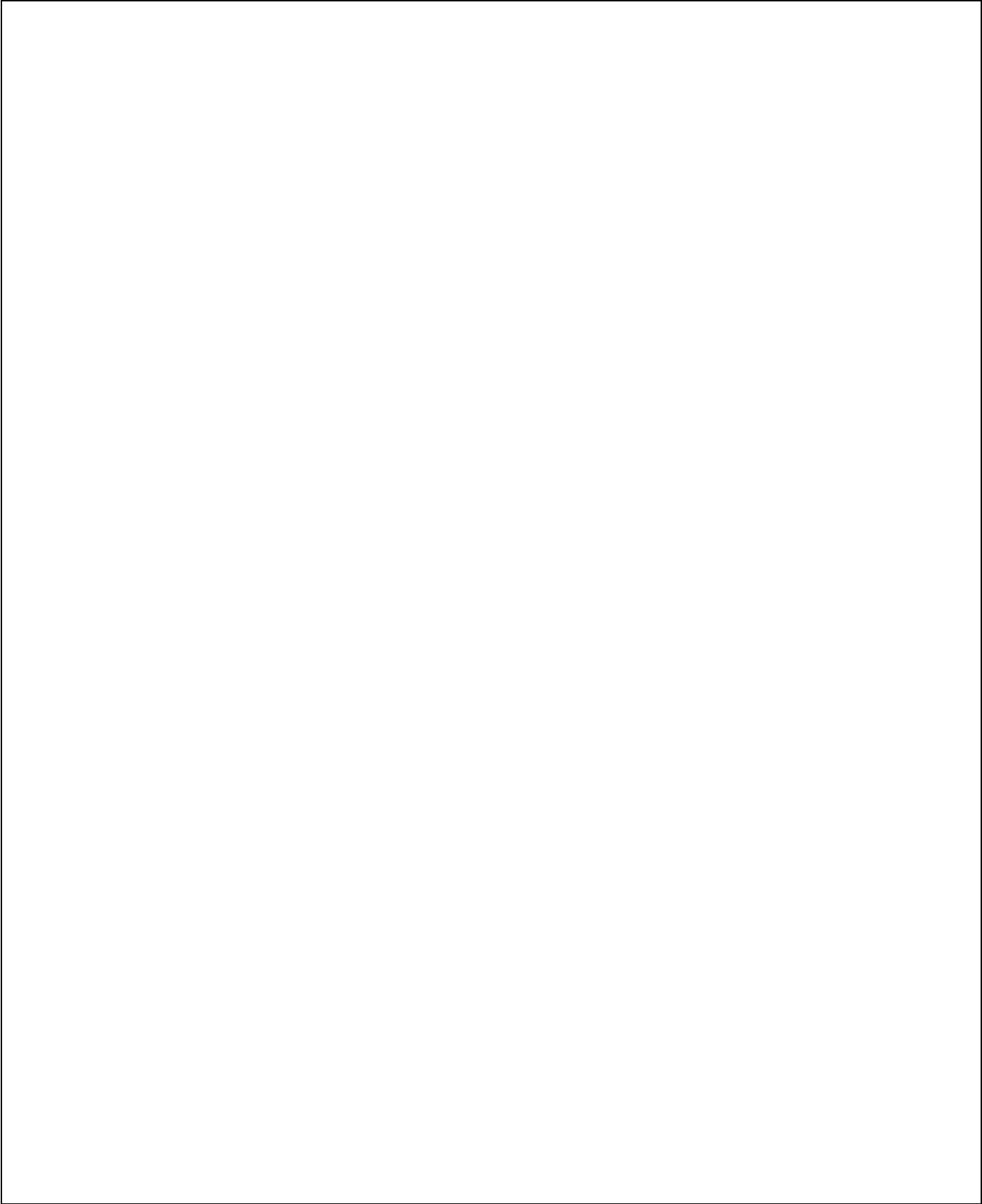


Figure 7.4.5

Note: Be sure to click on the [Exit Direct Access](#) button when finished with Direct Access.





8.0 ALERT SETUP

Alert Setup: Alert setup is used to group controllers in a particular area to an alert group. It also allows the user to choose what alerts to view after the alerts are gathered. Alert filters are a global setting. This means that one set of alert filters pertain to all groups within the alert group listing.

Alerts are the controller’s diagnostic lines which are used to alert the user that the controller detected a change or problem with the irrigation system.

1. From the toolbar at the top of the screen select **Setup** then scroll down to **Alert** and click on it (Figure 8.0.1).

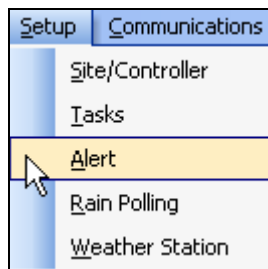


Figure 8.0.1

Note: This will bring you to the “Alert Setup” screen (Figure 8.0.2).

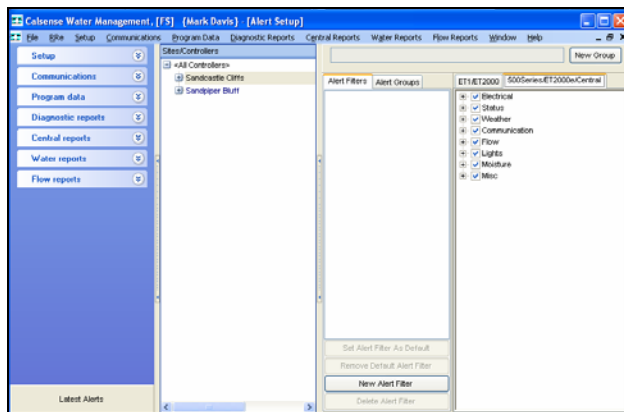


Figure 8.0.2

8.1 NEW ALERT FILTER

The New Alert Filter option allows the user to set up a user defined Alert Filter, by name, which can be used to filter out unwanted alerts during the creation of a duration Alerts report used for viewing or printing.

1. To create a new alert filter press the **New Alert Filter** button (Figure 8.1.1).



Figure 8.1.1

Note: This will highlight the **New Alert Filter** entry.

2. Type a name in the **New Alert Filter** box that correlates to the desired Alerts. (Example: John Smith’s Electrical Alerts) Figure 8.1.2.



Figure 8.1.2

3. With the name of the New Alert Filter still highlighted, check and uncheck the desired alerts for this alert filter (Figure 8.1.3).

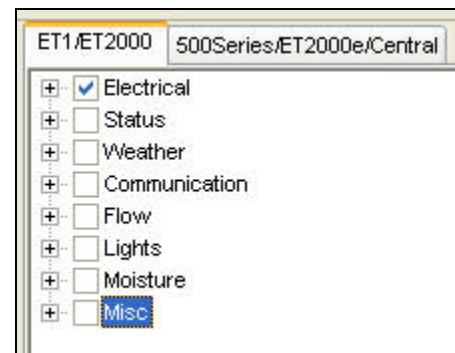


Figure 8.1.3

Note: Any time that the Alerts (Section 20) portion of Command Center is now accessed the alert Filter just entered will be available (Figure 8.1.4).

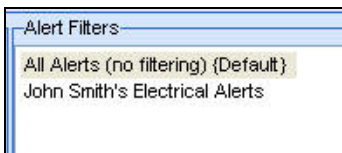


Figure 8.1.4

SEE SECTION 20.0 FOR MORE DETAILS

8.2 SET ALERT FILTER AS DEFAULT

This setting allows the user to set a desired Alert Filter as the default.

1. Highlight the **Alert Filter** name (Figure 8.2.1).



Figure 8.2.1

2. Click on the **Set Alert Filter As Default** button (Figure 8.2.2).



Figure 8.2.2

Note: The default setting will automatically filter out unwanted alerts every time alerts are gathered. Selecting other alert filters at time of report gathering will override this setting.

8.3 REMOVE DEFAULT ALERT FILTER

This setting allows the user to deactivate a default Alert Filter.

1. Highlight the **Alert Filter** name (Figure 8.3.1).



Figure 8.3.1

2. Click on the **Remove Default Alert Filter** button (Figure 8.3.2).

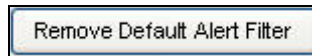


Figure 8.3.2

Note: This setting will return Command Center to retrieving **all** alerts automatically from any controller contacted for that purpose.

8.4 DELETE ALERT FILTER

This setting allows the user to delete any created Alert filter.

3. Highlight the **Alert Filter** name (Figure 8.4.1).



Figure 8.4.1

4. Click on the **Remove Default Alert Filter** button (Figure 8.4.2).

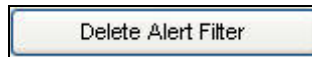


Figure 8.4.2

8.5 ALERT FILTERS

ET1/ET2000 and 500 Series / ET2000e / Central: Alert Filters allow the Administrator and each Standard User to select which alerts they want to see when viewing the Alerts report.

Note: There are two different tabs for alert filters:

ET1/ET2000: This tab is used if the controllers you are using are ET1 or a ET2000 (400 series). You can identify this by using your Alerts Report and looking at the top right hand corner of the report for each individual controller. If the report has a number starting with 4 or less use this tab (Figure 8.5.1)

500 Series / ET2000e / Central: Use this tab if the controllers you have show a number starting with 5 in the upper right hand corner of the Alerts page (Figure 8.5.1)

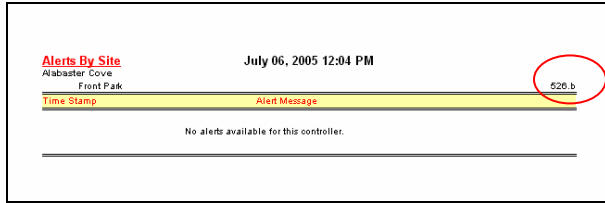


Figure 8.5.1

Note: If you have a combination of some or all three different types of controllers use both tabs to satisfy your Alerts Setup needs.

- To view the individual alert options under each heading click on the “+” next to the heading to expand the alert features of each heading (Figure 8.5.2).

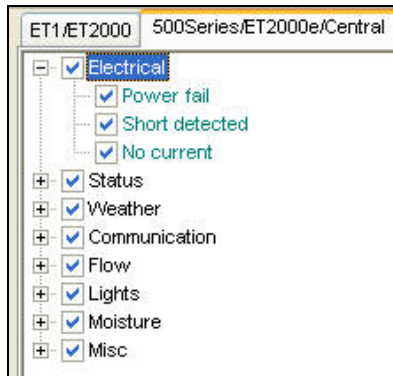


Figure 8.5.2

- All boxes checked will be viewed in the Alerts report (Figure 8.5.3).
- Any box left unchecked will not be viewed in the Alert report (Figure 8.5.3).
- Any grayed out box next to a heading indicates that selected alerts under that heading will not be viewed in the Alert report (Figure 8.5.3).

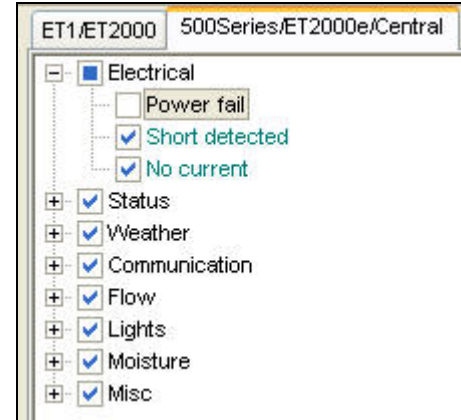


Figure 8.5.3

8.6 ALERT GROUP SETUP

- At the top of the screen click on the **New Group** button (Figure 8.6.1).



Figure 8.6.1

Note: This will allow you to enter a name for the group that you are currently creating.

- Type the name in the box and click on the **OK** button (Figure 8.6.2).

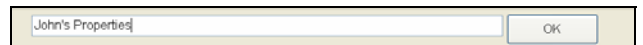


Figure 8.6.2

- The group name will appear in the “**Alert Group**” section (Figure 8.6.3).

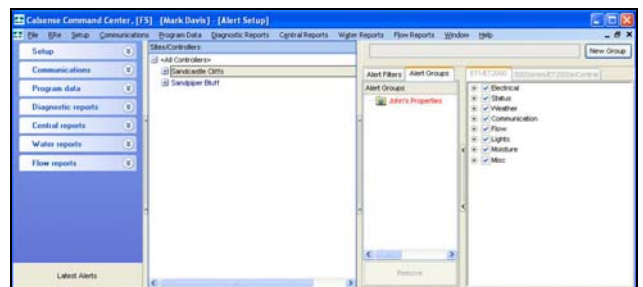


Figure 8.6.3

Note: Only the controllers that have been assigned to the current logged in user will appear in the controller list.

8. Highlight the new alert group in the Alert Group section (Figure 8.6.4).



Figure 8.6.4

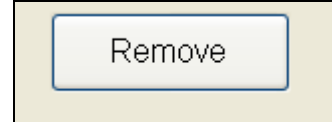


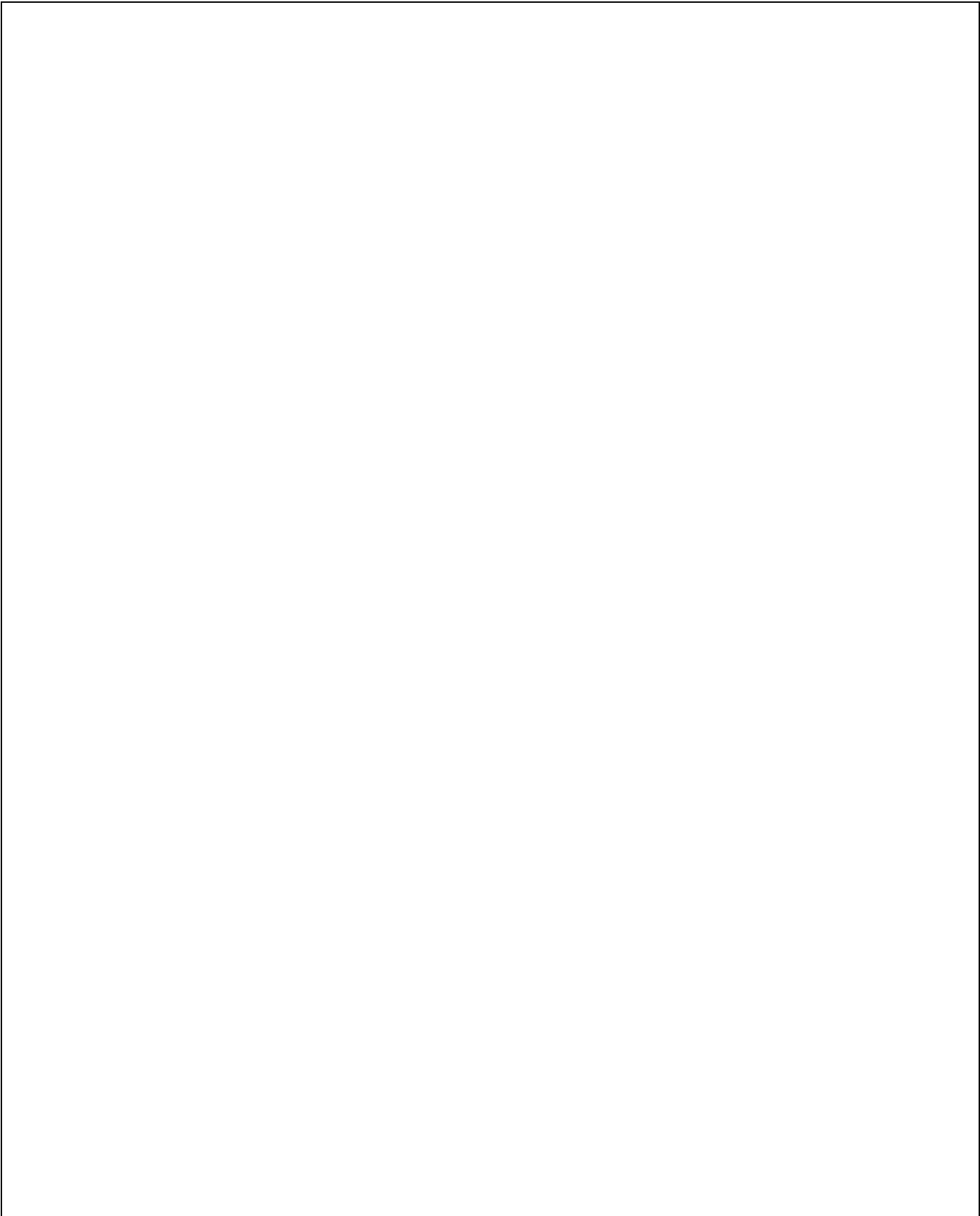
Figure 8.6.5

There are four ways to add controllers into a group:

- To add all the controllers in a site. Highlight a site name from the controller list hold down the right button on your mouse. Drag the site name over to the created alert group and release the mouse button.
- To add a single controller from a site to the group. Select the "+" in front of the site name. This expands the site name to show all the controllers listed in that site hold down the right button on your mouse. Drag the site name over to the created alert group and release the mouse button.
- To add a number of different controllers in a site to the group. Select the "+" in front of the site name. This expands the site name to show all the controllers listed in that site. Holding down the "CTRL" key, highlight only the controllers in the site you want to add to the group and then drag one of them over to the site name.
- You can also drag and drop controllers from one site group in to another site group.

Note: The shift key allows the user to highlight 2 controllers and select all controllers in between highlights.

9. To remove a Site / Controller from the list highlight the controller or site and click on the **Remove** button at the bottom of the screen (Figure 8.6.5).



9.0 SETUP ET2000 ACCESS CONTROL

The ET2000 access control setup is used for assigning access levels and login codes for field personnel. When login codes are sent to the controller, only personnel with an assigned login code will have access to the controller's programming and operating features. Access Levels can only be created and sent to a controller with Command Center software.

Note: Only an Administrator or Standard User with setup privileges will have access to the ET2000 Access Control Setup.

9.1 CREATE AN ACCESS GROUP

1. In the toolbar at the top of the screen select **Setup** and then scroll down to **Access Control** and click on it (Figure 9.1.1).

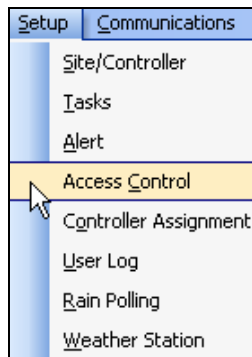


Figure 9.1.1

Note: This will take you to the "Access Control" screen (Figure 9.1.2).

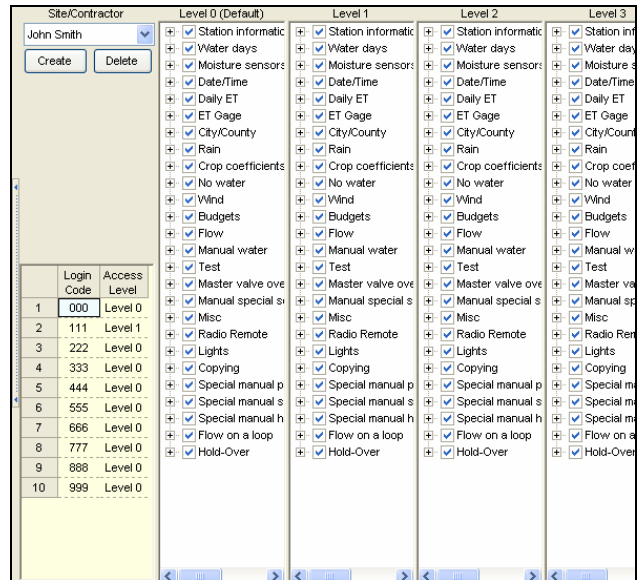


Figure 9.1.2

Note: ET2000 controllers are shipped from the factory with Level 0, having access to all items listed. The entire controllers programming is accessible and no Login code is necessary.

Note: Existing Access Control names can be accessed by using the pull down arrow to the right of the name box (Figure 9.1.3)

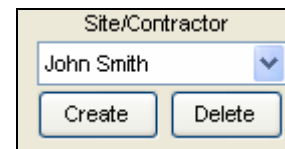


Figure 9.1.3

2. Under the Site / Contractor section click on the **Create** button (Figure 9.1.4).

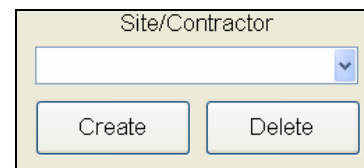


Figure 9.1.4

Note: This will bring up the "New Task" window (Figure 9.1.5).

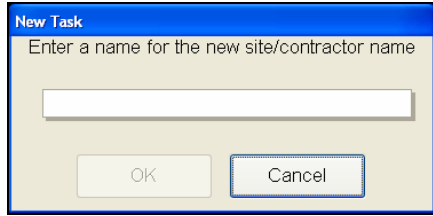


Figure 9.1.5

3. Type in the name of the site, company, or person that you want this setting to be identified by (Figure 9.1.6)



Figure 9.1.6

4. Click on the **OK** button if you want to save this name. Click on the **Cancel** button if you do not.

Note: Next you will have to select login Codes (Figure 9.1.7).

	Login Code	Access Level
1	000	Level 0
2	111	Level 0
3	222	Level 0
4	333	Level 0
5	444	Level 0
6	555	Level 0
7	666	Level 0
8	777	Level 0
9	888	Level 0
10	999	Level 0

Figure 9.1.7

Login Code: There can be up to ten login codes assigned.

- Click on one of the default Login Codes.
- Enter in a Login Code. (Login codes are case sensitive and can be A-thru-Z, a-thru-z, 0-thru-9).

5. For each Login Code you will have to assign an access level (Figure 9.1.8).

Access Level: Access levels allow field personnel access to only the predefined programming and operating features assigned by the Administrator or Standard user.

- Select the Access Level box next to one of the login codes assigned to a user. From the drop down box select one of the levels of access (Level 0 thru Level 3) for that user (Figure 9.1.8).

	Login Code	Access Level
1	000	Level 0
2	111	Level 0
3	222	Level 0
4	333	Level 0
5	444	Level 0
6	555	Level 0
7	666	Level 0
8	777	Level 0
9	888	Level 0
10	999	Level 0

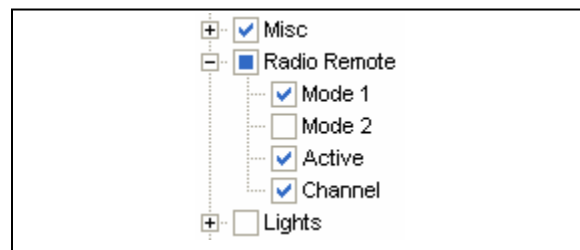
Figure 9.1.8

Level 0 thru 3: The four columns, Level 0 (default) thru 3 are used for selecting the programming and operation that will be permitted under that Level.

To view the different programming and operation selections:

- Click on the “+” next to the programming and operation description.

Example:



Misc: allows the user access to all the options listed within that feature.

Radio Remote: A Blue square indicates options within that feature are not selected. Only the selected options within that feature will the user have access too.

Lights: Not selected, does not allow the user access to any of the options within that feature.

Note: Looking at the ET2000 access control setup screen on the next page (Figure 9.1.9). XYZ Landscaping is the "Site / Contractor".



Site/Contractor

XYZ Landscaping

Create Delete

	Level 0 (Default)	Level 1	Level 2	Level 3
<input type="checkbox"/>	Station informatic	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Water days	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Moisture sensors	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Date/Time	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Daily ET	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	ET Gage	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	City/County	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Rain	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Crop coefficients	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	No water	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Wind	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Budgets	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Flow	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Manual water	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Test	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Master valve ove	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Manual special s	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Misc	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Radio Remote	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Lights	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Copying	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Special manual p	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Special manual s	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Special manual h	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Flow on a loop	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Hold-Over	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

	Login Code	Access Level
1	792	Level 0
2	604	Level 1
3	545	Level 0
4	333	Level 0
5	444	Level 0
6	555	Level 0
7	666	Level 0
8	777	Level 0
9	888	Level 0
10	999	Level 0

Figure 9.1.9

The company was assigned a Login Code of 604 and Access Level 1 (Figure 9.1.9).

making water work
since 1986

	Login Code	Access Level
1	792	Level 0
2	604	Level 1
3	545	Level 2
4	333	Level 0
5	444	Level 0
6	555	Level 0
7	666	Level 0
8	777	Level 0
9	888	Level 0
10	999	Level 0

Figure 9.1.10

Under the Level 1 access, XYZ Landscaping was not given full access to the controllers that are assigned to them. The Station information category has a blue square meaning that under that category they have limited access. In addition they have no access to the categories where the boxes are not checked (Figure 9.1.10).

Level 1	
<input checked="" type="checkbox"/>	Station informatic
<input checked="" type="checkbox"/>	Water days
<input type="checkbox"/>	Moisture sensors
<input checked="" type="checkbox"/>	Date/Time
<input type="checkbox"/>	Daily ET
<input checked="" type="checkbox"/>	ET Gage
<input checked="" type="checkbox"/>	City/County
<input checked="" type="checkbox"/>	Rain
<input checked="" type="checkbox"/>	Crop coefficients
<input checked="" type="checkbox"/>	No water
<input type="checkbox"/>	Wind
<input type="checkbox"/>	Budgets
<input type="checkbox"/>	Flow
<input checked="" type="checkbox"/>	Manual water
<input checked="" type="checkbox"/>	Test
<input checked="" type="checkbox"/>	Master valve ove
<input checked="" type="checkbox"/>	Manual special s
<input type="checkbox"/>	Misc
<input type="checkbox"/>	Radio Remote
<input type="checkbox"/>	Lights
<input type="checkbox"/>	Copying
<input type="checkbox"/>	Special manual p
<input type="checkbox"/>	Special manual s
<input type="checkbox"/>	Special manual h
<input type="checkbox"/>	Flow on a loop
<input type="checkbox"/>	Hold-Over

Figure 9.1.10

Note: Only when logged on as the **Administrator** will the alert line show the users login code.

06/04/2004 09:16 AM User 604 login to level 1

When logged on as a **Standard User** the alert line will only show the level of the person who logged in.

06/04/2004 09:16 AM User logged in to level 1

The ET2000 controller does not display the login code. The code is replaced with three asterisks and only the access level is shown.

9.2 SENDING AN ACCESS GROUP

1. From the toolbar at the top of the screen select **Communications** then scroll down to **Speed Communications** and click on it (Figure 9.2.1).

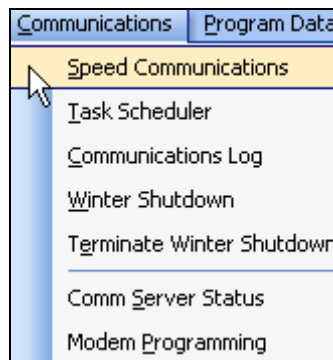


Figure 9.2.1

Note: This will bring you to the **Speed Communications** screen (Figure 9.2.1).

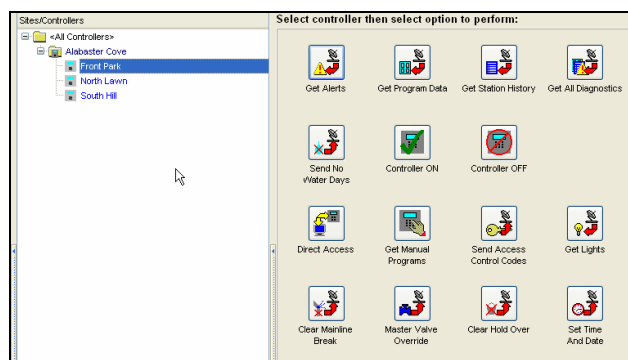


Figure 9.2.1

2. Select a Site / Controller that you want to send the Access Control Code Set to by highlighting it (Figure 9.2.2).

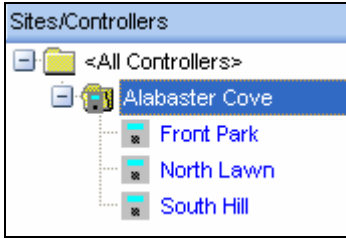


Figure 9.2.2

3. Select the **Send Access Control Codes** icon in the right hand panel and click on it (Figure 9.2.3).



Figure 9.2.3

Note: This will bring up the “**Access control Selection**” screen (Figure 9.2.4)

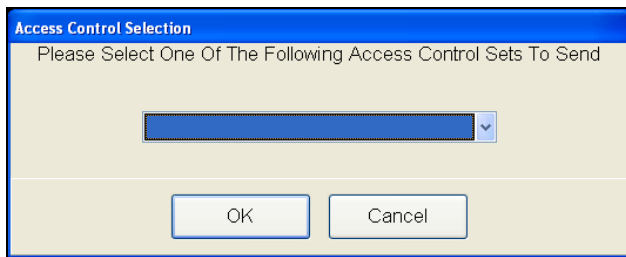


Figure 9.2.4

4. You can use the pull down arrow to the right of the entry box to select the Access Control Code set that you want to send to this controller.

Note: If there are no entries in this box then you do not have access to send codes or there are no code groups created. See section 9.1 of this manual.

5. Highlight the name of the group and click on the **OK** button to send.

Note: Click the **Cancel** button if you do not wish to send this information to the controller.

6. The communications server will activate and send the information selected to the chosen controller.

Note: After the communications task has taken place the “**Communications Completed**” screen will appear (Figure 9.2.5).

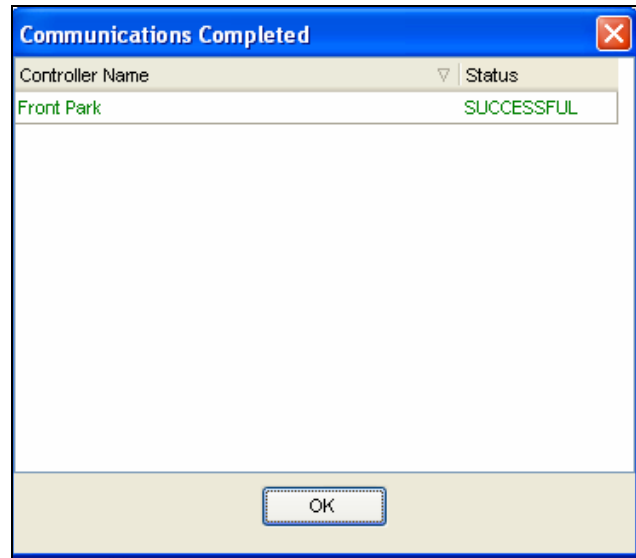
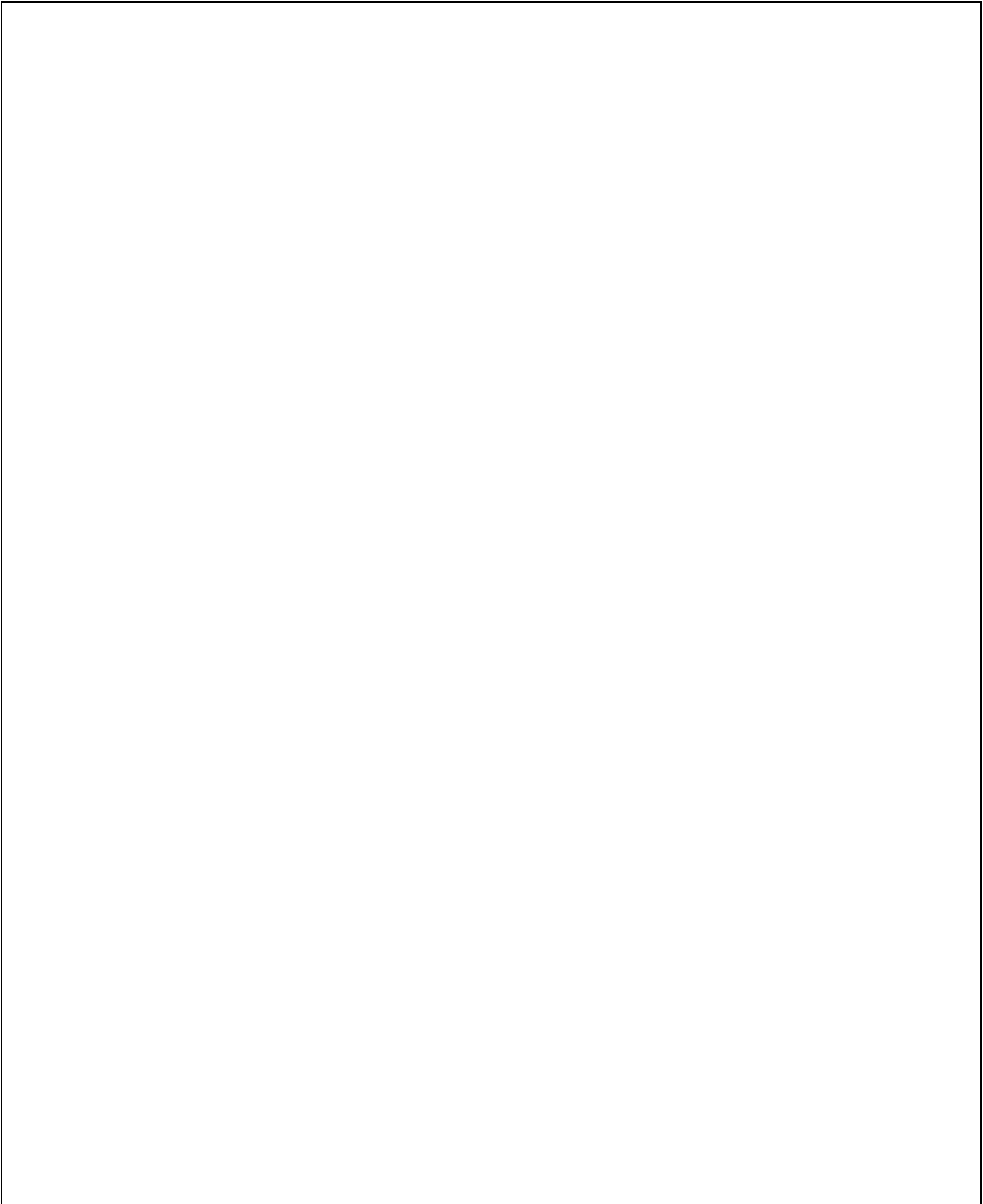


Figure 9.2.5

2. Click on the **OK** button.



10.0 WEATHER STATION SETUP

Weather Station Setup: Weather Station setup is used to configure Command Center to communicate with, and gather ET and rain information from, Campbell Scientific Weather Stations.

1. In the toolbar at the top of the screen select **Setup** and then scroll down to the words **Weather Station** and click on it (Figure 10.0.1).



Figure 10.0.1

Note: This will take you to the “**Weather Station Setup**” screen (Figure 10.0.2).

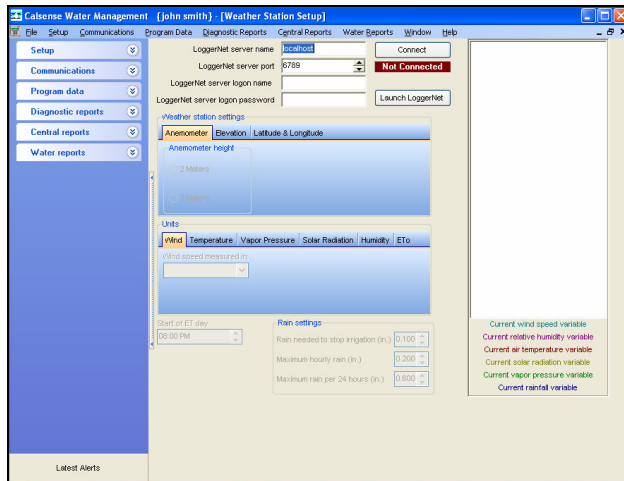


Figure 10.0.2

Note: This screen may appear different if only ETo entry is required. For instructional purposes all individual entries will be shown in this section.

LoggerNet Server Name: This is the name or IP address of the computer that **LoggerNet** is running on. If running on the same computer than this one, the server name is LOCALHOST this is the default address.

LoggerNet Server Port: 6789 is the channel number. Leave this number as is. It is the default and should not be changed unless told to do so by a Calsense representative.

LoggerNet Server Logon Name: This is setup in the **LoggerNet** program as your **LoggerNet** server logon name. Use the same exact name.

LoggerNet Server Logon Password: This is setup in the **LoggerNet** program as your **LoggerNet** server password. Use the same exact password.

1. If **LoggerNet** is not currently running on your computer. Click on the Launch **LoggerNet** button to start the program (Figure 10.0.3)



Figure 10.0.3

2. Click on the **Connect** button to communicate with **LoggerNet** (Figure 10.0.4).

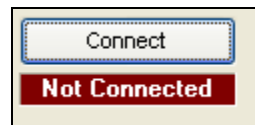


Figure 10.0.4

Note: If you are not currently connected to **LoggerNet** a **Not Connected** signal will appear directly under the **Connect** button.

Note: If you are connected to **LoggerNet** the **Connected** signal will appear directly below the **Connect** button (Figure 10.0.5).

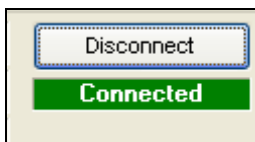


Figure 10.0.5

Note: If you want to disconnect from *LoggerNet* click on the **Disconnect** button.

Note: When you are connected to the available weather stations they will show up in the “**Weather Station**” window (Figure 10.0.6)



Figure 10.0.6

Note: Clicking on the “+” symbol to the left of the weather station name will expand the folder to show more information folders. These folders should contain your weather station information in the following manner. By the Minute, Hourly, and Daily (Figure 10.0.7)

Note: Every weather station labels their folders differently so you will have to search for the right information, and in which folder it is located in.

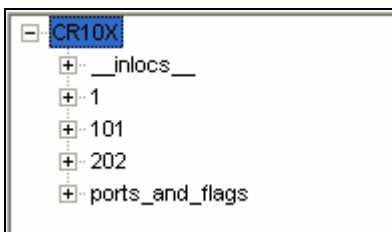


Figure 10.0.7

Using CR10X as our weather station example there are two ways in which we can collect weather data:

Method One

In the legend at the bottom of the **Weather station** window you will see two (2) entries (Figure 10.0.8)



Figure 10.0.8

Note: Using this method you only need to find the hourly Eto variable.

- By using the “+” symbols to the right of each folder search through them until you find a folder with a title similar to Total ETo (Figure 10.0.9).

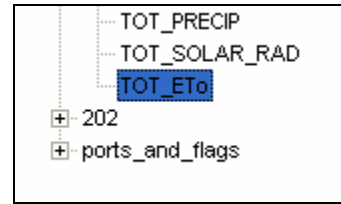


Figure 10.0.9

- Right click on this folder to open up the **selections** window (Figure 10.0.10).

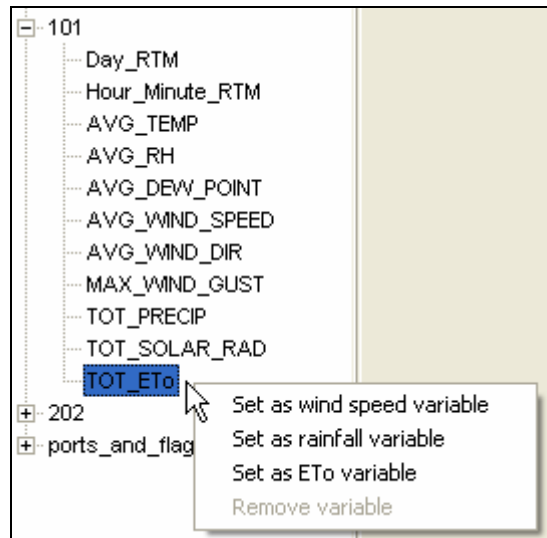


Figure 10.0.10

- Scroll down to **Set as ETo variable** in the **selections** window and click on it (Figure 10.0.11)

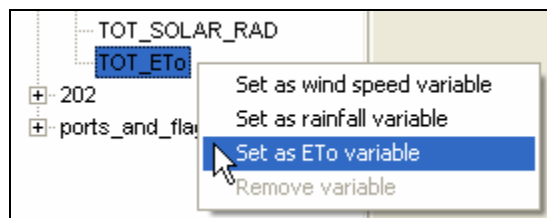


Figure 10.0.11

Note: If done correctly this will change the color of the folder to the same color as the Current ETo variable color in the legend (Figure 10.0.12)

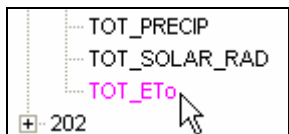


Figure 10.0.12

Note: This selection will collect all of the data required to operate your weather station within Command Center.

Note: If you are going to use the weather station to collect rain data use this same method to select the appropriate rain data folder and assign it as your current rainfall variable.

Method Two

In the legend at the bottom of the **Weather station** window you will see several entries (Figure 10.0.13).

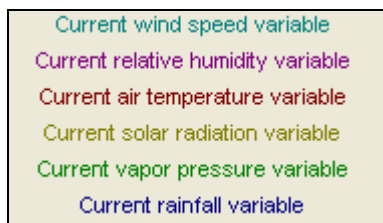


Figure 10.0.13

Note: You will have to select each Hourly Weather Data folder and enter them one at a time.

- In the weather station folders find the folder that is responsible for the hourly wind speed (Figure 10.0.14).

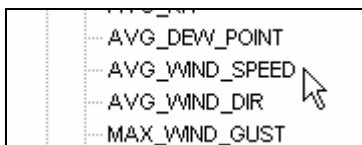


Figure 10.0.14

- Right click on the folder to open up the **selections** window (Figure 10.0.15).

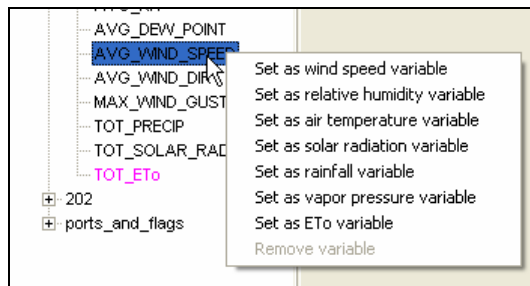


Figure 10.0.15

- Scroll down to set wind speed variable in the **selections** window and click on it (Figure 10.0.16).

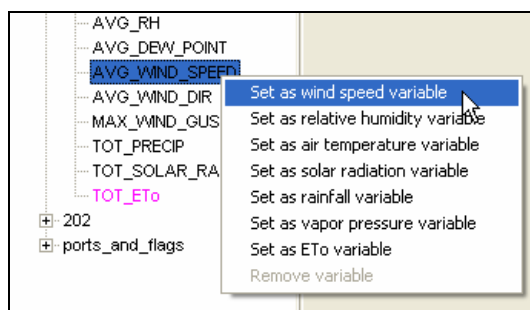


Figure 10.0.16

Note: If done correctly this will change the color of the folder to the same color as the current wind speed variable color in the legend (Figure 10.0.17).

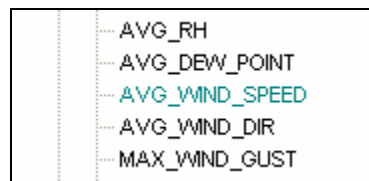


Figure 10.0.17

Note: Use the same steps to install the following settings:

- Current relative Humidity
- Current air temperature variable
- Current solar radiation variable
- Current vapor pressure variable
- Current rainfall variable

Note: When all folders are assigned properly, you are done with this window.



Weather Station Settings : This window contains the following information: (Figure 10.0.18).

Note: The weather station that you are changing setting on will have to be highlighted in the **Weather station** window.

Anemometer: Click on this tab to enter the site Anemometer information.

- **2 meters:** If the Anemometer is installed on a two meter pole click on this bubble.
- **3 meters:** If the Anemometer is installed on a three meter pole click on this bubble.

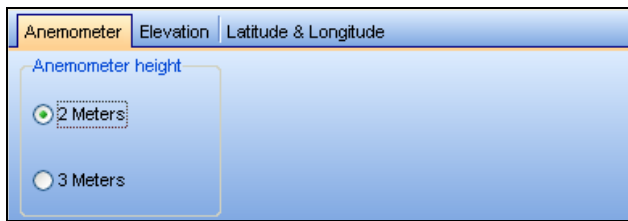


Figure 10.0.18

Elevation: Click on this tab to enter site elevation information (Figure 10.0.19).

Site Elevation: Enter the elevation number in this box.

Elevation measured in:

- **Feet:** If the site elevation is measured in feet click on this bubble.
- **Meters:** If the site elevation is measured in meters click on this bubble.

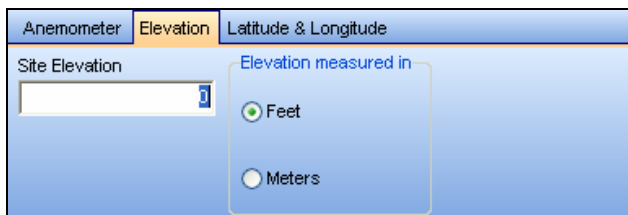


Figure 10.0.19

Latitude & Longitude: Click on this tab to enter the site latitude & longitude information (Figure 10.0.20)

- **Site Latitude:** Enter the numerical measurement for the site Latitude in this box.
- **Site Longitude:** Enter the numerical measurement for the site Longitude in this box.

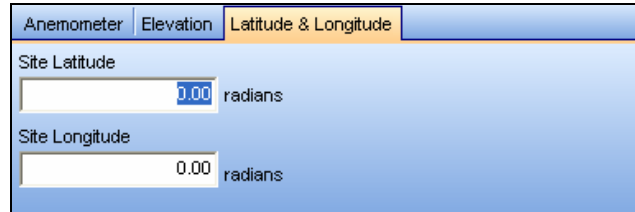


Figure 10.0.20

Units window: This window contains the following information:

Wind: Click on this tab to enter the site wind information (Figure 10.0.21).

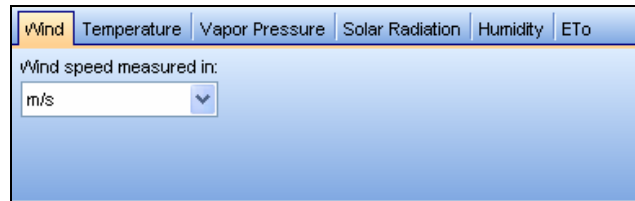


Figure 10.0.21

Wind speed measured in: Use the pull down window to choose from the following: (Figure 10.0.22).

- **m/s:** Use this setting if wind speed is measured in meters per second.
- **mph:** Use this setting if wind speed is measured in miles per hour.

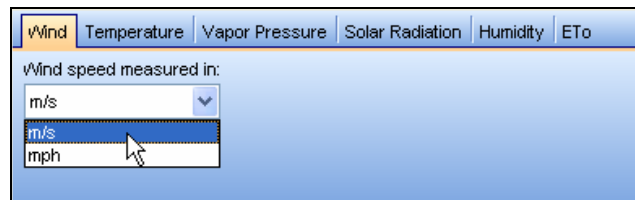


Figure 10.0.22

Temperature: Click on the temperature tab to enter the site temperature information (Figure 10.0.23)

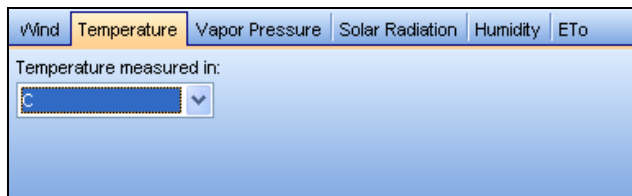


Figure 10.0.23

Temperature measured in: Use the pull down arrow to choose from the following: (Figure 10.0.24).

- **c:** Celsius scale of measurement where the freezing point of water is 0 degrees and the boiling point of water is 100 degrees under normal atmospheric conditions.
- **f:** Fahrenheit scale of measurement where the freezing point of water is measured at 32 degrees and the boiling point of water is measured at 212 degrees at 1 atmosphere of pressure.
- **k:** Kelvin scale of measurement whose absolute zero point is approximately minus 273.16 degrees Celsius.

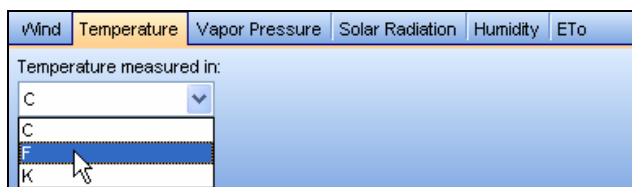


Figure 10.0.24

Vapor Pressure: Click on this tab to enter the site vapor pressure information (Figure 10.0.25).

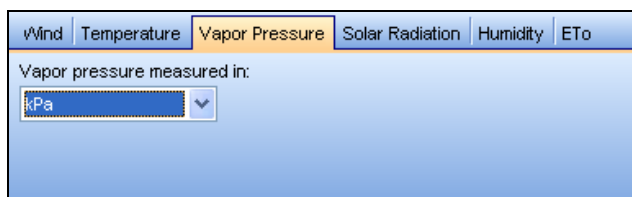


Figure 10.0.25

Vapor pressure measured in: Use the pull down arrow to choose from the following: (Figure 10.0.26).

- **Kpa:** Kilopascal scale of measurement where 1Kpa=10 millibars.

- **Pa:** Pascal scale of measurement where 1Pa equals one Newton per square meter.
- **Bars:** Bar scale of measurement where 1 bar equals 100,000 pascals.
- **mBars:** Millibar scale of measurement where 1 millibar equals 100 pascals.

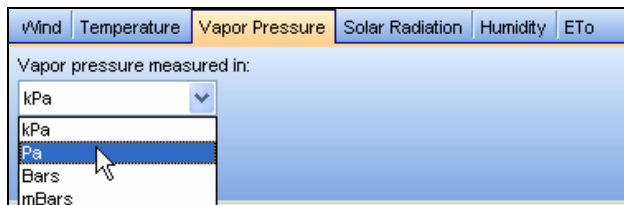


Figure 10.0.26

Solar Radiation: Click on this tab to enter the site solar radiation information (Figure 10.0.27).

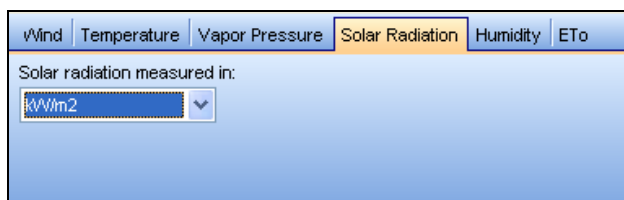


Figure 10.0.27

Solar radiation measured in: Use the pull down arrow to choose from the following (Figure 10.0.28).

- **kW/m2:** Killowatts per meter squared.
- **W/m2:** Watts per meter squared.
- **Ly/day:** Langley unit of measurement where 1 langley equals 1 calorie divided by one centimeter squared.

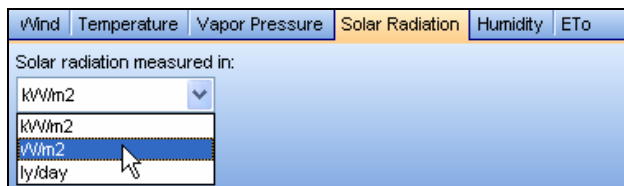


Figure 10.0.28

Humidity: Click on this tab to enter the site humidity information (Figure 10.0.29)



Humidity stored as a percent:

- **No:** If the site humidity is not measured as a percentage, click this bubble.
- **Yes:** If the site humidity is measured as a percentage, click this bubble.

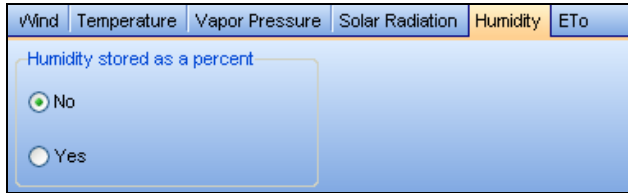


Figure 10.0.29

Eto: Click on this tab to enter the site Eto information (Figure 10.0.30).

Eto calculated in MM/hr:

- **No:** If the site Eto is not measured in millimeters per hour click on this bubble.
- **Yes:** if the site Eto is measured in millimeters per hour click on this bubble.

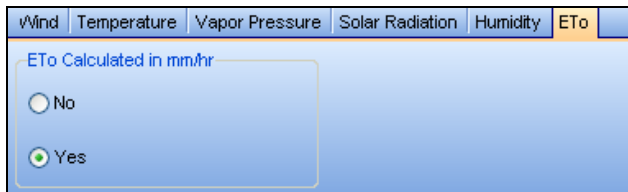


Figure 10.0.30

Start of ET Day: Use the **UP** and **DOWN** arrows to enter the time of day that you have your controllers set to start a new ET day (Figure 10.0.31)

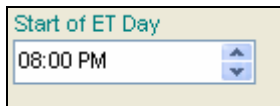


Figure 10.0.31

Rain Settings: Use the **UP** and **DOWN** arrows to set the following rain measurements (Figure 10.0.32).

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 10.0.32 (.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 10.0.32 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 10.0.32 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.

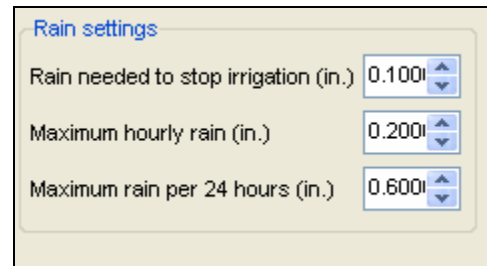
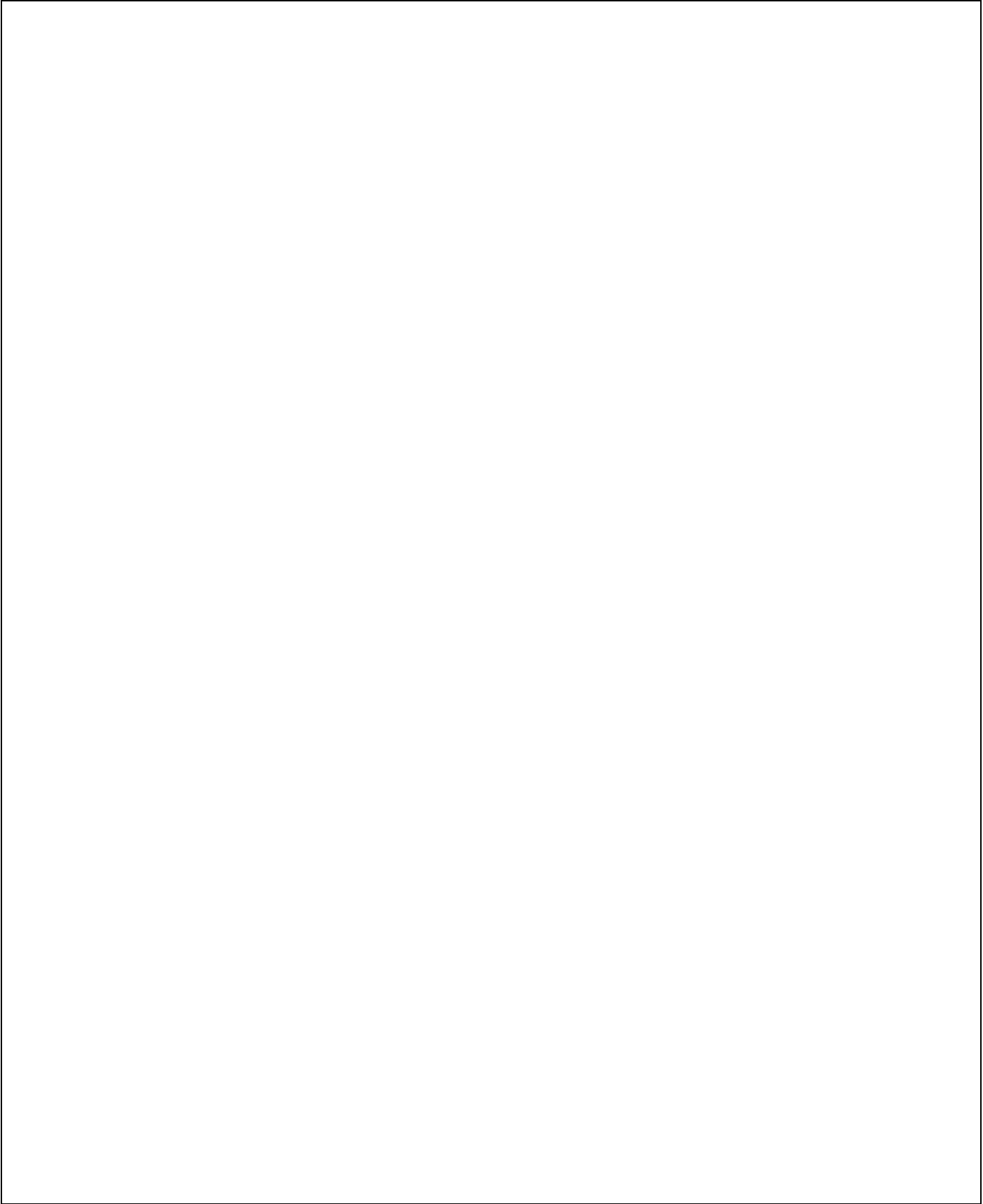


Figure 10.0.32



11.0 SETTING UP A TASK

Tasks are built to perform repetitive functions to large numbers of field controllers. Some of the most common tasks are sharing weather, getting alerts, and Turning ON/OFF controllers.

Note: Prior to setting up your tasks. Give some thought to the controllers that you want to include in the task, the frequency of gathering the task, and what information that you want to retrieve during the task.

1. In the toolbar at the top of the screen select **Setup** and scroll down to **Tasks** and click on it (Figure 11.0.1).

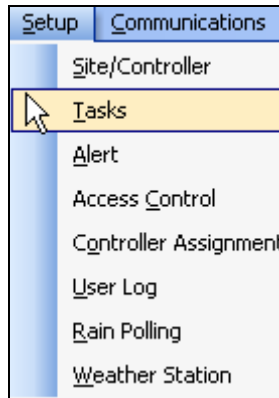


Figure 11.0.1

Note: This will take you to the “Task Setup” window (Figure 11.0.2).

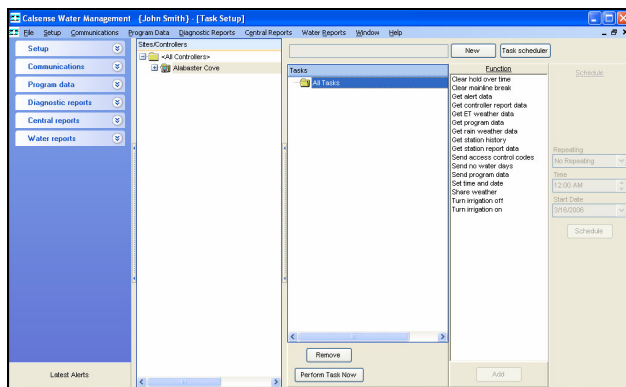


Figure 11.0.2

2. Click on the **New** button to add a new task. Type in a name for the task that will distinguish it from other tasks that you have or will put in (Figure 11.0.3).

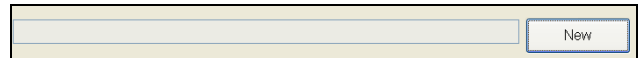
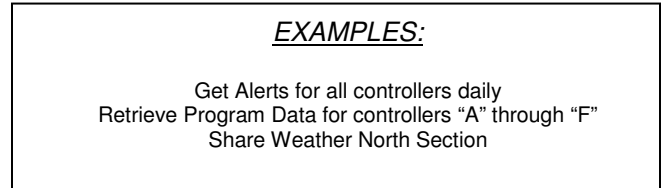


Figure 11.0.3

Note: The **New** button will change to read **OK** (Figure 11.0.4)



Figure 11.0.4

3. Once you are satisfied with the task name click on the **OK** button. This will add the task to the “Tasks” window (Figure 11.0.5).

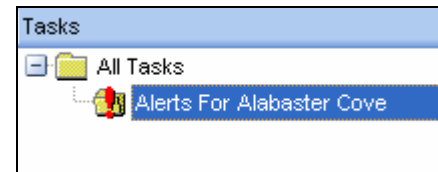


Figure 11.0.5

Note: The task will have a **RED** exclamation point on the folder next to the task name until the task is completely entered.

4. Next you will have to decide which functions that you want to take place under this task. Select one function at a time from the “Functions” window by clicking on it (Figure 11.0.6).

Note: You can select more than one function by clicking on the first function and then holding down the **Ctrl** key and clicking on the other functions one at a time until done.

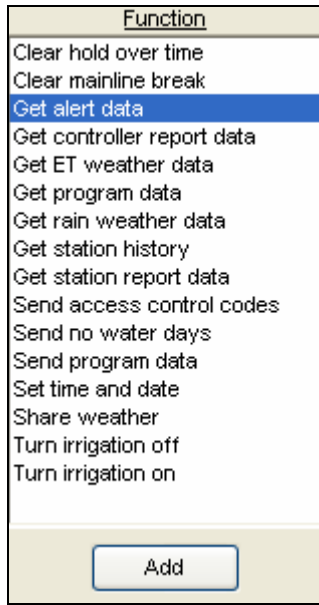


Figure 11.0.6

- Once you have selected a function click on the **Add** button to add the function to your task. If you want to add more functions to the task just repeat this step until done. The selected functions will appear as sub-sections of the task itself (Figure 11.0.7).

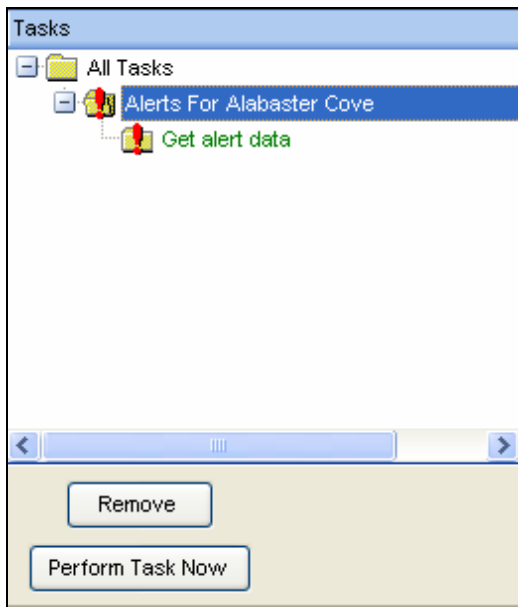


Figure 11.0.7

- Next select the controller or controllers that you want the task to be performed on. If it is a site of controllers just highlight the site name in the **“Site / Controllers”** window. You can add as many sites as you want just Click on the site name with the left mouse button to highlight it. Then holding the button drag and drop the controller into the task function folder (Figure 11.0.8). You can select individual controllers by clicking on the site name that the controller belongs to, and then using the **“+”** symbol to the left of the site to expand the list. Click on the controller name with the left mouse button to highlight it. Hold the button and drag and drop the controller into the task function folder (Figure 11.0.8).

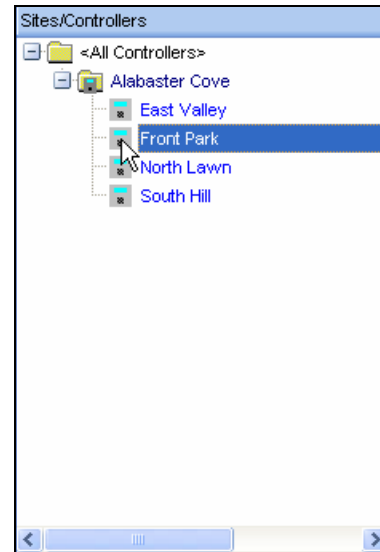


Figure 11.0.8

Note: When a task is completed a **GREEN** check mark will appear on the task folder indicating the task is complete (Figure 11.0.9).

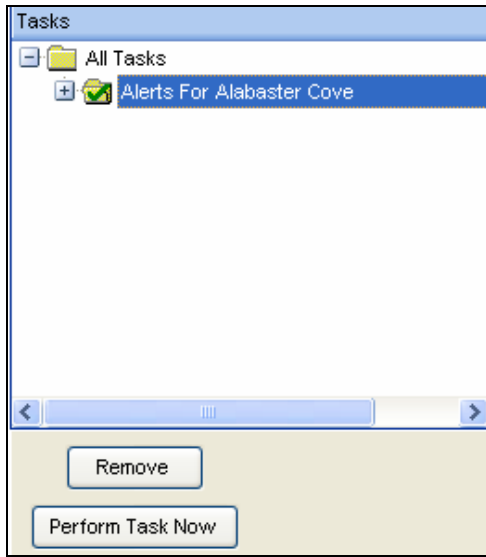


Figure 11.0.9

- You can check to see that all of the controllers that you wanted to have listed are in fact attached to this task by clicking on the “+” symbol to the left of the task function (Figure 11.0.10).

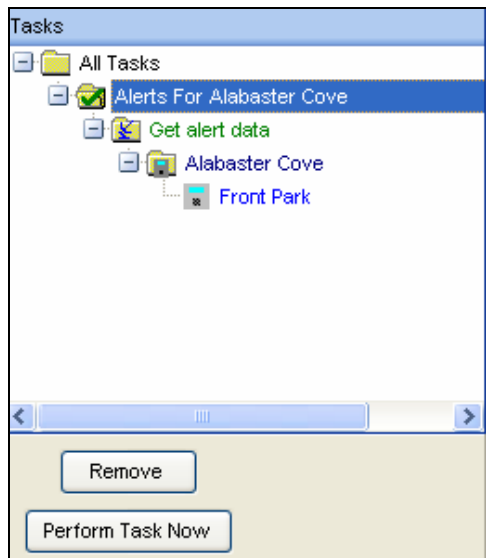


Figure 11.0.10

Note: You will have to schedule this task in order for it to take place see section 11.1 for “**Scheduling a task**”.

11.1 PERFORMING / SCHEDULING A TASK

PERFORM TASK NOW

If you have already set up a task using the steps in section 11.0 you can perform that task right now by using the **Perform Task Now** button in the lower right hand corner of the “**Task Setup**” screen (Figure 11.1.1).

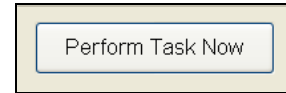


Figure 11.1.1

SCHEDULING A TASK

- Click on the Task Scheduler button (Figure 11.1.2).

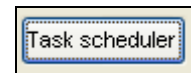


Figure 11.1.2

- Next click on the task that you want to schedule to highlight it (Figure 11.1.3).

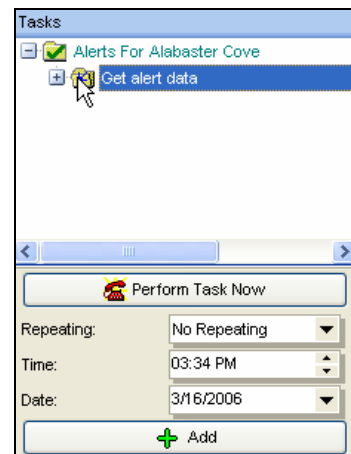


Figure 11.1.3

- Click on the pull down arrow to the right of the **Repeating:** box to select the frequency of the task. (Figure 11.1.4).

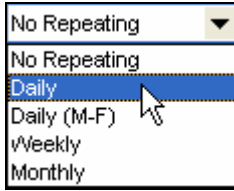


Figure 11.1.4

Note: Tasks should be scheduled on an as needed basis, for example alerts may be needed daily where as a task like Get Station History may only be needed weekly.

Repeating: This area has a pull down selection with the following options:

- **No Repeating:** This task will initiate one time only at the time and date that you specify.
- **Daily:** This task will initiate once a day, every day, at the time that you specify.
- **Daily (M-F):** This task will initiate once a day Monday through Friday at the time that you specify.
- **Weekly:** This task will initiate once a week starting from the first date that you specify.
- **Monthly:** This task will initiate once a month starting from the first date that you specify.

4. Next set a time.

Time: By using the **UP** and **DOWN** arrows to the right of the time box, you can adjust the time for the task to take place. Changing the time can also be accomplished by clicking on the box and entering the time manually.

5. Now enter a Start Date.

Date: The date can be altered by clicking on the **DOWN** arrow to the right of the Date box. A calendar will appear below the box (Figure 11.1.5).

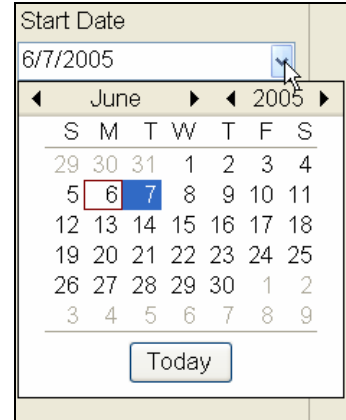


Figure 11.1.5

Note: You cannot schedule a task to take place on a date or time that has already passed.

If you want the task to start from today on, click on the **Today** button.

If you want to change the month or year use the **BLACK** arrows at the top of the screen. Then click on the appropriate date in the calendar to set the date.

6. Click on the **Add** button to enter the task to the schedule.

11.2 COMMUNICATIONS TASK SCHEDULER

Note: If you have already scheduled your task in section 11.1 you do not need to repeat the steps in this section.

You can use the “**Scheduling task**” window setup by clicking on the **Scheduler** button in the “**Task Setup**” window (Figure 11.2.1).

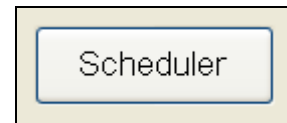


Figure 11.2.1

Or, by using the toolbar at the top of the screen. Click on **Communications** and then scroll down to **Task Scheduler** and click on it (Figure 11.2.2).

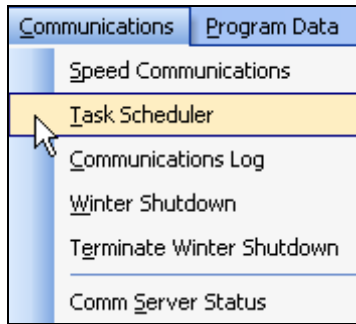


Figure 11.2.2

Note: This will take you to the “Scheduler” window. Here you can view your tasks in calendar format and schedule them using the same steps used in section 11.1 of this manual (Figure 11.2.3).

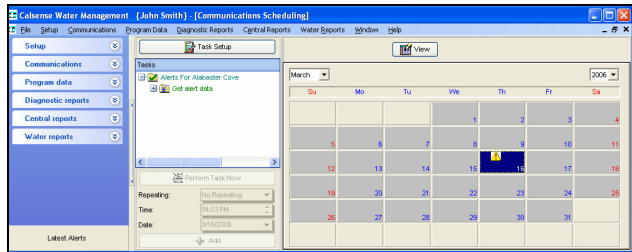


Figure 11.2.3

1. Click on the **Perform Task Now** button to initiate the task immediately. This task **will only be performed once** (Figure 11.2.4).

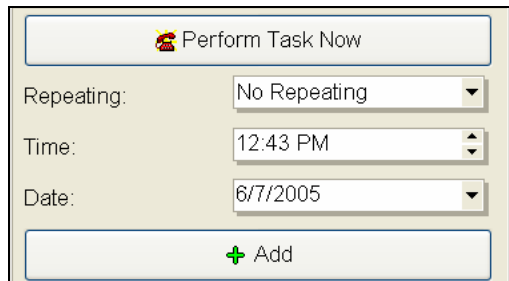


Figure 11.2.4

2. For multiple performances use the directions below:

Repeating: This area has a pull down selection with the following options:

- **No Repeating:** This task will initiate one time only at the time and date that you specify.
- **Daily:** This task will initiate once a day, every day, at the time that you specify.
- **Daily (M-F):** This task will initiate once a day Monday through Friday at the time that you specify.
- **Weekly:** This task will initiate once a week starting from the first date that you specify.
- **Monthly:** This task will initiate once a month starting from the first date that you specify.

Time: By using the **UP** and **DOWN** arrows to the right of the time box, you can adjust the time for the task to take place. Changing the time can also be accomplished by clicking on the box and entering the time manually.

Start Date: The date can be altered by clicking on the **DOWN** arrow to the right of the Date box. A calendar will appear below the box (Figure 11.2.5).

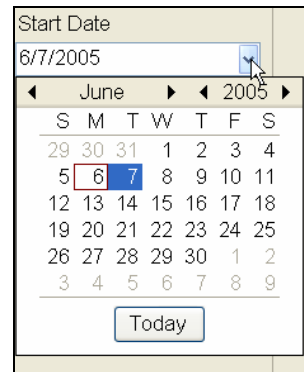


Figure 11.2.5

3. Once you have entered the cycle in which you want the task to perform click on the **Add** button at the bottom of the scheduler (Figure 11.2.6).

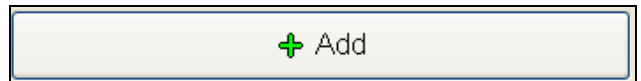


Figure 11.2.6

4. When added the “Information” screen will appear. Click on **OK** to complete the action (Figure 11.2.7).

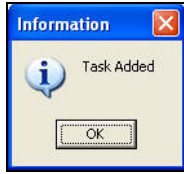


Figure 11.2.7

Note: This will add your task to the calendar portion of the screen (Figure 11.2.8).

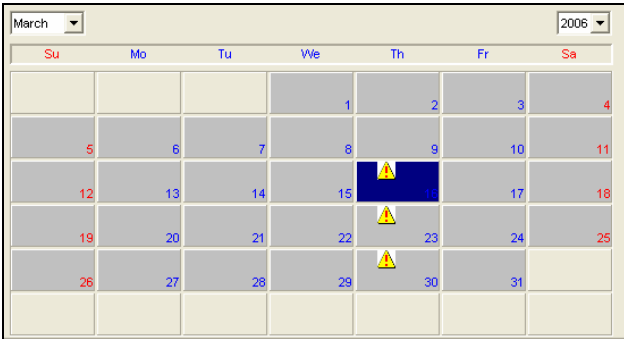


Figure 11.2.8

Note: Whenever something is scheduled for a particular day, one or all of the icons below would appear on the calendar indicating the type of task that is scheduled to be performed for that day.

- Alerts: A task has been scheduled to gather Alerts.
- Weather: A task has been scheduled to share Weather.
- Reports: A task has been scheduled to gather Report data.
- Misc. Communications: Clear Hold Over, Mainline Break, Turn Irrigation On/Off, Get Station History, Program Data, Send No Water Days, Program Data, Set Time and Date.

5. You can view your task schedules by year and month using the **MONTH** and **YEAR** buttons at the top of the calendar. Just click on the appropriate button and use the pull down arrow to select the correct month or year (Figure 11.2.9).



Figure 11.2.9

11.3 VIEWING DAILY SCHEDULE

View: The view button is for viewing the Daily Schedule for that day or deleting a task(s) that is scheduled.

1. Click on the **View** button above the calendar (Figure 11.3.1).

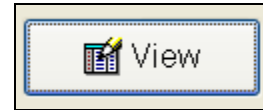


Figure 11.3.1

Note: This will take you to the “Daily Schedule for xx/xx/xxxx” screen (Figure 11.3.2).

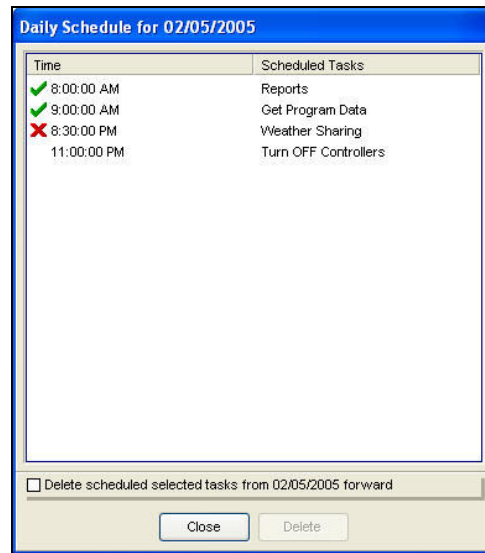


Figure 11.3.2

In Figure 11.25 there are four tasks scheduled for 02/05/2005. The scheduled tasks are identified by color:

- **Green:** The task has been completed as scheduled.
- **Red:** The task did not start. (Possible equipment or communications failure).
- **Blank:** Scheduled tasks that have not yet been completed.

11.4 DELETING A SCHEDULED TASK

- In the toolbar at the top of the screen select **Setup** and scroll down to **Tasks** and click on it (Figure 11.4.1).

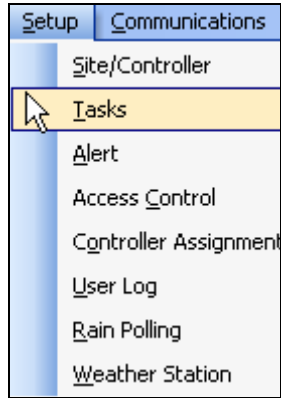


Figure 11.4.1

Note: This will take you to the “Task Setup” screen.

- Click on the task that you want to delete and highlight it. (Figure 11.4.2).

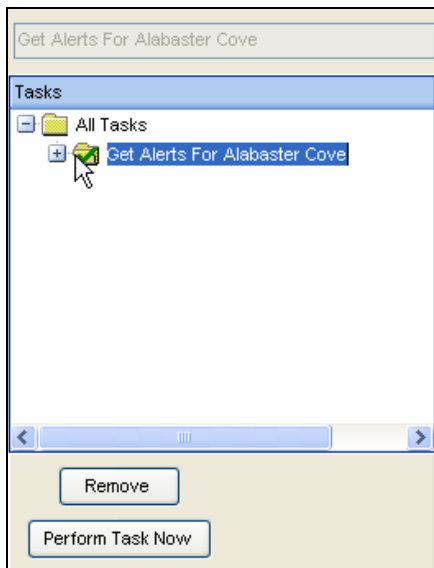


Figure 11.4.2

- Click on the **Remove** button to delete the task (Figure 11.4.3).



Figure 11.4.3

- Next click on the **Task Scheduler** button to the right of the screen (Figure 11.4.4).

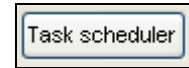


Figure 11.4.4

- Select a day from the calendar by double clicking on it (Figure 11.4.5).

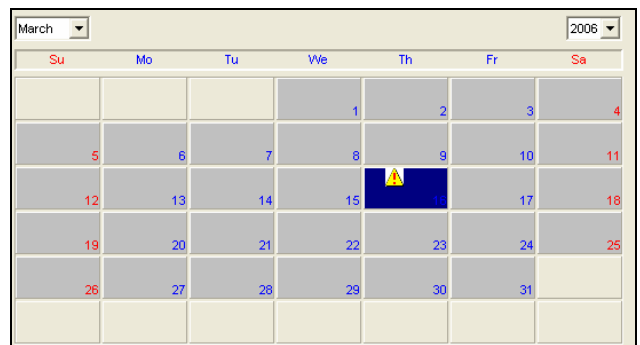


Figure 11.4.5

Note: You can also access the desired screen by clicking on the View button (Figure 11.4.6).

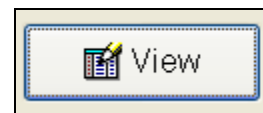


Figure 11.4.6

Note: The “Daily Schedule for xx/xx/xxxx” window will appear (Figure 11.4.8).

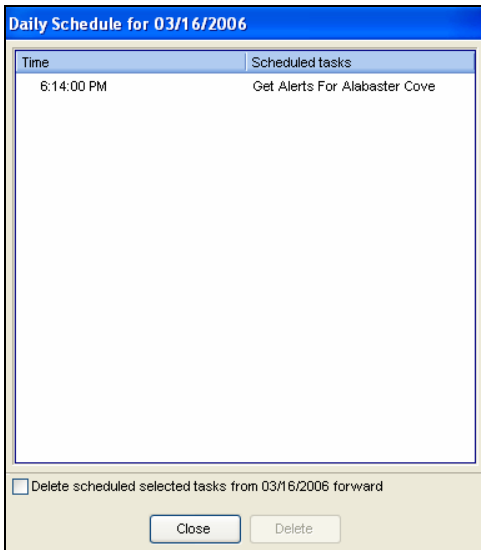


Figure 11.4.8

Note: Delete scheduled selected tasks from 02/05/2005 forward: If you are deleting a task from the Task Setup menu that has been scheduled. The task **must be deleted** from the task scheduler first. If not, a message “Unidentified Task” will appear in the daily scheduler box that identifies the scheduled task for that day.

There are two options for deleting a task:

Delete a scheduled task: With the box **unchecked** next to Delete scheduled selected tasks from mm/dd/yyyy forward. Select Delete.

Delete scheduled selected tasks from mm/dd/yyyy forward: Check the box next to Delete scheduled selected tasks from mm/dd/yyyy forward. Select Delete.

A confirmation box will appear asking to confirm that the task has been deleted. Click **Yes** (Figure 11.4.9).

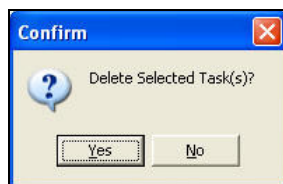
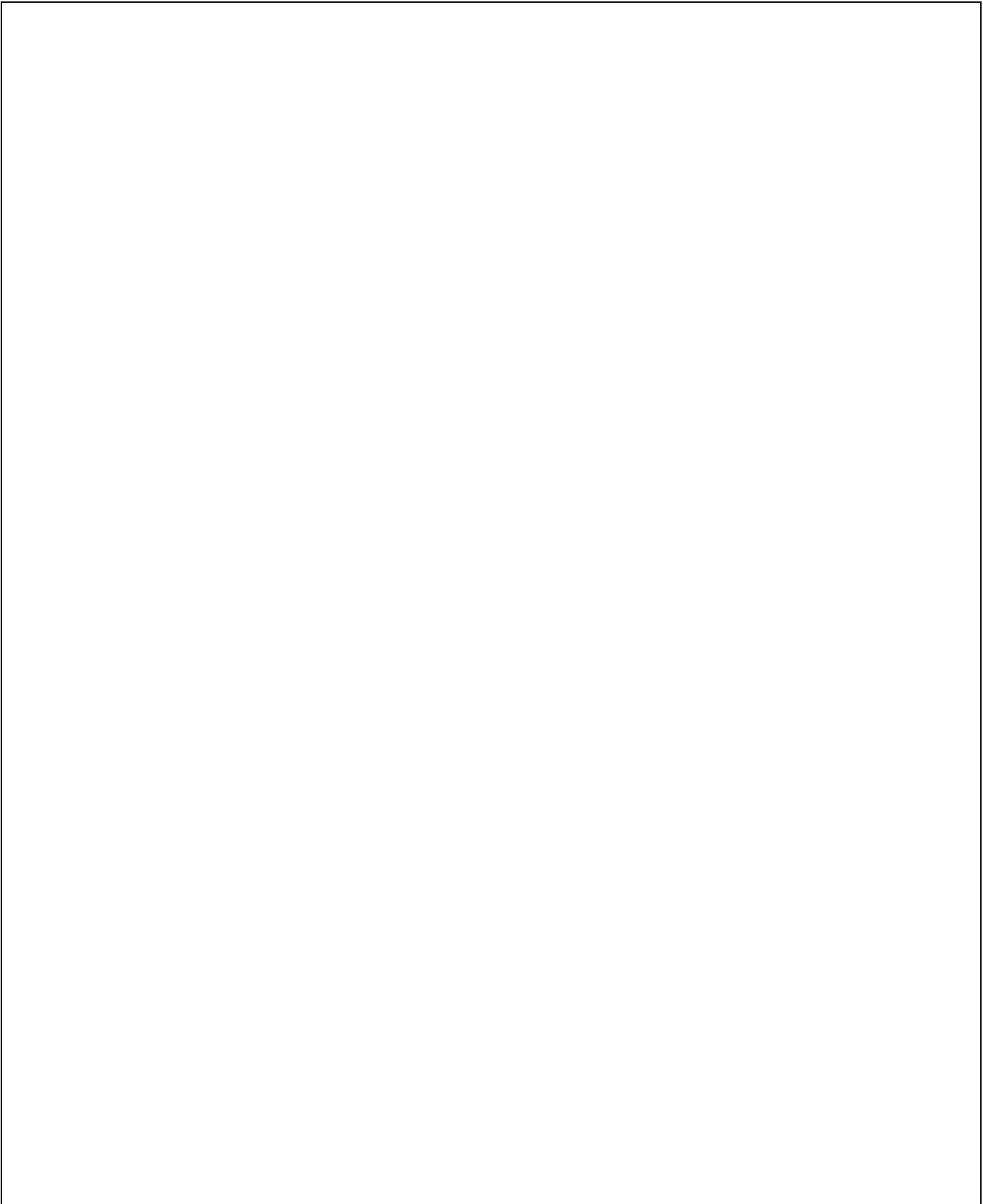


Figure 11.4.9

2. Click the **Yes** button if you want to delete the selected task.

Note: Click the **No** button if you do not want to delete the task and return to the scheduler screen.



12.0 SHARING WEATHER TASK

Weather Sharing is designed to gather weather related information from one or more controllers and/or one or more weather stations and then share it with one or more controllers. This enables the customer to automatically adjust the irrigation stations run time according to the actual weather conditions.

Do not get Weather Sharing confused with Rain Polling. Weather Sharing will only relay the weather data to the other controllers for them to use in calculating irrigation. Rain Polling can be used to stop irrigation due to rain at controllers without a Rain Bucket.

SEE SECTION 13.0 FOR RAIN POLLING

12.1 GATHERING WEATHER DATA

1. In the toolbar at the top of the screen select **Setup** and scroll down to **Tasks** and click on it (Figure 12.1.1).

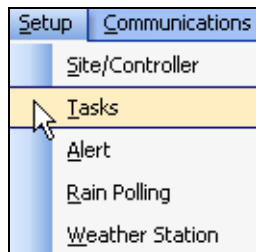


Figure 12.1.1

Note: This will take you to the “**Task Setup**” window (Figure 12.1.2).

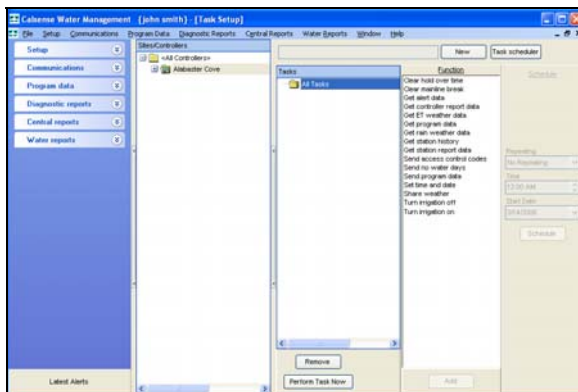


Figure 12.1.2

2. Click on the **New** button to add a new task. Type in a name for the task that will distinguish it from other tasks that you have or will put in (Figure 12.1.3).

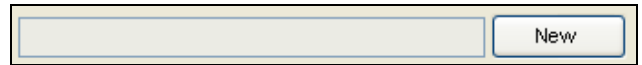


Figure 12.1.3

Note: The **New** button will change to read **OK**. The name of the new task name will appear in the box as you type it (Figure 12.1.4).

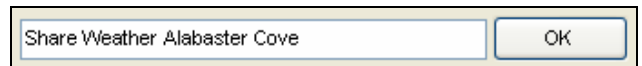


Figure 12.1.4

3. Once you are satisfied with the task name click on the **OK** button. This will add the task to the “**Tasks**” window (Figure 12.1.5).

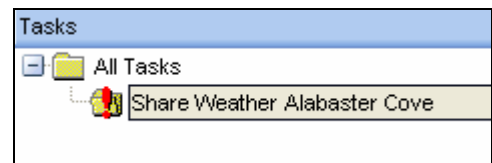


Figure 12.1.5

Note: The task will have a **RED** exclamation point in the folder next to the task name until the task is completely entered.

In this example you are shown how to gather both rain weather data and ET weather data. If you only have one or the other just select the function for the one that you have.

Note: If you are gathering ET information from a controller you **must** have an ET gage connected to that controller. If you are gathering rain weather data from a controller you **must** have a rain bucket connected to that controller.

4. Next you will have to decide which functions that you want to take place under this task. Click on a function to highlight it. If you want to choose multiple functions press the **Ctrl** key and click on each function until done (Figure 12.1.6).

Note: **Do not** add any other functions to a weather sharing task, schedule them separately. This will cut down on the communications time required. The weather sharing window has a time constraint.

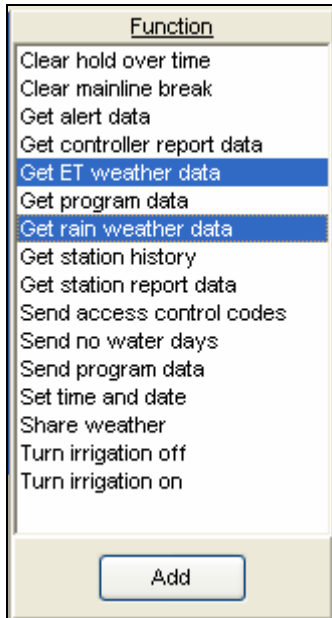


Figure 12.1.6

- Once you have selected a function click on the **Add** button to add the function(s) to your task.

Note: The selected functions will appear as sub-sections of the task itself (Figure 12.1.7).

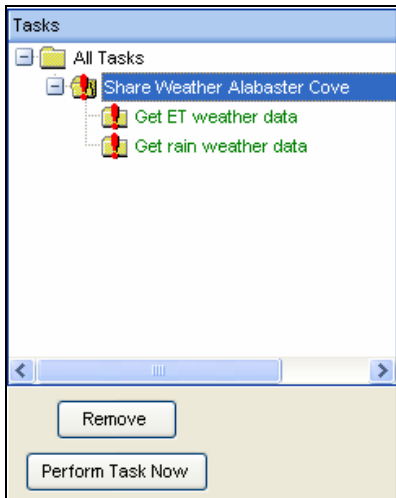


Figure 12.1.7

- Next highlight the **“Get rain weather data”** function (Figure 12.1.8).

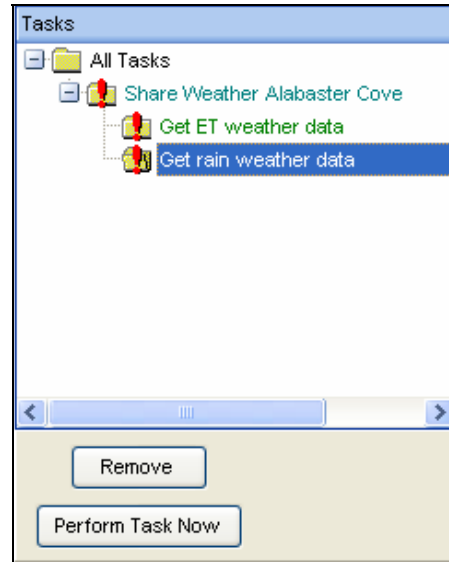


Figure 12.1.8

- Now highlight the controller from the **“Site / Controller”** window that you want to get rain weather data from. Remember this controller must have a rain bucket attached. (Figure 12.1.9).

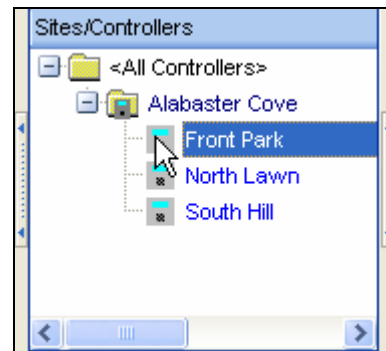


Figure 12.1.9

- Then left click on the controller holding down the mouse button drag and drop the controller into the **Get rain weather data** folder in the **Tasks** window. (Figure 12.1.10)

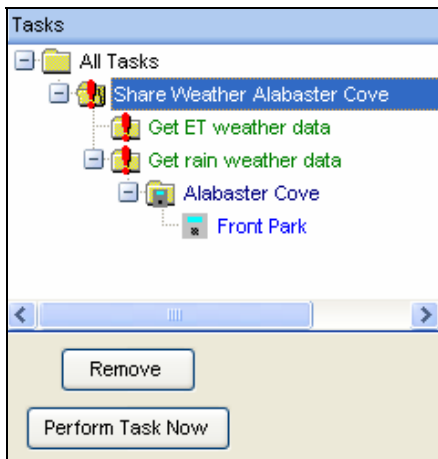


Figure 12.1.10

Note: A window will appear asking the following: “Do you want to automatically poll this controller for rain during the scheduled polling time”? This will appear only if this specific controller is currently not selected to poll rain (Figure 12.1.11).

Note: The screen below (Figure 12.1.11) will **not** appear if Rain Polling is not turned on. (See Section 13.0 for more information).

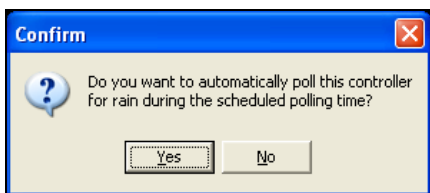


Figure 12.1.11

9. Selecting **No** will allow you to not add this controller to your rain polling list. Select **No** if you do not have rain polling turned on also. (See Section 13.0 for Rain Polling instructions).

Note: Selecting **Yes** will automatically add this controller to the rain polling list if you already have Rain Polling turned on.

10. Once you have assigned the controller that you want to **Get rain weather from** it should appear under the “**Get rain weather**” task (Figure 12.1.12).

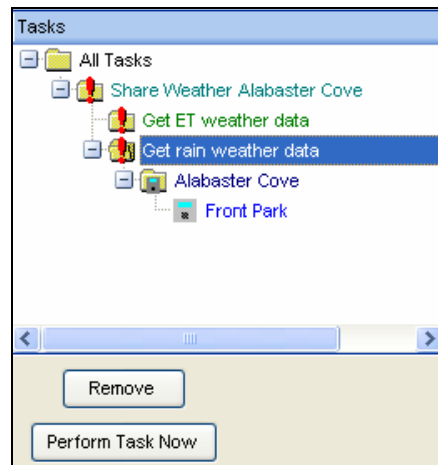


Figure 12.1.12

11. Now you want to do the same thing for “**Get ET weather data**”. Highlight the “**Get ET weather data**” folder under the “**Share weather**” folder in the **Tasks** window (Figure 12.1.13).

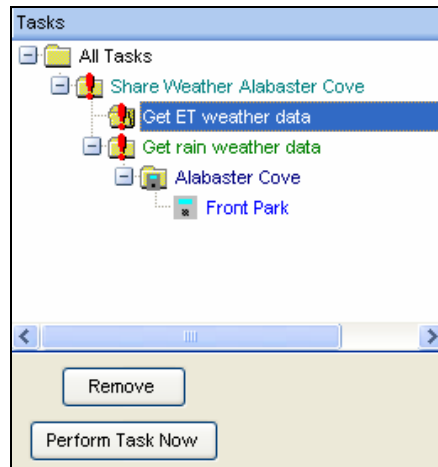


Figure 12.1.13

12. Now highlight the controller from the “**Site / Controller**” window that you want to get **ET weather data** from. Remember this controller must have an ET Gage attached (Figure 12.1.14).



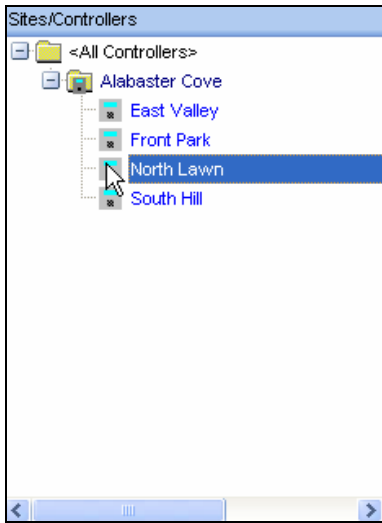


Figure 12.1.14

- left click on the controller holding down the mouse button drag and drop the controller into the **Get ET weather data** folder (Figure 12.1.15)

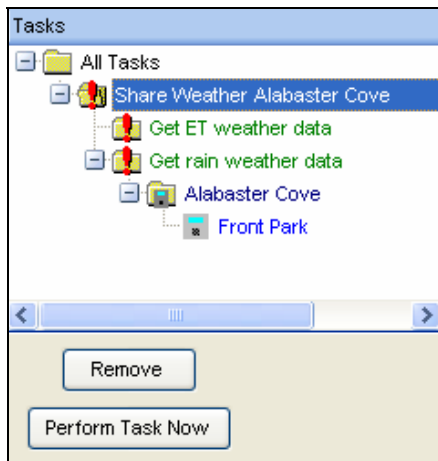


Figure 12.1.15

- Now this controller should appear directly under the **Get ET weather data** folder in the **Tasks** window (Figure 12.1.16).

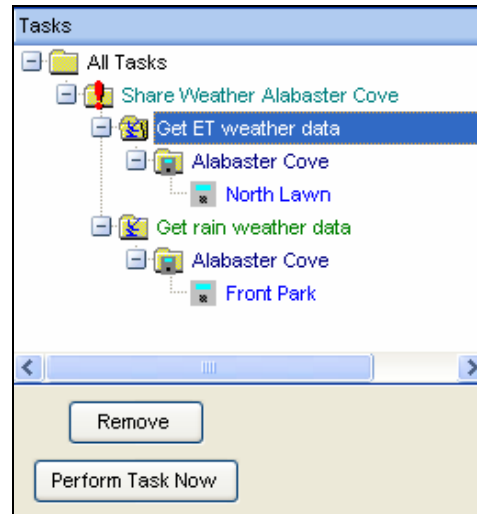


Figure 12.1.16

12.2 SHARING WEATHER DATA

Note: You must follow the steps in Section 12.0 through 12.1 before moving on with this section.

- Next highlight the **Share weather** function in the **Function** window (Figure 12.2.1).

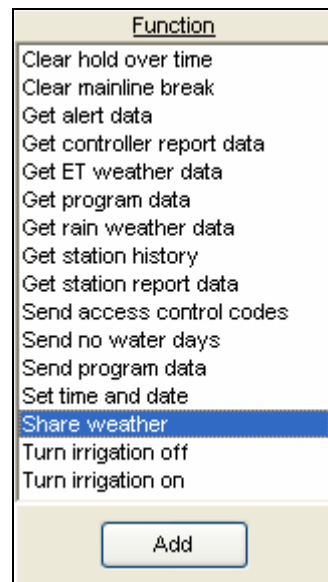


Figure 12.2.1

- Click on the **Add** button at the bottom of this window (Figure 12.2.2).

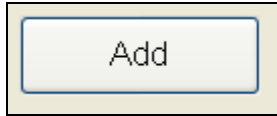


Figure 12.2.2

- This will add the **Share weather** function to the task that you are currently building (Figure 12.2.3).

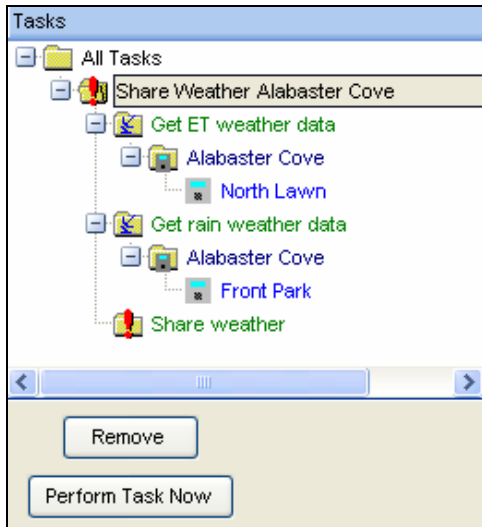


Figure 12.2.3

- Now you want to add the controller(s) that you want to share the weather information with. Select the controller(s) from the “**Site Controller**” window (Figure 12.2.4).

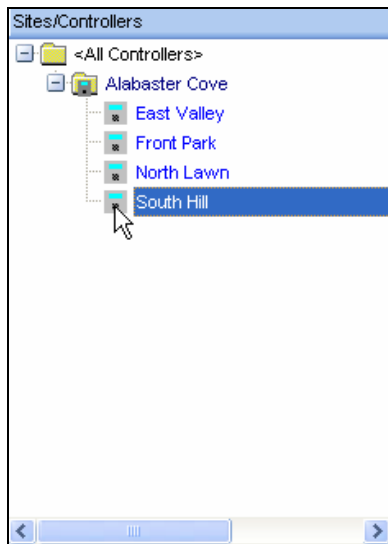


Figure 12.2.4

- Then left click on the controller holding down the mouse button drag and drop the controller(s) into the **Share weather** folder (Figure 12.2.5).

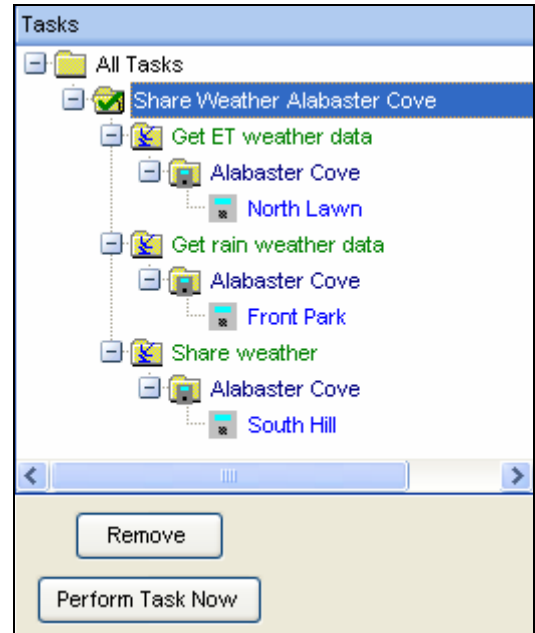


Figure 12.2.5

- A window will appear asking you for the controller that you are getting ET from and the controller that you are getting the Rain from. Enter the appropriate controllers by using the drop down arrows to the right of the boxes (Figure 12.2.6).

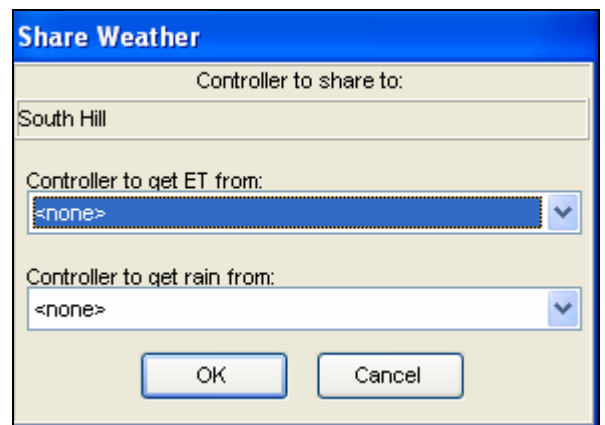


Figure 12.2.6

- Click on the **OK** button when you have entered the appropriate answers.

Note: If you are using a weather station for weather information (see section 10), and have already set it up, the weather station will appear in the drop down window for “**Controllers to Get ET from:**” and also “**Controllers to get Rain from:**” shown as CR510 (Figure 12.2.6).

Note: Click on **Cancel** if you do not want to save these entries.

8. Repeat this step for each controller that you want to add to the list. Each controller will appear under the **Share weather** folder in the **Task** window (Figure 12.2.7).

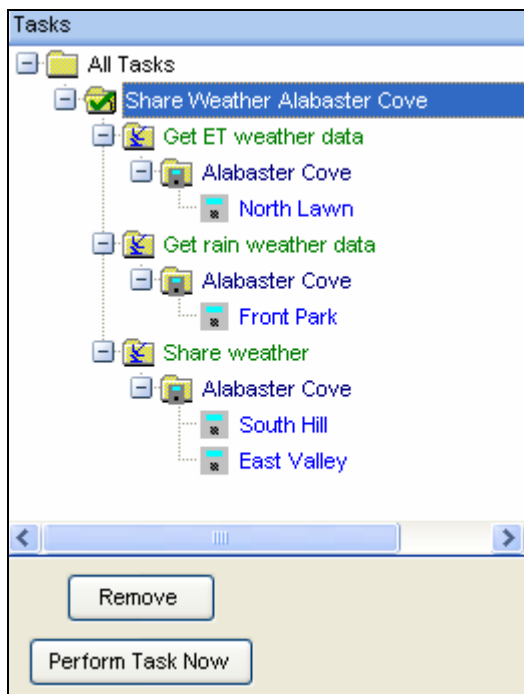


Figure 12.2.7

Note: Notice that the **RED** exclamation points in the **Share weather** folders have all changed to a **GREEN** check mark. This lets you know that the task has been entered properly.

9. Now you will want to schedule this task so that it will take place on a regular time schedule.

SEE SECTION 11.1 FOR TASK SCHEDULING

A large empty rectangular box with a black border, intended for a drawing or diagram related to the weather task.

13.0 RAIN POLLING SETUP

Rain Polling is a central function used to poll a controller(s) with a RB-1 Tipping Rain Bucket or to poll the databases established with a weather station. During polling, when the rain minimum is crossed the central will contact all controllers in the weather share group and **STOP** all current running and scheduled irrigation for that ET day.

Note: Rain polling must be turned on by a Field Representative prior to following these steps. Call Calsense at 1-(800)-572-8608. If it is **not**, Rain Polling setup will not be available under Setup in the toolbar.

1. In the upper toolbar select **Setup** and then scroll down to **Rain Polling** and click on it (Figure 13.0.1).

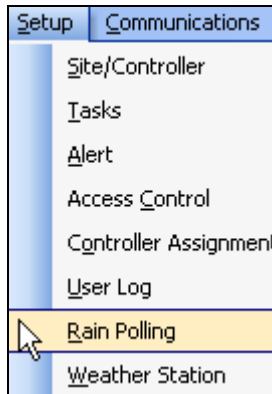


Figure 13.0.1

Note: This will take you to the “**Rain Polling**” screen (Figure 13.0.2).

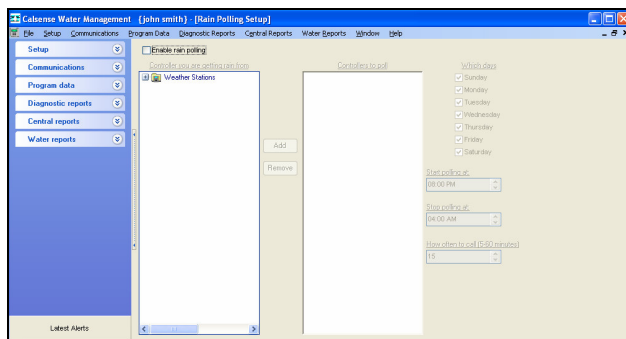


Figure 13.0.2

Note: Only controllers that have been setup to get rain weather data in a weather sharing task will appear in the **Controller you are getting rain from** column.

SEE SECTION 12.0 FOR SETTING UP WEATHER SHARING.

2. Click on the **Enable rain polling** button. This will enable the information windows on this screen (Figure 13.0.3).

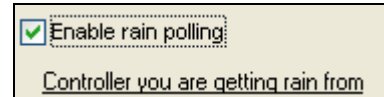


Figure 13.0.3

Note: All of the controllers from your “**Sites / Controllers**” window that have a task set up to “**Get rain weather data**” will show up on the “**Controller you are getting rain from**” list (Figure 13.0.4).

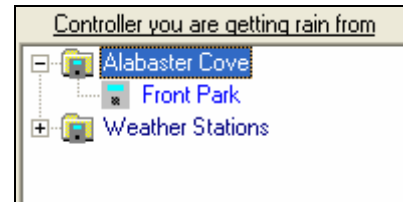


Figure 13.0.4

3. To add controllers to the “**Controllers to poll**” window highlight the controllers one at a time in the “**Controllers you are getting rain from**” window and click on the **Add** button (Figure 13.0.5).

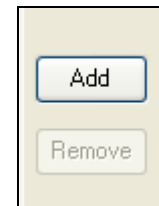


Figure 13.0.5

4. If you want to remove a controller just use the same method by highlighting the controller in the “**Controllers to poll**” window and click on the **Remove** button (Figure 13.0.6).

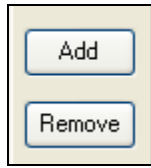


Figure 13.0.6

- Once you have finished adding your controllers to the “**Controllers to poll**” list you will have to set up the days in which you want the controllers to be polled.
- In the “**Which Days**” section of the screen turn on the days that you want to poll on by checking the appropriate box next to the day (Figure 13.0.7).

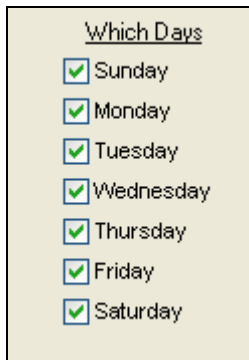


Figure 13.0.7

- Next you will need to select a time period that you want to Poll the selected controllers. First select a “**Start polling at:**” by using the pull down arrows to the right of the “**Start polling at:**” box (Figure 13.0.8).

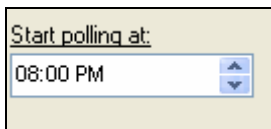


Figure 13.0.8

Note: You can also change the time in this box by highlighting the box and typing in the time that you want.

- Select a “**Stop Polling at:**” time by using the pull down arrows to the right of the “**Stop Polling at:**” box (Figure 13.0.9).

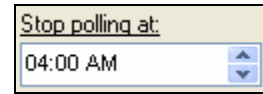


Figure 13.0.9

- The last step in the process is selecting a rain polling cycle. In the “**How often to call (5-60 minutes)**” box choose a time cycle that you want this task to be performed at. This will determine how many times the task will start every hour between the start polling time and the stop polling time (Figure 13.0.10).

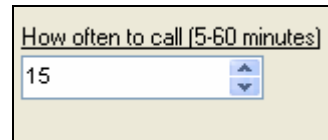



Figure 13.0.10

- You can check to make sure that the task has been scheduled by right clicking on the communications globe icon  in the lower right system tray.

- Select **View** (Figure 13.0.11).

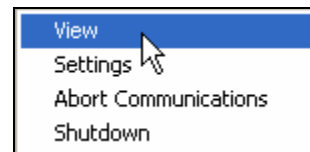


Figure 13.0.11

Note: The “**View**” window will appear with all of your scheduled tasks for that day (Figure 13.0.12).

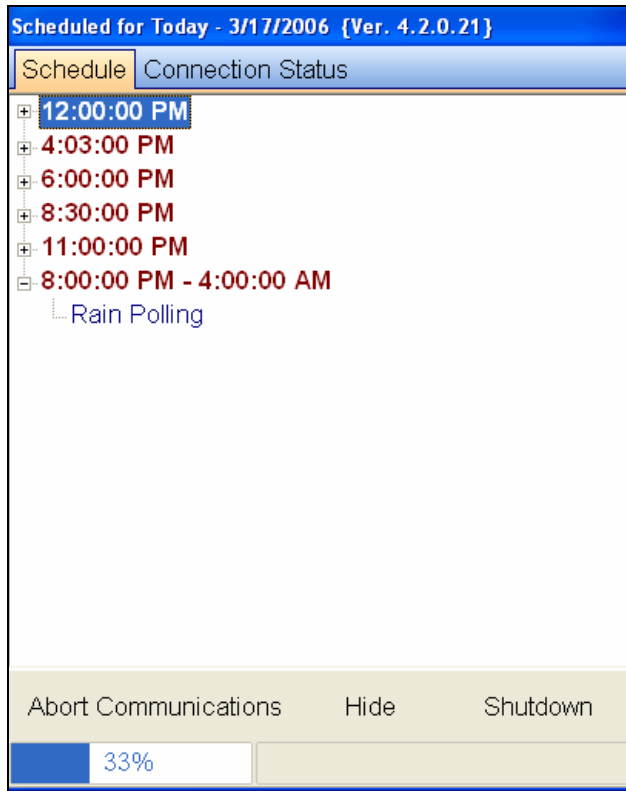
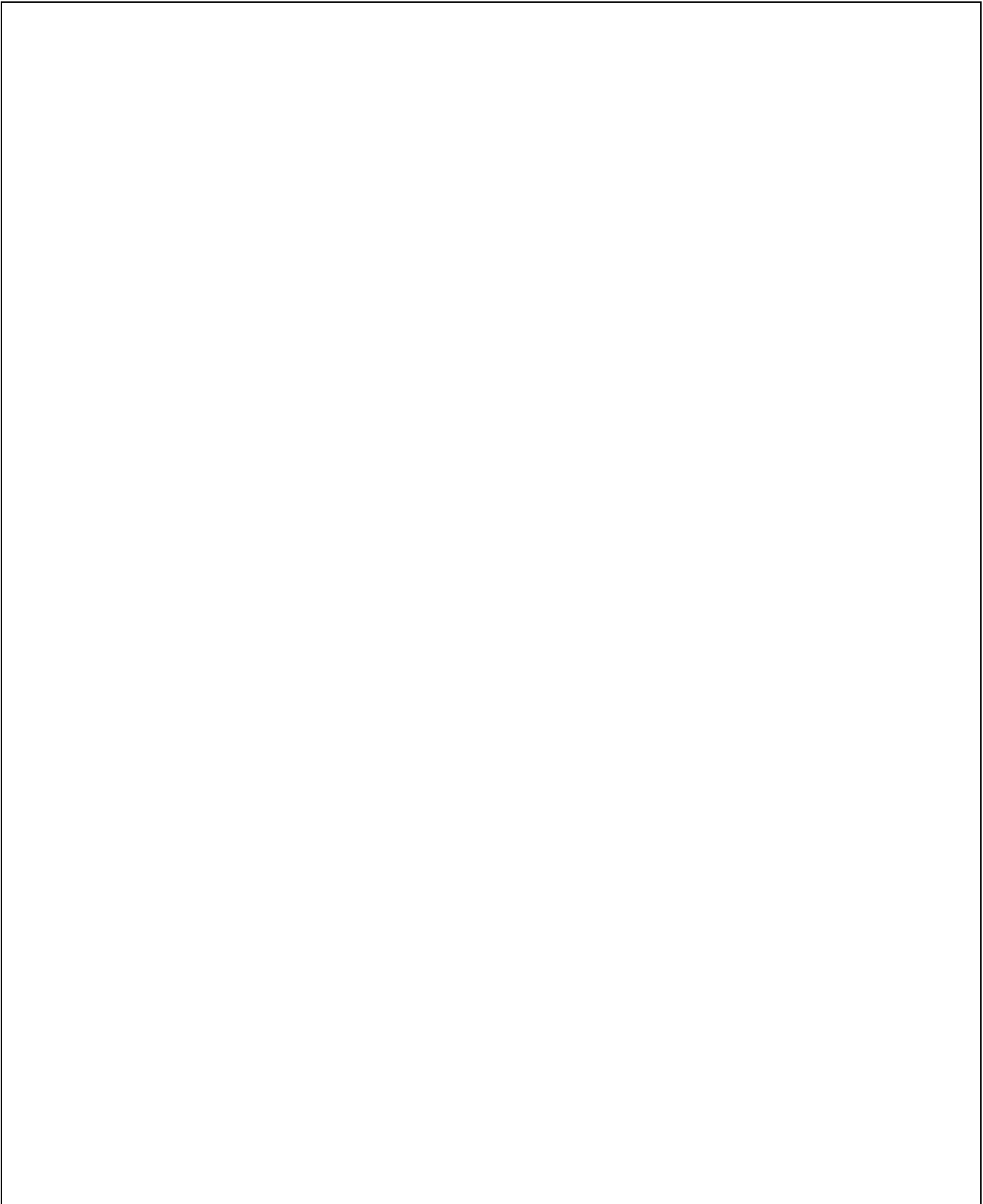


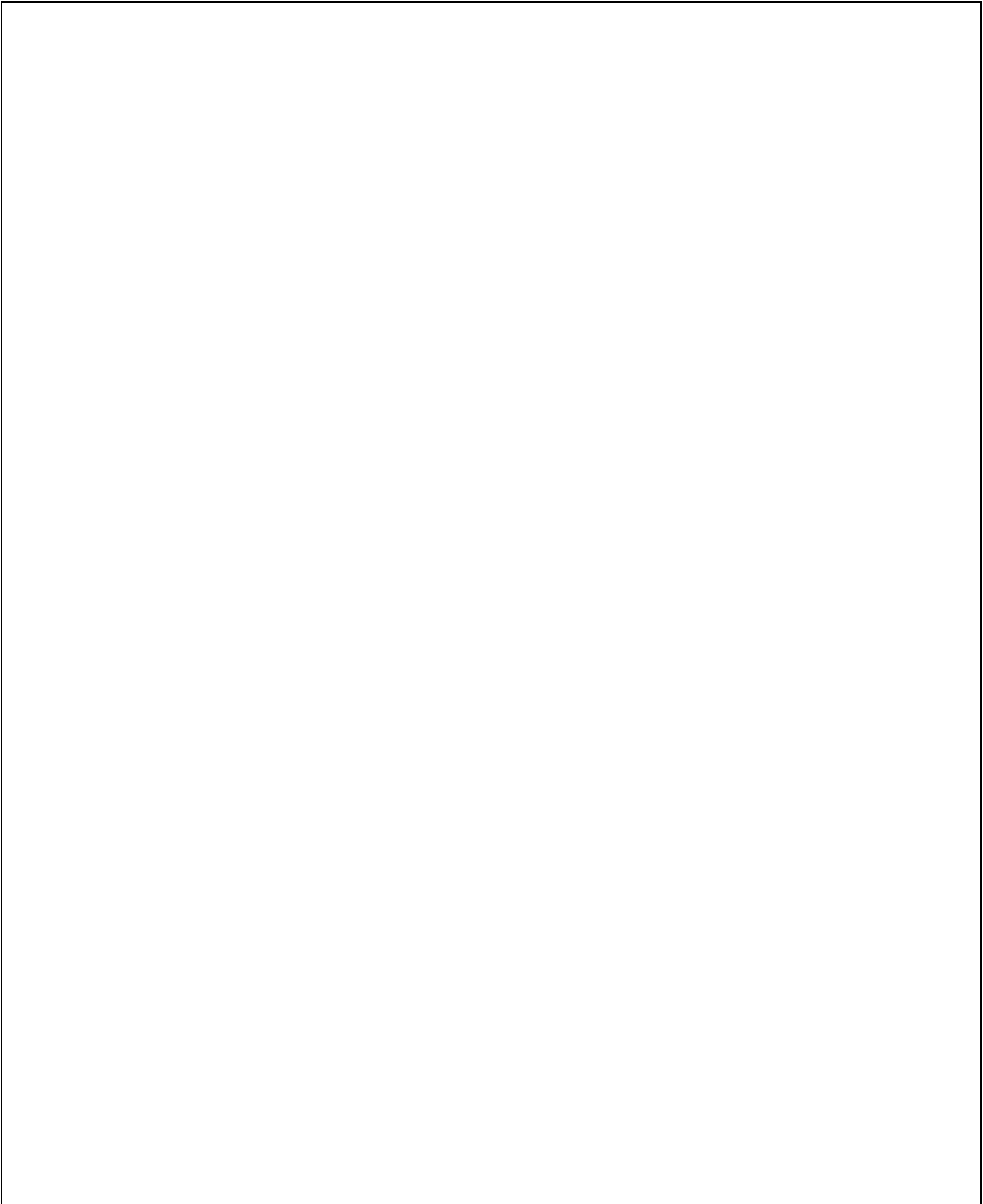
Figure 13.0.12

12. The Rain Polling task will show up in this window. Use the “+” symbol next to the times to see the task name.
13. Click the **Hide** button to close this window.

Note: The controllers that the “Rain Polling” task shares with, is dictated by the controllers that you are already “Sharing Weather” with.
 An “S” entry will show up on the rain table for rain data that is shared from other controllers.







14.0 WINTER SHUTDOWN

Winter Shutdown is a temporary program which replaces the controller's normal program. The controller's normal program is saved on the central computer. Winter Shutdown provides a way for the controller to exercise the irrigation valves that would normally not be used over a long period of time.

CAUTION:

Winter Shutdown should not be used in areas where the irrigation system is winterized due to freezing temperatures and snow.

Note: When a client server environment is used, where multiple central computers are used to communicate to the same field controllers, only the central computer sending the Winter Shutdown can terminate the Winter Shutdown program.

1. From the toolbar at the top of the screen select **Communications** then scroll down to **Winter Shutdown** and click on it (Figure 14.0.1).

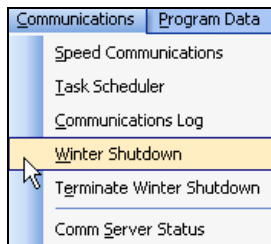


Figure 14.0.1

Note: This will take you to the "Winter Shutdown" screen (Figure 14.0.2).

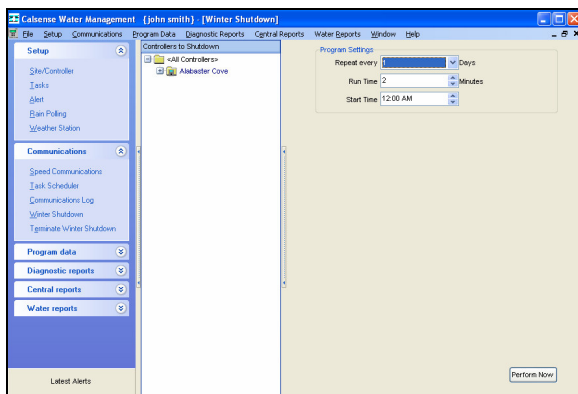


Figure 14.0.2

2. Select a Site(s) or Controller(s) to convert to Winter Shutdown (Figure 14.0.3).

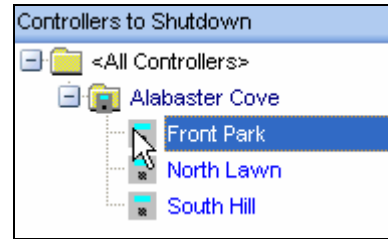


Figure 14.0.3

3. Next you will have to fill in the Program Settings (Figure 14.0.4).

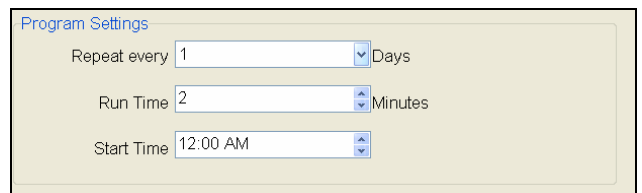


Figure 14.0.4

4. Click on the drop down arrow to the right of the **Repeat every** box to adjust the exercise days. This will allow you to select the day cycle at which the task takes place (Figure 14.0.5).

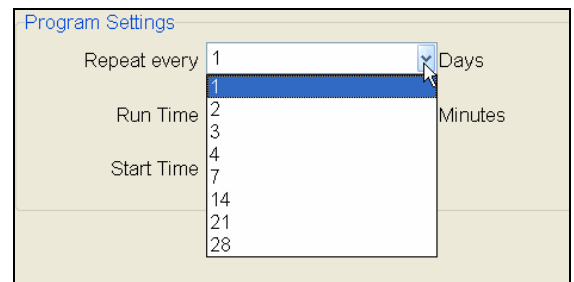


Figure 14.0.5

5. Next click on the **Run Time** block and use the **UP** and **DOWN** arrows to adjust the time in minutes for **each** station to run (Figure 14.0.6).



Figure 14.0.6

- Now click on the **Start Time** box. Use the **UP** and **DOWN** arrows to adjust the time that you want the program to start each day (Figure 14.0.7).

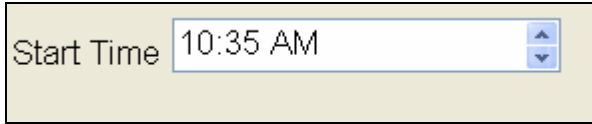


Figure 14.0.7

Note: You can also adjust the time by clicking on the box and typing the time in.

- Once you have entered all of the information that you want to go to the controller click on the **Perform Now** button (Figure 14.0.8).

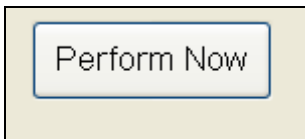


Figure 14.0.8

Note: A communications screen will appear letting you know that you are communicating with the controller of choice (Figure 14.0.9).

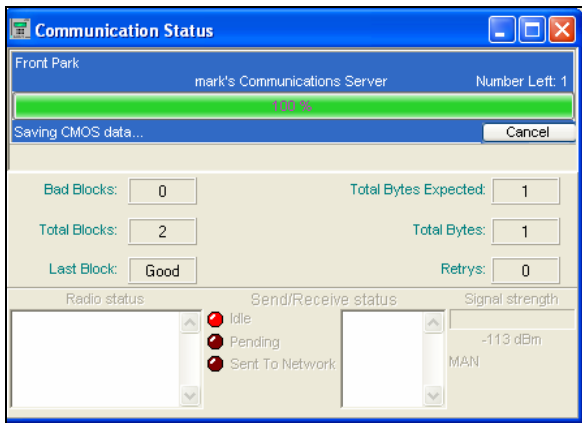


Figure 14.0.9

- After the communications task has taken place the **"Communications Completed"** screen will appear (Figure 14.0.10).

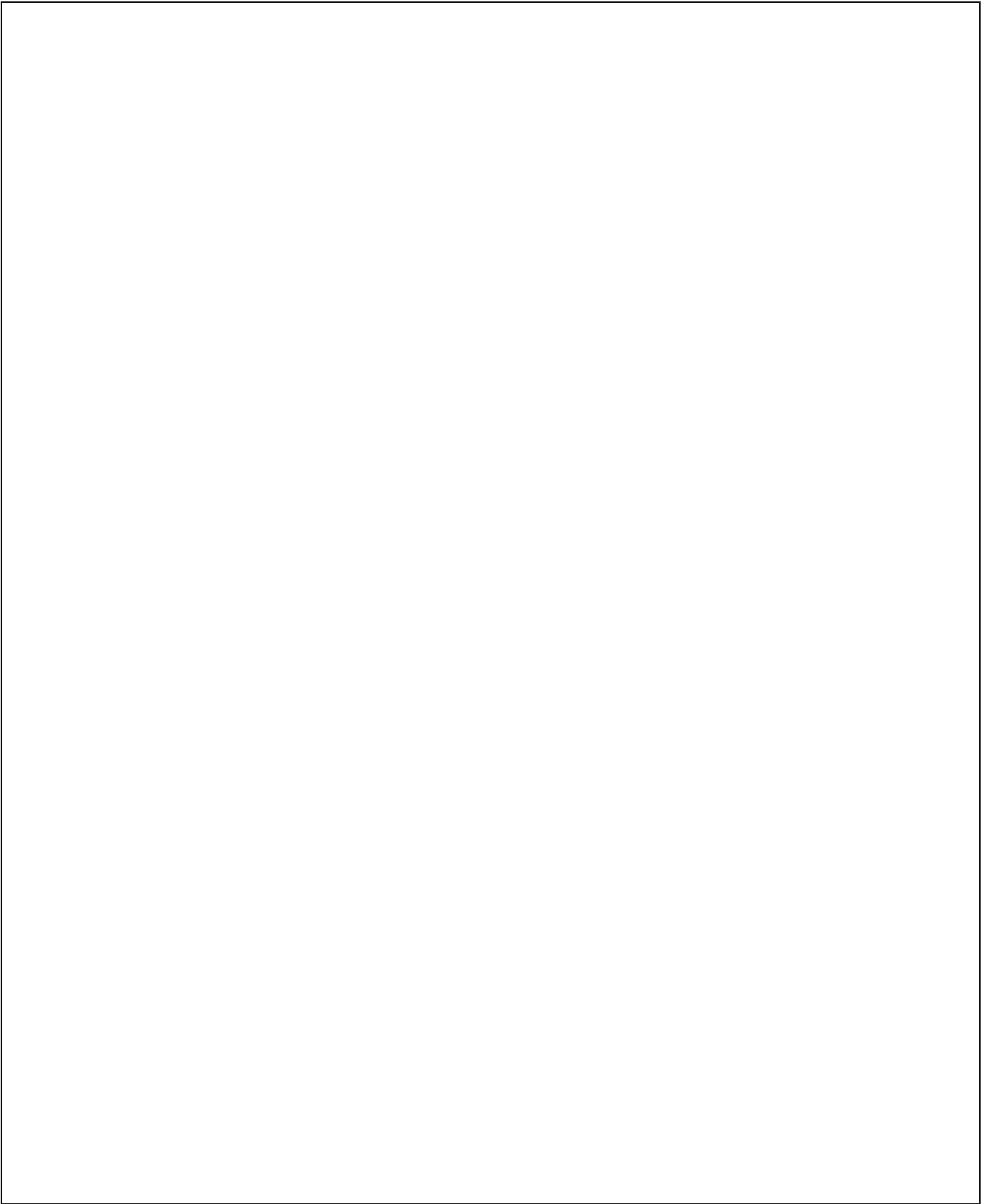


Figure 14.0.10

- Click on the **OK** button.

Note: This process will get your Program Data from the controller and store it. Then replace it with the schedule that you just entered. If you want to end this schedule and replace it with your current Program Data:

SEE SECTION 15.0 FOR MORE DETAILS



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15.0 TERMINATE WINTER SHUTDOWN

Terminate Winter Shutdown is designed to bring a controller back up to a regular program status from the Winter Shutdown mode of operation.

1. From the toolbar at the top of the screen select **Communications** then scroll down to **Terminate Winter Shutdown** and click on it (Figure 15.0.1).

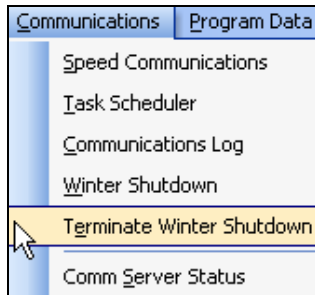


Figure 15.0.1

Note: This will take you to the “**Terminate Winter Shutdown**” screen (Figure 15.0.2).

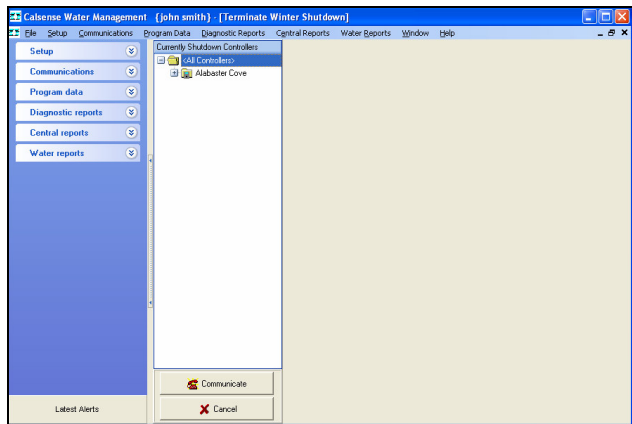


Figure 15.0.2

2. Select an entire site or select a single Controller to convert back from Winter Shutdown (Figure 15.0.3).

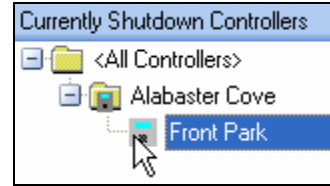


Figure 15.0.3

3. Next click on the **Communicate** button at the bottom of this screen (Figure 15.0.4).

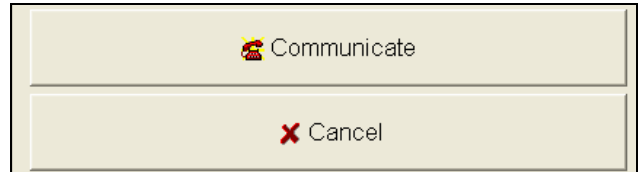


Figure 15.0.4

Note: Click on the **Cancel** button if you do not want to continue with this process.

Note: A communications screen will appear letting you know that you are communicating with the controller of choice (Figure 15.0.5).

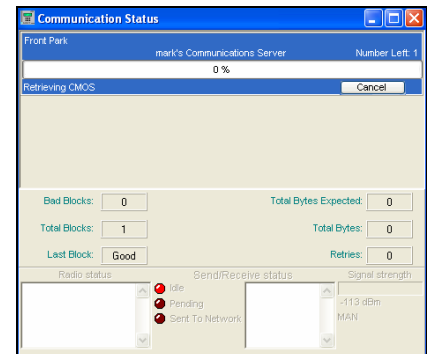


Figure 15.0.5

Note: After the communications task has taken place the “**Communications Completed**” screen will appear (Figure 15.0.6).

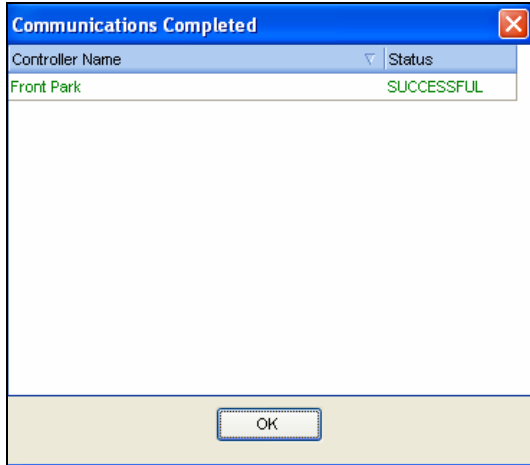
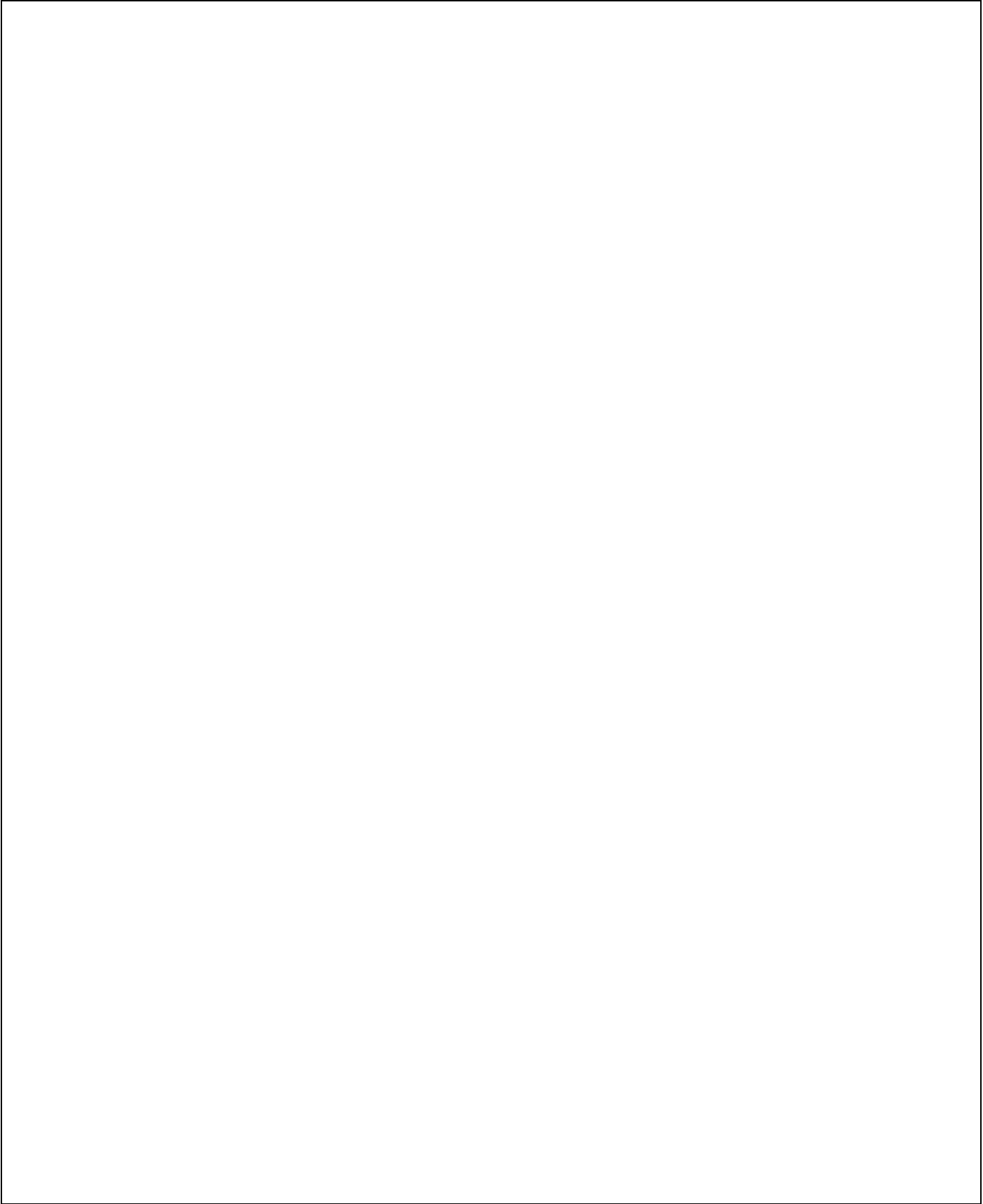


Figure 15.0.6

4. Click on the **OK** button.

Note: This process will send your original Program Data back to the entire site or single controller, and terminate the Winter Shutdown schedule.





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16.0 (TAB A) ET1 CONTROLLER PROGRAM DATA

Controller Program Data: This 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 ET1 CONTROLLER SCHEDULE

Controller Schedule: Controller Schedule is used to program start times, water days, controller setup, 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 16.1.1A).

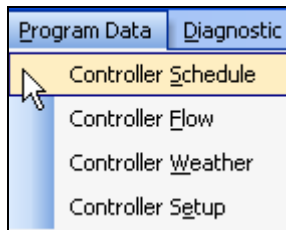


Figure 16.1.1A

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

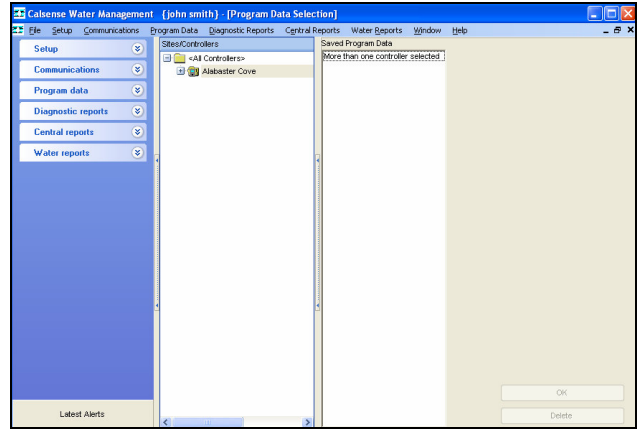


Figure 16.1.2A

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

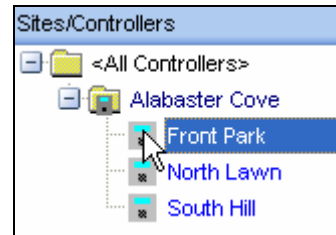


Figure 16.1.3A

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 16.1.4A).

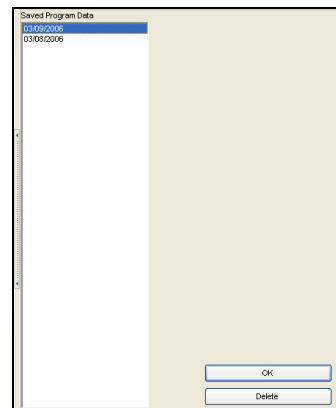


Figure 16.1.4A

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 16.1.5A).

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

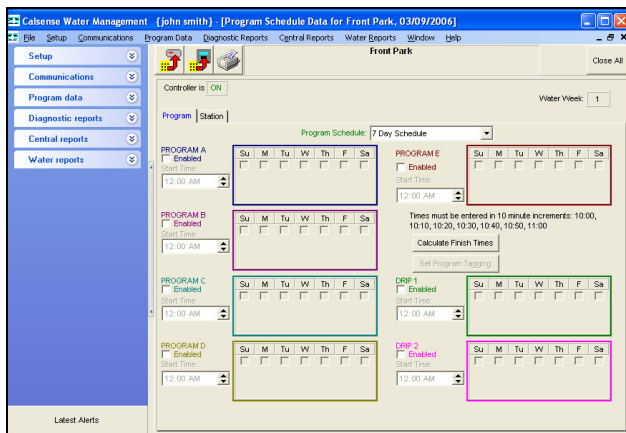


Figure 16.1.5A

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

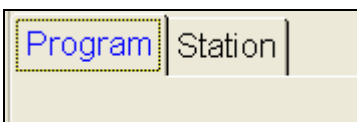


Figure 16.1.6A

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

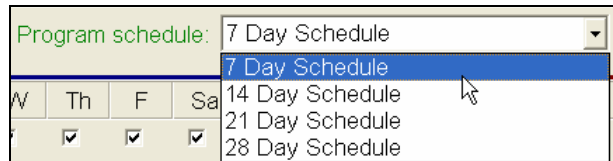


Figure 16.1.7A

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

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

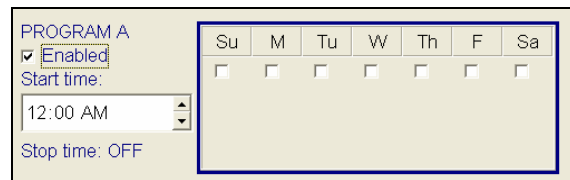


Figure 16.1.8A

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

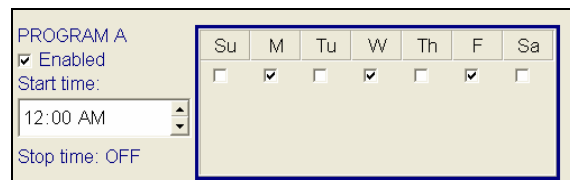


Figure 16.1.9A

- 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 16.1.10A).

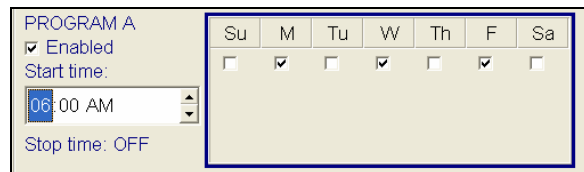


Figure 16.1.10A

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 16.1.11A).



Figure 16.1.11A

9. You can calculate finish times by clicking on the **Calculate Finish Times** button (Figure 16.1.12A).

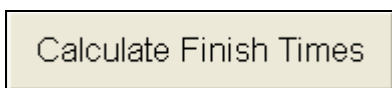


Figure 16.1.12A

Note: This will take you to the **“Finish Times”** screen (Figure 16.1.13A).

Program	Finish Times	(Worst Day)	Cu.ft./Mon
Prog A:	03:30A	(Week 1 Mon.)	106.56
Prog B:	12:40A	(Week 1 Sun.)	124.31
Prog C:	03:50A	(Week 1 Sun.)	23.68
Prog D:	NO RUN		0.00
Prog E:	NO RUN		0.00
Drip D1:	NO RUN		0.00
Drip D2:	NO RUN		0.00
Totals:			254.55

Actual ET

Prog A:			
Prog B:			
Prog C:			
Prog D:			
Prog E:			
Drip D1:			
Drip D2:			

Historical ET

Re-Calculate Percent Of ET: 100 Done

Figure 16.1.13A

Note: This screen will show you the finish times for all of the programs that are actively scheduled. The screen is split in to two categories:

Actual ET: The actual ET section of the screen contains the following information:

- **Program:** each of the controller programs are listed and cannot be edited (Figure 16.1.14A).
- **Finish Times:** This column will either have a Finish Time across from the appropriate program or state **“NO RUN”** meaning this program is not in use. The Finish Time shown is the Worst Day Finish Time (Figure 16.1.14A).
- **Worst Day:** This column will show you the longest irrigation day and on which week that it occurs for each program using actual ET (Figure 16.1.14A).

Note: Worst Day calculation is useful in figuring out if the schedule that you have for that specific day will or will not fit into your water window.

- **Cubic Feet Per Month:** This column calculates the cubic feet of water that will be used for this specific program for the entire month (Figure 16.1.14A).
- **Percent of ET:** This is the average percent of ET that you have all of the stations set within this specific program (Figure 16.1.14A).

Note: The percent of ET option will only show up if you are calculating run times using ET.

Program	Finish Times	(Worst Day)	Cu.ft./Month	% of Eto
Prog A:	10:18A	(Week 1 Mon.)	2805.75	101
Prog B:	09:12A	(Week 1 Mon.)	97.59	120
Prog C:	10:19A	(Week 1 Mon.)	93.53	115
Prog D:	NO RUN		0.00	
Prog E:	NO RUN		0.00	
Drip D1:	NO RUN		0.00	
Drip D2:	NO RUN		0.00	
Totals:			2996.87	92%

Actual ET

Figure 16.1.14A

Note: At the bottom of the screen you will see a total for the cubic feet per month and the percent of ET will show as an average of all of your stations ET.



Historical ET: The Historical ET section of this screen contains the same information as the Actual ET section. The only difference is that it uses Historical ET and is adjustable.

- Adjust the **Percent of ET** using the **UP** and **DOWN** arrows to the right of the **Percent of ET** box (Figure 16.1.15A).

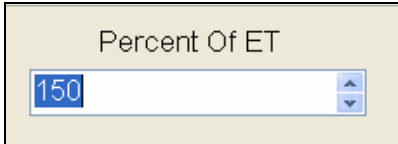


Figure 16.1.15A

- Click on the **Re-Calculate** button (Figure 16.1.16A).

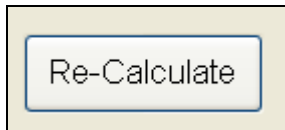


Figure 16.1.16A

Note: Depending on what percentage you enter the Finish Time, Worst day, Cubic Feet per Month, and percent of ET will change (Figure 16.1.17A).

Prog A:	05:58A	(Week 1 Mon)	365.94	100	Historical ET
Prog B:	12:25A	(Week 1 Sun)	91.49	100	
Prog C:	04:10A	(Week 1 Sun)	45.74	100	
Prog D:	NO RUN		0.00	---	
Prog E:	NO RUN		0.00	---	
Drip D1:	NO RUN		0.00	---	
Drip D2:	NO RUN		0.00	---	
Totals:			503.17	100%	

Re-Calculate Percent Of ET: 30 Done

Figure 16.1.17A

Note: At the bottom of the screen you will see a total for the cubic feet per month and the percent of ET shown as an average of all of your stations ET.

- Click on the **Done** button when finished in this screen.

16.2 ET1 CONTROLLER SCHEDULE STATION ASSIGNMENT

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

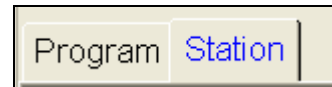


Figure 16.2.1A

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

Station Number	Alert	Program	Adjustment To ET (%)	Total Minutes	Minutes per Cycle	Soak-in Time (min.)	Mo. Water Days
1		Prog. A	100 %	0.0	4	5	0
2		Prog. A	100 %	0.0	4	5	0
3		Prog. A	100 %	0.0	4	5	0
4		Prog. A	100 %	0.0	4	5	0
5		Prog. A	100 %	0.0	4	5	0
6		Prog. A	100 %	0.0	4	5	0
7		Prog. A	100 %	0.0	4	5	0
8		Prog. A	100 %	0.0	4	5	0
9		Prog. A	100 %	0.0	4	5	0
10		Prog. A	100 %	0.0	4	5	0
11		Prog. A	100 %	0.0	4	5	0
12		Prog. A	100 %	0.0	4	5	0
13		Prog. A	100 %	0.0	4	5	0
14		Prog. A	100 %	0.0	4	5	0
15		Prog. A	100 %	0.0	4	5	0
16		Prog. A	100 %	0.0	4	5	0
17		Prog. A	100 %	0.0	4	5	0
18		Prog. A	100 %	0.0	4	5	0
19		Prog. A	100 %	0.0	4	5	0

Figure 16.2.2A

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



Figure 16.2.3A

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

Station Number	Alert
1	
2	
3	
4	HighFlow

Figure 16.2.4A

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

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

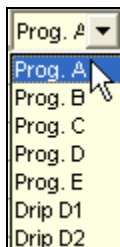


Figure 16.2.5A

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 16.2.6A).

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

Figure 16.2.6A

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 16.2.7A).

Total Minutes
12.5
10.2
5.0
0.0

Figure 16.2.7A

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 16.2.8A).

Minutes per Cycle
4
5
1
4

Figure 16.2.8A

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 16.2.9A).

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

Figure 16.2.9A

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 16.2.10A).





Figure 16.2.10A

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

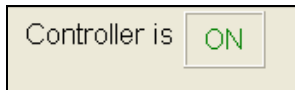


Figure 16.2.11A

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 16.2.12A).

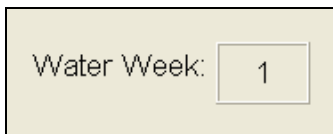


Figure 16.2.12A

16.3 ET1 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 16.3.1A).

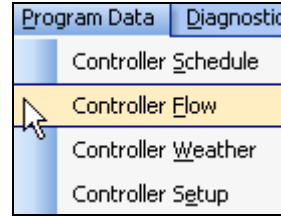


Figure 16.3.1A

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

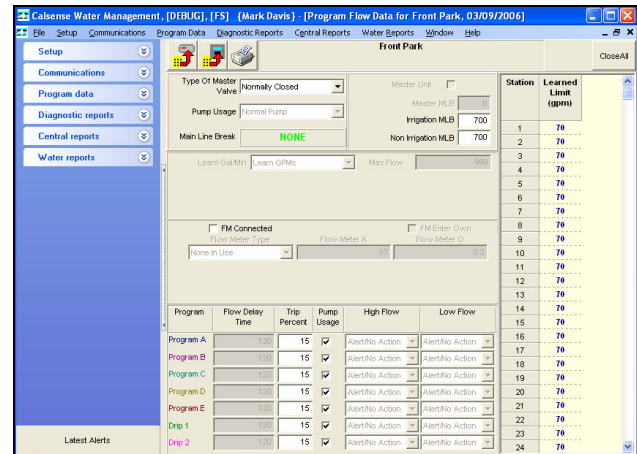


Figure 16.3.2A

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 16.3.3A).

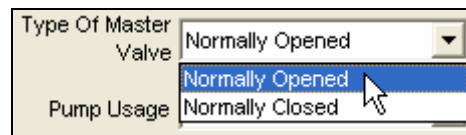


Figure 16.3.3A

3. Next check and see what the **Pump Usage** box is set at (Figure 16.3.4A).

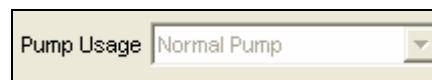


Figure 16.3.4A

Note: This can only be changed at the controller but can be a useful tool if used in conjunction with a light to alert the user to a problem. The three settings are:

- **Normal Pump Output:** You are using the pump output to turn a pump ON and OFF.
- **Blinking Alert Light:** You are using the pump output to power a blinking light installed at the controller to alert you of any of the following:
 - Main Line Break
 - High flow
 - No flow
 - Unstable flow
 - Low flow
 - Short detected
 - No current
- **Steady Alert light:** You are using the pump output to power a steady light installed at the controller to alert you of any of the following: (see Blinking Alert Light).

Note: Look at the **Main Line Break** box. This will tell you if there is a main line break (Figure 16.3.5A).



Figure 16.3.5A

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

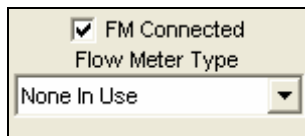


Figure 16.3.6A

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

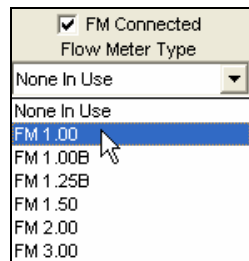


Figure 16.3.7A

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 16.3.8A).

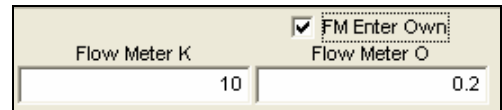


Figure 16.3.8A

Note: Contact Calsense for assistance in determining the “K” and Offset values.

6. Next edit the **Learned Gal/Min** box. Use the drop down arrow to the right (Figure 16.3.9A).

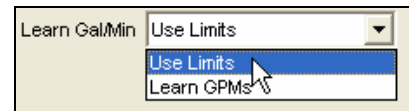


Figure 16.3.9A

- **Use Limits:** This setting is used once the controller has learned each stations flow rates. This feature will convert the station flow rate to a fixed number, or a high and low based on the trip percent (Figure 16.3.20A).
- **Learn GPM's:** Use this setting first if you have not learned the flow rate for each station.

Max Flow: Set this number to the maximum amount of gallons per minute that you think your entire system is capable of. This will keep your stations from exceeding this number when two or more valves are on (Figure 16.3.10A).

Figure 16.3.10A

- If this is a Master Unit click on the box titled **Master Unit**. If you do not know leave this box unchecked (Figure 16.3.11A).

Note: Master Unit refers to the master controller in a chain of controllers sharing a single point of connection.

Figure 16.3.11A

- Next set the **Master MLB** (Main Line Break). This is the number of gallons per minute that you want the Main Line Break to trip at (Figure 16.3.12A).

Figure 16.3.12A

Note: If this is not a Master Unit leave the box unchecked and fill in the **Irrigation MLB** (Main Line Break) and **Non-Irrigation MLB** (Main Line Break) numbers (Figure 16.3.13A).

Figure 16.3.13A

- In the **Flow Delay Time (sec.)** fill in the amount of time in seconds per program that you want the controller to delay checking flow due to line fill and / or valve closing (Figure 16.3.14A).

Program	Flow Delay Time
Program A	120
Program B	120
Program C	120
Program D	120
Program E	120
Drip 1	120
Drip 2	120

Figure 16.3.14A

- Next enter the **Trip Percent** for each program that you want the controller to trip a flow alert. This setting equals a percentage of your stations flow rate (Figure 16.3.15A).

Note: This only has an effect when in learn mode

Figure 16.3.15A

Example:

If Station flow rate equals 40 then the Trip Percent (15%) would equal:

34 to 46 gallons per minute.

34 gpm or below would trip a Low Flow alert.
46 gpm or above would trip a High Flow alert.

- If a pump is in use check the box next to each program that it applies to (Figure 16.3.16A).

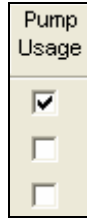


Figure 16.3.16A

12. Next using the drop down arrow for each box select the **High Flow Action** alert of your choice (Figure 16.3.17A).

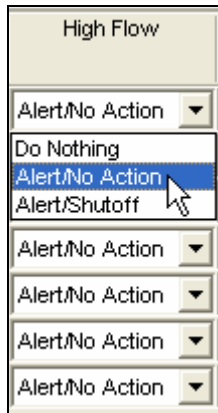


Figure 16.3.17A

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 a High Flow occurs but the controller will take no action.
- **Alert Shutoff:** This means that the controller will alert you and also will shutoff the valves assigned to this alert group.

13. Use the same method to choose the **Low Flow** action for each program (Figure 16.3.18A).



Figure 16.3.18A

Note: If you have had the controller learn each stations flow rate, the number will appear in the **Learned Limit (GPM)** column (Figure 16.3.19A).

Station	Learned Limit (gpm)
1	141
2	141
3	141
4	141
5	141
6	141

Figure 16.3.19A

Note: If you use the **Use Limits** setting in the **Learn Gal/Min** box. The upper and lower limits will show up next to the stations. These numbers are derived from each programs trip percent based on your learned flow rate (Figure 16.3.20A).

Station	Upper Limit (gpm)	Lower Limit (gpm)
1	162	120
2	162	120
3	162	120
4	162	120
5	162	120
6	162	120

Figure 16.3.20A

16.4 ET1 CONTROLLER WEATHER

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

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 16.4.1A).

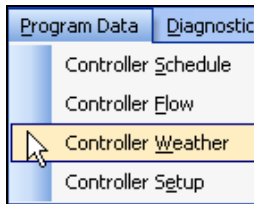


Figure 16.4.1A

Note: This will take you to the **Controller Weather** screen (Figure 16.4.2A).

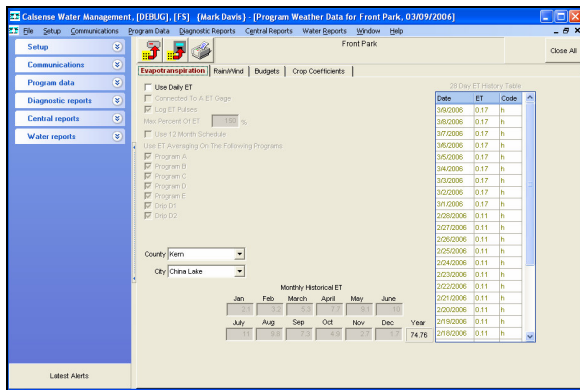


Figure 16.4.2A

EVAPOTRANSPIRATION

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

2. If you plan on using Daily ET check the **Use Daily ET** box (Figure 16.4.3A).

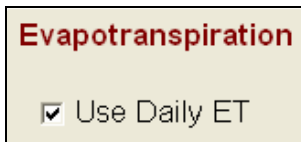


Figure 16.4.3A

Note: When you check this box a **Confirm** screen will appear (Figure 16.4.4A).

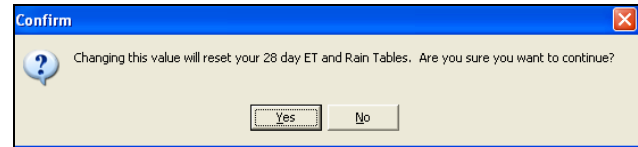


Figure 16.4.4A

Note: If you want to reset your 28 day ET and Rain tables click **Yes**.

Note: If you **do not** want to reset your 28 day ET and Rain tables click **No**.

3. If this controller is going to be connected to an ET gage check the **Connected to A ET Gage** box (Figure 16.4.5A).



Figure 16.4.5A

Note: This will cause the **Log ET Pulses** box to become available. Click on this box if you want the ET pulses logged in the alerts page (Figure 16.4.6A).



Figure 16.4.6A

Note: By using the **Max Percent Of ET** box you can set the controller to never go over a certain percentage of ET (Figure 16.4.7A).

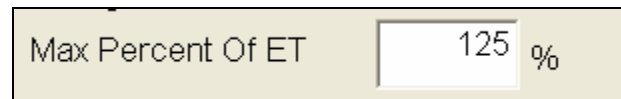


Figure 16.4.7A

Example:

If your historical ET for August is .35 and your Max Percent Of ET is set at 150% then the controller will never let your daily 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 16.4.8A).

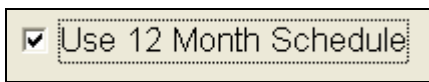


Figure 16.4.8A

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 16.4.9A)

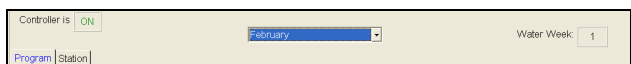


Figure 16.4.9A

- Next check the box next to each program that you want to **Use ET Averaging On The Following Programs** (Figure 16.4.10A).

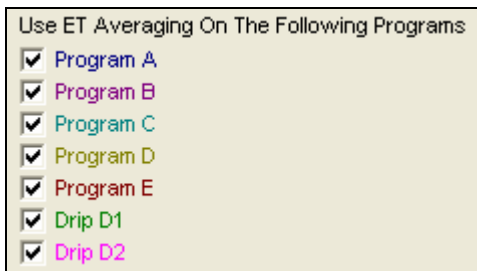


Figure 16.4.10A

ET Averaging: ET averaging is used to smooth out the long station run times caused by OFF water days.

- Use the drop down arrow next to **County** to select a compatible county (Figure 16.4.11A).



Figure 16.4.11A

- Next use the drop down arrow next to **City** to select a city within that county (Figure 16.4.12A).

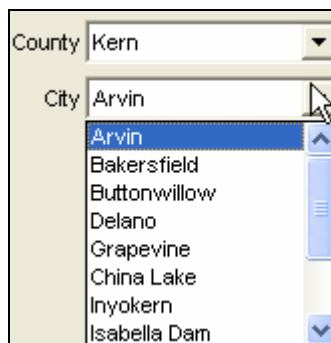


Figure 16.4.12A

Note: You can enter your own ET numbers in the **Monthly Historical ET** blocks (Figure 16.4.13A).

Monthly Historical ET						
Jan	Feb	March	April	May	June	
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	73.67

Figure 16.4.13A

Note: These boxes can be edited by selecting “Your Own” in the drop down box for **County** (Figure 16.4.14A).

Monthly Historical ET						
Jan	Feb	March	April	May	June	
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	73.69

Figure 16.4.14A

Note: The **Year** box is the total ET for the year (Figure 16.4.15A).

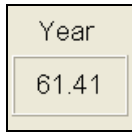


Figure 16.4.15A

Note: The 28 Day ET Historical Table shows the ET averages for the last 28 days consecutively (Figure 16.4.16A).

28 Day ET History Table		
Date	ET	Code
3/10/2006	0.17	h
3/9/2006	0.17	h
3/8/2006	0.17	h
3/7/2006	0.17	h
3/6/2006	0.17	h
3/5/2006	0.17	h
3/4/2006	0.17	h
3/3/2006	0.17	h
3/2/2006	0.17	h
3/1/2006	0.17	h
2/28/2006	0.11	h
2/27/2006	0.11	h
2/26/2006	0.11	h
2/25/2006	0.11	h
2/24/2006	0.11	h
2/23/2006	0.11	h
2/22/2006	0.11	h
2/21/2006	0.11	h
2/20/2006	0.11	h
2/19/2006	0.11	h

Figure 16.4.16A

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 16.4.17A).

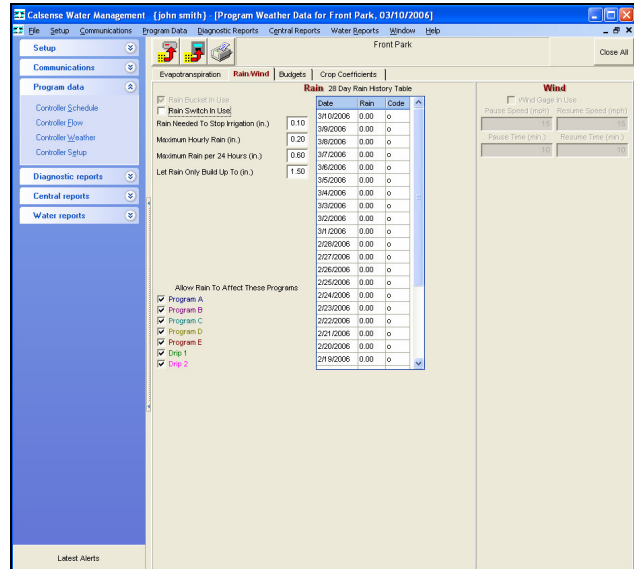


Figure 16.4.17A

Note: If a Rain Bucket (-RB) option is installed in this controller the **Rain Bucket In Use** box will be checked automatically (Figure 16.4.18A).



Figure 16.4.18A

2. If you are using a Rain Switch check the **Rain Switch In Use** box (Figure 16.4.19A).

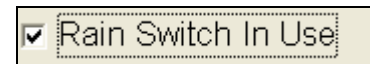


Figure 16.4.19A

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 16.4.20A .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 16.4.20A 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 16.4.20A 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 will be used in the rain table.

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 16.4.20A

- In the “**Allow Rain To Affect These Programs**” section check the box next to each program that you want rain to factor into (Figure 16.4.21A).

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 16.4.21A

Note: The “**28 Day Rain History Table**” shows the rain averages for the last 28 days consecutively (Figure 16.4.22A).

Date	Rain	Code
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
2/23/2006	0.00	o
2/22/2006	0.00	o
2/21/2006	0.00	o
2/20/2006	0.00	o
2/19/2006	0.00	o

Figure 16.4.22A

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.

Note: If a Wind Gage (-WG) option is installed in this controller the **Wind Gage In Use** box will be checked automatically (Figure 16.4.23A).

Wind	
<input checked="" type="checkbox"/> Wind Gage In Use	
Pause Speed (mph)	Resume Speed (mph)
15	15
Pause Time (min.)	Resume Time (min.)
10	10

Figure 16.4.23A

4. You can change the settings for each box by clicking on them and entering the appropriate number.

Note: The settings in figure 16.4.23A are read as follows:

If the wind speed is 15 miles per hour for 10 minutes irrigation will pause.

When the wind speed is less than 15 miles per hour for 10 minutes irrigation will resume.

BUDGETS

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

Note: This will take you to the “**Budgets**” screen (Figure 16.4.24A).

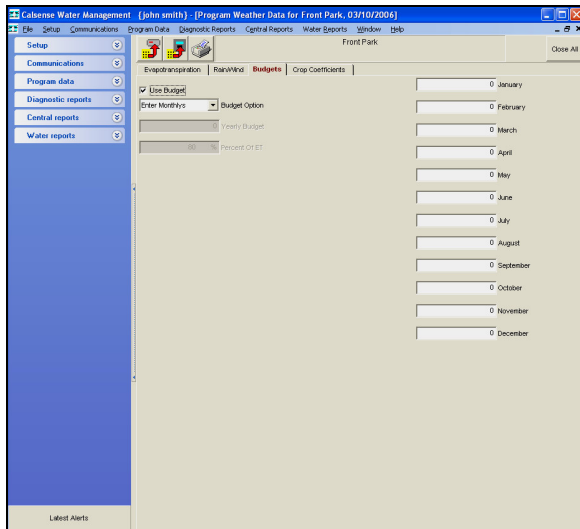


Figure 16.4.24A

Note: You will need to select a County, City, and enter your square footage numbers prior to selecting **Enter Yearly**, or **Enter % of ET**.

2. Click on the **Use Budgets** box if you want to use budgets (Figure 16.4.25A).

Use Budgets

Figure 16.4.25A

3. Next use the drop down arrow next to the **Budget Option** box to select the type of budget desired (Figure 16.4.26A).

Enter Monthlys Budget Option
 Enter Monthlys
 Enter Yearly Yearly Budget
 Enter % of ET

Figure 16.4.26A

Enter Monthlys: This option allows you to enter your own budget gallons per month (Figure 16.4.27A).

15433 January
 0 February

Figure 16.4.27A

Enter Yearly: This option allows you to set a budget number in gallons for the year (Figure 16.4.28A).

115433 Yearly Budget

Figure 16.4.28A

Note: This will automatically calculate all of the month entries based on ET (Figure 16.4.29A).

4288	January
6070	February

Figure 16.4.29A

Enter % 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 16.4.30A).

150	%	Percent Of ET
-----	---	---------------

Figure 16.4.30A

CROP COEFFICIENTS

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

Note: This will take you to the “**Crop Coefficients**” screen (Figure 16.4.31A).

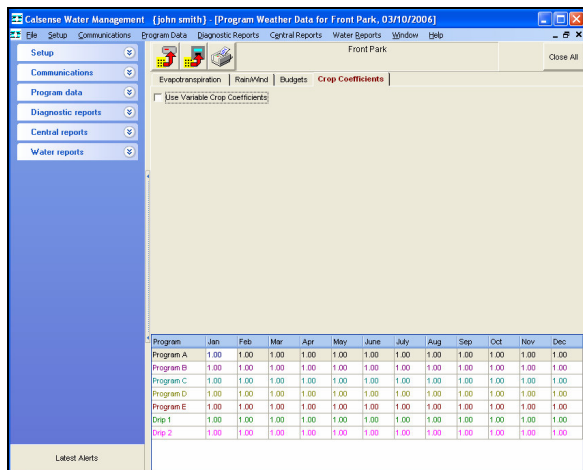


Figure 16.4.31A

2. Click on the **Use Variable Crop Coefficients** button to use Crop Coefficients (Figure 16.4.32A).

<input checked="" type="checkbox"/>	Use Variable Crop Coefficients
-------------------------------------	--------------------------------

Figure 16.4.32A

Note: This will allow you to enter a multiplier number, by program, for each month allowing you to alter calculated run times (Figure 16.4.33A).

Program	Jan
Program A	1.50
Program B	1.00
Program C	1.00
Program D	1.00
Program E	1.00
Drip 1	1.00
Drip 2	1.00

Figure 16.4.33A

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).

16.5 ET1 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 16.5.1A).

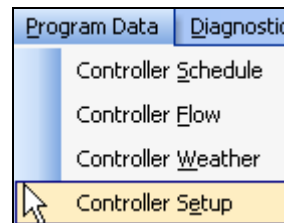


Figure 16.5.1A

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

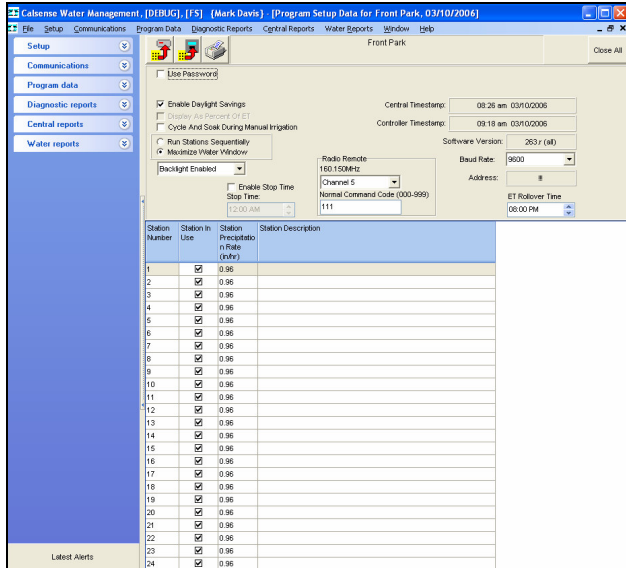


Figure 16.5.2A

- If you want to use a password for this controller click on the **Use Password** box (Figure 16.5.4A).

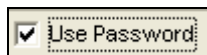


Figure 16.5.4A

Note: This will open up three drop down windows that you can choose a three key password from (Figure 16.5.5A).

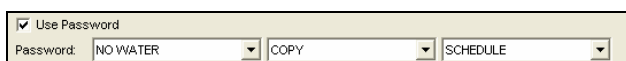


Figure 16.5.5A

Note: Each drop down window has the 24 individual key pad words from the controller to choose from. Any combination of the 24 words in the three separate windows is acceptable.

Example:

In Figure 16.5.5A the password is now set at
NO WATER COPY SCHEDULE

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

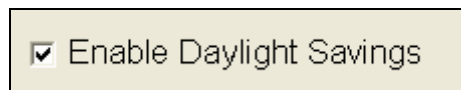


Figure 16.5.6A

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

Controller Timestamp: This was the controller's time when you received the Program Data (Figure 16.5.7A).

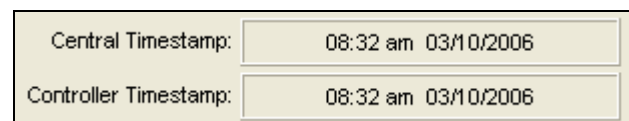


Figure 16.5.7A

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

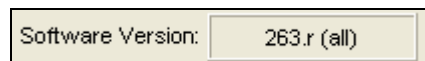


Figure 16.5.8A

Baud Rate: This is the rate at which the controller transfers data when communicating (Figure 16.5.9A).

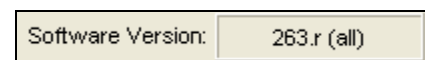


Figure 16.5.9A

Address: This is the current central communications address for this controller (Figure 16.5.10A).



Figure 16.5.10A

Note: The communications address can only be changed at the controller itself.

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 past 24 hours will be rolled over into the (ET) table (Figure 16.5.11A).

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.

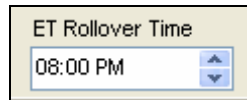


Figure 16.5.11A

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 16.5.12A).

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 16.5.12A).

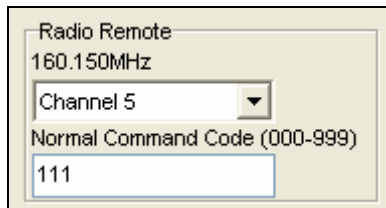


Figure 16.5.12A

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 (Figure 16.5.13A).

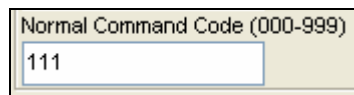


Figure 16.5.13A

Enable Stop Time: Check this box if you want to establish a stop time for all irrigation. Use the **UP** and **DOWN** arrows to adjust the time in the box (Figure 16.5.14A).

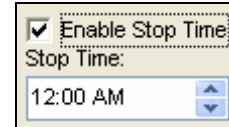


Figure 16.5.14A

Run Stations Sequentially: This will run the stations in order from lowest to highest numerically (Figure 16.5.15A).

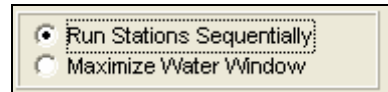


Figure 16.5.15A

Maximize Water Window: This will allow you to run the stations in an order that will fit as many stations as possible into your water window (Figure 16.5.16A).

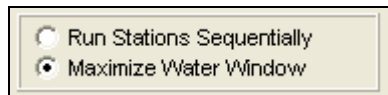


Figure 16.5.17A

Backlight Enabled: Selecting this option will turn on the backlight at the controller which will light up the screen whenever a key is pressed (Figure 16.5.18A).

Backlight Disabled: This selection will turn off the backlight option at the controller so that the screen stays unlit during key usage (Figure 16.5.18A).

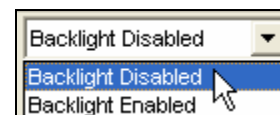


Figure 16.5.18A

Station Number: This is the numerical sequence of stations and cannot be adjusted (Figure 16.5.19A).



Figure 16.5.19A

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 16.5.20A).

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

Figure 16.5.20A

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 16.5.21A).

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"/>	1

Figure 16.5.21A

***Station Covered Area (sq.ft):** This is the amount of area that this station covers in square feet (Figure 16.5.22A).

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"/>	1	100

Figure 16.5.22A

***Station Precipitation Rate (in/hr):** This is the precipitation rate in inches per hour for this particular station (Figure 16.5.23A).

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"/>	1	100	0.96

Figure 16.5.23A

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 16.5.24A).

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"/>	12	100	11.55	Shrubs next to parking lot
2	<input checked="" type="checkbox"/>	25	200	12.03	South ball field

Figure 16.5.24A

16.6 ET1 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 16.6.1A).



Figure 16.6.1A

Note: No further action is required. Your Data is saved under Today's date.

16.7 ET1 CONTROLLER SCHEDULE SEND PROGRAM DATA

Note: It is quite easy to accidentally send old Program data to a controller. Make sure that the Program data that you intend to send to the controller of choice is in fact the Program data that you are currently looking at.

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



Figure 16.7.1A

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

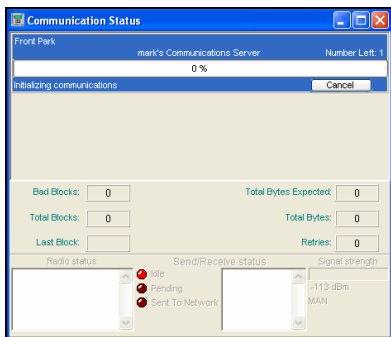


Figure 16.7.2A

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

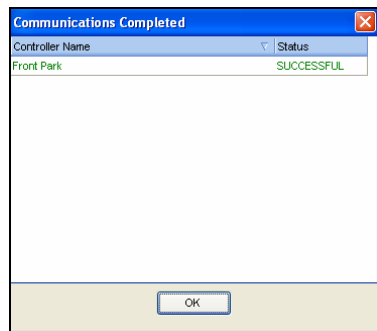


Figure 16.7.3A

2. Click on the **OK** button.

16.8 ET1 CONTROLLER SCHEDULE PRINT PROGRAM DATA

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

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



Figure 16.8.1A

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

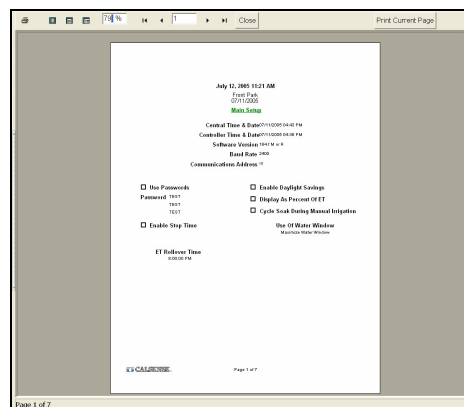


Figure 16.8.2A

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

16.9 ET1 GET PROGRAM DATA

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

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

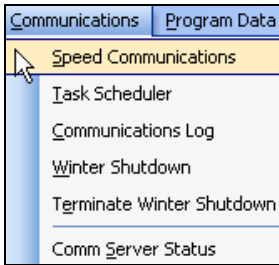


Figure 16.9.1A

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

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

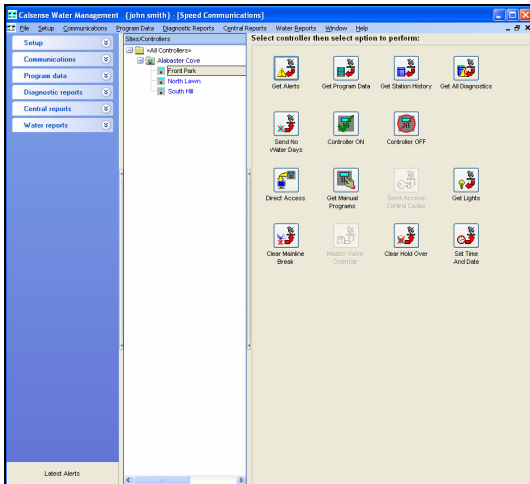


Figure 16.9.2A

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

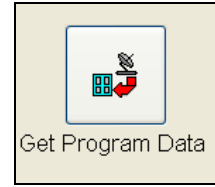


Figure 16.9.3A

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

SEE SECTION 16.1 FOR MORE DETAILS

Empty rectangular area for controller program data.

16.0 (TAB B) ET2000 (400 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 (400 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 16.1.1B).

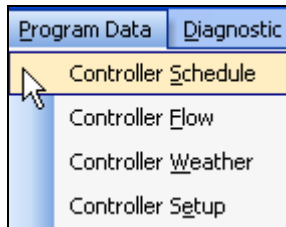


Figure 16.1.1B

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

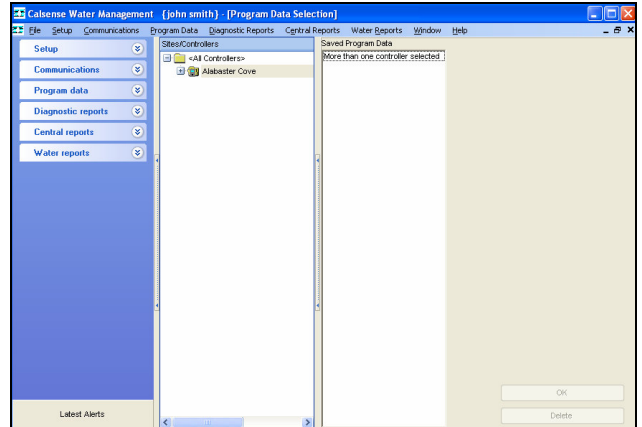


Figure 16.1.2B

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

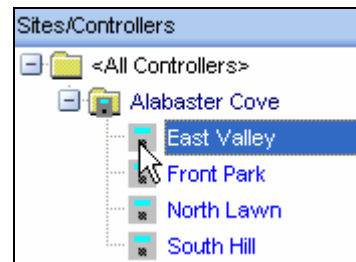


Figure 16.1.3B

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 16.1.4B).

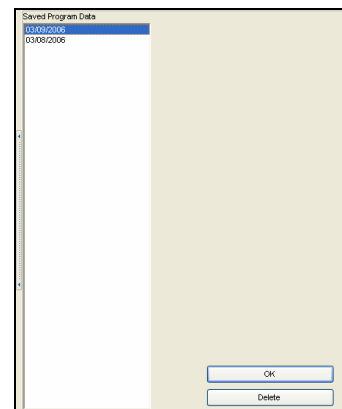


Figure 16.1.4B

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 16.1.5B).

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

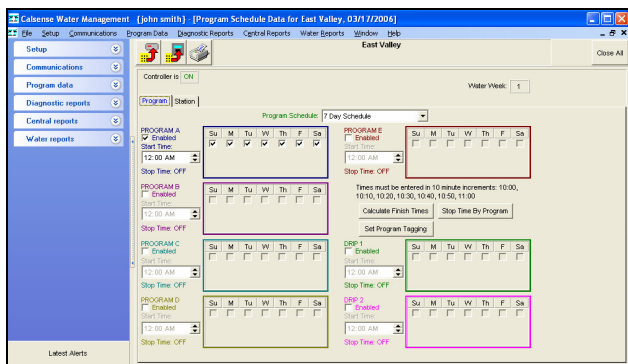


Figure 16.1.5B

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

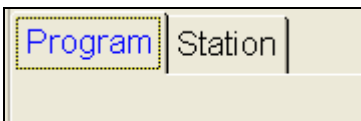


Figure 16.1.6B

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

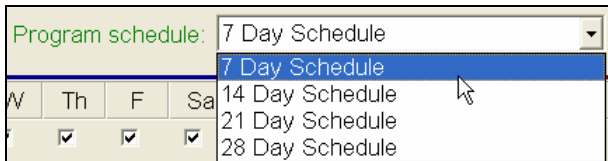


Figure 16.1.7B

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 16.1.8B).

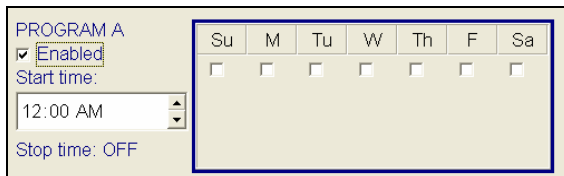


Figure 16.1.8B

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

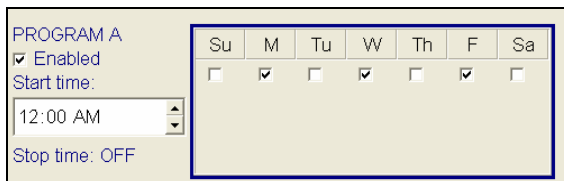


Figure 16.1.9B

- 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 16.1.10B).

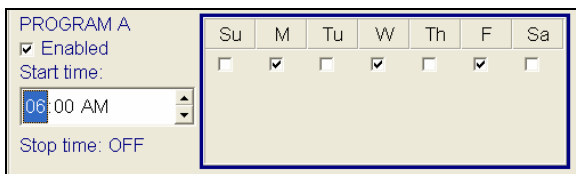


Figure 16.1.10B

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 16.1.11B).



Figure 16.1.11B

- You can calculate finish times by clicking on the **Calculate Finish Times** button (Figure 16.1.12B).

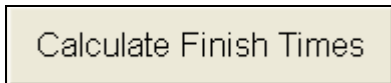


Figure 16.1.12B

Note: This will take you to the **“Finish Times”** screen (Figure 16.1.13B).

Finish Times			
Program	Finish Times	(Worst Day)	Cu.ft./Mon
Prog A:	03:30A	(Week 1 Mon)	106.56
Prog B:	12:40A	(Week 1 Sun)	124.31
Prog C:	03:50A	(Week 1 Sun)	23.68
Prog D:	NO RUN		0.00
Prog E:	NO RUN		0.00
Drip D1:	NO RUN		0.00
Drip D2:	NO RUN		0.00
Totals:			254.55

Actual ET

Prog A:			
Prog B:			
Prog C:			
Prog D:			
Prog E:			
Drip D1:			
Drip D2:			

Historical ET

Re-Calculate Percent Of ET: Done

Figure 16.1.13B

Note: This screen will show you the finish times for all of the programs that are actively scheduled. The screen is split in to two categories:

Actual ET: The actual ET section of the screen contains the following information:

- Program:** each of the controller programs are listed and cannot be edited (Figure 16.1.14B).

- Finish Times:** This column will either have a Finish Time across from the appropriate program or state **“NO RUN”** meaning this program is not in use. The Finish Time shown is the Worst Day Finish Time (Figure 16.1.14B).

- Worst Day:** This column will show you the longest irrigation day and on which week that it occurs for each program using actual ET (Figure 16.1.14B).

Note: Worst Day calculation is useful in figuring out if the schedule that you have for that specific day will or will not fit into your water window.

- Cubic Feet Per Month:** This column calculates the cubic feet of water that will be used for this specific program for the entire month (Figure 16.1.14B).

- Percent of ET:** This is the average percent of ET that you have all of the stations set within this specific Program (Figure 16.1.14B).

Note: The percent of ET option will only show up if you are calculating run times using ET.

Finish Times				
Program	Finish Times	(Worst Day)	Cu.ft./Month	% of ETto
Prog A:	10:18A	(Week 1 Mon)	2805.75	101
Prog B:	09:12A	(Week 1 Mon)	97.59	120
Prog C:	10:19A	(Week 1 Mon)	93.53	115
Prog D:	NO RUN		0.00	
Prog E:	NO RUN		0.00	
Drip D1:	NO RUN		0.00	
Drip D2:	NO RUN		0.00	
Totals:			2996.87	92%

Actual ET

Figure 16.1.14B

Note: At the bottom of the screen you will see a total for the cubic feet per month and the percent of ET will show as an average of all of your stations ET.

Historical ET: The Historical ET section of this screen contains the same information as the Actual ET section. The only difference is that it uses Historical ET and is adjustable.



10. Adjust the **Percent of ET** using the **UP** and **DOWN** arrows to the right of the **Percent ET** box (Figure 16.1.15B).

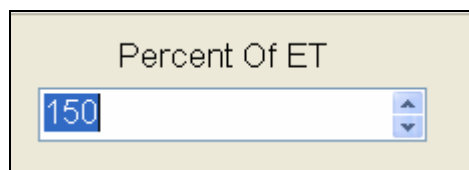


Figure 16.1.15B

11. Click on the **Re-calculate** button (Figure 16.1.16B).

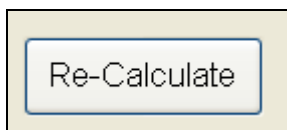


Figure 16.1.16B

Note: Depending on what percentage you enter the Finish Time, Worst day, Cubic Feet per Month, and percent of ET will change (Figure 16.1.17B).

Prog A:	05:58A	(Week 1 Mon)	365.94	100	Historical ET
Prog B:	12:25A	(Week 1 Sun)	91.49	100	
Prog C:	04:10A	(Week 1 Sun)	45.74	100	
Prog D:	NO RUN		0.00	—	
Prog E:	NO RUN		0.00	—	
Drip D1:	NO RUN		0.00	—	
Drip D2:	NO RUN		0.00	—	
Totals:			503.17	100%	

Figure 16.1.17B

Note: At the bottom of the screen you will see a total for the cubic feet per month and the percent of ET shown as an average of all of your stations ET.

12. Click on the **Done** button when finished in this screen.

13. You can enter a name for each program by clicking on the **Set program tagging** button (Figure 16.1.18B).

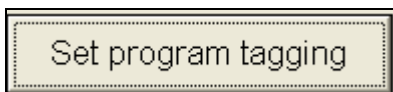


Figure 16.1.18B

Note: This will take you to the **“Set Program Tagging”** screen (Figure 16.1.19B).

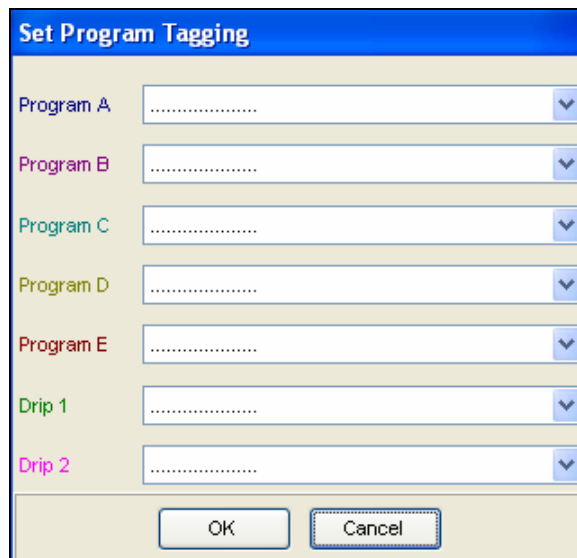


Figure 16.1.19B

14. By using the drop down arrow to the right you can choose a name for the selected program from a list provided (Figure 16.1.20B).

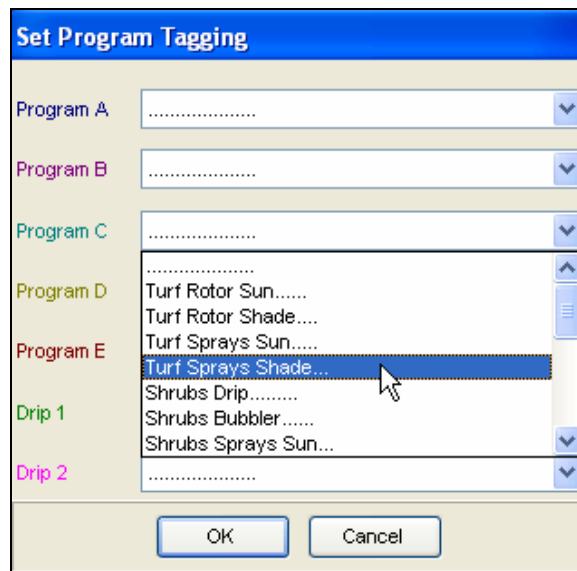


Figure 16.1.20B

15. 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.

- You can set a stop time for each program by clicking on the **Stop time by program** button (Figure 16.1.21B).



Figure 16.1.21B

Note: This will take you to the **“Stop time by program”** screen (Figure 16.1.22B).

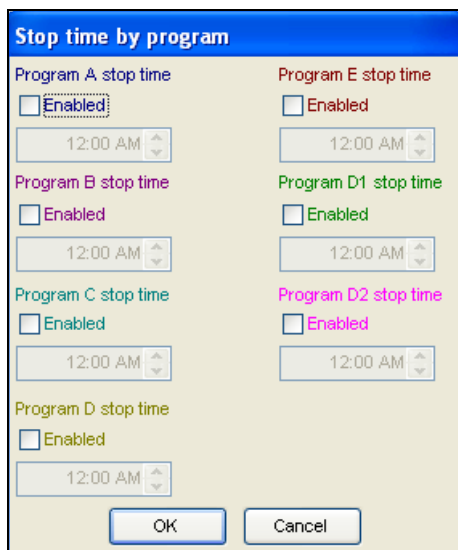


Figure 16.1.22B

- You can set a stop time for each program by clicking on the **Program X stop time Enabled** button (Figure 16.1.23B).



Figure 16.1.23B

- Click on the **Time** box and use the **UP** and **DOWN** arrows to set the time that you want this schedule to stop (Figure 16.1.24B).

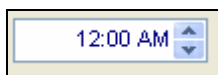


Figure 16.1.24B

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

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

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

16.2 ET2000 (400 SERIES) CONTROLLER SCHEDULE STATION ASSIGNMENT

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

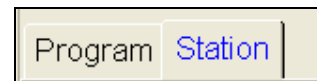


Figure 16.2.1B

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

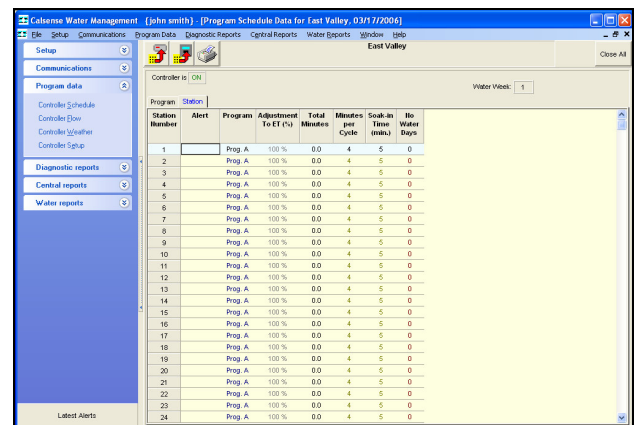


Figure 16.2.2B

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

Station Number
1
2
3
4

Figure 16.2.3B

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

Station Number	Alert
1	
2	
3	
4	HighFlow

Figure 16.2.4B

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

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

Prog. # ▾
Prog. A
Prog. B
Prog. C
Prog. D
Prog. E
Drip D1
Drip D2

Figure 16.2.5B

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 16.2.6B).

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

Figure 16.2.6B

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 16.2.7B).

Total Minutes
12.5
10.2
5.0
0.0

Figure 16.2.7B

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 16.2.8B).

Minutes per Cycle
4
5
1
4

Figure 16.2.8B

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 16.2.9B).



Soak-in Time (min.)
5
10
15
5

Figure 16.2.9B

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 16.2.10B).

No Water Days
2
1
0

Figure 16.2.10B

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

Controller is ON

Figure 16.2.11B

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 16.2.12B).

Water Week: 1

Figure 16.2.12B

16.3 ET2000 (400 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 16.3.1B).

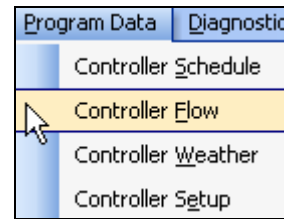


Figure 16.3.1B

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

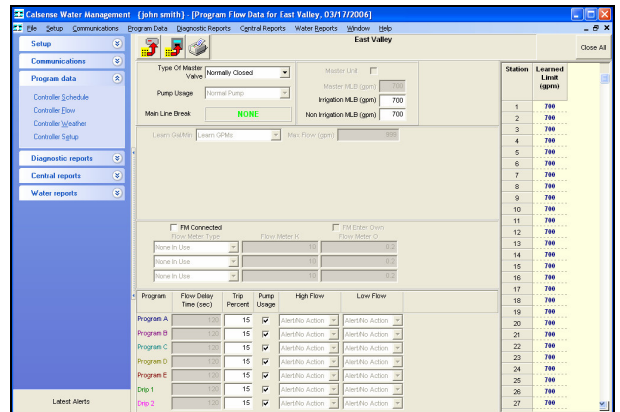


Figure 16.3.2B

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 16.3.3B).

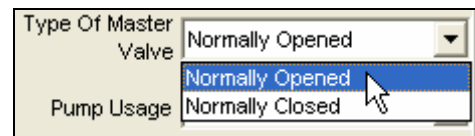


Figure 16.3.3B

3. Next check and see what the **Pump Usage** box is set at (Figure 16.3.4B).

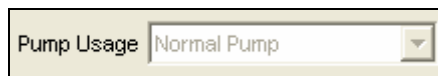


Figure 16.3.4B

Note: This can only be changed at the controller but can be a useful tool if used in conjunction with a light to alert the user to a problem. The three settings are:

- **Normal Pump Output:** You are using the pump output to turn a pump ON and OFF.
- **Blinking Alert Light:** You are using the pump output to power a blinking light installed at the controller to alert you of any of the following:
 - Main Line Break
 - High flow
 - No flow
 - Unstable flow
 - Low flow
 - Short detected
 - No current
- **Steady Alert light:** You are using the pump output to power a steady light installed at the controller to alert you of any of the following: (see Blinking Alert Light).

Note: Look at the **Main Line Break** box. This will tell you if there is a main line break (Figure 16.3.5B).



Figure 16.3.5B

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

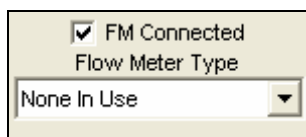


Figure 16.3.6B

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

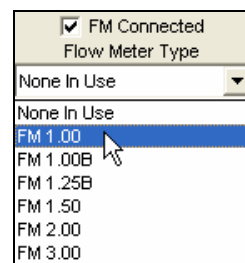


Figure 16.3.7B

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 16.3.8B).

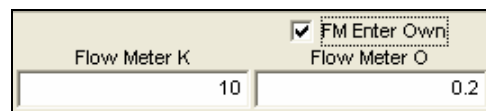


Figure 16.3.8B

Note: Contact Calsense for assistance in determining the "K" and Offset values.

6. Next edit the **Learned Gal/Min** box. Use the drop down arrow to the right (Figure 16.3.9B).



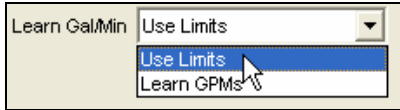


Figure 16.3.9B

- **Use Limits:** This setting is used once the controller has learned each stations flow rates. This feature will convert the station flow rate to a fixed number, or a high and low based on the trip percent (Figure 16.3.20A).
- **Learn GPM's:** Use this setting first if you have not learned the flow rate for each station.

Max Flow: Set this number to the maximum amount of gallons per minute that you think your entire system is capable of. This will keep your stations from exceeding this number when two or more valves are on (Figure 16.3.10B).



Figure 16.3.10B

7. If this is a Master Unit click on the box titled **Master Unit**. If you do not know leave this box unchecked (Figure 16.3.11B).

Note: Master Unit refers to the master controller in a chain of controllers sharing a single point of connection.

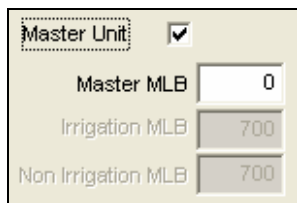


Figure 16.3.11B

8. Next set the **Master MLB** (Main Line Break). This is the number of gallons per minute that you want the Main Line Break to trip at (Figure 16.3.12B).

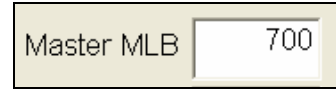


Figure 16.3.12B

Note: If this is not a Master Unit leave the box unchecked and fill in the **Irrigation MLB** (Main Line Break) and **Non-Irrigation MLB** (Main Line Break) numbers (Figure 16.3.13B).

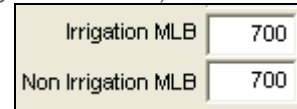


Figure 16.3.13B

9. In the **Flow Delay Time (sec.)** fill in the amount of time in seconds per program that you want the controller to delay checking flow due to line fill and / or valve closing (Figure 16.3.14B).

Program	Flow Delay Time
Program A	120
Program B	120
Program C	120
Program D	120
Program E	120
Drip 1	120
Drip 2	120

Figure 16.3.14B

10. Next enter the **Trip Percent** for each program that you want the controller to trip a flow alert. This setting equals a percentage of your stations flow rate (Figure 16.3.15B).

Note: This only has an effect when in learn mode



Figure 16.3.15B

Example:

If Station flow rate equals 40 then the Trip Percent (15%) would equal:

34 to 46 gallons per minute.

34 gpm or below would trip a Low Flow alert.
 46 gpm or above would trip a High Flow alert.

11. If a pump is in use check the box next to each program that it applies to (Figure 16.3.16B).

Figure 16.3.16B

12. Next using the drop down arrow for each box select the **High Flow Action** alert of your choice (Figure 16.3.17B).

Figure 16.3.17B

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 a High Flow occurs but the controller will take no action.
- **Alert Shutoff:** This means that the controller will alert you and also will shutoff the valves assigned to this alert group.

13. Use the same method to choose the **Low Flow** action for each program (Figure 16.3.18B).

Figure 16.3.18B

Note: If you have had the controller learn each stations flow rate, the number will appear in the **Learned Limit (GPM)** column (Figure 16.3.19B).

Station	Learned Limit (gpm)
1	141
2	141
3	141
4	141
5	141
6	141

Figure 16.3.19B

Note: If you use the **Use Limits** setting in the **Learn Gal/Min** box. The upper and lower limits will show up next to the stations. These numbers are derived from each programs trip percent based on your learned flow rate (Figure 16.3.20B).



Station	Upper Limit (gpm)	Lower Limit (gpm)
1	162	120
2	162	120
3	162	120
4	162	120
5	162	120
6	162	120

Figure 16.3.20B

16.4 ET2000 (400 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 16.4.1B).

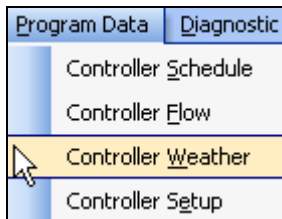


Figure 16.4.1B

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

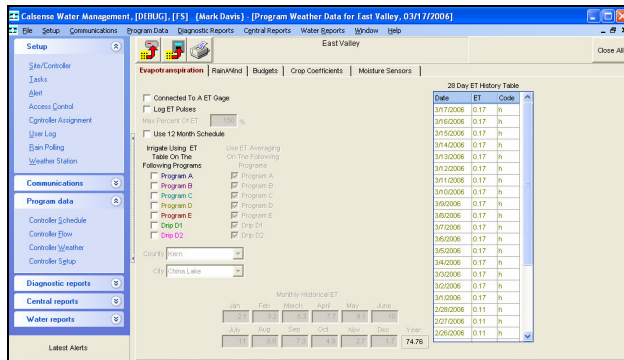


Figure 16.4.2B

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 16.4.3B).

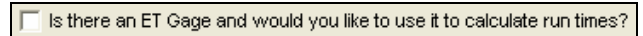


Figure 16.4.3B

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

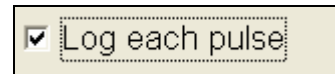


Figure 16.4.4B

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



Figure 16.4.5B

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

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

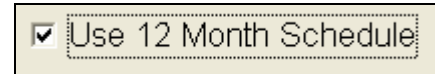


Figure 16.4.6B

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 16.4.7B).



Figure 16.4.7B

- Next check the box next to each program that you want to **Irrigate Using ET table on the following programs** (Figure 16.4.8B).

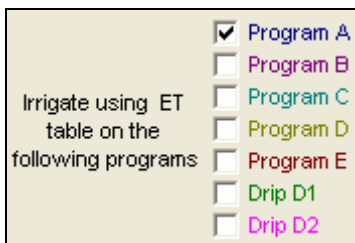


Figure 16.4.8B

- Now check each box that you want to **Use ET averaging on the following programs** (Figure 16.4.9B).

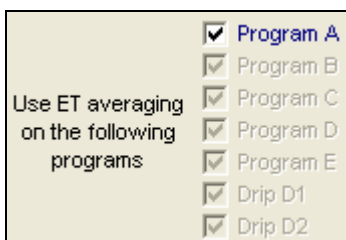


Figure 16.4.9B

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



Figure 16.4.10B

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

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	74.76

Figure 16.4.11B

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 16.4.12B).

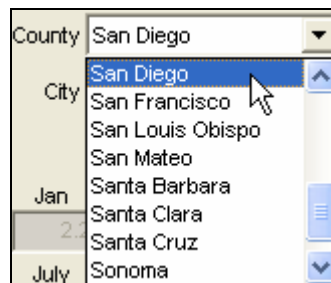


Figure 16.4.12B

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

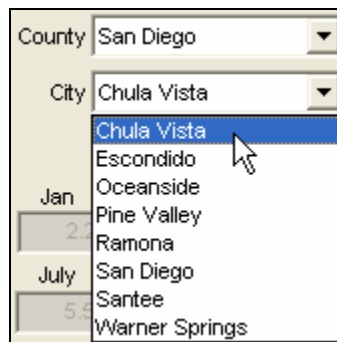


Figure 16.4.13B

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

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	5.8	3.4	2.4	76.02

Figure 16.4.14B

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

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 16.4.15B

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 16.4.16B).

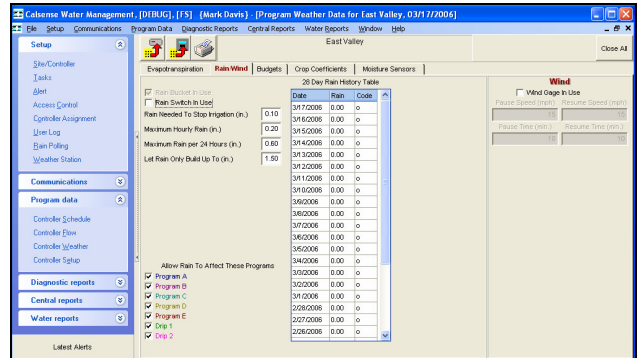


Figure 16.4.16B

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



Figure 16.4.17B

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



Figure 16.4.18B

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 16.4.19B .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 16.4.19B 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 16.4.19B 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 16.4.19B 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 16.4.19B

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

Allow Rain To Affect These Programs

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

Figure 16.4.20B

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

Date	Rain	Code
3/17/2006	0.00	o
3/16/2006	0.00	o
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

Figure 16.4.21B

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 16.4.22B).



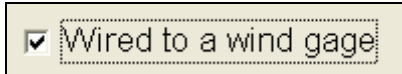


Figure 16.4.22B

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

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

Pause Time (min.): This is the minimum amount of time, in minutes, that you want irrigation to pause for when the Pause (mph) has been reached (Figure 16.4.23B).

Resume Time (min): This is the amount of time that you want the clock to pause after the Resume (mph) has been reached prior to resuming irrigation (Figure 16.4.23B).

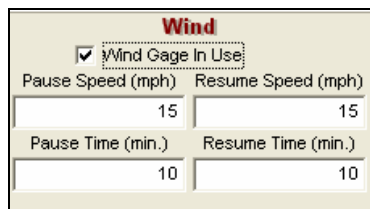


Figure 16.4.23B

BUDGETS

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

Note: This will take you to the “Budgets” screen (Figure 16.4.24B).

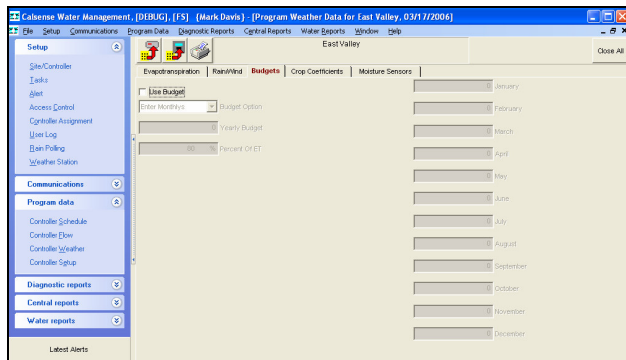


Figure 16.4.24B

2. Click on the **Use Budget** box if you want to use a budget (Figure 16.4.25B).

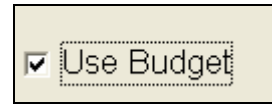


Figure 16.4.25B

3. Next use the drop down arrow next to the **Budget Option** box to select the type of budget desired (Figure 16.4.26B).

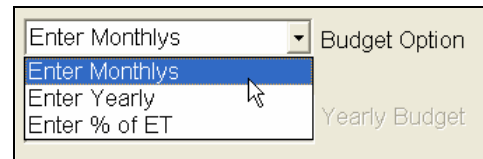


Figure 16.4.26B

Enter Monthlys: This option allows you to enter your own budget gallons per month (Figure 16.4.27B).

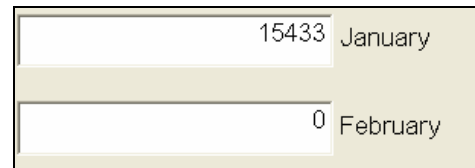


Figure 16.4.27B

Enter Yearly: This option allows you to set a budget number in gallons for the year (Figure 16.4.28B).



Figure 16.4.28B

Note: This will automatically change all of the month entries based on ET (Figure 16.4.29B).



Figure 16.4.29B



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 16.4.30B).

Figure 16.4.30B

CROP COEFFICIENTS

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

Note: This will take you to the “**Crop Coefficients**” screen (Figure 16.4.31B).

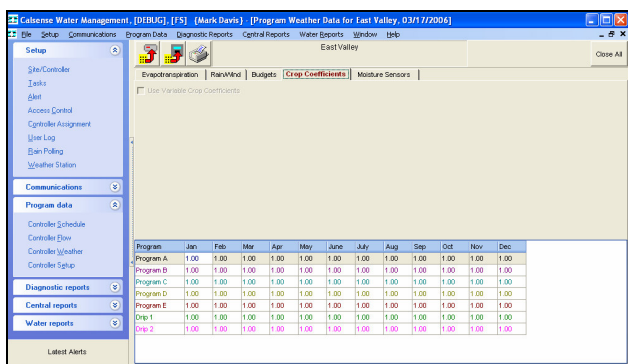


Figure 16.4.31B

5. Click on the **Use Variable Crop Coefficients** button to use Crop Coefficients (Figure 16.4.32B).

Figure 16.4.32B

Note: This will allow you to enter a multiplier number, by program, for each month allowing you to alter calculated run times (Figure 16.4.33B).

Program	Jan
Program A	1.50
Program B	1.00
Program C	1.00

Figure 16.4.33B

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

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

Note: This will take you to the “**Moisture Sensors**” screen (Figure 16.4.34B).

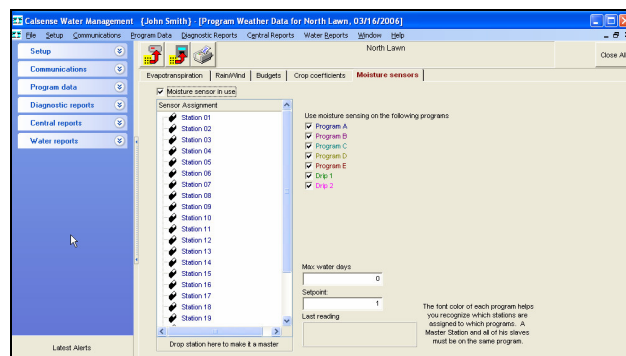


Figure 16.4.34B

2. If you are currently using Moisture sensors click the **Moisture Sensor In Use** box (Figure 16.4.35B).

Figure 16.4.35B

Note: This will open up the “**Use Moisture Sensing On The Following Programs**” section (Figure 16.4.36B).

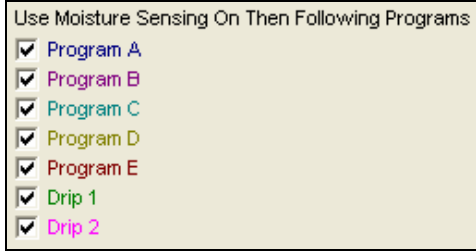


Figure 16.4.36B

- Place a check in each program box that you want to use moisture sensors on (Figure 16.4.37B).

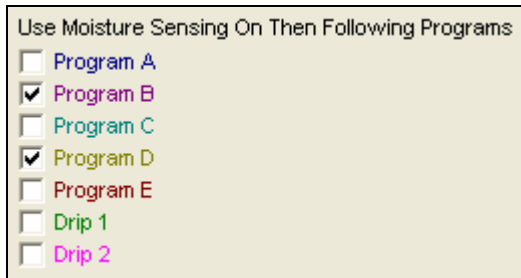


Figure 16.4.37B

Note: This will place all of the stations currently available in the "Sensor Assignment" Window (Figure 16.4.38B).



Figure 16.4.38B

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 16.4.39B).

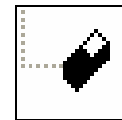


Figure 16.4.39B

Slave: Slave stations are stations without sensors and are assigned to a master station that shares similar water requirements (Figure 16.4.40B).

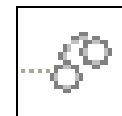


Figure 16.4.40B

Note: To assign stations as slaves to another station:

- Click on the station that you want to make a slave (Figure 16.4.41B)

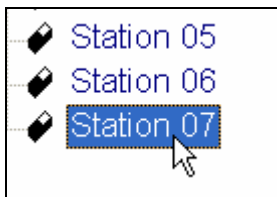


Figure 16.4.41B

- While holding down the left button of the mouse, drag this station to the one you want to slave it to (Figure 16.4.42B).

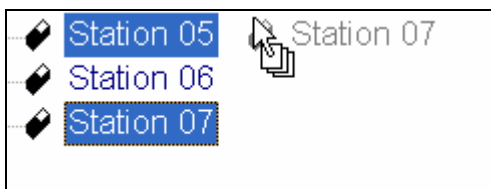


Figure 16.4.42B

- 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 16.4.43B).

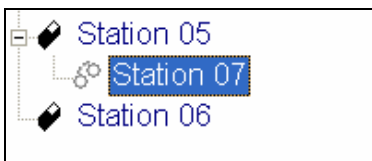


Figure 16.4.43B

Note: Master and Slave Moisture Sensors stations must be assigned to the same programs (Figure 16.4.44B).

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 16.4.44B

- 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 16.4.45B).

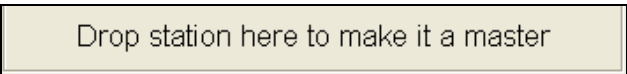


Figure 16.4.45B

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 16.4.46B).

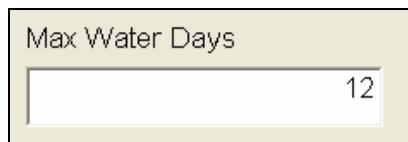


Figure 16.4.46B

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 16.4.47B).

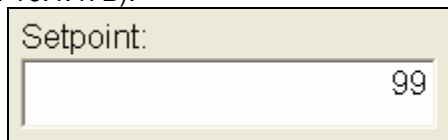


Figure 16.4.47B

Last reading: This is the moisture sensors last reading, a new reading is taken before each irrigation cycle (Figure 16.4.48B).

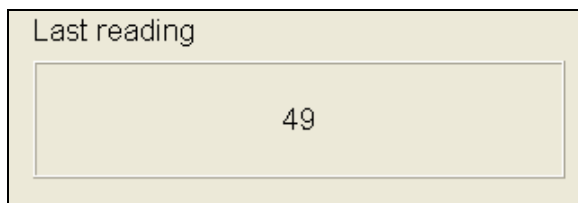


Figure 16.4.48B



16.5 ET2000 (400 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 16.5.1B).

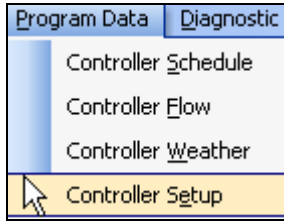


Figure 16.5.1B

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

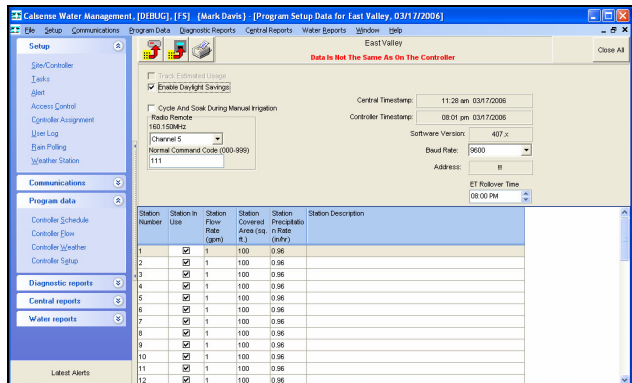


Figure 16.5.2B

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 16.5.3B).

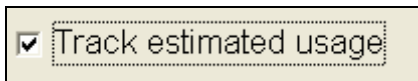


Figure 16.5.3B

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 16.5.4B).

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 16.5.4B

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 16.5.5B).

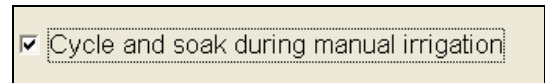


Figure 16.5.5B

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



Figure 16.5.6B

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

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

Central timestamp:	08:17 am 03/16/2006
Controller timestamp:	08:17 am 03/16/2006

Figure 16.5.7B

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

Software Version:	407.x
-------------------	-------

Figure 16.5.8B

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

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

Figure 16.5.9B

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 16.5.10B).

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 16.5.10B

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 16.5.11B).

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 16.5.11B).

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

Figure 16.5.11B

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 16.5.12B).

Normal Command Code (000-999)
111

Figure 16.5.12B

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

Station Number
1
2
3
4

Figure 16.5.13B

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 16.5.14B).



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 16.5.14B

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 16.5.15B).

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 16.5.15B

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

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 16.5.16B

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

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 16.5.17B

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 16.5.18B).

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 16.5.18B

16.6 ET2000 (400 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 16.6.1B).



Figure 16.6.1B

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

16.7 ET2000 (400 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 16.7.1B).



Figure 16.7.1B

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

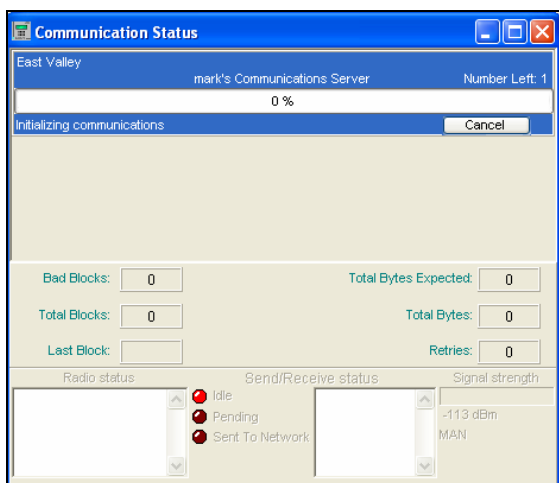


Figure 16.7.2B

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

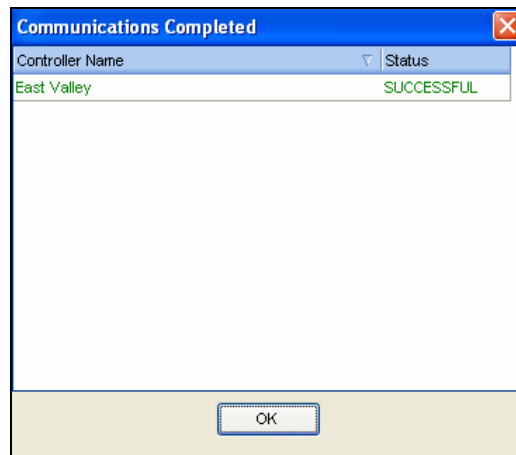


Figure 16.7.3B

2. Click on the **OK** button.

16.8 ET2000 (400 SERIES) CONTROLLER SCHEDULE PRINT PROGRAM DATA

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

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



Figure 16.8.1B

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

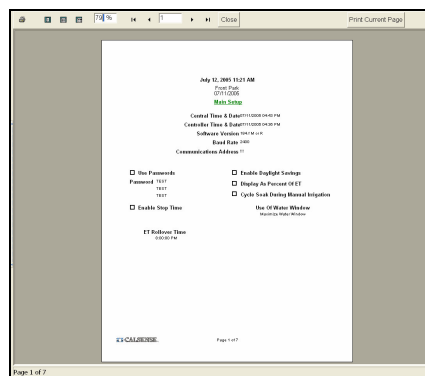


Figure 16.8.2B

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

**16.9 ET2000 (400 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.

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

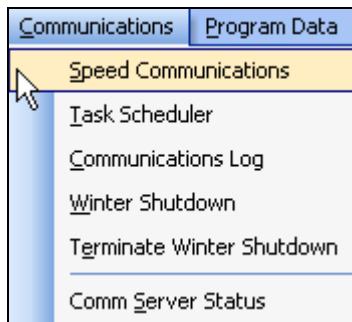


Figure 16.9.1B

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

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.

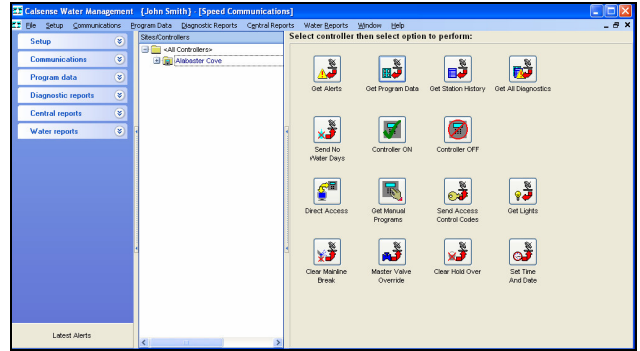


Figure 16.9.2B

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

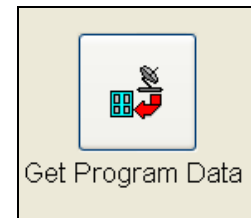
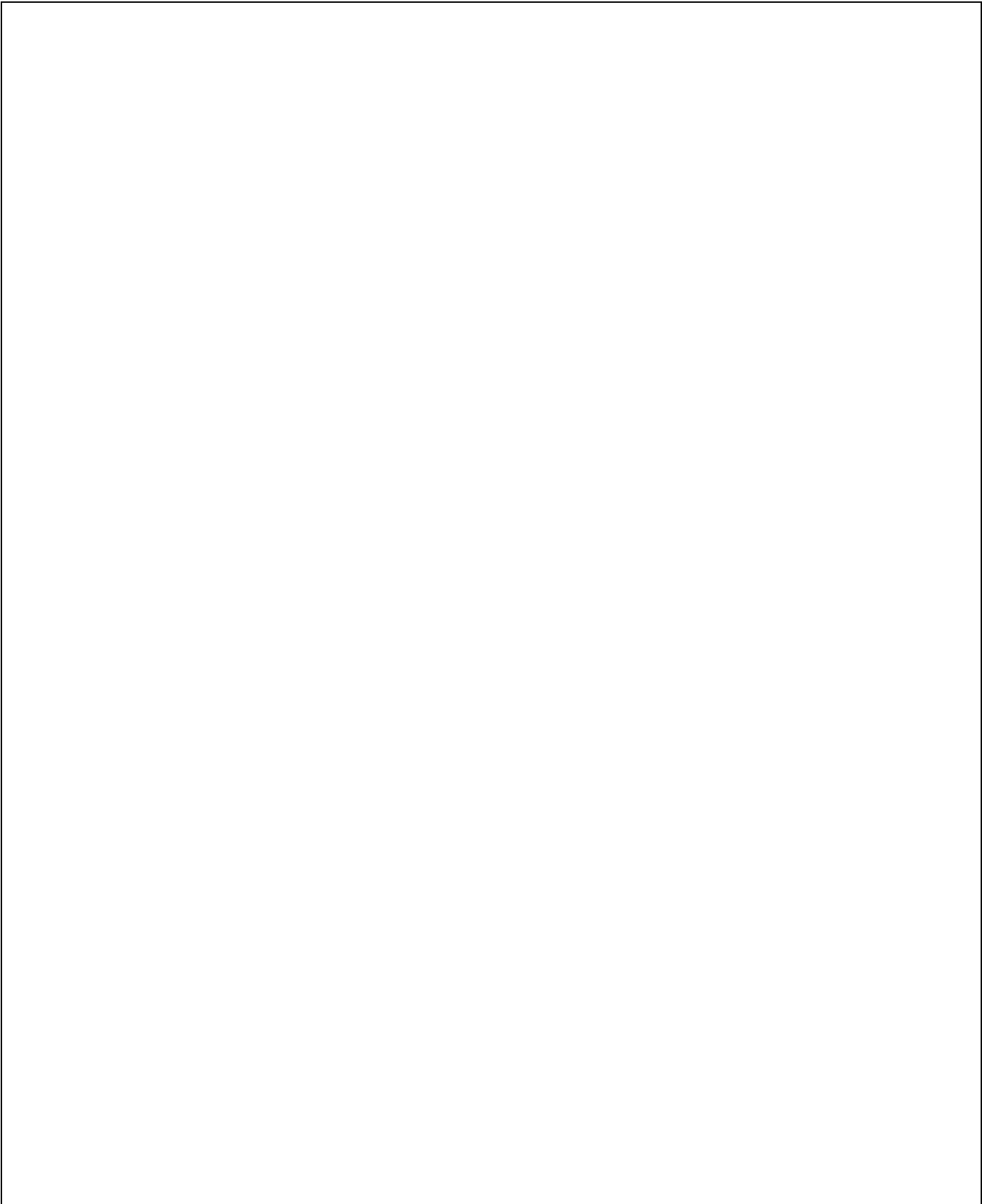


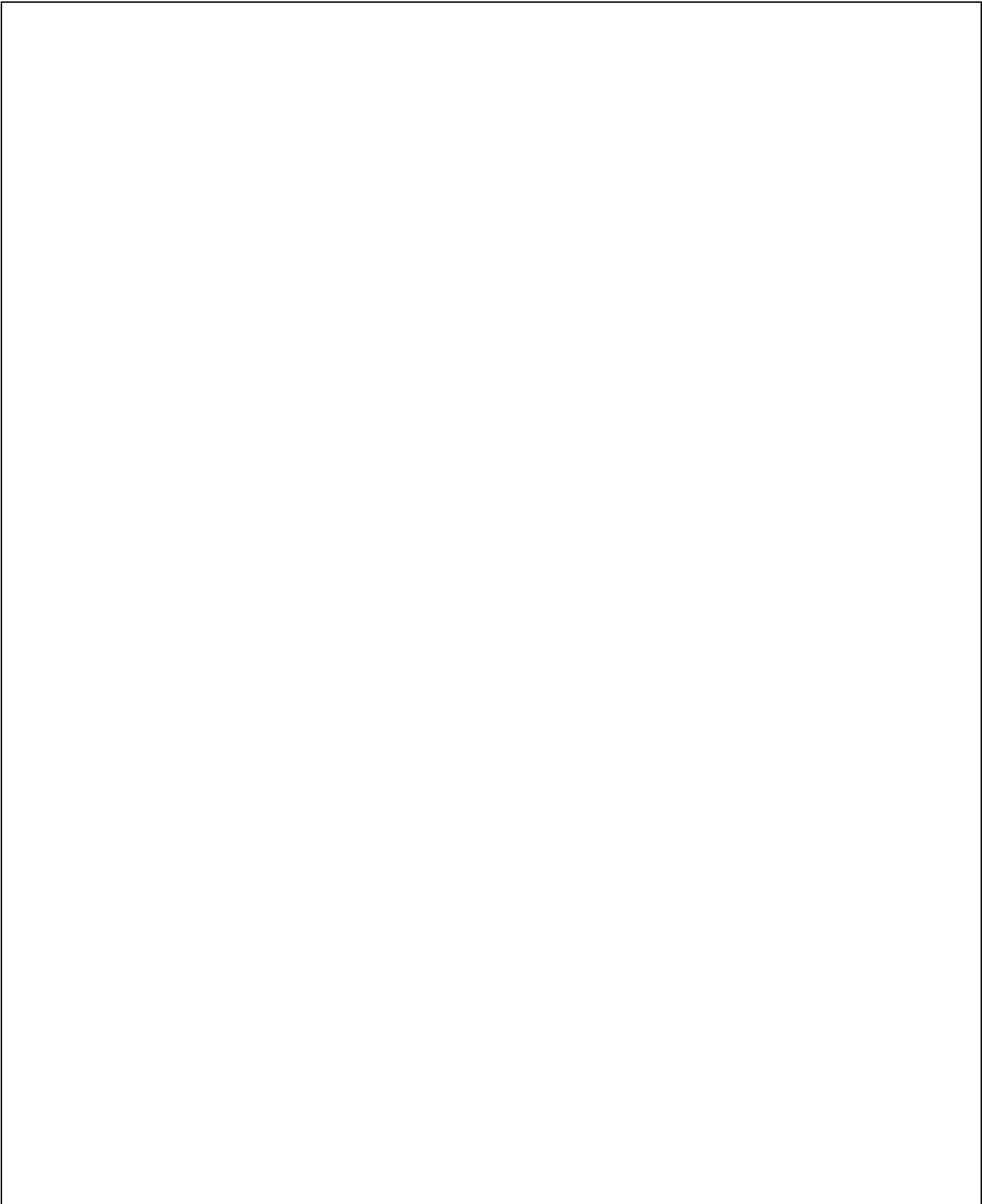
Figure 16.9.3B

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

SEE SECTION 16.1 FOR MORE DETAILS







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).

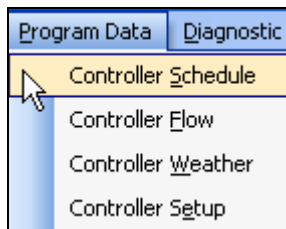


Figure 16.1.1C

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

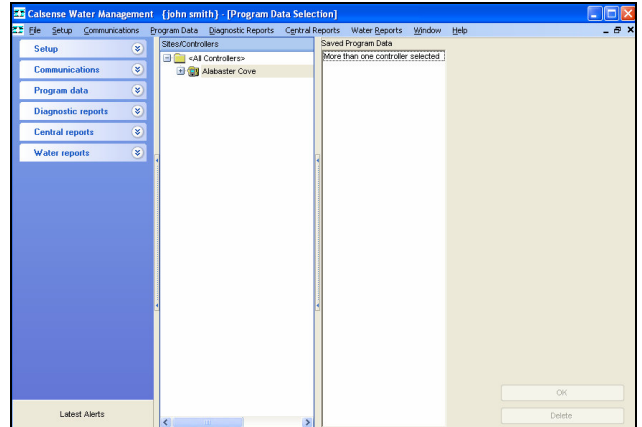


Figure 16.1.2C

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

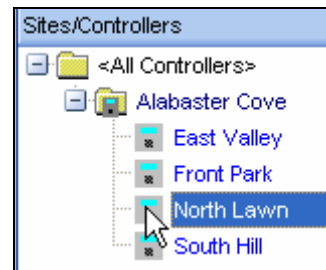


Figure 16.1.3C

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).

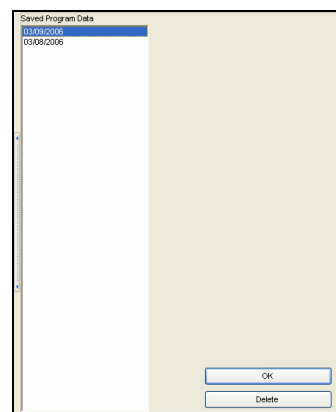


Figure 16.1.4C

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

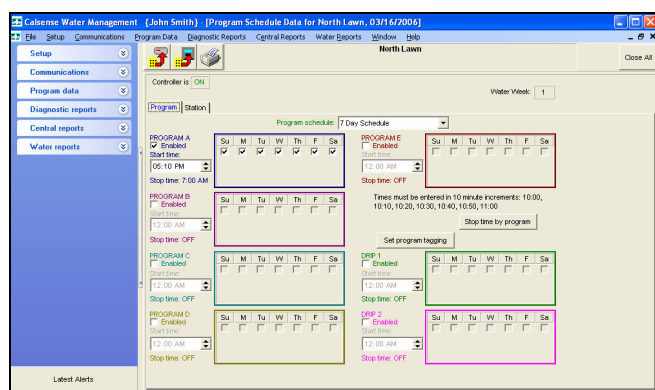


Figure 16.1.5C

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

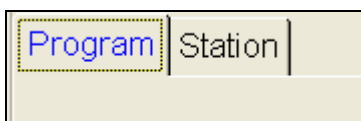


Figure 16.1.6C

5. 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.

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

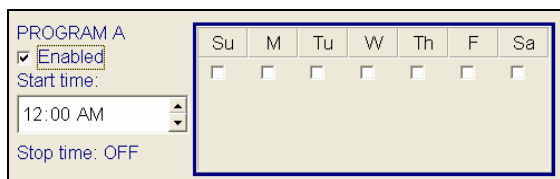


Figure 16.1.8C

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

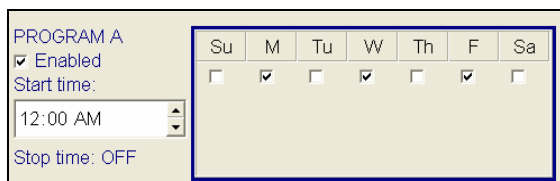


Figure 16.1.9C

8. 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).

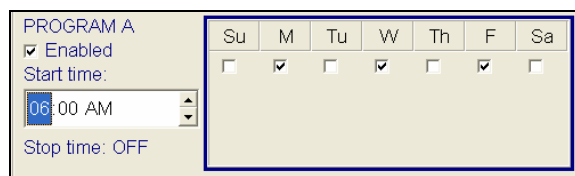


Figure 16.1.10C

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).

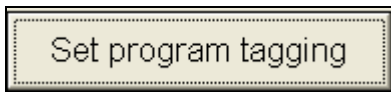


Figure 16.1.12C

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

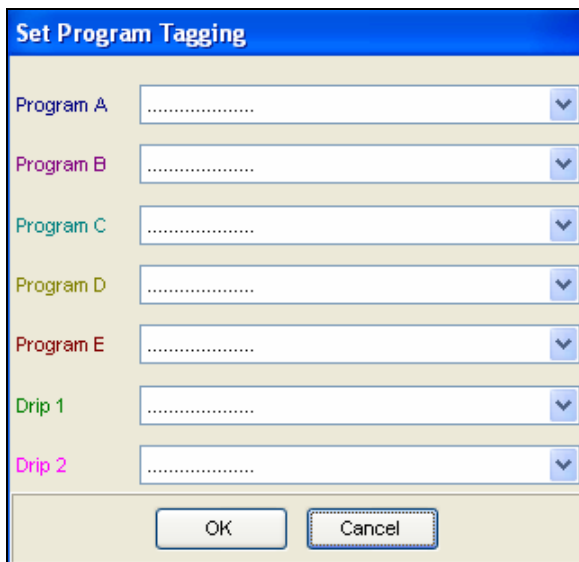


Figure 16.1.13C

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).

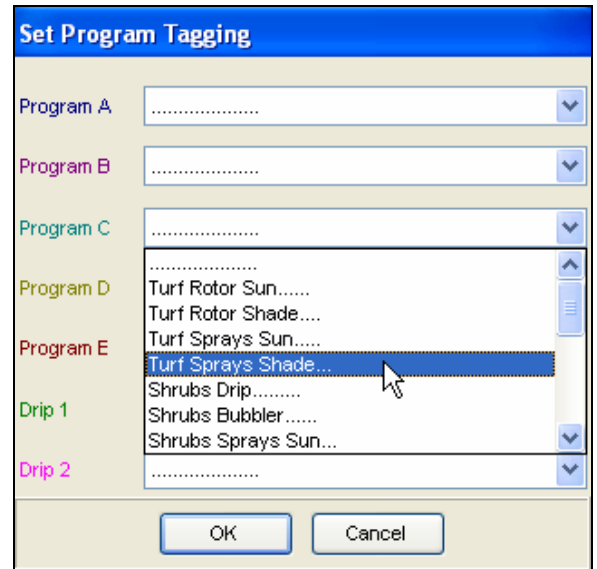


Figure 16.1.14C

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).

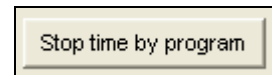


Figure 16.1.15C

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

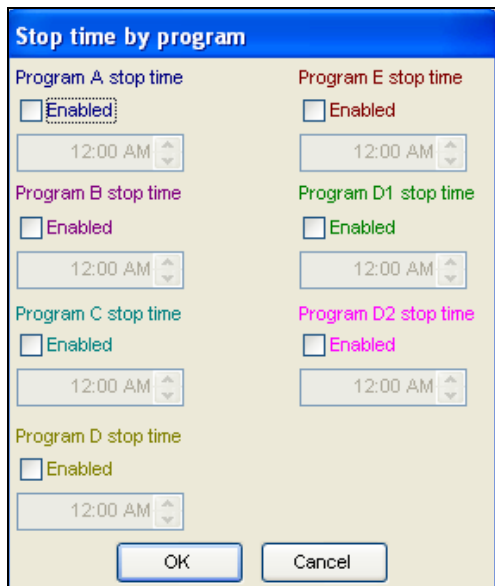


Figure 16.1.16C

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).

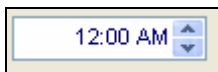


Figure 16.1.18C

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).

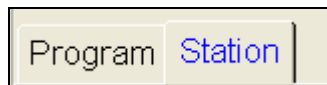


Figure 16.2.1C

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

Station number	Alert	Program	Adjustment to ET (%)	Total Minutes	Minutes per cycle	Soak-in time (mins)	No water days
1		Prog. A	100%	20	2	20	0
2		Prog. A	100%	20	2	20	0
3		Prog. A	100%	20	2	20	0
4		Prog. A	100%	20	2	20	0
5		Prog. A	100%	20	2	20	0
6		Prog. A	100%	20	2	20	0
7		Prog. A	100%	20	2	20	0
8		Prog. A	100%	20	2	20	0
9		Prog. A	100%	20	2	20	0
10		Prog. A	100%	20	2	20	0
11		Prog. A	100%	20	2	20	0
12		Prog. A	100%	20	2	20	0
13		Prog. A	100%	20	2	20	0
14		Prog. A	100%	20	2	20	0
15		Prog. A	100%	20	2	20	0
16		Prog. A	100%	20	2	20	0
17		Prog. A	100%	20	2	20	0
18		Prog. A	100%	20	2	20	0
19		Prog. A	100%	20	2	20	0
20		Prog. A	100%	20	2	20	0
21		Prog. A	100%	20	2	20	0
22		Prog. A	100%	20	2	20	0
23		Prog. A	100%	20	2	20	0
24		Prog. A	100%	20	2	20	0

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.

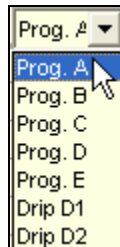


Figure 16.2.5C

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).



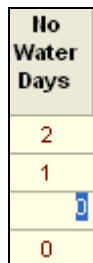


Figure 16.2.10C

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

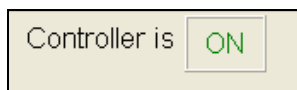


Figure 16.2.11C

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).

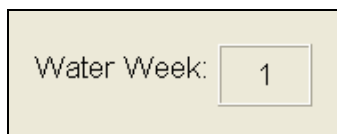


Figure 16.2.12C

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).

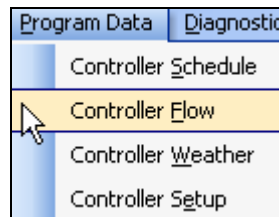


Figure 16.3.1C

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

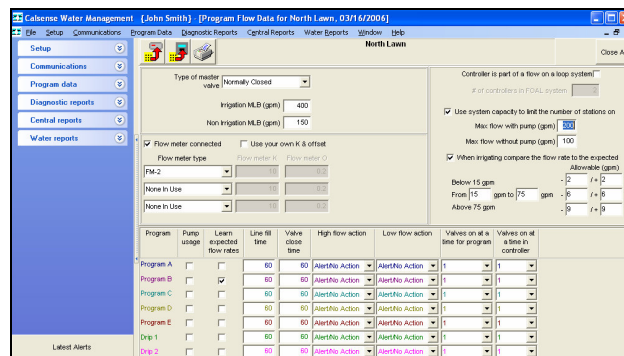


Figure 16.3.2C

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).

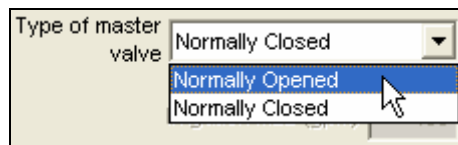


Figure 16.3.3C

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).

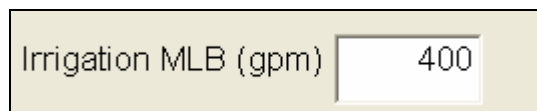


Figure 16.3.4C

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).



A dropdown menu titled "High flow action" with the following options: Alert/No Action, Do Nothing, Alert/No Action, Alert/Shutoff, Alert/No Action, Alert/No Action, Alert/No Action, and Alert/No Action. A mouse cursor is pointing at the second "Alert/No Action" option.

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).



A dropdown menu titled "Low flow action" with the following options: Alert/No Action, Alert/No Action, Alert/No Action, Alert/No Action, Alert/No Action, Alert/No Action, Alert/No Action, and 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.



A dropdown menu titled "Valves on at a time for program" with the following options: 1, 1, 2, 3, 4, X, 1, 1, and 1. A mouse cursor is pointing at the "3" option.

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.

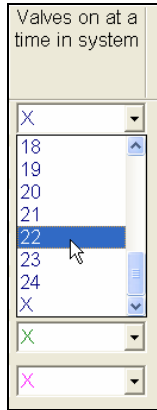


Figure 16.3.24C

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).

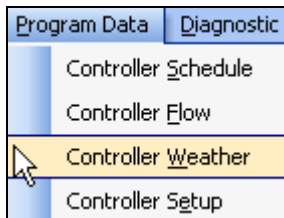


Figure 16.4.1C

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

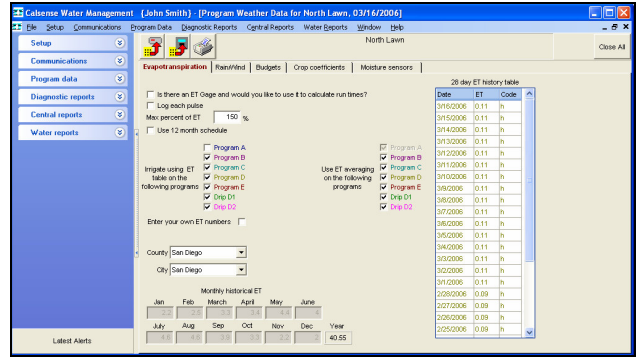


Figure 16.4.2C

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).

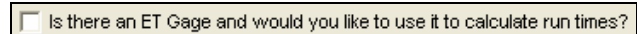


Figure 16.4.3C

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

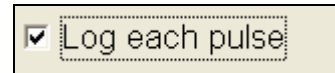


Figure 16.4.4C

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	74.76

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).

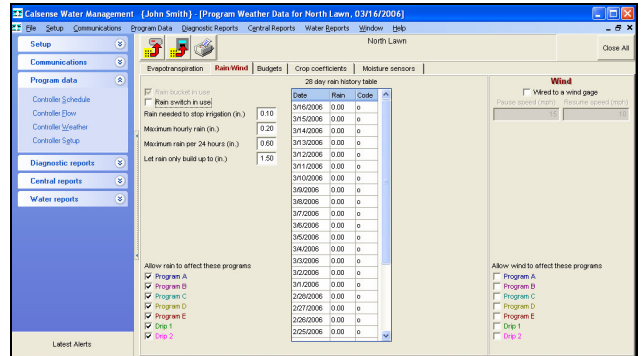


Figure 16.4.16C

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).

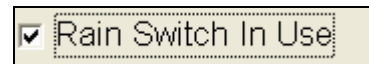


Figure 16.4.18C

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).

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).



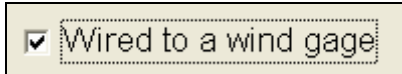


Figure 16.4.22C

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).

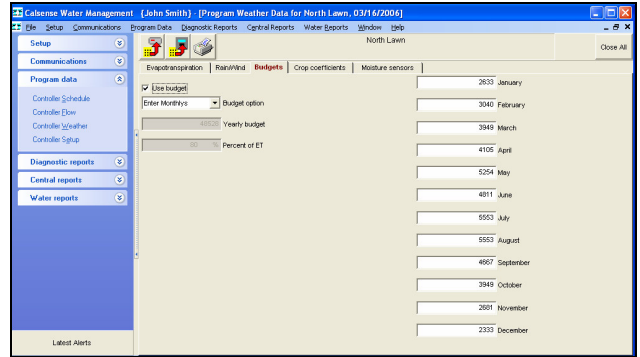


Figure 16.4.25C

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

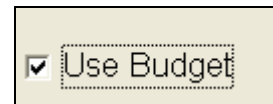


Figure 16.4.26C

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 Yearly Yearly Budget
 Enter % of ET

Figure 16.4.27C

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

15433	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).

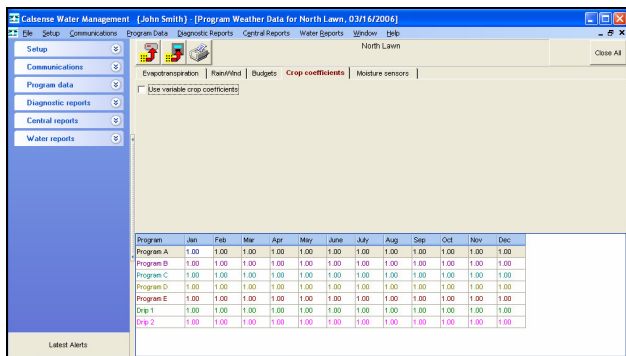


Figure 16.4.32C

- 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).

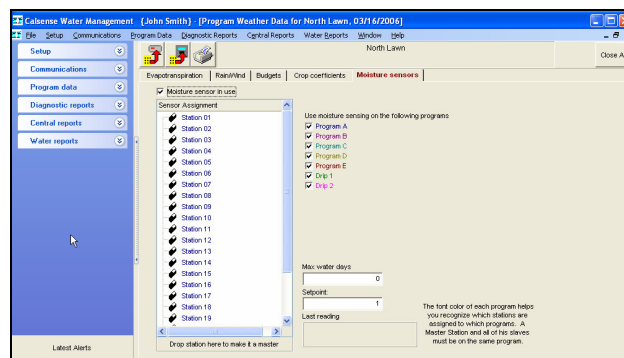


Figure 16.4.35C

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

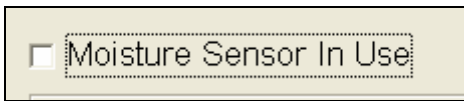


Figure 16.4.36C

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

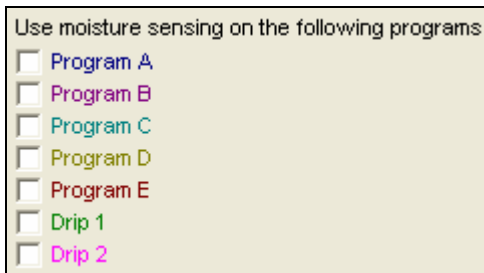


Figure 16.4.37C

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

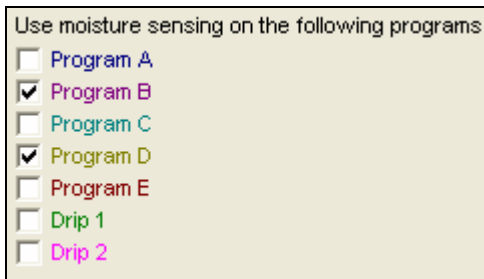


Figure 16.4.38C

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

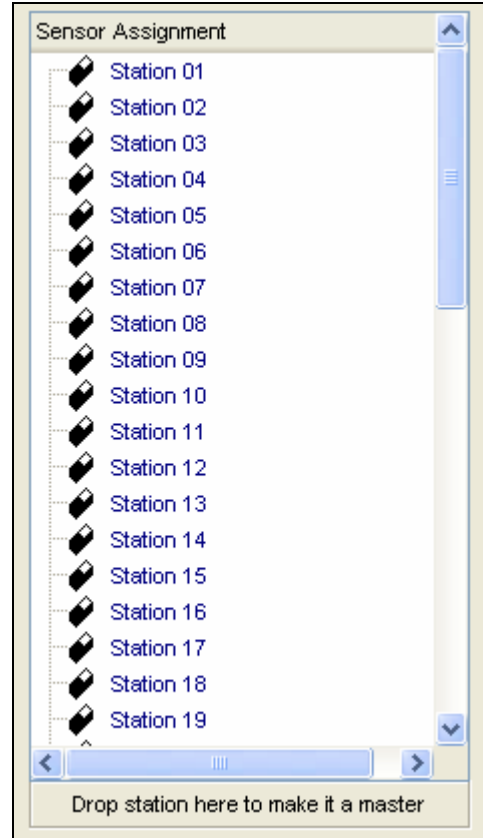


Figure 16.4.39C

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).

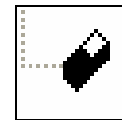


Figure 16.4.40C

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

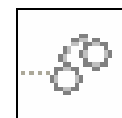


Figure 16.4.41C



Note: To assign stations as slaves to another station:

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

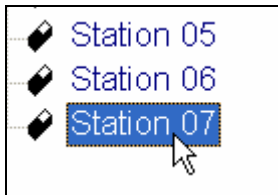


Figure 16.4.42C

- 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).

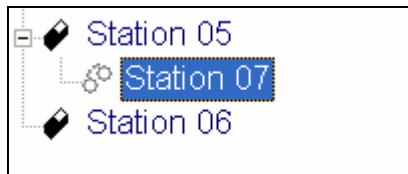


Figure 16.4.44C

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).

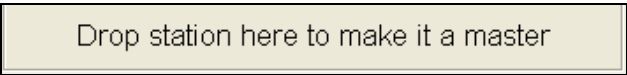


Figure 16.4.46C

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).

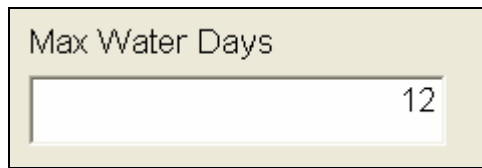


Figure 16.4.47C

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).

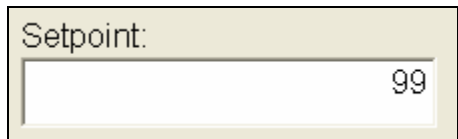


Figure 16.4.48C

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).

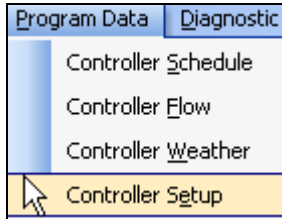


Figure 16.5.1C

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

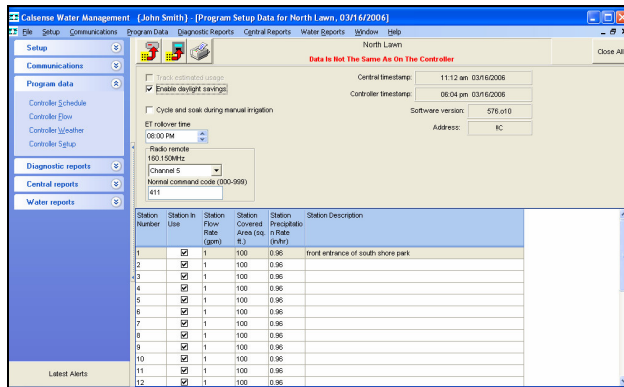


Figure 16.5.2C

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).

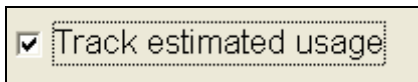


Figure 16.5.3C

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).

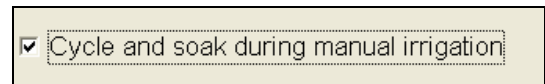


Figure 16.5.5C

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

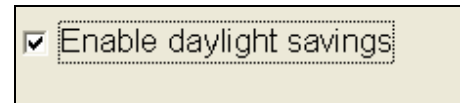


Figure 16.5.6C

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).

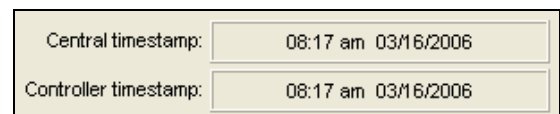


Figure 16.5.7C

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 capitol 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).

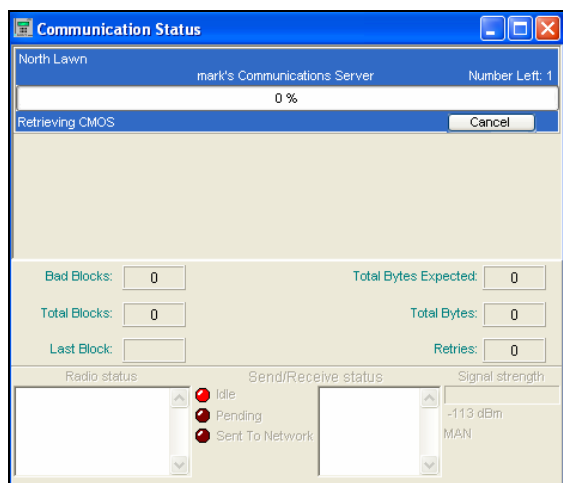


Figure 16.7.2C

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

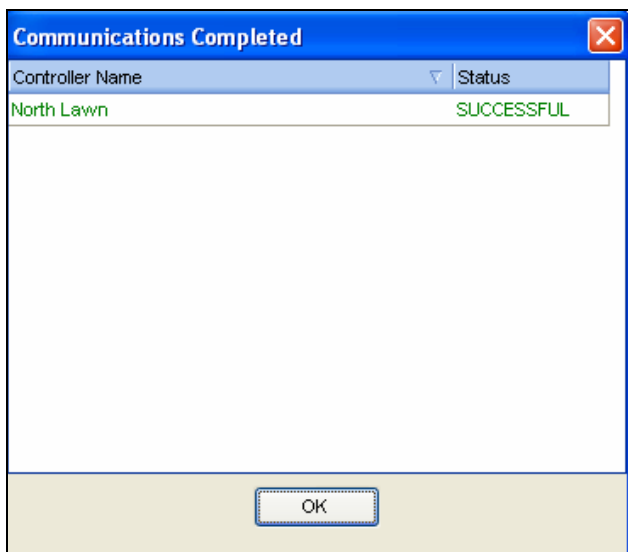


Figure 16.7.3C

2. 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.

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

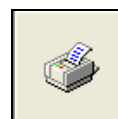


Figure 16.8.1C

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

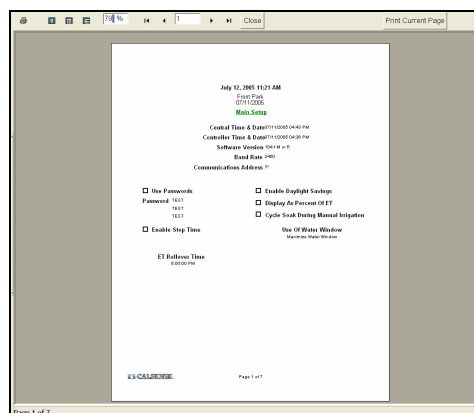


Figure 16.8.2C

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.

1. 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).

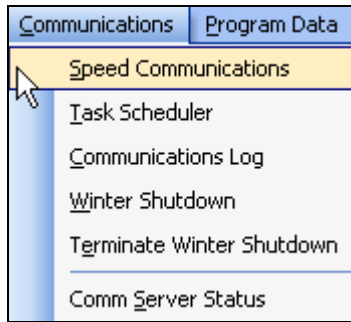


Figure 16.9.1C

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.

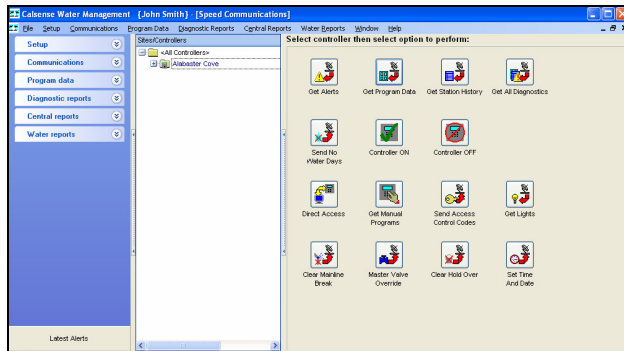


Figure 16.9.2C

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

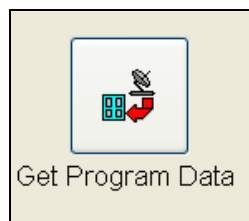
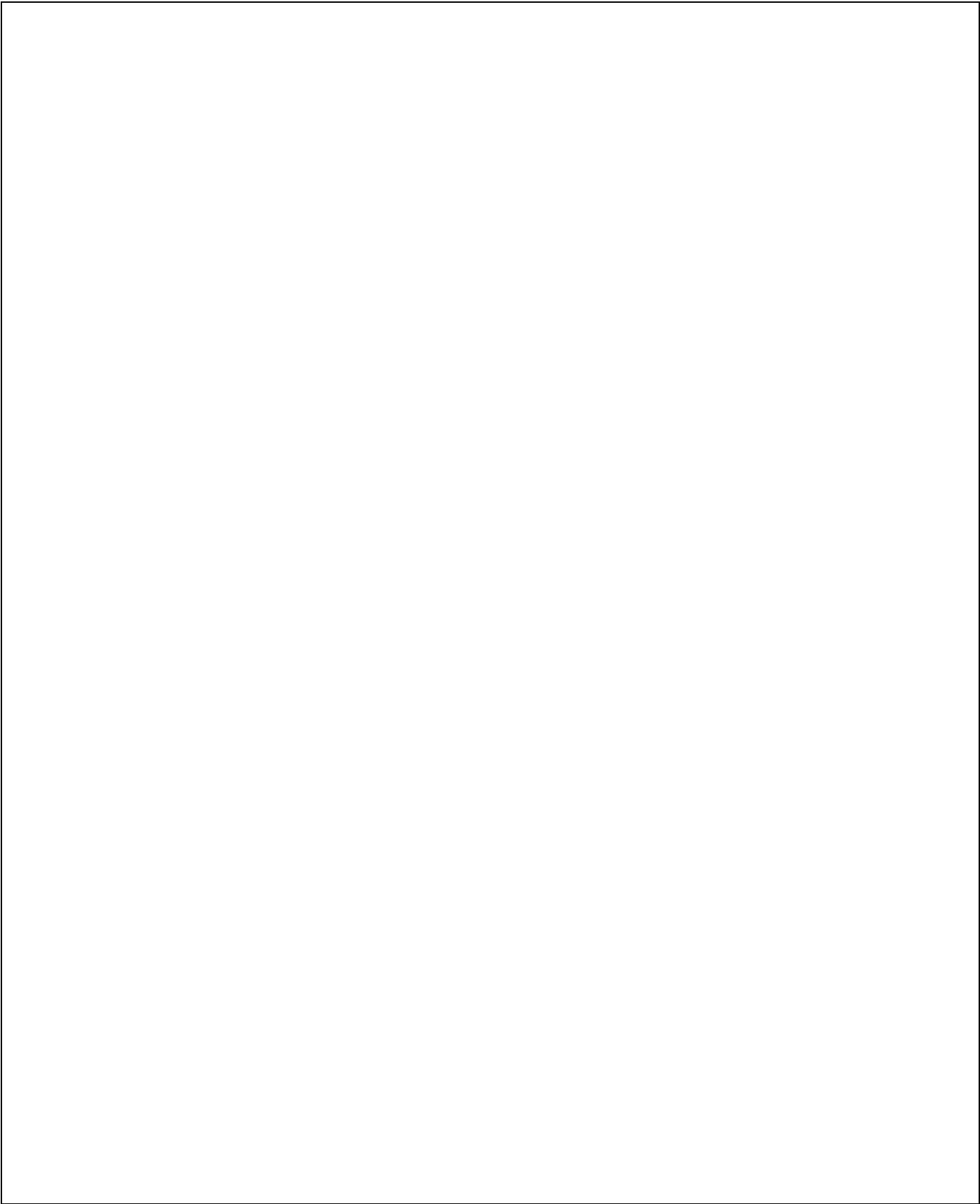
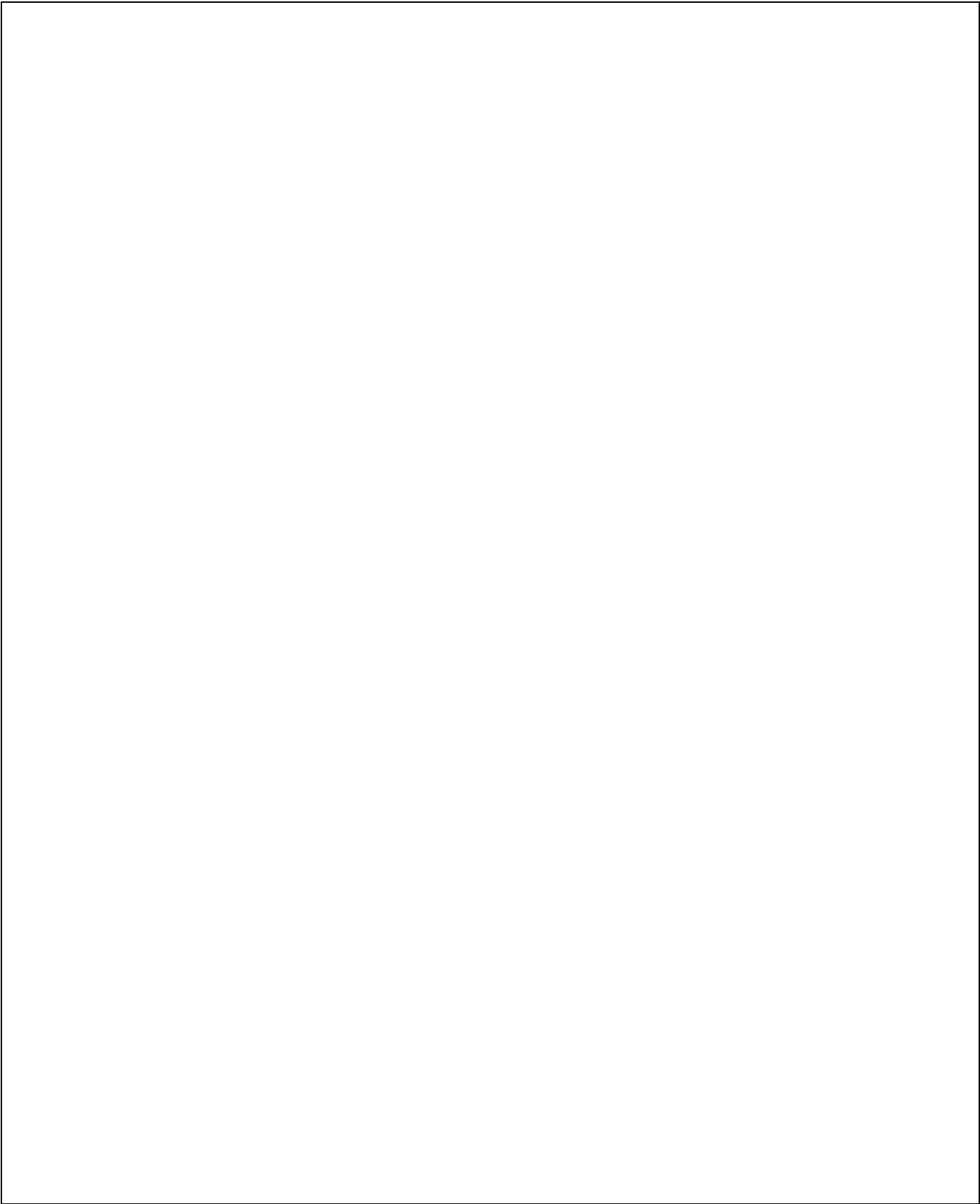


Figure 16.9.3C

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

SEE SECTION 16.1 FOR MORE DETAILS





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**16.0 (TAB D) ET2000e
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 ET2000e
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 16.1.1D).

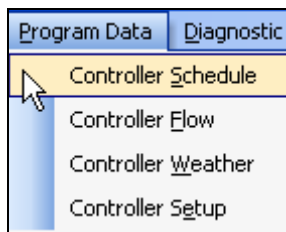


Figure 16.1.1D

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

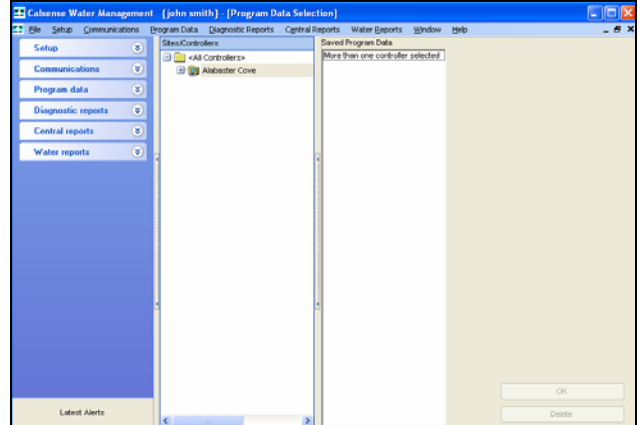


Figure 16.1.2D

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

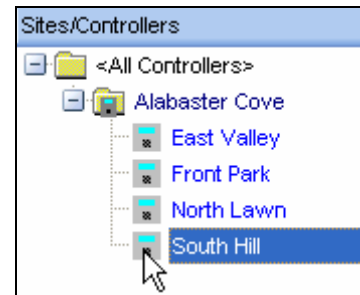


Figure 16.1.3D

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 16.1.4D).

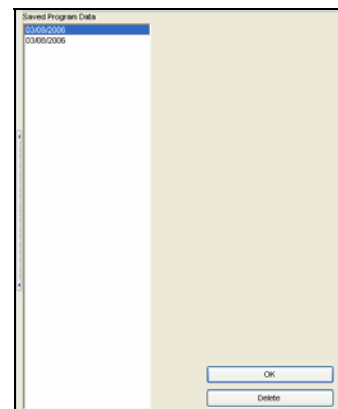


Figure 16.1.4D

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 16.1.5D).

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

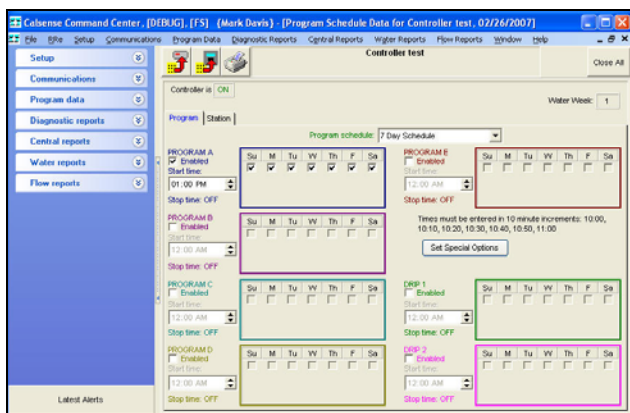


Figure 16.1.5D

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

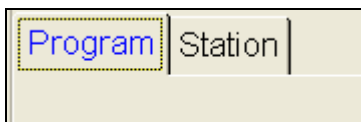


Figure 16.1.6D

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

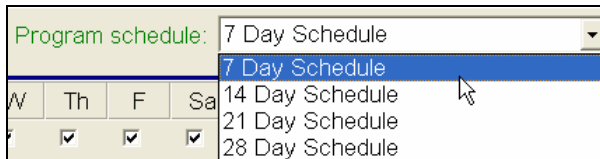


Figure 16.1.7D

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 16.1.8D).

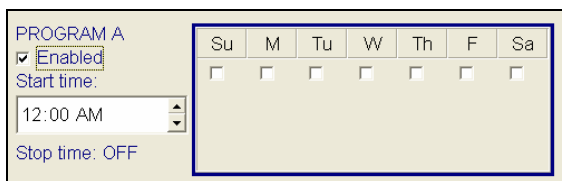


Figure 16.1.8D

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

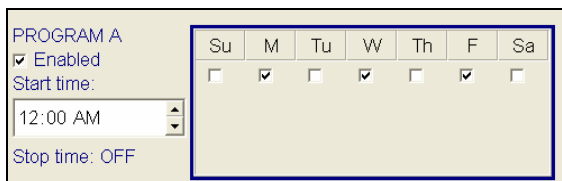


Figure 16.1.9D

- 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 16.1.10D).

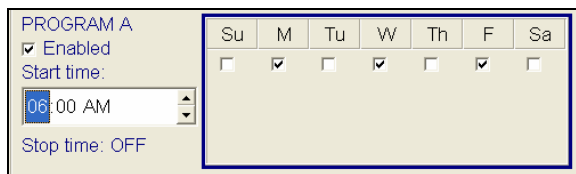


Figure 16.1.10D

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 16.1.11D).



Figure 16.1.11D

9. You can enter a name for each program by clicking on the **Set Special Options** and scrolling down. Select the **Set program tagging** button (Figure 16.1.12D).

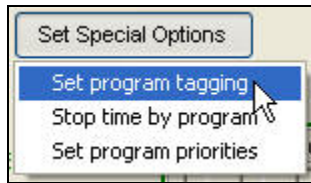


Figure 16.1.12D

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

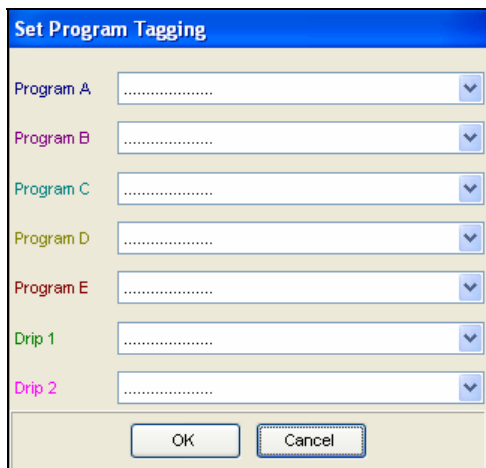


Figure 16.1.13D

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

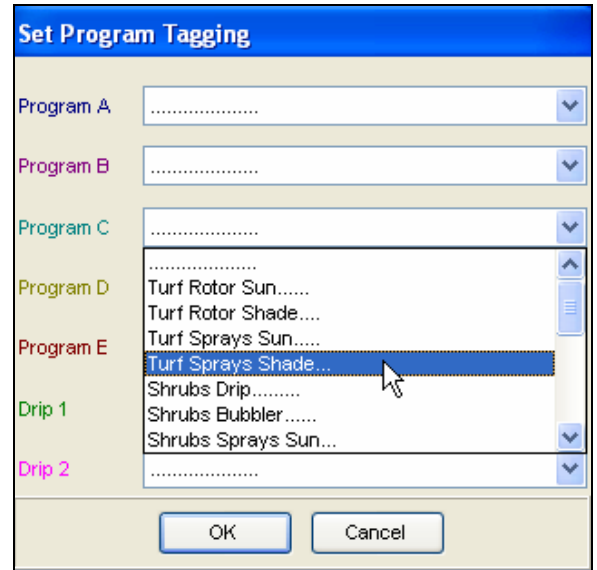


Figure 16.1.14D

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 **Set Special Options** and scrolling down. Select the **Stop time by program** button (Figure 16.1.15D).

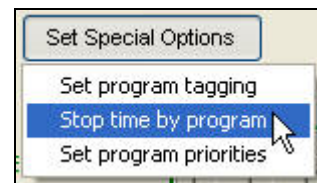


Figure 16.1.15D

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

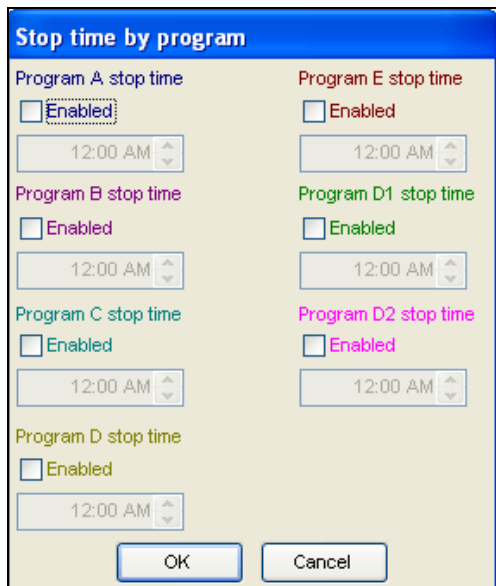


Figure 16.1.16D

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



Figure 16.1.17D

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 16.1.18D).

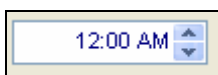


Figure 16.1.18D

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. You can enter a priority for each program by clicking on the **Set Special Options** and scrolling down. Select the **Set program priorities** button (Figure 16.1.19D).

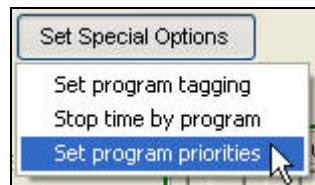


Figure 16.1.19D

Note: This will take you to the **“Program Priorities”** screen (Figure 16.1.16D).

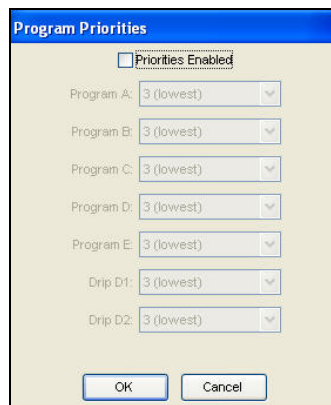


Figure 16.1.20D

17. You can enable program priorities by clicking on the **Priorities Enabled** button (Figure 16.1.21D).



Figure 16.1.21D

18. By using the drop down arrow to the right you can choose a level of priority for each program listed (Figure 16.1.22D).

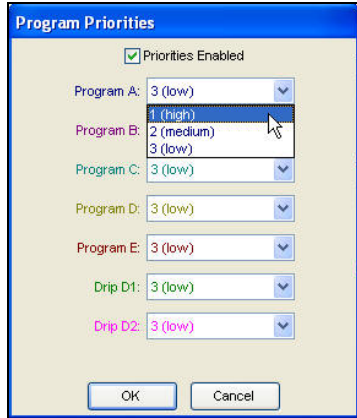


Figure 16.1.22D

1 (highest): This setting will take precedence over the other two settings.

2 (Medium): This is the middle setting of the three and will irrigate prior to any program set for 3(lowest), but will not go before a program set to 1(highest).

3 (lowest): This setting will wait for any other program set to 2 or 1 (Highest) before beginning irrigation.

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

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

**16.2 ET2000e
CONTROLLER SCHEDULE
STATION ASSIGNMENT**

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

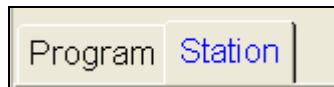


Figure 16.2.1D

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

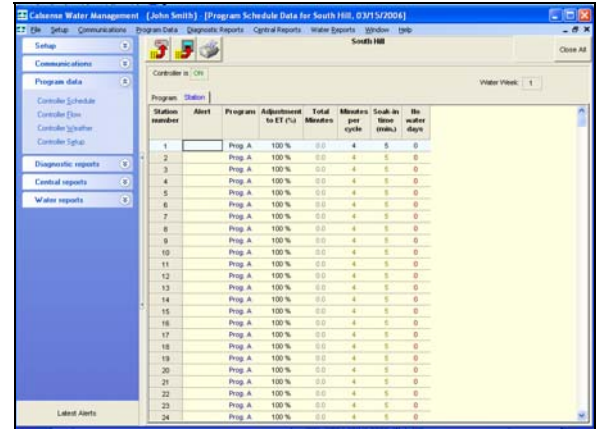


Figure 16.2.2D

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

Station Number
1
2
3
4

Figure 16.2.3D

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

Station Number	Alert
1	
2	
3	
4	HighFlow

Figure 16.2.4D

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

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

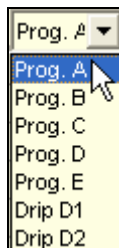


Figure 16.2.5D

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 16.2.6D).

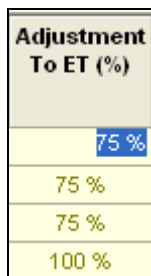


Figure 16.2.6D

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 16.2.7D).

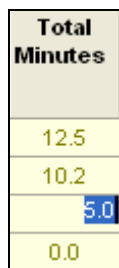


Figure 16.2.7D

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 16.2.8D).

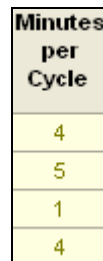


Figure 16.2.8D

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 16.2.9D).

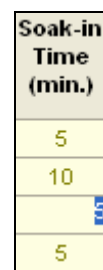


Figure 16.2.9D

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 16.2.10D).



Figure 16.2.10D

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

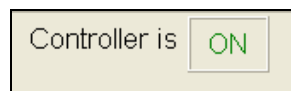


Figure 16.2.11D

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 16.2.12D).

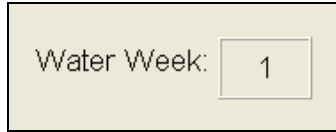


Figure 16.2.12D

16.3 ET2000e 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.

Note: If the controller you have retrieved Program Data from is an ET2000e with the (-F) option installed see section 16.10 ET2000e (-F) Option for detailed instructions.

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

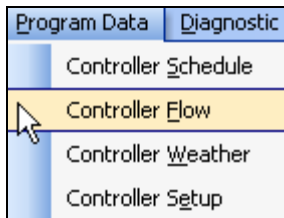


Figure 16.3.1D

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

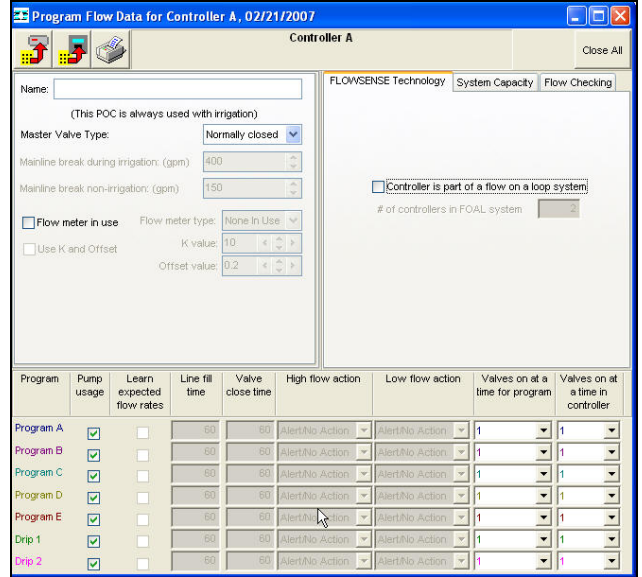


Figure 16.3.2D

2. Click on the **Name** box to type in a description for this Point of Connection (Figure 16.3.3D).



Note: This description will appear on the Point of Connection screen on the controller when program data is sent to the controller.

3. Click on the **Master Valve Type** box and select from the drop down list the type of Master Valve that you have for this controller (Figure 16.3.3D).



Figure 16.3.3D

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

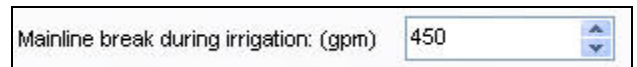


Figure 16.3.4D

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 16.3.5D).

Figure 16.3.5D

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

Figure 16.3.6D

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

Figure 16.3.7D

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 1.50B:** This is a one and a half inch brass flow meter.
- FM 2:** This is a two inch PVC flow meter.
- FM2B:** This is a two inch brass 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 16.3.8D).

Figure 16.3.8D

FLOWSENSE TECHNOLOGY TAB

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

Figure 16.3.9D

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

Figure 16.3.10D

SYSTEM CAPACITY TAB

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 16.3.11D).

Figure 16.3.11D

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 16.3.12D).

Max flow with pump (gpm)

Figure 16.3.12D

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 16.3.13D).

Max flow without pump (gpm)

Figure 16.3.13D

FLOW CHECKING TAB

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 16.3.14D).

When irrigating compare the flow rate to the expected

Figure 16.3.14D

	Allowable (gpm)
Below 30 gpm	- 5 / + 5
From <input type="text" value="30"/> gpm to <input type="text" value="65"/> gpm	- 10 / + 10
From 65 gpm to <input type="text" value="100"/> gpm	- 10 / + 10
Above 100 gpm	- 15 / + 15

Figure 16.3.15D

Note: The four levels in figure 16.3.15D are designed to set up different alert parameters for your entire flow regime from lowest to highest flowing valves.

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

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

1st From / to: This section allows you to set the fluctuation limits for the lower range of your medium flowing valves. In this box you want to enter the lower normal operating range of water flow. Then in the (-) and (+) blocks enter the range of fluctuation that you deem normal (Figure 16.3.15D).

Example:

If you set the limit at 30 gpm to 65 gpm.
Then set your (-) limit at 10, and your (+) limit at 10.
You will be alerted if the pressure at the lower middle of the scale fluctuates by more than ten gallons per minute in either direction.
That is less than 20 gpm or more than 75 gpm

2nd From / to: This section allows you to set the fluctuation limits for the upper range of your medium flowing valves. In this box you want to enter the upper normal operating range of water flow. Then in the (-) and (+) blocks enter the range of fluctuation that you deem normal (Figure 16.3.15D).

Example:

If you set the limit at 65 gpm to 100 gpm.
Then set your (-) limit at 10, and your (+) limit at 10.
You will be alerted if the pressure at the upper middle of the scale fluctuates by more than ten gallons per minute in either direction.
That is less than 55 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 16.3.15D).

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 16.3.16D).

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

Figure 16.3.16D

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

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 16.3.17D

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 un-check itself. This number will not change until the box is checked again (Figure 16.3.18D).

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 16.3.18D

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 16.3.19D).



Line fill time
60
60
60
60
60
60
60
60

Figure 16.3.19D

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 16.3.20D).

Valve close time
60
60
60
60
60
60
60
60

Figure 16.3.20D

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

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 16.3.21D

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.

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

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

Figure 16.3.22D

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 16.3.23D).

- **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.

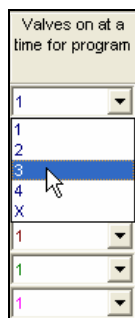


Figure 16.3.23D

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 16.3.24D).

- **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.

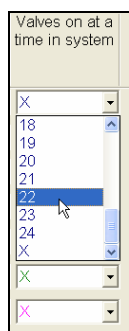


Figure 16.3.24D

16.4 ET2000e 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 16.4.1D).

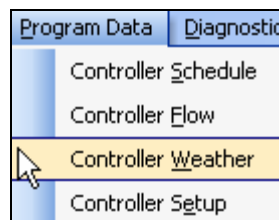


Figure 16.4.1D

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

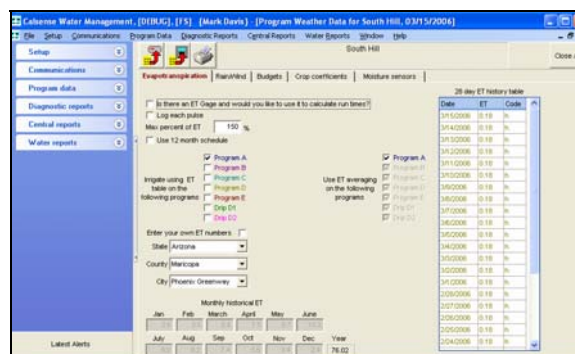


Figure 16.4.2D

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 16.4.3D).

Is there an ET Gage and would you like to use it to calculate run times?

Figure 16.4.3D

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

Log each pulse

Figure 16.4.4D

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

Max Percent Of ET %

Figure 16.4.5D

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 16.4.6D).

Use 12 Month Schedule

Figure 16.4.6D

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 16.4.7D).

Controller is Water Week:

Figure 16.4.7D

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

Irrigate using ET table on the following programs

- Program A
- Program B
- Program C
- Program D
- Program E
- Drip D1
- Drip D2

Figure 16.4.8D

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

Use ET averaging on the following programs

- Program A
- Program B
- Program C
- Program D
- Program E
- Drip D1
- Drip D2

Figure 16.4.9D

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

Enter your own ET numbers

Figure 16.4.10D

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

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	74.76

Figure 16.4.11D

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



6. Use the drop down arrow next to **State** to select a compatible state (Figure 16.4.12D).

Figure 16.4.12D

7. Next use the drop down arrow next to the **County** within that state (Figure 16.4.13D).

Figure 16.4.13D

8. Next use the drop down arrow next to the **City** within that county (Figure 16.4.14D).

Figure 16.4.14D

Note: This will automatically adjust the ET numbers for each Month and the Year box (Figure 16.4.15D).

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 16.4.15D

Note: the 28 Day ET Historical Table shows the ET averages for the last 28 days consecutively (Figure 16.4.16D).

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 16.4.16D

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 16.4.17D).



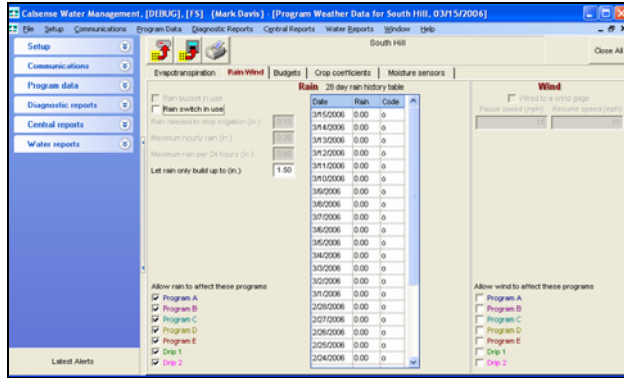


Figure 16.4.17D

Note: If a Rain Bucket (-RB) option is installed in this controller the **Rain Bucket In Use** box will be checked automatically (Figure 16.4.18D).

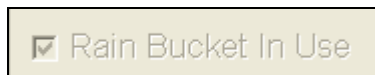


Figure 16.4.18D

- If you are using a Rain Switch check the **Rain Switch In Use** box (Figure 16.4.19D).



Figure 16.4.19D

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 16.4.20D .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 16.4.20D 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 16.4.20D 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 16.4.20D 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 16.4.20D

- In the **“Allow Rain To Affect These Programs”** section check the box next to each program that you want rain to factor into (Figure 16.4.21D).

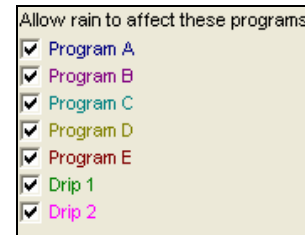


Figure 16.4.21D

Note: the **“28 Day Rain History Table”** shows the rain averages for the last 28 days consecutively (Figure 16.4.22D).



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 16.4.22D

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 16.4.23D).

Wired to a wind gage

Figure 16.4.23D

Pause speed (mph): This is the wind speed, or above, at which you want all irrigation to temporarily pause (Figure 16.4.24D).

Resume speed (mph): This is the wind speed, or below, that you want the irrigation to resume at (Figure 16.4.24D).

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

Figure 16.4.24D

Allow wind to affect these programs: Check the box for each program that you want the wind settings to affect (Figure 16.4.25D).

Allow wind to affect these programs

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

Figure 16.4.25D

BUDGETS

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

Note: This will take you to the “**Budgets**” screen (Figure 16.4.26D).

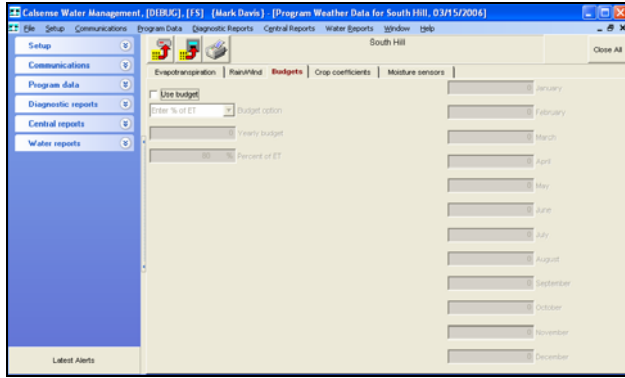


Figure 16.4.26D

- Click on the **Use Budget** box if you want to use a budget (Figure 16.4.27D).

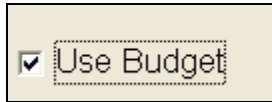


Figure 16.4.27D

- Next use the drop down arrow next to the **Budget Option** box to select the type of budget desired (Figure 16.4.28D).

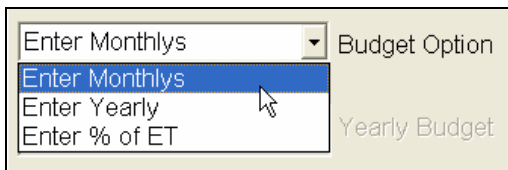


Figure 16.4.28D

Enter Monthlys: This option allows you to enter your own budget gallons per month (Figure 16.4.29D).

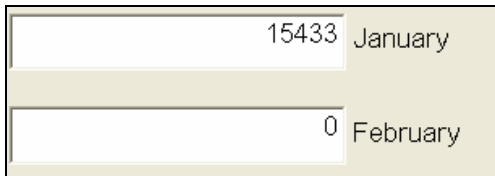


Figure 16.4.29D

Enter Yearly: This option allows you to set a budget number in gallons for the year (Figure 16.4.30D).



Figure 16.4.30D

Note: This will automatically change all of the month entries based on ET (Figure 16.4.31D).



Figure 16.4.31D

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 16.4.32D).

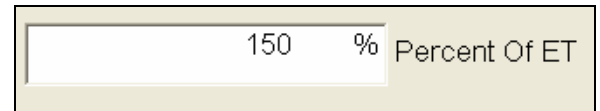


Figure 16.4.32D

CROP COEFFICIENTS

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

Note: This will take you to the **“Crop Coefficients”** screen (Figure 16.4.33D).

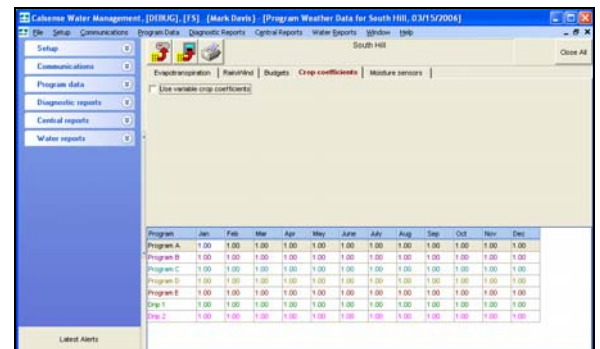


Figure 16.4.33D



- Click on the **Use Variable Crop Coefficients** button to use Crop Coefficients (Figure 16.4.34D).

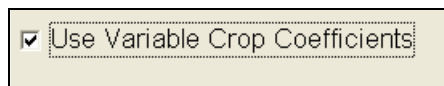


Figure 16.4.34D

Note: This will allow you to enter a multiplier number, by program, for each month allowing you to alter calculated run times (Figure 16.4.35D).

Program	Jan
Program A	1.50
Program B	1.00
Program C	1.00

Figure 16.4.35D

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 16.4.36D).

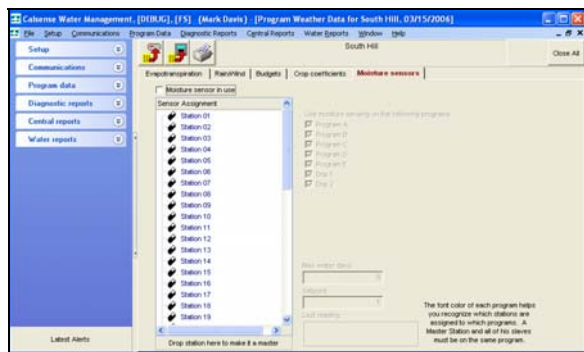


Figure 16.4.36D

- If you are currently using Moisture sensors click the **Moisture Sensor In Use** box (Figure 16.4.37D).

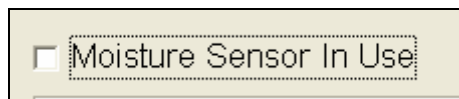


Figure 16.4.37D

Note: This will open up the “**Use Moisture Sensing On The Following Programs**” section (Figure 16.4.38D).

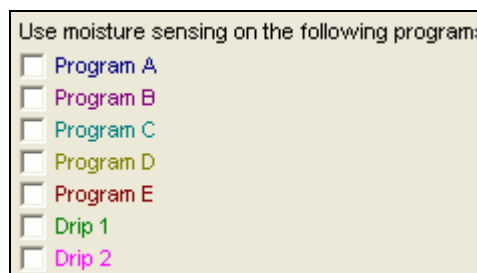


Figure 16.4.38D

- Place a check in each program box that you want to use moisture sensors on (Figure 16.4.39D).

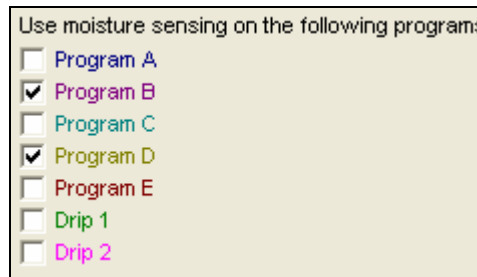


Figure 16.4.39D

Note: This will place all of the stations currently available in the “**Sensor Assignment**” Window (Figure 16.4.40D).

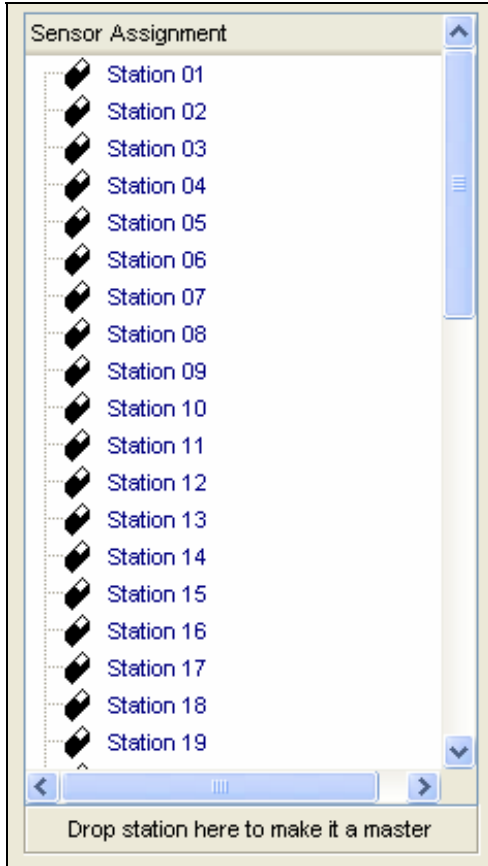


Figure 16.4.40D

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 16.4.41D).

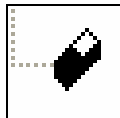


Figure 16.4.41D

Slave: Slave stations are stations without sensors and are assigned to a master station that shares similar water requirements (Figure 16.4.42D).

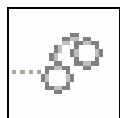


Figure 16.4.42D

Note: To assign stations as slaves to another station:

- Click on the station that you want to make a slave (Figure 16.4.43D)



Figure 16.4.43D

- While holding down the left button of the mouse, drag this station to the one you want to slave it to (Figure 16.4.44D).

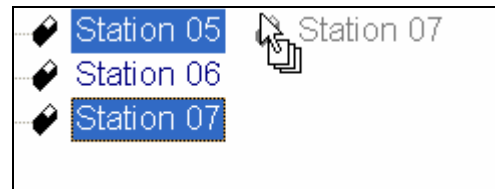


Figure 16.4.44D

- 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 16.4.45D).

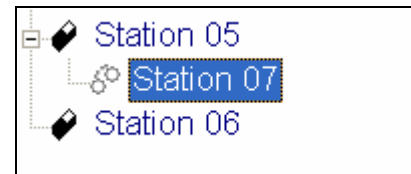


Figure 16.4.45D

Note: Master and Slave Moisture Sensors stations must be assigned to the same programs (Figure 16.4.46D).

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 16.4.46D

- 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 16.4.47D).

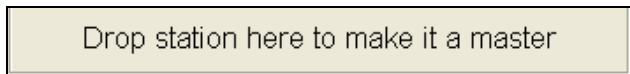


Figure 16.4.47D

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 16.4.48D).

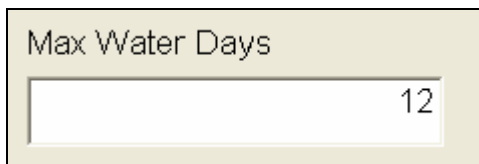


Figure 16.4.48D

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 16.4.49D).



Figure 16.4.49D

Last reading: This is the moisture sensors last reading, a new reading is taken before each irrigation cycle (Figure 16.4.50D).

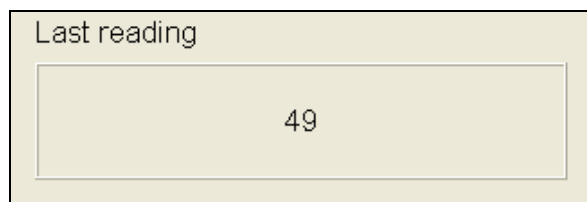


Figure 16.4.50D

16.5 ET2000e CONTROLLER SETUP

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

- 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 16.5.1D).

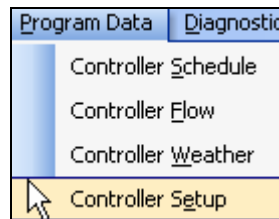


Figure 16.5.1D

Note: This will take you to the "Controller Setup" screen (Figure 16.5.2D).

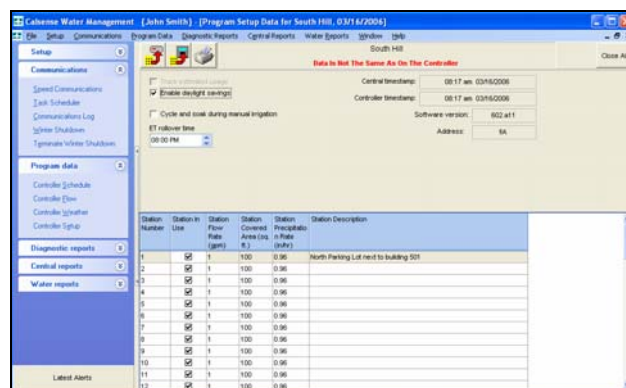


Figure 16.5.2D

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 16.5.3D).

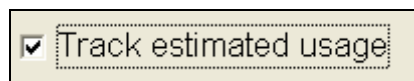


Figure 16.5.3D

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 16.5.4D).

Station flow rate (gpm)
27
28
33
40
39
5
63
69

Figure 16.5.4D

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 16.5.5D).

Cycle and soak during manual irrigation

Figure 16.5.5D

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

Enable daylight savings

Figure 16.5.6D

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

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

Central timestamp: 08:17 am 03/16/2006
Controller timestamp: 08:17 am 03/16/2006

Figure 16.5.7D

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

Software version: 602.a11

Figure 16.5.8D

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

Address: !!A

Figure 16.5.9D

Note: The communications address can only be changed at the controller and the last letter of the address must be capitol 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 16.5.10D).

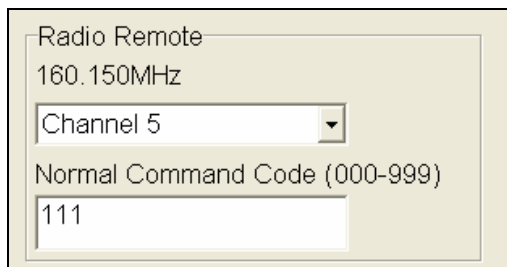
Note: Make sure that the (ET) roll over time occurs prior to the irrigation start times. This will ensure that your irrigation run time will be calculated using the most current ET data.

ET Rollover Time
08:00 PM

Figure 16.5.10D

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 16.5.11D).

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 16.5.11D).



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

Figure 16.5.11D

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 16.5.12D).



Normal Command Code (000-999)
111

Figure 16.5.12D

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

Station Number
1
2
3
4

Figure 16.5.13D

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 16.5.14D).

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 16.5.14D

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 16.5.15D).

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 16.5.15D

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

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 16.5.16D

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

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 16.5.17D

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 16.5.18D).

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 16.5.18D

16.6 ET2000e
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 16.6.1D).



Figure 16.6.1D

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

16.7 ET2000e
CONTROLLER SCHEDULE
SEND PROGRAM DATA

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

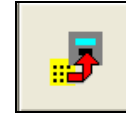


Figure 16.7.1D

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

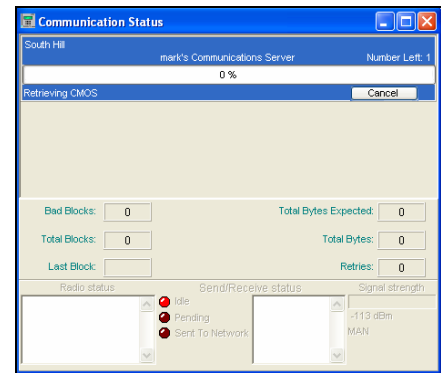


Figure 16.7.2D

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

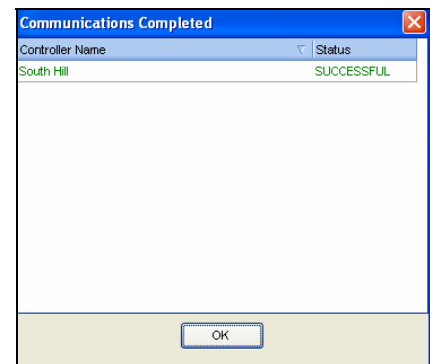


Figure 16.7.3D

2. Click on the **OK** button.

16.8 ET2000e CONTROLLER SCHEDULE PRINT PROGRAM DATA

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

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



Figure 16.8.1D

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

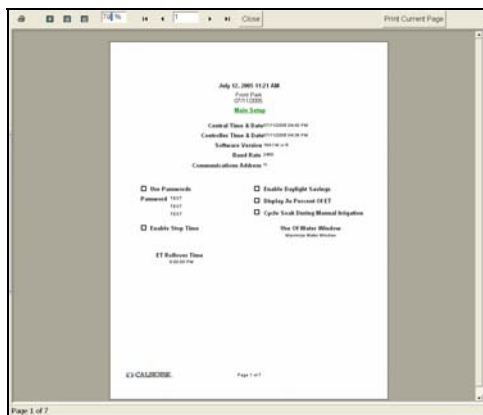


Figure 16.8.2D

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

16.9 ET2000e 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.

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

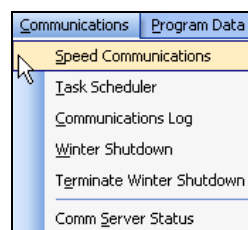


Figure 16.9.1D

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

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.

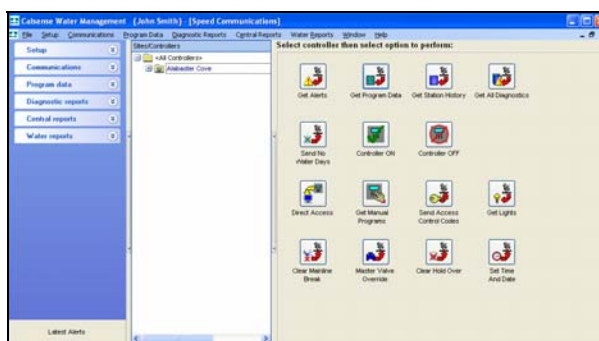


Figure 16.9.2D

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

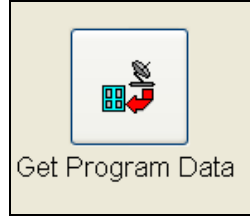


Figure 16.9.3D

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

SEE SECTION 16.1 FOR MORE DETAILS

16.10 ET2000e (-F) OPTION

The (-F) option on ET2000e Irrigation Controllers allows the user the ability to operate up to three individual Master Valves & Flow Meters for Irrigation or non-irrigation purposes. The Master valves can be any combination of Normally Closed or Open design, with the ability to work in conjunction with up to three individual Flow Meters with differing diameters.

- In the toolbar at the top of the screen select **Program Data** then scroll down to **Controller Flow** and click on it (Figure 16.10.1D).

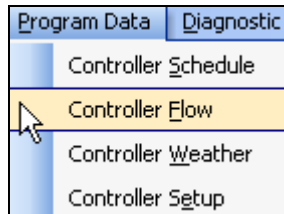


Figure 16.10.1D

Note: This will take you to the “**Controller Flow**” screen (Figure 16.10.2D).

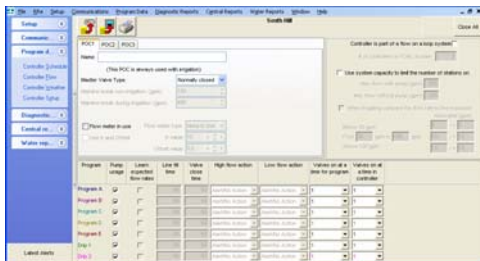


Figure 16.10.2D

POC 1 TAB

The information and settings contained in this tab pertains to Point of Connection 1 only and will not affect the settings for Tabs 2 and 3.

Name: Type a name or phrase in this box that best describes the P.O.C.’s geographic location or use so that it will be familiar to the user (Figure 16.10.3D).

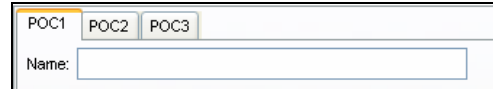


Figure 16.10.3D

Note: The name or phrase typed will become the title for the tab vice the default name of POC1 (Figure 16.10.4D).

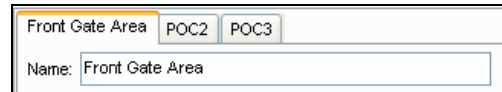


Figure 16.10.4D

Note: POC1 can be set for use with irrigation only.

- Click on the **Master Valve Type** box and select from the drop down list the type of Master Valve that you are using for Point of Connection 1 (Figure 10.16.5D).



Figure 10.16.5D

Note: The **Mainline break non-irrigation (gpm)** and **Mainline break during irrigation (gpm)** numbers will remain greyed out until the Flow Meter in use box is checked. If no Flow Meter is in use, there will be no mainline protection for this Point of Connection.

- Now check the **Flow meter in use** box if a flow is assigned to this Point of Connection (Figure 16.10.6D).

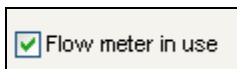


Figure 16.10.6D

- Use the drop down list to choose the type of flow meter that you are using (Figure 16.10.7D).

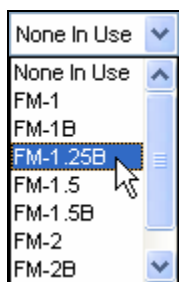


Figure 16.10.7D

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 1.50B:** This is a one and a half inch brass flow meter.
- FM 2:** This is a two inch PVC flow meter.
- FM2B:** This is a two inch brass flow meter.
- FM 3:** This is a three inch PVC flow meter.

Note: If you are using a flow meter that is larger than three (3) inches, or is not predefined you will have to check the **Use K and Offset** box (Figure 16.10.8D).

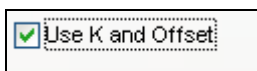


Figure 16.10.8D

- To change the **K** and **Offset** numbers use the UP / DOWN / LEFT / RIGHT arrows to change the value for each box, or highlight

the individual boxes for each entry and type the value into the box (Figure 16.10.9D).

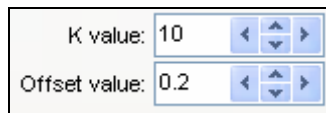


Figure 16.10.9D

POC 2

The information and settings contained in this tab pertains to Points of Connection 2 only and will not affect the settings for Tabs 1 and 3.

Name: Type a name or phrase in this box that best describes the P.O.C.'s geographic location or use so that it will be familiar to the user (Figure 16.10.10D).

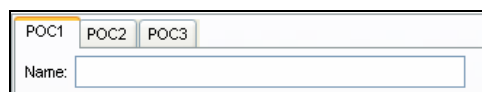


Figure 16.10.10D

Note: The name or phrase typed in will become the title for the tab vice the default name of POC2 (Figure 16.10.11D).

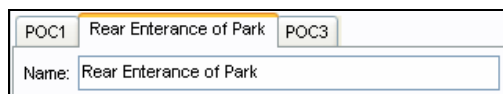


Figure 16.10.11D

Note: POC2 and POC3 can be set for use with irrigation, or with non-irrigation parameters.

Note: If this Point of Connection is being used with irrigation the instructions for Point of Connection 1 can be followed to enter the appropriate settings.

- Uncheck the **Part of Irrigation** box if this Point of Connection will be used for non-irrigation purposes only (Figure 16.10.12D).

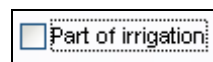


Figure 16.10.12D

Note: This will open up an additional tab for POC2 Schedule (Figure 16.10.13).

	Enabled	Open at	Duration
Sunday	<input type="checkbox"/>	12:00 AM	1 hr. 0 min.
Monday	<input type="checkbox"/>	12:00 AM	1 hr. 0 min.
Tuesday	<input type="checkbox"/>	12:00 AM	1 hr. 0 min.
Wednesday	<input type="checkbox"/>	12:00 AM	1 hr. 0 min.
Thursday	<input type="checkbox"/>	12:00 AM	1 hr. 0 min.
Friday	<input type="checkbox"/>	12:00 AM	1 hr. 0 min.
Saturday	<input type="checkbox"/>	12:00 AM	1 hr. 0 min.

(0-24) (0-59)

Figure 16.10.12D

Note: This tab allows the user to set up a weekly schedule for opening the master valve and set a duration time for how long it will need to be open for.

Note: The tab name will appear with the same name as the POC tab with the addition of the word (schedule) after it.

2. Check the box next to the day of the week that you want to set a schedule for (Figure 16.10.13D).

	Enabled	Open at	Duration
Sunday	<input checked="" type="checkbox"/>	12:00 AM	1 hr. 0 min.

Figure 16.10.13D

Open at: This is the time that you want the Master valve to open. Use the **UP** and **DOWN** arrows to change the valve, or highlight the box and type in the desired time.

Duration: This is the time limit that you want the Master to be open for. Use the UP and DOWN arrows to change the value in each box, or highlight the box and type in the appropriate values. The hour value can be from 0-24, the Minute value can be from 0-59.

Note: In the case of a Normally Open Master Valve the weekly schedule will dictate which mainline break number that the controller will pay attention to (During use, or not during use).

POC 3 TAB

The information and settings contained in this tab pertains to Points of Connection 3 only and will not affect the settings for Tabs 1 and 2.

The instructions for Point of Connection 3 are identical to Point of Connection 2.

SEE POC2 FOR MORE DETAILS

The directions for the other portions of this screen can be found in Section 16.3 Figure 16.3.9 through Section 16.3 Figure 16.3.24D and are the same for controllers with or without the (-F) option installed.



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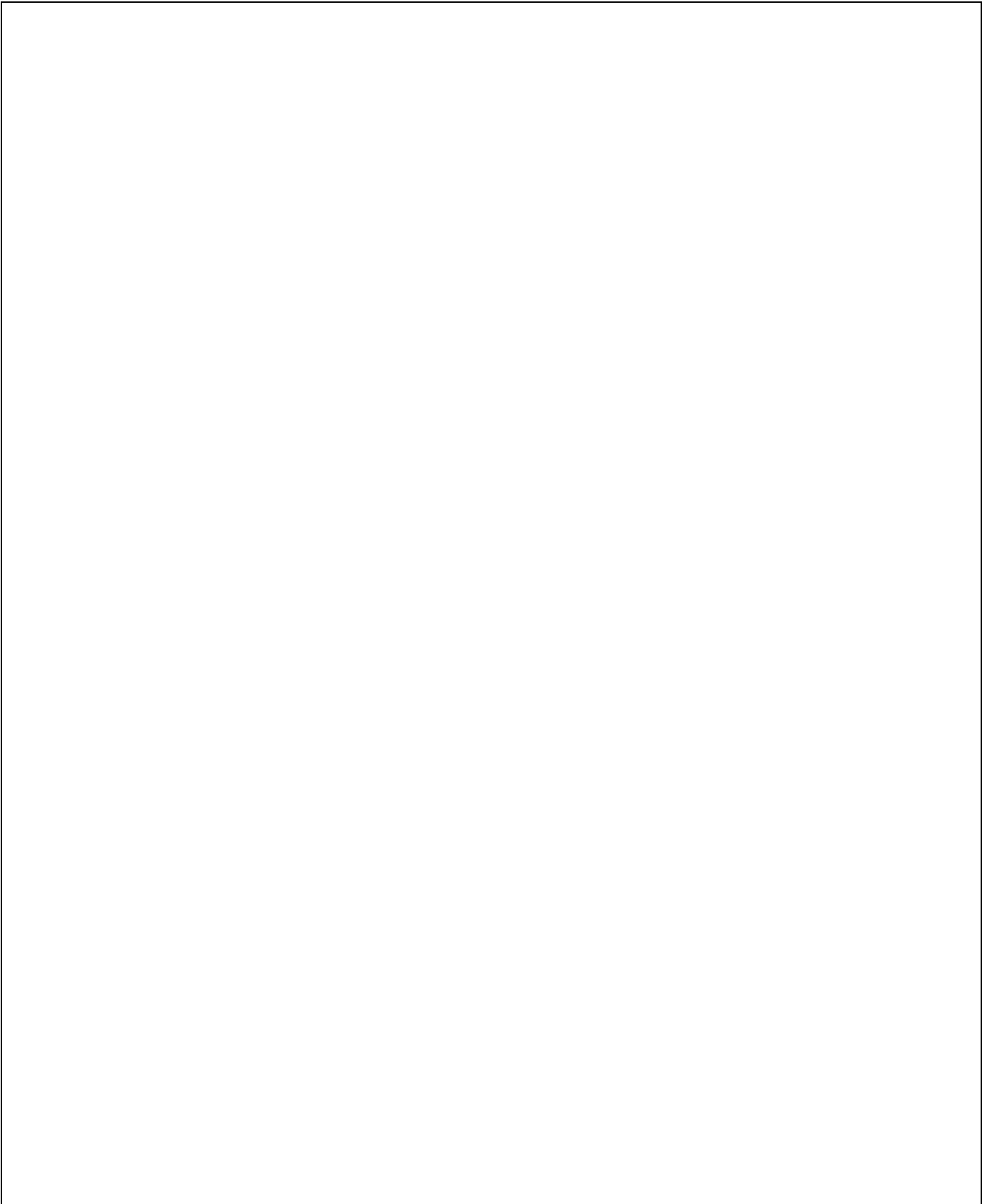
CHANGE 2

30 March 2007



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17.0 MANUAL PROGRAMS

Manual Programs: Provides an independent supplement to regularly scheduled irrigation. Typical use of Manual Programs might include over seeding, fertilizing and walk-thru.

1. From the toolbar at the top of the screen select **Communications** then scroll down to **Speed Communications** and click on it (Figure 17.0.1).

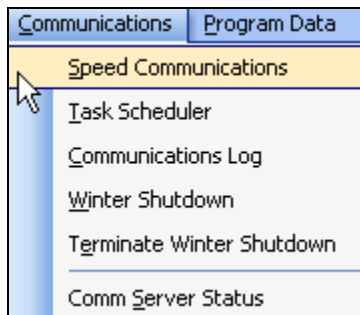


Figure 17.0.1

2. Select the Site / Controller that you want to perform Speed Communications on from the **“Site / Controller”** window. Make sure that it is highlighted (Figure 17.0.2).

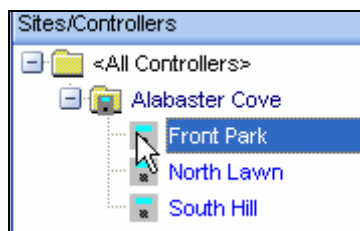


Figure 17.0.2

3. From the List of icons to the right of the **“Speed Communications”** screen select the **Get Manual Programs** icon (Figure 17.0.3).

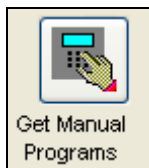


Figure 17.0.3

Note: A communications screen will appear letting you know that you are communicating with the controller of choice (Figure 17.0.4).

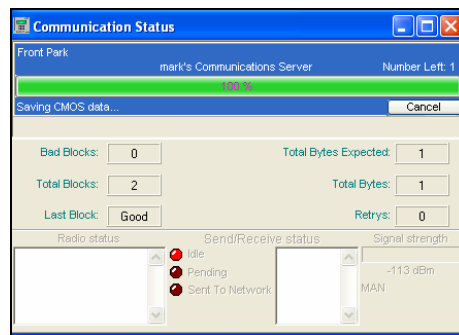


Figure 17.0.4

Note: After the communications task has taken place the **“Manual Program”** screen will appear.

FOR ET1 / ET2000 CONTROLLERS (400 SERIES) MANUAL PROGRAMS SEE SECTION 17.1

FOR ET2000 CONTROLLERS (500 SERIES) MANUAL PROGRAMS SEE SECTION 17.2

17.1 ET1 / ET2000 CONTROLLERS (400 SERIES) MANUAL PROGRAMS

Note: The **“Manual Special Sequence”** screen will appear (Figure 17.1.1).

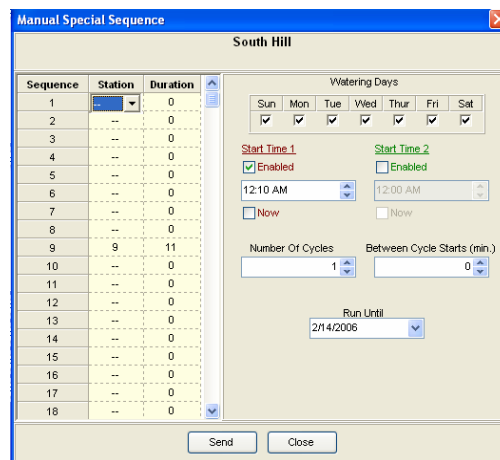


Figure 17.1.1

Manual Special Sequence: Manual Special Sequence is an independent program that provides additional irrigation to the landscape from the normal day to day programmed irrigation.

Sequence: The order in which the selected stations will turn on (Figure 17.1.2).

Sequence
1
2
3
4
5

Figure 17.1.2

Station: The irrigation valves that irrigate a particular landscape area. Click on the **DOWN** arrow to select a particular station. The station order does not have to be sequential. Example: 4-5-3-1-2. Changing the order of valves turning on is helpful when doing a walk-thru (Figure 17.1.3).

1. To the right of the number 1 in the Sequence column, use the drop down arrow under Station to select the first station that you want to come on (Figure 17.1.3).

Sequence	Station
1	4
2	2
3	--
4	--

Figure 17.1.3

2. Use this same method until all of the stations that you want to assign to a sequence or Walk-through are entered.

Duration: The amount of time, in minutes, the station will run.

3. Enter a duration time for each station (Figure 17.1.4).

Sequence	Station	Duration
1	4	20
2	--	0

Figure 17.1.4

Watering Days: Sunday thru Saturday, Checking the box will enable the water day

4. Check the appropriate box for each day that you want this sequence to run (Figure 17.1.5).

Watering Days						
Sun	Mon	Tue	Wed	Thur	Fri	Sat
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Figure 17.1.5

Start Time 1 & 2: Check the box to enable a start time.

5. Use the **UP** and **DOWN** arrows to enter a Start time, or click on the box and type the time in manually (Figure 17.1.6).

<u>Start Time 1</u>	<u>Start Time 2</u>
<input checked="" type="checkbox"/> Enabled	<input type="checkbox"/> Enabled
09:00 PM	12:00 AM
<input type="checkbox"/> Now	<input type="checkbox"/> Now

Figure 17.1.6

Note: The **Now** box must be unchecked before sending the Manual Special Program. It is informing you that the controller is set for the NOW command (Figure 17.1.7).



Figure 17.1.7

Number of Cycles: How many times do you want to repeat this Special Sequence.

- Next you will need to enter the number of cycles. Use the **UP** and **DOWN** arrows to adjust the cycles (Figure 17.1.8).

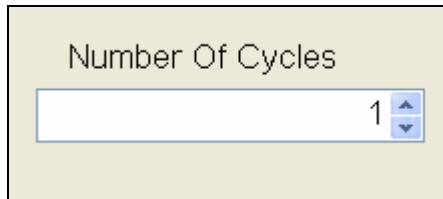


Figure 17.1.8

Between Cycle Starts (min.): The amount of time in minutes between cycles.

Note: ET2000 400 series between cycle starts have no effect if the number of cycles is set to 1.

- Use the **UP** and **DOWN** arrows to adjust the amount of time for Between Cycle Starts (Figure 17.1.9).

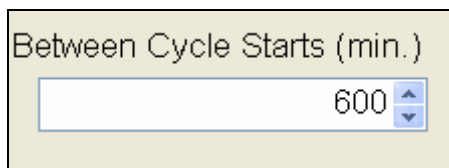


Figure 17.1.9

Run Until: The date to stop the Special Manual Program.

- Enter a date that you want this sequence to run until (Figure 17.1.10).

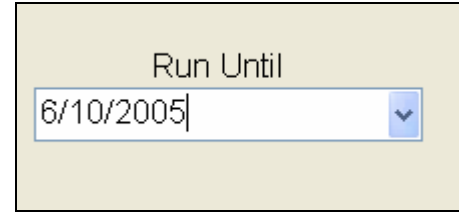


Figure 17.1.10

- You can enter the date by using the drop down arrow and changing the date by using the calendar feature. Use the **BLACK** arrows to change the month or year and then click on a day of the month to select. You can also use the **Today** button to select today's date (Figure 17.1.11).

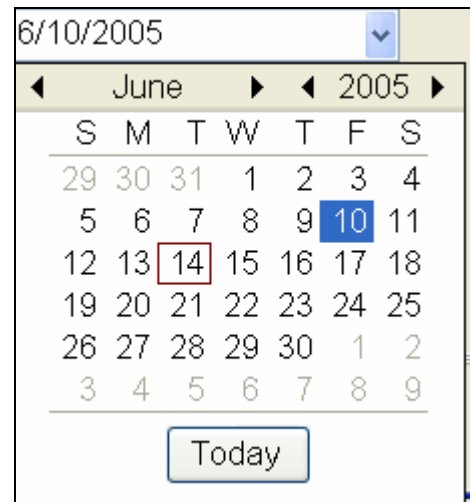


Figure 17.1.11

Send: Send this Manual Special Program to the controller.

- Clicking on the **Send** button will send this sequence to the controller selected (Figure 17.1.12).

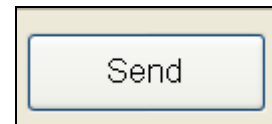


Figure 17.1.12

Close: Close the current screen and don't send the program to the controller (Figure 17.1.13).



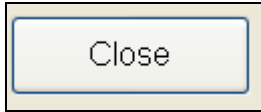


Figure 17.1.13

Note: Clicking the **Close** button will close you out of this screen without sending the data to the controller. This program will not be saved.

17.2 ET2000 CONTROLLERS (500 SERIES) MANUAL PROGRAMS

The ET2000 500 Series controller contains five separate Manual Programs; Manual Programs 1 & 2, Walk Through, Use Hold-Over, and Master Valve Override.

MANUAL PROGRAM 1 & 2

Note: The “**Manual Programs**” screen will appear (Figure 17.2.1).

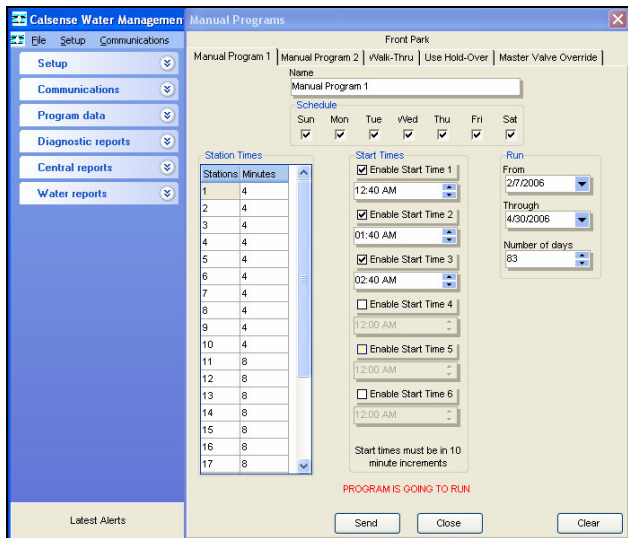


Figure 17.2.1

Name: The name of the Manual Program is editable.

1. Click on the **Name** box and type in a new name that might better describe the use for the Manual Program. (Example: Over seeding) (Figure 17.2.2).

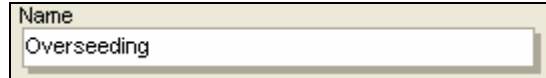


Figure 17.2.2

Note: The name that you just entered will appear on the first tab at the top of the screen, and also on the Manual Program screen of the controller once sent (Figure 17.2.3).



Figure 17.2.3

Schedule: Seven day scheduling Sunday thru Saturday.

2. Check the appropriate box for each day that you want this schedule to run (Figure 17.2.4).

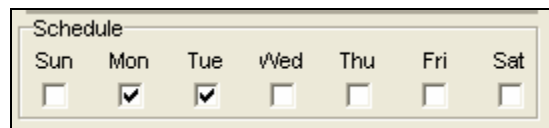


Figure 17.2.4

Start Times: There are six separate Start Time options.

3. Check the box for each Start Time that you want to enable (Figure 17.2.5).

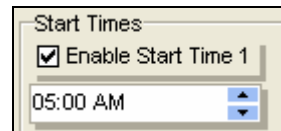


Figure 17.2.5

Note: Start times must be in 10 minute increments. Use the **UP** and **DOWN** arrows to change the time in each start time box.

Run From: This is the date to start the Manual Program.

4. Enter the date that you want this Program to begin on (Figure 17.2.6).

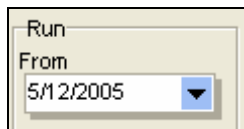


Figure 17.2.6

Note: You can enter the date by using the drop down arrow and changing the date by using the calendar feature. Use the **BLACK** arrows to change the month or year and then click on a day of the month to select. You can also use the **Today** button to select today's date (Figure 17.2.7).

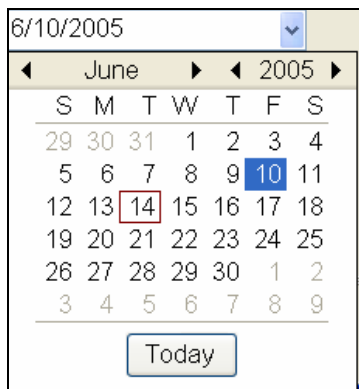


Figure 17.2.7

Through: The date to stop the Manual Program.

5. Enter the date that you want the program to stop (Figure 17.2.8).

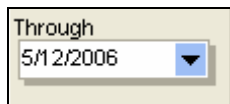


Figure 17.2.8

Note: You can enter the date by using the drop down arrow and changing the date by using the calendar feature. Use the **BLACK** arrows to change the month or year and then click on a day of the month to select. You can also use the **TODAY** button to select today's date (Figure 17.2.9).

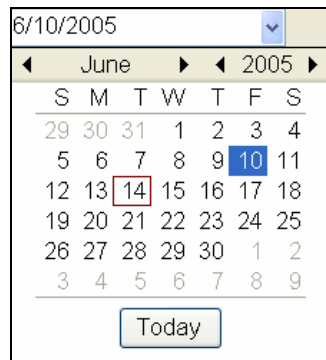


Figure 17.2.9

Number of Days: The number of days will be the total of run from / through dates. It is also possible not to select the run from / through dates and directly enter the number of days to run the Manual Program.

Note: You can use the **Run From / Through** blocks to enter a time period, or enter the number of days that you want the program to run. The **Through** date will change automatically (Figure 17.2.10).

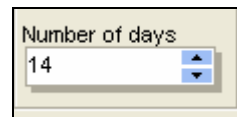


Figure 17.2.10

Send: Send this Manual Special Program to the controller (Figure 17.2.11).

Close: Close the current screen and don't send the program to the controller. The data will not be saved (Figure 17.2.11).

Clear: All Station Times, Scheduled water days and Start Times will be deleted (Figure 17.2.11).

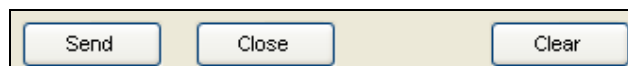


Figure 17.2.11



WALK THRU

Manual Walk Thru is a program used to orchestrate a visual inspection of all valves and heads for proper operation.

1. When you click on the **Walk Thru** tab the “**Walk Thru**” screen will appear (Figure 17.2.12).

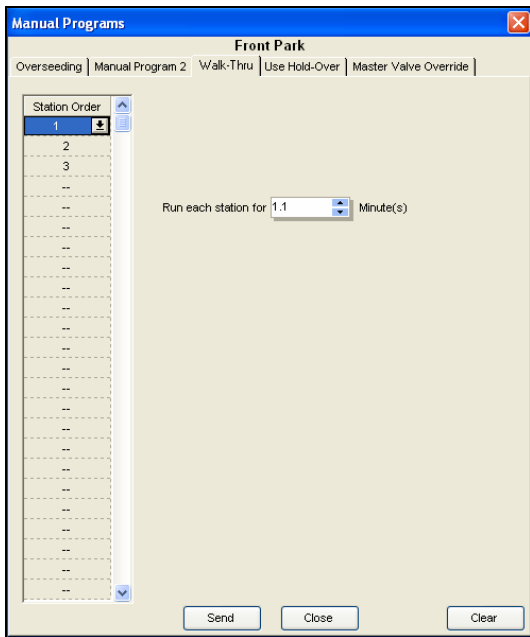


Figure 17.2.12

Station Order: The station order does not have to be sequential. Example: 4-5-3-1-2.

2. Use the drop down arrow to the right of the “--” symbols to change to a station number (Figure 17.2.13).

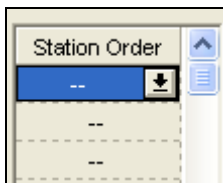


Figure 17.2.13

3. Use this same method to enter all of the stations that you want to view during a Walk Through (Figure 17.2.14).

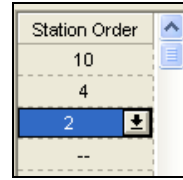


Figure 17.2.14

Run each station for: Enter the run time minutes.

4. Use the **UP** and **DOWN** arrows to adjust the time for each station (Figure 17.2.15).

Note: When entering the time for each station to run factor in the time that it would physically take you to get from one station to the next. This will ensure that each station that you walk by is running at that time.

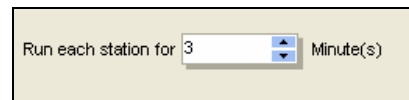


Figure 17.2.15

Send: Send this Walk-Thru Program to the controller.

5. Click on the **Send** button to send this information to the controller (Figure 17.2.16).



Figure 17.2.16

Close: Close the current screen and don't send the program to the controller. Data will not be saved (Figure 17.2.17).

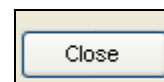


Figure 17.2.17

Clear: This will clear the Walk-Through Program without saving it (Figure 17.2.18).

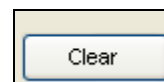


Figure 17.2.18

USE HOLD OVER

Hold-Over time is generated whenever scheduled irrigation has not completed at the Stop time. The controller will first try and use up any hold-over in the table after scheduled irrigation but before the Stop Time has been reached. The Use Hold-Over feature allows the user to schedule a specific time and day(s) to try and use up any hold-over in the table.

1. Click on the **Use Hold-Over** tab. This will bring up the “**Use Hold-Over**” screen (Figure 17.2.19).

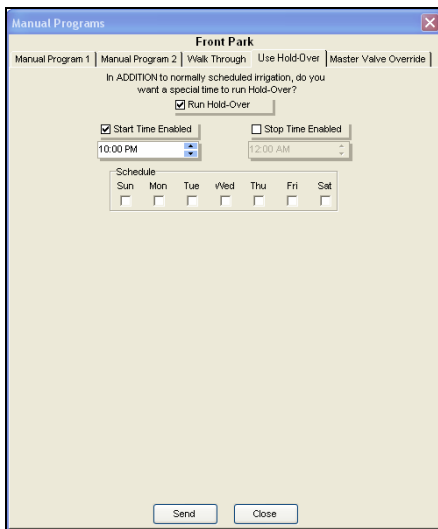


Figure 17.2.19

Run Hold-Over: Check the box to enable the Use Hold-over feature.

2. Click on the **Run Hold-Over** box to enable the Hold-Over Program (Figure 17.2.20).

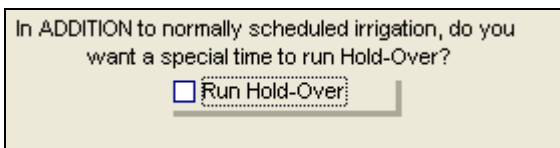


Figure 17.2.20

Note: This will open up the Hold-Over enabling choices (Figure 17.2.21).

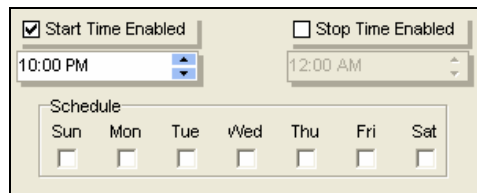


Figure 17.2.21

Note: When creating a Use Hold-Over window, **you must** have a **START** and **STOP** time.

Start Time Enabled: This will allow you to set up a start time.

3. Check the box to enable. Highlight the **START TIME** and use the **UP** and **DOWN** arrows to adjust the time (Figure 17.2.22).

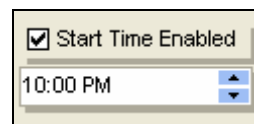


Figure 17.2.22

Stop Time Enabled: This will allow you to set up a stop time.

4. Check the box to enable. Highlight the **STOP TIME** and use the **UP** and **DOWN** arrows to adjust the time (Figure 17.2.23).

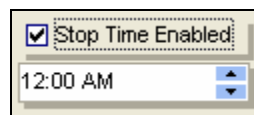


Figure 17.2.23

Schedule: Seven day scheduling Sunday thru Saturday.

5. Check the days that you want to use Hold-Over on (Figure 17.2.24).

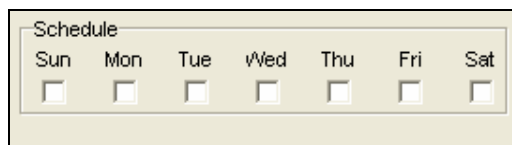


Figure 17.2.24

Send: The Send button will send this program to the controller.



- Click on the **Send** button to send the Use Hold-Over data to the controller (Figure 17.2.25).

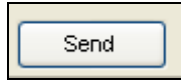


Figure 17.2.25

Close: This will exit the program without sending it to the controller. Data will not be saved.

- Click on the **Close** button if you do not want to send this schedule to the controller (Figure 17.2.26).

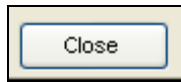


Figure 17.2.26

Master Valve Override

The master valve override is a program that enables the scheduled opening of a normally closed master valve in the ET2000 controllers with 500 series software.

- Click on the **Master Valve Override** tab to bring up the “**Master Valve Override**” screen (Figure 17.2.27).



Figure 17.2.27

Note: When scheduling a master valve override, **you must** have a **START** and **STOP** time for the day selected. If not, the program will not run.

Enable: Check the boxes to enable the day(s) to use master valve override.

- Select an **Enabled** box for the day that you want the Master Valve Override to occur on (Figure 17.2.28).

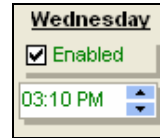


Figure 17.2.28

- Use the **UP** and **DOWN** arrows to adjust the time that you want the Master Valve to OPEN.

Close: Select a time to close the normally closed master valve.

- Use the **UP** and **DOWN** arrows to adjust the time for the master valve to close (Figure 17.2.29).

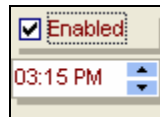


Figure 17.2.29

Send: The Send button will send this program to the controller.

- Click on the **Send** button to send the Master Valve Override data to the controller (Figure 17.2.30).



Figure 17.2.30

Close: This will exit the program without sending it to the controller.

- Click on the **Close** button if you do not want to send this schedule to the controller (Figure 17.2.31).

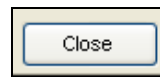
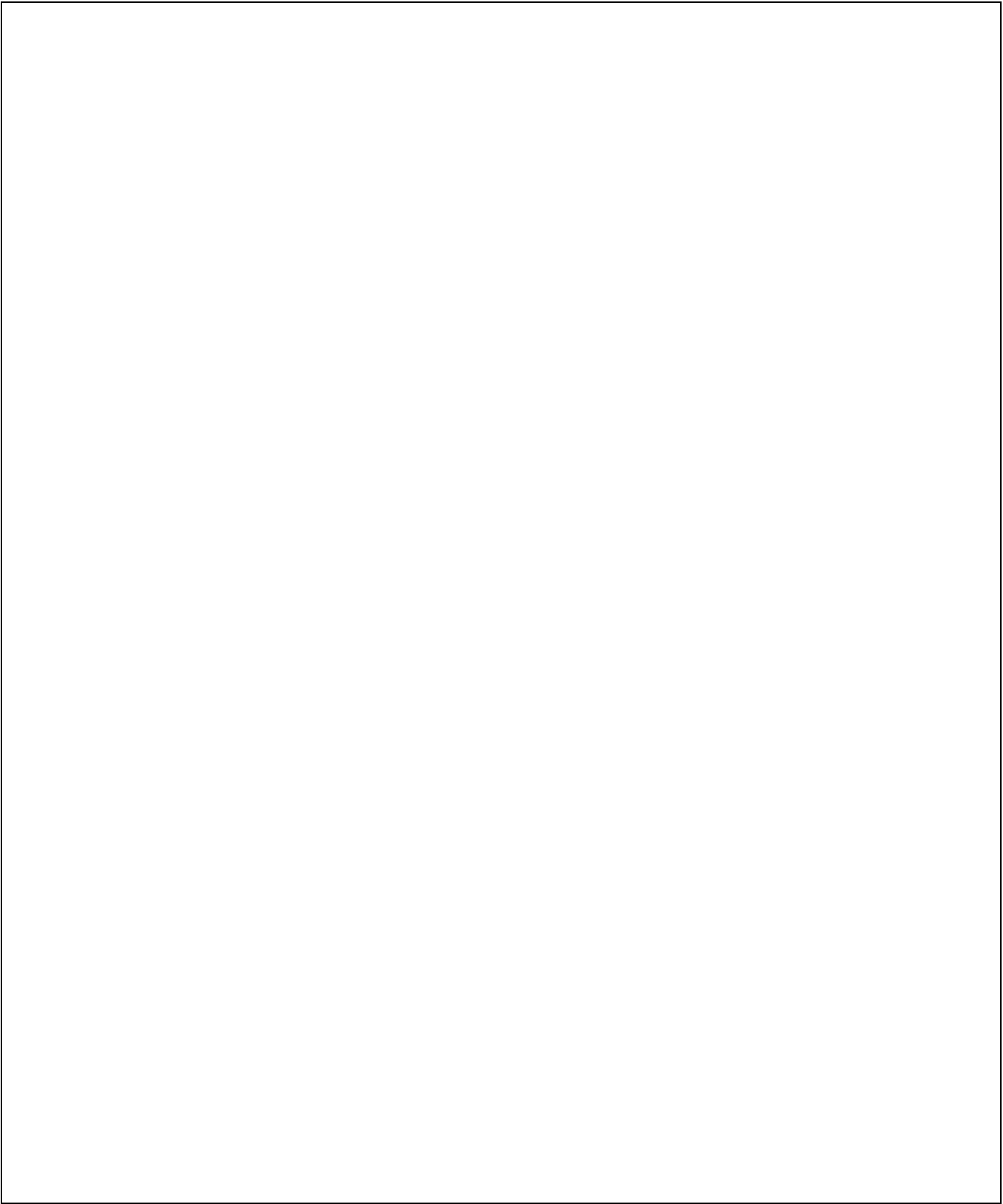


Figure 17.2.31



making water work

since 1986

18.0 LIGHTS

Lights: The Lights program consists of a fourteen day rolling schedule with two Start and Stop times per circuit. The lights circuit outputs at the controller supply 24 volts to a relay to control various devices such as turning On/Off lights, gates or water features.

Note: There are four identical tabs to set up four independent light programs. Each can be set up using the directions below.

Note: The name of the controller will appear at the top of the screen along with the current time and date.

1. From the toolbar at the top of the screen select **Communications** then scroll down to **Speed Communications** and click on it (Figure 18.0.1).

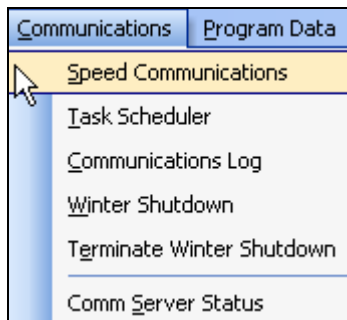


Figure 18.0.1

2. Select the Site / Controller that you want to perform the **Get Lights** on from the **“Site / Controller”** window. Make sure that it is highlighted (Figure 18.0.2).

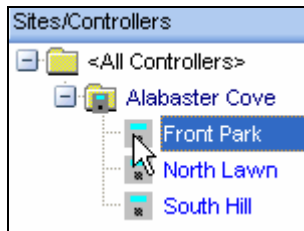


Figure 18.0.2

3. From the List of icons to the right of the **“Speed Communications”** screen select the **Get Lights** Icon (Figure 18.0.3).

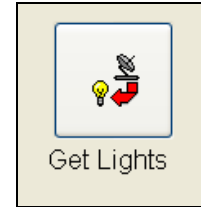


Figure 18.0.3

Note: A communications screen will appear letting you know that you are communicating with the controller of choice (Figure 18.0.4).

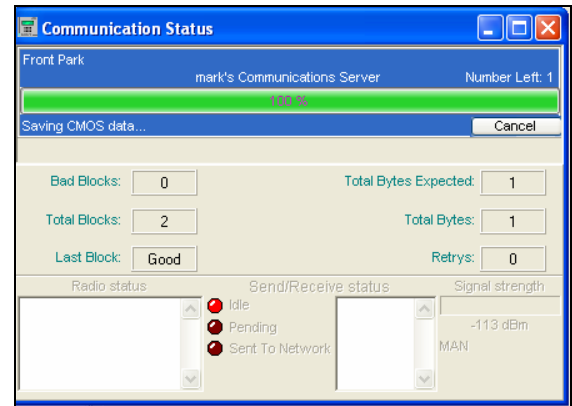


Figure 18.0.4

Note: After the communications task has taken place the **“Lights”** screen will appear (Figure 18.0.5).

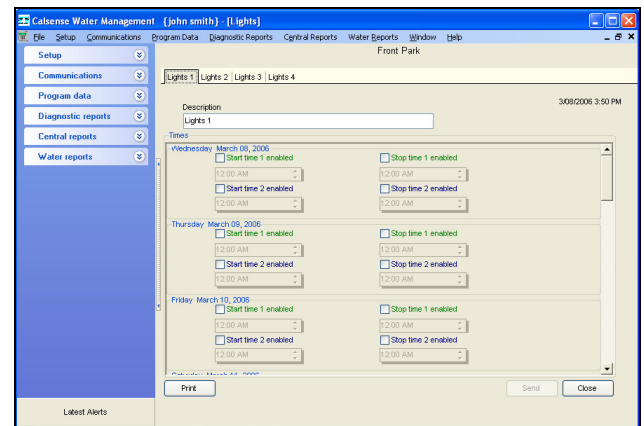


Figure 18.0.5

Note: When scheduling lights there must be a **START** and **STOP** time for the day selected.

Description: The description field is used to describe the area or circuit this particular tab is assigned to.

- Fill out the description box with a name for this particular circuit (Figure 18.0.6).

(Example: Walkway Lights)

Figure 18.0.6

Note: This name will appear on the tab at the top of the screen, and also at the controller when sent (Figure 18.0.7).

Figure 18.0.7

- To enable a Start Time, Check the box next to **Start Time 1 Enable**. Using the **UP** and **DOWN** arrows adjust the time that you want the program to start (Figure 18.0.8).

Figure 18.0.8

- To enable a stop time, Check the box next to **Stop Time 1 Enabled**. Using the **UP** and **DOWN** arrows adjust the time that you want the program to start (Figure 18.0.9).

Figure 18.0.9

- Use this same method for each **START** and **STOP** time desired.

Send: Send will send the Lights Program Schedule to the controller (Figure 18.0.10).

Figure 18.0.10

Close: Close will exit the Lights Program and not send any changes. Data will not be saved.

- Click on the **Close** button to close out of the Lights Program (Figure 18.0.11).

Figure 18.0.11

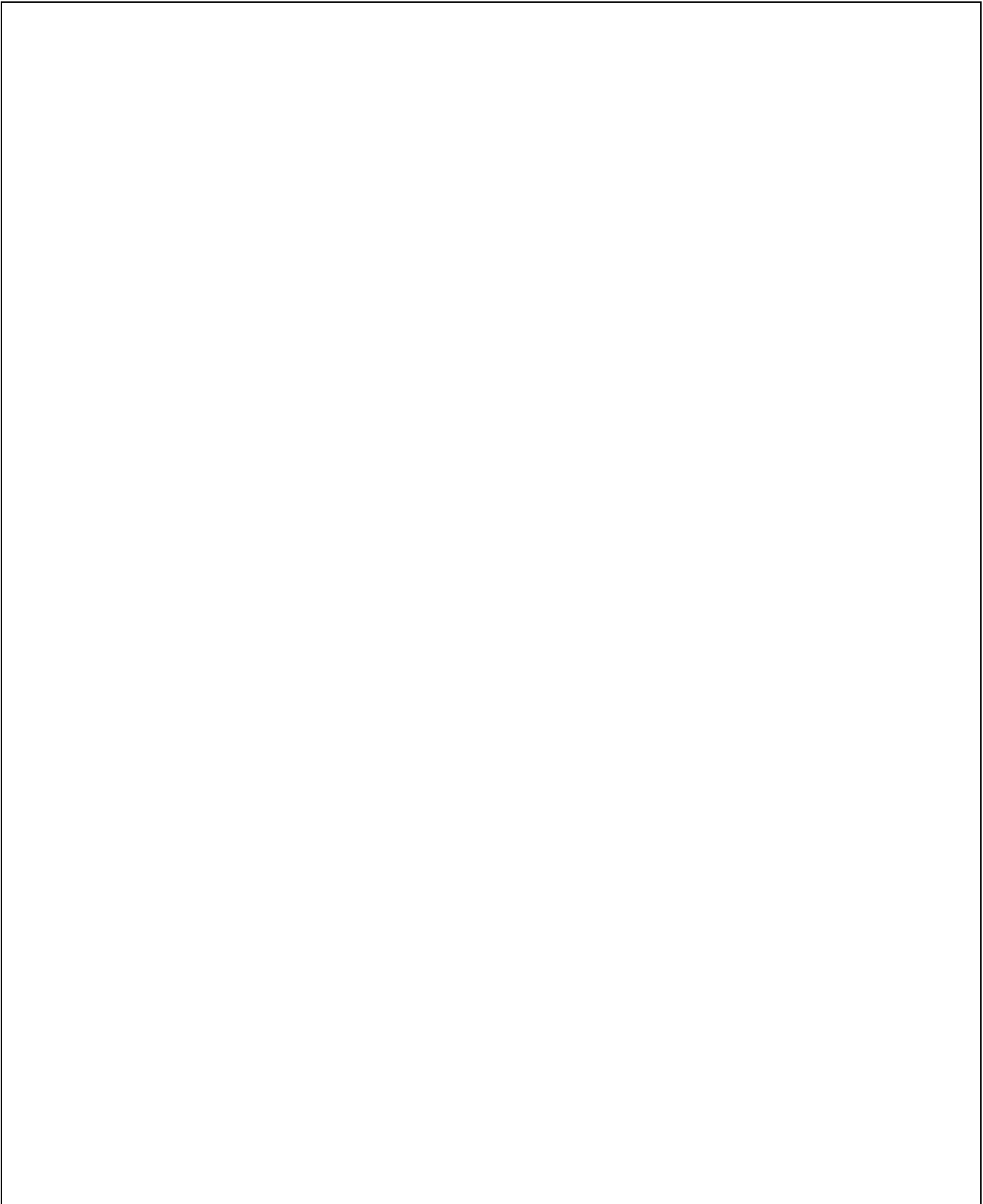
Print: Click on the **Print** button if you want to print the lights schedule (Figure 18.0.12).

Figure 18.0.12

Note: This will take you to the **“Lights Scheduled”** screen (Figure 18.0.13).

Figure 18.0.13

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



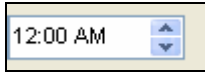


Figure 19.0.6

Note: Use the same method to change the **To:** box, and also the time.

Show Success: Checking this box will allow you to view all successful communications within the date range specified (Figure 19.0.7)

Show Warnings: Checking this box will allow you to view any negative event that took place during a communication (Figure 19.0.7).

Show Failures: This box is permanently checked and cannot be unchecked. It will allow you to view all failed communications within the date range specified (Figure 19.0.7).

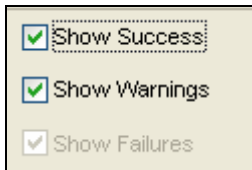


Figure 19.0.7

Detailed View: Selecting this option will allow you to view the following columns of information: (Figure 19.0.8).

- **Time stamp:** This is the date and time that the controller was communicated to.
- **Controller name:** This is the name that you have assigned to this controller.
- **Error message:** This column will show a brief description of the action that took place.
- **Function:** This column will show a brief description of what caused the action in the error message column to take place.
- **Communications Type:** This is the type of communications used to contact this controller.
- **ROM version:** This is the current Read Only Memory (R.O.M.) Chip installed in this controller.

- **Model:** This is the model number of the controller.
- **User name:** This is the name of the user that attempted the communication.
- **Communications Server:** This is the name of the communications server used to communicate with this controller.

Summary View: Selecting this option will allow you to view the following columns of information: (Figure 19.0.8).

- **Time stamp:** This is the date and time that the controller was communicated to.
- **Controller name:** This is the name that you have assigned to this controller.
- **Task:** This is a brief description of what was requested, or sent.
- **Communications Server:** This is the name of the communications server used to communicate with this controller.
- **User name:** This is the name of the user that attempted the communication.

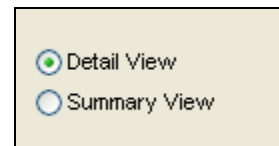


Figure 19.0.8

Update Display: Click on this button any time that you change the date range or make any adjustments to the viewing criteria (Figure 19.0.9).

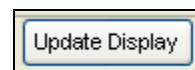


Figure 19.0.9

Clear Entire Log: This will delete all entries in the communications log for this user from present time back (Figure 19.0.10).

CAUTION:

Once these entries have been deleted they cannot be recovered.



Figure 19.0.10

Print: Clicking this button will allow you to print your Communications Log entries (Figure 19.0.11).

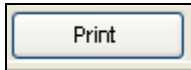


Figure 19.0.11

Note: This will take you to the "Print" screen (Figure 19.0.12).

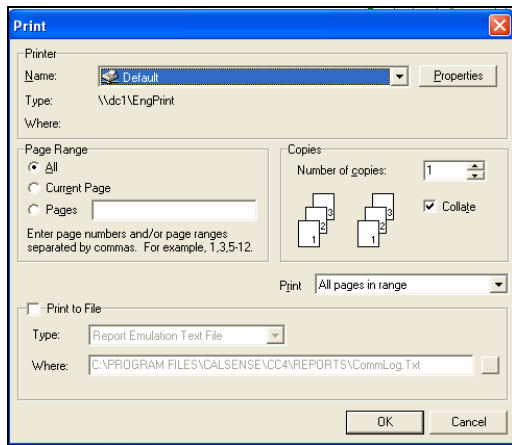


Figure 19.0.12

Timestamp	Controller name	Error message	Function	Communications type
1/17/2006 3:15:25 PM	Front Park	Received CMOS settings	Successful	Phone
1/17/2006 3:15:28 PM	Front Park	Received alerts	Successful	Phone
1/17/2006 3:15:46 PM	Front Park	Received controller report data	Successful	Phone
1/17/2006 3:22:37 PM	Front Park	Received CMOS settings	Successful	Phone
1/17/2006 3:22:46 PM	Front Park	Received program data	Successful	Phone
1/18/2006 10:27:32 AM	Front Park	Communications timed out waiting for controller respon	Retrieving CMOS	Phone
1/18/2006 10:27:56 AM	Front Park	Communications timed out waiting for controller respon	Retrieving CMOS	Phone
1/18/2006 10:27:56 AM	Front Park	Controller Failed Communications	Communications Not Completed	Phone
1/18/2006 11:56:31 AM	Front Park	Communications timed out waiting for controller respon	Retrieving CMOS	Phone
1/18/2006 11:57:06 AM	Front Park	Communications aborted	Communications Canceled	Phone
1/18/2006 11:57:58 AM	Front Park	Communications timed out waiting for controller respon	Retrieving CMOS	Phone
1/18/2006 11:58:24 AM	Front Park	Communications timed out waiting for controller respon	Retrieving CMOS	Phone
1/18/2006 11:58:24 AM	Front Park	Controller Failed Communications	Communications Not Completed	Phone
1/18/2006 11:59:04 AM	Front Park	Received CMOS settings	Successful	Phone
1/18/2006 11:59:08 AM	Front Park	Received Station In Use Information	Successful	Phone
1/18/2006 11:59:08 AM	Front Park	Began Direct Access	Starting Direct Access	Phone
1/18/2006 12:06:08 PM	Front Park	Ended Direct Access	Stopping Direct Access	Phone
2/6/2006 4:21:30 PM	Front Park	Received CMOS settings	Successful	Phone
2/6/2006 4:21:34 PM	Front Park	No water days sent	Successful	Phone

[Empty table area for communications log entries]

20.0 ALERTS

Alerts: Alerts are a chronological listing of each individual event that has taken place, or changes that have been made to the controller. Alerts can be viewed at the controller physically or obtained from the controller via communications and displayed at the central computer.

1. From the toolbar at the top of the screen select **Diagnostic Reports** then scroll down to **Alerts** and click on it (Figure 20.0.1).

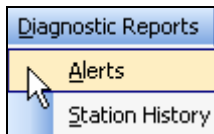


Figure 20.0.1

Note: This will take you to the "Alerts" screen (Figure 20.0.2).

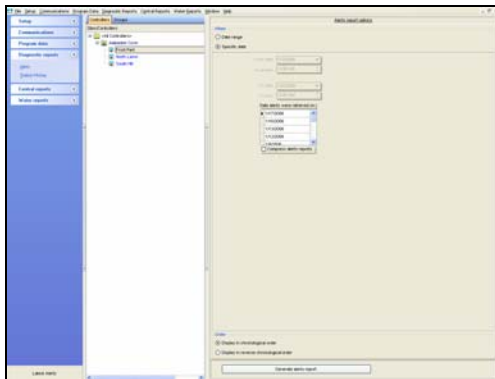


Figure 20.0.2

2. Next Click on one of the following choices in the **Controllers / Groups** section (Figure 20.0.3).



Figure 20.0.3

Controllers: This choice will let you view all of the controllers assigned to the user by site. By clicking on the "+" symbol next to the site will reveal the controllers assigned to that site (Figure 20.0.4).

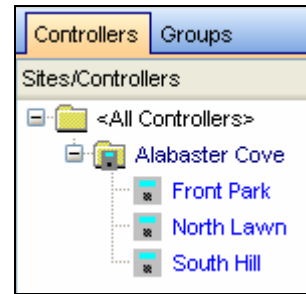


Figure 20.0.4

Groups: This allows you to view the controllers by the group that they are assigned to (Figure 20.0.5).

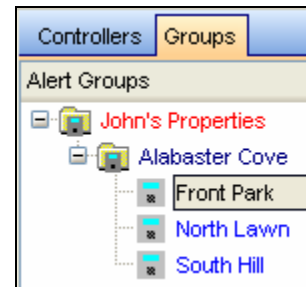


Figure 20.0.5

3. From the controller list click on a controller to highlight it (Figure 20.0.6).

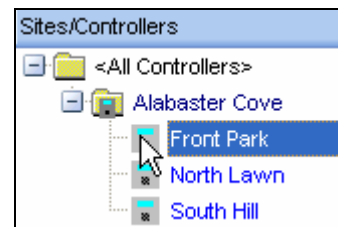


Figure 20.0.6

4. Next in the "When" section choose a period of time that you want the Alert data from (Figure 20.0.7).

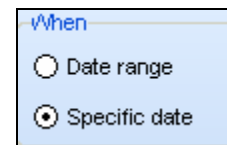


Figure 20.0.7

Date range: This allows you to select a range of time using a **From date: / to Date:** and a **From Time: / to Time:** (Figure 20.0.8).

A form with four input fields: 'From date:' with a dropdown menu showing '3/8/2006', 'From time:' with a time selector showing '04:08 PM', 'To date:' with a dropdown menu showing '3/8/2006', and 'To time:' with a time selector showing '04:08 PM'.

Figure 20.0.8

From date: The date can be altered by clicking on the **DOWN** arrow to the right of the **From date** box (Figure 20.0.9).

A calendar interface showing the month of May 2005. The date '5/30/2005' is selected in a dropdown menu at the top. The calendar grid shows days of the week (S, M, T, W, T, F, S) and dates from 24 to 31. A 'Today' button is located at the bottom.

Figure 20.0.9

Note: Use the **BLACK** arrows to adjust the **MONTH** and **YEAR** or click on the **Today** button to set the date for today's date.

Specific date: This allows you to select one specific date from the list of dates that you have retrieved alerts from this controller in the past (Figure 20.0.10).

A form with a dropdown menu labeled 'Date alerts were retrieved on:' showing '3/8/2006'.

Figure 20.0.10

5. Click on the **Compress alerts reports** box to cause each controller to fall directly below the next on the report. When not checked each individual controller will have its own report page (Figure 20.0.11).

A form with a dropdown menu labeled 'Date alerts were retrieved on:' showing '3/8/2006' and a checked checkbox labeled 'Compress alerts reports'.

Figure 20.0.11

6. Highlight the appropriate **Alert Filter Title** (Figure 20.0.12).

A list titled 'Alert Filters' with three items: 'ABC Maintenance Alerts' (highlighted), 'All Alerts (no filtering)', and 'John Smith's Electrical Alerts {Default}'.

Figure 20.0.12

Alert Filters: These are alert filter settings created by the user in the Alert Setup (Section 8.0) portion of Command Center.

Note: If you are currently using Alert Filters and have a default one. The default alert filter will take place automatically if no choice is made in this section.

7. Next decide on which order you want the alerts to appear. Click on the appropriate button in the **Order** section (Figure 20.0.13).

An 'Order' section with two radio buttons: 'Display in chronological order' (selected) and 'Display in reverse chronological order'.

Figure 20.0.13

Display in chronological order: This will display the Alerts from oldest to newest by date.

Display in reverse chronological order: This will display the alerts from newest to oldest by date.

- Click on the Generate alerts report button to view the **“Alerts”** report (Figure 20.0.14).

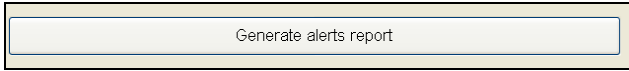


Figure 20.0.14

 **20.1 ALERTS REPORT**

Note: This will take you to the **“Alerts report”** screen (Figure 20.1.1).

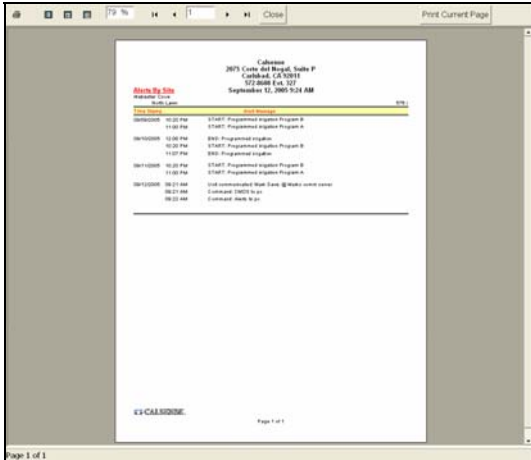


Figure 20.1.1

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

 **20.2 ALERTS PAGE REPORT CONTENTS**

The following is a list of every item on the **“Alerts”** report (Figure 20.1.1).

Date and Time: This shows the date and time that you requested the report. If you decide to print the

report this gives you a way in which to file chronologically.

Site Name: Each Site name will appear to the left of the list in regular font.

Controller Name: The controller names will be listed directly under the Site that they are a part of. They will appear in alpha-numeric sequence and are in regular font.

Time Stamp: This is the Date and Time that the Alert occurred.


Alert Message: This is a descriptive line explaining the alert.

79 % 1 Close Print Current Page

Calsense
2075 Corte del Nogal, Suite P
Carlsbad, CA 92011
572-8608 Ext. 327
September 12, 2005 9:24 AM

Alerts By Site
Alabaster Cove

North Lawn		576.i
Time Stamp	Alert Message	
09/09/2005 10:20 PM	START: Programmed irrigation Program B	
11:00 PM	START: Programmed irrigation Program A	
09/10/2005 12:08 PM	END: Programmed irrigation	
10:20 PM	START: Programmed irrigation Program B	
11:07 PM	END: Programmed irrigation	
09/11/2005 10:20 PM	START: Programmed irrigation Program B	
11:00 PM	START: Programmed irrigation Program A	
09/12/2005 09:21 AM	Unit communicated: Mark Davis @ Marks comm server	
09:21 AM	Command: CMOS to pc	
09:22 AM	Command: Alerts to pc	

 CALSENSE

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20.3 GET ALERTS

Get Alerts: The Get Alerts command is used to gather the controller's diagnostic lines. The diagnostic report consists of all alert messages recorded by the controller in a given 24 hour period.

1. From the toolbar the top of the screen select **Communications** then scroll down to **Speed Communications** and click on it (Figure 20.3.1).

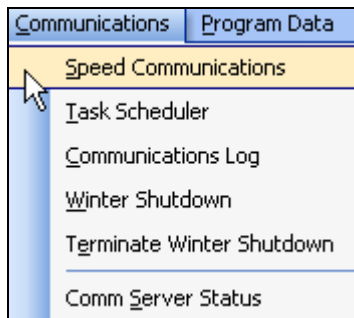


Figure 20.3.1

2. Next select a controller from your Site/ Controller list that you want to get the alerts from by highlighting the specific Site / Controller (Figure 20.3.2).

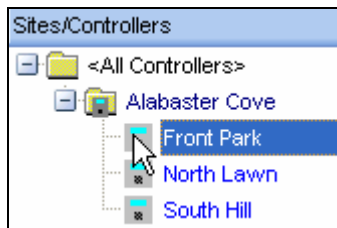


Figure 20.3.2

3. Next click on the **Get Alerts** button (Figure 20.3.3).



Figure 20.3.3

Note: A communications screen will appear letting you know that you are communicating with the controller of choice (Figure 20.3.4).

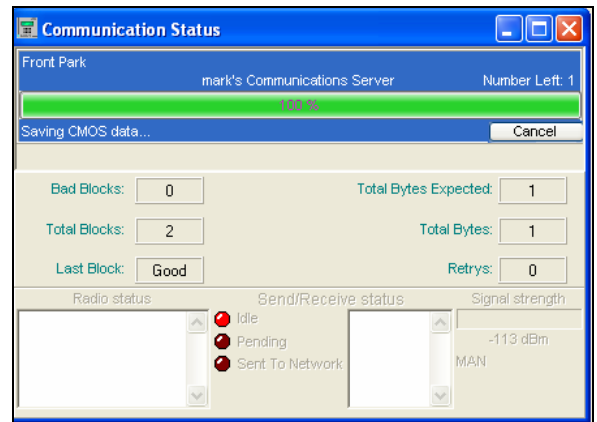


Figure 20.3.4

Note: After the communications task has taken place the "**Communications Completed**" screen will appear (Figure 20.3.5).

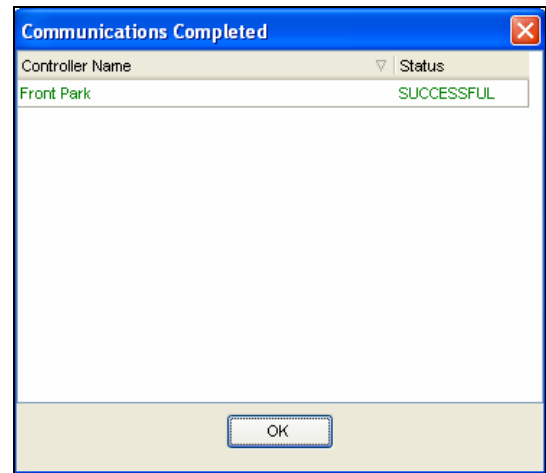


Figure 20.3.5

4. Click on the **OK** button.

Note: This will bring up the **Alerts report** page for the controller selected (Figure 20.3.6).

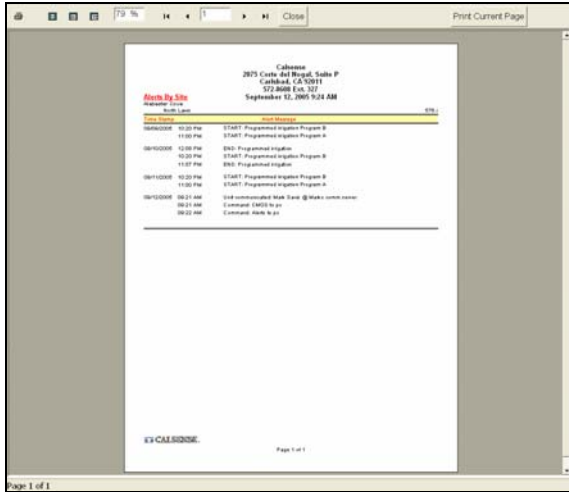


Figure 20.3.6

SEE “HOW TO PRINT REPORT” SECTION FOR MORE INFORMATION.

20.4 LATEST ALERTS

Latest Alerts: The **Latest Alerts** button can be used only if you have a task set up to retrieve alerts from controllers in your controller list.

Note: The **Latest Alerts** button will appear in the lower left hand corner of every screen (Figure 20.4.1).

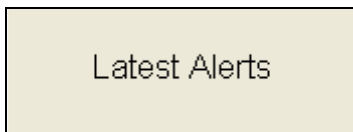


Figure 20.4.1

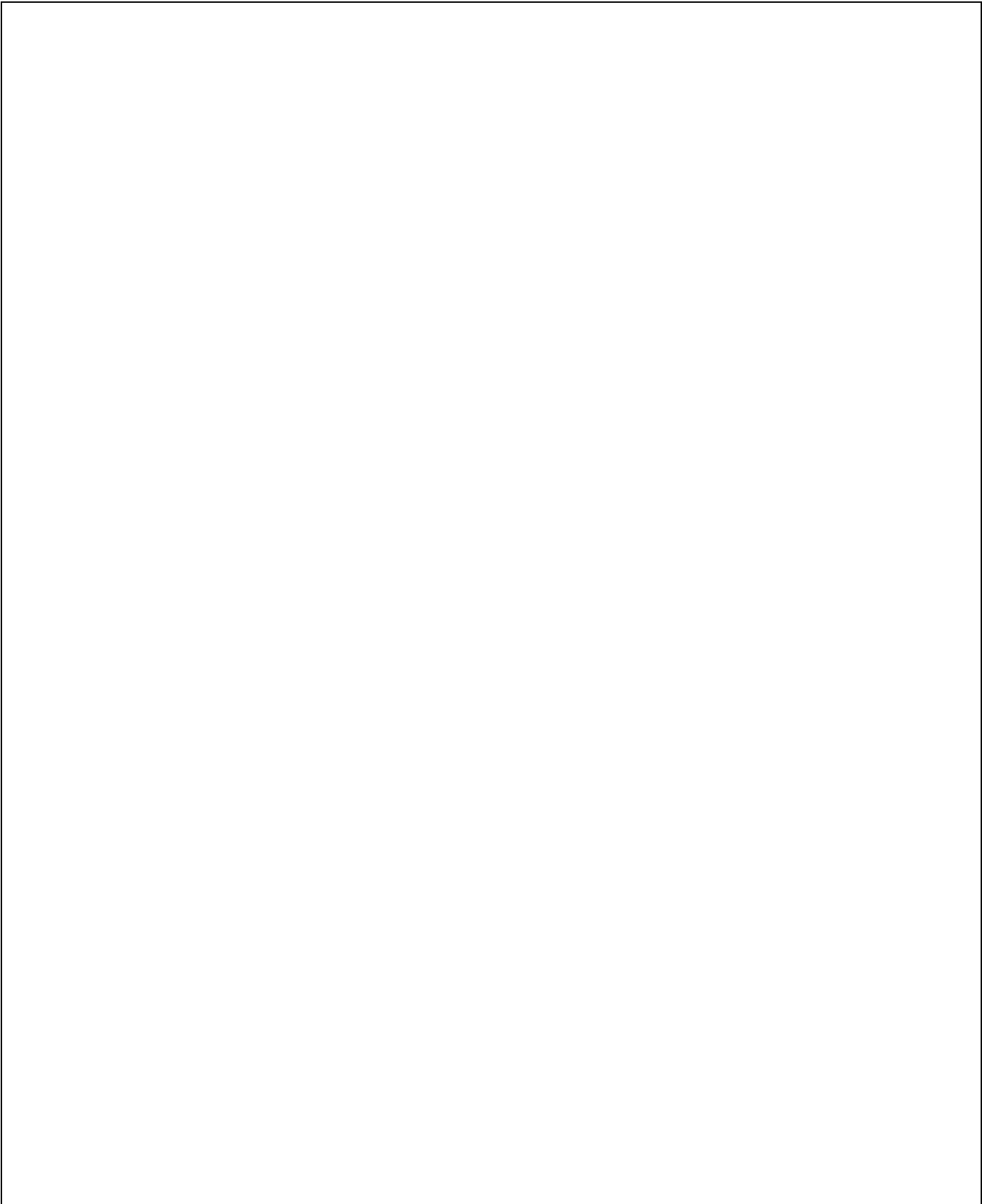
Note: If there are latest alerts to be viewed a revolving **RED** exclamation point in a **YELLOW** triangle will appear on top of the **Latest Alerts** button (Figure 20.4.2).



Figure 20.4.2

1. Click on the **Latest Alerts** button to retrieve the current alerts for the controllers that you have set up the task for.

SEE SECTION 20.1 FOR ALERT REPORT DESCRIPTION.



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21.0 STATION HISTORY

Station History: Station History is a report that shows individual station irrigation information for a selected controller. Each controller's stations are reported on using a date range. This report allows you to select from 1 to 30 entries for all of the controller's stations.

1. From the toolbar at the top of the screen select **Diagnostic Reports** then scroll down to **Station History** and click on it (Figure 21.0.1).

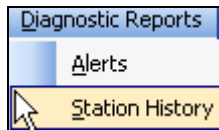


Figure 21.0.1

Note: This will take you to the "Station History" screen (Figure 21.0.2).

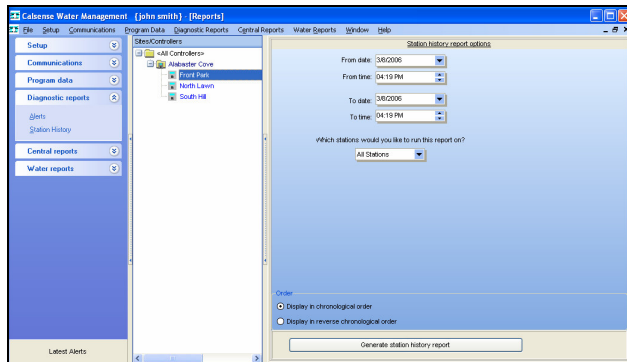


Figure 21.0.2

2. Next Click on a controller from your controller list to highlight it (Figure 21.0.3).

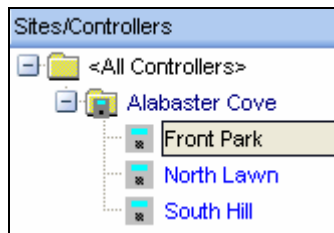


Figure 21.0.3

Date range: This allows you to select a range of time using a **From date / to Date** and a **From Time / to Time** (Figure 21.0.4).

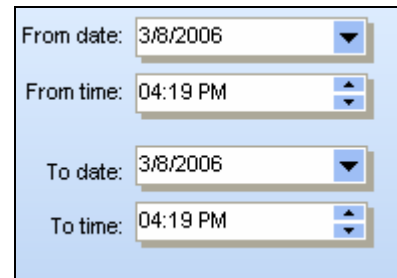


Figure 21.0.4

From date: The date can be altered by clicking on the **DOWN** arrow to the right of the **From date** box (Figure 21.0.5).

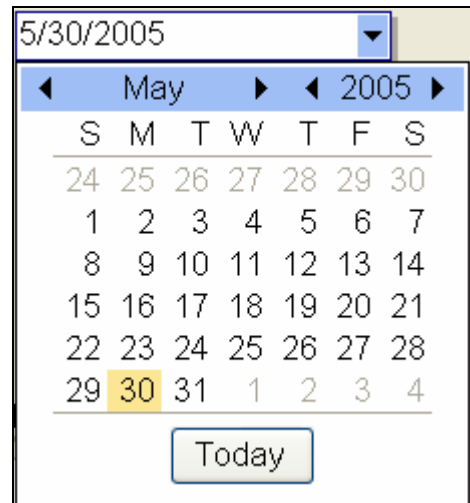


Figure 21.0.5

Note: Use the **BLACK** arrows to adjust the **MONTH** and **YEAR** or click on the **Today** button to set the date for today's date.

1. Next click on the "Which stations would you like to run this report on?" box (Figure 21.0.6).

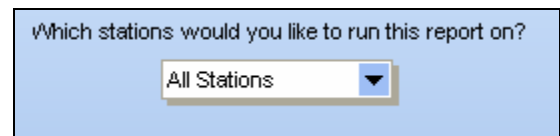


Figure 21.0.6



Note: You can select from the following choices:

All Stations: This will allow you to run the report on every station assigned in this controller.

Station (x): This will allow you to select an individual station to run the report on.

- Next decide on which order you want the Station History to appear. Click on the appropriate button in the “Order” section (Figure 21.0.7).

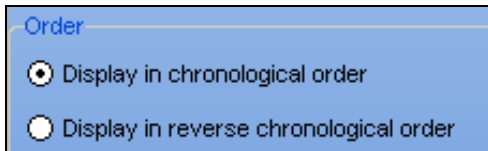


Figure 21.0.7

Display in chronological order: This will display the alerts from oldest to newest by date.

Display in reverse chronological order: This will display the alerts from newest to oldest by date.

- Click on the **Generate station history report** button to view the “Station History” report (Figure 21.0.8).

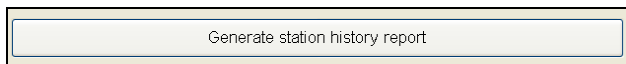


Figure 21.0.8

21.1 STATION HISTORY REPORT

Note: This will take you to the “Station History” screen (Figure 21.1.1).

Station Name	Program	Repeats	Progressed (Mins)	Applied (Mins)	Applied (Cycles)	Applied (Inches)	High Limit (gpm)	Flow (gpm)	Low Limit (gpm)	Hold Over (Mins)	Missive Sensor Stat.	Stator Last Reading (F/L)	Stator
Station: A													
07/06/2005 12:08 AM	A	1	2.0	2.0	77	0.03	0	---	0	0	---	0	0
07/06/2005 12:20 PM	B	17	40.8	16.0	712	0.31	0	---	0	0	---	0	0
Station: D1													
07/06/2005 4:01 AM	D1	2	11.2	11.2	56	0.37	0	---	0	0	---	0	0
07/06/2005 4:01 AM	D1	2	11.2	11.2	56	0.37	0	---	0	0	---	0	0
07/06/2005 2:22 AM	D1	2	11.4	11.4	57	0.37	0	---	0	0	---	0	0
07/06/2005 11:14 AM	A	1	2.0	2.0	101	0.06	0	---	0	0	---	0	0
07/06/2005 12:24 PM	B	5	8.2	9.4	47	0.31	0	---	0	0	---	0	0
Station: B													
07/06/2005 11:14 PM	D1	8	55.0	55.0	3,495	0.88	0	---	0	0	---	0	0
07/06/2005 11:07 PM	D1	8	56.1	56.0	3,520	0.88	0	---	0	0	---	0	0
07/06/2005 11:14 PM	D1	8	56.7	56.7	3,582	0.89	0	---	0	0	---	0	0
07/06/2005 12:12 AM	A	1	2.0	2.0	151	0.03	0	---	0	0	---	0	0
07/06/2005 12:22 PM	B	17	40.9	32.0	2,000	0.50	0	---	0	0	---	0	0
Station: B													
07/06/2005 12:22 AM	D1	3	52.0	52.0	3,647	0.95	0	---	0	0	---	0	0
07/06/2005 12:22 AM	D1	3	53.5	53.5	3,889	0.95	0	---	0	0	---	0	0
07/06/2005 12:12 AM	D1	3	54.0	54.0	3,727	0.94	0	---	0	0	---	0	0
07/06/2005 12:14 AM	A	1	2.0	2.0	107	0.03	0	---	0	0	---	0	0
07/06/2005 12:23 PM	B	16	39.0	31.0	2,123	0.52	0	---	0	0	---	0	0

Figure 21.1.1

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

SEE LAST PAGE OF THIS SECTION FOR FULL PAGE REPORT.

21.2 STATION HISTORY REPORT CONTENTS

The following is a list of every item on the “Station History” Report (Figure 21.1.1).

Date and Time: This shows the date and time that you requested the report. If you decide to print the report this gives you a way in which to file chronologically.

Site Name: Each Site name will appear to the left of the list in regular font.

Controller Name: The controller names will be listed directly under the Site that they are a part of. They will appear in alpha-numeric sequence and are in regular font.

Start Date / Time: This is the Date and Time that the 1st irrigation cycle occurred.

Program: This is the program that this station is currently assigned.

Repeats: This is how many cycles of irrigation this station ran.

Programmed (min): This is the total programmed minutes for this station.

Applied (Min): This is the actual minutes of applied irrigation for this station.

Applied (Gal): This is the actual amount of gallons applied by this station.

Applied (inches): This is the total amount of inches of water applied by this station.

High Limit (gpm): This is the limit that you have set for this station to trigger a high flow alert.

Flow (gpm): This is the actual flow for this particular station.

Low Limit (gpm): This is the limit that you have set for the station to trigger a low flow alert.

Hold Over (min): These are the Hold Over minutes that currently exist on this station due to crossing a stop time..

Moisture Sensor Set last Reading: This is the number that the moisture sensor read at during the last irrigation cycle.

FLAG: These are the alert flag letters. See the Flag letter chart at the end of this section for more information.

Flag Legend: This is a brief description of each flag letter see the Flag letter chart at the end of this section for more information.

Moisture Sensor Reading legend: This is a brief description of each Moisture Sensor reading code.



Station History

July 11, 2005 12:21 PM

Alabaster Cove

Front Park

576.b

Start Date/Time	Program	Repeats	Programed (Min)	Applied (Min)	Applied (Gal)	Applied (Inches)	High Limit (gpm)	Flow (gpm)	Low Limit (gpm)	Hold Over (Min)	Moisture Sensor Set	Moisture Sensor Last Reading	FLAG
Station 5													
07/08/2005 12:08 AM	A	1	2.0	2.0	77	0.03	0	---	0	0			
07/08/2005 12:20 PM	B	17	40.9	18.5	712	0.31	0	---	0	0			
Station 6													
07/05/2005 4:01 AM	D1	2	11.2	11.2	56	0.37	0	---	0	0			
07/06/2005 4:01 AM	D1	2	11.3	11.3	56	0.37	0	---	0	0			
07/07/2005 3:22 AM	D1	2	11.4	11.4	57	0.37	0	---	0	0			
07/08/2005 12:10 AM	A	1	2.0	2.0	10	0.06	0	---	0	0			
07/08/2005 12:24 PM	B	5	8.2	9.4	47	0.31	0	---	0	0			
Station 7													
07/04/2005 11:14 PM	D1	8	55.6	55.6	3,495	0.88	0	---	0	0			
07/05/2005 11:07 PM	D1	8	56.1	56.0	3,520	0.88	0	---	0	0			
07/06/2005 11:14 PM	D1	8	56.7	56.7	3,562	0.90	0	---	0	0			
07/08/2005 12:12 AM	A	1	2.0	2.0	125	0.03	0	---	0	0			
07/08/2005 12:22 PM	B	17	40.9	32.0	2,000	0.50	0	---	0	0			
Station 8													
07/05/2005 1:22 AM	D1	3	52.9	52.9	3,647	0.55	0	---	0	0			
07/06/2005 1:22 AM	D1	3	53.5	53.5	3,688	0.55	0	---	0	0			
07/07/2005 12:53 AM	D1	3	54.0	54.0	3,722	0.56	0	---	0	0			
07/08/2005 12:14 AM	A	1	2.0	2.0	137	0.02	0	---	0	0			
07/08/2005 12:23 PM	B	16	39.0	31.0	2,123	0.32	0	---	0	0			

Flag Legend:

'S' = Short Circuit 'F' = Controller Off 'W' = No Water 'M' = Moisture Sensor Caused Cycle Skip
 'C' = No Current 'L' = Low Flow 'R' = Rain Switch 'X' = Moisture Sensor Max Water Days Set
 'I' = Low Current 'H' = High Flow 'T' = Normal Stop Time 'V' = Master Valve Override
 'U' = High Current 'U' = Flow Not Checked 'B' = Mainline Break 'A' = Tailends Adjustment

Moisture Sensor Reading Legend:

'-' = Reading Never Taken
 'R' = Reading Out Of Range
 'F' = No Filtered Reading
 'S' = Signal Never Went Away
 'D.' = Reading Not Put In Line Yr

Flag Letter Definitions For Controller

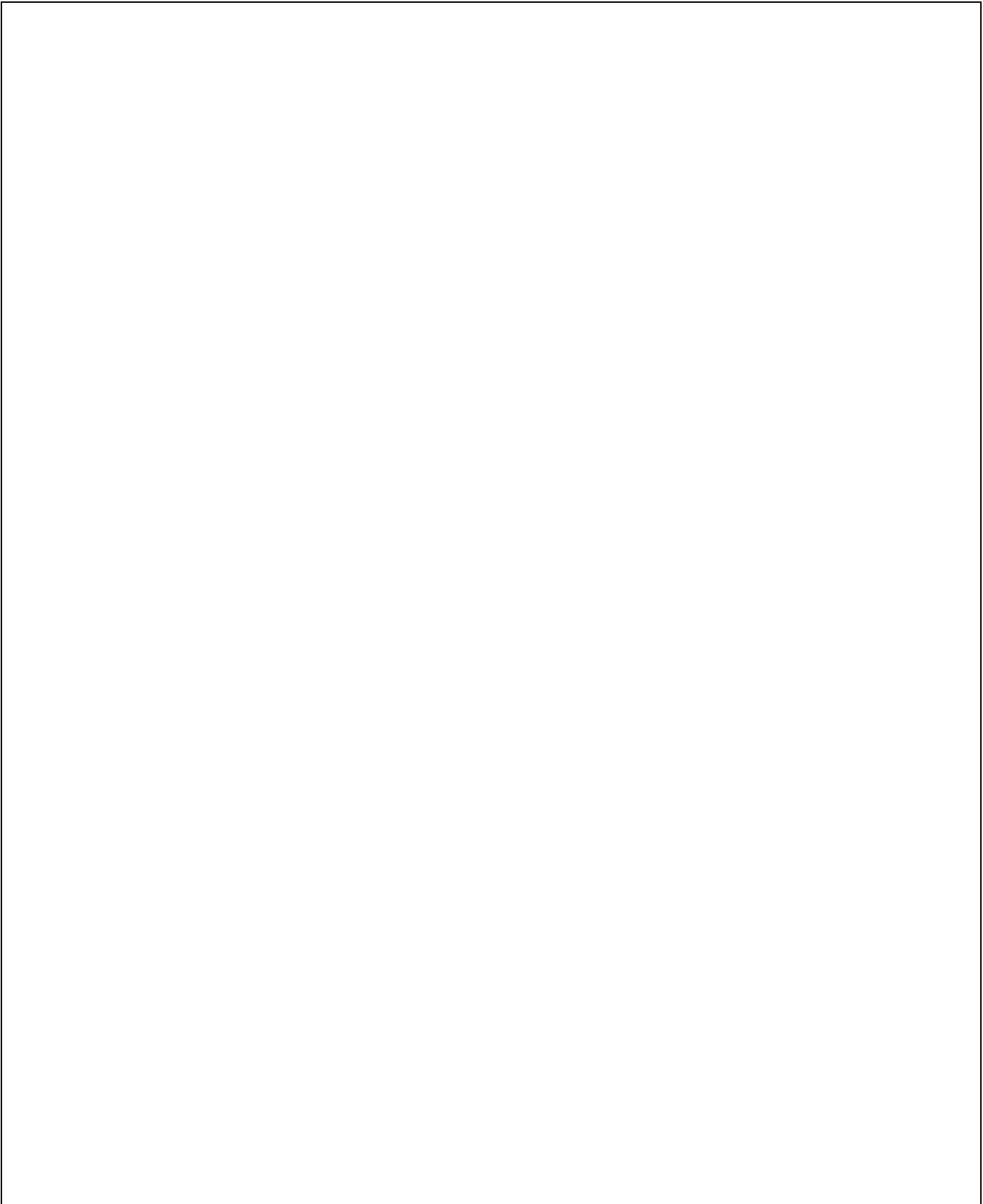
LETTER	DESCRIPTION	DEFINITION
S	Short Circuit	During normally scheduled irrigation or during scheduled manual hold over a short circuit was detected. The valve is turned off and the remaining irrigation time is thrown away. At the next scheduled irrigation the valve will try again.
O	No Current	During normally scheduled irrigation or during scheduled manual hold-over, an open circuit was detected. This is a passive alert. The valve stayed on and completed its irrigation.
C	Low Current	A low current situation was detected. Not yet implemented or used.
I	High Current	A high current situation was detected. Not yet implemented or used.
A	Tail Ends Adjustment	During normally scheduled irrigation or during scheduled manual hold-over, the Tail-Ends adjustment caused a portion of the scheduled time not to run. The time to irrigate was less than 5% of the cycle time. (FYI: When the residual time is between 5% & 20% of the cycle time it is evenly divided up among the cycles that do run.)
L	Low Flow	During normally scheduled irrigation or during scheduled manual hold-over, flow was tested and this valve failed the LOW FLOW test. The action taken is controlled by the Alert Actions settings.
H	High Flow	During normally scheduled irrigation or during scheduled manual hold-over, flow was tested and this valve failed the HIGH FLOW test. The action taken is controlled by the Alert Actions settings.
U	Flow Not Checked	For one reason or another flow could not be checked during one of the cycles that this station ran during normally scheduled irrigation or during scheduled manual hold-over. In field service mode you will get an elaborate alert detailing the conditions that could prevent flow from being checked.
W	No water	The scheduled programmed irrigation did not apply any time for this station because NO WATER days were set.
R	Rain switch	The RAIN SWITCH caused the programmed irrigation to cut short or to not be applied at all. In addition whenever a RAIN BUCKET causes programmed irrigation to be affected (either through polling or sharing) this flag is set. So it's a dual use flag: used to indicate Rain Switch and Rain Bucket activities. This flag will be set if the above rain events occur during scheduled manual hold-over.
B	Main Line Break	A MAINLINE BREAK affected the programmed irrigation. Either it did not start or it was cut short when the mainline break occurred. This flag will be set if the mainline break occurs during scheduled manual hold-over.



T	Normal Stop Time	During normally scheduled programmed irrigation, we crossed the HOLD OVER time. The irrigation was terminated and the remaining time was added to the hold-over for that station. This flag is set during manually scheduled hold-over if during that activity we hit the manual hold-over STOP TIME .
F	Controller Off	The normally scheduled programmed irrigation did not apply any time for this station because the controller was set to OFF . This flag will be set if the controller is turned OFF in the middle of applying normally scheduled irrigation or scheduled manual hold-over.
M	Moisture Sensor Caused Cycle Skip	The MOISTURE SENSOR caused the programmed irrigation or scheduled hold-over time to be cut short. A number of cycles did not irrigate because the moisture sensor reading was equal to or above the set point. Anywhere from one cycle to all of the scheduled cycles may be curtailed. This flag is set in the master station as well as all of his slaves.
X	Moisture Sensor Max water Days Set	While using moisture sensing, MAX WATER was set causing this station to irrigate all of its normally scheduled irrigation- regardless of what the moisture sensor said to do.
V	Master Valve Override	The master valve was closed using MASTER VALVE OVERRIDE . This master valve closure either prohibited the normally scheduled irrigation from occurring or it interrupted it. This flag will be set if the master valve is closed using master valve override during scheduled manual hold-over.

Flag Letter Definitions For Moisture sensors

LETTER	DESCRIPTION	DEFINITION
---	Reading Never Taken	This means the "Moisture sensor in use block" in Program Data is checked but the program in the "Use Moisture Sensor in the following program" block using this station is not checked for moisture sensor usage.
R**	Reading Out Of Range	This means the reading the controller received from the Moisture Sensor was out of the realm of 0-100 therefore out of range.
F**	No Filtered Reading	Hardware problem with the controller / moisture sensor / or field wiring
S**	Signal Never went Away	Hardware problem with the controller.
O--	Reading Not Put In Line Yet	This means that there is a Moisture Sensor assigned to this station via a program, but has not yet taken a reading.



22.0 CONTROLLER LIST

Controller List: The Controller List is a report that identifies all of the irrigation controllers currently assigned to the User. It contains important at-a-glance information concerning individual controller characteristics.

1. From the toolbar at the top of the screen select **Central Reports** then scroll down to **Controller List** and click on it (Figure 22.0.1).

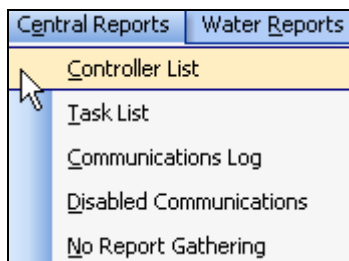


Figure 22.0.1

Note: This will take you to the “**Controller List**” screen (Figure 22.0.2).

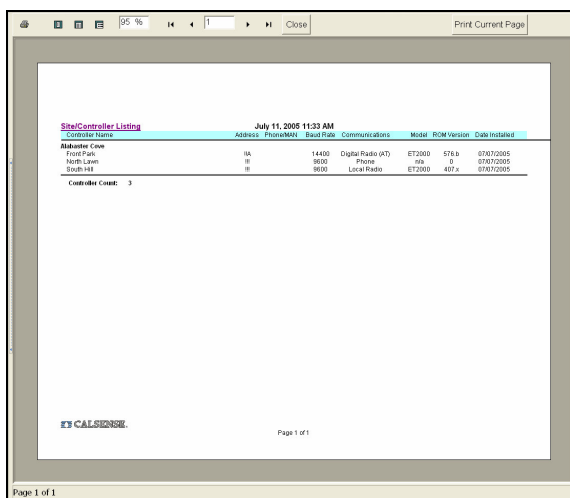


Figure 22.0.2

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

SEE LAST PAGE OF THIS SECTION FOR FULL PAGE REPORT.

22.1 CONTROLLER LIST REPORT CONTENTS

The following is a list of every item on the **Controller List** report (Figure 22.0.2).

Date and Time: This shows the date and time that you requested the report. If you decide to print the report this gives you a way in which to file chronologically.

Site Name: Each site name will appear to the left of the list in bold font.

Controller Name: The controller names will be listed directly under the site that they are a part of. They will appear in alpha-numeric sequence and are in regular font.

Address: This is the communications address for each controller.

Phone / MAN: This is the phone number, MAN (Mobytex Access Number) number, IP (Internet Protocol) number that you use to communicate with the controller.

Baud Rate: This is the rate at which you are communicating with the controller.

Communications: This is the type of communications device that you are communicating to the controller with.

Model: This is the model type of the controller.

ROM Version: This number and letter text combination identifies the (Read Only Memory) chip installed in the controller.

Date Installed: This is the date that you have entered in the “**Site / Controller**” screen for this controller.


Controller Count: The total amount of controllers assigned to this user.

95 % 1 Close Print Current Page

Site/Controller Listing July 11, 2005 11:33 AM

Controller Name	Address	Phone/MAN	Baud Rate	Communications	Model	ROM Version	Date Installed
Alabaster Cove							
Front Park	!!A		14400	Digital Radio (AT)	ET2000	576.b	07/07/2005
North Lawn	!!!		9600	Phone	n/a	0	07/07/2005
South Hill	!!!		9600	Local Radio	ET2000	407.x	07/07/2005

Controller Count: 3

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23.0 TASK LIST

Task List: The Task List is a detailed report containing the user's individual scheduled tasks listed by Task name, occurrence, and controllers involved.

1. From the toolbar at the top of the screen select **Central Reports** then scroll down to **Task List** and click on it (Figure 23.0.1).

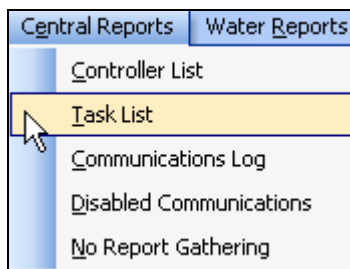


Figure 23.0.1

Note: This will take you to the “Task List” screen (Figure 23.0.2).

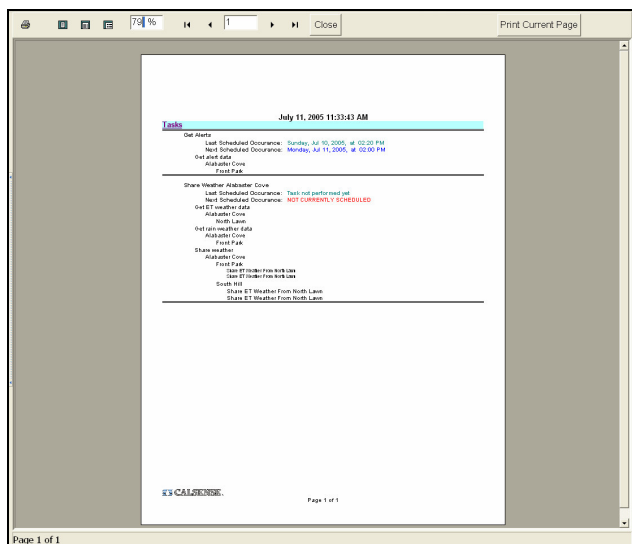


Figure 23.0.2

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

SEE LAST PAGE OF THIS SECTION FOR FULL PAGE REPORT.

23.1 TASK LIST REPORT CONTENTS

The following is a list of every item on the **Task List** Report (Figure 23.0.1).

Date and Time: This shows the date and time that you requested the report.

Task: This is the name of the task as it appears in the “Task Setup” window.

Last Scheduled Occurrence: This is the last date and time that the task took place.

Next Scheduled Occurrence: This is the next date and time that the task will take place.

Site Name: Each site name will appear to the left of the list.

Controller Name: The controller names will be listed directly under the site that they are a part of. They will appear in alpha-numeric sequence and are in regular font.

Share ET weather From: If you have a weather sharing task set up, the controller that you are getting the information from will appear directly below the controller that you are sharing it to.

79% 1 Close Print Current Page

Tasks
July 11, 2005 11:33:43 AM

Get Alerts
Last Scheduled Occurance: Sunday, Jul 10, 2005, at 02:20 PM
Next Scheduled Occurance: Monday, Jul 11, 2005, at 02:00 PM

Get alert data
Alabaster Cove
Front Park

Share Weather Alabaster Cove
Last Scheduled Occurance: Task not performed yet
Next Scheduled Occurance: NOT CURRENTLY SCHEDULED

Get ET weather data
Alabaster Cove
North Lawn

Get rain weather data
Alabaster Cove
Front Park

Share weather
Alabaster Cove
Front Park
Share ET Weather From North Lawn
Share ET Weather From North Lawn

South Hill
Share ET Weather From North Lawn
Share ET Weather From North Lawn

Page 1 of 1

A large, empty rectangular box with a thin black border, intended for a task list.



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24.0 DISABLED COMMUNICATIONS

Disabled Communications: The Disabled Communications Report shows a listing of controllers that have been selected, by the user, as controllers that the central computer will not communicate with.

1. From the toolbar at the top of the screen select **Central Reports** then scroll down to **Disabled Communications** and click on it (Figure 24.0.1).



Figure 24.0.1

Note: This will take you to the “**Disabled Communications**” screen (Figure 24.0.2).

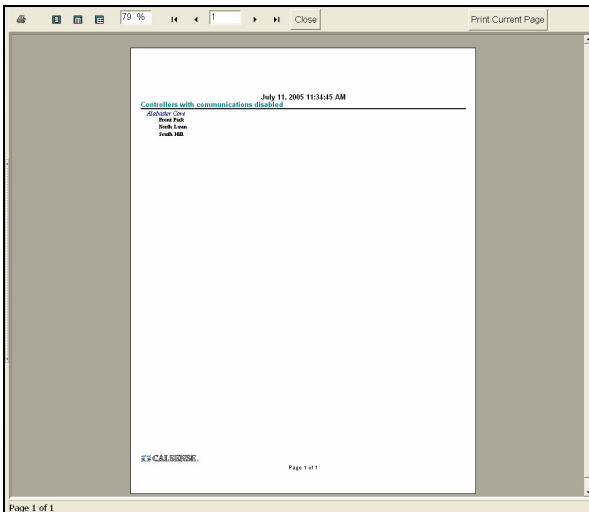


Figure 24.0.2

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

SEE LAST PAGE OF THIS SECTION FOR FULL PAGE REPORT.

24.1 DISABLED COMMUNICATIONS LIST REPORT CONTENTS

The following is a list of every item on the **Disabled Communications** report (Figure 24.0.2).

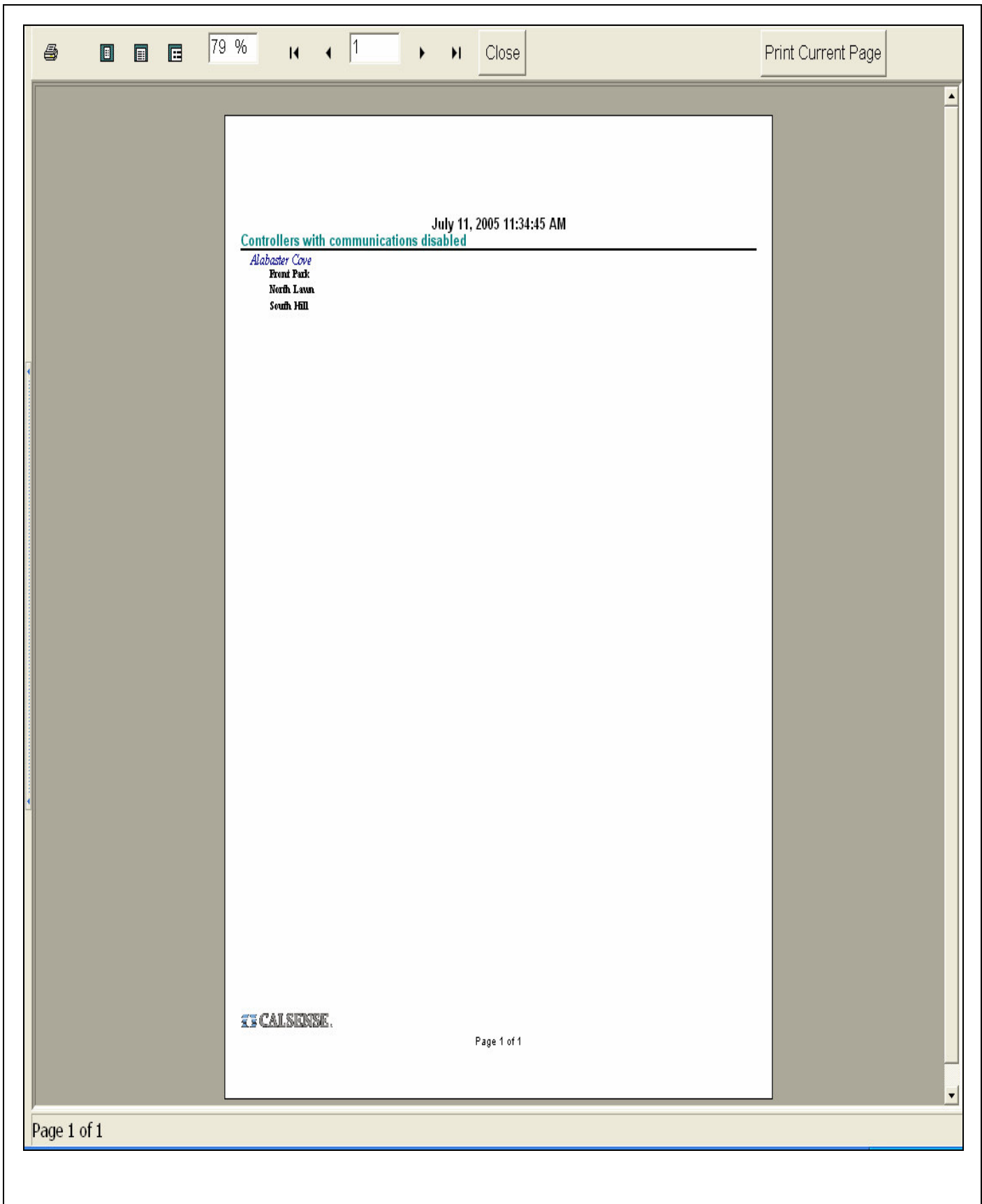
Date and Time: This shows the date and time that you requested the report.

Site Name: Each site name will appear to the left of the list in a colored font.

Controller Name: The controller names will be listed directly under the site that they are a part of. They will appear in alpha-numeric sequence and are in bold font.

Note: To enable the communications for a controller in this list you must go to **Site / Controller setup** in the toolbar and check the box next to **Communications Enabled**.

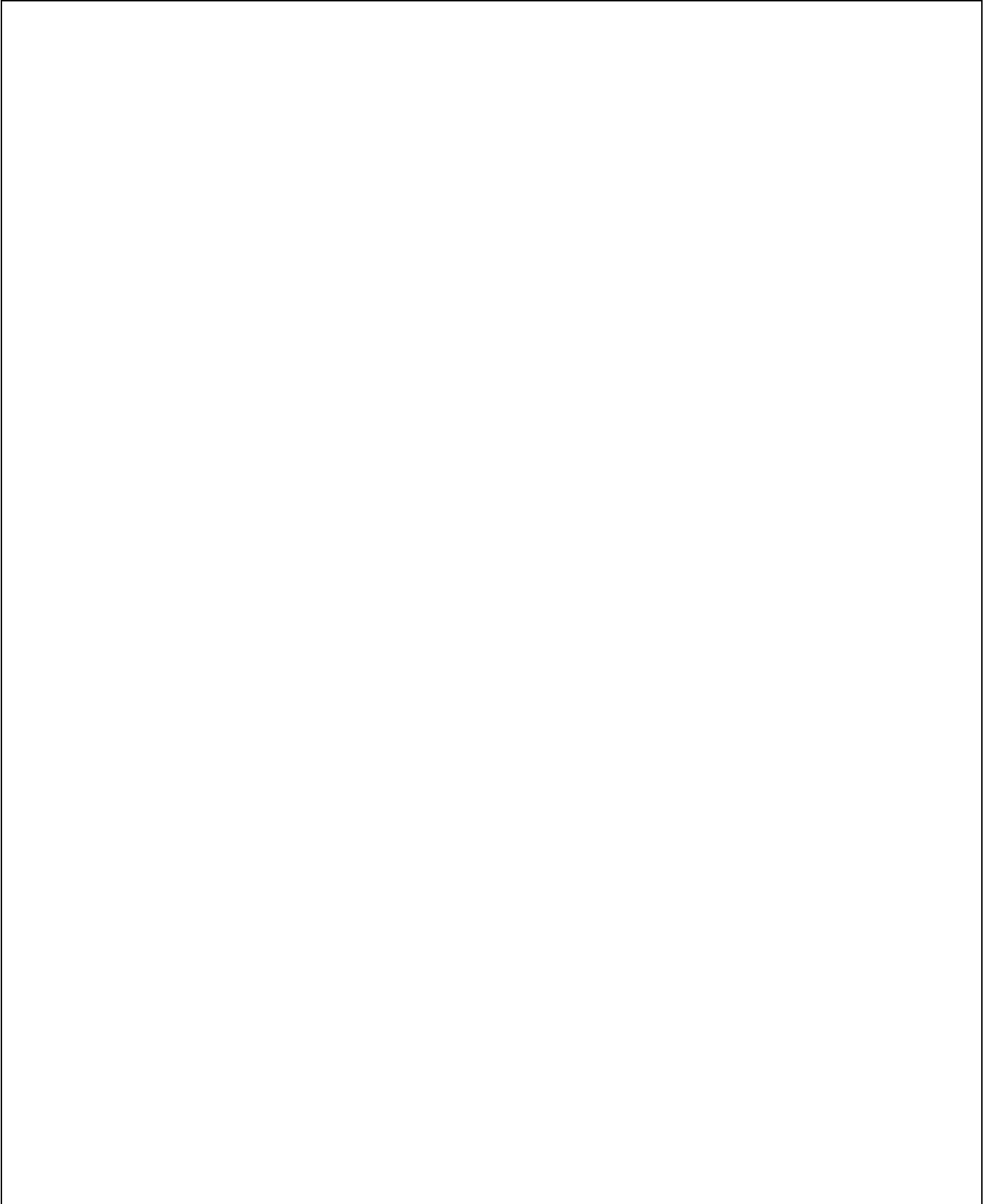




The screenshot shows a PDF viewer window with a toolbar at the top. The toolbar includes icons for print, zoom, and navigation, along with a zoom percentage of 79%, a page number of 1, and a 'Close' button. A 'Print Current Page' button is also visible. The main content area displays a document page with the following text:

July 11, 2005 11:34:45 AM
Controllers with communications disabled
Alabaster Cove
Front Park
North Lawn
South Hill

At the bottom of the page, the CALSENSE logo and 'Page 1 of 1' are visible. The viewer's status bar at the bottom left also shows 'Page 1 of 1'.



25.0 NO REPORT GATHERING

No Report Gathering: The No Report Gathering section allows the user to check a box in the **Site Controller Section** of the Command Center software so that certain controllers can be singled out, and contacted on an as needed basis. This limits communication time and costs with certain types of communications.

1. From the toolbar at the top of the screen select **Central Reports** then scroll down to **No Report Gathering** and click on it (Figure 25.0.1).



Figure 25.0.1

Note: This will take you to the “**No Report Gathering**” screen (Figure 25.0.2).

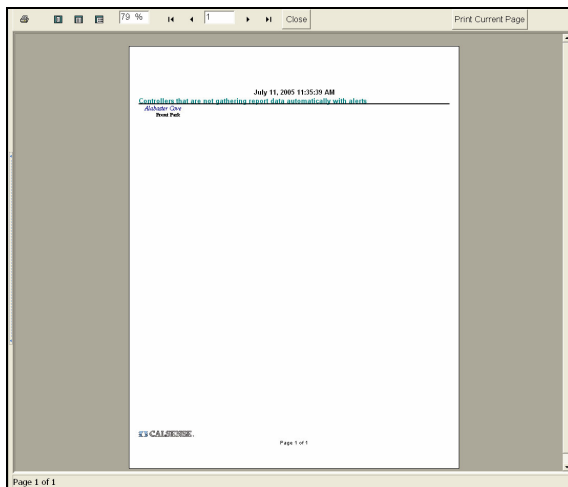


Figure 25.0.2

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

SEE LAST PAGE OF THIS SECTION FOR FULL PAGE REPORT.

25.1 NO REPORT GATHERING REPORT CONTENTS

The following is a list of every item on the “**No Report Gathering**” report (Figure 25.0.2).

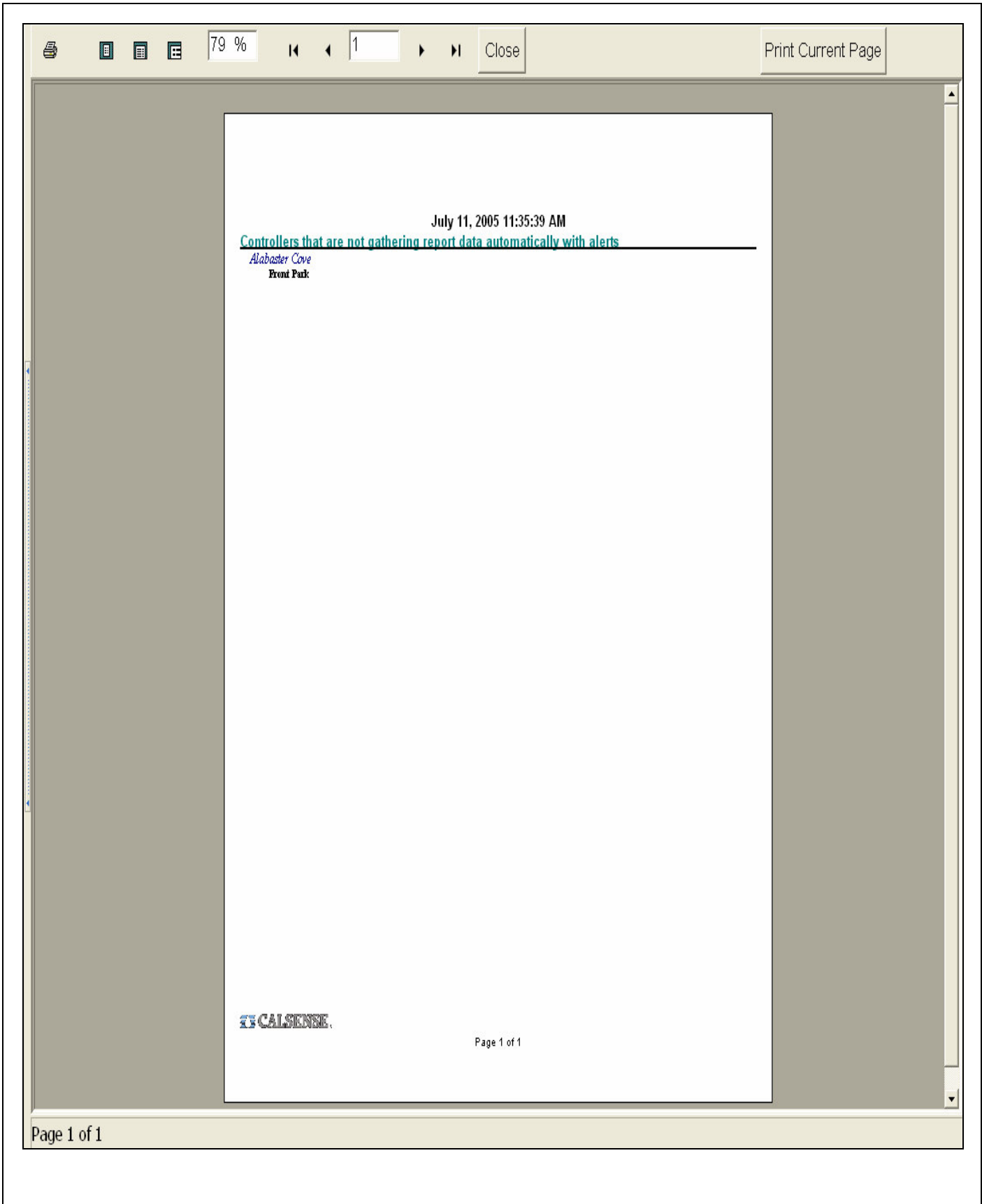
Date and Time: This shows the date and time that you requested the report. If you decide to print the report this gives you a way in which to file chronologically.

Site Name: Each site name will appear to the left of the list in colored font.

Controller Name: The controller names will be listed directly under the site that they are a part of. They will appear in alpha-numeric sequence and are in bold font.

Note: To enable report gathering for a controller in this list you must go to **Site / Controller setup** in the toolbar and check the box next to **Automatically retrieve controller report data with alerts**.






79 % 1 Close Print Current Page

July 11, 2005 11:35:39 AM

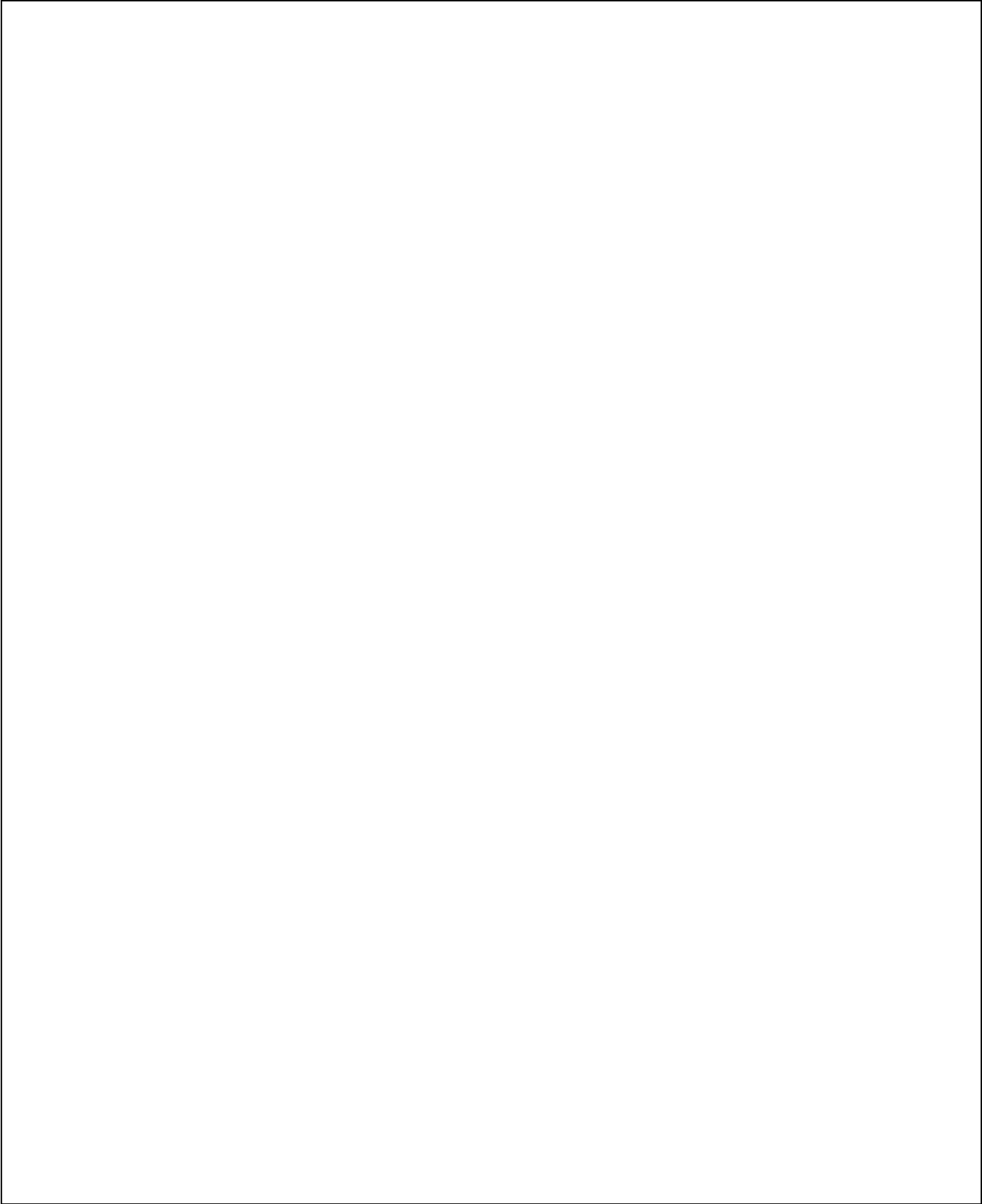
Controllers that are not gathering report data automatically with alerts

Alabaster Cove
Front Park

 CALSENSE

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26.0 WATER MANAGEMENT

Water Management: The Water Management report details monthly water usage and budget numbers, in an easy to read information column, and graph / chart format.

1. From the toolbar at the top of the screen select **Water Reports** then scroll down to **Water Management** and click on it (Figure 26.0.1).

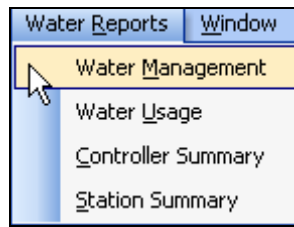


Figure 26.0.1

Note: This will take you to the “**Water Management**” screen (Figure 26.0.2).

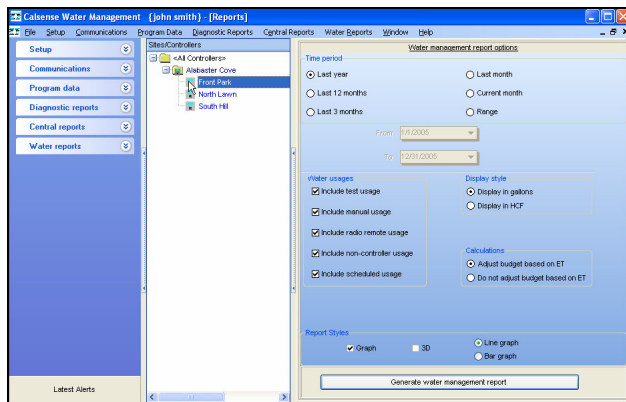


Figure 26.0.2

2. Next Click on a controller from your controller list to highlight it (Figure 26.0.3).

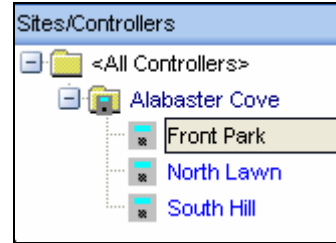


Figure 26.0.3

Time Period: This allows you to select a range of time by selecting from one of the six choices below (Figure 26.0.4).

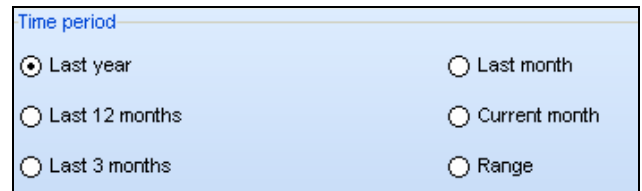


Figure 26.0.4

Last year: This will allow you to select a date range from January 1st to December 31st of the last calendar year.

Last 12 months: This will allow you to select a date range for the last 12 calendar months.

Last 3 months: This will allow you to select a date range for the last three calendar months.

Last month: This will allow you to select a date range for the last calendar month.

Current month: This will allow you to select a date range from the first day of this month until the last day of this month.

Range: This allows you to select a specific date range with a set start date and set finish date.

Note: This will open up the date range boxes directly below the **Range** button (Figure 26.0.5).



Figure 26.0.5

3. Click on the drop down arrow to select a date. This will reveal the calendar to choose a specific date (Figure 26.0.6).

Figure 26.0.6

Note: Use the **BLACK** arrows to adjust the **MONTH** and **YEAR** or click on the **Today** button to set the date for today's date.

4. Next click on the box for each item from the **Water Usages** list that you would like to include in your report (Figure 26.0.7).

Figure 26.0.7

5. In the **Display style** section click on the appropriate box for the following (Figure 26.0.8).

Display in gallons: This will display all water totals in gallons.

Display in HCF: This will display all water totals in hundreds of cubic feet.

Figure 26.0.8

6. In the **Calculations** section click on the appropriate box for the following (Figure 26.0.9).

Adjust Budget based on ET: This will show all calculations based on ET.

Do Not Adjust budgets based on ET: This will calculate your report by not using ET information.

Calculations

Adjust budget based on ET

Do not adjust budget based on ET

Figure 26.0.9

- Next choose from the **Report Styles** section the style of report that you want (Figure 26.0.10).

Report Styles

Graph 3D Line graph

Bar graph

Figure 26.0.10

Graph: This will display your report in graph format.

3D: This will display your report in a three dimensional format.

Line Graph: This will show your report in line graph format.

Bar Graph: This will show your report in bar graph format.

- Click on the **Generate water management report** button to view Water Usage report (Figure 26.0.11).

Generate water management report

Figure 26.0.11

26.1 WATER MANAGEMENT REPORT

Note: This will take you to the “**Water Management**” report screen (Figure 26.1.1).

Calsense

Water Management
August 31, 2005 9:02:20 AM

Date	CONTROLLER NAME	ACTUAL ET (INCHES)	ADJ. ET (INCHES)	CONTROLLER NAME	ADJUSTED ET (INCHES)	WATER USAGE (GALLONS)	WATER USAGE (GALLONS)	PERCENT USED
Jan-2004	01	1.92	2.08	40	1.74	7242	7242	80
Feb-2004	05	2.47	2.25	0	0.770	0.770	2,459	0.207
Mar-2004	01	3.28	3.06	0	0.000	10,000	10,000	7.185
Apr-2004	00	4.71	4.55	0	0.000	10,741	10,741	7.599
May-2004	01	6.61	6.66	0	0.000	10,000	10,000	6.411
Jun-2004	00	6.71	6.83	0	0.000	23,071	23,071	11,102
Jul-2004	01	6.50	6.63	0	0.000	24,248	24,248	10,261
Aug-2004	01	6.41	6.41	0	0.000	22,040	22,040	9,261
Sep-2004	00	5.30	5.30	0	0.000	10,200	10,200	4,241
Oct-2004	00	2.46	2.46	0	0.790	0.790	2,248	0.543
Nov-2004	01	1.66	1.66	0	0.000	0.000	0.000	0.000
TOTAL	003	61.48	62.10	0	0.000	105,500	105,500	29,114

Figure 26.1.1

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

SEE LAST PAGE OF THIS SECTION FOR FULL PAGE REPORT.

26.2 WATER MANAGEMENT REPORT CONTENTS

The following is a list of every item on the “**Water Management**” Report (Figure 26.1.1).

Date and Time: This shows the date and time that you requested the report. If you decide to print the report this gives you a way in which to file chronologically.

Report Title: This is the title of the report that you are currently viewing.

Site Name: Each site name will appear to the left of the list in regular font.

Controller Name: The controller names will be listed directly under the site that they are a part of. They will appear in alpha-numeric sequence and are in regular font.

ROM Version: This will show up on the right hand side of the screen. Should be a three digit number followed by a period and an alphabetical letter. This will tell you the current (Read Only Memory) chip version that this controller is running on.

Start Date : This is the date and time that the irrigation occurred.

of Days: This shows you the total days for that particular month.

Controller Historical ET: This is the historical ET for this controller for the month shown.

Actual ET Table: This is the actual ET for this controller for the month shown.

ADJ%: This is the difference in percent between historical ET and Actual ET for that particular month.

Controller Budget (HCF / Gal): This is the budget amount in hundreds of cubic feet or gallons that were budgeted for that month.

Adjusted Budget (HCF / Gal): This is the budget based on actual ET in hundreds of cubic feet or gallons that were budgeted for the month.

Usage Actual (HCF / Gal): Shows actual water usage in hundreds of cubic feet or gallons for that month.

Savings: (HCF / Gal): This shows you the total amount of water in hundreds of cubic feet or in gallons that you were able to save for that month.

Percent Saved: This is the percent of water that you saved for that month.

Total: This row will give you the totals for each individual column.



79 % 1 Close Print Current Page

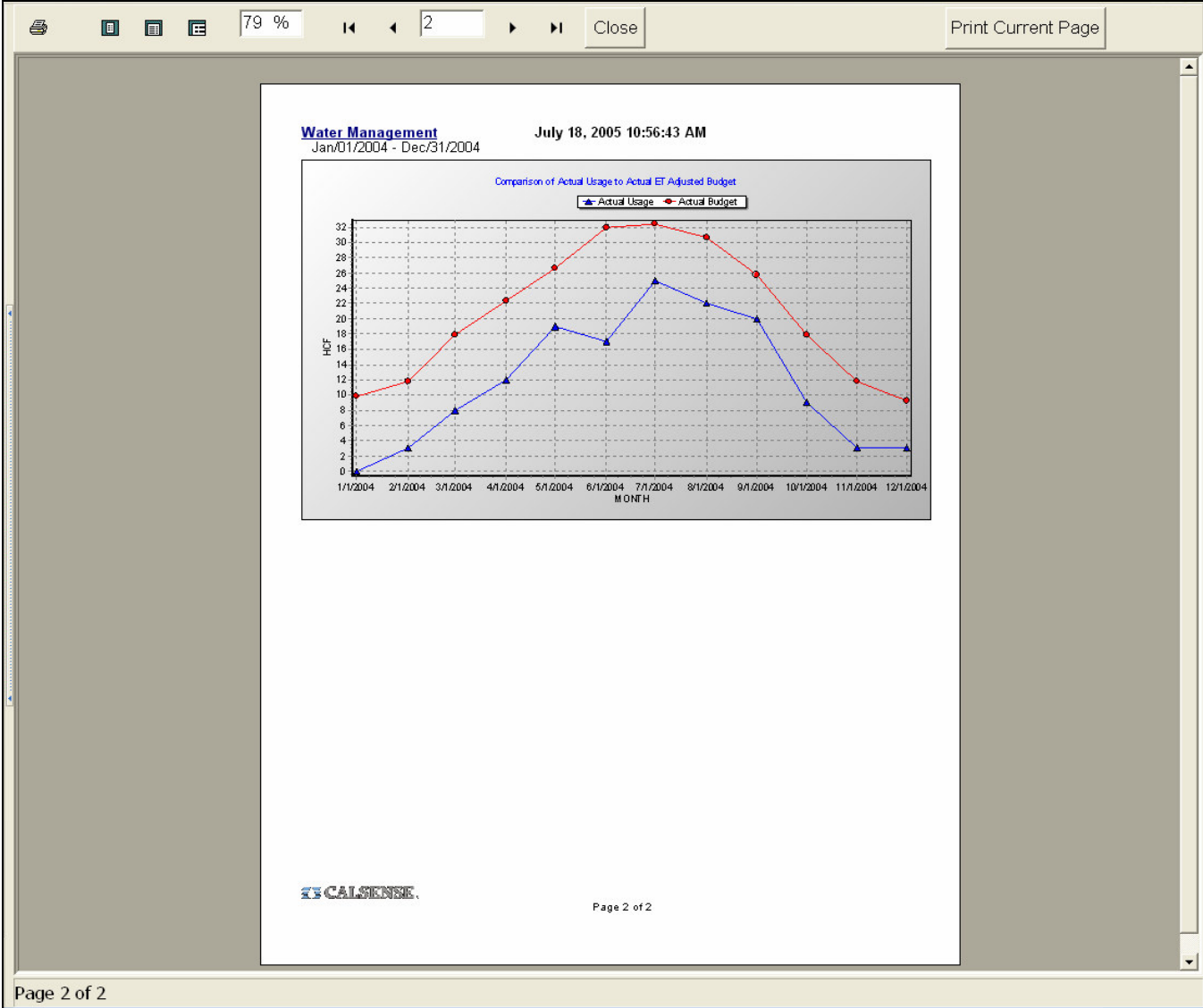
Calsense

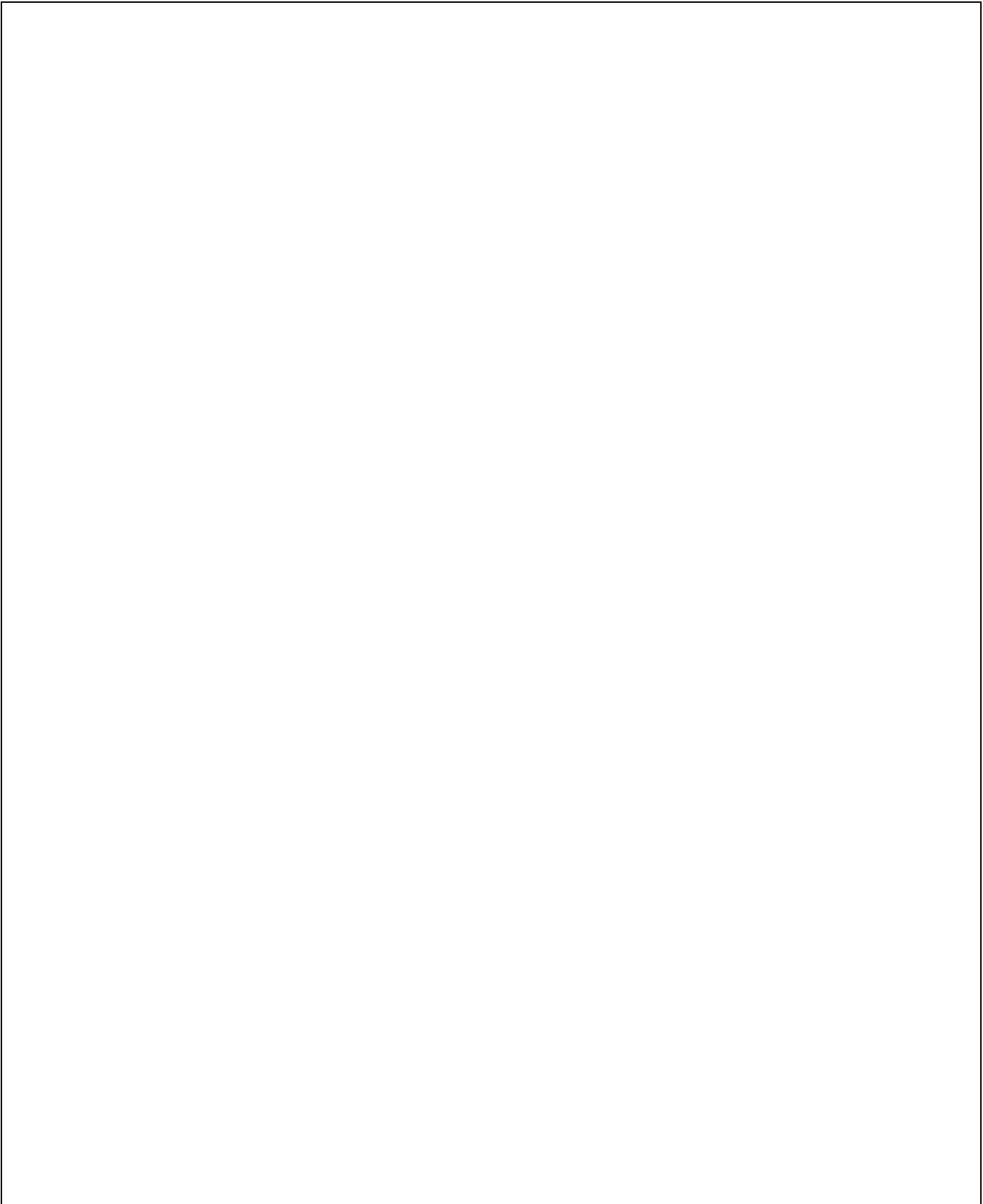
Water Management August 31, 2005 9:02:20 AM
 Jan/01/2004 - Dec/31/2004
 Alabaster Cove
 Front Park 523.x

Date	# of Days	CONTROLLER HISTORICAL ET	*ACTUAL ET TABLE	ADJ %	**CONTROLLER BUDGET GALLONS	***ADJUSTED BUDGET GALLONS	****USAGE ACTUAL GALLONS	SAVINGS GALLONS	PERCENT SAVED
Jan-2004	31	1.75	2.56	46 %	7,342	7,342	368	6,974	95 %
Feb-2004	26	2.47	2.25	-9 %	8,776	8,776	2,469	6,307	72 %
Mar-2004	31	3.78	3.59	-5 %	13,407	13,407	5,654	7,753	58 %
Apr-2004	30	4.72	4.55	-4 %	16,741	16,741	9,142	7,599	45 %
May-2004	31	5.61	5.46	-3 %	19,898	19,898	14,427	5,471	27 %
Jun-2004	30	6.73	4.83	-28 %	23,871	23,871	12,679	11,192	47 %
Jul-2004	31	6.83	6.83	0 %	24,226	24,226	18,933	5,293	22 %
Aug-2004	31	6.47	6.47	0 %	22,949	22,949	16,558	6,391	28 %
Sep-2004	30	5.43	5.43	0 %	19,260	19,260	14,975	4,285	22 %
Oct-2004	31	3.78	3.78	0 %	13,407	13,407	6,945	6,462	48 %
Nov-2004	30	2.48	2.48	0 %	8,796	8,796	2,243	6,553	74 %
Dec-2004	31	1.95	1.95	0 %	6,916	6,916	2,089	4,827	70 %
TOTAL	363	51.99	50.18	-3 %	185,589	185,589	106,485	79,104	43 %

ET values and usages set to zero when budget is zero
 * County and city settings for controller are San Diego and Escondido
 ** Controller Budget was Calculated at 100% of Controller Historical ET.
 *** The controller budget was not modified based on actual ET to calculate the adjusted budget.
 **** Usage based on: Test usage, manual usage, scheduled usage, noncontroller usage, radio remote usage

CALSENSE Page 1 of 2





making water work

since 1986

27.0 WATER USAGE

Water Usage: The Water Usage report shows individual monthly water usage numbers, along with ET table and rain table data for each controller selected.

- From the toolbar at the top of the screen select **Water Reports** then scroll down to **Water Usage** and click on it (Figure 27.0.1).

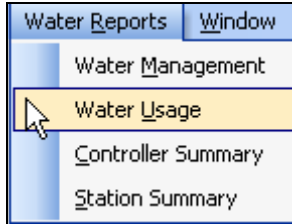


Figure 27.0.1

Note: This will take you to the “Water Usage” screen (Figure 27.0.2).

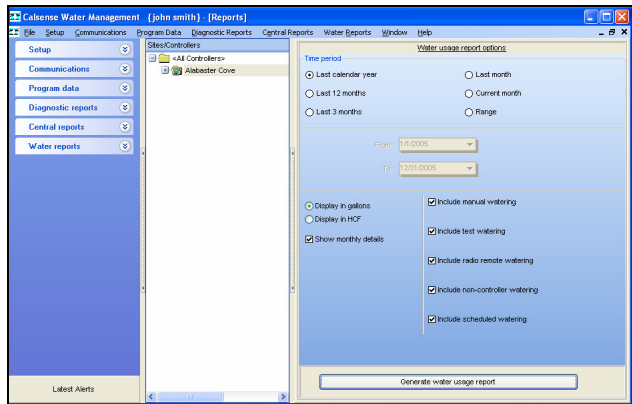


Figure 27.0.2

- Next click on a controller from your controller list to highlight it (Figure 27.0.3).

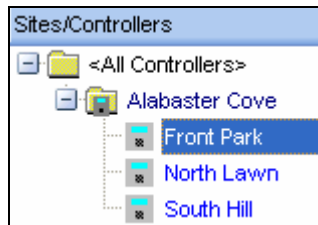


Figure 27.0.3

Time Period: This allows you to select a range of time by selecting from one of the six choices below (Figure 27.0.4).

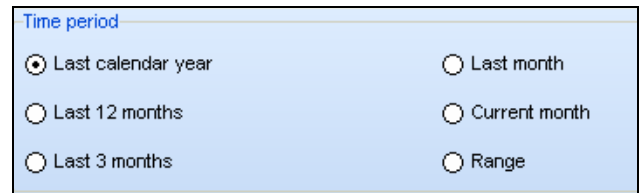


Figure 27.0.4

Last year: This will allow you to select a date range from the first day of the last calendar year to the last day of the calendar year.

Last 12 months: This will allow you to select a date range for the last 12 calendar months.

Last 3 months: This will allow you to select a date range for the last three calendar months.

Last month: This will allow you to select a date range for the last calendar month.

Current month: This will allow you to select a date range from the first day of this month until the last day of this month.

Range: This allows you to select a specific date range with a set start date and set finish date.

Note: This will open up the date range boxes directly below the **Range** button (Figure 27.0.5).

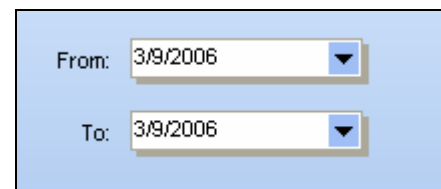


Figure 27.0.5

- Click on the drop down arrow to select a date. This will reveal the calendar to choose a specific date (Figure 27.0.6).



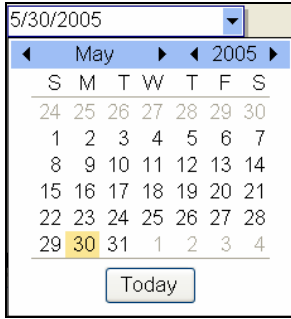


Figure 27.0.6

Note: Use the **BLACK** arrows to adjust the **MONTH** and **YEAR** or click on the **Today** button to set the date for today's date.

- Next click on the box for each item from the **Water Usages** list that you would like to include in your report (Figure 27.0.7).

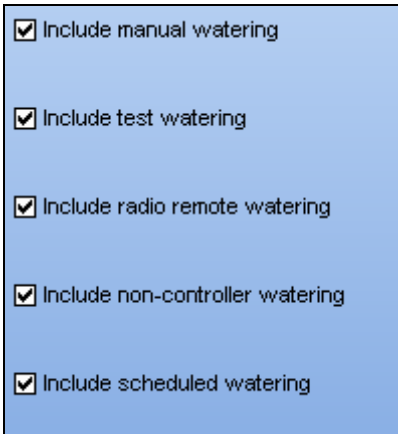


Figure 27.0.7

- In the **Display style** section click on the appropriate box for the following (Figure 27.0.8).

Display in gallons: This will display all water totals in gallons.

Display in HCF: This will display all water totals in Hundreds of Cubic feet.

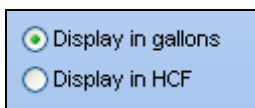


Figure 27.0.8

- Click on the **Show monthly details** button if you want your report to show calculations for each day of the month selected in the report (Figure 27.0.9).



Figure 27.0.9

- Click on the **Generate water usage report** button (Figure 27.0.10).

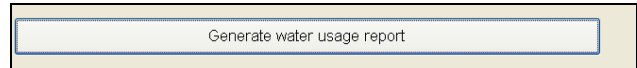


Figure 27.0.10

27.1 WATER USAGE REPORT

Note: This will take you to the "Water Usage" report screen (Figure 27.1.1).

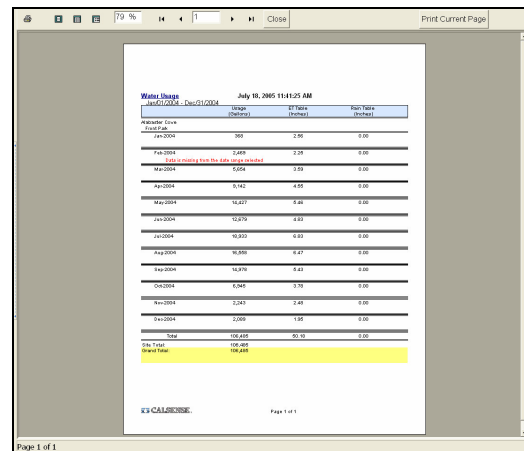


Figure 27.1.1

SEE "HOW TO PRINT REPORTS" SECTION FOR MORE INFORMATION.

SEE LAST PAGE OF THIS SECTION FOR FULL PAGE REPORT.

 **27.2 WATER USAGE REPORT CONTENTS**

The following is a list of every item on the “**Water Usage**” report (Figure 27.1.1).

Date and Time: This shows the date and time that you requested the report. If you decide to print the report this gives you a way in which to file chronologically.

Report Title: This is the title of the report that you are currently viewing.

Site Name: Each site name will appear to the left of the list in regular font.

Controller Name: The controller names will be listed directly under the site that they are a part of. They will appear in alpha-numeric sequence and are in regular font.

Date Range: This is the period covered by the report.

Usage (Gallons or HCF): This shows you the total amount of water used for each month.

ET Table (Inches): This shows the total inches in ET for each month.

Rain Table (Inches): This is the amount of rain in inches for each month.

Total: This is the total for each column of information.

Site Total: This is the total water usage for this site.

Grand Total: This is the water usage grand total for all sites included in this report.

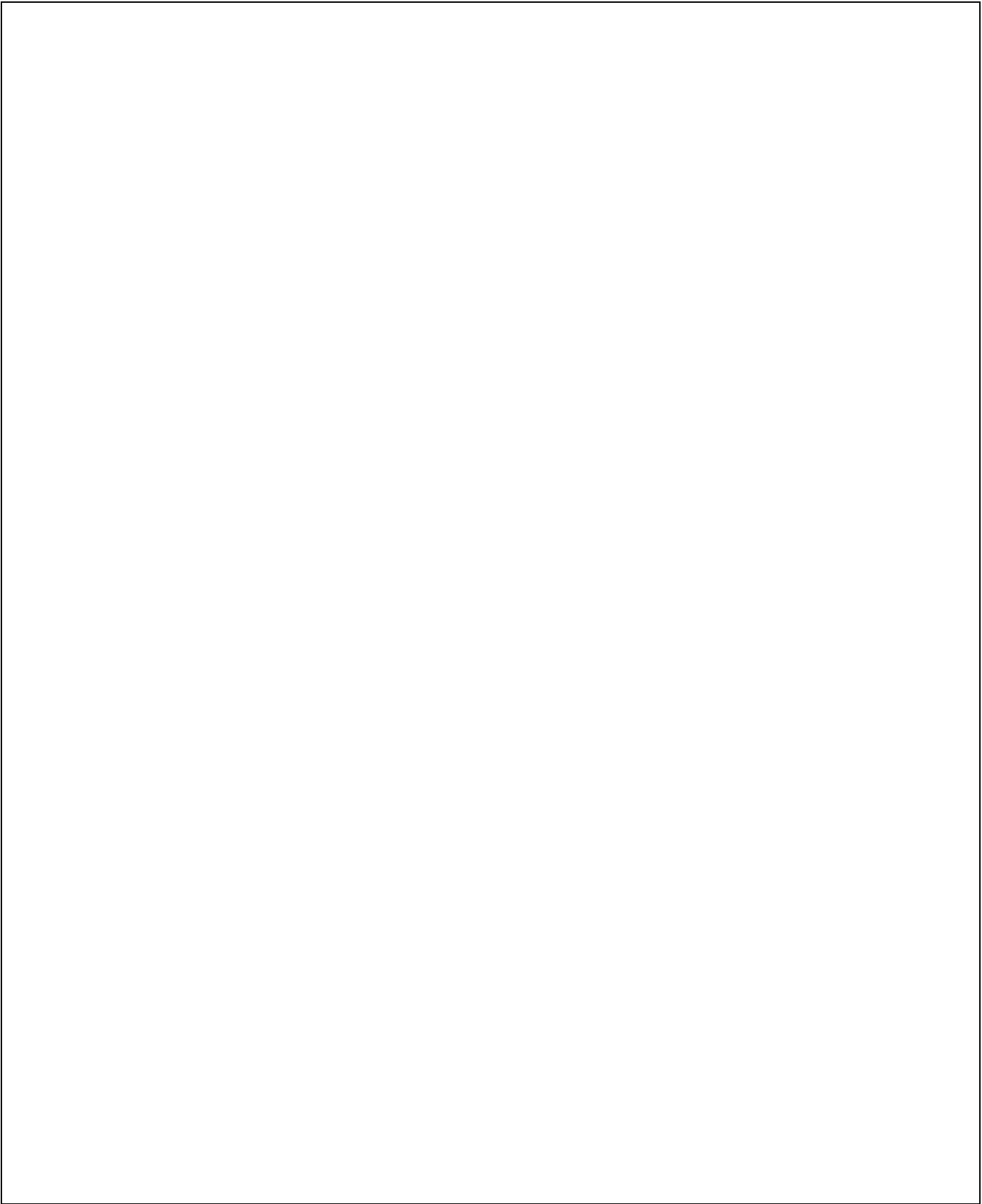


Water Usage

July 18, 2005 11:41:25 AM

Jan/01/2004 - Dec/31/2004

	Usage (Gallons)	ET Table (Inches)	Rain Table (Inches)
Alabaster Cove			
Front Park			
Jan-2004	368	2.56	0.00
Feb-2004	2,469	2.25	0.00
Data is missing from the date range selected			
Mar-2004	5,654	3.59	0.00
Apr-2004	9,142	4.55	0.00
May-2004	14,427	5.46	0.00
Jun-2004	12,679	4.83	0.00
Jul-2004	18,933	6.83	0.00
Aug-2004	16,558	6.47	0.00
Sep-2004	14,978	5.43	0.00
Oct-2004	6,945	3.78	0.00
Nov-2004	2,243	2.48	0.00
Dec-2004	2,089	1.95	0.00
Total	106,485	50.18	0.00
Site Total:	106,485		
Grand Total:	106,485		



28.0 CONTROLLER SUMMARY

Controller Summary: The Controller Summary report contains individual controller monthly, or daily water usage data broken down into specific irrigation types such as Scheduled, Test, Radio Remote, etc.

1. From the toolbar at the top of the screen select **Water Reports** then scroll down to **Controller Summary** and click on it (Figure 28.0.1).

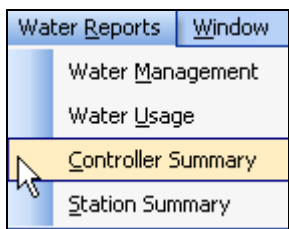


Figure 28.0.1

Note: This will take you to the “Controller Summary” screen (Figure 28.0.2).

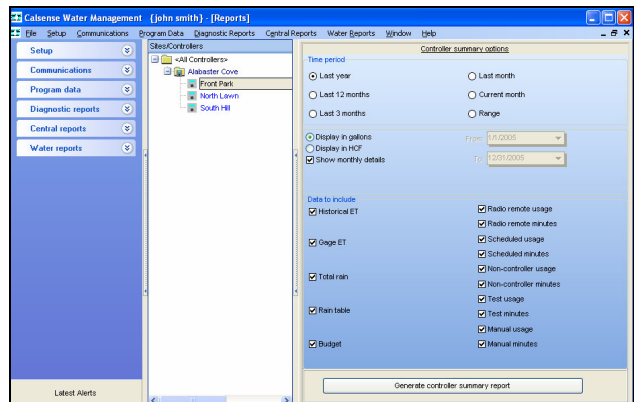


Figure 28.0.2

2. Next click on a controller from your controller list to highlight it (Figure 28.0.3).

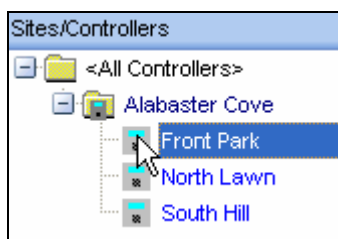


Figure 28.0.3

Time Period: This allows you to select a range of time by selecting from one of the six choices below (Figure 28.0.4).

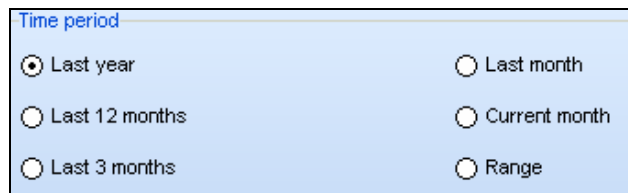


Figure 28.0.4

Last year: This will allow you to select a date range from the first day of the last calendar year to the last day of the calendar year.

Last 12 months: This will allow you to select a date range for the last 12 calendar months.

Last 3 months: This will allow you to select a date range for the last three calendar months.

Last month: This will allow you to select a date range for the last calendar month.

Current month: This will allow you to select a date range from the first day of this month until the last day of this month.

Range: This allows you to select a specific date range with a set start date and set finish date.

Note: This will open up the date range boxes directly below the **Range** button (Figure 28.0.5).

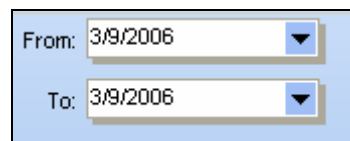


Figure 28.0.5

3. Click on the drop down arrow to select a date. This will reveal a calendar to choose a specific date (Figure 28.0.6).

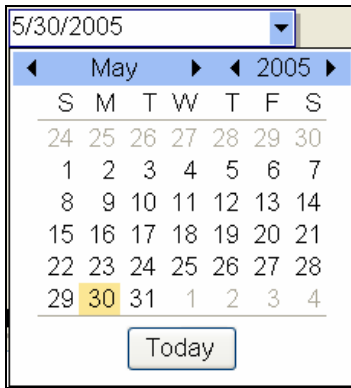


Figure 28.0.6

Note: Use the **BLACK** arrows to adjust the **MONTH** and **YEAR** or click on the **Today** button to set the date for today's date.

- Next click on the box for each item from the **Data to Include** list that you would like to include in your report (Figure 28.0.7).



Figure 28.0.7

- In the **Display style** section click on the appropriate box for the following (Figure 28.0.8).

Display in gallons: This will display all water totals in gallons.

Display in HCF: This will display all water totals in Hundreds of Cubic feet.

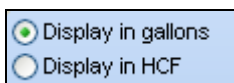


Figure 28.0.8

- Click on the **Show monthly details** button if you want your report to show Calculations for each day of the month selected in the report (Figure 28.0.9).

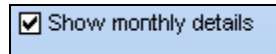


Figure 28.0.9

- Next click on the Generate controller summary report button (Figure 28.0.10)

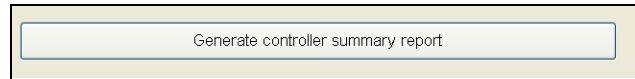


Figure 28.0.10

28.1 CONTROLLER SUMMARY REPORT

Note: This will take you to the **“Controller Summary”** report screen (Figure 28.1.1).

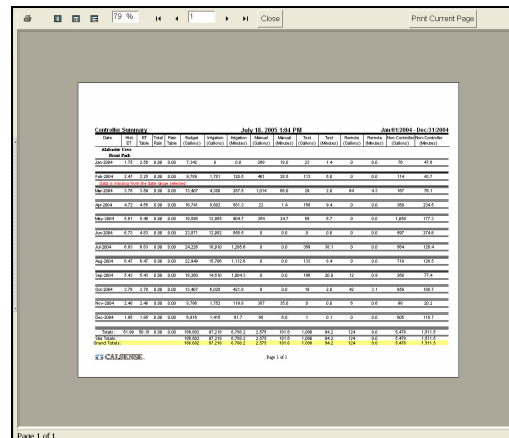


Figure 28.1.1

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

SEE LAST PAGE OF THIS SECTION FOR FULL PAGE REPORT.

 **28.2 CONTROLLER SUMMARY
REPORT CONTENTS**

The following is a list of every item on the "Controller Summary" Report (Figure 28.1.1).

Date and Time: This shows the date and time that you requested the report. If you decide to print the report this gives you a way in which to file chronologically.

Report Title: This is the title of the report that you are currently viewing.

Date Range: This is the period covered by the report.

Site Name: Each site name will appear to the left of the list in regular font.

Controller Name: The controller names will be listed directly under the site that they are a part of. They will appear in alpha-numeric sequence and are in regular font.

Historical ET: This is the historical ET readings for this controller for each month.

ET Table (Inches): This shows the total inches in ET for each month.

Total Rain: This is the total rain reading for this controller for each month.

Rain Table (Inches): This is the amount of rain in inches for each month.

Budget (HCF or Gal): This is the budgeted amount for this controller for each month.

Irrigation (HCF or Gal): This is how much water was used for this controller for each month.

Irrigation (minutes): This is the amount of minutes in irrigation time used by this controller for each month.

Manual (HCF or Gal): This is how much water was used during manual irrigation by this controller for each month.

Manual (minutes): This is the amount of minutes in manual irrigation used by this controller for each month.

Test (HCF or Gal): This is how much water was used for test by this controller for each month.

Test (minutes): This is the amount of minutes in test irrigation used by this controller for each month.

Remote (HCF or Gal): This is the amount of water used while irrigating using a Calsense Radio Remote.

Remote (minutes): This is the amount of minutes used while irrigating using a Calsense Radio Remote.

Non-controller (HCF or Gal): This is the amount of water used in non-irrigation by this controller for each month.

Non-controller (minutes): This is the amount of time in minutes used for non-irrigation by this controller for each month.

Totals: This is the total for each column of information.

Site Totals: This is the total water usage for this site.

Grand Totals: This is the water usage grand total for all sites included in this report.



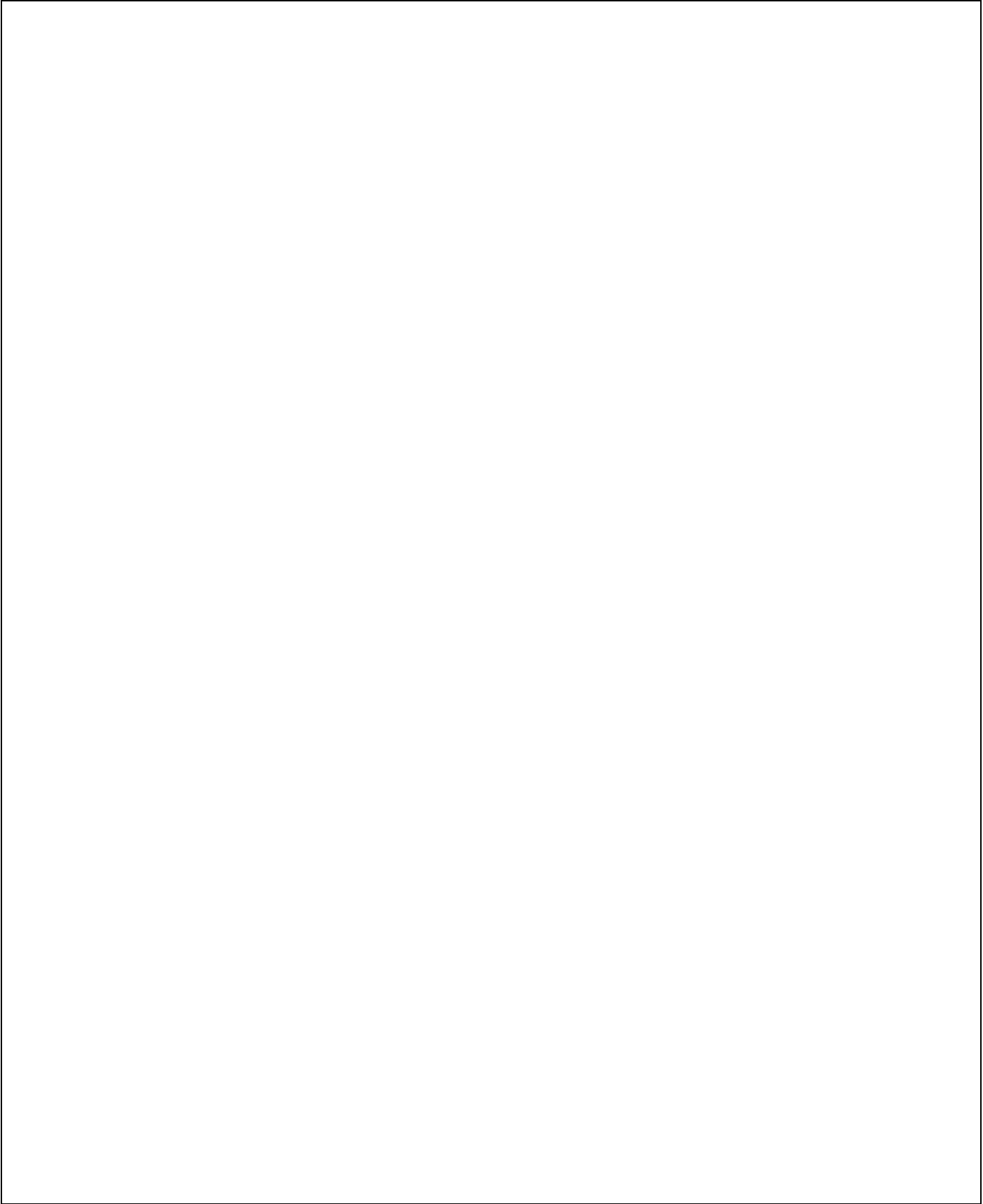
79 %
1
Close

Print Current Page

Controller Summary July 18, 2005 1:04 PM Jan/01/2004 - Dec/31/2004

Date	Hist. ET	ET Table	Total Rain	Rain Table	Budget (Gallons)	Irrigation (Gallons)	Irrigation (Minutes)	Manual (Gallons)	Manual (Minutes)	Test (Gallons)	Test (Minutes)	Remote (Gallons)	Remote (Minutes)	Non-Controller (Gallons)	Non-Controller (Minutes)
Alabaster Cove															
Front Park															
Jan-2004	1.75	2.56	0.00	0.00	7,342	0	0.0	269	18.0	23	1.4	0	0.0	76	47.6
Feb-2004	2.47	2.25	0.00	0.00	9,789	1,781	120.5	461	28.5	113	6.0	0	0.0	114	43.7
Data is missing from the date range selected															
Mar-2004	3.78	3.59	0.00	0.00	13,407	4,380	287.5	1,014	68.0	29	2.0	64	4.3	167	76.1
Apr-2004	4.72	4.55	0.00	0.00	16,741	8,602	581.3	22	1.4	158	9.4	0	0.0	360	234.5
May-2004	5.61	5.46	0.00	0.00	19,898	12,955	904.7	354	24.7	59	6.7	0	0.0	1,059	177.3
Jun-2004	6.73	4.83	0.00	0.00	23,871	12,082	858.5	0	0.0	0	0.0	0	0.0	597	274.6
Jul-2004	6.83	6.83	0.00	0.00	24,226	18,010	1,285.6	0	0.0	359	38.1	0	0.0	564	126.4
Aug-2004	6.47	6.47	0.00	0.00	22,949	15,706	1,112.6	0	0.0	133	8.4	0	0.0	719	126.5
Sep-2004	5.43	5.43	0.00	0.00	19,260	14,510	1,004.3	0	0.0	196	20.0	12	0.9	260	77.4
Oct-2004	3.78	3.78	0.00	0.00	13,407	6,025	421.8	0	0.0	19	2.0	42	3.1	859	188.7
Nov-2004	2.48	2.48	0.00	0.00	8,796	1,752	119.8	387	35.0	0	0.0	6	0.6	98	20.2
Dec-2004	1.95	1.95	0.00	0.00	6,916	1,415	91.7	68	6.0	1	0.1	0	0.0	605	118.7
Totals:	51.99	50.18	0.00	0.00	186,802	97,218	6,788.2	2,575	181.6	1,090	94.2	124	9.0	5,478	1,511.5
Site Totals:					186,802	97,218	6,788.2	2,575	181.6	1,090	94.2	124	9.0	5,478	1,511.5
Grand Totals:					186,802	97,218	6,788.2	2,575	181.6	1,090	94.2	124	9.0	5,478	1,511.5

Page 1 of 1



29.0 STATION SUMMARY

Station Summary: The Station Summary report is a detailed breakout of the Controller Summary report with the information shown by station.

1. From the toolbar at the top of the screen select **Water Reports** then scroll down to **Station Summary** and click on it (Figure 29.0.1).



Figure 29.0.1

Note: This will take you to the “Station Summary” screen (Figure 29.0.2).

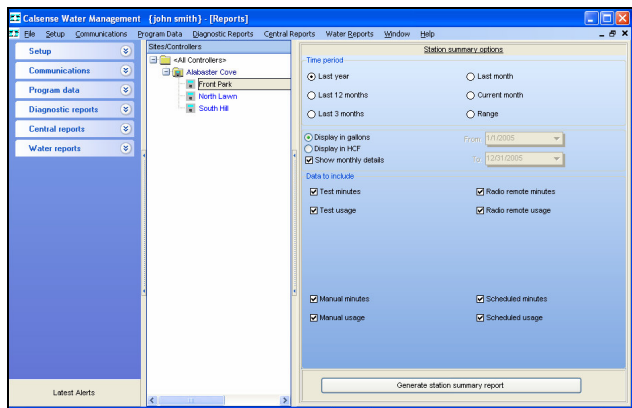


Figure 29.0.2

2. Next click on a controller from your controller list to highlight it (Figure 29.0.3).

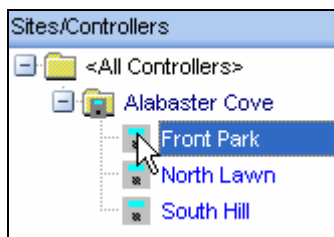


Figure 29.0.3

Time Period: This allows you to select a range of time by selecting from one of the six choices below (Figure 29.0.4).

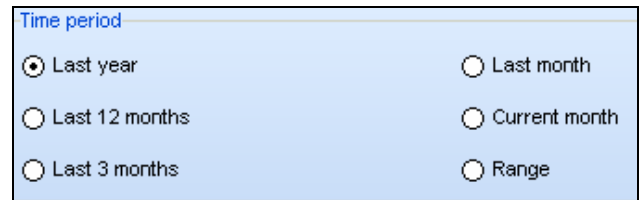


Figure 29.0.4

Last year: This will allow you to select a date range from the first day of the last calendar year to the last day of the calendar year.

Last 12 months: This will allow you to select a date range for the last 12 calendar months.

Last 3 months: This will allow you to select a date range for the last three calendar months.

Last month: This will allow you to select a date range for the last calendar month.

Current month: This will allow you to select a date range from the first day of this month until the last day of this month.

Range: This allows you to select a specific date range with a set start date and set finish date.

Note: This will open up the date range boxes directly below the **Range** button (Figure 29.0.5).

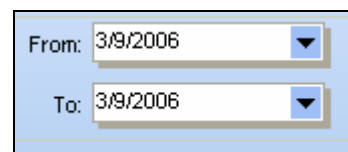


Figure 29.0.5

3. Click on the drop down arrow to select a date. This will reveal the calendar to choose a specific date (Figure 29.0.6).

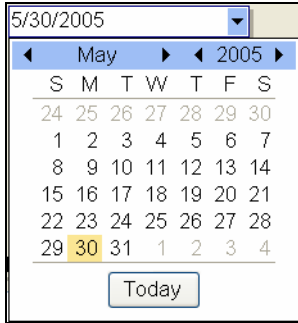


Figure 29.0.6

Note: Use the **BLACK** arrows to adjust the **MONTH** and **YEAR** or click on the **Today** button to set the date for today's date.

- Next click on the box for each item from the **Data to include** list that you would like to include in your report (Figure 29.0.7).

Data to include

<input checked="" type="checkbox"/> Test minutes	<input checked="" type="checkbox"/> Radio remote minutes
<input checked="" type="checkbox"/> Test usage	<input checked="" type="checkbox"/> Radio remote usage
<input checked="" type="checkbox"/> Manual minutes	<input checked="" type="checkbox"/> Scheduled minutes
<input checked="" type="checkbox"/> Manual usage	<input checked="" type="checkbox"/> Scheduled usage

Figure 29.0.7

- In the **Display style** section click on the appropriate box for the following (Figure 29.0.8).

Display in gallons: This will display all water totals in gallons.

Display in HCF: This will display all water totals in hundreds of cubic feet.

Display in gallons

Display in HCF

Figure 29.0.8

- Click on the **Show monthly details** button if you want your report to show calculations for each day of the month selected in the report (Figure 29.0.9).



Figure 29.0.9

- Click on the **Generate station summary report** button (Figure 29.0.10).

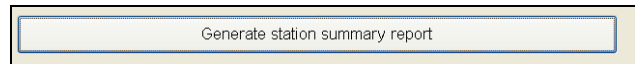


Figure 29.0.10

29.1 STATION SUMMARY REPORT

Note: This will take you to the **“Station Summary”** report screen (Figure 29.1.1).

Date	Manual Minutes	Manual Gallons	Manual HCF	Radio remote Minutes	Radio remote Gallons	Radio remote HCF	Scheduled Minutes	Scheduled Gallons	Scheduled HCF	Total
Jul-2004	40.4	508	0.0	0	0	0	0	0	0	0
Aug-2004	90.4	728	0.0	0	23	22	0	0	0	0
Sep-2004	97.5	791	0.0	0	0	0	0	0	0	0
Oct-2004	92.4	994	0.0	0	0	0	0	0	0	0
Nov-2004	42.0	540	0.0	0	0	0	0	0	0	0
Dec-2004	6.8	75	0.0	0	0	0	0	0	0	0
Jan-2005	0.0	0	0.0	0	0	0	0	0	0	0
Total	6,769.2	87,260	101.8	2,587	942	1,008	0.0	0.0	0.0	12H
Sta Total	6,769.2	87,260	101.8	2,587	942	1,008	0.0	0.0	0.0	12H
Area Total	6,769.2	87,260	101.8	2,587	942	1,008	0.0	0.0	0.0	12H

Figure 29.1.1

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

SEE LAST PAGE OF THIS SECTION FOR FULL PAGE REPORT.

29.2 STATION SUMMARY REPORT CONTENTS

The following is a list of every item on the “**Station Summary**” report (Figure 29.1.1).

Date and Time: This shows the date and time that you requested the report. If you decide to print the report this gives you a way in which to file chronologically.

Report Title: This is the title of the report that you are currently viewing.

Date Range: This is the period covered by the report.

Site Name: Each site name will appear to the left of the list in regular font.

Controller Name: The controller names will be listed directly under the site that they are a part of. They will appear in alpha-numeric sequence and are in regular font.

Station: This is each individual station number.

Date: This is each individual month for each station.

Scheduled Minutes: This is the amount of time in minutes that this station was scheduled to irrigate per month.

Scheduled (HCF or Gallons): This is the amount of water in HCF or gallons that this station was scheduled to irrigate per month.

Manual Minutes: This is the amount of time in minutes that this station was used for manual irrigation.

Manual (HCF or Gallons): This is the amount of water in HCF or gallons that this station was scheduled to use during manual irrigation for each month.

Test Minutes: This is the amount of time in minutes that this station was used for test irrigation for each month.

Test (HCF or Gallons): This is the amount of water in HCF or gallons that this station was used for test irrigation for each month.

Remote Minutes: This is the amount of time in minutes used while irrigating using a Calsense Radio Remote.

Remote (HCF or Gallons): this is the amount water in HCF or gallons that this station used while irrigating using a Calsense Radio Remote.

Totals: This is the total for each column of information.

Site Totals: This is the total water usage for this site.

Grand Totals: This is the water usage grand total for all sites included in this report.

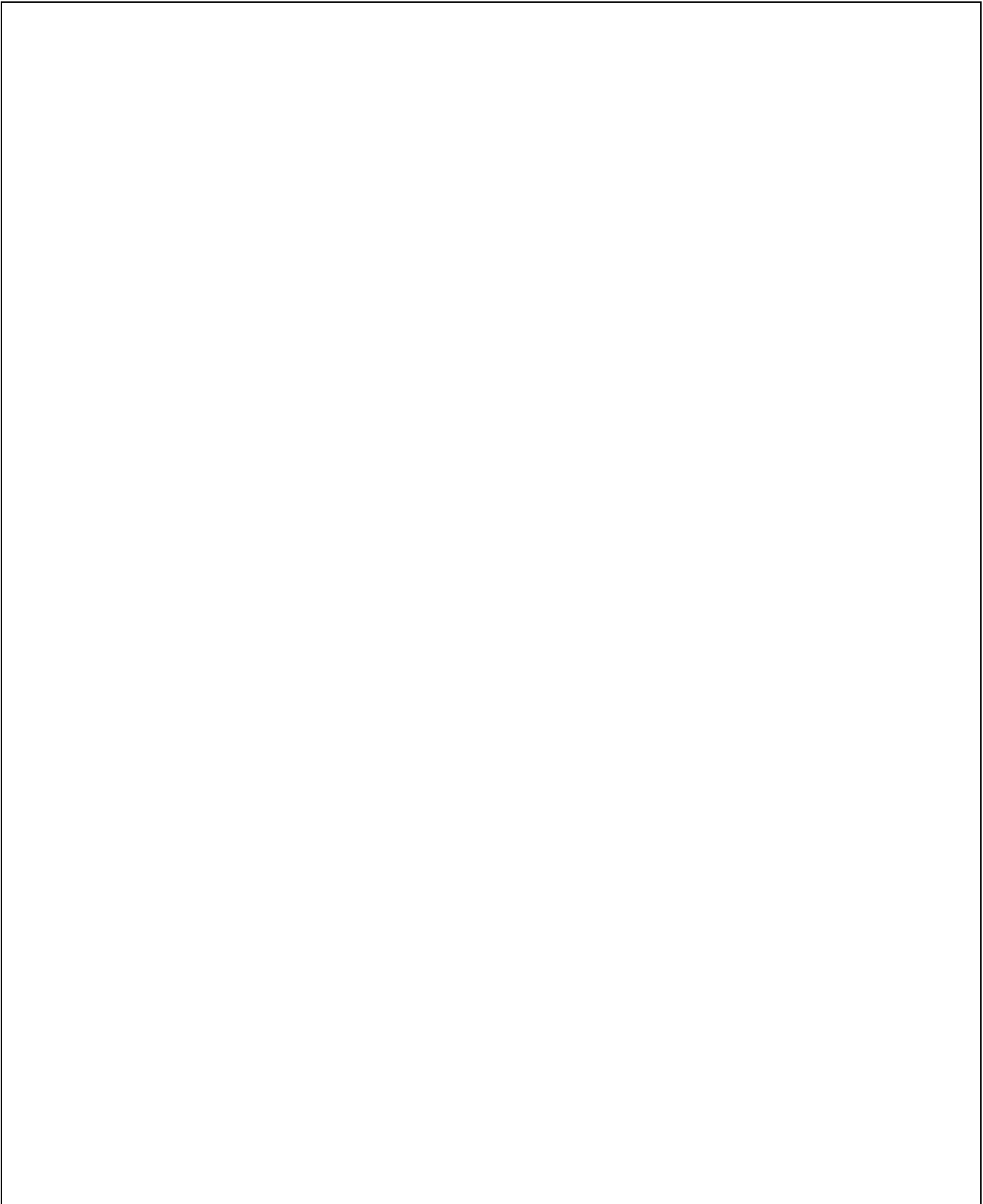


Station Summary

July 18, 2005 1:50 PM

Jan/01/2004 - Dec/31/2004

Date	Scheduled Minutes	Scheduled (Gallons)	Manual Minutes	Manual (Gallons)	Test Minutes	Test (Gallons)	Remote Minutes	Remote (Gallons)
Alabaster Cove Front Park								
Station9								
Jun-2004	40.4	328	0.0	0	0.0	0	0.0	0
Jul-2004	90.4	738	0.0	0	2.8	22	0.0	0
Aug-2004	97.6	791	0.0	0	0.0	0	0.0	0
Sep-2004	82.4	664	0.0	0	0.0	0	0.0	0
Oct-2004	42.0	343	0.0	0	0.0	0	0.0	0
Nov-2004	8.8	73	0.0	0	0.0	0	0.0	0
Dec-2004	0.0	0	0.0	0	0.0	0	0.0	0
Totals:	6,788.2	97,260	181.6	2,587	94.2	1,098	9.0	126
Site Totals:	6,788.2	97,260	181.6	2,587	94.2	1,098	9.0	126
Grand Totals:	6,788.2	97,260	181.6	2,587	94.2	1,098	9.0	126



30.0 USER LOG SETUP

User Log: The User Log is a report that tracks the activity of all users who have logged onto Command Center. **Only** a person with an **Administrator** level will be able to view the user log.

1. In the toolbar at the top of the screen select **Setup**. Scroll down to **User Log** and click on it (Figure 30.0.1).

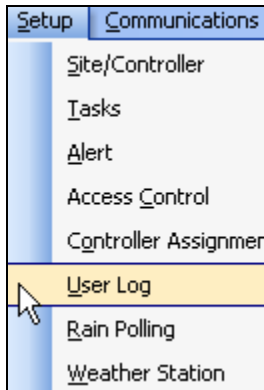


Figure 30.0.1

2. This will take you to the **Users** screen (Figure 30.0.2).

The image shows a 'User Log' report window with a 'Clear Log' button. The report is a table with columns for User, TimeStamp, and Activity. The 'User' column lists 'Richard' for all entries. The 'Activity' column lists various actions such as logging in, deleting tasks, editing controllers, and adding controllers.

User	TimeStamp	Activity
Richard	5/27/2004 2:23:26 PM	User closed command center. (Richard's Laptop)
Richard	5/27/2004 2:18:43 PM	User logged in to Richard's Laptop
Richard	5/27/2004 2:08:23 PM	User closed command center. (Richard's Laptop)
Richard	5/27/2004 2:06:41 PM	Task Deleted [All Tasks, Richard]
Richard	5/27/2004 1:45:22 PM	Edited controller: Weather
Richard	5/27/2004 1:10:31 PM	User Deleted Controller [hay]
Richard	5/27/2004 1:09:45 PM	Added controller: hay
Richard	5/27/2004 1:07:12 PM	Edited controller: Weather
Richard	5/27/2004 12:51:59 PM	User started alerts retrieval [Weather]
Richard	5/27/2004 12:51:41 PM	Added controller: Weather
Richard	5/27/2004 12:48:33 PM	User Deleted Controller [Weather Controller]
Richard	5/27/2004 12:48:22 PM	Edited controller: Weather Controller
Richard	5/27/2004 12:42:21 PM	User started alerts retrieval [Weather Controller]
Richard	5/27/2004 12:42:08 PM	Edited controller: Weather Controller
Richard	5/27/2004 12:39:37 PM	User started alerts retrieval [Weather Controller]
Richard	5/27/2004 12:34:07 PM	User started alerts retrieval [Weather Controller]
Richard	5/27/2004 12:33:50 PM	Edited controller: Weather Controller
Richard	5/27/2004 12:19:10 PM	Added controller: Weather Controller
Richard	5/27/2004 11:59:35 AM	User logged in to Richard's Laptop

Figure 30.0.2

SEE LAST PAGE OF THIS SECTION FOR FULL PAGE REPORT.

3. From the **user list**, Select a user name and click on it. This will allow you to view everything that a user has done within Command Center by date stamp.

CAUTION:

The Clear Log button is only available to users with Administrator login accounts. Pressing this button will clear the entire log for ALL user historical entries.

30.1 USER LOG REPORT CONTENTS





The following is a list of every item on the **User Log** report (Figure 30.0.2).

User: This shows the user that you have selected to look at.

Timestamp: This is the time that the user initiated the item in the activity section.

Activity: This is the particular action that the user initiated.

Clear Log

	User	TimeStamp	Activity
 John Smith-(Administrator)	Richard	5/27/2004 2:23:26 PM	User closed command center {Richard's Laptop}
 Mary-(Standard User)	Richard	5/27/2004 2:18:43 PM	User logged in to Richard's Laptop
 Richard-(Standard User)	Richard	5/27/2004 2:08:23 PM	User closed command center {Richard's Laptop}
 Tom-(Standard User)	Richard	5/27/2004 2:06:41 PM	Task Deleted [All Tasks, Richard]
	Richard	5/27/2004 1:45:22 PM	Edited controller: Weather
	Richard	5/27/2004 1:10:31 PM	User Deleted Controller [hgy]
	Richard	5/27/2004 1:09:45 PM	Added controller: hgy
	Richard	5/27/2004 1:07:12 PM	Edited controller: Weather
	Richard	5/27/2004 12:51:59 PM	User started alerts retrieval [Weather]
	Richard	5/27/2004 12:51:41 PM	Added controller: Weather
	Richard	5/27/2004 12:48:33 PM	User Deleted Controller [Weather Controller]
	Richard	5/27/2004 12:48:22 PM	Edited controller: Weather Controller
	Richard	5/27/2004 12:42:21 PM	User started alerts retrieval [Weather Controller]
	Richard	5/27/2004 12:42:08 PM	Edited controller: Weather Controller
	Richard	5/27/2004 12:39:37 PM	User started alerts retrieval [Weather Controller]
	Richard	5/27/2004 12:34:07 PM	User started alerts retrieval [Weather Controller]
	Richard	5/27/2004 12:33:50 PM	Edited controller: Weather Controller
	Richard	5/27/2004 12:19:10 PM	Added controller: Weather Controller
	Richard	5/27/2004 11:59:35 AM	User logged in to Richard's Laptop

Empty rectangular box for user log setup.



31.0 BACK UP & RESTORE

Back-Up & Restore: Back-up and Restore allows the user to record and store controller information data on several different storage media types, and retrieve the information when required.

1. In the toolbar at the top of the screen select **File** and then scroll down to **Backup & Restore** and click on it (Figure 31.0.1).

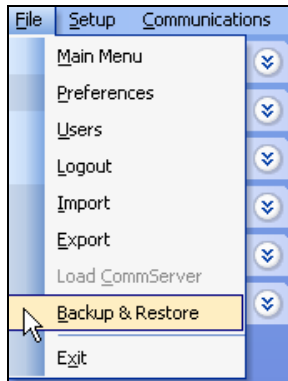


Figure 31.0.1

Note: A confirmation screen will appear informing you of the following: **“Running the backup requires Command Center to be shut down. Are you sure you want to continue?”**

2. If you are going to perform a backup or restore function you must select **Yes** (Figure 31.0.2).

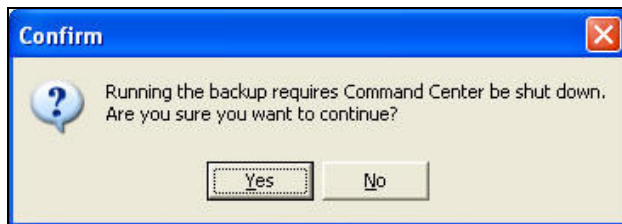


Figure 31.0.2

Note: If you select **No** this will close the **“Confirm”** screen.

CAUTION

Allow 5 to 10 seconds for Command Center to shut down before proceeding.

3. Right click the  globe icon found on the scheduling tray.

Note: You may have to click on the left pointing arrow to expose the globe on the toolbar see (Figure 31.0.3).



Figure 31.0.3

4. Select **Shutdown** from the list (Figure 31.0.4).

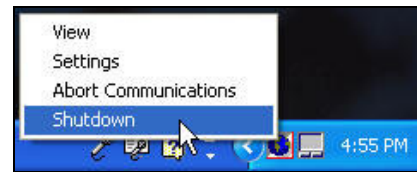


Figure 31.0.4

5. When you click on this option the **“Confirm”** window will appear asking the following **“Closing the communications scheduler will prevent any communications to occur, Do you want to close the communications scheduler ?”** (Figure 31.0.5).

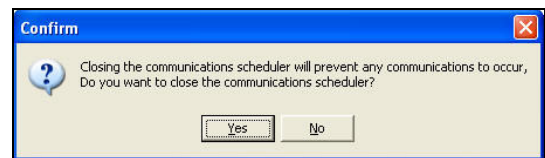


Figure 31.0.5

6. Click the **Yes** button.

Note: If after Command Center closes and the communications have not been closed this message will appear reminding you to close the communicator (Figure 31.0.6).

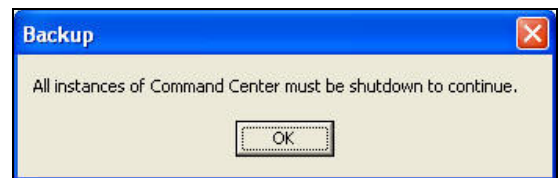


Figure 31.0.6

31.1 BACK UP

Backup: The backup option allows you to save controller data to an alternative media such as Floppy disk, Compact Disk, etc. Backup of information should be done on a regularly scheduled basis.

1. From the “**Back up / Restore**” window Select **Backup** (Figure 31.1.1).



Figure 31.1.1

2. Click on the **OK** button.

Note: This will take you to the “**Backup**” screen (Figure 31.1.2).

Note: If you select the **Cancel** button you will exit out of the Backup & Restore process.

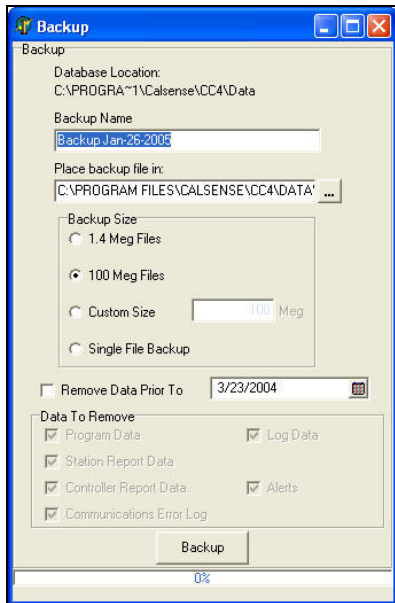


Figure 31.1.2

3. **Place backup file in:** is the default (recommended) Directory / File name :

C:\PROGRAMFILES\CALSENSE\CC4\DATA\
Backup (recommended) or rename.

Note: You can rename this Directory / File if you want to place the information somewhere else.

Backup Size: Select which type of media that you are saving the data to.

- 1.4 Meg Files (Floppy)
- 100 Meg Files (Zip Drive)
- Custom Size
- Single File Backup (All compressed into one (1) file, CDR / Hard Drive)

Remove Data Prior To: Checking this box will delete all data prior to the date selected after the backup has been completed. Deleting data **will limit** the date range when viewing past history. This also helps the computer memory from being used up storing years of data.

Note: When backing up databases it is recommended that the data is first backed up to the computers hard drive then **copied** to another media. Also it is recommended that you label the storage media at this time with the version of Command Center currently installed and the date backup was performed.

Note: You can verify which version of Command Center that you are currently using by:

- Click on **Help** in the toolbar at the top of the screen and scroll down to the word **About** (Figure 31.1.3).

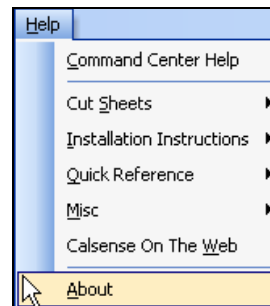


Figure 31.1.3

Note: This will open up the “About” screen (Figure 31.1.4).

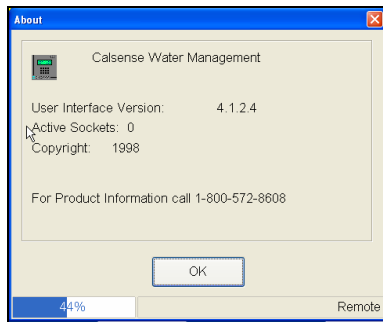


Figure 31.1.4

- After you have verified the version number click on the **OK** button to close this screen.

Data To Remove: Checking each of these boxes individually will decide which data you would like to erase from your computer during the backup process. This will free up memory in the computer while still saving it to a backup format (Figure 31.1.5).

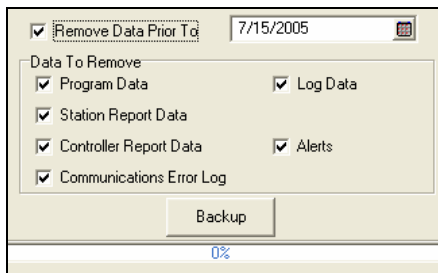


Figure 31.1.5

Note: Once the data that has been erased from the computer it is no longer accessible unless you perform a restore of that data.

- Once you have made the appropriate choices click on the **Backup** button (Figure 31.1.6).

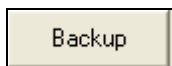


Figure 31.1.6

- After the backup is complete a small “Backup” screen will appear saying “Backup Complete”. Click on the **OK** button (Figure 31.1.7).

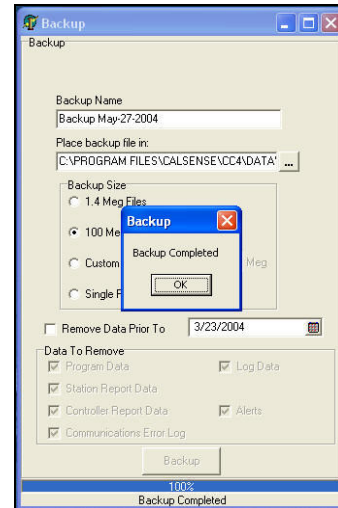


Figure 31.1.7

31.2 RESTORE

Restore: The restore option allows you to recover stored controller data from an alternative media such as Floppy disk, Compact Disk, etc. Restores should be done only when recovering data, or updating a new system.

- In the toolbar at the top of the screen select **File** and then scroll down to the words **Backup & Restore** and click on it (Figure 31.2.1).

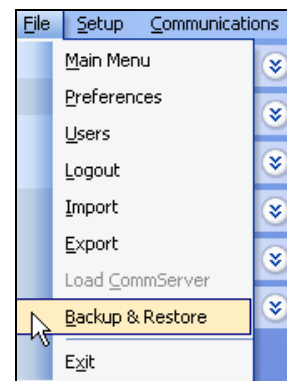


Figure 31.2.1

Note: A confirmation screen will appear informing you of the following: **“Running the backup requires Command Center to be shut down. Are you sure you want to continue?”**.

- If you are going to perform a backup or restore function you must select **Yes** (Figure 31.2.2).

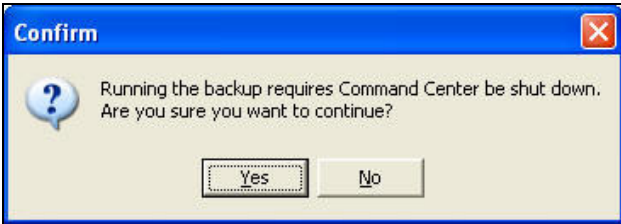


Figure 31.2.2

Note: If you select **No** this will close the **“Confirm”** screen.

CAUTION:

Restore will overwrite all current data.

Allow 5 to 10 seconds for Command Center to shut down before proceeding.

- Right click the globe icon found on the scheduling tray.
- You may have to click on the left pointing arrow to expose the globe on the toolbar see (Figure 31.2.3).



Figure 31.2.3

- Select **Shutdown** from the list (Figure 31.2.4).

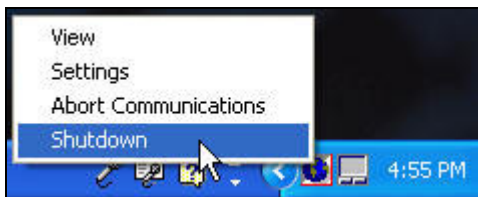


Figure 31.2.4

Note: When you click on this option the **“Confirm”** window will appear asking the following (Figure 31.2.5).

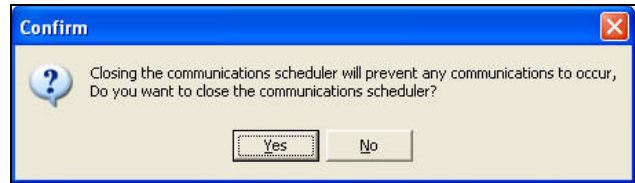


Figure 31.2.5

- Click the **Yes** button.

Note: If you select **No** this will close the **“Confirm”** screen.

Note: If after Command Center closes and the communications have not been closed this message will appear reminding you to close the communicator (Figure 31.2.6).

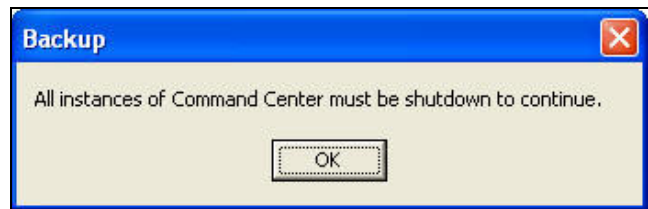


Figure 31.2.6

- From the **“Backup / Restore”** window select **Restore** (Figure 31.2.7).

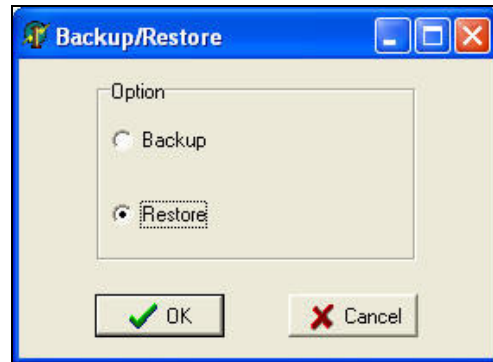


Figure 31.2.7

- Click on the **OK** button.

Note: This will take you to the **“Restore”** screen (Figure 31.2.8).

Note: If you select the **Cancel** button you will exit out of the Back up & Restore process.

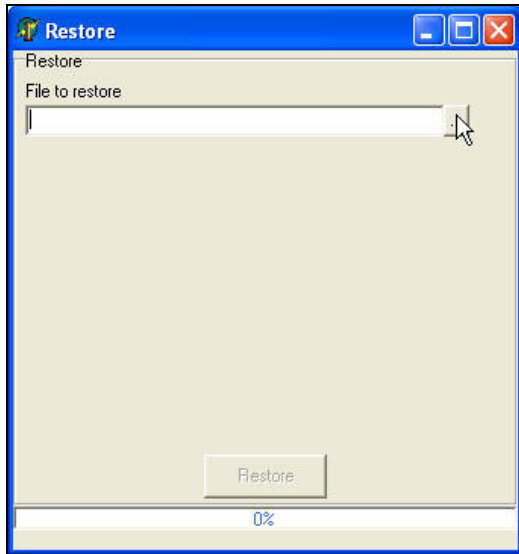


Figure 31.2.8

- Click on the **Browse** button to the right of the **File to restore** box. This will take you to the **Open** screen (Figure 31.2.9).

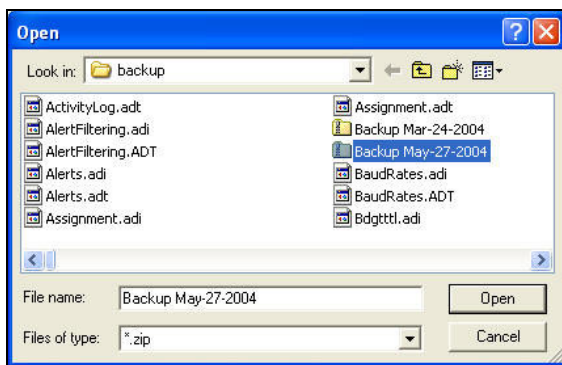


Figure 31.2.9

- Locate the address of the media that you have your data stored on and select the file name under which it saved.
- Click on the **Open** button.

Note: If you select the **Cancel** button you will exit out of the Backup & Restore process.

- This will open up the **Restore** screen. Make sure that the file address that you chose in step 12 is the same one appearing in the **File to restore** box (Figure 31.2.11).

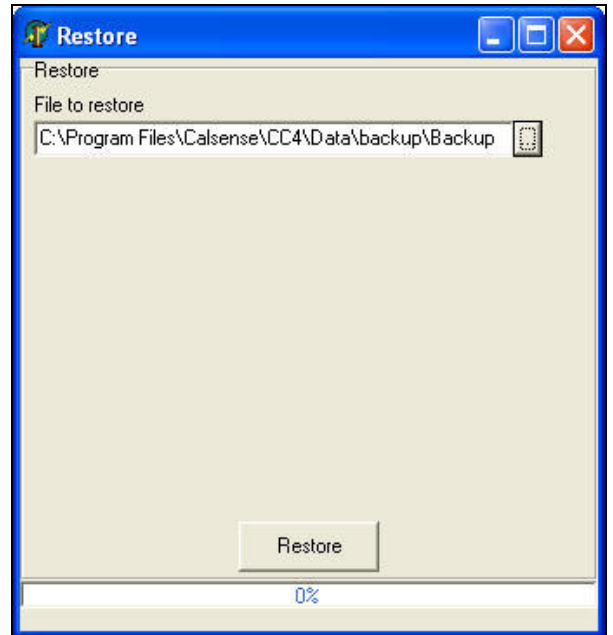


Figure 31.2.11

- Click on the **Restore** button.
- This will take you to the **Confirm** window. This screen asks you the following: **This will OVERWRITE all of your existing data. Are you sure you want to continue?** (Figure 31.2.12).

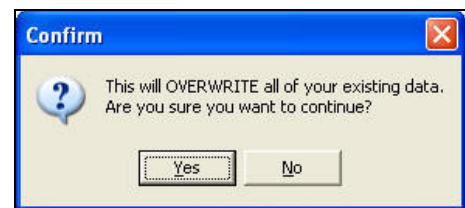


Figure 31.2.12

- Click on the **Yes** button. This will activate the restore process.

Note: Clicking on the **No** button will cancel any of the restore from taking place.

16. Once the restore is complete the “Backup” window will appear. Click on the **OK** button to complete the process (Figure 31.2.13).

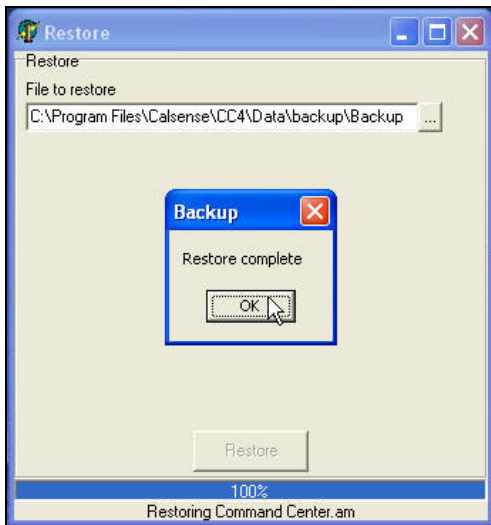
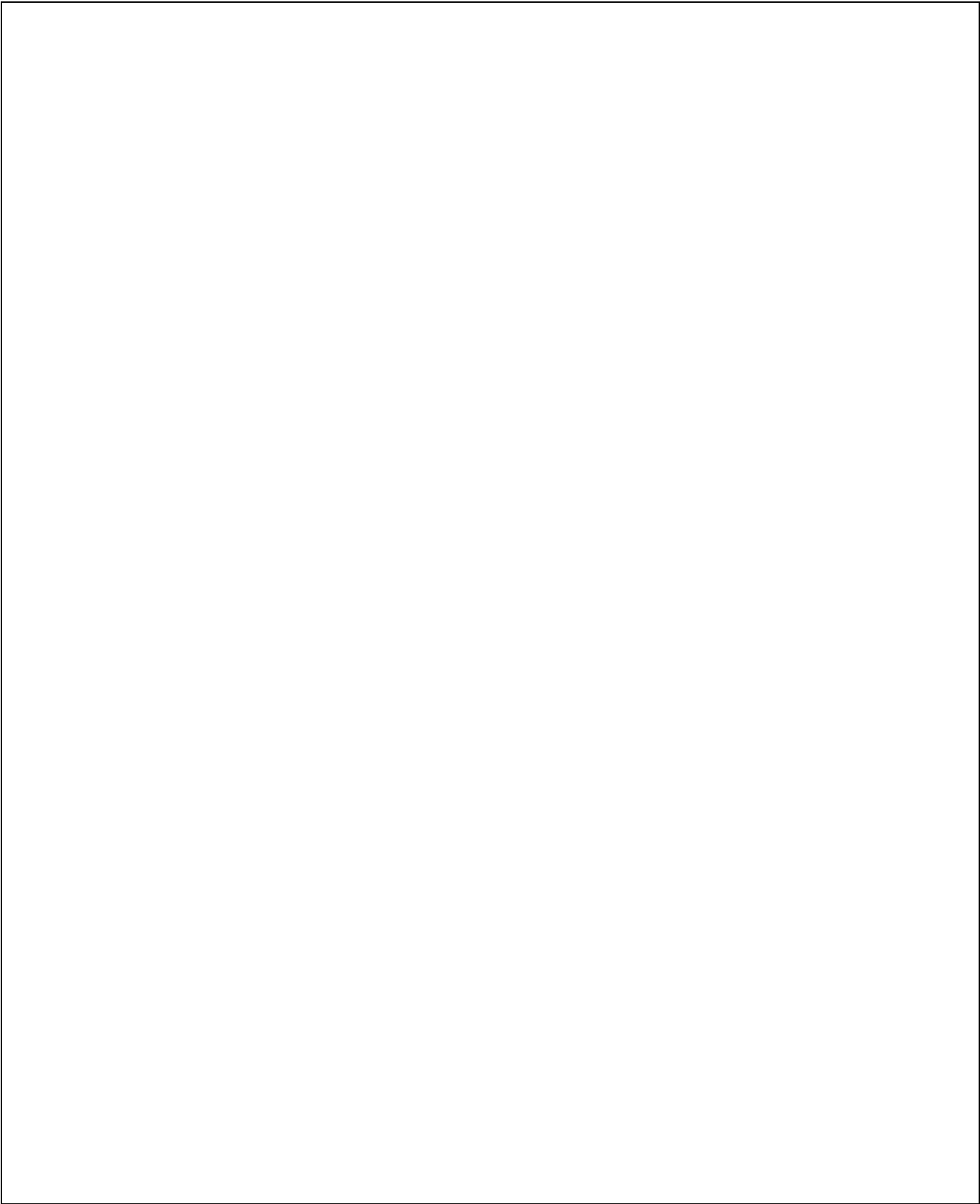


Figure 31.2.13



32.0 COMMUNICATIONS SERVER STATUS

Communications Server Status: The Communications Server Status screen is a useful tool when dealing with a network situation where more than one communications server is available. Utilizing this screen you can visually see what the status of any one given communications server is and what it is currently doing.

1. From the toolbar at the top of the screen select **Communications** then scroll down to **Comm server status** and click on it (Figure 32.0.1).

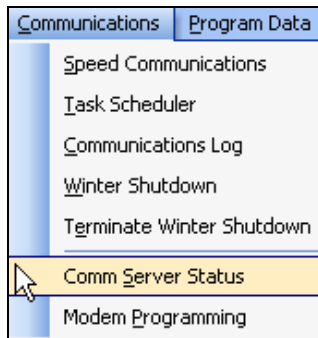


Figure 32.0.1

Note: This will take you to the “**Communications Server Status**” screen (Figure 32.0.2).

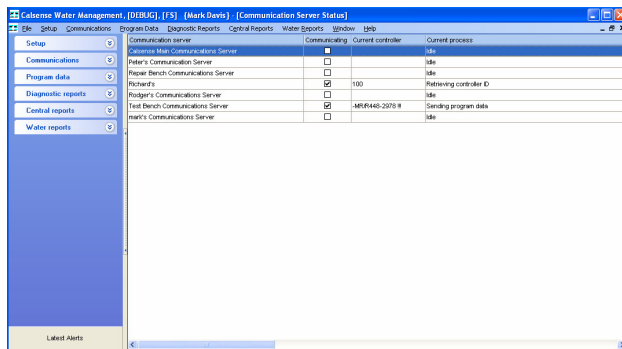


Figure 32.0.2

SEE LAST PAGE OF THIS SECTION FOR FULL PAGE REPORT.

32.1 COMMUNICATIONS SERVER STATUS SCREEN CONTENTS

Communications Server: This is the name of each individual communications server as it has been entered into your system.

Communicating: This box will have a green check mark in it when the communications server is currently communicating.

Current Controller: This box shows the controller by name that is currently being contacted by the communications server.

Current Process: This box shows the action that the communications server is currently initiating.

IP Address: This box shows the TCP/IP (Transmission Control Protocol / Internet Protocol) address of the communications server.

IP Port: A TCP / IP Port# value from 0-65535. Values below 1024 are typically restricted to operating system processes.

Modem: A green check mark in this box indicates that the communications server is set up to communicate via a phone modem.

AT: A green check mark in this box indicates that the communications server is set up to use Digital Radio (AT-Bell South 1).

MASC: A green check mark in this box indicates that the communications server is set up to use Digital Radio (MASC-Bell South 2).

CDPD: A green check mark in this box indicates that the communications server is set up to use a Cellular Digital Packet Data type of communications.

Hard Wire: A green check mark in this box indicates that the communications server is set up to communicate via direct wire cable.

Ethernet: A green check mark in this box indicates that the communications server is set up to communicate via Ethernet.

GPRS: A green check mark in this box indicates that the communications server is set up to communicate via a General Packet Radio Service type communications.

Fiber Optic: A green check mark in this box indicates that the communications server is set up to communicate via a Fiber Optic Modem.

Last Started: This is the last time that this particular communication server was activated.

Controller retries: Current number of retries for this controller.

Command retries: Current number of retries for this command.

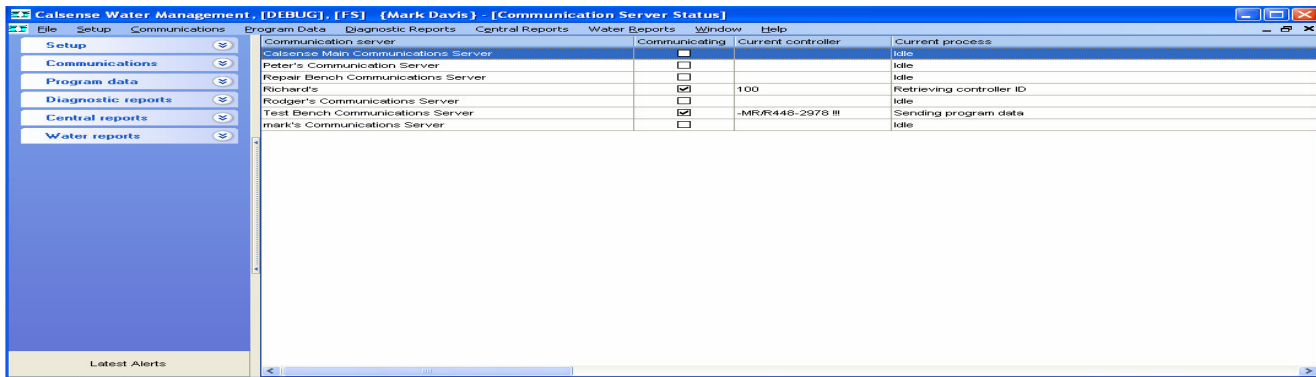
Server ID: Unique identification assigned to each communications server.

Number Of Controllers: Current number of controllers in a communication's query.

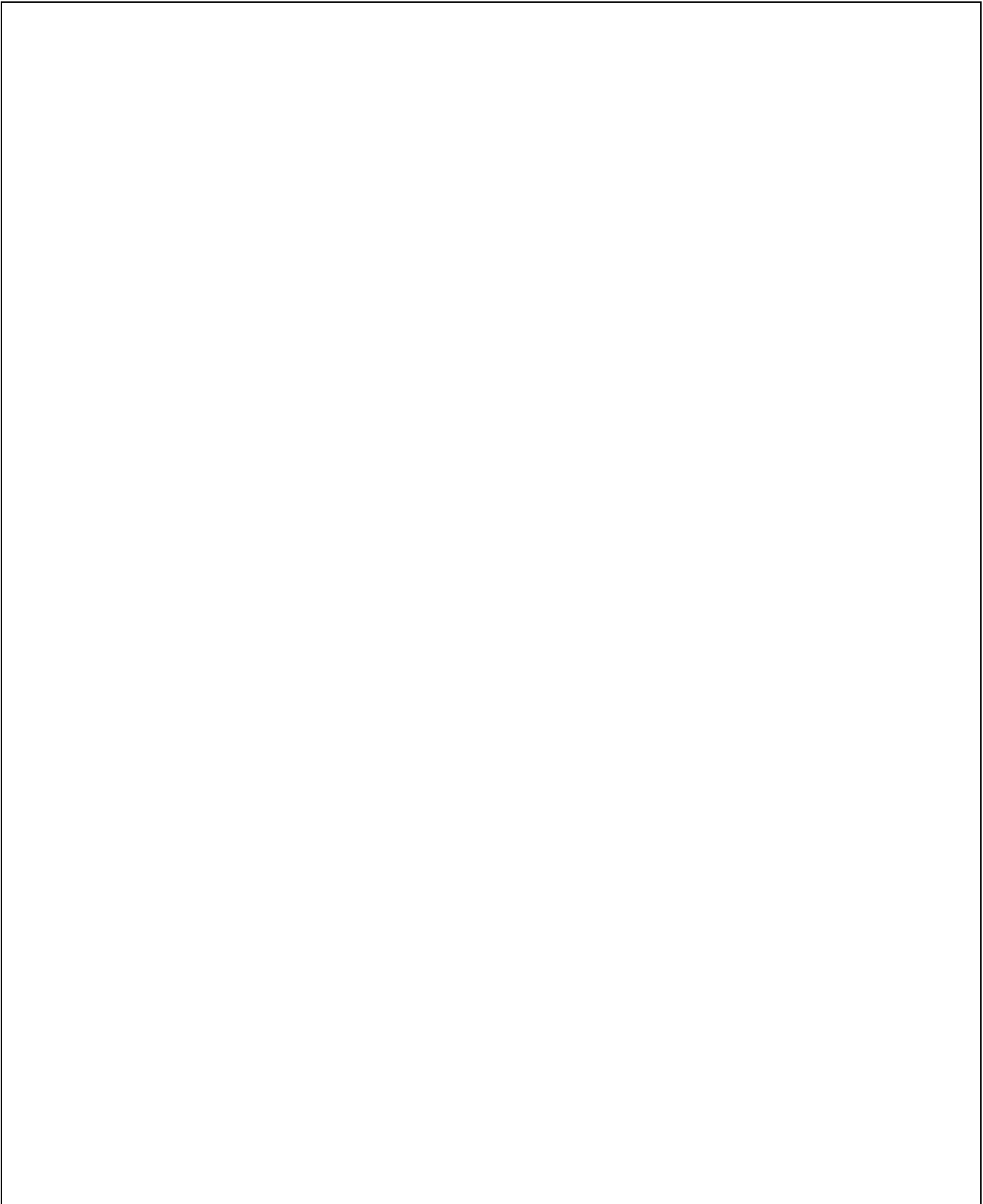
Online: Displays if this communications server is online and available to process communication requests.

Version: Communication server software version.

Host Name: Host personal computer name communications server is running on.



Communication server	Communicating	Current controller	Current process
Calsense Main Communications Server	<input type="checkbox"/>		idle
Peter's Communication Server	<input type="checkbox"/>		idle
Repair Bench Communications Server	<input type="checkbox"/>		idle
Richard's	<input checked="" type="checkbox"/>	100	Retrieving controller ID
Rodger's Communications Server	<input type="checkbox"/>		idle
Test Bench Communications Server	<input checked="" type="checkbox"/>	-MR/R446-2976 #1	Sending program data
mark's Communications Server	<input type="checkbox"/>		idle



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33.0 RRe INTERFACE

The RRe Interface section of Command Center is used for transferring controller information from:

Command Center to Handheld (RRe-TRAN):
Region / Controller information is created, edited, or deleted and sent to the Handheld unit via IR-Interface section of Command Center.

Handheld (RRe-TRAN) to Command Center:
Controller information is obtained first hand from the controller via the Handheld (RRe-Tran) and retrieved by Command Center using IR-Interface.

Note: If you **do not** have Command Center currently running you can click on the **RRe-Interface** Icon on your desktop to access the software program (Figure 33.0.1).



Figure 33.0.1

Note: You will be required to login using your Command Center Username and Password.

If you have Command Center currently running.

In the toolbar at the top of the screen select **RRe**. Then scroll down to **Load RRe Interface** and click on it (Figure 33.0.2).

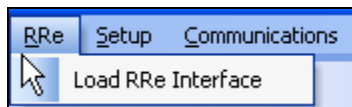


Figure 33.0.2

Note: This will bring up the **Calsense RRe** window (Figure 33.0.3).

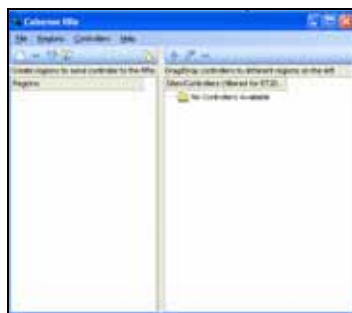


Figure 33.0.3

33.1 PREFERENCES

The preferences section of the RRe-Interface is used for identifying the communications port, and entering the proper Client /Server settings.

COMMUNICATIONS TAB

In the toolbar at the top of the **Calsense RRe** window select **File** and then scroll down to **Preferences** and click on it (Figure 33.1.0).

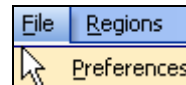


Figure 33.1.0

1. In the Communications tab use the drop down arrow to **Select serial port for IR link to Handheld** (Figure 33.1.1)



Figure 33.1.1

Note: This setting is to identify the Communications port that you have the IR-Interface Unit (RRe-IR) physically plugged into.

2. Click the **OK** button once the selection has been made (Figure 33.1.2).

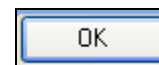


Figure 33.1.2

Note: Click the **Cancel** button if you want to exit this screen without saving any changes.



DATABASES TAB

CAUTION:

The settings in the area have already been entered in Section 2.0 Preferences / Client/Server of Command Center and are greyed out from use in this section. They are displayed for informational purposes only. Changes should be made from within Command Center.

33.2 REGIONS

The Regions section of the IR-Interface allows the user to do the following:

- Add new Region
- Delete Region
- Send selection to RRe-TRAN
- Acquire regions
- View / Hide controller list

NEW REGION

This section allows the user to create new regions, assign existing sites and individual controllers to newly created regions, or pre-existing regions.

1. In the toolbar of the IR-Interface window select **Regions** and scroll down to **New Region** and click on it (Figure 33.2.0).

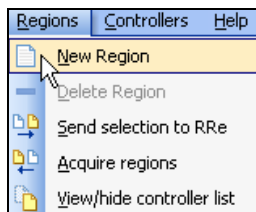


Figure 33.2.0

The **New Region** screen will be displayed (Figure 33.2.1.)

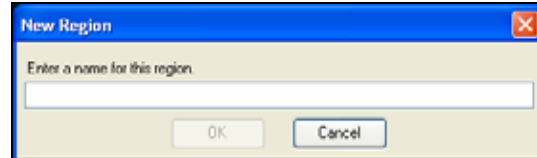


Figure 33.2.1

2. Type the name that you have chosen for the region in the box provided (Figure 33.2.2).

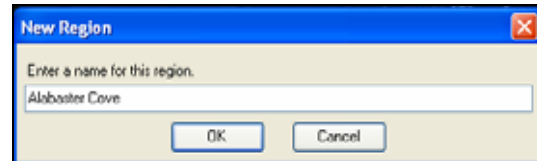


Figure 33.2.2

3. To save the entry click on the **OK** button (Figure 33.2.3).

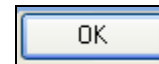


Figure 33.2.3

The **Calsense RRe** screen will display the new region (Figure 33.2.4).

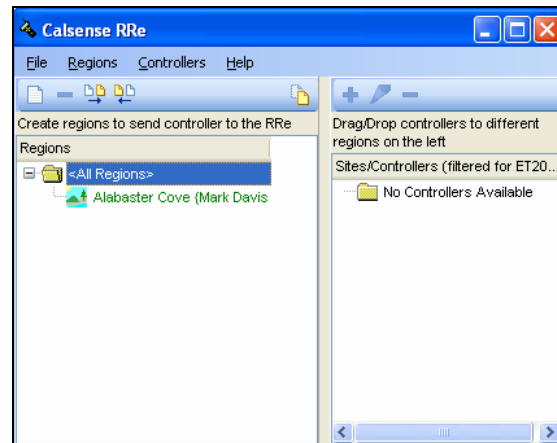


Figure 33.2.4

Note: Click on the **Cancel** button to exit this screen without saving any changes.

Assign a Site / Controller to the Region:

When a user has existing sites with ET2000e controllers assigned to them, they will appear in the Sites/Controllers portion of the screen (Figure 33.2.5).

Note: Each individual controller will have to have been communicated to via Command Center before it will show up on the Site/Controller list.

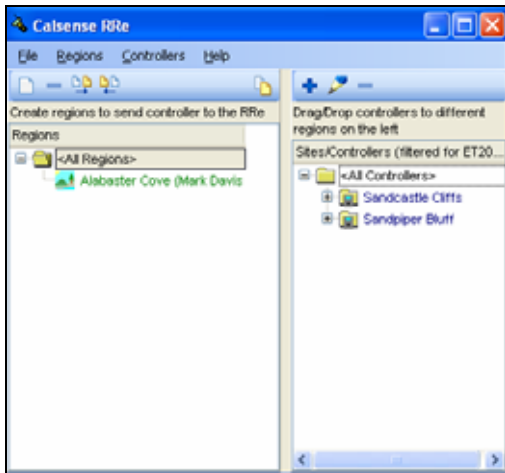


Figure 33.2.5

4. Highlight the site or controller that you want to assign to a region (Figure 33.2.6).

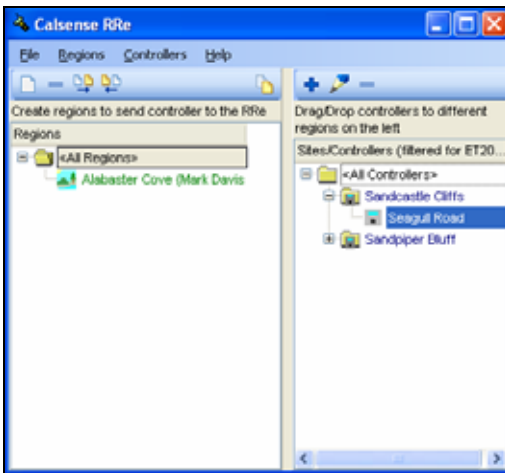


Figure 33.2.6

5. Click on the Site/Controller and hold down the left mouse button. Drag the Site/Controller over to the desired region. Release the mouse button. (Figure 33.2.7).

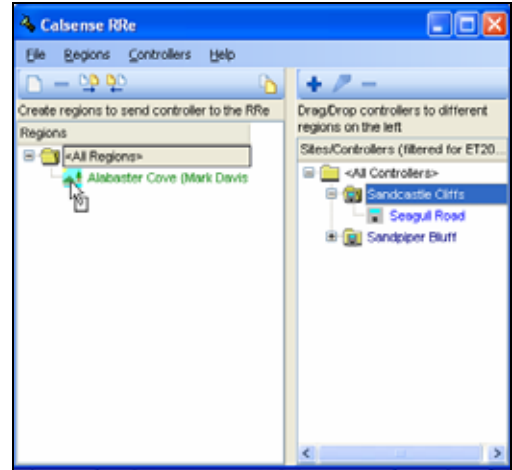


Figure 33.2.7

The Site/Controller will appear under the region chosen and is displayed in figure 33.2.8

Note: In figure 33.2.8 the region “Alabaster Cove” now has one site assigned “Sandcastle Cliffs” with one controller in the site named “Seagull Road”.

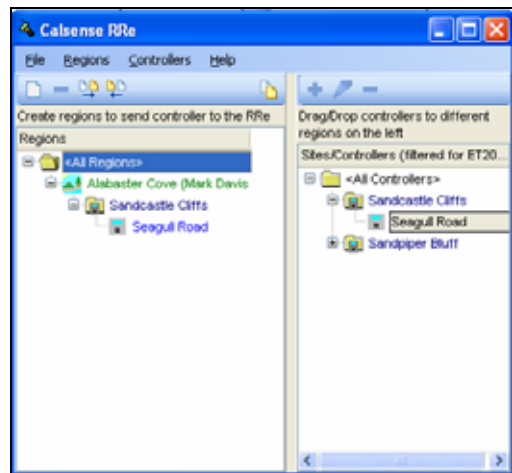


Figure 33.2.8



DELETE REGION

This section allows the user to delete existing regions, sites, and controllers assigned to them.

Deleting a Region:

1. Highlight the region that you want to delete (Figure 33.2.9).

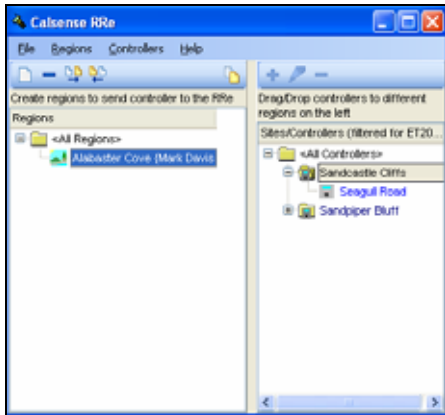


Figure 33.2.9

2. In the toolbar of the IR-Interface window select **Regions** and scroll down to **Delete Region** and click on it (Figure 33.2.10).

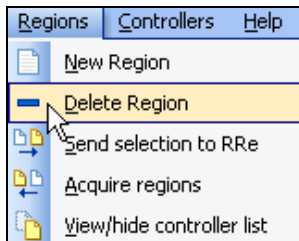


Figure 33.2.10

The **Confirm** screen will be displayed (Figure 33.2.11).

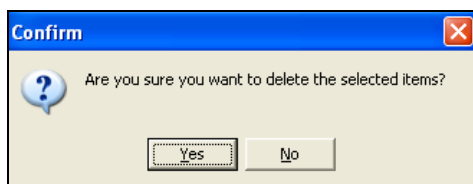


Figure 33.2.11

3. Click on the **Yes** button to delete the selected region and **all** of the controllers assigned to that region.

Note: Click on the **No** button to exit this screen without saving any changes.

Deleting a Site:

1. Click on the "+" symbol to the left of the region that your site resides in.
2. Highlight the site that you want to delete.

Note: You can select multiple sites within a region or in more than one region by holding down the **Ctrl** button on your keyboard and clicking on each individual site to highlight them.

3. In the toolbar of the IR-Interface window select **Regions** and scroll down to **Delete Region** and click on it. (Figure 33.2.10).
4. The **Confirm** screen will be displayed (Figure 33.2.11).
5. Click on the **Yes** button to delete the selected sites and **all** of the controllers assigned to the site(s).

Note: Click on the **No** button to exit this screen without saving any changes.

Deleting controllers:

1. Click on the "+" symbol to the left of the region that your controller resides in.
2. Click on the "+" symbol to the left of the site that your controller resides in.
3. Highlight the controller that you want to delete.

Note: You can select multiple controllers within a region / site, or in more than one region or site by holding down the **Ctrl** button on your keyboard and clicking on each individual controller to highlight them.

4. In the toolbar of the IR-Interface window select **Regions** and scroll down to **Delete Region** and click on it. (Figure 33.2.10).

- The **Confirm** screen will be displayed (Figure 33.2.11).
- Click on the **Yes** button to delete the selected controller(s).

Note: Click on the **No** button to exit this screen without saving any changes.

SEND SELECTION TO RRe

This section allows the user to send new regions, sites, and controllers to the RRe-TRAN handheld unit.

- Highlight the region, site, or controller in the **Regions** list that you want to send to the RRe-TRAN Handheld unit (Figure 33.2.12).

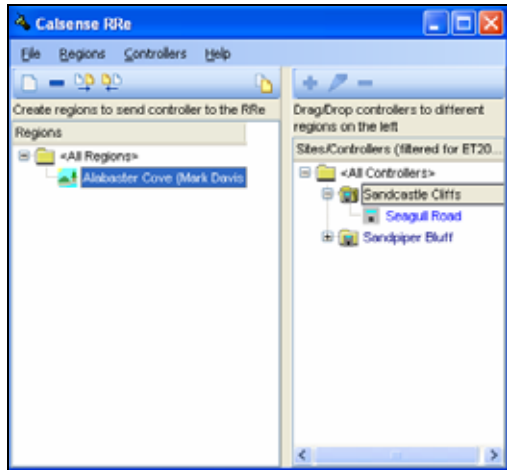


Figure 33.2.12

- In the toolbar of the IR-Interface window select **Regions** and scroll down to **Send selection to RRe** and click on it (Figure 33.2.13).

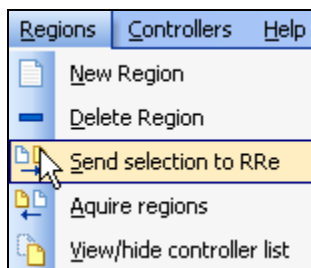


Figure 33.2.13

The **IR Link alignment** screen is displayed (Figure 33.2.14)



Figure 33.2.14

Note: Make sure that the IR-Link and the RRe-Tran are aligned correctly.

- Press the **OK** button.

The **Status** screen is displayed (Figure 33.2.15).

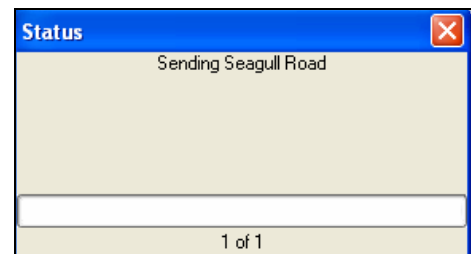


Figure 33.2.15

Once the communication has taken place the **RRe Interface** screen is displayed (Figure 33.2.16)

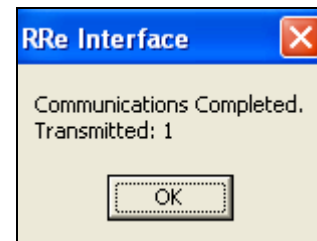


Figure 33.2.16

- Press the **OK** button.

ACQUIRE REGIONS

1. In the toolbar of the IR-Interface window select **Regions** and scroll down to **Acquire regions** and click on it (Figure 33.2.17).

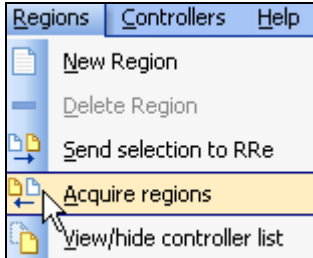


Figure 33.2.17

The **IR Link alignment** screen is displayed (Figure 33.2.18)



Figure 33.2.18

Note: Make sure that the IR-Link and the RRe-Tran are aligned correctly.

2. Press the **OK** button.

The **Status** screen is displayed (Figure 33.2.19).

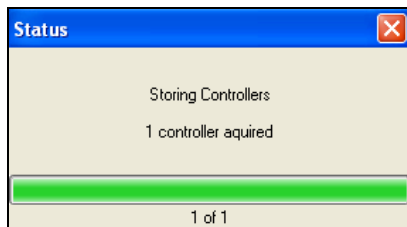


Figure 33.2.19

Once the communication has taken place the **RRe Interface** screen is displayed (Figure 33.2.20)

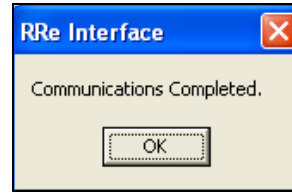


Figure 33.2.20

3. Press the **OK** button.

The acquired Sites/Controllers will appear in the regions section of the screen (Figure 33.2.21).

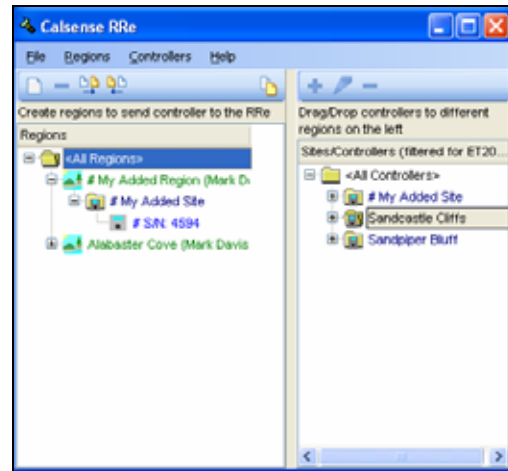


Figure 33.2.21

Note: Any controller that was acquired via the Handheld Radio Remote (RRe-TRAN) will show up as a serial number for the name. If you want to change the name of the controller, site, or region you will have to highlight it and type in the new name. Then send this new information back to the Handheld Radio remote (RRe-TRAN).

VIEW / HIDE CONTROLLER LIST

This section of the IR-Interface allows the user to hide the controller list portion of the screen once controllers have been assigned to the various regions and is no longer necessary to look at.

1. In the toolbar of the IR-Interface window select **Regions** and scroll down to **View/Hide controller list** and click on it (Figure 33.2.22).

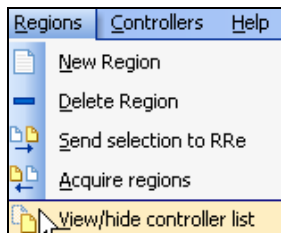


Figure 33.2.22

Note: This will remove the controller list from view in the IR-Interface window (Figure 33.2.23).

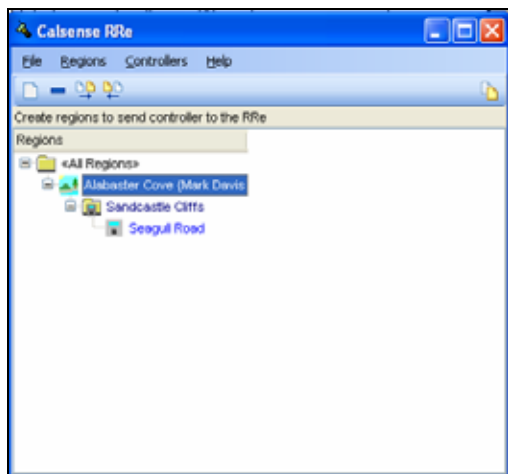


Figure 33.2.23

Note: To unhide the controller list. In the toolbar of the IR-Interface window select **Regions** and scroll down to **View/Hide controller list** and click on it (Figure 33.2.22).

33.3 CONTROLLERS

NEW CONTROLLER

This section allows the user to enter a new controller into the existing controller list in Command Center via the IR-Interface window.

1. In the toolbar of the IR-Interface window select **Controllers** and scroll down to **New Controller** and click on it (Figure 33.3.0).



Figure 33.3.0

The **Controller Information** screen is displayed (Figure 33.3.1).

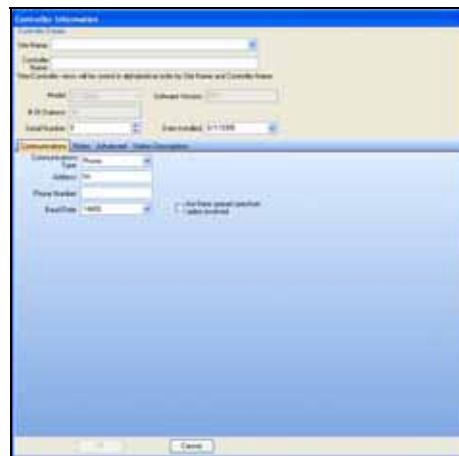


Figure 33.3.1

Site Name: Site names are used to group a number of controllers together.

- Type a name in the site name box or select the down arrow and choose a name that has already been entered. (Example: Memorial Park).

Controller Name: Controller names are used to identify individual controllers in a site. (Example: Snack bar).

Model: This box shows the model type of the controller. This section is greyed out and will change automatically when the controller is contacted for the first time.

Software Version: This is the current ROM version of the controller. This section is greyed out and will change automatically when the controller is contacted for the first time.

of Stations: This is the number of stations the controller is equipped with. This section is greyed out and will change automatically when the controller is contacted for the first time.

Serial Number: This is the individual serial number for the controller. It must be entered prior to using the IR-Interface to communicate with the controller. If not known this number can be retrieved by using speed communications to communicate, and number will update automatically.

Date Installed: Use this box to fill in the date that the controller was originally installed.

COMMUNICATIONS TAB

Communications Type:

- **Phone:** (-M,-R,-MR) Used for phone or hard wire communications.
- **Local Radio:** (-ML,-LR,-MLR) Used for Local Radio.
- **Digital Radio (AT):** (-MD,-DR,-MDR) Used for digital radio using AT protocol.
- **Digital (MASC):** (-MD,-DR, -MDR) Used for digital radio using MASC protocol.
- **MDS:** Microwave Data System.
- **CDPD:** Cellular Digital Packet Data.
- **Ethernet:** (-ME,-EN,-MEN) Ethernet Network.
- **Spread Spectrum:** (-SR,-MSR,-MS) Spread Spectrum Radio.
- **GPRS:** (-MG,-GR,-MGR) General Packet Radio Service.

- **Fiber Optic Modem:** Fiber Optic Communications.

Contact Calsense at 1-(800)-572-8608 if you are unable to determine the controller's communication type.

Note: Next you will have to enter a communications address in the "Address" box.

2. Click on the "**Address:**" box and enter a three letter / number or symbol combination (Figure 33.3.2).

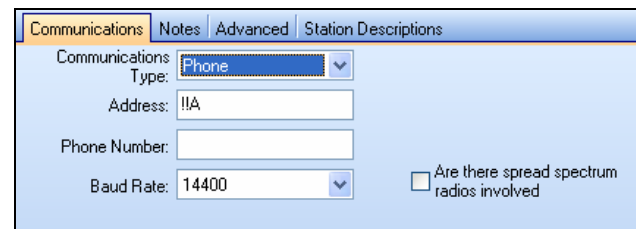


Figure 33.3.2

Address: The address is used to identify a particular controller's communication address. Controllers using communications options -LR, -SR, -ME, -MG, -MDR, -MLR, -MSR, -FOM, -MR or -M make it necessary to set a different communication address for each controller that is physically hard wired together sharing a single phone number, MAN number or radio.

It is not necessary to change the address if the communications option for the controller is a -DR, -EN, -GR, -R, or a stand alone controller using a Calsense direct wire cable communicating through the front serial port of the controller.

Note: The controller's communications address shipped from the factory is !!A. The controller's address can only be changed at the controller. The address listed here, in the central software, **must** match the address in the controller. If the addresses do not match the central **will not** communicate with the controller.

Note: ET2000 (500 series) and ET2000e controllers are shipped from the factory with a communications address of !!A.

TCP/IP Address / ID / IP / MAN Number or Phone Number: Depending on which communication type has been selected. One of the following will appear.

- TCP/IP Address: (CDPD) Cellular Digital Packet Data.
- ID Number: (GPRS) General Packet Radio Service.
- IP: Ethernet.
- Man Number: (AT & MASC) Digital Radio.
- Phone Number:
 - Phone
 - MDS
 - Local Radio or Spread Spectrum
 - Fiber Optic Modem

3. Select the TCP/IP, ID, and IP, MAN or Phone number box and enter the appropriate number.

Note: If hard wire communications is being used, no number is entered.

Baud Rate: This is the rate at which the controller transfers data when communicating.

Are there Spread Spectrum radios involved: If there is an Spread Spectrum radio involved in a chain of controllers, each controller in the chain must have this box checked.

NOTES TAB

1. By clicking on the “Notes” tab you will open up an area where you can enter additional information about the controller (Figure 33.3.3).

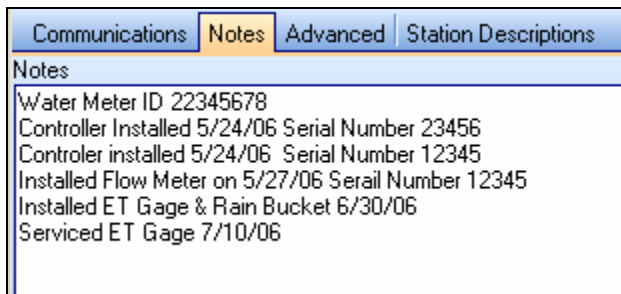


Figure 33.3.3

ADVANCED TAB

1. By clicking on the “Advanced” tab you can change the following information:
 - Use CTS (Clear to send) / RTS (Request to send) when hard wired.
 - Time out adjustment percentage.

The **Advance Tab** screen is displayed (Figure 33.3.4).

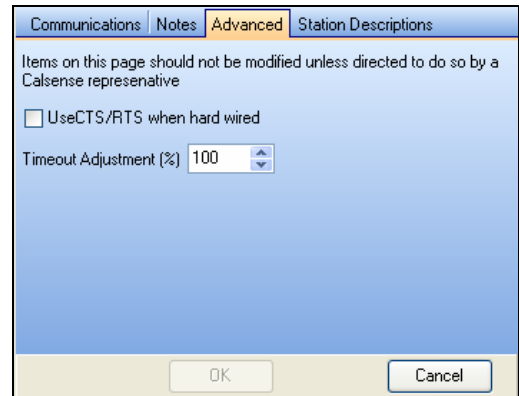


Figure 33.3.4

CAUTION:

Items on the Advance tab should not be modified unless directed to do so by a Calsense representative.

Note: If you choose not to save any of the information for this controller click on the **Cancel** button at the bottom of the screen.

2. Click on the **OK** button to exit this window.



STATION DESCRIPTION

- By clicking on the “**Station Description**” tab you will open up an area where you can enter Station specific information (Figure 33.3.5).

Station Number	Station In Use	Station Description (Only the first 16 characters will be displayed in the handheld)
1	<input checked="" type="checkbox"/>	East parking lot shrubs
2	<input checked="" type="checkbox"/>	Childrens play area south of building
3	<input type="checkbox"/>	
4	<input type="checkbox"/>	
5	<input checked="" type="checkbox"/>	Soccer field 1
6	<input checked="" type="checkbox"/>	Baseball diamond 3A
7	<input type="checkbox"/>	
8	<input checked="" type="checkbox"/>	Nature walk / Dog park

Figure 33.3.5

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

Stations In Use: This column allows the user to turn off non-required station outputs. These stations will no longer be visible for programming in any of the RRe-TRAN screens.

Station Description: This column allows the user to name individual stations (Only 16 characters will be displayed in the handheld) up to 40 characters can be used.

Note: making any changes to the Stations in Use, and Station Descriptions can only be sent to the Handheld via the IR-Interface. The Stations in Use, and Station Descriptions for this controller will be different in Command Center’s Program Data/Controller Setup and should be changed and sent via Speed Communications to the controller so that they match.

- To save the entry click on the **OK** button (Figure 33.3.6).

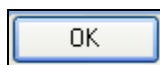


Figure 33.3.6

Note: Click on the **Cancel** button to exit this screen without saving any changes.

EDIT CONTROLLER

- From the “**Sites/Controller**” list highlight the site that you want to edit (Figure 33.3.7).

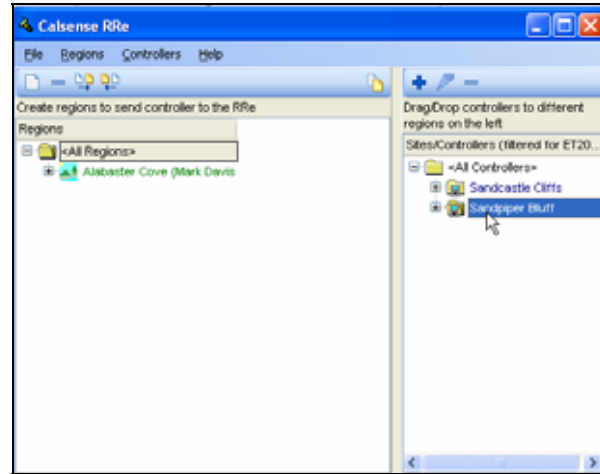


Figure 33.3.7

- Click on the “+” sign to the left of the site name to reveal the controllers list assigned to this site (Figure 33.3.8).

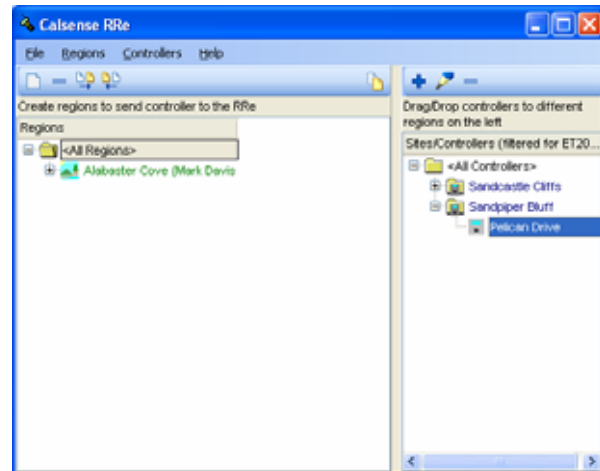


Figure 33.3.8

- Highlight the controller from the list that you want to edit.
- In the toolbar of the IR-Interface window select **Controllers** and scroll down to **Edit Controller** and click on it (Figure 33.3.9).



Figure 33.3.9

Note: Clicking this button will allow you to edit the existing data for this specific controller. Use the directions in Section 33.3 “New Controller” of this manual to go step by step through the effected fields.

- Once you have edited the information click on the **OK** button to save any changes that were made (Figure 33.3.10).

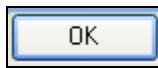


Figure 33.3.10

Note: If you do not want to save the edited data click on the **Cancel** button. This will not alter any information that you currently have in the database.

DELETE CONTROLLER

CAUTION:

The Del~~e~~te Controller option will be greyed out and is only available if you are not using IR-Interface in conjunction with Command Center software. You will have to delete the controller via Site/Controller setup in Command Center.

33.4 HELP

This section of the RRe-Interface program allows the user to identify what version of RRe-Interface software they are currently running.

- In the toolbar of the IR-Interface window select **Help** scroll down to **About** and click on it (Figure 33.4.0).

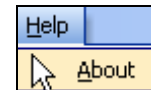


Figure 33.4.0

The **About** screen is displayed (Figure 33.4.1).

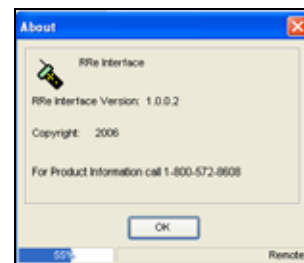


Figure 33.4.1

- Press the **OK** button to exit this screen (Figure 33.4.2).

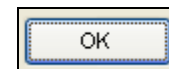
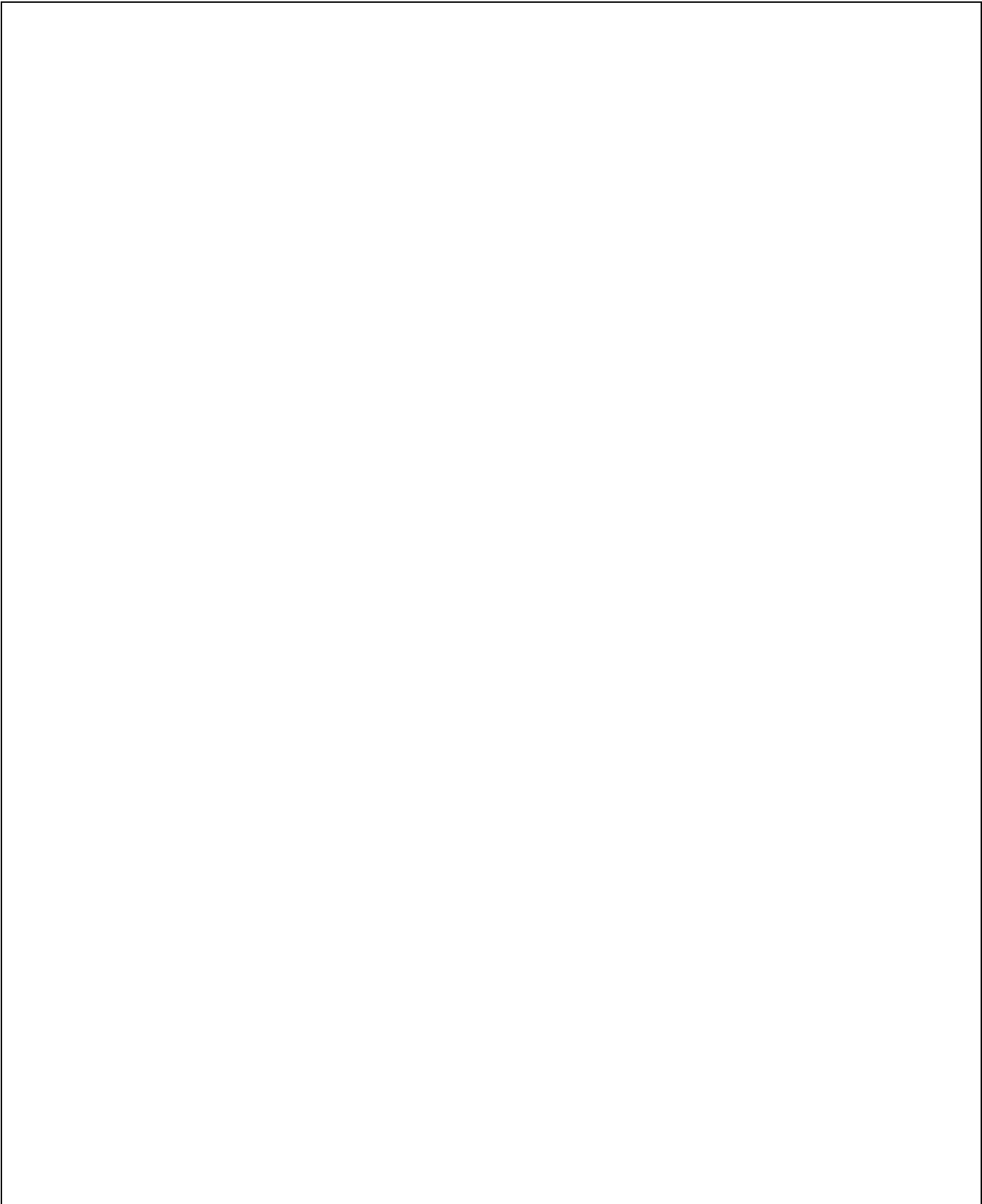


Figure 33.4.2



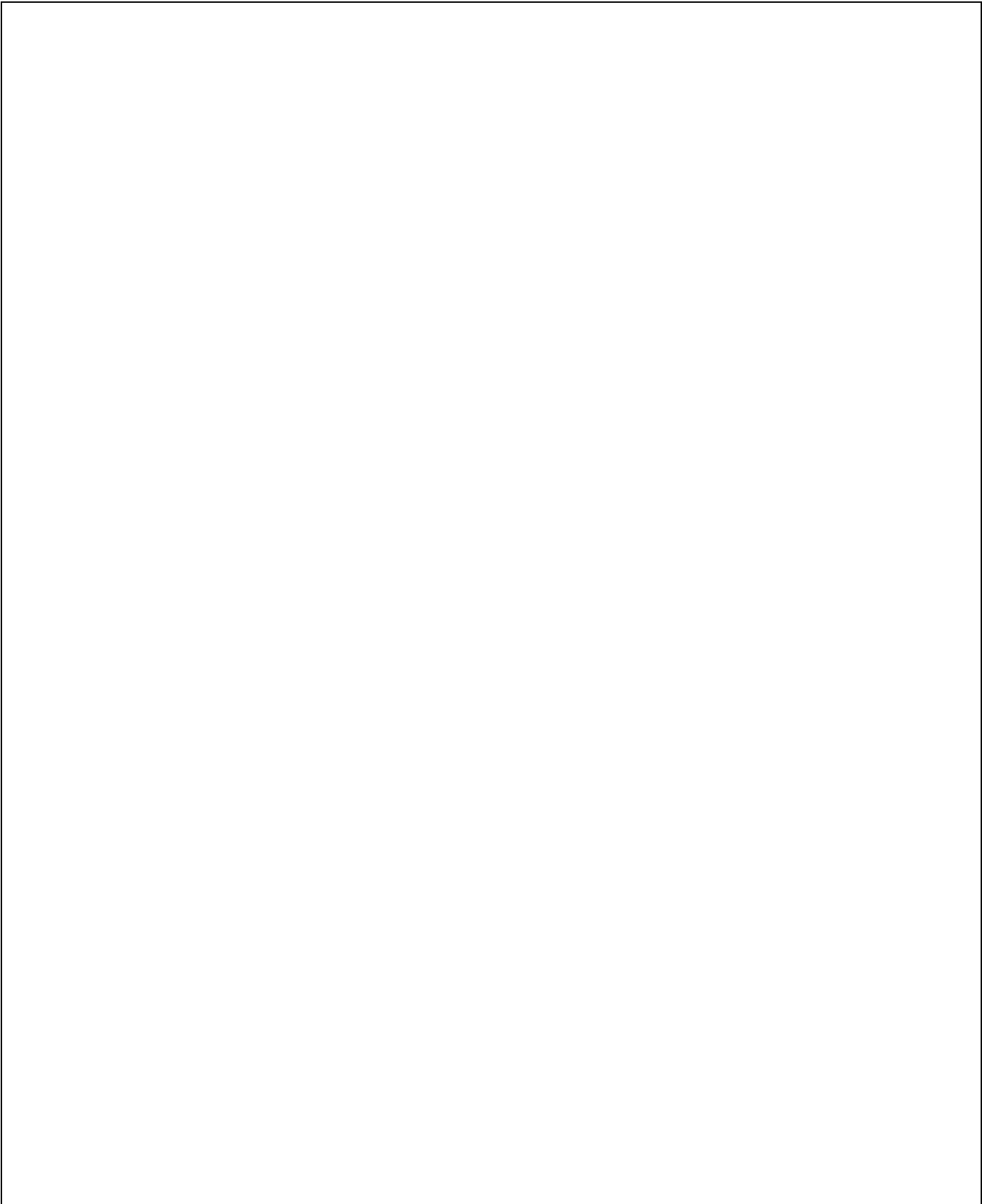
CHANGE 1

20 September 2006



making water work

since 1986



CHANGE 1

20 September 2006



making water work

since 1986

34.0 POC SUMMARY

P.O.C. Summary: The P.O.C. Summary report is a detailed breakout of the Irrigation Controller Points of Connection for connections two (2) and three (3). The Irrigation Controller must meet the following criteria:

- Have a (-F) option installed.
 - Points of connection must be used for non-irrigation purposes.
 - Must have a flow meter installed for each point of connection reported on.
1. From the toolbar at the top of the screen select **Water Reports** then scroll down to **POC Summary** and click on it (Figure 34.0.1).

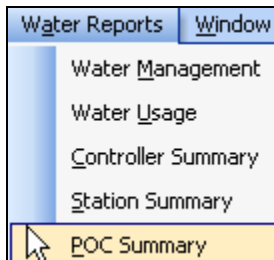


Figure 34.0.1

Note: This will take you to the “**POC Summary**” screen (Figure 34.0.2).

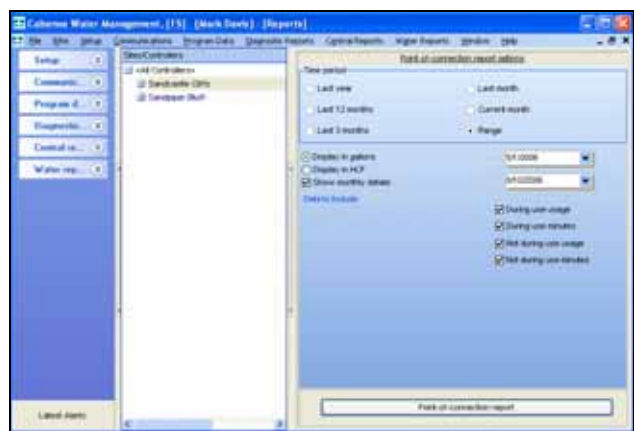


Figure 34.0.2

2. Next click on a controller from your controller list to highlight it (Figure 34.0.3).

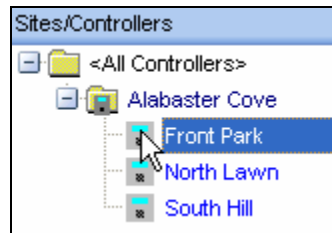


Figure 34.0.3

Time Period: This allows you to select a range of time by selecting from one of the six choices below (Figure 34.0.4).

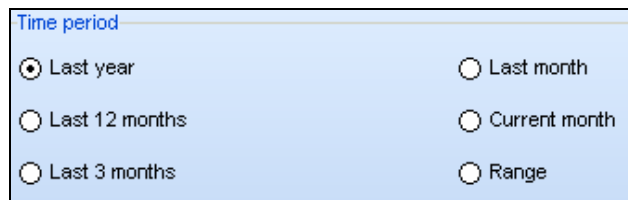


Figure 34.0.4

Last year: This will allow you to select a date range from the first day of the last calendar year to the last day of the calendar year.

Last 12 months: This will allow you to select a date range for the last 12 calendar months.

Last 3 months: This will allow you to select a date range for the last three calendar months.

Last month: This will allow you to select a date range for the last calendar month.

Current month: This will allow you to select a date range from the first day of this month until the last day of this month.

Range: This allows you to select a specific date range with a set start date and set finish date.

Note: This will open up the date range boxes directly below the **Range** button (Figure 34.0.5).

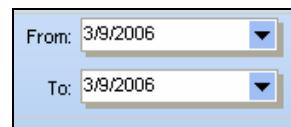


Figure 34.0.5

- Click on the drop down arrow to select a date. This will reveal the calendar to choose a specific date (Figure 34.0.6).

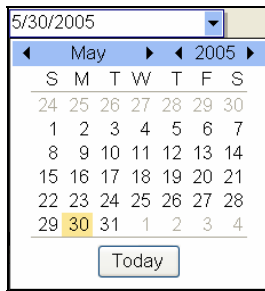


Figure 34.0.6

Note: Use the **BLACK** arrows to adjust the **MONTH** and **YEAR** or click on the **Today** button to set the date for today's date.

- Next click on the box for each item from the **Data to include** list that you would like to include in your report (Figure 34.0.7).



Figure 34.0.7

- In the **Display style** section click on the appropriate box for the following (Figure 34.0.8).

Display in gallons: This will display all water totals in gallons.

Display in HCF: This will display all water totals in hundreds of cubic feet.

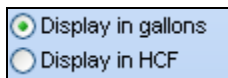


Figure 34.0.8

- Click on the **Show monthly details** button if you want your report to show calculations for each day of the month selected in the report (Figure 34.0.9).



Figure 34.0.9

- Click on the **Generate station summary report** button (Figure 34.0.10).

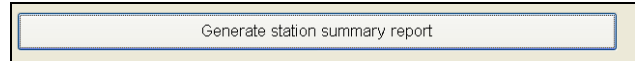


Figure 34.0.10

34.1 P.O.C SUMMARY REPORT

Note: This will take you to the **"P.O.C Summary"** report screen (Figure 34.1.1).

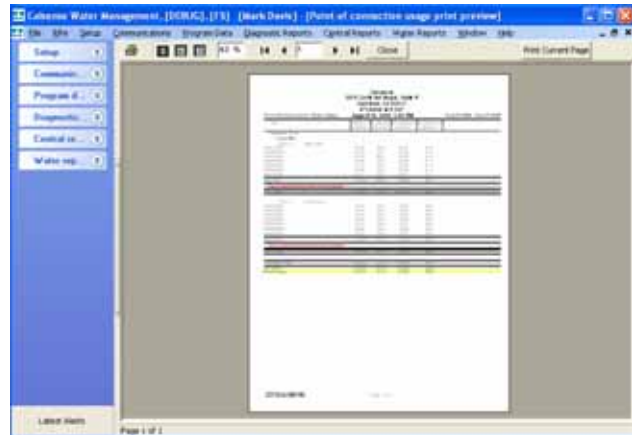


Figure 34.1.1

SEE "HOW TO PRINT REPORTS" SECTION FOR MORE INFORMATION.

SEE LAST PAGE OF THIS SECTION FOR FULL PAGE REPORT.

34.2 P.O.C SUMMARY REPORT CONTENTS

The following is a list of every item on the **"P.O.C Summary"** report (Figure 34.2.1).

Date and Time: This shows the date and time that you requested the report. If you decide to print the report this gives you a way in which to file chronologically.

Report Title: This is the title of the report that you are currently viewing.

Date Range: This is the period covered by the report.

Site Name: Each site name will appear to the left of the list in bold font.

Controller Name: The controllers assigned to this site will appear by name and will be listed directly under the site name.

Date: This is each individual date that each Point of Connection was scheduled to open during the date range requested.

During Use Gallons / HCF: This is the amount of gallons or hundreds of cubic feet of water used during the time the Point of Connection was open during that specific date.

During Use Minutes: This is the amount of time in minutes used while the Point of Connection was open during that specific date.

Not During Use Gallons / HCF: This is the amount of gallons or hundreds of cubic feet of water used during the time the Point of Connection was not scheduled to be open during that specific date.

Not During Use Minutes: This is the amount of time in minutes used while the Point of Connection was scheduled to be closed during that specific date.

Total: At the bottom of each column is a running total for each column for each month of the date range selected.

POC Totals: This entry shows a complete total for each column from the beginning entry to the final entry of the date range requested.

Controller Totals: This entry shows a combined total for each column for POC2 and POC3.

Site Totals: This entry shows a combined total for each column for each site queried for this report.

Grand Totals: This entry shows a combined total for each column for all points of connection for all sites and controllers queried for this report.



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572-8608 Ext. 327

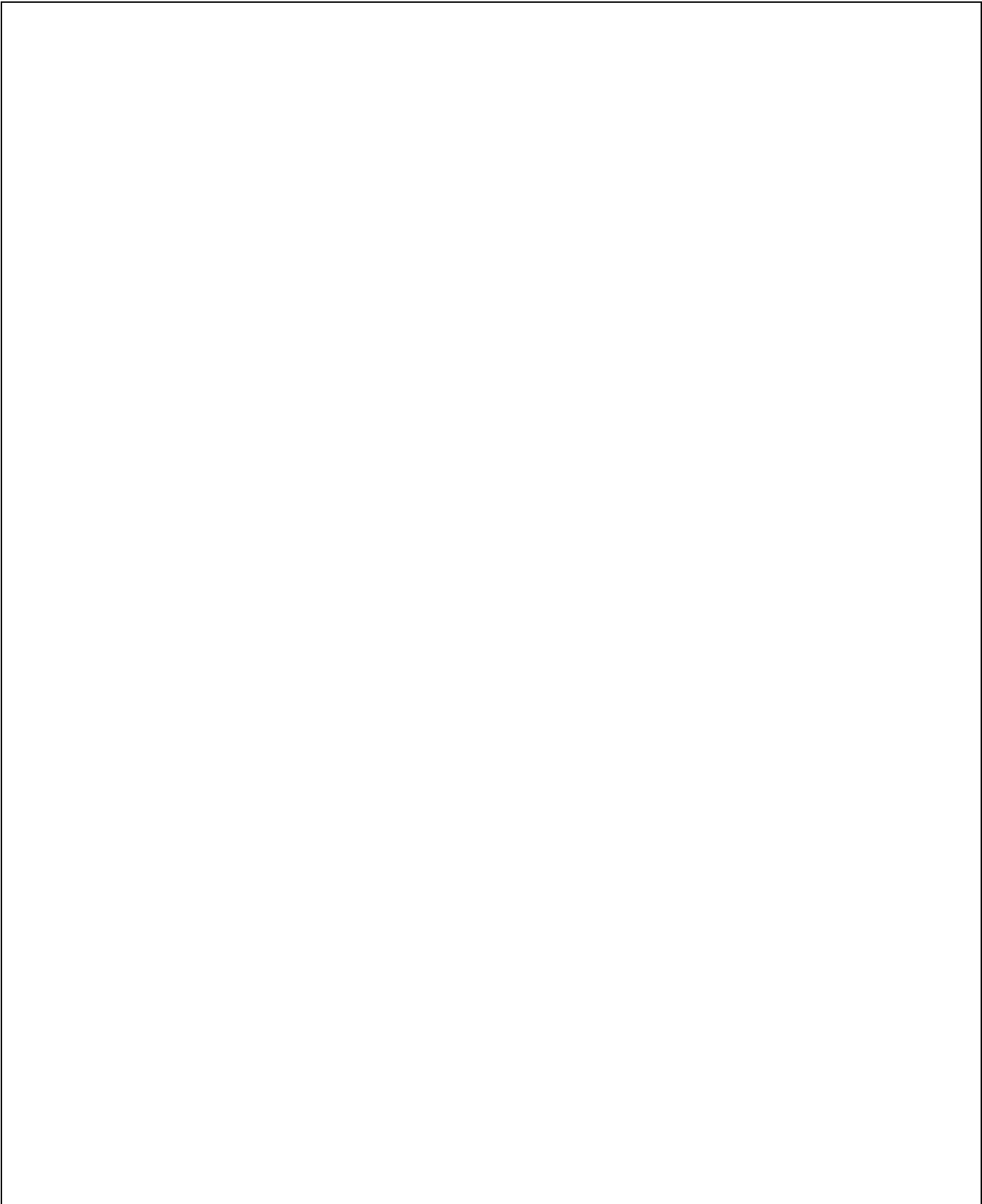
Point-Of-Connection Water Usage August 10, 2006 2:50 PM Jul/06/2006 - Aug/10/2006

Date	During Use (Gallons)	During Use (Minutes)	Not During Use (Gallons)	Not During Use (Minutes)
Alabaster Cove				
South Hill				
POC -2 Back Gate				
07/06/2006	2,063	42.7	2,033	42.2
07/07/2006	2,062	42.7	2,032	42.2
07/08/2006	2,061	42.7	2,031	42.2
07/09/2006	2,060	42.7	2,030	42.2
07/10/2006	2,059	42.7	2,029	42.2
07/11/2006	2,058	42.6	2,028	42.1
07/12/2006	2,057	42.6	2,027	42.1
07/13/2006	2,056	42.6	2,026	42.1
07/14/2006	2,055	42.6	2,025	42.1
07/15/2006	2,054	42.6	2,024	42.1
07/16/2006	2,053	42.6	2,023	42.1
07/17/2006	2,052	42.5	2,022	42.0
07/18/2006	2,051	42.5	2,021	42.0
07/19/2006	2,050	42.5	2,020	42.0
07/20/2006	2,049	42.5	2,019	42.0
07/21/2006	2,048	42.5	2,018	42.0
07/22/2006	2,047	42.5	2,017	42.0
07/23/2006	2,046	42.4	2,016	41.9
07/24/2006	2,045	42.4	2,015	41.9
07/25/2006	2,044	42.4	2,014	41.9
07/26/2006	2,043	42.4	2,013	41.9
07/27/2006	2,042	42.4	2,012	41.9
07/28/2006	2,041	42.4	2,011	41.9
07/29/2006	2,040	42.3	2,010	41.8
07/30/2006	2,039	42.3	2,009	41.8
07/31/2006	2,038	42.3	2,008	41.8
Jul-2006	53,313	1,105.2	52,533	1,092.2
08/01/2006	2,037	42.3	2,007	41.8
08/02/2006	2,036	42.3	2,006	41.8
08/03/2006	2,035	42.3	2,005	41.8
08/04/2006	2,034	42.2	2,004	41.7
08/05/2006	2,033	42.2	2,003	41.7
08/06/2006	2,032	42.2	2,002	41.7
08/07/2006	2,031	42.2	2,001	41.7
Aug-2006	14,238	295.6	14,028	292.1
<i>Data is missing from the date range selected</i>				
POC Totals:	67,551	1,400.9	66,561	1,384.4

POC -3 Front Drive				
07/06/2006	3,063	59.4	3,033	58.9
07/07/2006	3,062	59.4	3,032	58.9
07/08/2006	3,061	59.4	3,031	58.9
07/09/2006	3,060	59.3	3,030	58.8
07/10/2006	3,059	59.3	3,029	58.8
07/11/2006	3,058	59.3	3,028	58.8
07/12/2006	3,057	59.3	3,027	58.8
07/13/2006	3,056	59.3	3,026	58.8
07/14/2006	3,055	59.3	3,025	58.8
07/15/2006	3,054	59.2	3,024	58.7
07/16/2006	3,053	59.2	3,023	58.7
07/17/2006	3,052	59.2	3,022	58.7
07/18/2006	3,051	59.2	3,021	58.7



Point-Of-Connection Water Usage		August 10, 2006 2:50 PM		Jul/06/2006 - Aug/10/2006	
Date		During Use (Gallons)	During Use (Minutes)	Not During Use (Gallons)	Not During Use (Minutes)
Alabaster Cove					
South Hill					
POC -3 Front Drive					
07/19/2006		3,050	59.2	3,020	58.7
07/20/2006		3,049	59.2	3,019	58.7
07/21/2006		3,048	59.1	3,018	58.6
07/22/2006		3,047	59.1	3,017	58.6
07/23/2006		3,046	59.1	3,016	58.6
07/24/2006		3,045	59.1	3,015	58.6
07/25/2006		3,044	59.1	3,014	58.6
07/26/2006		3,043	59.1	3,013	58.6
07/27/2006		3,042	59.0	3,012	58.5
07/28/2006		3,041	59.0	3,011	58.5
07/29/2006		3,040	59.0	3,010	58.5
07/30/2006		3,039	59.0	3,009	58.5
07/31/2006		3,038	59.0	3,008	58.5
Jul-2006		79,313	1,538.5	78,533	1,525.5
<hr/>					
08/01/2006		3,037	59.0	3,007	58.5
08/02/2006		3,036	58.9	3,006	58.4
08/03/2006		3,035	58.9	3,005	58.4
08/04/2006		3,034	58.9	3,004	58.4
08/05/2006		3,033	58.9	3,003	58.4
08/06/2006		3,032	58.9	3,002	58.4
08/07/2006		3,031	58.9	3,001	58.4
Aug-2006		21,238	412.3	21,028	408.8
<hr/>					
Data is missing from the date range selected					
<hr/>					
POC Totals:		100,551	1,950.9	99,561	1,934.4
<hr/>					
Controller Totals:		168,102	3,351.7	166,122	3,318.7
<hr/>					
Site Totals:		168,102	3,351.7	166,122	3,318.7
<hr/>					
Grand Totals:		168,102	3,351.7	166,122	3,318.7



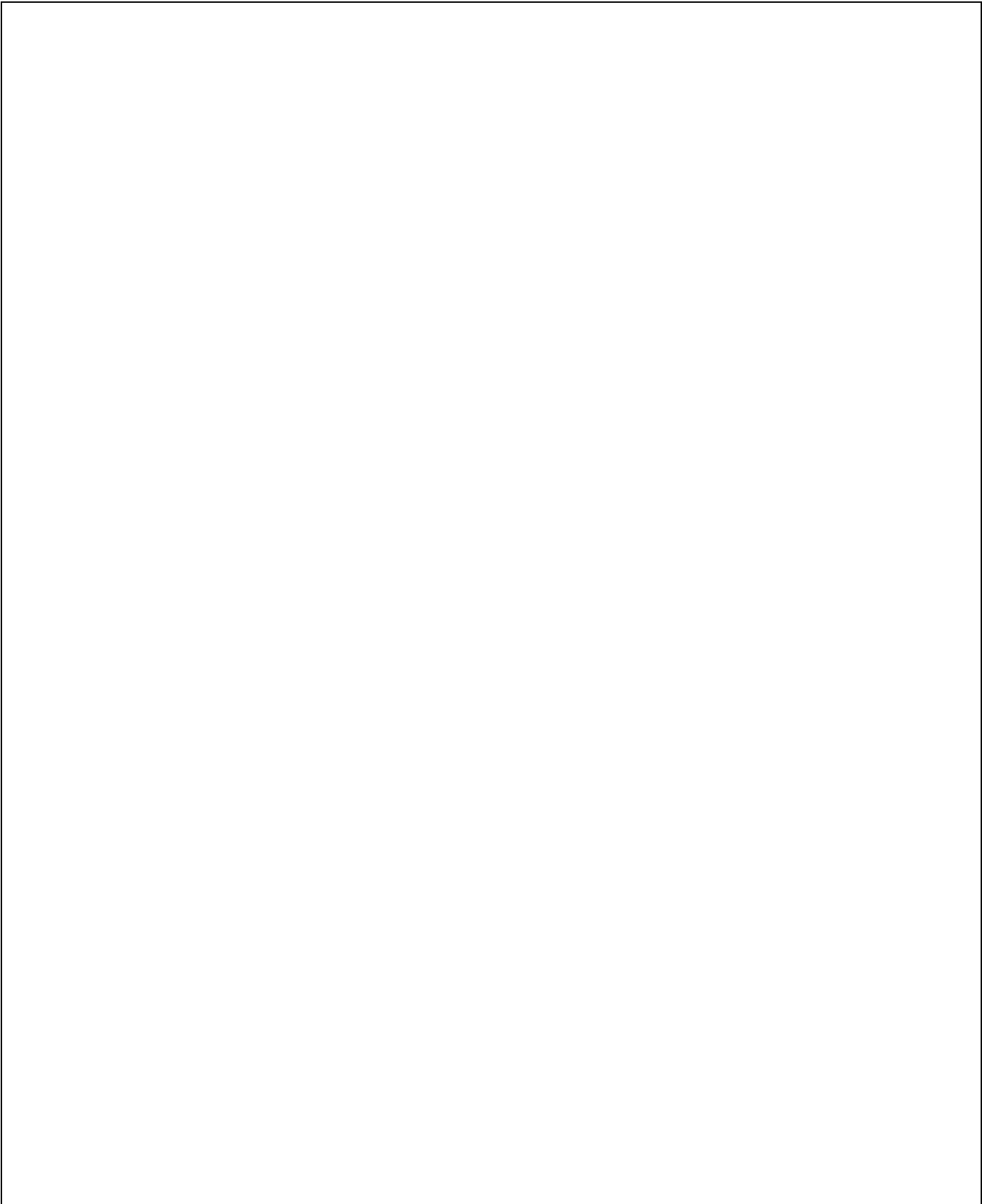
CHANGE 1

20 September 2006



making water work

since 1986



CHANGE 1

20 September 2006



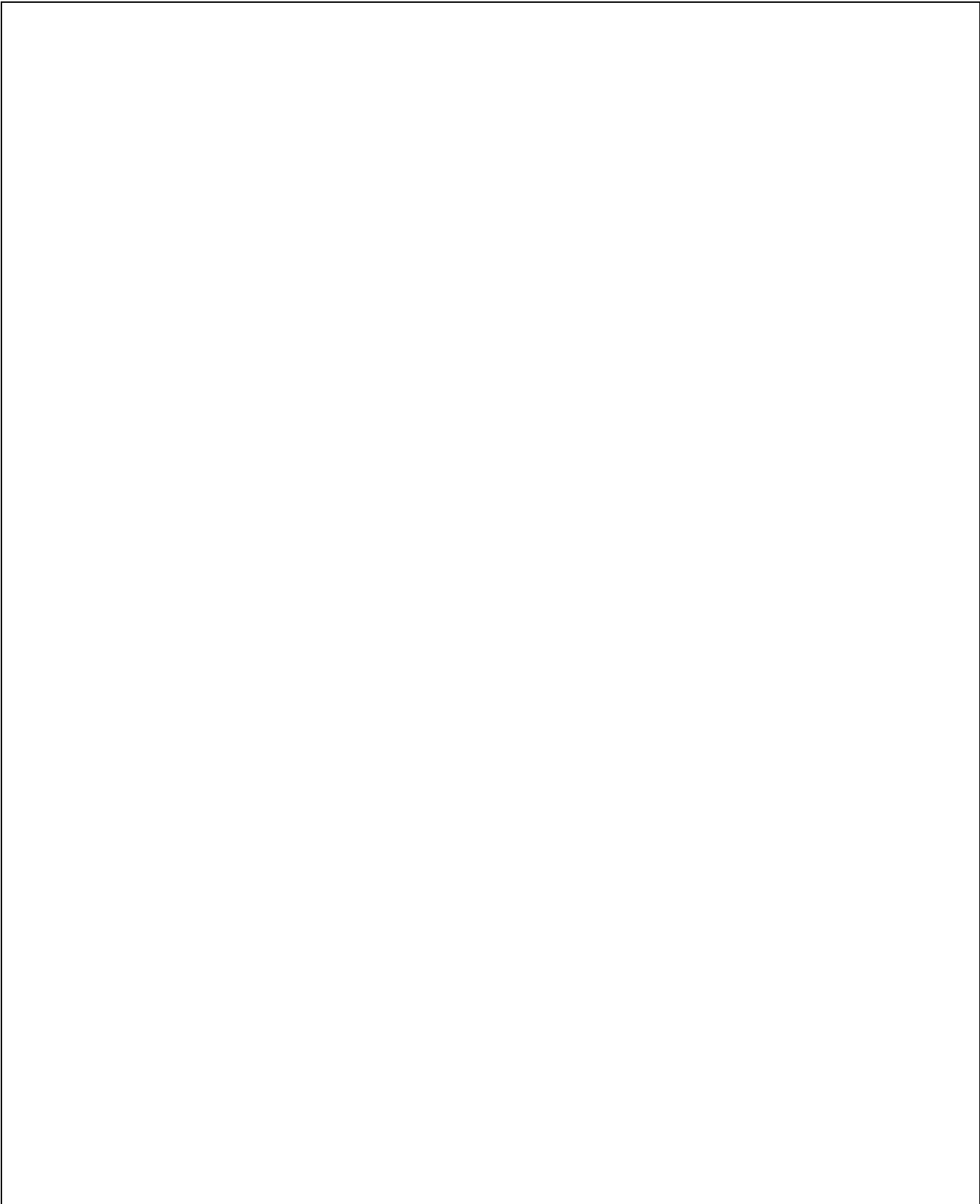
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since 1986

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That Work”*







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Software Version

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(CHANGE 2)

incorporated

