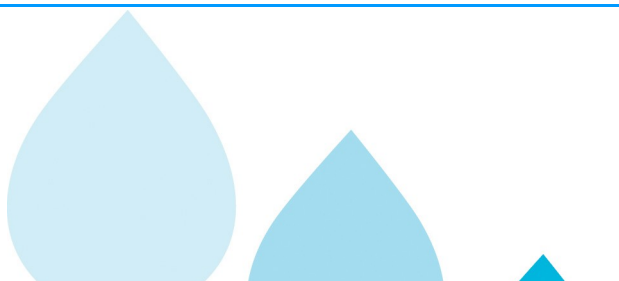


WiSA

Water Smarter, Water WiSA

AquaLink 7 Suite

Users Guide

Table of Contents

1. Introduction

AquaLink is award winning software for irrigation monitoring and control. It has been designed to provide total irrigation management, from the monitoring of a crops growing environment, the planning and scheduling of irrigation events, to monitoring the performance of the irrigation system.

This guide explains AquaLink for the everyday user.

To configure your AquaLink system, please refer to the Installation and Setup Guide.

Please don't hesitate to contact your local reseller, or the WiSA Irrigation Solutions team, if you have any questions or problems with your software.

2. AquaLink Windows

The main program of the AquaLink Suite, “AquaLink” must being running at all times for the system to function.

All components of the AquaLink suite can be accessed from the main window

2.1. Starting AquaLink

How to Start AquaLink

You can start AquaLink by

1. Double clicking the '**AquaLink**' Icon on the Windows Desktop

or

1. Select the Windows '**Start**' Button
2. Select '**All programs**'
3. Select '**WiSA7**' (or the name of the start menu entered during the installation process)
4. Select '**AquaLink**'

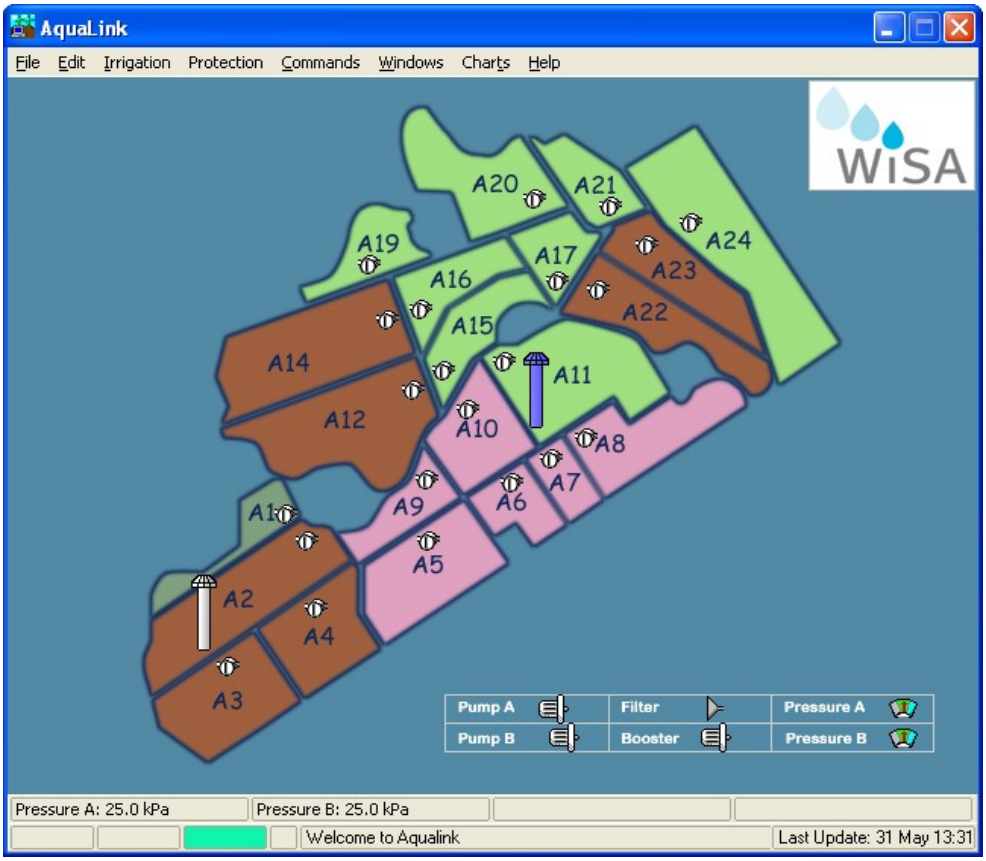
Once loaded AquaLink will communicate to all field units to obtain initial values and status's

When this is complete “Welcome to AquaLink” with be shown in AquaLink's Status bar and the main menu will become active.

AquaLink should be configured to automatically start when the computer is turn on. If it is not and would like to do this, please see the AquaLink Suite Set-up guide,

2.2. AquaLink's Main Window

The main AquaLink window is shown below.



It consists of a menu bar at the top of the screen, the main display window which shows a map of the property, optionally a Data Panel bar and finally a status bar at the bottom of the screen.

The Status bar is further divided into sections.

The first section is coloured based on the status of the irrigation timer. The colours represent the following:

- **Grey :** the timer is off and no scheduled irrigations will occur.
- **Green:** the timer is active however no irrigation is currently in progress.
- **Blue:** system has valves on (they may be on manually or scheduled).
- **Pink:** the irrigation timer is paused due to the user editing a cycle/schedule.

The second section indicates the current paused state of an irrigation cycle.

- **Grey:** no Irrigation cycles are paused
- **Red:** one or more cycles are paused and waiting to be resumed.

Right-clicking this panel when there is a paused cycle, will produce a menu that allows you to resume or clear a paused cycle.

The third section represents the status of the protection timer. The protection timer controls when the system protection is operational.

- **Grey:** the protection timer is off and any entered system protection rules will not be functional.
- **Green:** the protection timer is activated.
- **Blue:** the protection cycle or shift has been activated by a protection rule.

The fourth section indicates the status of the communications.

- **Green:** the last communication was successful.
- **Red:** a failed communication has occured.

The fifth section is the message panel, which displays general information about the device or control the mouse cursor is pointing at.

The final section is the last update time. This panel indicates the last time the system communicated with the field units.

2.2.1. Default Icons

Each device (sensor, valve, pump, etc) that make up the irrigation system are represented by icons in the main display window. The default the icons are shown below.

WiSA field unit icons

Valve Icons

Pump Icons

Filter Icons

Injector Icons

Alarm Icons

AquaSpy Probe Group Icons

Sentek Probe Group Icons

Soil Moisture sensor Icons

Analogue Sensor Icon

Switched Sensor Icons

Field Unit Battery Icons

2.3. Flow Capacity Window

The System Status window displays the Flow Rates of each Hydraulic Group. The flow rates, number of irrigation and booster pumps defined in each hydraulic group can be found by clicking on the appropriate hydraulic group. The total flow capacity of all opened valves is also displayed in the System Status window.

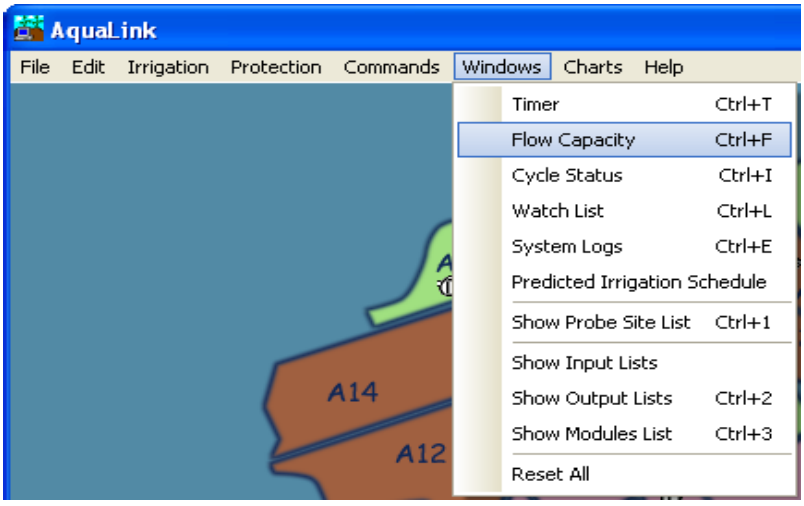
This information allows you to balance the system flow rates. During shift programming, this window displays the values from the current shift, NOT the currently active values.

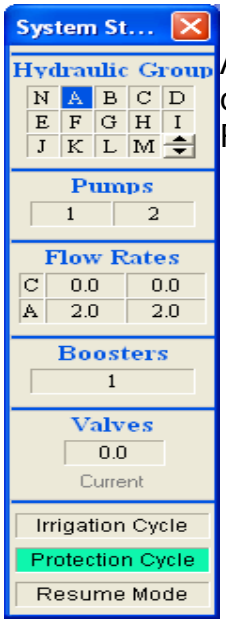
How to show the Flow Capacity Window

1. Click the '**Windows'** option on AquaLink's main menu bar.
2. Click the '**Flow Capacity'** option and the flow capacity window will be shown.

or

1. Hold down the '**CTRL**' key then press the '**F**' key while holding the '**CTRL**' key.
2. Release both keys and the flow capacity window will be displayed.





At the bottom of the System Status form are three panels which display the status of the irrigation timer, the protection timer and Resume status:

For the Irrigation Timer and Protection timers,

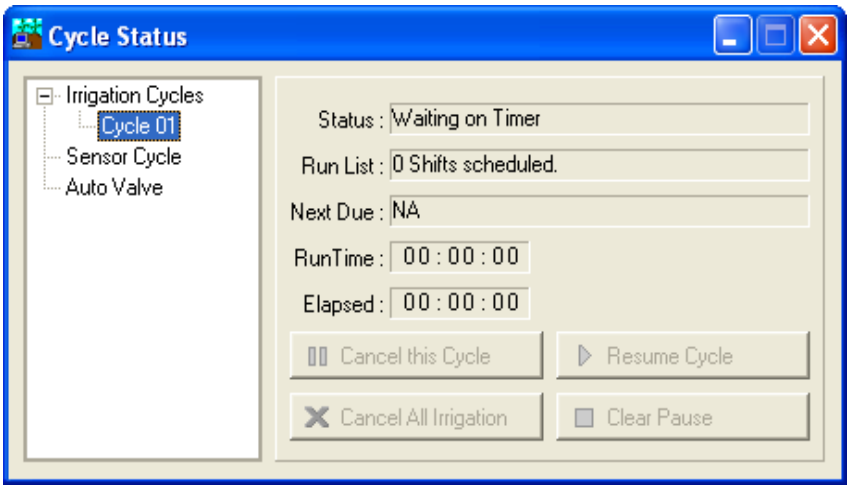
Grey:	Timer off
Green:	Timer active, but no irrigation or protection cycles in progress.
Blue:	Irrigation or protection cycle in progress.
Pink:	Program mode indicating when the “Edit Irrigation Shifts” page is active.

The Resume Status are as follows

Grey:	No paused cycles
Red:	One for more paused cycles.

2.4. Cycle Status Window

This window provides the user with information on the status of any irrigation cycles that are currently active, or waiting to run. Each cycle will display either its current status or when it is next scheduled to run. Buttons on this form allow you to cancel an active irrigation sequence, or to cancel the irrigation timer, resume a paused/stopped irrigation sequence, or clear a paused/stopped irrigation sequence.

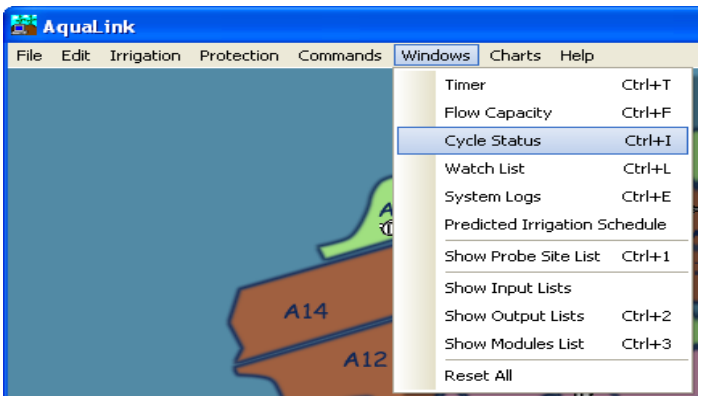


How to show the Flow Capacity Window

1. Click the '**Windows**' option on AquaLink's main menu bar.
2. Click the '**Cycle Status**' option and the Cycle Status window will be shown.

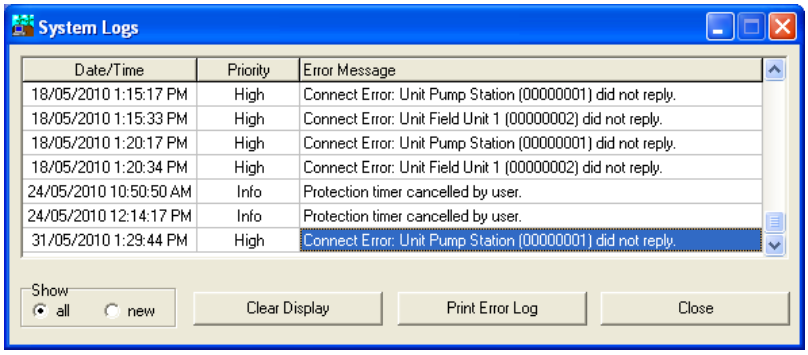
or

1. Hold down the '**CTRL** 'key then press the '**I**' key while holding the '**CTRL**' key.
2. Release both keys and the Cycle Status window will be displayed.



2.5. System Log Window

The error log displays a list of all errors, warnings and informational messages produced by the AquaLink program.



There are two display options for messages generated in AquaLink:

Show All: displays all the messages generated
Show New: only displays new messages (i.e. those generated since AquaLink was last started or the “Clear Display” button was clicked.

There are 3 buttons in the System Logs:

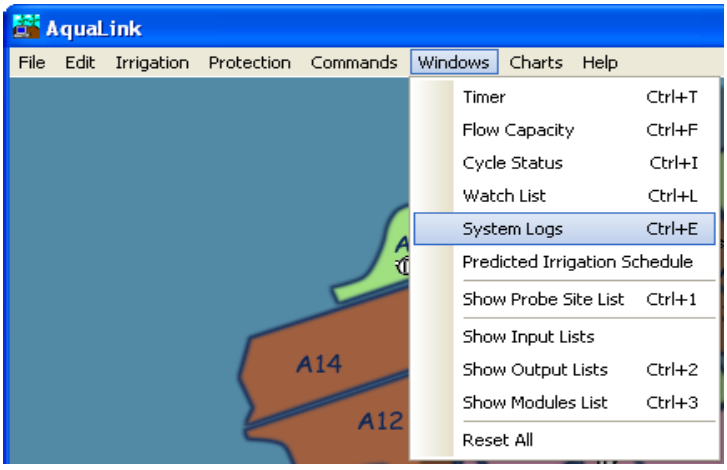
Clear Display: marks the messages as viewed, so that only new messages will be shown.
Print Error Log: will print the current message view (i.e. “New only” or “All”) to a printer.
Close: closes the System Log Window.

How to show the System Log Window

1. Click the '**Windows**' option on AquaLink's main menu bar.
2. Click the '**System Log**' option and the System Log window will be shown.

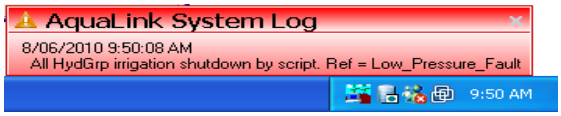
or

1. Hold down the '**CTRL**' key then press the '**E**' key while holding the '**CTRL**' key.
2. Release both keys and the System Log window will be displayed.



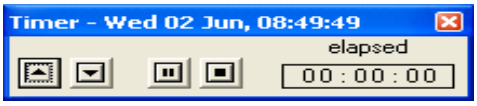
Or if an error has occurred.

Click the Errors have occurred red message panel above/below the windows task tray.



2.6. Timer Window

The timer window provides a stop-watch. This can be useful if you want to run a manual irrigation and wish to keep track of how long you have run the valve for. If the Auto-timer option is set (from the commands menu), then the stopwatch will run automatically whenever a pump is turned on.

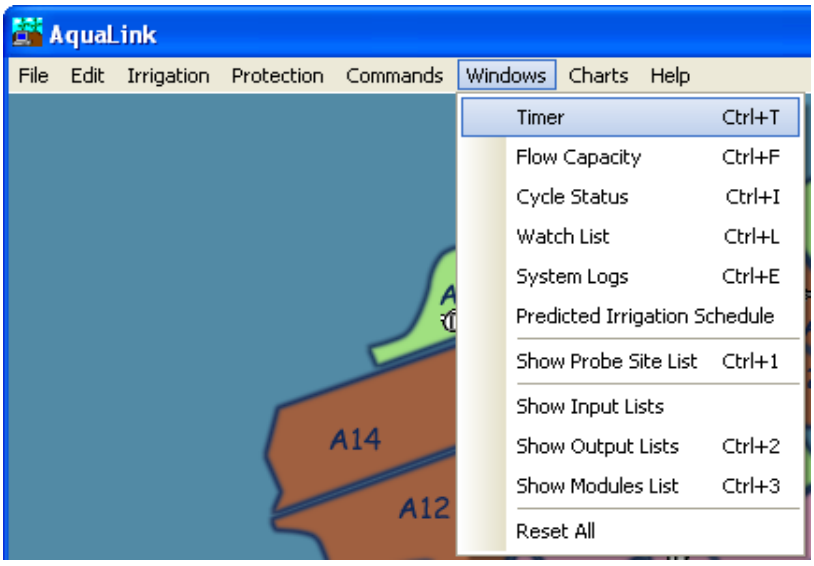


How to show the Timer Window

1. Click the '**Windows**' option on AquaLink's main menu bar.
2. Click the '**Timer**' option and the Timer window will be shown.

or

1. Hold down the '**CTRL**' key then press the '**T**' key while holding the '**CTRL**' key.
2. Release both keys and the Timer window will be displayed.

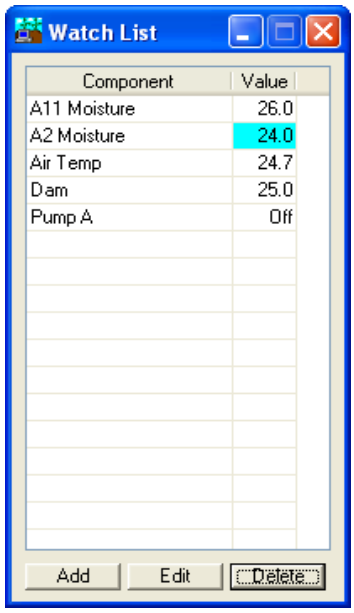


2.7. Watch Window

The watch list allows you to continually display the value of selected items.

For example, you may wish to display several sensors, probes, status of valves and pumps at any one time. This can be achieved by displaying the Watch List window from the main menu.

Where applicable, the value or condition for each item will be displayed in the boxes on the right of the item. In the example, the All Moisture is 26.0, the A2 Moisture is 24.0, Air temperature is reading 24.7, the Dam level is reading 25.0 and Pump A is off.

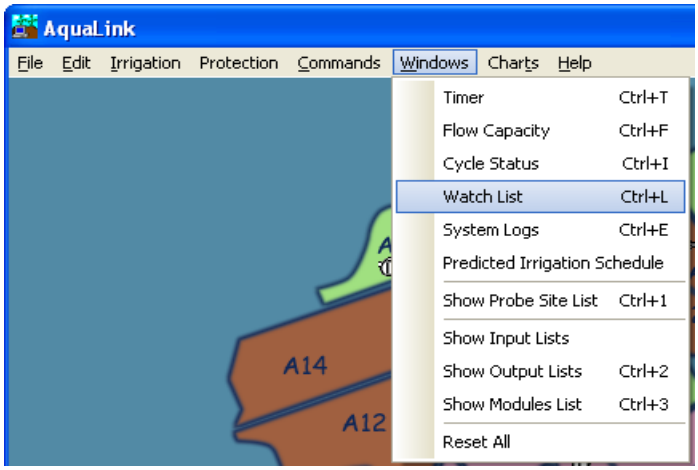


How to show the Watch Window

1. Click the '**Windows**' option on AquaLink's main menu bar.
2. Click the '**Watch List**' option and the Watch window will be shown.

or

1. Hold down the '**CTRL**' key then press the '**L**' key while holding the '**CTRL**' key.
2. Release both keys and the Watch window will be displayed.



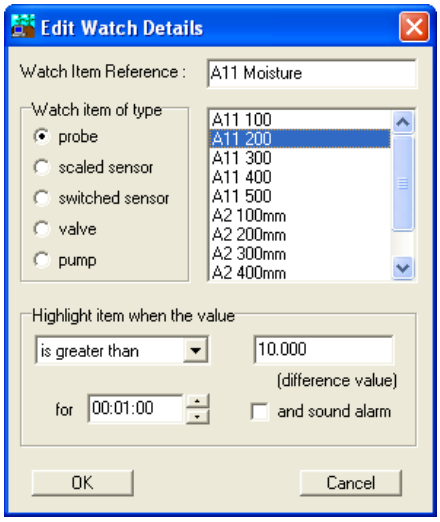
2.7.1. Add a Watch

To add a watch click the Add button. This takes you to the Watch Edit window where you can change the settings as required.

For more information on the settings, see the next section, "Edit Watch Details".

Click the '**OK**' to complete the addition. Clicking '**Cancel**' will abort the addition.

2.7.2. Edit Watch Details



Watch Item Reference

Chose a name appropriate for this watch item. To avoid confusion don't use a name that has already been used.

Watch Item of Type

The watch list can display the current status of probes, sensors, valves or pumps. Select the type of component by clicking on the appropriate option. The list of components will be updated to only display components of the selected type.

Watch Item

Select the required item from the list.

Highlight Item when the Value

The watch list can be programmed to highlight a particular sensor or valve when its value matches a certain criteria, and to optionally ring an alarm.

(a) For a probe or scaled sensor

From the drop down list, choose one of the following:

- is greater than,
- is less than or
- is equal to

Then enter the difference value in the box on the RHS. Enter the time required for this value to be met in the time box. When displayed in the watch list, this item will display a value and turn blue once the condition has been met for a given time.

In this example, the A11 200 deep probe will be highlighted blue on the watch list window when the condition has been met for 60 seconds, i.e. when the soil moisture reading is greater than 10% for 60 seconds.

(b) For a switched sensor, valve or pump

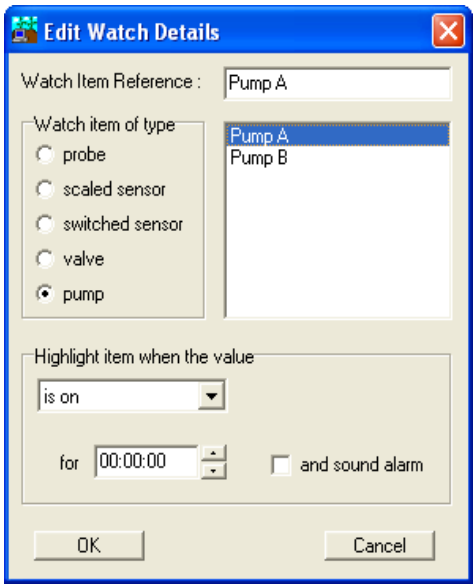
From the drop down list, choose either

– is on or

– is off

When displayed in the watch list, this item will be highlighted blue. Enter the time for which this condition needs to be met.

In this example, the Flow switch will be highlighted blue on the watch list when the Flow switch is OFF for 30 seconds.



Sound Alarm

When checked AquaLink will activate the first alarm (if exists) when the conditions for the highlight are met.

NOTE: This will not shut-down the system.

2.8. Predicted Cycle Schedule Window

The predicted cycle shows when valves are due to be activated according to the irrigation cycle schedule.

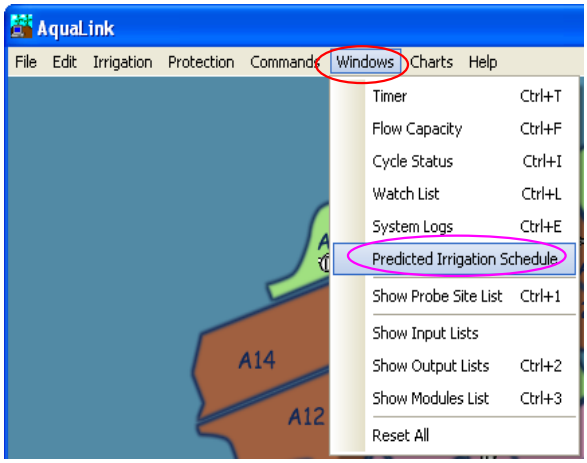
It will does not show when valves may be activated via Valve auto mode feature.

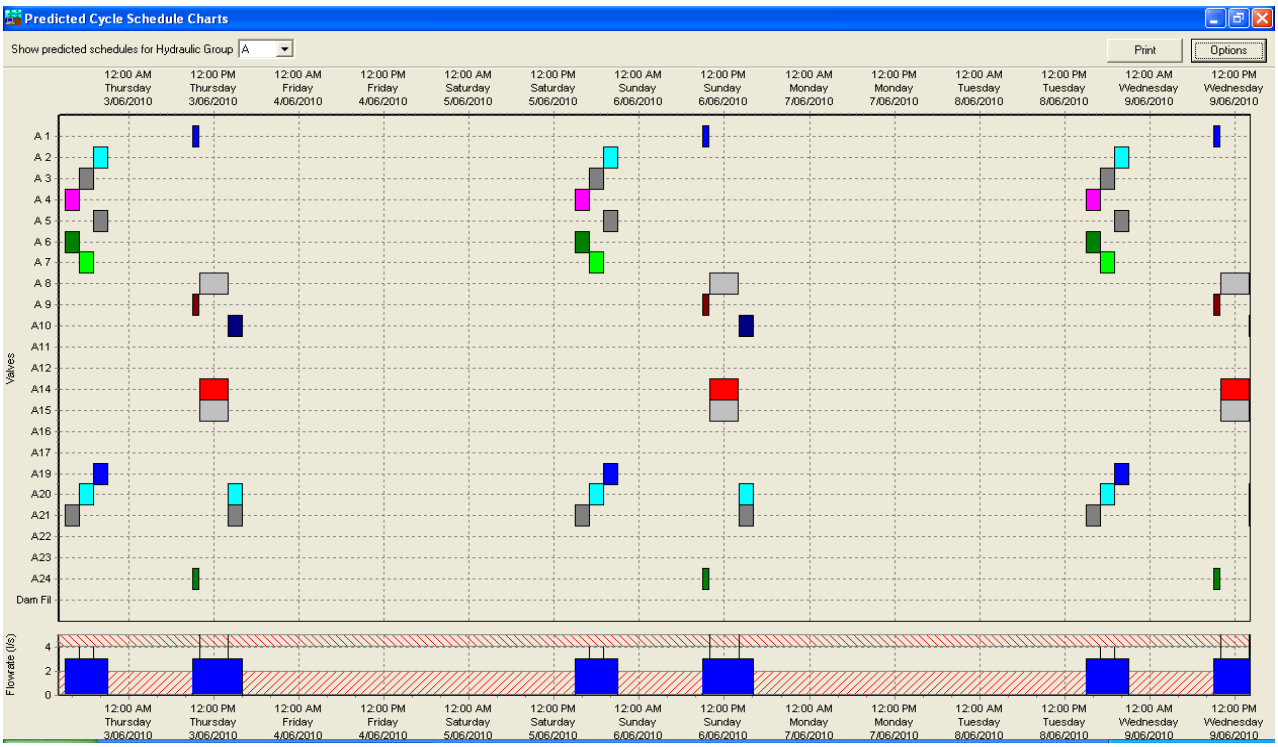
Also if shifts are set to have soil moisture or flow overrides, then these overrides are assumed not to occur and the chart will show the maximum runtime of the shifts.

The top part of the screen shows the individual valves while the bottom chart shows the estimated flow rates.

The predicated Cycle schedule window is only available if you have the Irrigation Shifts and Cycles Feature enabled.

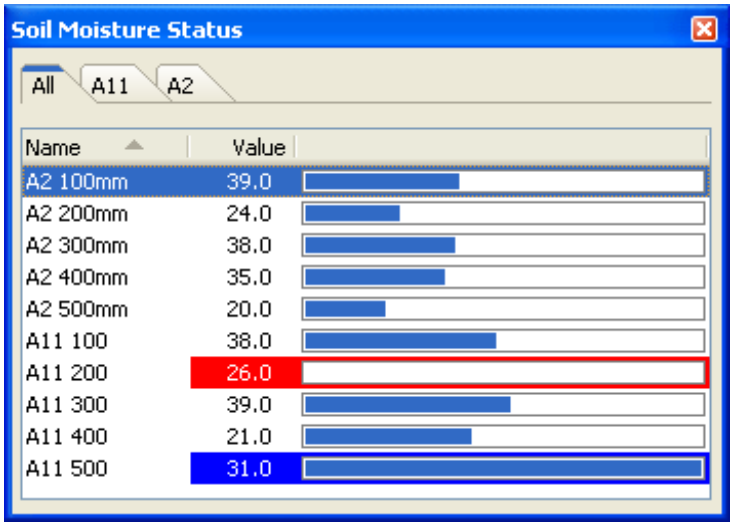
Please see the Installation and Set-up Guide on how to enable and disable this feature.





2.9. Probe Site List Window

The '**Probe site list**' window shows a list of soil moisture sensors configured in AquaLink. If shown via the menus, then all sensors are shown. If shown by right-clicking a probe icon then only the sensors for the selected probe group is shown.

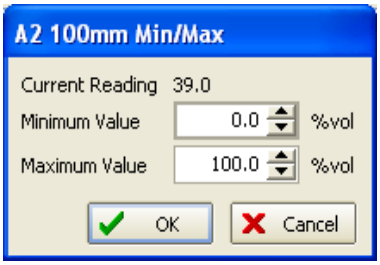


The 'Value' column indicates the current soil moisture value, while the Bar column indicates a percentage "full" between the Min and Max soil moisture values.

- **Blue values:** the sensor is above the Max soil moisture value,
- **Red values:** the sensor is below the Min soil value.

Tabs at the top allow you to selected the sensors belong to a particular probe group.

Double-Clicking the Sensor name will allow you to changed the soil moisture minimum and maximum soil moisture values (for calculating the percentage for the bar above).



2.10. Inputs List Window

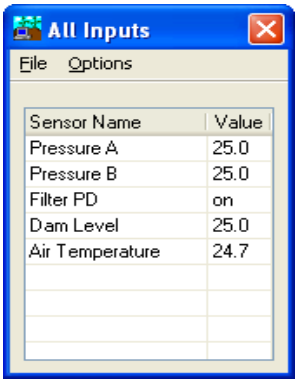
The Inputs list can optionally show

- all sensors,
- only non soil moisture sensors
- soil moisture sensors only that are configured in AquaLink.

Select the **Options** Menu then **Show Probes** to hide or show all soil moisture sensors in the window.

Select the **Options** menu then **Show Sensors** to hide or show all the non soil moisture sensors in the window.

If the Options menu, Combine lists option is select then all the sensors are shown in a single list. If not selected then two separate lists are shown. One list shows all Soil moisture sensors, and the other list shows all other sensors.



2.11. Outputs List Window

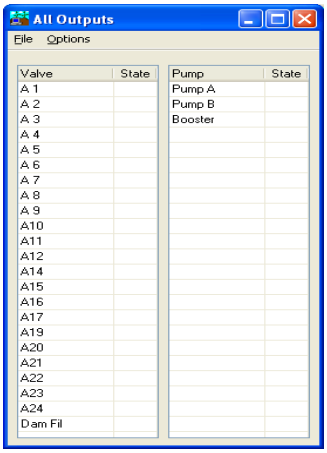
The Outputs list can selectively show

- Valves,
- Pumps
- all other output device states that are configured in AquaLink.

Select the '**Options**' Menu then '**Show Valves**', '**Show Pumps**', '**Show Others**' to selectively enable the display of various devices.

If the Options menu, Combine lists option is select then all the sensors are shown in a single list. If not selected then up to three separate lists are shown. Each list shows the items from only particular group (e.g. Valves, Pumps or Other Devices)

Selecting the **Options** | **Allow Output Switching** option allows you double-click the device name to change it's state.

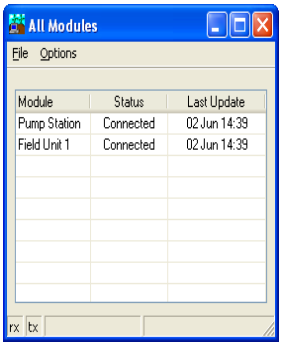


2.12. Module List Window

The module list shows the communication status of all the field units configured in AquaLink.

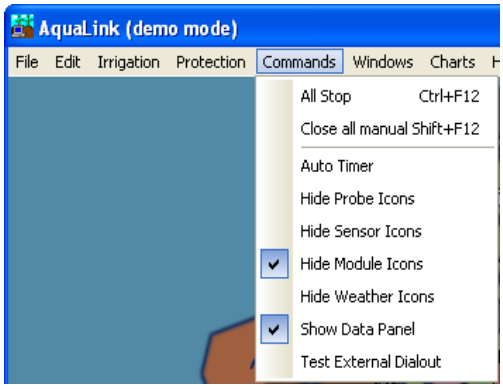
The Status column indicates if the a module is connected and communicating normally.

The Last Update column indicates the last time AquaLink successful communicated to the module.



2.13. Hiding Groups of Icons

At any time, you may decide to hide certain component icons to reduce clutter on the screen. You can do this by selecting the appropriate hide command from the commands menu. A check shows that the icons are currently hidden, and selecting the menu item again will re-show the icons.

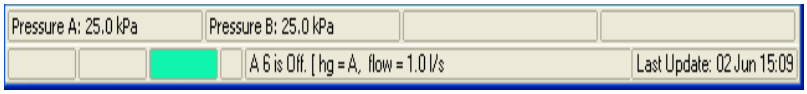


2.14. Hiding/Showing the data Panel

The Data panel is a small bar that can display up to 4 sensor values at the bottom of the main AquaLink window.

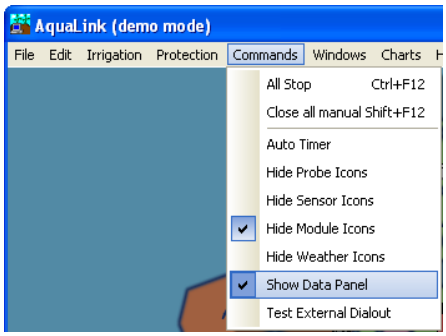
The specific sensors displayed are configured in SiteConfig.

For more information please refer to the AquaLink Suite Installation and Set-up guide.



How to Hide/Show the data panel

1. Click the '**Commands**' option on AquaLink's main menu bar.
2. Click the '**Show Data Panel**' option to hide (if currently visible) or show (if currently hidden) the Data Panel.



3. Manual Operations

Manual operations are operations that are initiated via the the user and not scheduled to occur.

3.1. How to manually turn on a valve, pump or device

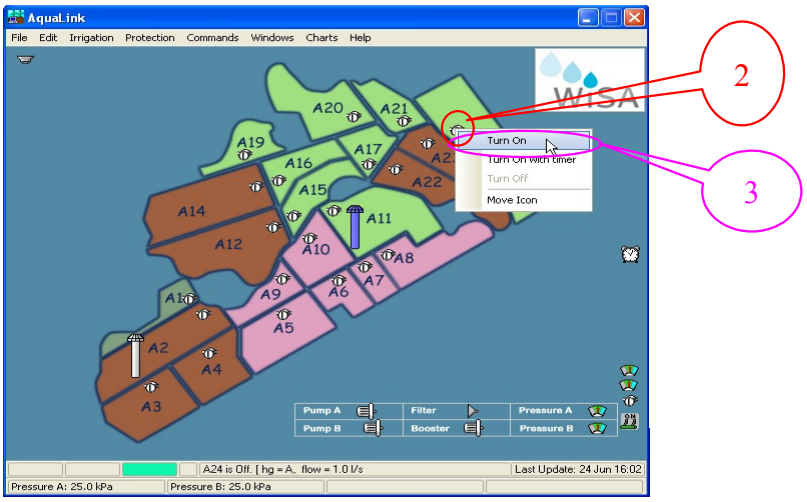
Depending on how AquaLink is configured you may not be able to turn on a device when the irrigation scheduling is enabled. See the section “how to turn off the irrigation scheduling” to disable the irrigation timer.

1 Locate the device icon on the AquaLink's Main Window.
2 Right-click the icon.
3 Select '**Turn on**' from the menu that appears.
4 The device will now turn on and remain on until you turn the device off.

Or

1 Locate the device icon on AquaLink's main window
2 Double click the icon.
3 The device will now turn on (if it was off).

NOTE: Some field units have the ability to manually have the ability to turn on / off the devices from at the field unit. With these module the device can also be turned on/off at the module. Therefore manually activated devices through the computer can be turned off at the field unit.



3.2. How to manually turn off a valve, pump or device

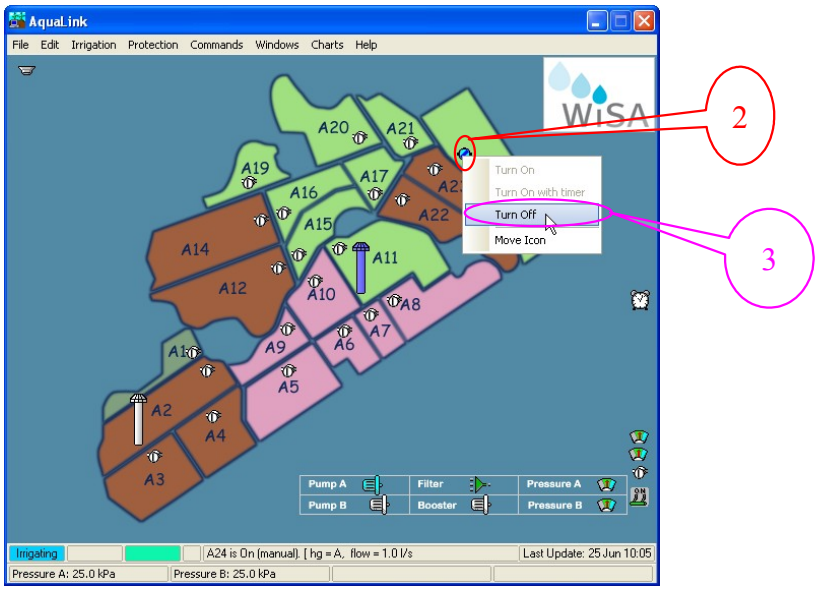
Only devices that have been manually turned on can be turn off. If a device was activated due to a irrigation schedule, etc. then that device can not be manually turned off, you must stop the irrigation schedule, etc. to turn it off.

1 Locate the device Icon on the AquaLink's main window.
2 Right-click the icon.
3 Select Turn off from the menu that appears.
4 The device will now turn off.

Or

1 Locate the device icon on AquaLink's main window.
2 Double click the icon with the mouse.
3 The device will now turn off (if it was on).

NOTE: Some field units have the ability to manually have the ability to turn on / off the devices from at the field unit. If a device is turn on from the field unit it can be manually de-activated through the computer.



3.3. How to manually activate a valve or pump for a given time

In AquaLink you can manually initiate a valve or pump for a given amount of time, before automatically turning off.

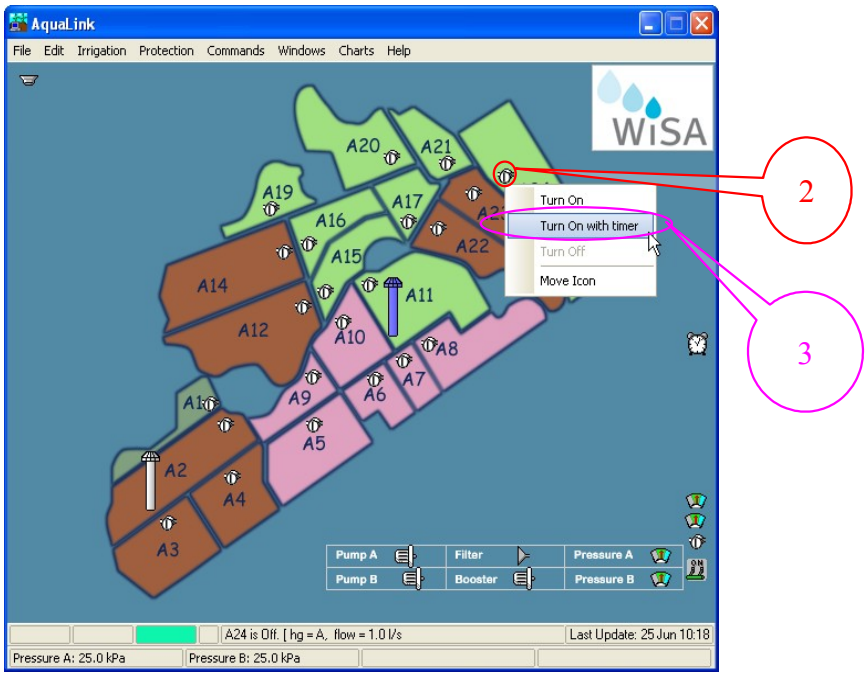
As these operations are classed as manual operations, you also have the ability to manually turn off the device earlier if needed.

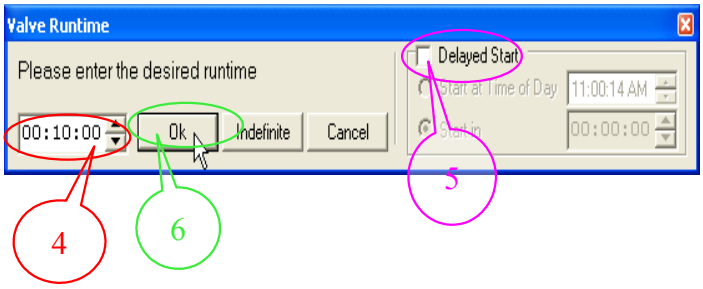
Depending on how AquaLink is configured you may not be able to manually turn on a device when the irrigation scheduling is enabled.

See the section "how to turn off the irrigation scheduling" to disabled the irrigation timer.

1 Locate the valve or pump Icon on AquaLink's main window.
2 Right-click the icon.
3 Select '**Turn on with Timer** 'from the menu that appears.
4 Enter the amount of time the valve is required to be on as the desired time.
5 Ensure '**Delayed Start**' is unchecked.
6 Click '**OK** 'and the valve will open for the entered time.
Clicking Indefinite will result in the valve opening without a runtime so the valve will remain on until manually turned off.

Clicking cancel will abort the timed operation, leaving the valve off.





3.4. How to manually activate a valve or pump at a given time

AquaLink can be asked to manually initiate a valve or pump at a particular time of day for a given amount of time.

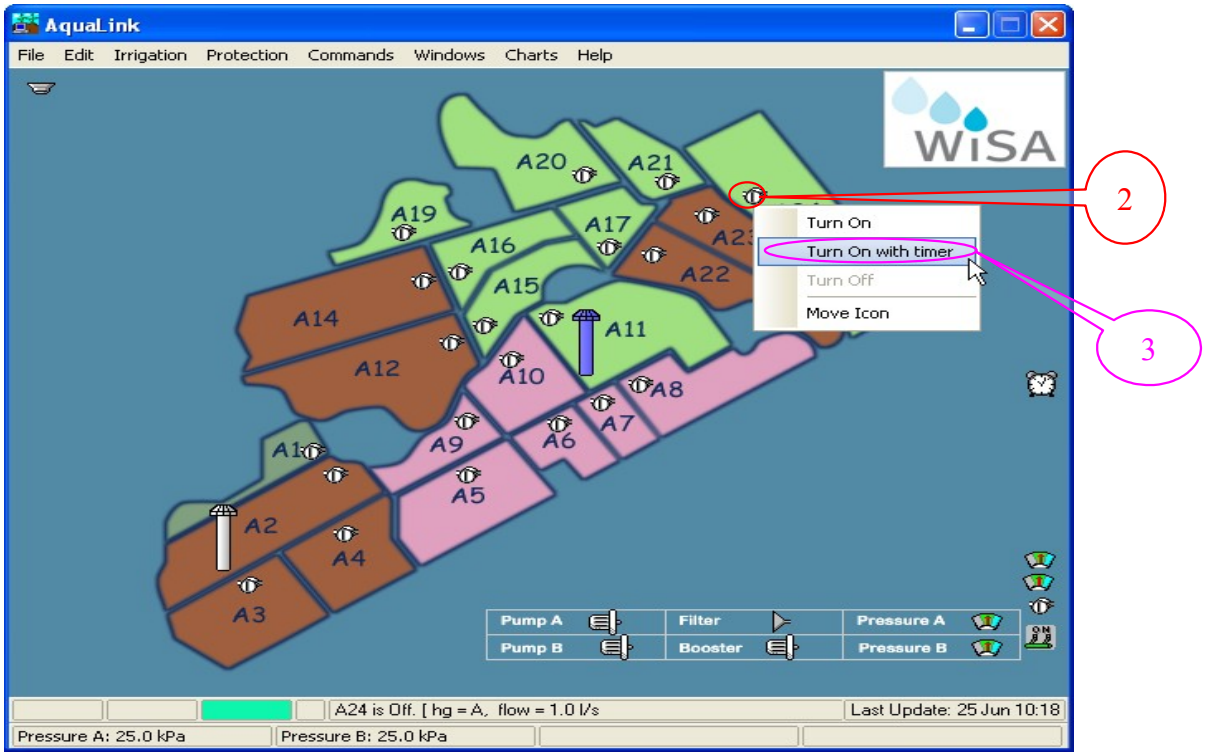
As these operations are classed as manual operations, you also have the ability to manually turn off the device earlier if needed.

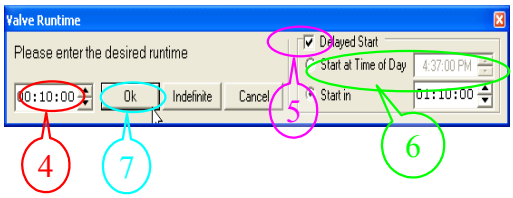
Depending on how AquaLink is configured you may not be able to turn on a device when the irrigation scheduling is enabled.

See the section "how to turn off the irrigation scheduling" to disable the irrigation timer.

1 Locate the valve or pump Icon on AquaLink's main window.
2 Right-click the icon.
3 Select '**Turn on with Timer**' from the menu that appears.
4 Enter the amount of time the valve is required to be on as the desired time.
5 Ensure '**Delayed Start**' is checked.
6 You can now choose to select a time of day when the valve will open at.
or
Tell AquaLink to open the valve in so much time (ie in 1 hour or in 10 mins).
7 Click '**OK**' and the valve will wait until the required time then open for the desired time.
Clicking Indefinite will result in the valve opening without a time delay or runtime so the valve will remain on until manually turned off.

Clicking cancel will abort the timed operation, leaving the valve off.



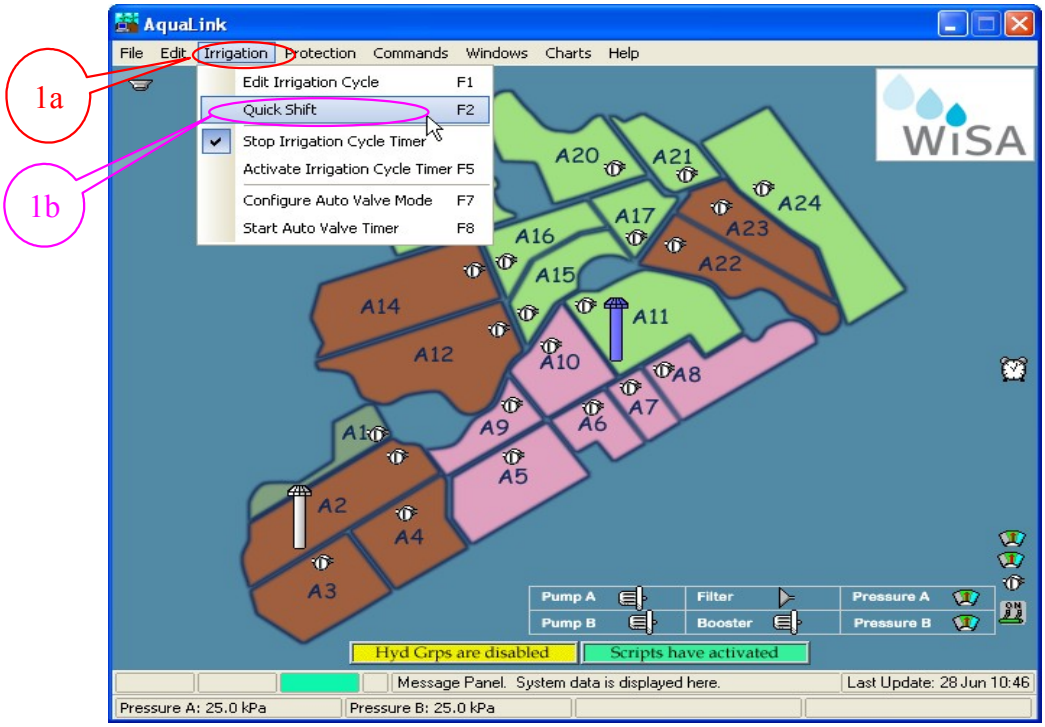


3.5. How to manually turn on a group of valves together

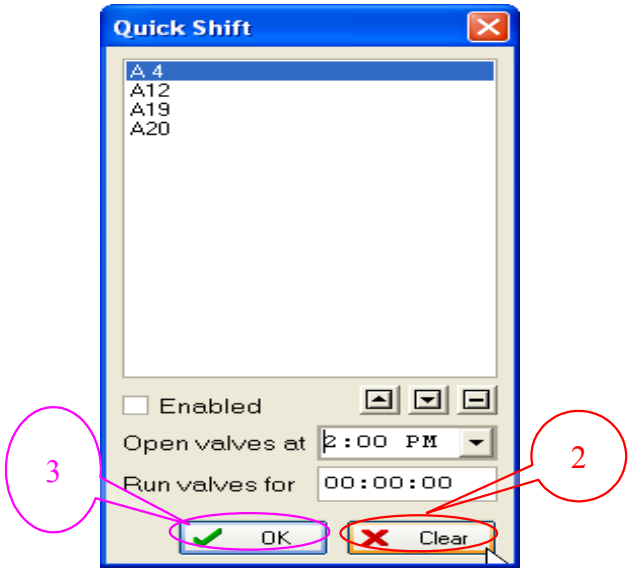
AquaLink has a feature called "**Quick Shift**". If this feature is enabled, it allows you to add a number of valves to a special "shift", this quick shift can then be activated a a given time, for a period of time.

NOTE: Quick shift is not the same as an Irrigation Shift. The two shift types are completely separate.

1 First we need to clear any existing valves from the quick shift by selecting the Irrigation menu from AquaLink's main window, then select the Quick shift option.



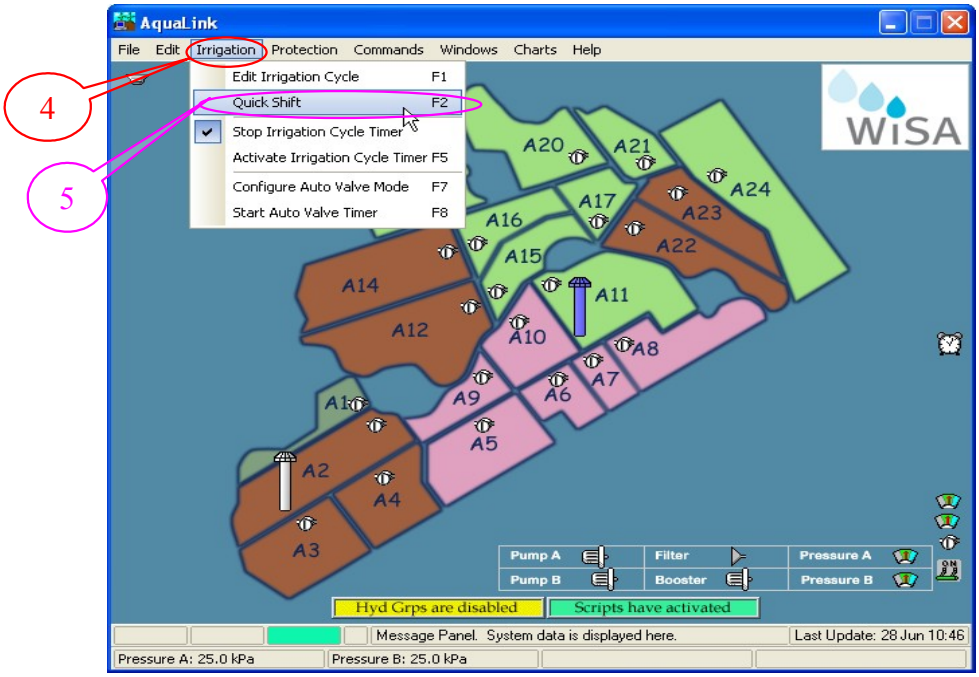
2 In the Quick shift dialogue that appears press the '**Clear**' button to erase the current configuration



3 Close the Quick Shift dialogue by clicking the OK button

Now we need to select the valves to be turned on.

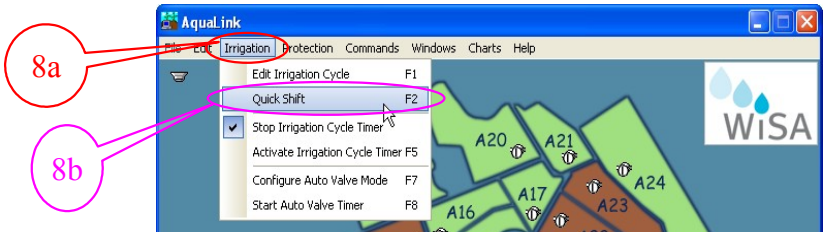
4 Right click on the first valve to wish to include.
5 Select "**Add to Quick Shift**".



6 Repeat step 4 and 5 for the remaining valves you wish to include, in the order in which they are to open/close.
7 If you are not using automatic pump control, also select the pump to run, by right-clicking on the pump icon and select "**Add to Quick Shift**".

Now to set the start time and enabled it.

8 After all the valves and pumps have been selected, click the Irrigation menu, select select the Quick Shift Option.



9 Ensure to valves and pump you wish to open, are included in the list at the top of the dialogue.
If they aren't close the dialogue and return the main screen and select the valves as per steps 4 to 5.
If you have extra valves/pumps, click on the valve/pump name to highlight it then click the remove button (The one with the minus sign in the square). Repeat this for any extra valves that may be present.

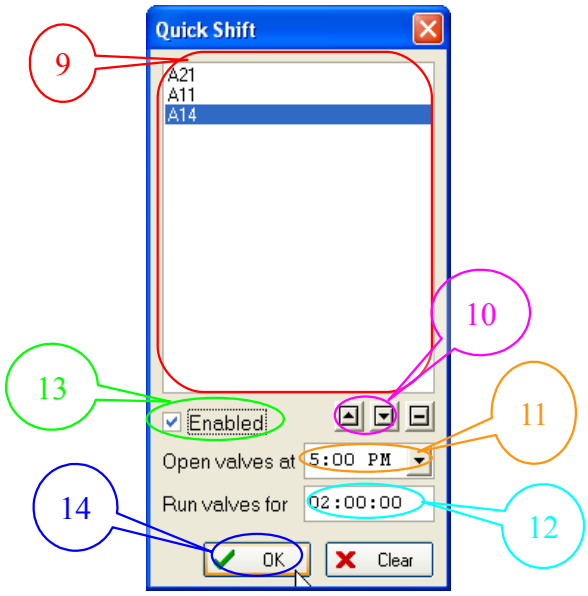
10 Check the order of the valves. If you wish to change the order, click on valve/pump you wish to move and used the Up or Down buttons (The ones with the arrows on them).

11 Set the "**Open valves at**" option to the time that you would like the valves to be opened.

12 Set the "**Run valves for**" option to how long the valves should be opened. This time is in hours, minutes and seconds.

13 Click the '**Enable**' check box, to enabled the quick shift.
AquaLink will now open this group of valves at the given time of day.

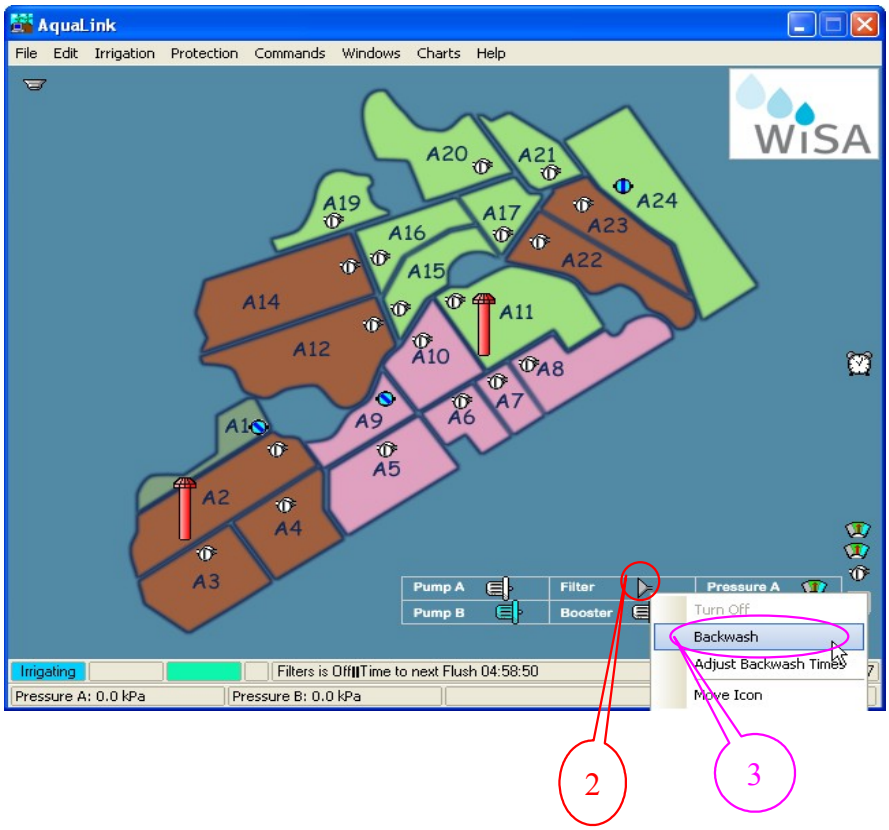
14 Click '**OK**' button to close the dialogue.



3.6. How to manually initiate a filter backwash

When the system has valves or pumps on the belong to a filters site group, you can manually initiate a filter backwash or clean cycle.

1 Once one or more valves and pumps are running, locate the '**Filter-bank**' icon on AquaLink's main window.
2 Right-click the icon.
3 Select '**Backwash**' from the menu that appears.
4 AquaLink will now initiate the backwash/cleaning cycle for that filter-bank.



3.7. How to stop a filter backwash cycle

If required you can abort the current filter backwash/cleaning cycle even if the cycle was initiated due to an automatically (either via time, or pressure-differential or other script condition).

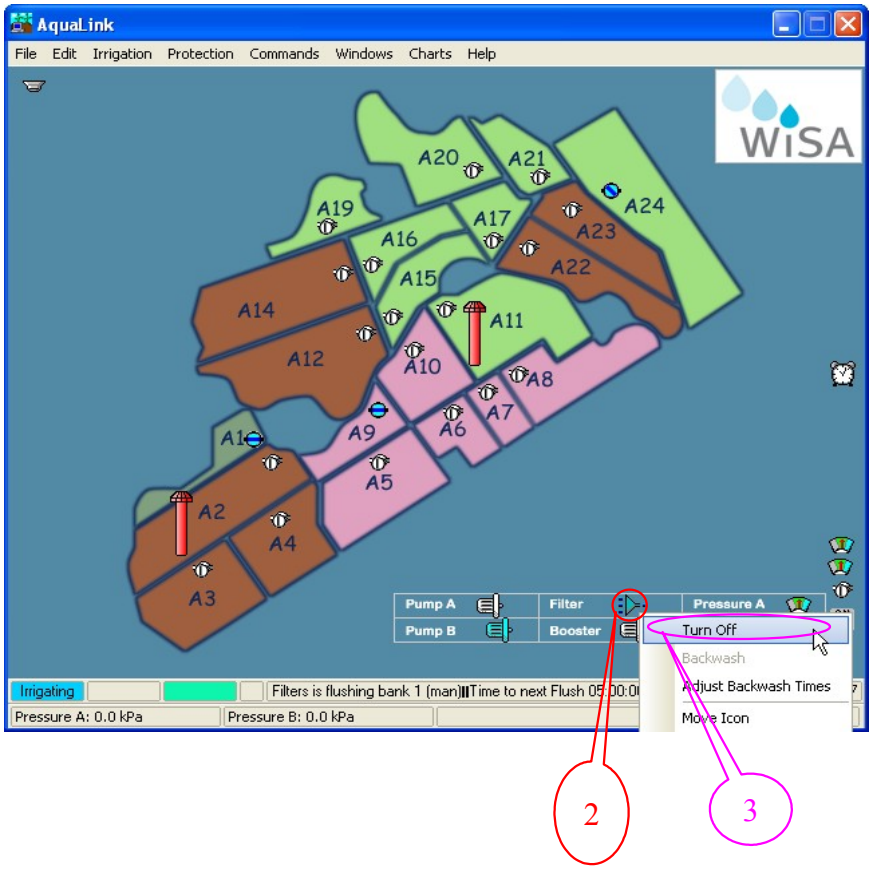
1 Locate the '**filter-bank**' icon on AquaLink's main window.

2 Right-click the icon.

3 Select '**Turn off**' from the menu that appears.

4 AquaLink will now abort the backwash/cleaning cycle for that filter-bank.

NOTE: AquaLink will automatically abort a filter backwash/cleaning cycle if the pumps/valves belonging to the filters site group are turned off.



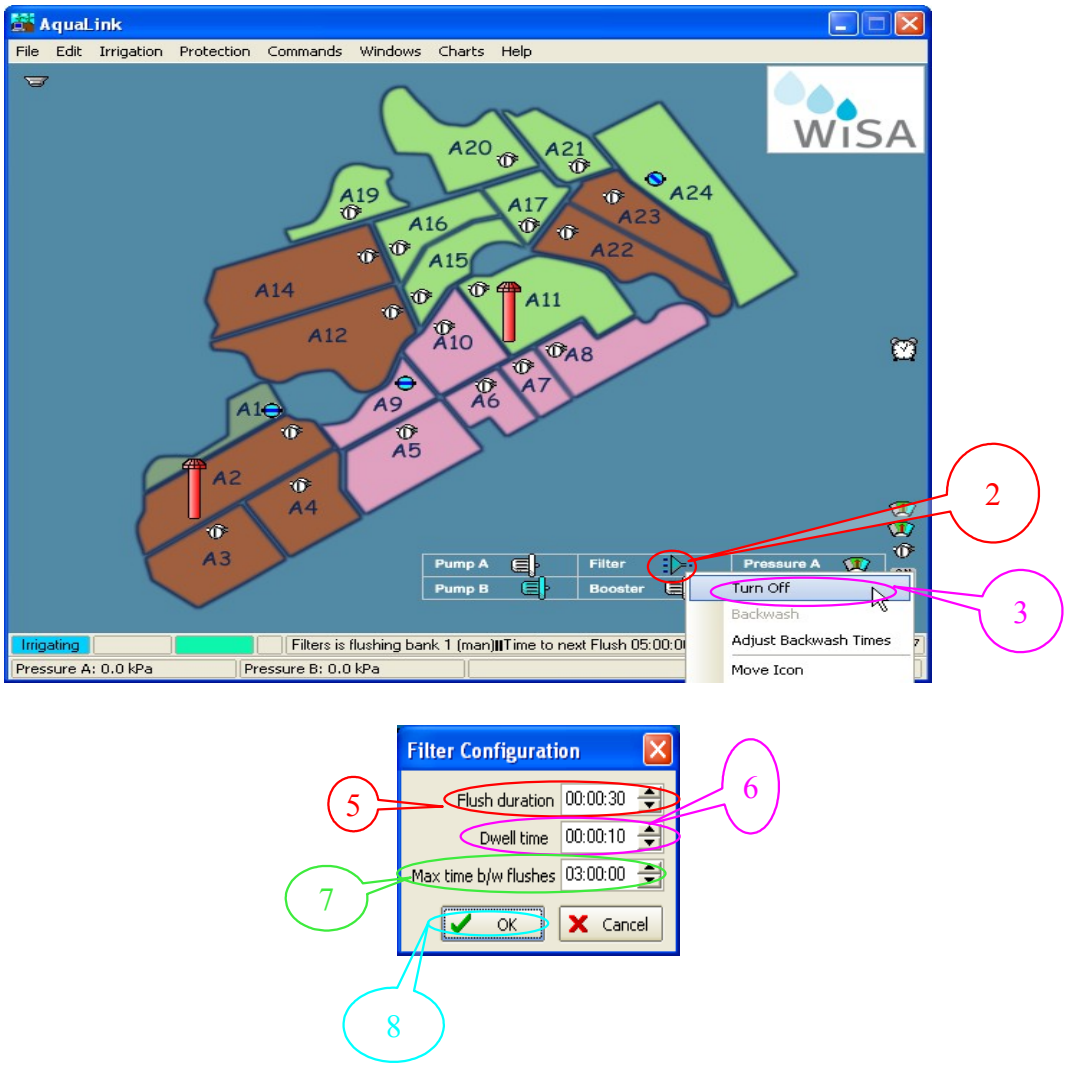
3.8. How to adjust the filter timing

The maximum time between filter backwashes/clean cycles, how long each filter element is put into cleaning cycle and the amount of time between each filter element can be adjusted from within AquaLink or SiteConfig. Below is the steps to adjust the timing from within AquaLink. If you wish to change it from within SiteConfig, please see the AquaLink Suite Installation and Setup guide.

1 Locate the '**filter-bank**' icon on AquaLink's main window.
2 Right-click the icon.
3 Select '**Adjust Backwash times**' from the menu that appears.
4 The Filter Configuration dialogue will appear.
5 Set the '**Flush duration**' to the required time that each filter element is in backwash/clean state.
6 Set the '**Dwell time**' to the required time between backwashing/cleaning each filter element.

NOTE: If a pressure sustaining valve is activated when backwashing the filter bank, these time is also how long the AquaLink waits after activating the sustaining valve before the first element is backwashed.

7 Set the '**Max time b/w flushes**' to the required maximum runtime (time the valves/pumps are active for) between backwashing/cleaning the filter.
8 Click '**OK**' to accept the new times or click Cancel to discard the changes.



3.9. How to disable/enable a pump

AquaLink can disable a pump to prevent it from being started and used by AquaLink in either Irrigation schedules or manual operations.

It does not prevent the pump from be started by it's own local controls/switchgear, or from the remote unit.

If you required the pump to be completely isolated then you must have this functionality build into the pump electrical switchgear and must be activated as required by the pumps electrical switchgear. Actual function of these abilities is outside the scope of this manual.

NOTE: Only pumps that are not currently active can be disabled.

1 Locate the '**valve**' or '**pump**' Icon on AquaLink's main window.
2 Right-click the icon.
3 Select '**Disable Pump**' from the menu that appears.
4 If the pump is currently enabled it will be disabled.
If the pump is currently disabled it will be re-enabled.
When a pump is disabled a Red Cross (an X) appears across the pump.

NOTE: If custom icons are being used the the disabled icon will be displayed instead, which may not be a red cross.

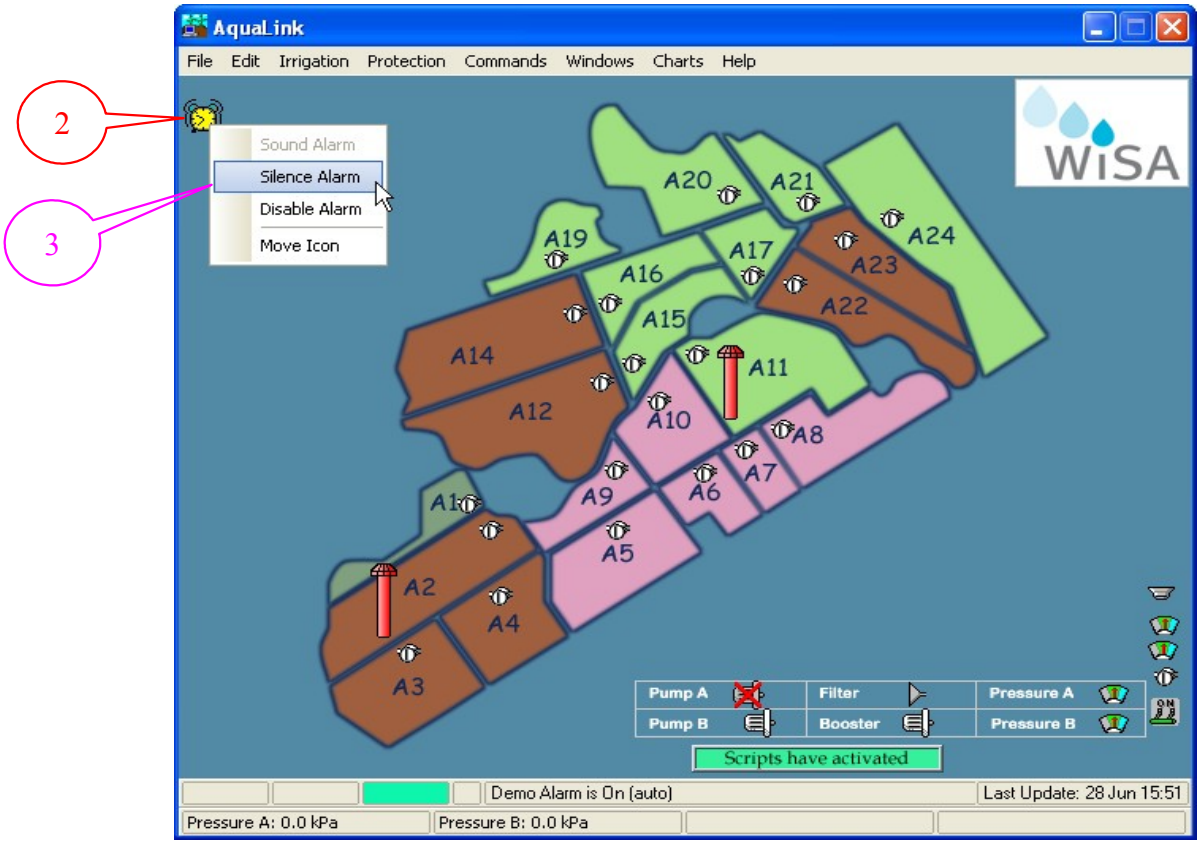
3.10. How to turn off an activated Alarm

If configured when an error occurs a alarm can be activated. This alarm could be connected to a flashing light or siren and must be manually turned off to de-active the light/siren.

1 Locate the '**alarm**' icon on AquaLink's main window.
2 Right-click the icon.
3 Select '**Turn off**' from the menu that appears.
4 The Alarm will stop flashing on the screen and will turn off the remote device, if connected.

Or

1 Locate the '**alarm**' icon on AquaLink's main window
2 Double click the alarm icon with the mouse.
3 The alarm will now stop flashing on the screen and will turn off the remote device, if connected.



4. Shifts and Cycles Scheduling

AquaLink has two types of scheduling. This section explains scheduling based on Shifts and Cycles, which is typically used for most agriculture type applications. The second form of scheduling, Valve Auto mode, is explained in the next section.

Either type can be disabled and therefore not present in the system. If Shifts and Cycles scheduling is disabled then none of the functions in this section will be available.

Shifts and Cycles Explained

Most irrigation systems are simply unable to water the entire property all at once. They generally lack the pumping or piping capacity for this to occur. In these systems, it is common to run one group of valves for a certain period of time, followed by another group of valves, followed by yet another group of valves and so on. In AquaLink these groups of valves are called shifts.

The sequence of Shift 1, followed by Shift 2, followed by Shift 3, etc. coupled with a start time is known as an Irrigation Schedule.

An Irrigation cycle is a list of schedules that will run successively.

Each AquaLink cycle is independent and will run concurrently with other cycles. Because of this it is not recommended to program the system to operate the same devices (valves, pump, etc.) in two different cycles as unexpected results will occur.

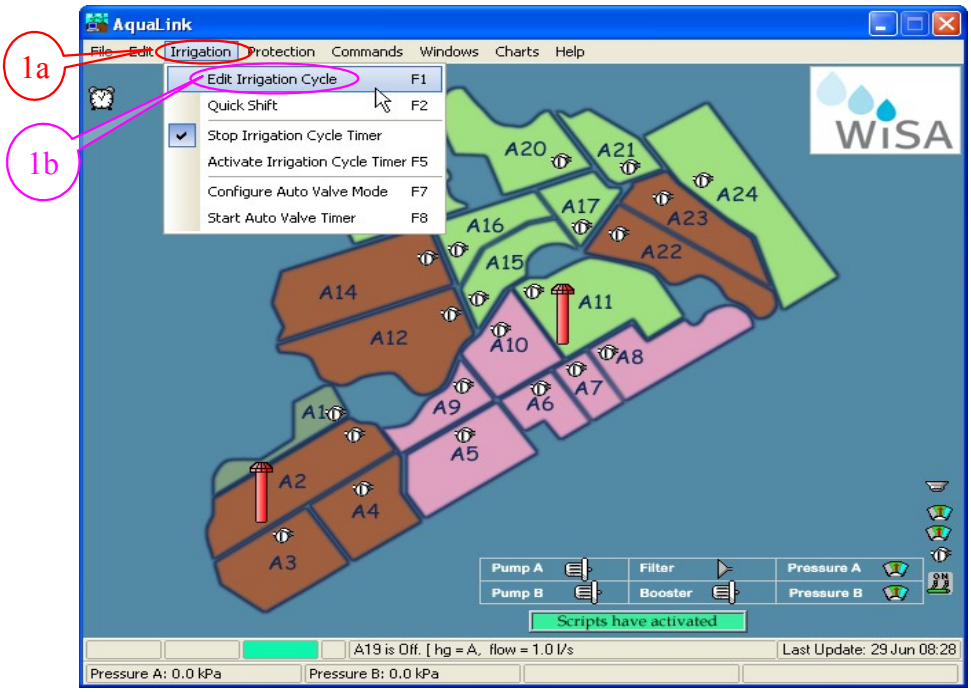
It is recommended that one cycle be used per hydraulic group. Additionally cycles can be used to provide various irrigation based protection such as Frost control.

By default, AquaLink will show the number of cycles per Hydraulic group configured in the system. This can be overwritten by manually adjusting the feature option, number of visible cycles.

4.1. How to program a Irrigation Sequence

These steps program an entire irrigation sequence from start to end. Various steps maybe skipped due to previous programming.

1 From AquaLink's main window, select the '**Irrigation**' Menu, then select '**Edit Irrigation Cycle**'.
2 The Edit Irrigation Shifts and Cycles dialogue will appear.



First program the shift(s)

These steps will need to be repeated for each irrigation shift (collection of Valves and Pumps that run together) to be programmed.

3 Select the '**Shifts'** tab page at the top of the dialogue.

4 Select the shift number to program from the list on the left side. In this example we are programming Shift 1

5 Set the Shift Enabled to **Yes.**

6 Press the Clear Shift button to erase any previously programmed information.

Note: Do not do this if you are editing a shift and only want to change certain settings.

7 Optionally enter a '**shift name'**. This name is not operationally important, however is displayed on some status windows.

8 Set the '**Hyd Group'** to the required Hydraulic Group that contains the valves and pumps to be included in this shift. In this example Hydraulic Group "A" is selected.

9 Enter the shift runtime as the '**Max Runtime'**. This will be the maximum time the shift will run for, if you enable flow volume, or soil moisture override.

10 Set the '**flow volume'** to 0. This disables the flow override. If you wish to run the shift on flow, then substitute this step for the steps in the section *4.4 How do I make my shift end after a volume has been applied.*

11 Set the '**Inter-Valve Delay'** to the required type between activating/de-activating the valve's in this shift.

12 Unless you wish the valves to turn off in opposite order they are selected, uncheck the '**Shutdown in reverse order'**.

13 Uncheck '**Use Individual Valve Runtimes'.** Checking this option will allow you to enter different runtimes for each valve in this shift. Please see the section on Individual shift runtimes for more information.

14 Select the Pump(s) to be started with valves to be included in this shifts. In this example Pump A is the only pump to be activated.

15 If appropriate select any booster pump that maybe required. In this example a booster pump is not required.

16 Select the valves to be turned on, in the order they are to be opened when this shift runs. In this example valves A4, A6 and A21 will be opened in the order listed.

I. You can select/unselect the valves by checking/unchecking them in the valves list.

Or

I. You can use "mouse Mode" by clicking on the mouse button below the shift list.

II. Then select the valves from the main AquaLink window in the order they are to open.

III. When finished, double-click on an empty space to return to the shift programming.

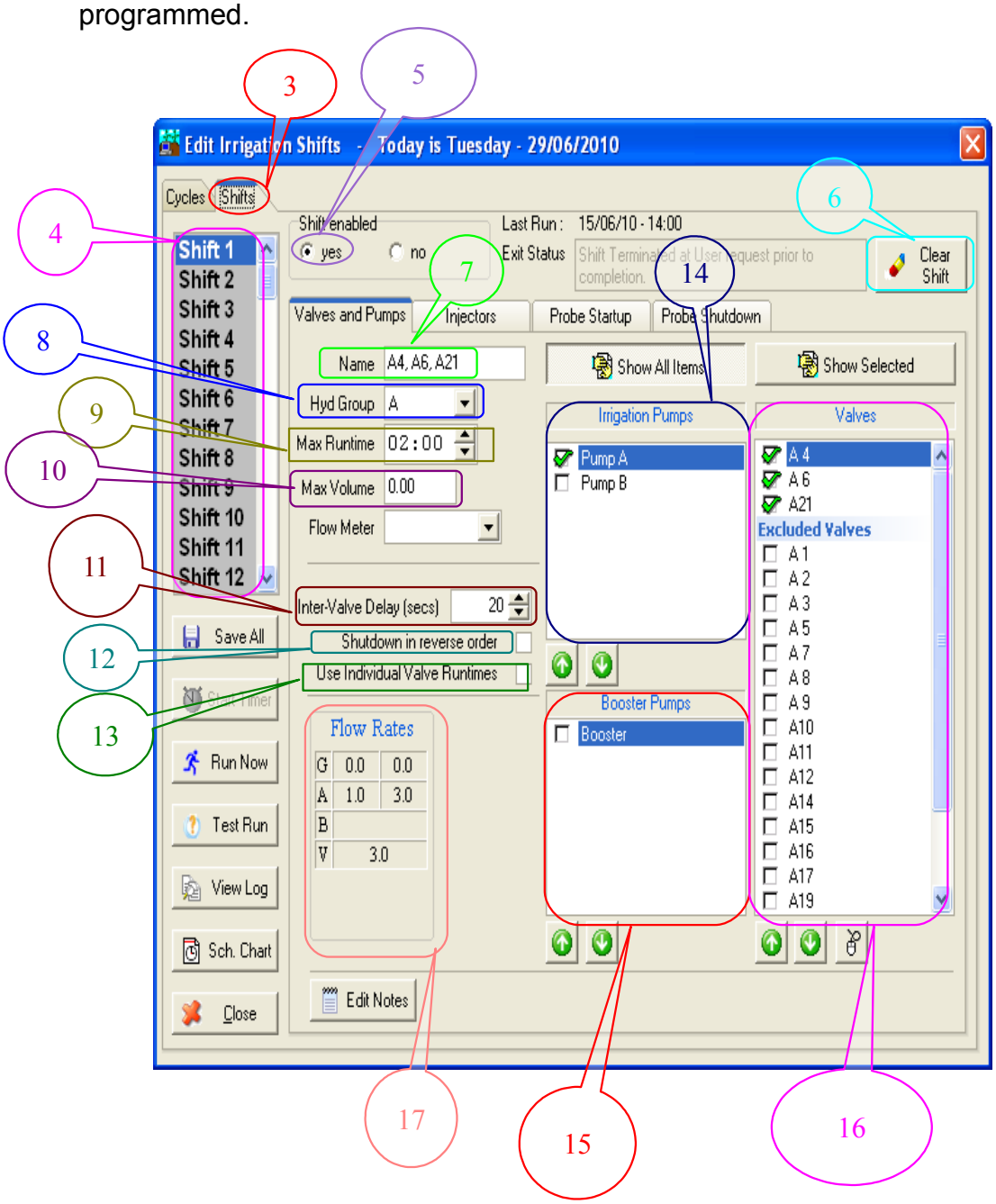
17 The flow option panel in the bottom left indicates the available flow capacities of the selected pumps at the top, while the bottom line indicates the flow requirements for the selected valves.

If this section turns red, then the estimated valve flow does not exceed the minimum capacity of the selected pumps.

If the section turns yellow, then the estimated valve flow exceeds the maximum capacity of the selected pumps.

18 If you wish to use Individual valve run-times, fertigation, soil moisture overrides, etc. perform these steps now. See the relevant sections of these steps.

19 Repeat from step 4, selecting a different shift to each remaining shift to be programmed.



Program the cycle

Once all the required shifts have been programmed then a schedule needs to be created.

20 Select the **Cycles** tab from the top of the Shifts and Cycles dialogue.

21 Select the cycle number to be programmed on from the list on the left. In this example Cycle 1 is being programmed.

22 Under the cycles options area in the lower left of the screen set the **Hydraulic Group** setting required. Hydraulic Group A is selected in the example.

23 You can choose have AquaLink close all the valves and pumps before opening valves in the next shift, or have AquaLink to merge the valves from one shift to next, without turn off the pumps. In the example shown Merge Valves is selected.

24 Selecting to **shut-down between shifts**, allows you to enter a delay time before opening valve in the next shift. This delay time is in minutes.

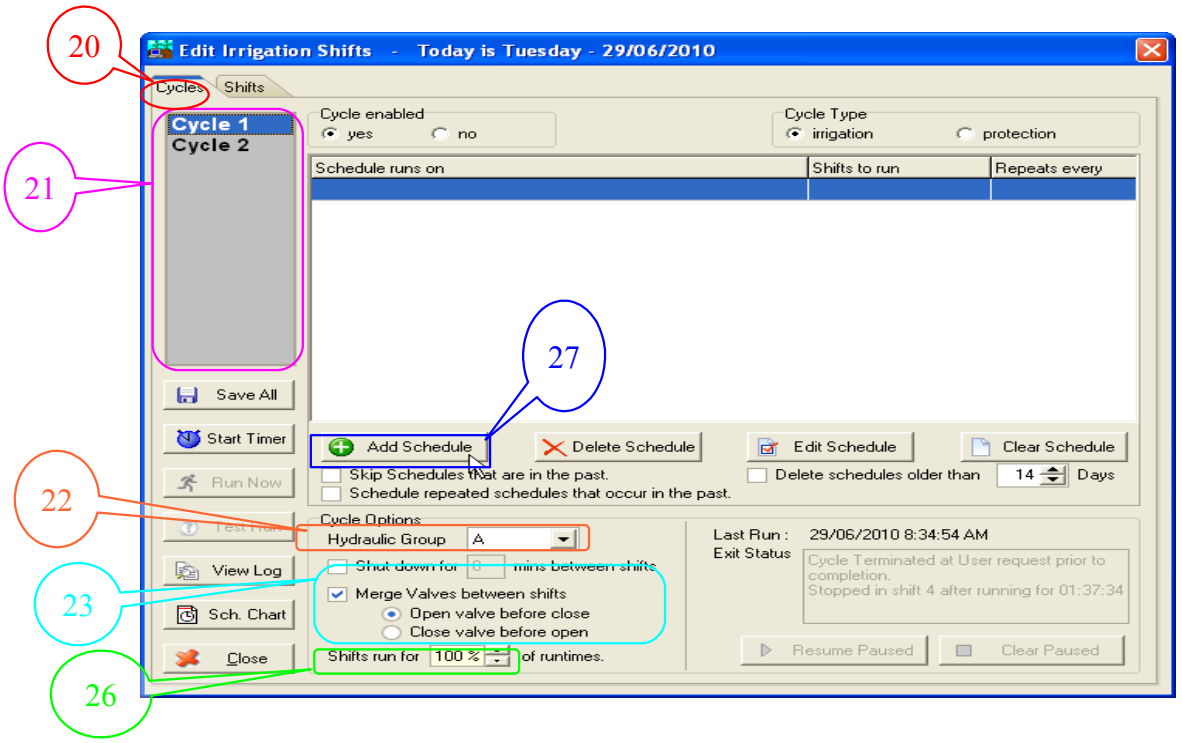
25 Selecting **Merge shift**, allows you to further select if valves are opened before close, or close before open.

When open before close is selected AquaLink will open a valve in the next shift, wait the inter-valve delay then close a valve in the previous shift, wait the inter-valve delay again before repeating the process until all valves change been changed over.

When close before open is selected, AquaLink will close a valve in the previous shift, wait the inter-valve delay then open a valve in the next shift, wait the inter-valve delay again before repeating the process until all the valves have been changed over.

26 Shifts run for X% of run-times can be adjusted to increase or decrease the physical runtime of the shifts. This does not change the programmed time of the shifts. In this example the shifts will run for the time entered as percentage is set to 100%.

NOTE: This will not adjust any injector/fertigation timing.



27 Click the **Add Schedule** button to add a new schedule and display the Edit Schedule Dialogue.

28 In the Edit Schedule dialogue, set the **Start on** the field to the required date to the sequence is to be started on.

29 Set the **at** field to the required time to start the sequence.

30 The schedule shifts may be continuously repeated in a loop by setting the run field to "**continuously repeat the shifts**". Setting this field to Once, as in this example, will cause the schedule to end when all the shifts have been completed.

31 If continuously repeat the shifts is selected you will need to enter a schedule loop end date and time in the until fields.

NOTE: By default this may not be when the schedule actually ends, but the time after which the shift list will not be repeated. The irrigation will continue until the last shift is completed normally

The schedule can be terminated at the **Until time**, regardless of which shift the system is up to, by right-clicking on the until time, and selecting Hard stop from the menu that appears. When this option is selected the Until date and time field will be black.

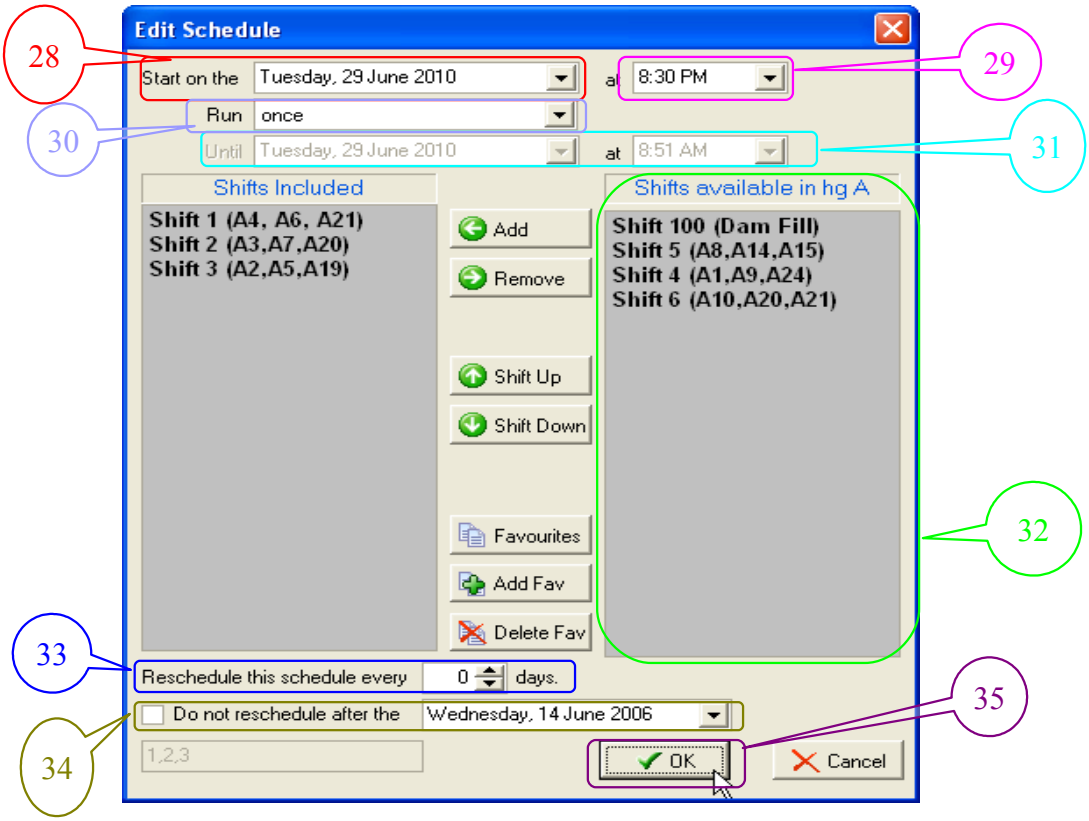
32 Double-click the shifts in the **Available** list on the right to move them to the included column on left. The order in which they are listed, is the order in which they will be run. In the example shown Shifts 1, 2 and 3 have been selected.

33 **Reschedule this schedule every X days** can be adjusted to cause AquaLink to automatically create a new schedule when this schedule is due with the same settings in the specified. Setting this value to 0, as in the example, will prevent AquaLink automatically re-scheduling.

34 If you choose to re-schedule this schedule, the "**Do not reschedule option after the**" field will allow you to enter a date at which point AquaLink will not automatically re-schedule the shifts.

35 Click the **OK** button to add the schedule to the cycle. Clicking Cancel will close the dialogue without adding a new schedule.

36 Additional schedules can be added by repeating steps 25 to 33.



Adjusting some additional cycle settings

37 The **Skip Schedules that are in the past** option when checked will prevent AquaLink from starting any schedules that were scheduled to operate more than 15minutes from the current time. A Schedule may not run and become “in the past” if the cycle timer is not enabled or if AquaLink is not running (eg computer is off).

38 The **Schedule repeated schedules that occur in the past** option when checked will cause AquaLink to generate automatically repeated schedules that would occur in the past. This can occur if AquaLink is unable to start a repeating schedule for a long time (e.g. AquaLink is turned off) and repeated schedules would occurred before AquaLink is re-enabled.

EG. Take a schedule that automatically occurs every 2 days and AquaLink is disabled for 7 days. Normally AquaLink will have created 3 new schedules during the period that AquaLink is disabled. If this option is checked then AquaLink will generate them anyway. If this option is not checked then AquaLink will only generate the 4th repeat which would occur on day 8.

39 The **Delete schedules older than X days** will cause AquaLink to automatically remove schedules that have run that are older than the period entered. If a schedule has not operated (eg due to AquaLink being off, cycle timer disabled, etc.) then will never be automatically removed by AquaLink.

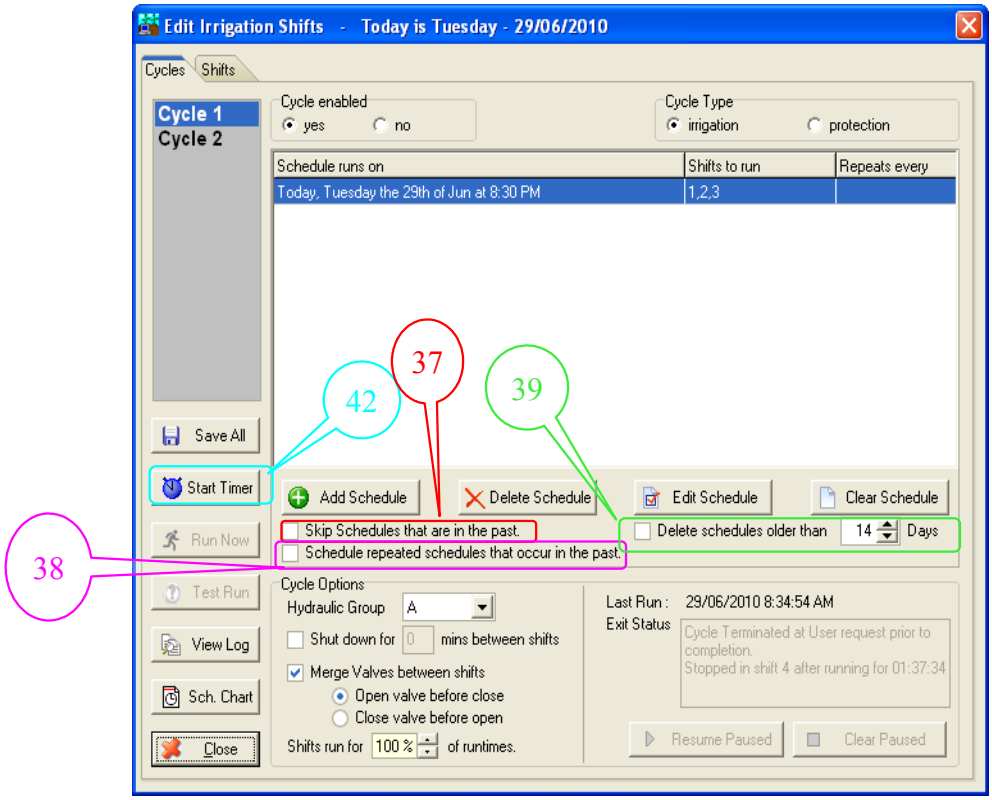
40 Repeat steps 21 to 39 for any Cycles that need to be programmed.

Finally enable the irrigation cycle timer.

41 Before the schedule will run the irrigation cycle timer must be enabled. If the cycle timer is already enabled you may skip these steps.

42 In the Shifts and Cycle window, click the **Start Timer** to enable the irrigation timer and the dialogue will close.

43 If the Shifts and cycles window is closed without a enabling the timer first, AquaLink will display a question asking if the cycle timer should be enabled. Click **Yes** will result in the timer being enabled.



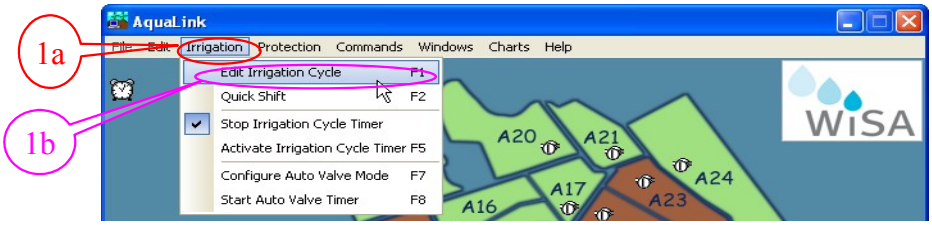
4.2. How to configure Fertigation in an Irrigation Sequence

The first few steps assume that you have previously configured an irrigation sequence, and that you wish to change/edit and existing shift.

If you are currently creating a new irrigation sequence then follow the “How to program a Irrigation Sequence“ section substituting step 18 with the marked steps below.

1 From AquaLink's main window, select the **Irrigation** Menu, then select **Edit Irrigation Cycle**.

2 The Edit Irrigation Shifts and Cycles dialogue will appear.

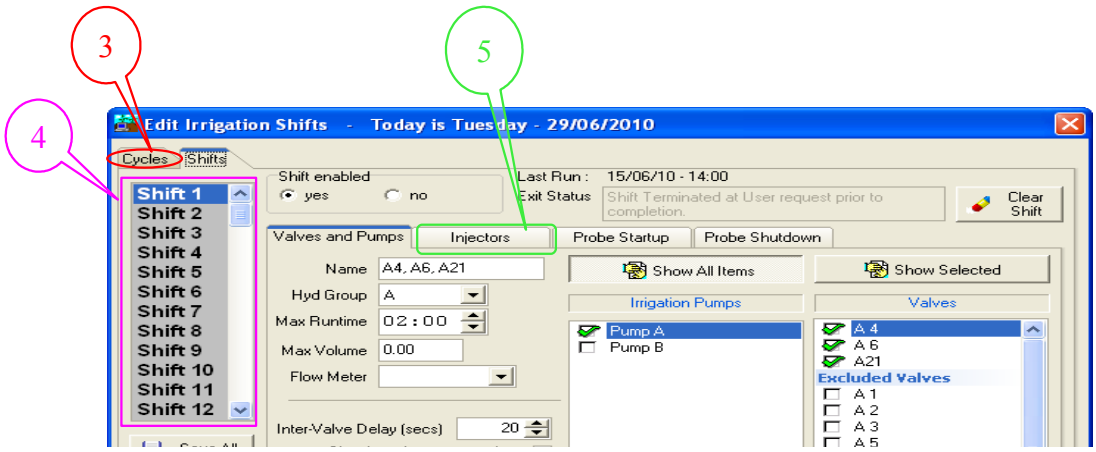


3 Select the **Shifts** tab page at the top of the dialogue.

4 Select the shift number to program from the list on the left side. In this example we are programming Shift 1.

If you were create/configuring a new shift, then you can substitute the following steps for step 18 of How to program a Irrigation Sequence.

5 Select the “**Injectors**” tab to display the Injector configuration.



6 If the device is in the excluded list at the bottom of the screen, click on the name of the device to be activated during this shift.

7 Click the **Add** button and the device will move from the excluded list into the included list at the top of the dialogue.

8 The Included list is divided into columns. The First column is the devices name and can not be changed.

9 The second column is the maximum runtime the device will run for. This time may be overridden by a flow volume, if configured. Depending on how the system is configured this time may be in minutes or seconds. Below the list AquaLink indicates if the times are in seconds or minutes.
Enter/Adjust the time by click on the cell, and typing in a new number.

10 The third column is the Pre wet up time, or Post flush time, depending on how the device is configured.

If the device is configured to be an injection device and set to inject at the start of the shift, then this time is how long the shift will run for before the device starts.

If the device is configured to be an injection device that is set to inject at the end of the shift, then this time is how long the device will be off before the shift ends. If the device also has a flow volume override. Then this time will be the minimum the injector is off for.
If the device is configured to be a preshift mixer then this time set how long the injector will run for before the shift starts. (The shift will be delayed by this time before it opens the valves).
NOTE: This is only appropriate for the first shift in an irrigation schedule. For other shifts this time is ignored.

To adjust the value, click in the cell and type in a new time.

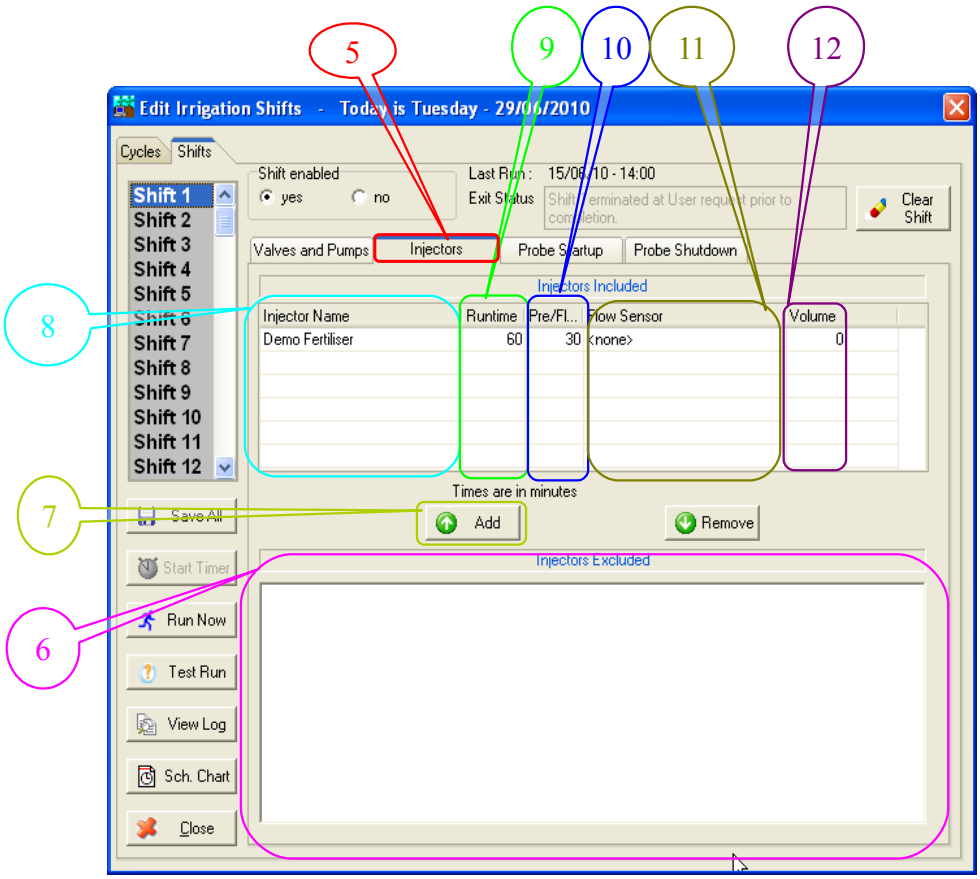
11 The forth column, optionally specifies a flow-meter that should be watched. When a specified amount of flow is passes through this sensor the device will be turned off.

To change/select a flow meter click on the cell, then click on the down arrow at appears on the right of the cell. Select a new sensor from the list that is shown.

12 The fifth and last column, optionally specifies the amount of flow that can pass through the specified flow sensor before the device is turned off.

If this value is zero then the flow override is disabled and the device will run purely on time.

13 Repeat steps 6 to 12 for any additional devices to be activated in the shift.



The following steps remove any unwanted devices from the shift. They may be skipped if there are no devices.

14 Click on the name of the device in the the included list.

15 Click the **remove** button and the device will be removed from the included list.

16 Repeat steps 14 and 15, until all the unwanted devices are removed.

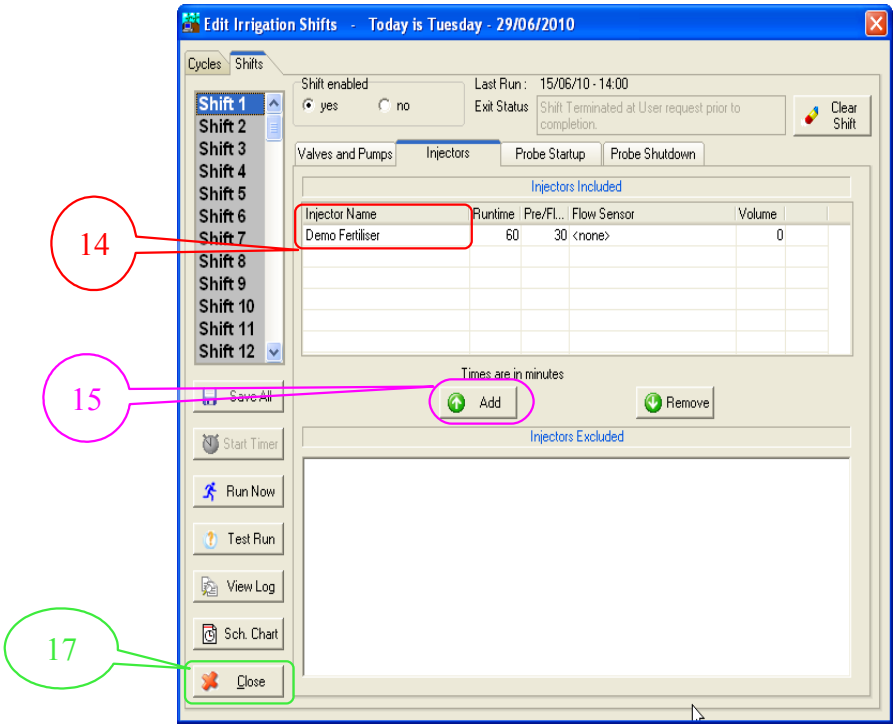
If are creating a new irrigation sequence please ignore the following steps and continue from step 19 of the How to program a Irrigation Sequence section.

17 Click the "**close**" button in the bottom left corner to close the dialogue.

18 If the irrigation cycle timer is not enabled a message dialogue will appear asking if the irrigation timer should be enabled.

Clicking **Yes** will enable the irrigation cycle timer allowing any scheduled irrigations to occur.

Clicking **No** will leave the irrigation cycle timer disabled preventing any irrigation schedules from starting.


Edit Irrigation Shifts - Today is Tuesday - 29/06/2010
Cycles
Shifts
Shift 1
Shift 2
Shift 3
Shift 4
Shift 5
Shift 6
Shift 7
Shift 8
Shift 9
Shift 10
Shift 11
Shift 12
Shift enabled
yes
no
Last Run : 15/06/10 - 14:00
Exit Status
Shift Terminated at User request prior to completion.
Clear Shift
Valves and Pumps
Injectors
Probe Startup
Probe Shutdown
Injectors Included
Injector Name
Runtime
Pre/Fl...
Flow Sensor
Volume
Demo Fertiliser
60
30
<none>
0
Times are in minutes
Add
Remove
Injectors Excluded
Save All
Start Timer
Run Now
Test Run
View Log
Sch. Chart
Close
14
15
17

4.3. How to have valves run for a different time to others in a shift (individual valve runtimes)

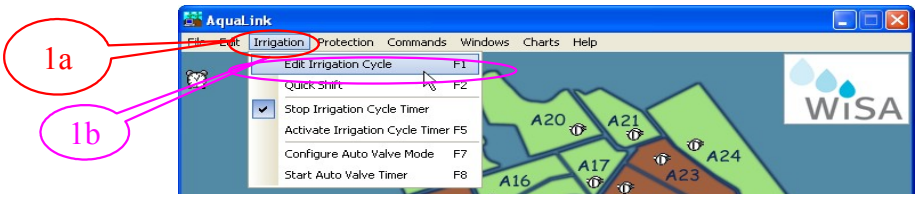
You can configure AquaLink to activate valves in a shift for different periods of time, by enabling a shift feature called **Individual valve runtimes**.

Caution should be applied when using this feature and using the merge shifts function, since the shift will not begin to merge until the valves with the longest runtime begin to turn off. Therefore care should be taken that the minimum pumping capacity is exceeded or else damage to the pump may occur.

If you are currently creating a new irrigation sequence then follow the “How to program a Irrigation Sequence“ section until step 18, once you have selected all the valves to be activated.

1 From AquaLink's main window, select the **Irrigation** Menu, then select Edit Irrigation Cycle.

2 The Edit Irrigation Shifts and Cycles dialogue will appear.

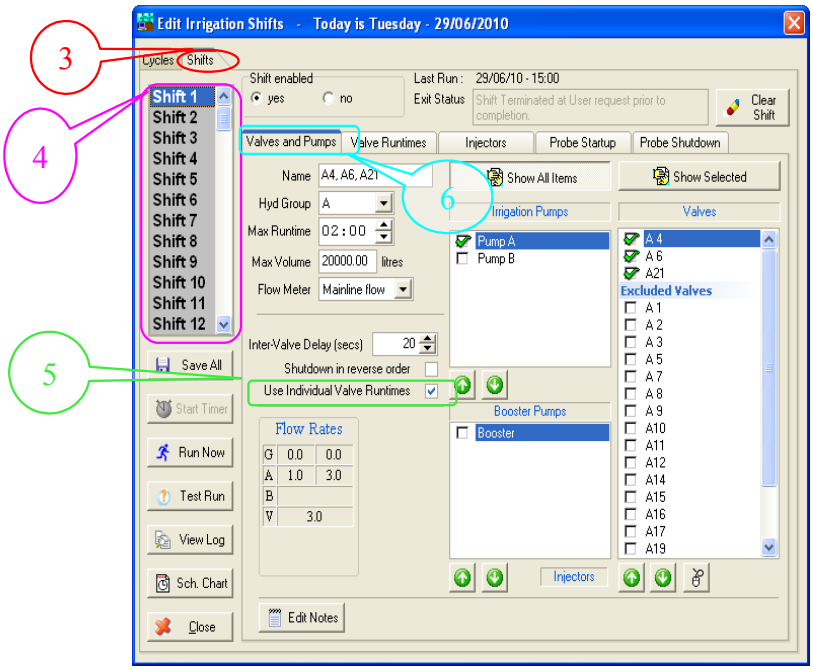


3 Select the Shifts tab page at the top of the dialogue.

4 Select the shift number to program from the list on the left side. In this example we are programming Shift 1.

If you were create/configuring a new shift, then you can follow the following steps after adding all the valves to the shift.

5 Check the Use Individual Valve Runtimes option to enabled the feature.



6 When enabled, a new tab will appear called "**Individual Runtime**", Click on this tab to select the individual runtimes page.

7 In the Valve list shown you can change the runtime of each valve as required.

NOTE: These times will override the shift Max runtime setting. The Shift maximum runtime is ignored when the Individual Valve runtime feature is enabled.

8 **Enforce Pump Minimum flowrate** can use be used to prevent AquaLink from closing too many valves that the minimum pump capabilities are still met.

NOTE: This may mean that some valves may not be closed when they are due to be closed.

9 **Enforce Pump Maximum flowrate** can be used to prevent AquaLink from opening too many valves so that the estimated flowrate exceeds the pump capabilities.

NOTE: This may mean that some valves will not be opened at the beginning of the shift. These valves would be opened when some of the initial valves have run for there runtime.

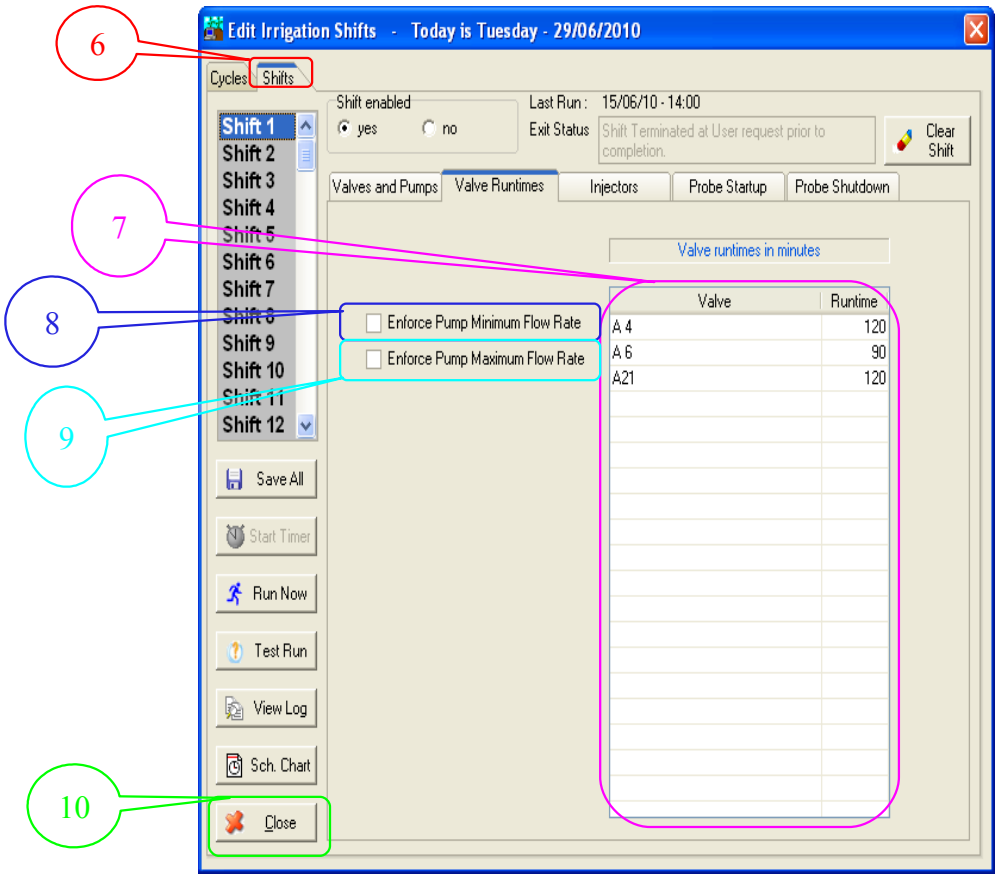
If you were create/configuring a new shift you can now return the "How to program a Irrigation Sequence" instructions, step 19

10 Click the "**close**" button in the bottom left corner to close the dialogue.

11 If the irrigation cycle timer is not enabled a message dialogue will appear asking if the irrigation timer should be enabled.

Clicking **Yes** will enable the irrigation cycle timer allowing any scheduled irrigations to occur.

Clicking **No** will leave the irrigation cycle timer disabled preventing any irrigation schedules from starting.



4.4. How do I make my shift end after a volume has been applied

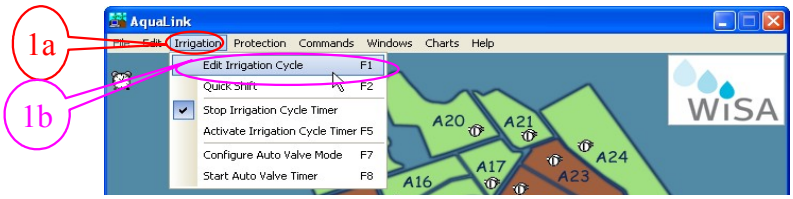
Shifts can be configure to stop if a specified volume has past through a flow-meter, with a Maximum runtime override.

NOTE: Do not use this feature with Use individual Valve runtimes, as unexpected results may occur.

If you are currently creating a new irrigation sequence then follow the “How to program a Irrigation Sequence“ section until step 10.

1 From AquaLink's main window, select the **Irrigation** Menu, then select **Edit Irrigation Cycle.**

2 The Edit Irrigation Shifts and Cycles dialogue will appear.



3 Select the **Shifts** tab page at the top of the dialogue.

4 Select the shift number to program from the list on the left side. In this example we are programming Shift 1.

If you were create/configuring a new shift, then you can follow the following steps to steps instead of step 10.

5 Set the **Max Runtime** to a little more than the maximum amount of time you would expect flow volume to be supplied. This time will act as a safety time in the event that a sensor or other failure (e.g. Broken flow meter wiring) occurs and the system is unable to measure flow.

NOTE: If this time is too short the shift will end based on time, before the required volume has been delivered.

6 Set the **Flowmeter** setting to the Flow-meter sensor that the flow volume will pass through.

7 Set the **Volume** setting to the required flow amount.

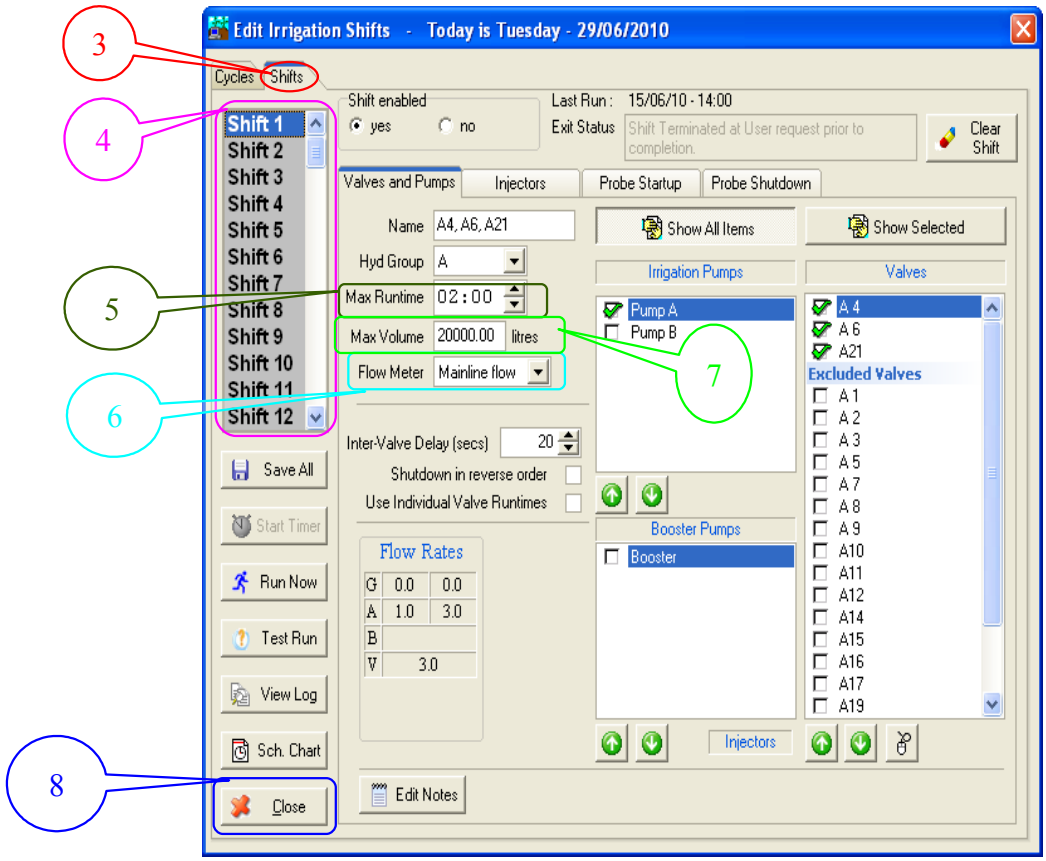
If you were create/configuring a new shift you can now return the “How to program a Irrigation Sequence“ instructions, step 11.

8 Click the “**close**” button in the bottom left corner to close the dialogue.

9 If the irrigation cycle timer is not enabled a message dialogue will appear asking if the irrigation timer should be enabled.

Clicking **Yes** will enable the irrigation cycle timer allowing any scheduled irrigations to occur.

Clicking **No** will leave the irrigation cycle timer disabled preventing any irrigation schedules from starting.



4.5. How to skip a shift on soil moisture

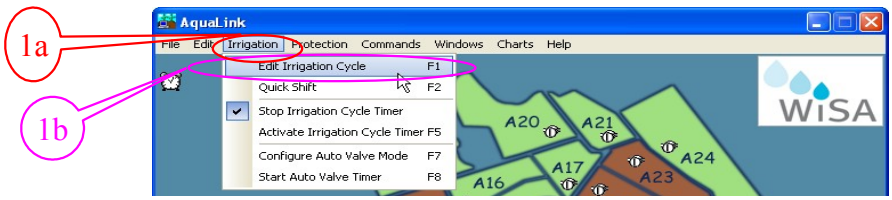
AquaLink shifts may be configured so they check soil moisture sensor values before the shift starts and if wet the shift will be skipped.

NOTE: Do not use this feature with Use individual Valve runtimes, as unexpected results may occur.

If you are currently creating a new irrigation sequence then follow the “How to program a Irrigation Sequence“ section until step 18, then follow the marked instructions below.

1 From AquaLink's main window, select the **Irrigation** Menu, then select **Edit Irrigation Cycle**.

2 The Edit Irrigation Shifts and Cycles dialogue will appear.

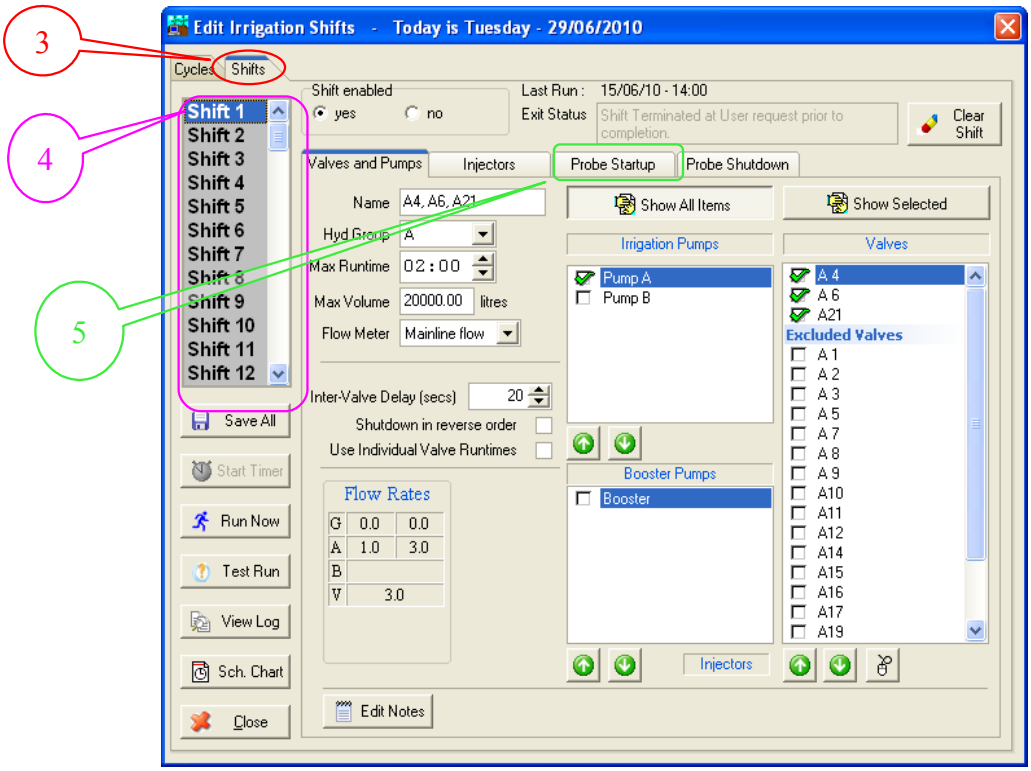


3 Select the **Shifts** tab page at the top of the dialogue.

4 Select the shift number to program from the list on the left side. In this example we are programming Shift 1.

If you were create/configuring a new shift, then you can follow the following steps after adding all the valves to the shift.

5 Select the "**Probe Startup**" Tab.



6 Check the **Enable Soil Moisture Override** option.

7 Click to highlight the name of the sensor to check in the **Probe Excluded** list.

8 Click the **Add** Button, and the sensor will move from the excluded list to the included list.

9 Repeat steps 7 and 8 for any other sensors, you wish to check.

10 If there are any sensors in the included list that you don't want be to checked, then click the name of the sensor and click remove, repeat for each sensor to remove.

11 For the sensors to included, change the value to the right of the sensor name to the required soil moisture level at which the shift will be allowed to run.

If the moisture if drier than the entered value when the shift is due to start then shift will not be allowed to run.

If there are multiple sensors, and any dry sensor will allow the shift to run.

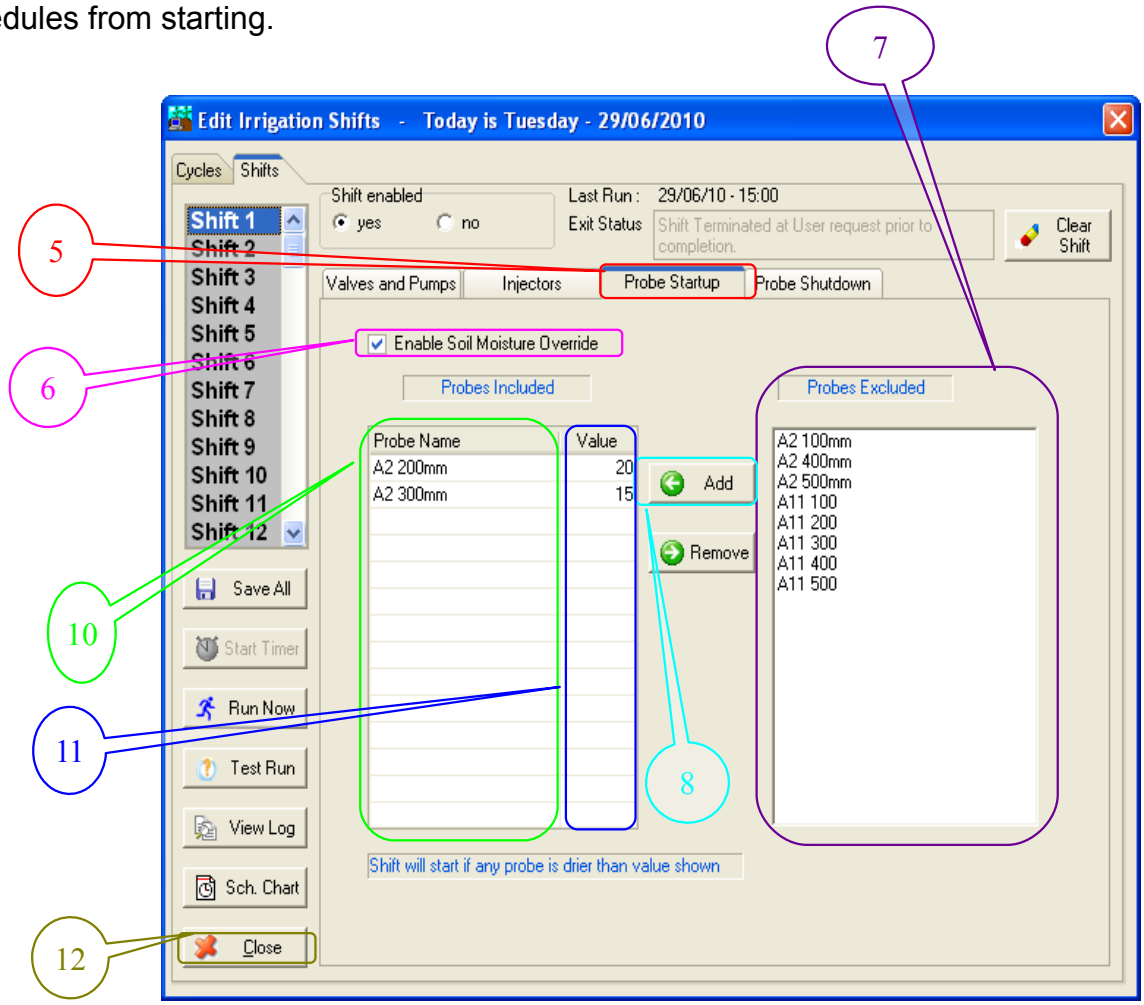
If you were create/configuring a new shift you can now return the "How to program a Irrigation Sequence" instructions, step 19.

12 Click the "**close**" button in the bottom left corner to close the dialogue.

13 If the irrigation cycle timer is not enabled a message dialogue will appear asking if the irrigation timer should be enabled.

Clicking **Yes** will enable the irrigation cycle timer allowing any scheduled irrigations to occur.

Clicking **No** will leave the irrigation cycle timer disabled preventing any irrigation schedules from starting.



4.6. How to finish a shift when soil moisture level reached

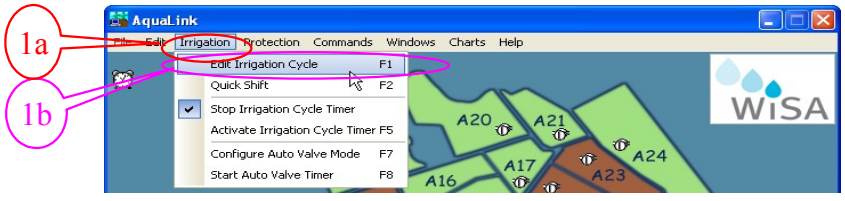
AquaLink shifts may be configured to they check soil moisture sensor values while the shift is running and when a soil moisture sensor indicates a desired level of moisture the shift will end.

NOTE: Do not use this feature with Use individual Valve runtimes, as unexpected results may occur.

If you are currently creating a new irrigation sequence then follow the “How to program a Irrigation Sequence“ section until step 18, then follow the marked instructions below.

1 From AquaLink's main window, select the **Irrigation** Menu, then select **Edit Irrigation Cycle**.

2 The Edit Irrigation Shifts and Cycles dialogue will appear.

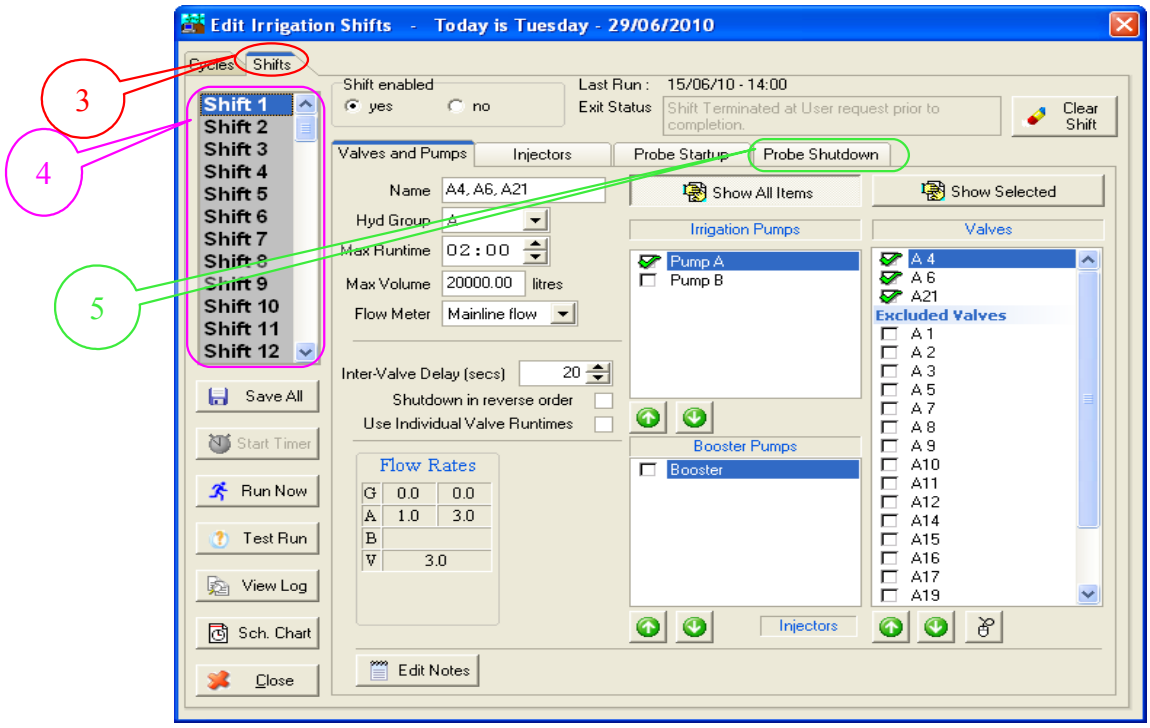


3 Select the **Shifts** tab page at the top of the dialogue.

4 Select the shift number to program from the list on the left side. In this example we are programming Shift 1.

If you were create/configuring a new shift, then you can follow the following steps after adding all the valves to the shift.

5 Select the "**Probe Shutdown**" Tab.



6 Check the **Enable Soil Moisture shutoff** option.

7 Click to highlight the name of the sensor to check in the Probe Excluded list.

8 Click the **Add** Button, and the sensor will move from the excluded list to the included list.

9 Repeat steps 7 and 8 for any other sensors, you wish to check.

10 If there are any sensors in the included list that you don't want be to checked, then click the name of the sensor and click remove, repeat for each sensor to remove.

11 For the sensors to included, change the value to the right of the sensor name to the required soil moisture level** at which the shift will be stopped.
If the moisture is wetter than the entered value shift will finish.
If there are multiple sensors, and any *wet* sensor will stop the shift.

12 AquaLink also has the ability to look for change in moisture reading by setting the "S**top if any listed probe changes by**" option. When this option is set AquaLink will take a record of the soil moisture readings of the listed sensors when the shift starts, then while the shift is running will compare the readings, when the changed by the entered amount the shift will end too.

***When operating in the "mode" you can set the shutdown moisture levels to full scale (ie 100 for percentage readings, 0 for KPA type readings) and the shift will not end until the sensor(s) change by the entered amount.*

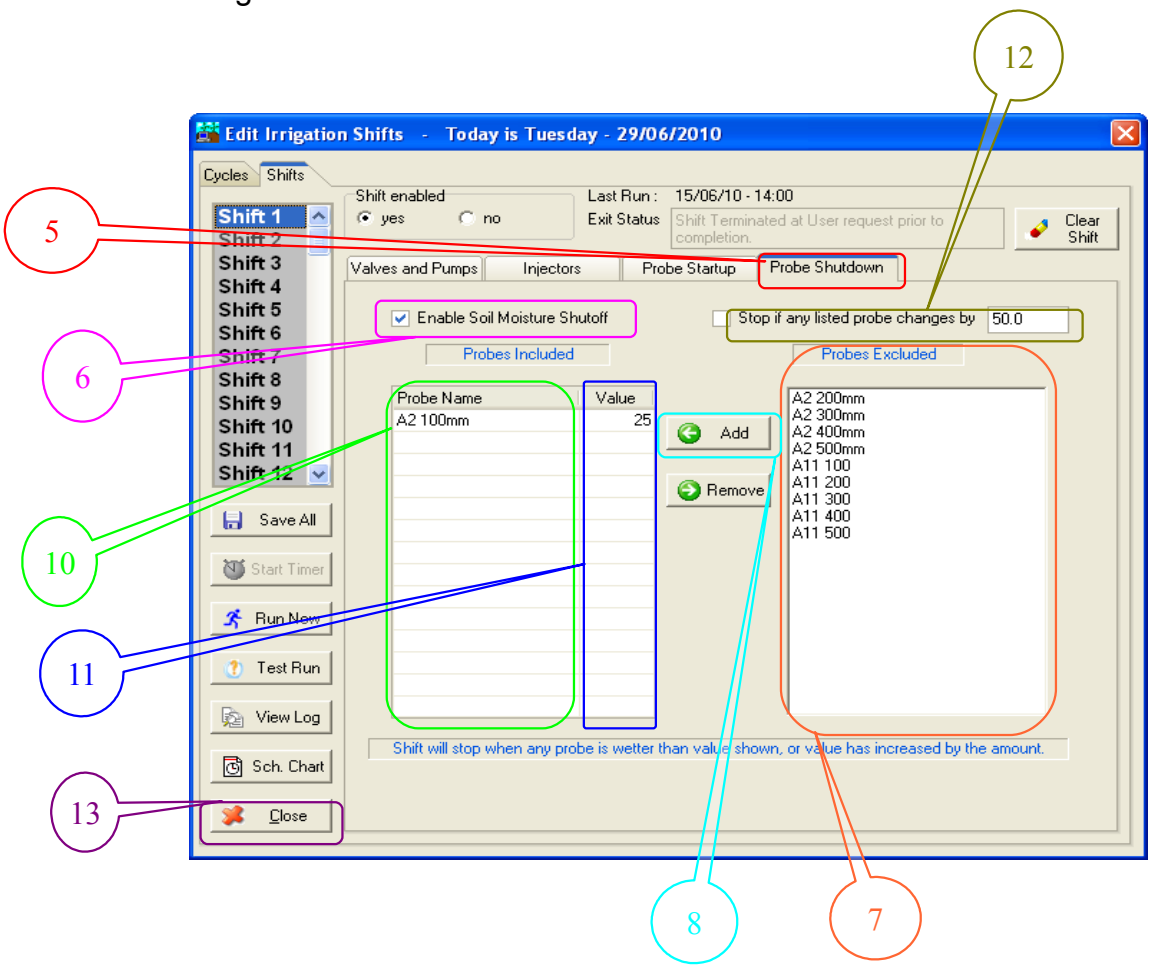
If you were create/configuring a new shift you can now return the "How to program a Irrigation Sequence" instructions, step 19.

13 Click the "**close**" button in the bottom left corner to close the dialogue.

14 If the irrigation cycle timer is not enabled a message dialogue will appear asking if the irrigation timer should be enabled.

Clicking **Yes** will enable the irrigation cycle timer allowing any scheduled irrigations to occur.

Clicking **No** will leave the irrigation cycle timer disabled preventing any irrigation schedules from starting.



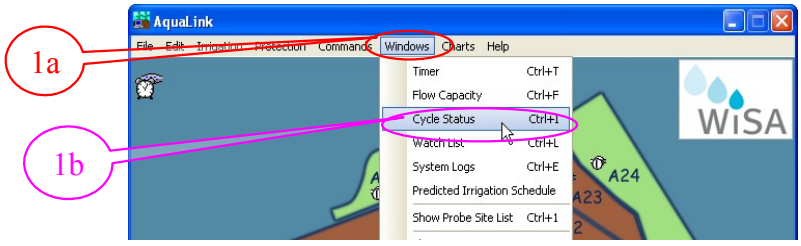
4.7. How to check what I cycle is doing

You can check the status of a cycle to find out what it is up to.

- Cycle status which will consist of one of the following.
  - **Off:** Cycle Timer is not enabled.
  - **Waiting on Timer:** The Cycle is current not running any shifts and is waiting for the next schedule to start.
  - **Irrigation Interrupted:** Cycle has been stopped while irrigating. You will need to resume or clear the stopped schedule.
  - **Opening a Shift:** Irrigation has just started
  - **Running Shift:** The cycle is currently midway through the indicated cycle.
  - **Merging Shift 'x' and Shift 'y':** The cycle is changing from one shift to the next.
  - **Closing Shift Valves:** The cycle is finishing the last shift, or is shutting down.
  - **Hydraulic Group has been disabled:** Cycle is unable to run because the hydraulic group the cycle belongs too has been disabled. This is usually due to a protection rule, such as low pressure.
- The current schedules list of shifts to run (I.e. Run List).
- If the system is waiting for a schedule AquaLink will display the start time of the next schedule.
- When a shift is running, the Shift Maximum runtime is displayed (This is the time that the shift will run for if the shift is not finished early due to flow volume or soil moisture overrides.
- While a shift is running the amount of time the shift has been running for.

1 From AquaLink's main window, select the **Windows** Menu, then select the **Cycle Status** option.

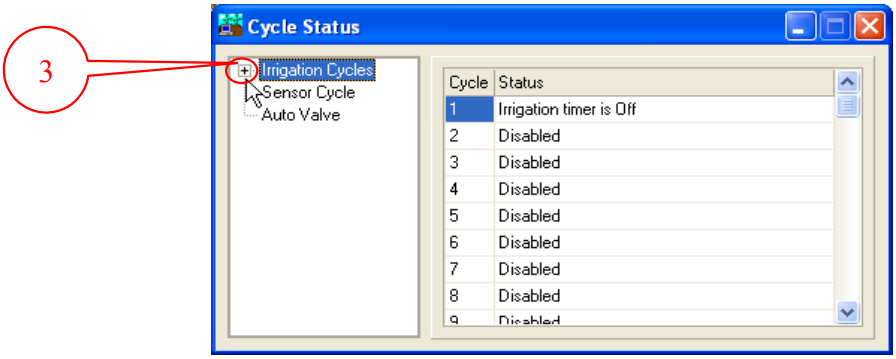
2 The Cycle Status dialogue will now appear.



3 Click the [**+**] indicator next to the Irrigation Cycles line in the left part of the window, to expand Irrigation Cycles option to display a list of cycles.

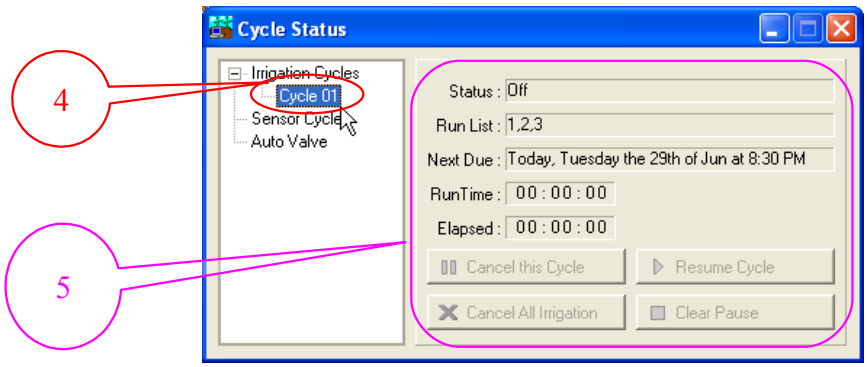
If the [-] indicator icon is displayed, then the list is already expanded.

NOTE: Only cycles that are enabled will be shown in the list.



4 Click the cycle you wish to check.

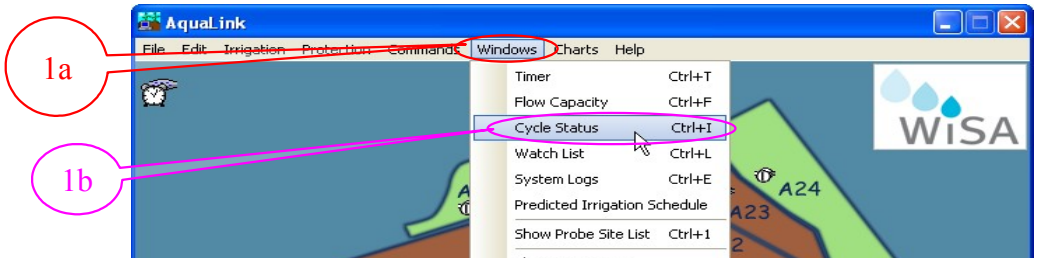
5 AquaLink will now the display information about the cycle.



4.8. How to Stop a running cycle

1 From AquaLink's main window, select the **Windows** Menu, then select the **Cycle Status** option.

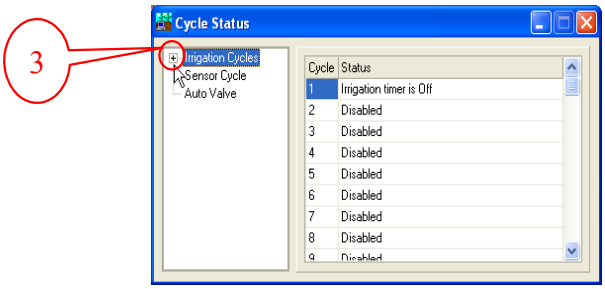
2 The Cycle Status dialogue will now appear.



3 Click the [+] indicator next to the Irrigation Cycles line in the left part of the window, to expand Irrigation Cycles option to display a list of cycles.

If the **[-]** indicator icon is displayed, then the list is already expanded.

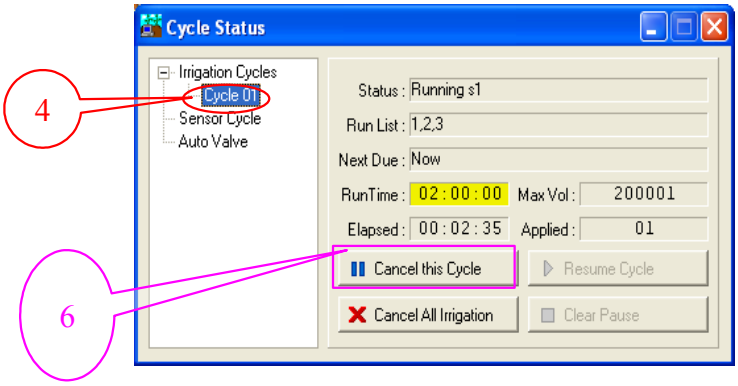
NOTE: Only cycles that are enabled will be shown in the list.



4 Click the **Cycle** option, displaying the cycle you wish to shut-down. In the example this is cycle 1.

5 The Main part of the screen will change to show the cycles current operating conditions.

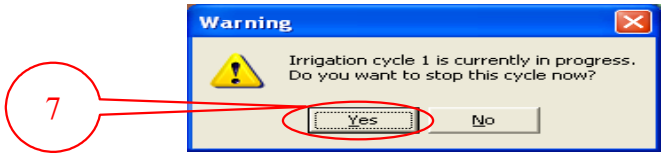
6 Click the "**Cancel this Cycle**" button to shut-down the cycle.



7 AquaLink will now ask if you really want to stop the cycle.

Click the **Yes** button to confirm.

Click the **No** button if you made a mistake and don't want to cancel the cycle.



8 If the shut-down was confirmed AquaLink will begin to shut-down the cycle.

After the cycles has completely shut-down you can either resume it by following the steps title *How to Resume a stopped cycle* or you must clear the cycle by following the steps title *How to Clear a stopped cycle.*

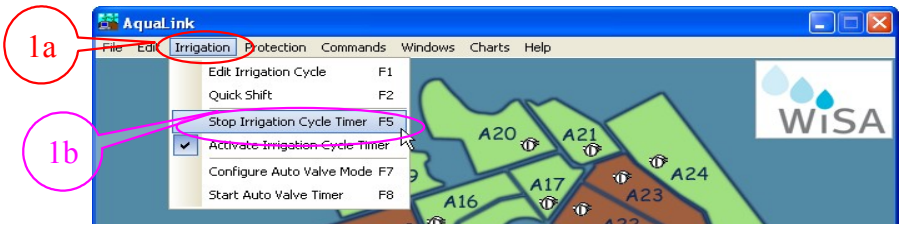
4.9. How to Stop all running cycles

The quickest way to shut-down all running cycles is to turn off the cycle timer.

1 From AquaLink's main window, select the **Irrigation** Menu, then select the **Stop Irrigation Cycle Timer**.

or

1 Press the **F5** key.

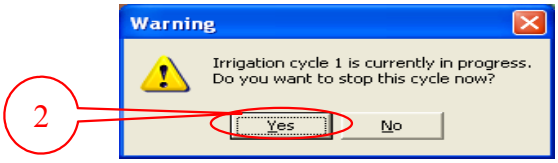


Then

2 AquaLink will then display a confirmation dialogue for each running cycle.

Click **Yes** to confirm that you want to shut down the cycle.

Click **No** if you made a mistake and would like to leave the cycle running.



3 Repeat Step 2, for each cycle that is running.

After the cycles has completely shut-down you can either resume it by following the steps title How to Resume a stopped cycle or you must clear the cycle by following the steps title How to Clear a stopped cycle.

4.10. How to Resume a stopped cycle

If a cycle is stopped before it could be completed normally it can be resumed.

NOTE: A stopped cycle must be resumed, or have the resume cleared, before it will run another schedules.

There are 3 methods to resume a stopped cycle.

Method 1

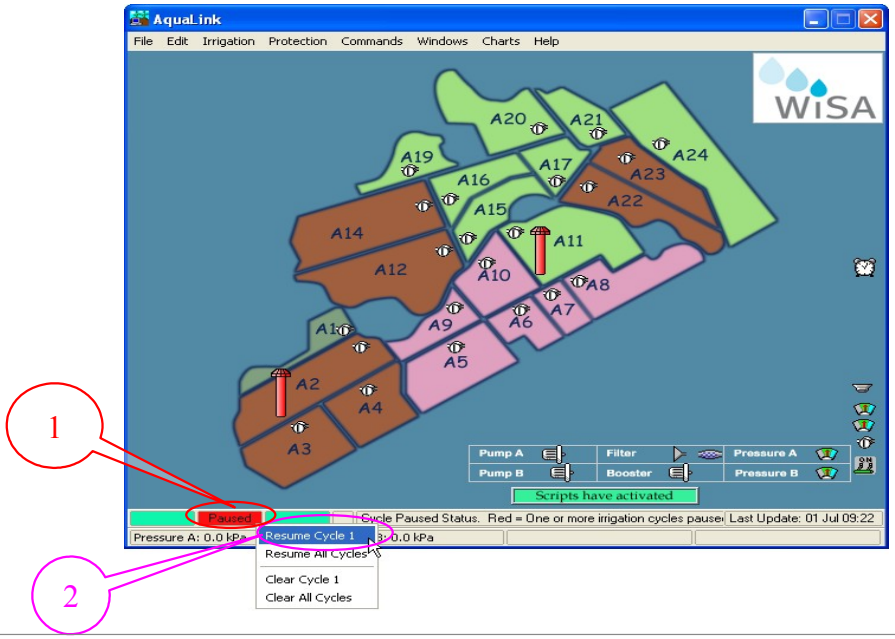
1 Right click on the red **paused** panel of AquaLink's Main window status bar.

NOTE: This panel is only red when there is one or more paused cycles.

2 Click the **Resume Cycle X** option for the cycle you wish to resume

or

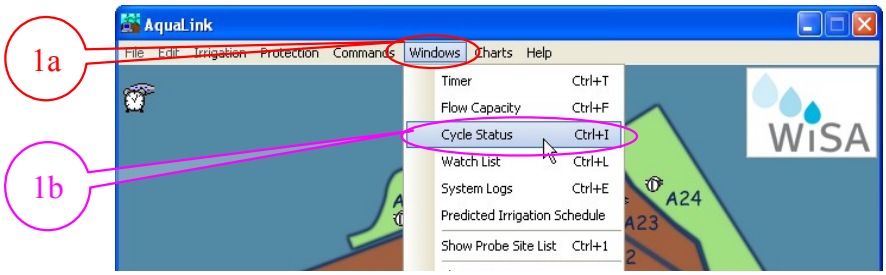
Click the **Resume All Cycles** option to resume all stopped cycles.



Method 2

1 From AquaLink's main window, select the **Windows** Menu, then select the **Cycle Status** option.

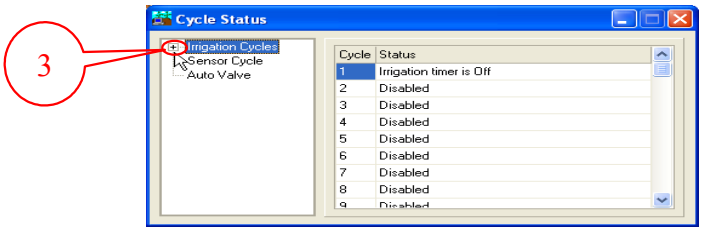
2 The Cycle Status dialogue will now appear.



3 Click the [+] indicator next to the Irrigation Cycles line in the left part of the window, to expand Irrigation Cycles option to display a list of cycles.

If the [-] indicator icon is displayed, then the list is already expanded.

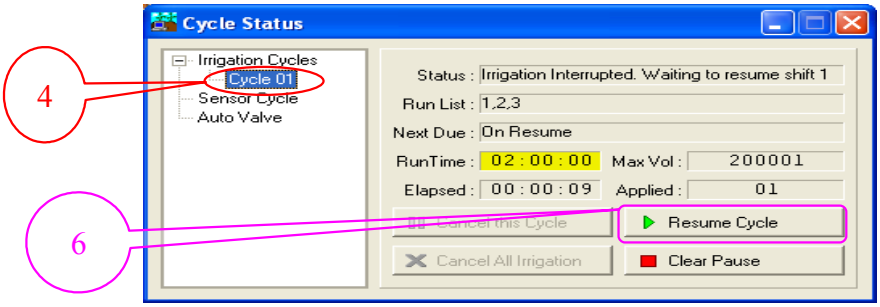
NOTE: Only cycles that are enabled will be shown in the list.



4 Click the Cycle option, displaying the cycle you wish to resume. In the example this is cycle 1.

5 The Main part of the screen will change to show the cycles current operating conditions.

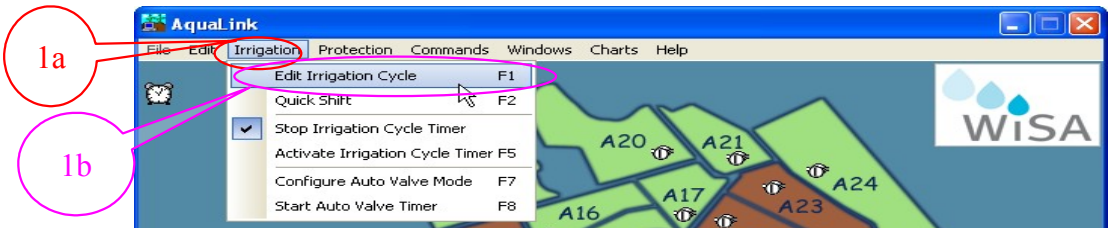
6 Click the "**Resume Cycle**" button and the cycle will be resumed.



Method 3

1 From AquaLink's main window, select the **Irrigation** Menu, then select **Edit Irrigation Cycle**.

2 The Edit Irrigation Shifts and Cycles dialogue will appear.

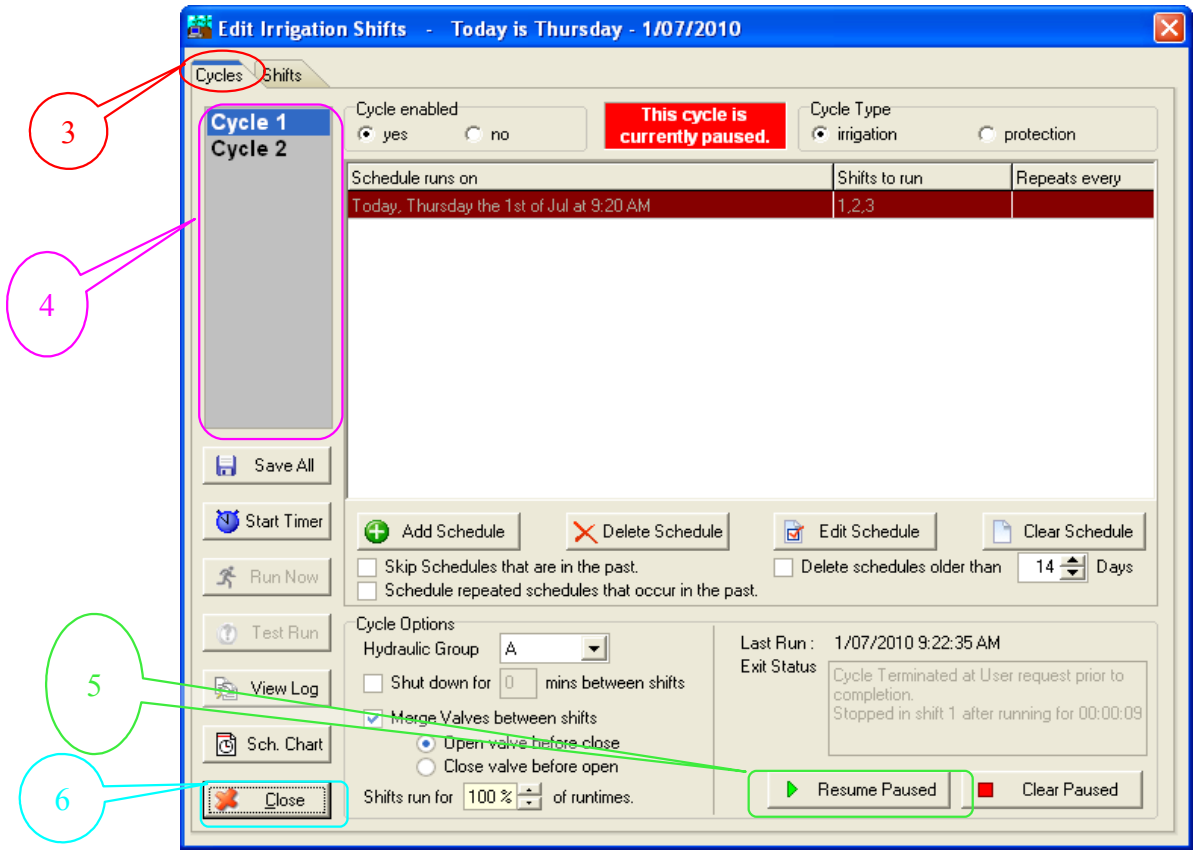


3 Select the **Cycles** tab page at the top of the dialogue.

4 Select the Cycle number to resume from the list on the left side. In this example we are resuming Cycle 1.

5 Click the "**Resume Paused**" button in the lower right corner of the dialogue.

6 Click the **close** button if the lower left corner to close the dialogue and the cycle will be resumed.



4.11. How to Clear a stopped cycle

If a cycle is stopped before it could be completed normally it can be cleared without the schedule continuing so that future schedules can be run.

NOTE: A stopped cycle must be resumed, or have the resume cleared, before it will run another schedules.

There are 3 methods to clear a stopped cycle.

Method 1

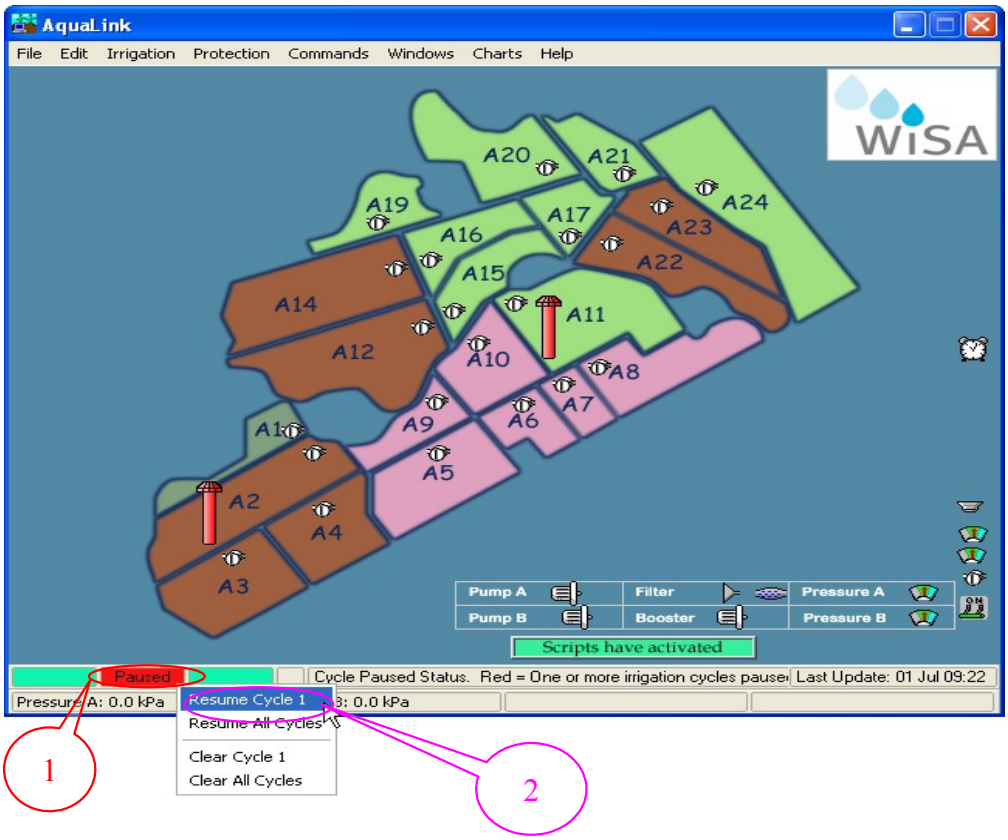
1 **Right click** on the red **Paused** panel of AquaLink's Main window status bar.

NOTE: This panel is only red when there is one or more paused cycles.

2 Click the **Clear Cycle X** option for the cycle you wish to clear

or

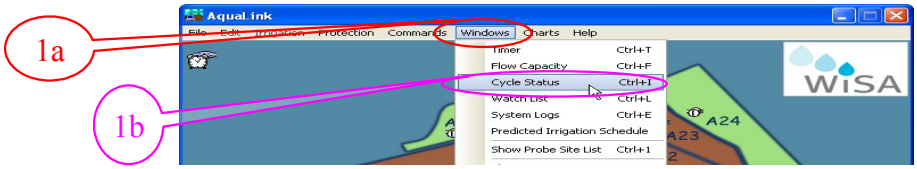
Click the **Clear All Cycles** option to clear all stopped cycles.



Method 2

1 From AquaLink's main window, select the **Windows** Menu, then select the **Cycle Status** option.

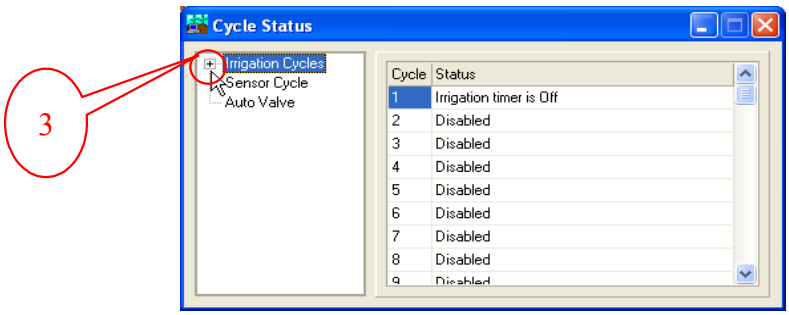
2 The Cycle Status dialogue will now appear.



3 Click the [**+**] indicator next to the Irrigation Cycles line in the left part of the window, to expand Irrigation Cycles option to display a list of cycles.

If the [**-**] indicator icon is displayed, then the list is already expanded.

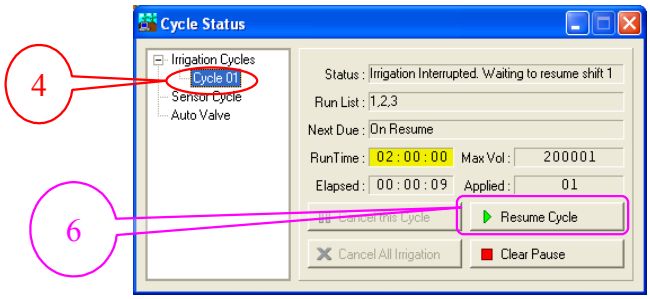
NOTE: Only cycles that are enabled will be shown in the list.



4 Click the **Cycle** option, displaying the cycle you wish to resume. In the example this is cycle 1.

5 The Main part of the screen will change to show the cycles current operating conditions.

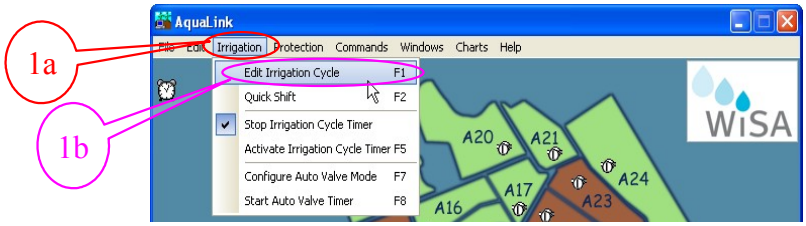
6 Click the "**Clear Pause**" button and the cycle will be cleared allowing future schedules to run.



Method 3

1 From AquaLink's main window, select the irrigation Menu, then select Edit Irrigation Cycle.

2 The Edit Irrigation Shifts and Cycles dialogue will appear.

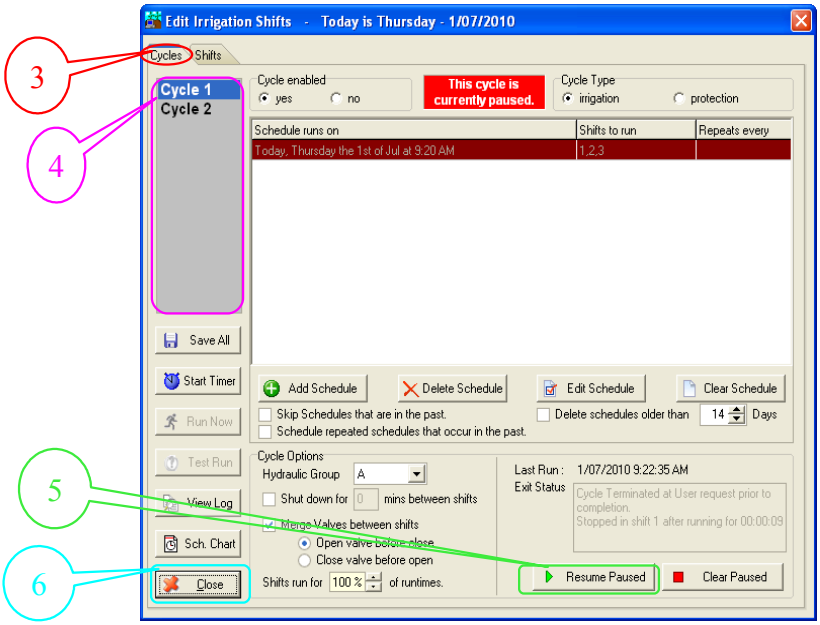


1 Select the **Cycles** tab page at the top of the dialogue.

2 Select the Cycle number to resume from the list on the left side. In this example we are resuming Cycle 1.

3 Click the "**Clear Paused**" button in the lower right corner of the dialogue to clear the cycle and allow future schedules to occur.

4 Click the **close** button if the lower left corner to close the dialogue.



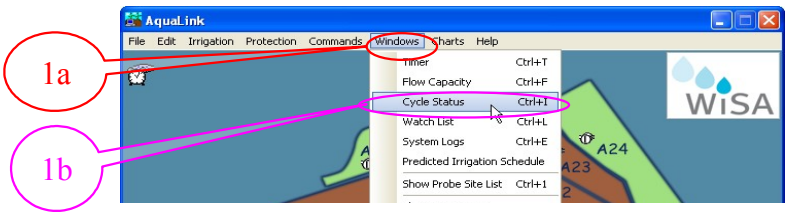
4.12. How to end a shift without stopping a cycle

You can tell AquaLink to finish a shift and move to the next one in the schedule without stopping the cycle.

NOTE: The shift will be finished (not stopped) therefore you will not be able to resume it.

1 From AquaLink's main window, select the **Windows** Menu, then select the C**ycle Status** option.

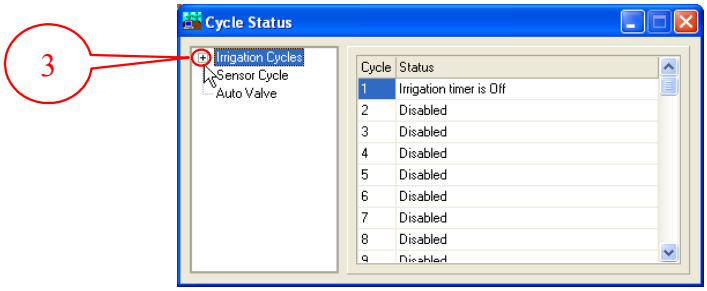
2 The Cycle Status dialogue will now appear.



3 Click the [**+**] indicator next to the Irrigation Cycles line in the left part of the window, to expand Irrigation Cycles option to display a list of cycles.

If the [-] indicator icon is displayed, then the list is already expanded.

NOTE: Only cycles that are enabled will be shown in the list.



4 Click the **Cycle** option, displaying the cycle that has the shift you wish to end. In the example this is cycle 1.

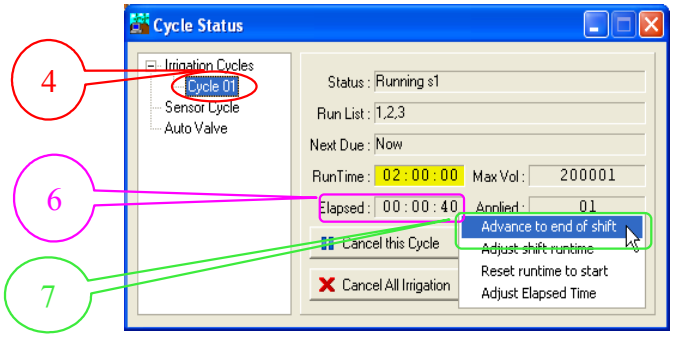
5 The Main part of the screen will change to show the cycles current operating conditions.

6 Right-click the **Elapsed Runtime** to display a menu

7 Click the "**Advance to end of the shift**".

8 AquaLink will now adjust the Elapsed time to within 15 seconds of the Shifts maximum runtime.

9 After 15 seconds the shift will finish and AquaLink will shut it down (or merge with the next shift).



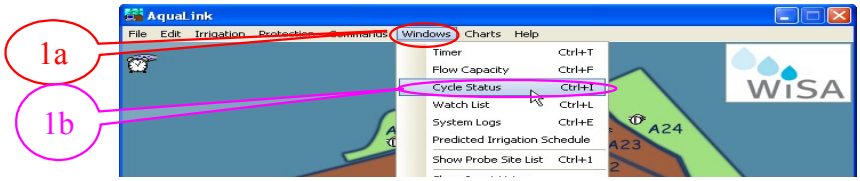
4.13. How to extend the runtime of a currently running shift without stopping the cycle

You can tell AquaLink to extend the runtime of a shift without stopping and restarting the cycle.

NOTE: You are unable to extend shifts that have individual Valve runtimes.

1 From AquaLink's main window, select the **Windows** Menu, then select the **Cycle Status** option.

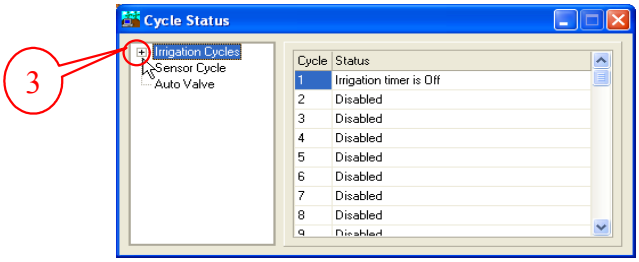
2 The Cycle Status dialogue will now appear.



3 Click the [**+**] indicator next to the Irrigation Cycles line in the left part of the window, to expand Irrigation Cycles option to display a list of cycles.

If the [**-**] indicator icon is displayed, then the list is already expanded.

NOTE: Only cycles that are enabled will be shown in the list.

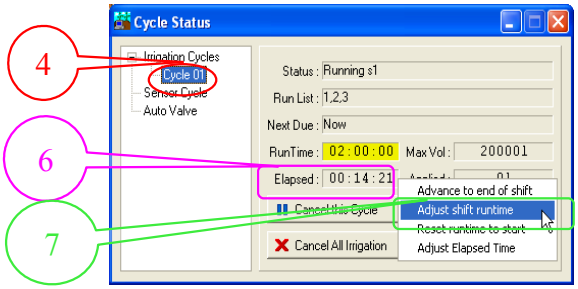


4 Click the **Cycle** option, displaying the cycle that has the shift you wish to extend. In the example this is cycle 1.

5 The Main part of the screen will change to show the cycles current operating conditions.

6 Right-click the **Elapsed Runtime** to display a menu

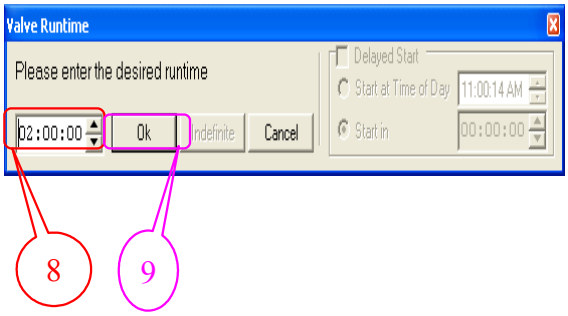
7 Select the "**Adjust shift runtime**" option.



8 Enter the new required time in the dialogue displayed.

9 Click **Ok** and the shift runtime will be set to the new time.

NOTE: This will only change the time for this schedule. It does not changed the time in the shifts configuration. To change it for future schedules wait for the shift to end, then edit the irrigation shift and change the maximum runtime.



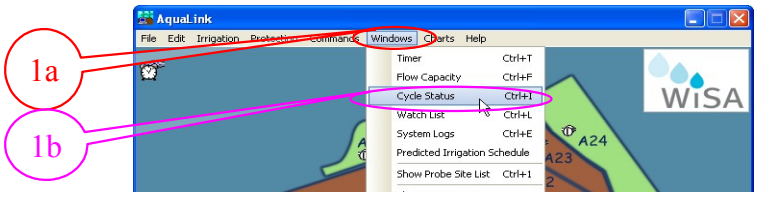
4.14. How to restart the currently running shift

You can tell AquaLink to restart a shift that is running without stopping and restarting the cycle.

NOTE: You are unable to restart a shift that has Individual valve times and one or more valves have already turned off.

1 From AquaLink's main window, select the **Windows** Menu, then select the **Cycle Status** option.

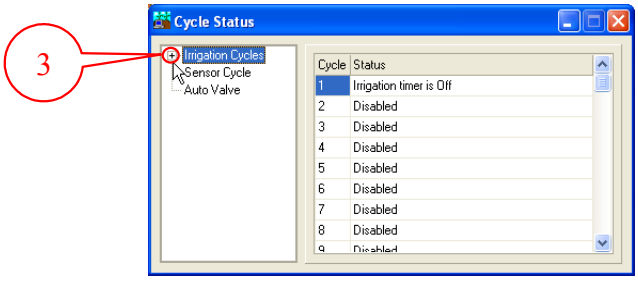
2 The Cycle Status dialogue will now appear.



3 Click the [**+**] indicator next to the Irrigation Cycles line in the left part of the window, to expand Irrigation Cycles option to display a list of cycles.

If the [**-**] indicator icon is displayed, then the list is already expanded.

NOTE: Only cycles that are enabled will be shown in the list.



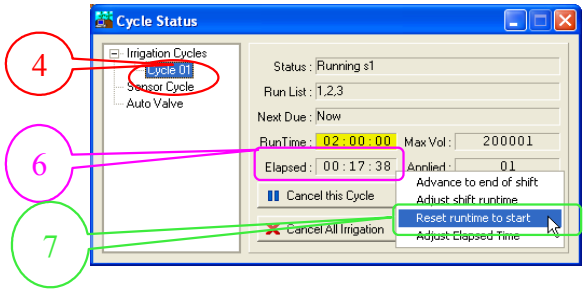
4 Click the Cycle option, displaying the cycle that has the shift you wish to restart. In the example this is cycle 1.

5 The Main part of the screen will change to show the cycles current operating conditions.

6 Right-click the Elapsed Runtime to display a menu.

7 Select “Reset runtime to Start” menu option.

8 The Elapsed time will now be reset to zero allowing the shift to restart.



4.15. How to disable all irrigation

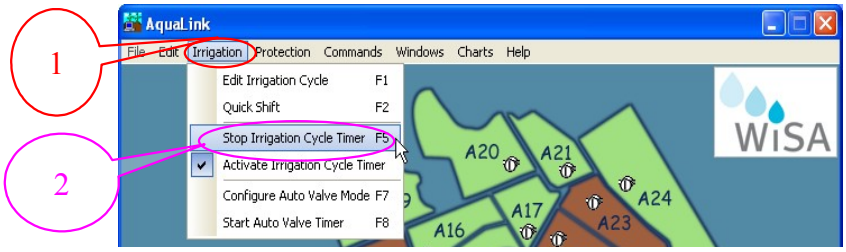
You can prevent AquaLink from running all schedules by turning off the Irrigation Cycle Timer.

1 From AquaLink's main window, select the **Irrigation** Menu.

2 Then select the **Stop Irrigation Timer**.

3 If the AquaLink is currently running an irrigation cycle(s), then it will ask to end the cycle(s).

4 Once all the cycles have been shut-down, then repeat steps 1 and 2.



5. System Protection

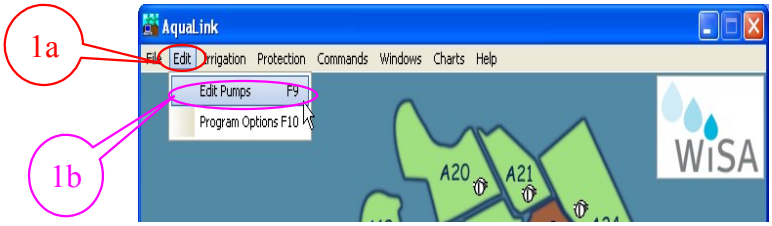
AquaLink has the ability to be set-up to operate a series of rules called “actions and conditions”.

Typically these rules will provide fault detection, such as low flow, high pressure, etc. will disable the corresponding Hydraulic Group to prevent irrigation.

5.1. How to re-enable a Hydraulic Group/Irrigation after a fault

If you have manually disabled a Hydraulic Group, or a protection rule has been set to disable the irrigation then you will need to re-enable they Hydraulic Group before any irrigation (manual or Scheduled) can take place.

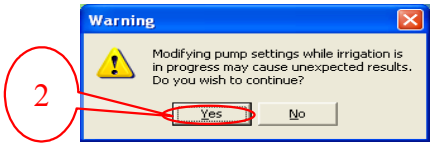
1 In AquaLink's main window, select the **Edit** menu, then the **Edit Pumps Option**.



Or

1 If present, double-click the yellow “**Hyd Grps are Disabled**” box on the main AquaLink window.

2 AquaLink may display a warning if it is currently running an irrigation, if so Accept the warning by pressing the **Yes** button.



3 The System Status dialogue will appear.

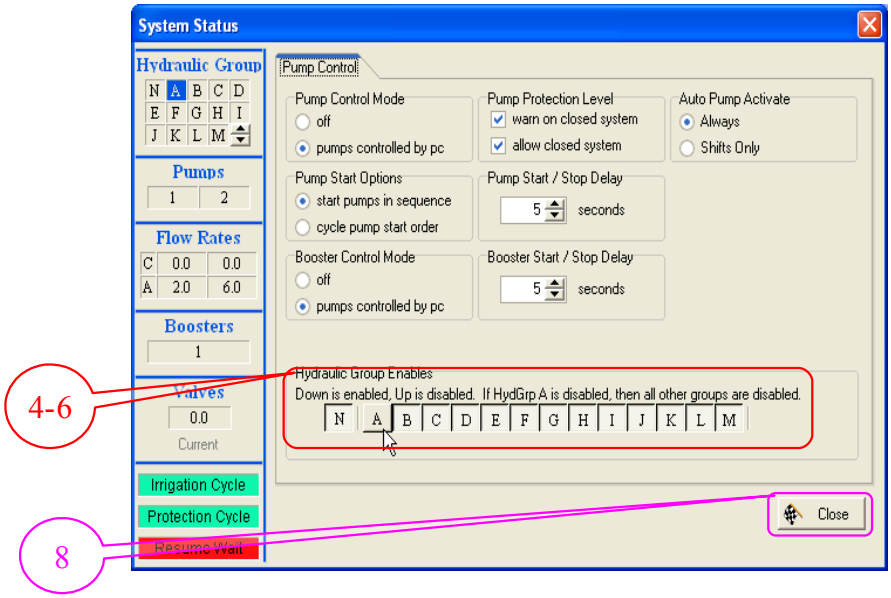
4 The Hydraulic Group Enables section in the bottom part of the Window contains a row of box's presenting the status of each Hydraulic Group.

5 If the Box's look depressed they are enabled, while raised box are disabled.

6 If the box Hydraulic Group containing the letter of the Group you wish to enable is raised click it once to enable it.

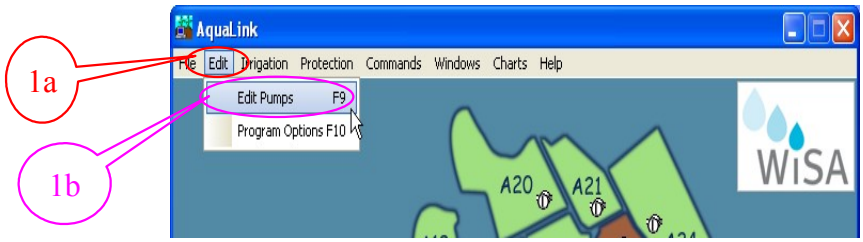
7 Repeat step 6 for any other groups you may wish to enable.

8 Click the **Close** button the bottom right corner of the screen to close the dialogue.

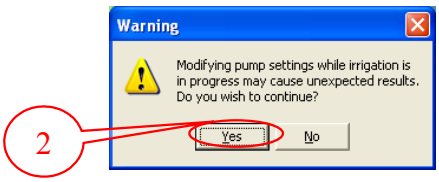


5.2. *How to disable a Hydraulic Group to prevent irrigation in that group*

1 In AquaLink's main window, select the **Edit** menu, then the **Edit Pumps** Option.



2 If the system is Irrigating a warning box is displayed click **yes** to continue.



3 The System Status dialogue will appear.

4 The Hydraulic Group Enable section in the bottom part of the Window contains a row of box's presenting the status of each Hydraulic Group.

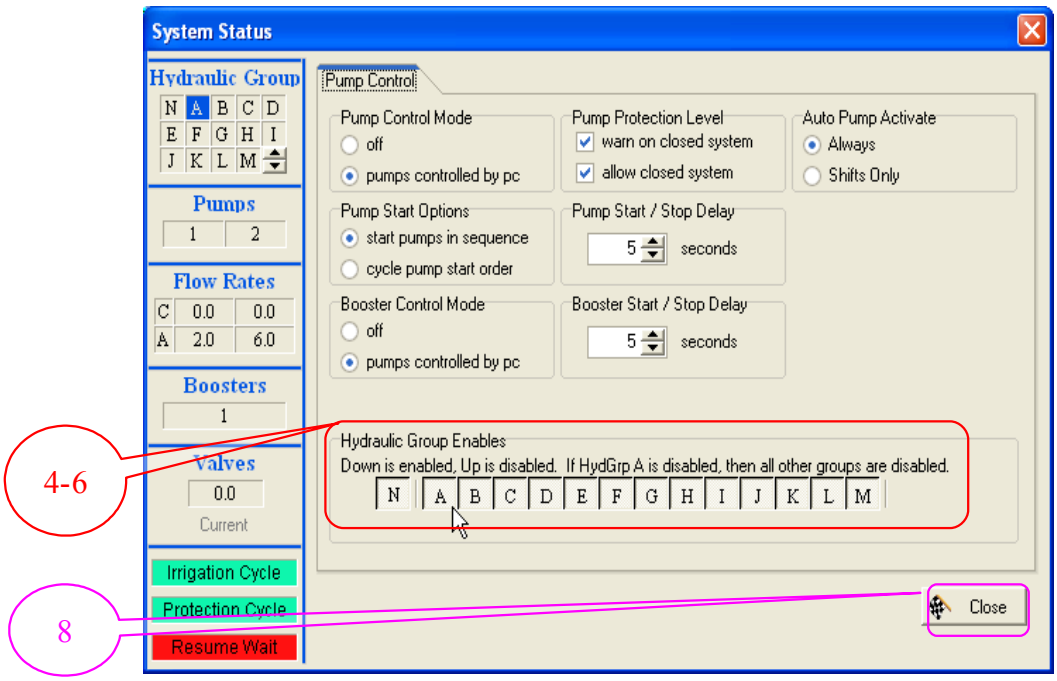
5 If the Box's look depressed they are enabled, while raised box are disabled.

6 If the box Hydraulic Group containing the letter of the Group you wish to enable is depressed click it once to disabled.

7 Repeat step 5 for any other groups you may wish to disable.

8 Click the **Close** button the bottom right corner of the screen to close the dialogue.

NOTE: Any Irrigation belonging to the Hydraulic being disabled will not be stopped and will continue as normal. However any future (including any remaining shifts in an active irrigation schedule) irrigation will be prevented from running.



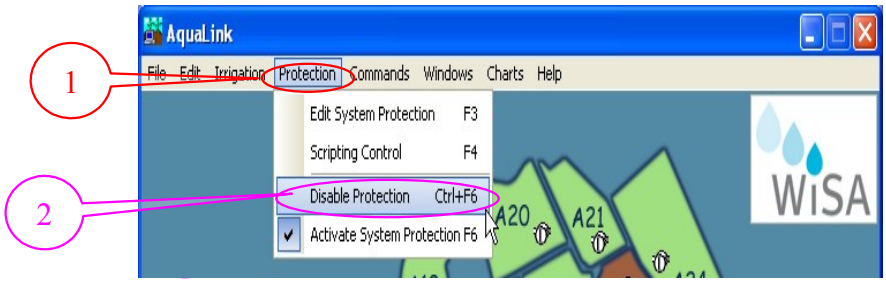
5.3. How to disable the system protection rules

In some circumstances testing parts of the irrigation system might violate some of the protection rules. In such cases the protection rules can be disabled.

The current status of the protection timer is shown as the third panel of AquaLink's status bar. If the panel is Green then the protection timer is enabled. If the panel is Grey/normal then the protection timer is off. A Blue panel indicates the protection timer is enabled and a protection shift or cycle has been started and is running.

1 In AquaLink's main window, select the **Protection** menu, then the **Disable Protection** Option.

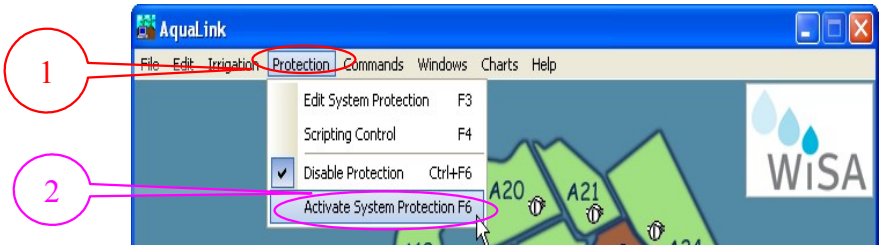
2 All Protection rules be now be disabled and will not be functional.



5.4. How to enable the system protection rules

1 In AquaLink's main window, select the **Protection** menu, then the **Activate System Protection** Option.

2 All Protection rules be now be activated.



5.5. How to stop a cycle or shift started by a protection rule

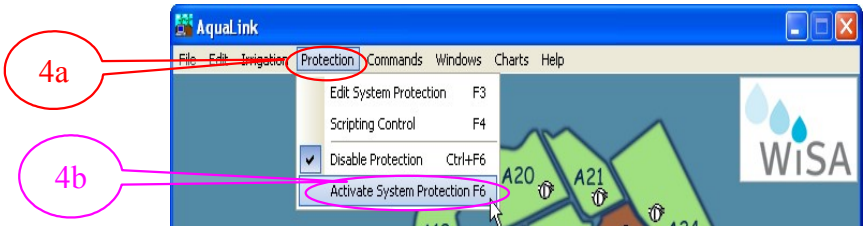
If a cycle or shift has been started by a protection rule (e.g. a Frost cycle, Sand blasting cycle, etc.) then it can be stopped by turn off the Protection Timer, disabling the system protection.

1 In AquaLink's main window, select the **Protection** menu, then the **Disable Protection** Option.

2 All Protection rules be now be disabled and will not be functional.

3 Wait for the system to start shutting down.

4 Now re-enable the protection timer, by selecting the **Protection** menu on AquaLink's main window, then select the **Activate System Protection** Option.



5 All Protection rules be now be re-activated.

6 If a protection cycle is being shut-down, wait for the cycle to complete it's shut-down then you will need to clear the it's pause by following the remaining steps. There are no more steps required if a protection shift was being shut down.

7 Right click on the red **Paused** panel of AquaLink's Main window status bar.

NOTE: This panel is only red once the cycle has actually stopped.

8 Click the **Clear Cycle X** option for the protection cycle that you just stopped.