IntelliServe® 2.8.1 User's Guide

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Patents Pending

ADS LLC has multiple patents pending on **IntelliServe**.

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CHAPTER 1

Introduction

IntelliServe® is a web-based information management system that automates the collection, storage, and presentation of data from a network of ADS® flow monitors and rain gauges. Working seamlessly with ADS flow monitors and rain gauges through telemetry and wireless communication, **IntelliServe** collects and securely stores flow, rain, and other system-related data.

IntelliServe is the culmination of 30 years of ADS experience. With this state-of-the-art system, ADS continues to revolutionize collection system intelligence as it did in 1974 with its first flow monitor. ADS has multiple patents pending on technology contained in **IntelliServe**.

IntelliServe Features

Accessible through a web browser, **IntelliServe** allows the user to perform the following tasks:

> **Note:** The access individual users have to specific features and capabilities is limited to the permissions granted by the System Administrator.

- View current and historical flow data in a scattergraph, hydrograph, or tabular format
- Receive visual and/or audible notification of system and flow-related events escalated to alarms online and through pagers, telephones, and email
- Collect data from all flow monitor and rain gauges in the system on demand or scheduled
- Import and export location information and data for review, display, analysis, and reporting among **IntelliServe**, **Profile**®, and external applications
- View or add private and public location-related documents and information
- Create links to external web sites for easy access
- Generate reports concerning alarms, events, data collection status, and system performance
- Set up templates to control report formatting, and define schedules for reports to be generated automatically
- View the collection system, specific basins, individual locations, and alarm status on a map display
- Access current weather conditions directly through the Internet

Chapter Overview

Chapter 1 Introduction This chapter provides a summary of **IntelliServe** features and information on accessing the system, understanding the menu structure, and viewing map displays.

Chapter 2 Maps and Locations For customers configured with maps, this chapter provides instructions for viewing a map of the entire flow monitoring network, maps of individual basins, and maps for defined monitor groups. It also provides detailed information on using the map toolbar.

Chapter 3 System Events and Alarms This chapter provides instructions for querying, sorting, and viewing events and alarms, and using the **Active Alarm**, **Alarm History**, and the **Event Logs**.

Chapter 4 Data Collection This chapter provides instructions on collecting data on demand from a flow monitor or rain gauge.

Chapter 5 Data Presentation This chapter provides instructions on viewing current data and displaying historical data in graphical or tabular formats.

Chapter 6 Data Importing and Exporting This chapter provides instructions for importing and exporting location information files and data to and from the **IntelliServe** database.

Chapter 7 Location Information This chapter provides instructions for viewing location configuration parameters and establishing data adjustment factors. It also describes how to access, view, and upload system- or location-related documents.

Chapter 8 Reports This chapter provides instructions for adding, modifying, and deleting reports, and for developing report templates. It also includes instructions for configuring automatic reports.

Appendix A Events This appendix describes the events configured in the **IntelliServe** system.

Appendix B Data Entities This appendix describes the data entities used in the **IntelliServe** system.

Appendix C Glossary This appendix contains a glossary of the terms used in this manual.

Hardware and Software Requirements

The user must have **Microsoft® Windows® 2000**, **Windows XP**, or **Windows Vista®** with **Microsoft Internet Explorer®** Version 6.0 (or higher) and internet access to operate the browser-based **IntelliServe** user interface. To view documents in PDF format through **IntelliServe**, the user must have **Adobe® Acrobat®** version 6.0 or later.

The user also must have the following minimum hardware:

- **Intel® Pentium®** 4 processor
- 1 GB RAM

In addition, ADS recommends using at least a 17-inch monitor and selecting the 1024 x 768 display settings option for optimal viewing.

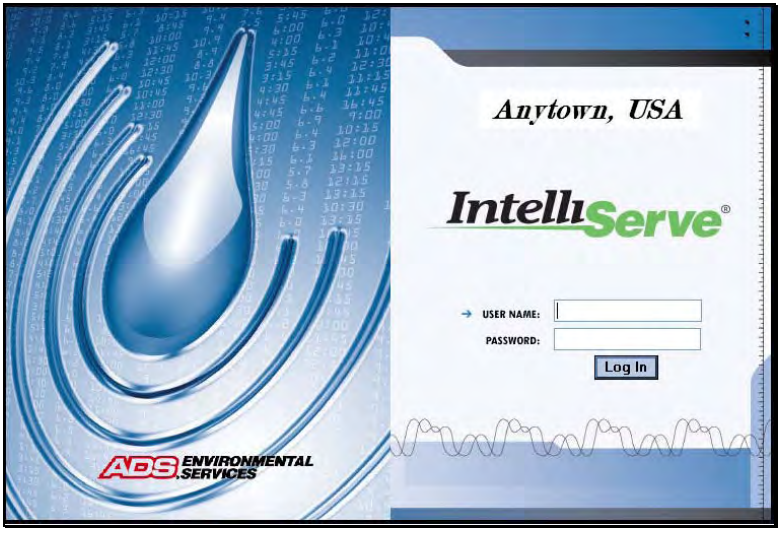
Accessing the System

Before accessing **IntelliServe**, obtain the relevant website address and a valid user ID and password from your System Administrator. This information is essential for logging into **IntelliServe**.

Logging In

Each time you log into **IntelliServe**, you must enter the user name and password (consisting of a minimum of 8 characters) provided by the System Administrator. The System Administrator sets each user password for a specified period of time. Periodically, the System Administrator will provide you with a new user name and password to ensure the ongoing integrity of the system. The administrator also can grant permission for you to change your own password.

> **Note:** Only the System Administrator can grant and maintain user names in the system.



IntelliServe Log In window

Log into the system in the following way:

1. Open an **Internet Explorer** browser and enter the appropriate Website address in the **Address** field.
2. When the **IntelliServe Log In** window displays, enter your user name and password into the corresponding fields.

> **Note**: User names and passwords are not case sensitive.

3. Click on the **Log In** button.

The system validates the user name and password as entered. ***IntelliServe*** *displays the full extent map in your main browser window. Upon request, the System Administrator can configure your system to display an organizational or other applicable image or logo, instead of the full extent map, on the application window (panel) following validation.*

> **Note**: If you are logged into **IntelliServe** and log in again (with the same user name and password) through another web browser, the system will end the first session before providing access through the other browser.

You can navigate through the **System Menu** to access the system's functional areas.

Logging Out

For security purposes, log out of the system to end an **IntelliServe** session by selecting **Logout** from the **System Menu**.

> **Note: IntelliServe** will not log out a user during an extended period of inactivity. However, closing the browser without logging out automatically logs out a user and ends a session. If a user logs in with another session, the first session ends automatically and the system logs out the user.

Changing the Password

IntelliServe allows you to change your password at any time, provided you have the appropriate permissions, in the following way:

1. Select **User Config > User Password** from the **System Menu**.

*The **User Password** window displays.*

2. Enter your existing password in the **Old Password** field.
3. Enter your new password in the **New Password** field, and then re-enter your new password in the **Confirm New Password** field.
4. Click on the **Save** button.

*The new password is saved to the **IntelliServe** database.*

IntelliServe Interface

IntelliServe's interface design combines the **IntelliServe** application panel and **Microsoft Internet Explorer** (version 6.0 or higher) dialogs and message windows. **IntelliServe** provides these main display areas, as shown on the following page:

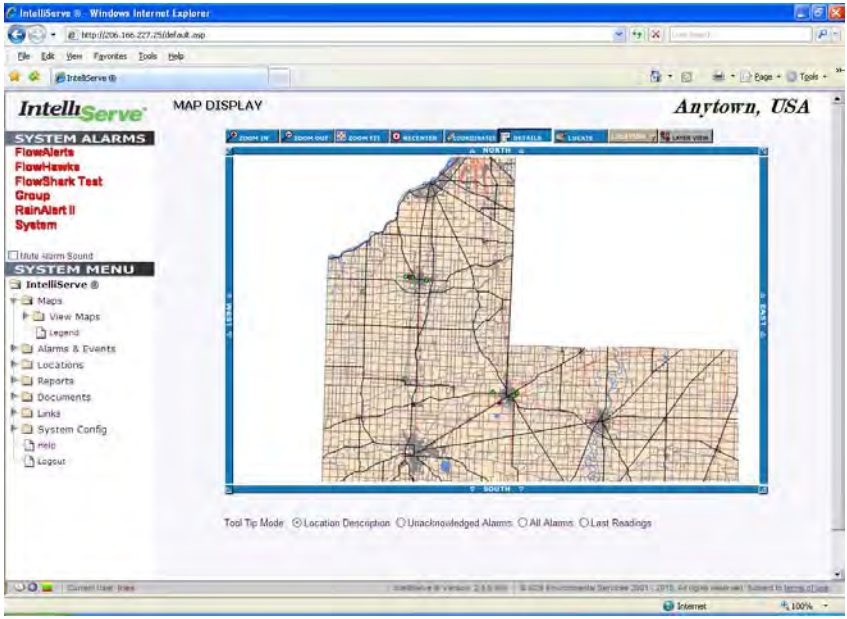
- **System Alarms** This menu reports the status of alarming basins by displaying basin names in red (alarming) and yellow (acknowledged). If your **IntelliServe** system is configured with maps, clicking a basin name displays a map of the basin. Clicking **System** enables the user to view active system alarms reported in the **Active Alarm Log**. This display area also provides an option for silencing the audible portion of active alarms.
- **System Menu** This menu is a navigation tree consisting of hyperlinks to the **IntelliServe's** main display panel. Click a link on the **System Menu** to access an operational area of **IntelliServe**.
- **Application Window** This window, occupying the right side of the screen, serves as **IntelliServe's** main display area for maps (or home page) and operations.
- **Symbols** The symbols on the status bar provide links to the following:

   **IntelliServe** online *Help*

   Terms of Use

   Legend

In addition, **Internet Explorer** windows (including dialogs and alert messages), overlay the **IntelliServe** interface when you perform certain actions that require further input.



IntelliServe application window with map display

Your organization's logo displays on the screen above the application window.

IntelliServe Menu Structure

The **IntelliServe** interface consists of two menus that enable you to navigate through the application: **System Alarms** and **System Menu**. These menus are located along the left side of the browser window and enable access to the **IntelliServe** system data and program features.

System Alarms

The **System Alarms** menu reports the status of alarming basins by displaying basin names and **System** (for system-related alarms) in red (alarming) or yellow (acknowledged).

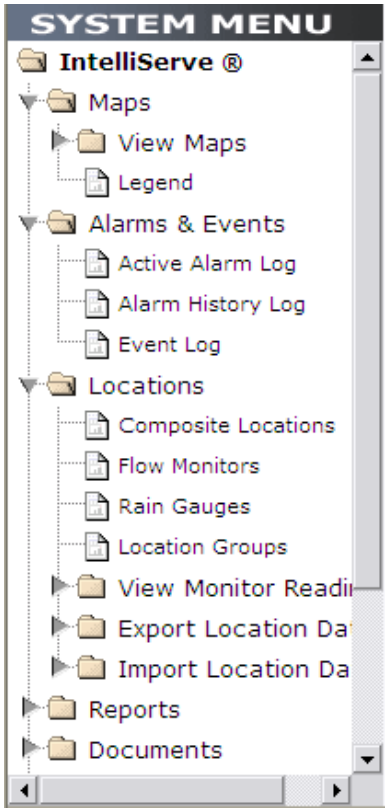
It also includes the option for silencing the audible component of active alarms occurring or received during the current session for the current user.

System Alarms menu

System Menu

The **System Menu**, shown next, provides access to the system's data structure, tools, and features through links. The **System Menu** displays *only* those links to functional areas and features you have permission to access, as configured by the System Administrator.

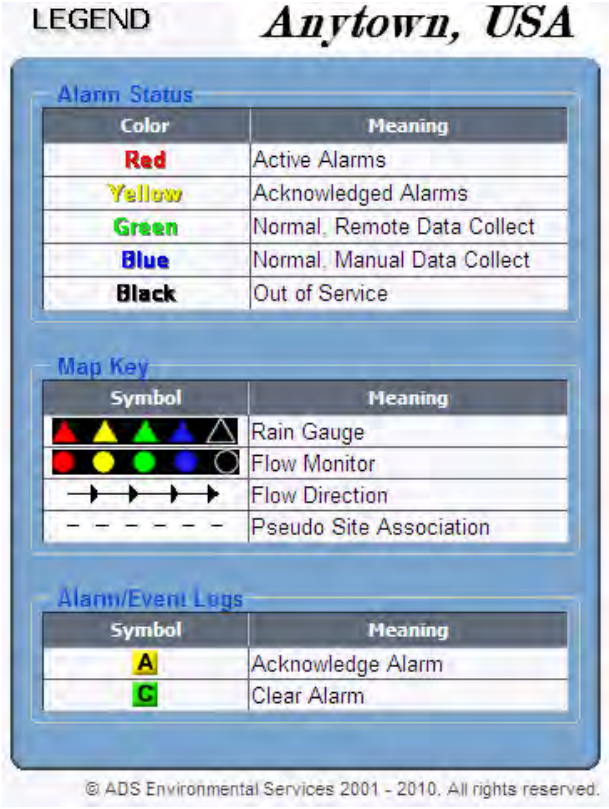
Expand (or collapse) the menu by clicking on the arrow to the left of the folder or by clicking directly on the folder. Display the window associated with the menu item by clicking on the name within the folder.



System Menu

IntelliServe Legend

The **Legend** shows how the colors and symbols represent location type/status, alarm/event status, flow direction, and pseudo site associations on maps (when applicable) and windows in **IntelliServe**.



IntelliServe Legend

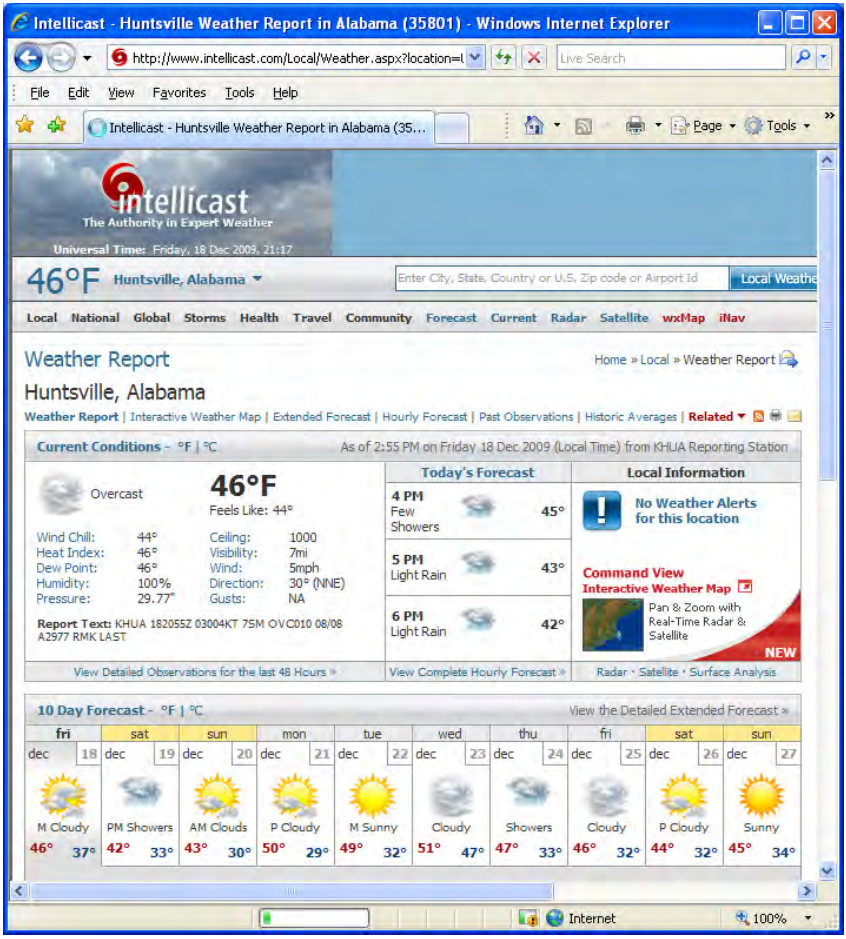
Display the **Legend** by selecting **Maps** > **Legend** from the **System Menu**, *or* by clicking on the **Legend** symbol ( ) at the bottom of the screen.

IntelliServe Help

IntelliServe provides web-based *online help* for users consisting of application information and instructions for performing the operations enabled by the System Administrator. View the **IntelliServe** *Help* by clicking the *Help* symbol () located in the **Status Bar** at the bottom of the **IntelliServe** screen *or* by selecting **Help** in the **System Menu**.

Weather Information

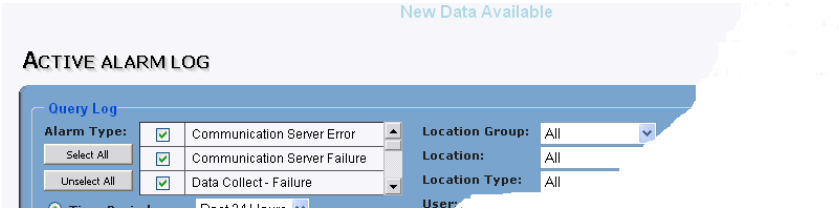
Access a weather website on **Internet Explorer** by selecting **Maps > View Maps > Weather** on the **System Menu**.



intellicast.com weather website

Displayed Data

Occasionally, you may need to refresh the **IntelliServe** display to ensure that the most recent data is displayed. **New Data Available** alert appears on the screen when new data is available, but currently not displayed on-screen, in **IntelliServe**.



New Data Available alert at top of window

Click on **New Data Available** to update the screen with the new information.

Permissions and User Groups

Permissions assigned by the System Administrator through user groups enable a user to access certain **IntelliServe** features available only to the user group to which the user belong. A user group is a defined set of users to which permissions are assigned. Permissions typically are granted based on a user's tasks and responsibilities. The **System Menu** displays only the menu labels related to user-group assigned features.

Escalation Groups and Chains

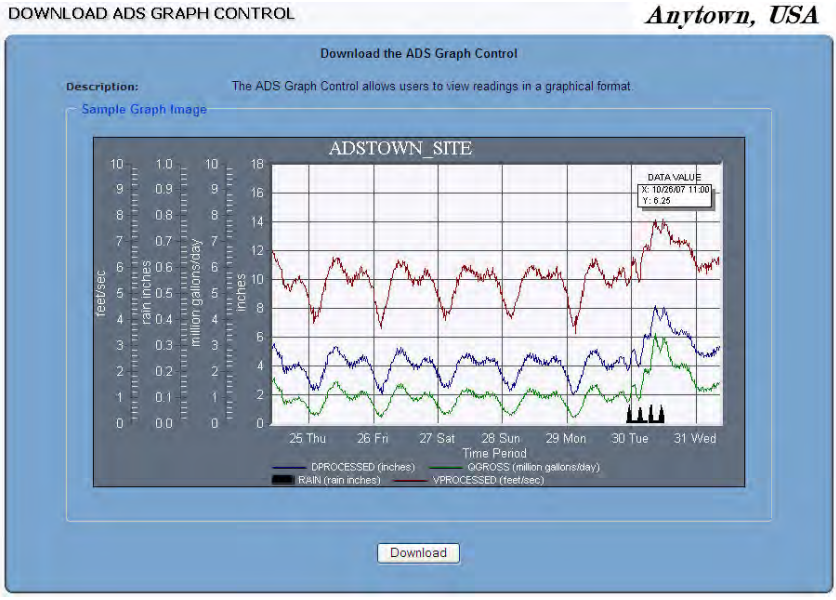
If an alarm goes unacknowledged for a specified duration, **IntelliServe** can begin sending various forms of notification to designated parties. The **IntelliServe** System Administrator can establish escalation groups and escalation chains to ensure alarms are received and acknowledged quickly by designated, responsible parties.

An escalation group includes designated **IntelliServe** users who can simultaneously receive e-mail, pager, and/or telephone notification of an alarm. An escalation group also can include non-**IntelliServe** users who can receive notification, but cannot respond through **IntelliServe**.

The System Administrator can configure multiple escalation groups called escalation chains. Escalation chains organize the escalation groups in a deliberate, methodical order so that the next group in a chain will receive notification of an alarm if the previous group notified does not respond within a specified time interval.

Downloading the ADS Graph Control

Enable the ability to generate hydrograph or scattergraph data reports by downloading the **ADS Graph Control** tool. From the **System Menu**, select **System Config** > **Download ADS Graph Control**.



Download ADS Graph Control window

Select the **Download** button and follow the installation prompts. Once the graph tool is successfully installed, you can generate and display hydrograph and scattergraph data reports.

> **Note:** If you are unable to successfully download the graph control, please contact the ADS Support Center by phone at (877) 237-9585 or email at adssupportcenter@idexcorp.com for assistance.

External Web Links

Through the **External Links** function, you can obtain quick and easy access to commonly referenced external websites through links created by a system administrator. These links may be organized throughout three levels of folders.

Access the links feature by selecting **Links** > **External Links** from the **System Menu**.

Links window

View a particular website by clicking on the corresponding link on the **Links** window. Running the cursor over a link reveals the associated website address and the **User ID** of the administrator who established the link to the website.

CHAPTER 2

Maps and Locations

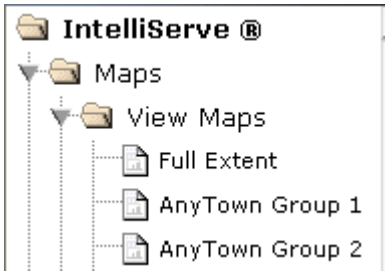
> **Note:** Under the standard configuration, **IntelliServe®** displays the **Full Extent** map when you first log into the system. However, upon request, the System Administrator can configure the system to display a home page or other image upon login in place of the map.

IntelliServe map views display the entire viewable region of the monitoring system containing all of the alarm basins and locations configured in the system. View the entire system, individual basins, or location groups. Map key symbols displayed on the map views and map toolbars enable users to quickly determine the status of flow monitors and rain gauges and to view flow direction.

This chapter explains how to use the **IntelliServe** map view and the features associated with the map.

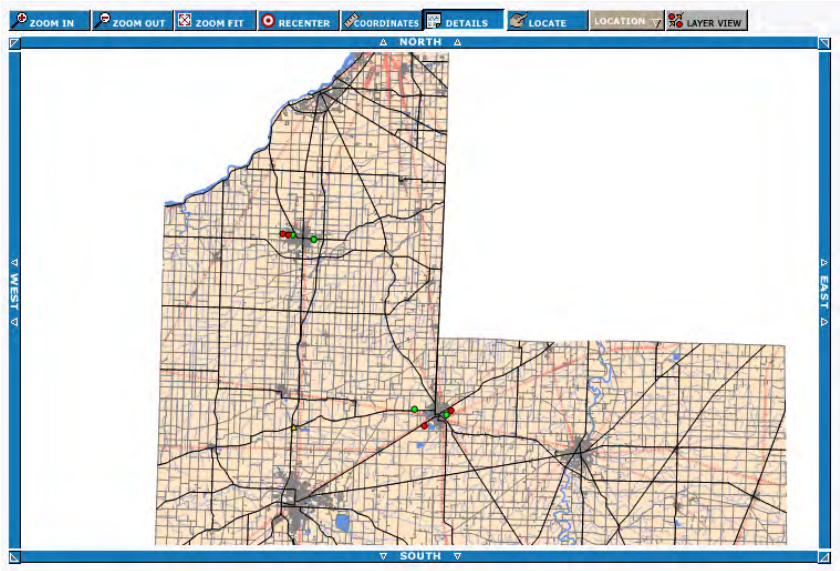
Viewing Full Extent, Individual Basin, or Location Group Maps

On the **System Menu**, select **Maps** > **View Maps** for the list of alarm basins configured in the system.



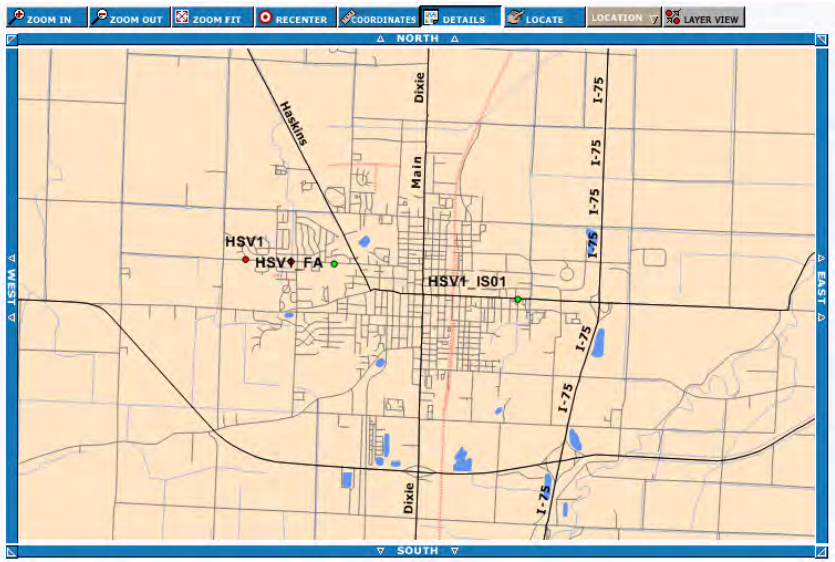
List of maps under the **View Maps** menu

To view all the locations within the entire system network, select the **View Maps > Full Extent** option. The entire region that contains all the rain gauges and flow monitors appears inside the **Map Display** window.



Map Display showing full extent

To view an individual alarm basin with its rain gauges and flow monitors, select one of the basins listed in the **System Menu**. The **Map Display** window *zooms in* to that basin.



Map Display window zoomed into one basin

To view a location group (if at least one exists), select **View Maps > Groups** and then select any group. Only those locations included in the group will display on the map.

Understanding Location Types

Several different types of locations are available in the **IntelliServe** system. The location types provide different categories of information related to flow monitoring.

Flow Monitor

A flow monitor measures open-channel flow in sanitary sewers, storm sewers, and other environments. A single flow monitor can support up to two monitoring points.

Rain Gauge

A rain gauge records the amount of rainfall that occurs over a specific rain event using a collection device called a tipping bucket. The tipping bucket contains a calibrated rainfall collection mechanism that tips once it receives a user-defined quantity of rainfall. The number of tips recorded throughout a given interval provides the total rainfall for the event.

Pseudo Site

A pseudo site is a logical grouping of two or more monitoring points existing in parallel in the system.

Location Group

A location group is a pre-defined grouping of similar locations (rain gauges, flow monitors, and pseudo sites). The groups facilitate the review of data in the hydrograph, scattergraph, and tabular formats. The primary purpose of a Location Group is to allow you to have a tailored list of locations to view rather than having to sort through all the locations in the system. You also can generated reports for location groups.

Composite Location

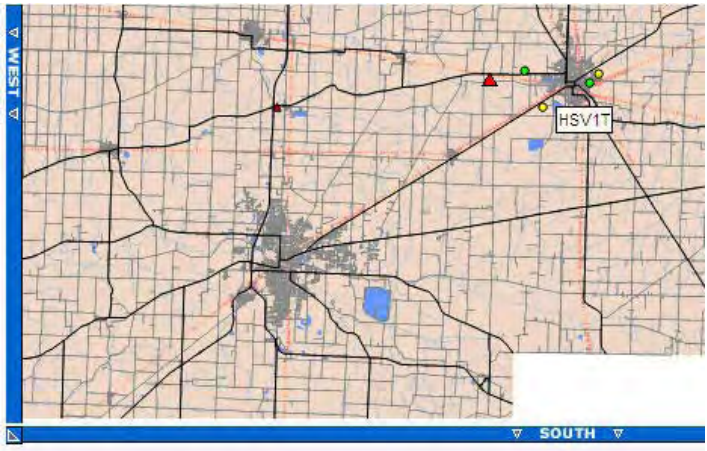
A composite location totals the flows for two or more monitoring points. The flows can be designated as inflows or outflows. The composite location is not a physical location within the collection system, but rather a mathematical totaling of multiple monitoring locations used to obtain the desired flow information. Composite locations are often defined when multiple monitored lines enter a wastewater treatment plant and the flow total into the plant is required. Composite locations are defined in the system by users with the appropriate permissions.

Viewing Name and Current Data for a Location

A triangle symbol indicates a rain gauge, and a circle symbol indicates a flow monitor. Refer to *Using the Legend* on page 2-12 for more information about the map symbols.

Display the name of a location in the following way:

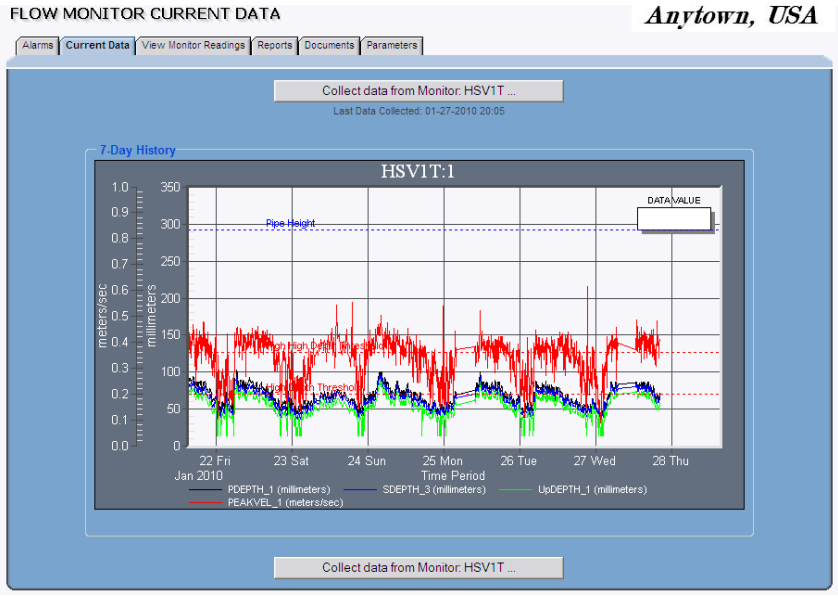
1. Move your mouse cursor over a map symbol to view the location name.



Location name at a map symbol

2. To display the current data (for the past seven days) for a rain gauge or flow monitor, click on the **Details** button on the map toolbar and then click on the map symbol.

*The **Flow Monitor** or **Rain Gauge Current Data** window displays.*

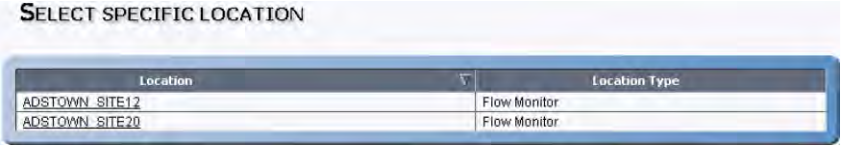


Flow Monitor Current Data window

> **Note:** Your **IntelliServe** System Administrator will configure the entities for display on the **Current Data** window.

3. If the location symbols are overlapped on the map view, making it difficult to access details for a specific location, click on a location symbol and then click on the **Details** button.

*The **Select Specific Location** window displays.*

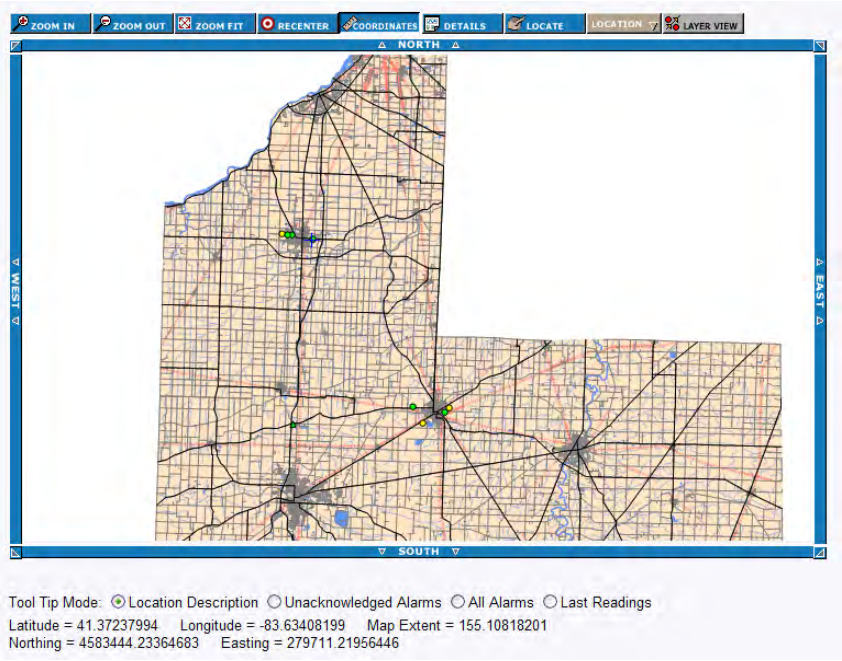


Select Specific Location window

4. Click on any location name from the list to display details for the location.

Viewing Map Coordinates

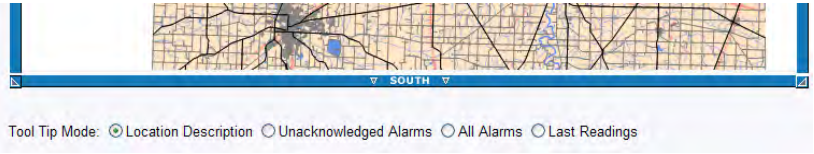
To view the geographical location coordinates, click on the **Coordinates** button above the map and then click on any location on the map. The geographical coordinates display beneath the map.



Map coordinates visible beneath map display

Viewing Map Tool Tips

Display informational tool tips for each location on the map by choosing from among the **Tool Tip Mode** radio buttons located beneath the map.



Tool Tip Mode radio buttons located beneath the map

Select one of the following tool tips for display:

- **Location Description** Choose this radio button to view the location name or description as tool tips. (The location name and description are extracted from the **Map Display Label** and **Description** fields of the location **Parameters**.)
- **Unacknowledged Alarms** Choose this radio button to view a list of up to the last three unacknowledged alarms for any location as tool tips.
- **All Alarms** Choose this radio button when you want to display a list of the last three active alarms for any location as tool tips.
- **Last Readings** Choose this radio button to display the date, time, and data values of the last monitor data reading for any location as tool tips.

Navigating the Map

The map toolbar buttons above the map view allow you to zoom in and out, zoom fit, recenter, and jump to specific locations in the map. The map border also contains directional arrows for moving around the map.

The following sections describe more about the toolbar buttons and directional arrows.

Map Toolbar

In addition to navigation tools, the **Map Display** window allows you to view map coordinates, location details, specific locations, and map layers.

Click on this button and then click and drag over the area you want to magnify on the map. Release the button and the area will be magnified.

or

Click on this button and then click on any area of the map to magnify the map, centered on the clicked position.

or

Click on this button, mouse over the **Location** button on the map toolbar, and then click on a location in the drop-down list to magnify the map, centered in reference to the selected location.

Click on this button and then click on any area of the map to de-magnify the map, centered on the clicked position.

or

Click on this button, mouse over the **Location** button on the map toolbar, and then click on a location in the drop-down list to de-magnify the map, centered in reference to the selected location.

Click on this button to automatically reload the entire map display.

Click on this button and then click on any area of the map to redefine the center of the map in reference to the clicked position.

or

Click on this button, mouse over the **Location** button on the map toolbar, and then click on a location in the drop-down list to redefine the center of the map in reference to the selected location.

Click on this button and then click on any area of the map to display latitude, longitude, and map extent in reference to the clicked position.

or

Click on this button, mouse over the **Location** button on the map toolbar, and then click on a location in the drop-down list to display latitude, longitude, and map extent in reference to the selected location.

Click on this button and then click on a monitor or rain gauge location on the map to display a graph of the last seven days of data and the most recent readings collected from the selected location.

or

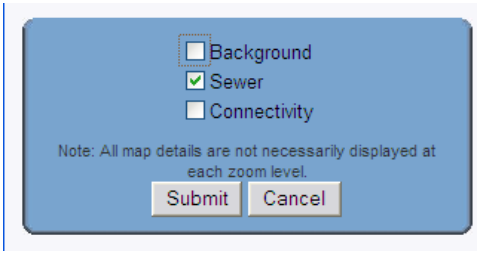
Click on this button, mouse over the **Location** button on the map toolbar, and then click on a location in the drop-down list to display a graph of the last seven days of data and the most recent readings collected from the selected location.

Click on this button, mouse over the **Location** button on the map toolbar, and then click on a location in the drop-down list to highlight the selected location on the map.

Mouse over this button to display the list of locations in the basin. Click on one of the map toolbar buttons and then select a location from the **Location** drop-down list to perform the operation for the location you selected.

For example, if you click **Coordinates** and then select "Monitor_06" under **Location**, the map will display the coordinates of that location and place the marker over that location icon on the map. The map view will change if necessary so the location will be in the viewing area.

Click on this button to display the layer view options. The **Background** and **Sewer** layers display by default; the connectivity layer does not display by default. You must have the *Display Connectivity* permission to display the **Connectivity** layer. Select (or deselect) the layers you want to view on (or remove from) the map, and click the **Submit** button.



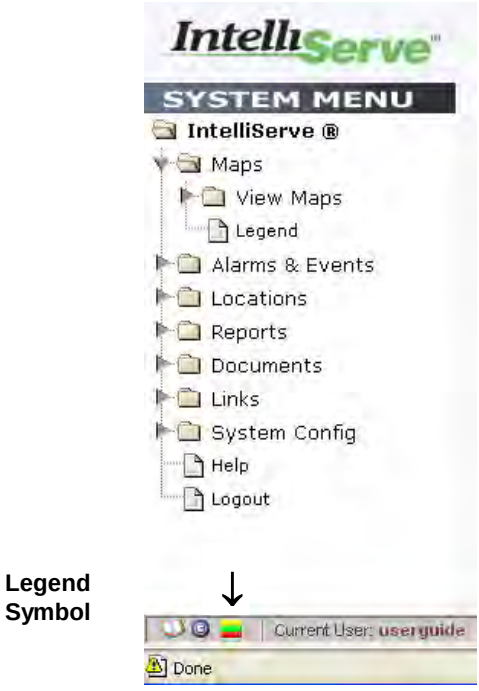
Map Directional Arrows

The **Map Display** provides navigational tools you can use to move around the map display in all directions: an active blue border framing the map labeled North, South, East, and West, and a set of active arrows located in the four corners of the blue border.

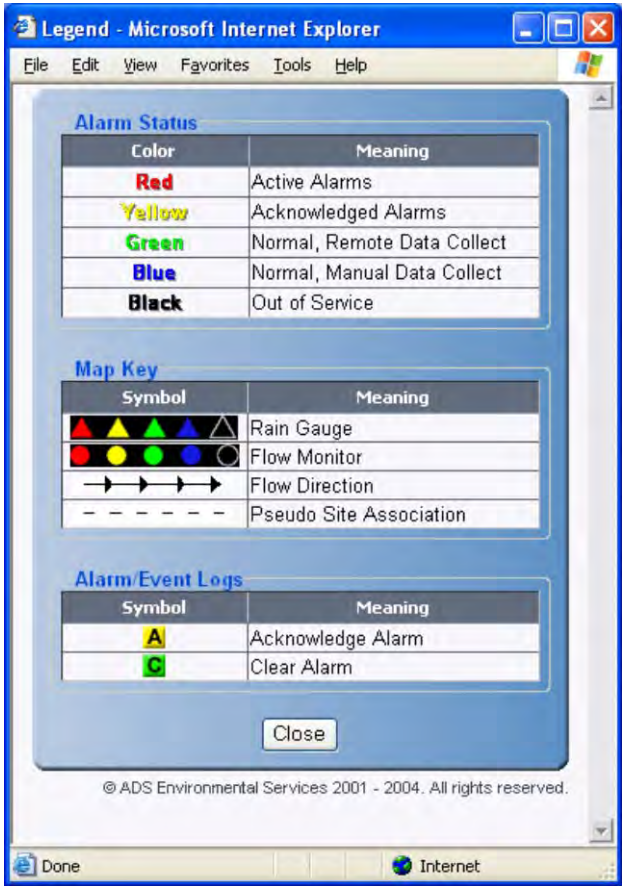
North	Click anywhere on the northern border to display a view north of the current map display.
South	Click anywhere on the southern border to display a view south of the current map display
East	Click anywhere on the eastern border to display a view east of the current map display.
West	Click anywhere on the western border to display a view west of the current map display.
	Click on this icon to display a view northeast of the current map display.
	Click on this icon to display a view northwest of the current map display.
	Click on this icon to display a view southeast of the current map display.
	Click on this icon to display a view southwest of the current map display.

Using the Legend

View map and system symbol descriptions by clicking on the **Legend** symbol located in the **Status Bar** at the bottom of the screen, *or* by selecting **Maps** > **Legend** from the **System Menu**.



Legend link under **View Maps** and icon on status bar



Legend Window

CHAPTER 3

Alarms and Events

IntelliServe's Alarms and Events feature enables users (with the appropriate permissions) to acknowledge and clear alarms triggered by flow monitors and to retrieve event and alarm information from the **IntelliServe**® database. **IntelliServe** broadcasts visual and audible alarms to users online or through pagers, e-mail, and telephone (*as configured*).

Event types configured in **IntelliServe** include the monitor-level (MLI™) events sent from flow monitors and rain gauges to **IntelliServe**, computer-level (CLI™) events generated by **IntelliServe**, and system-related events.

This chapter provides instructions for acknowledging alarms, muting an alarm, and using the **Flow Monitor/Rain Gauge Active Alarm** tables, **Active Alarm Log**, **Alarm History Log**, and **Event Log**.

Working with Alarms

An alarm is an event that has been upgraded by the System Administrator to ensure **IntelliServe** provides notification when data exceeds specified thresholds or when certain conditions are present or occur. **IntelliServe** provides both audible and visual alarms when these events occur. Users also may receive alarm notification through pagers, e-mail, or telephone when the System Administrator has configured these escalation options.

IntelliServe assigns three levels of alarm status to locations: *active*, *acknowledged*, and *cleared*. *Active* and *acknowledged* alarms display in the **System Alarms** menu, map display, **Active Alarm Log**, and **Flow Monitor/Rain Gauge Active Alarm** tables; *cleared* alarms display only in the **Alarm History Log**.

The **Flow Monitor/Rain Gauge Active Alarm** table only displays the alarms involving the selected location; it does not display system alarms.

- **Active (Unacknowledged) Alarms** When an alarm occurs in an alarm basin or the **IntelliServe** system, **IntelliServe** provides the following notifications:

  - The **System Alarms** menu displays **System** (in *red* text) for a system alarm and displays a basin name in red text when a location in that basin is experiencing an alarm. The map also displays the alarming location's map symbol in red.

  - The system emits a continuous audible notification (as long as the **Mute Alarm Sound** option on the **System Alarms** menu is not selected) to all users logged into the system with the proper permissions until a user acknowledges the alarms. *The audible alarm varies based on the sound file configured in the system.* If multiple alarms occur simultaneously, each individual alarm must be acknowledged before audible notification stops.

> **Note:** Be sure your speakers are turned *on* and the volume is set high enough to hear the active alarm audible notification.

  - The **Active Alarm Log** and the **Flow Monitor/Rain Gauge Active Alarms** table (when applicable) display *Alarming* as the status of the alarm and  (acknowledge) for the action required.

- **Acknowledged Alarm (not cleared)** When an acknowledged alarm exists, **IntelliServe** provides the following notifications:
  - The **System Alarms** menu displays **System** (in *yellow* text) for an acknowledged system alarm and displays the basin containing the location with the Acknowledged alarm in yellow text. A yellow map symbol also displays for the corresponding location (when applicable) on the map display.
  - The **Active Alarm Log** and the **Flow Monitor/Rain Gauge Active Alarms** table (when applicable) display *Acknowledged* as the status of the alarm and  (clear) for the action required. If the alarm is set to auto clear upon acknowledgement, **IntelliServe** will remove the alarm from the log. Alarms that you cannot clear manually will display in the log (without a ) until the condition returns to normal.
- **Cleared Alarm** When alarms are cleared, the following conditions exist:
  - The **System Alarms** menu, the **Active Alarm Log**, and the **Flow Monitor/Rain Gauge Active Alarms** table no longer display the alarm. A *green* or *blue* map symbol (*Normal* status) appears for the corresponding location on the map display.
  - The **Alarm History Log** displays the cleared alarm.
- **Normal (No Active or Acknowledged Alarm**) A location without an active or acknowledged alarm displays as a green or blue symbol on the map.
- **Out of Service** An out-of-service location displays as a black symbol on the map.

Muting an Active Alarm

IntelliServe provides an option to silence the *audible* component of active alarms occurring or initiated during the current session for the current user. Silence alarms by selecting the **Mute Alarm Sound** checkbox from the **System Alarms** menu.

Selecting this feature neither acknowledges existing alarms nor prevents future alarms from occurring. In addition, this muting function is in operation for all alarms only during the current session. If you log out, **IntelliServe** deactivates this feature. Therefore, it will not be in operation the next time you log in. You have to reselect this option to mute the alarms for each new session.

Acknowledging Active Alarms

Click on the A (*acknowledge*) button for individual alarms or Acknowledge All for *all* current active alarms to acknowledge active alarm(s). Acknowledging an alarm terminates any related escalation functions in progress.

> **Note:** If multiple alarms are occurring simultaneously, audible notification continues until you have acknowledged *every* alarm (*provided the **Mute Alarm Sound** option is not selected*).

To acknowledge an alarm, choose one of the following options based on the type of alarm, source of the alarm, and the number of alarms occurring simultaneously:

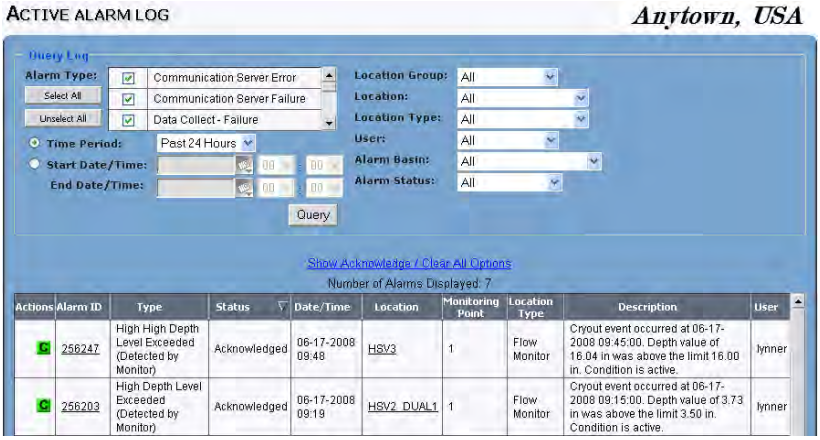
- Acknowledging Alarms on the System Level
- Acknowledging Alarms for a Specific Location

> **Note:** Only users with the appropriate permissions can acknowledge or clear alarms.

Acknowledging Alarms on the System

1. Select **Alarms & Events > Active Alarm Log** from the **System Menu.**

*The **Active Alarm Log** window displays.*



Active Alarm Log window

> **Note:** The number of alarms returned in the query is indicated in the **Number of Records Returned** label.
>
> **Note:** To view the **Current Data** window for a location in the **Active Alarm Log**, click the name in the **Location** column.

2. Click A to acknowledge an individual active alarm or select the **Show Acknowledge/Clear All Options** link and choose the Acknowledge All button to clear *all* active alarms.

*If you acknowledge a system-related alarm, the selected alarm status changes from Alarming to Acknowledged. The A is removed and C (clear alarms) now displays on the **Active Alarm Log**. On the **System Alarms** menu, **System** changes from red to yellow only once all system alarms have been acknowledged.*

> **Note:** Many system alarms will *auto clear* causing the C to not display on the **Active Alarm Log** following acknowledgement.

*If you have acknowledged a monitor-level alarm, the selected alarm status changes from Alarming to Acknowledged. The A is removed. However, the map symbol will not change from red to yellow until all alarms for the selected location have been acknowledged. The name of the alarm basin in the **System Alarms** menu also will not change from red to yellow until all alarms for all locations assigned to the alarm basin have been acknowledged.*

*If an alarm is configured to clear automatically upon acknowledgment, the alarm entry automatically moves from the **Active Alarm Log** to the **Alarm History Log**. The map symbol for the location returns to green or blue (Normal status) only after all alarms for the selected location have been acknowledged and cleared.*

3. Repeat Step 3 for all alarms you want to acknowledge.

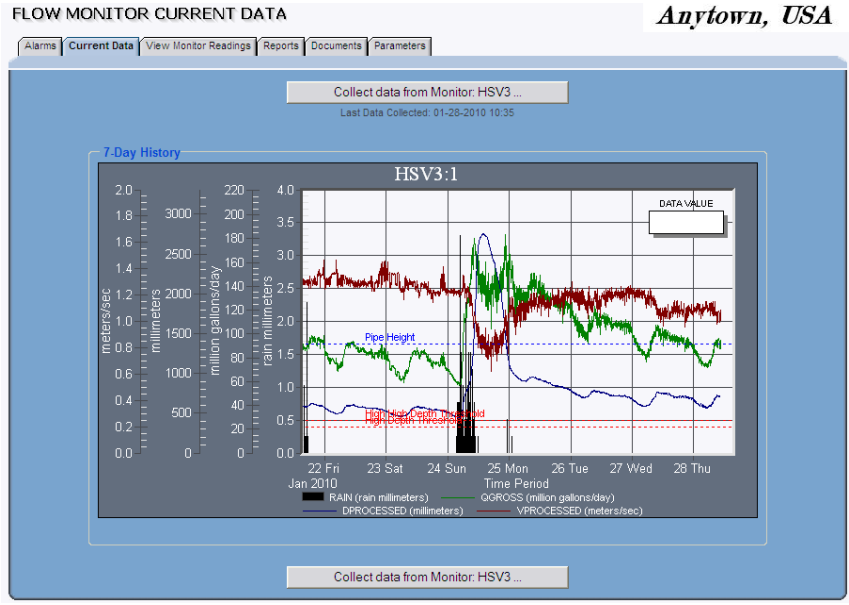
Acknowledging Alarms for a Specific Location

1. Select **Locations > [*Flow Monitors or Rain Gauges*]** from the **System Menu**.

*The **Flow Monitors** or **Rain Gauges** window displays.*

2. Click on the alarming location for which you want to acknowledge alarms.

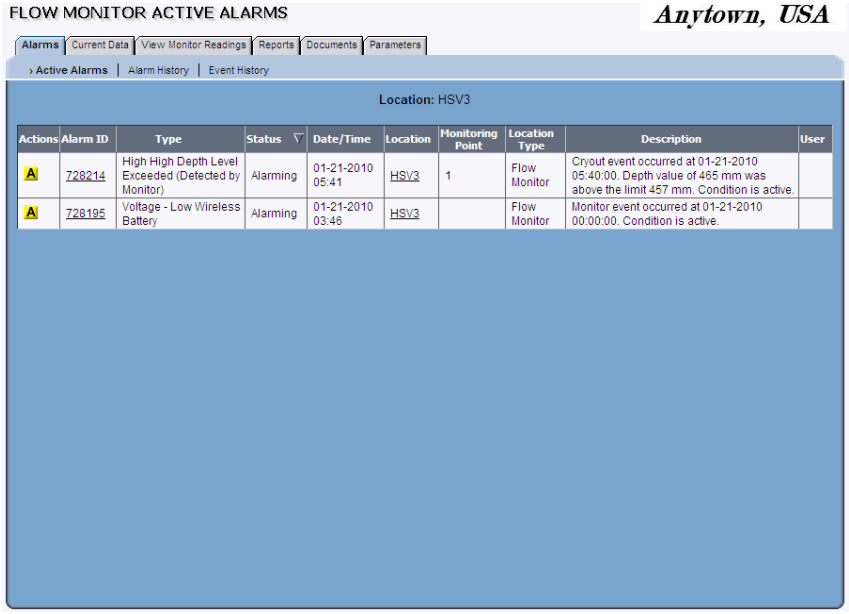
*The **Current Data** window for that location displays.*



Flow Monitor Current Data window

3. Click on the **Alarms** > **Active Alarms** tab.

*The **Flow Monitor/Rain Gauge Active Alarms** window displays.*



Flow Monitor Active Alarms window

> **Note:** Also access the **Flow Monitor/Rain Gauges Active Alarms** window by clicking on the alarming basin in the **System Alarms** menu, then the alarming location on the **Map Display**, and finally the **Active Alarms** tab on the **Flow Monitor/Rain Gauge Current Data** window.

4. Click A to acknowledge an active alarm.

*The alarm **Status** changes from **Alarming** to **Acknowledged** for all users logged into the system, and the **Action** designation changes from A to C. However, the location symbol on the **Map Display** changes from red to yellow only once all alarms for the selected location have been acknowledged. In addition, the name of the alarm basin in the **System Alarms** menu changes from red to yellow once all alarms for all locations assigned to the alarm basin have been acknowledged.*

> **Note:** If an alarm is configured to clear automatically upon acknowledgment, the alarm entry automatically moves to the **Alarm History Log**. The map symbol for the location returns to green or blue (Normal status) only after all alarms for the location have been acknowledged and cleared, manually or automatically.

5. Continue repeating Step 4 to acknowledge each alarm for the selected location. If multiple alarms are occurring simultaneously, audible notification continues until every alarm is acknowledged.

Deadbands

Some alarms may persist without returning to normal once flow conditions fall below the specified threshold that originally initiated the alarm. This can occur because many events include an established *deadband* that exists around the threshold to prevent the system from alarming repeatedly when flows fluctuate around the threshold. The deadband ensures that an alarm does not return to normal until readings occur outside the deadband in the pre-alarm range.

For example, assume the flow in a 12-inch pipe begins to surcharge, completely filling the pipe and traveling up the manhole. Based on this condition, **IntelliServe** initiates an alarm for that location. **IntelliServe** is designed to ensure that a surcharge alarm does not stop until the flow recedes to 2 inches below the pipe height (10 inches) for 4 consecutive readings. Therefore, an alarm will persist if depth readings fall only to 11 inches. However, if the depth readings fall to 9 inches or less for 4 consecutive readings, **IntelliServe** will discontinue and clear the alarming condition.

Refer to *Appendix A, Events*, for details concerning alarm thresholds and deadbands for the following events: *Surcharge Conditions*, *Flow Imbalance in Network*, *Possible Backwater Conditions*, and *Loss of Flow in Network*.

Clearing Acknowledged Alarms

If an alarm does not clear automatically when acknowledged, you can click on the  (clear) or the 

button on the **Active Alarm Log** or the **Flow Monitor/Rain Gauge Active Alarms** window to clear the alarm. When an alarm is cleared, the system moves the alarm entry to the **Alarm History Log**. In addition, the related map symbol (when applicable) changes to green or blue once all alarms for the location have been cleared, indicating a Normal status.

> **Note:** ADS does not recommend manually clearing alarms that indicate a threshold has been exceeded at a location. In addition, **IntelliServe** prevents users from manually clearing certain alarms.

Clear an acknowledged alarm in the following way:

1. Choose one of the following options:

   - **Clearing an Alarm in the Active Alarm Log** From the **System Menu**, click **Alarms & Events > Active Alarm Log** or click on the **System** designation in the **System Alarms** menu to display the **Active Alarm Log** window.
   - **Clearing an Alarm in the Location's Active Alarm Table** From the **System Menu**, click **Location > [Flow Monitor or Rain Gauge]** to display the **Flow Monitors/Rain Gauges** window and then click on the location for which you want to clear the alarm. From the **Flow Monitor/Rain Gauge Current Data** window, click on the **Alarms** > **Active Alarms** tab.

   Note: Clicking **System** also displays the **Active Alarm Log**. Clicking on an alarm basin name displays the map of that basin.

2. Click the  corresponding to an individual alarms or 

to clear all currently active alarms (only available on the **Active Alarm Log**) on the **Active Alarm Log** or the location's **Active Alarm** table.

IntelliServe *clears the selected alarm. This removes the associated basin or* ***System*** *designation from the* ***System Alarms*** *menu provided no other unacknowledged or uncleared alarms exist for the basin or system. IntelliServe also records the entry in the* ***Alarm History Log****. When all alarms are acknowledged and cleared for a location, the map symbol changes to green or blue (Normal status).*

Note: Typically, monitor-level alarms clear after receiving a call-in from a location reporting that an event has cleared. If this type of alarm does not clear automatically, ADS recommends that you collect data from the corresponding location to verify that it has returned to normal before manually clearing the alarm. *The alarm may clear automatically during the on-demand collect.* Refer to *Chapter 4, Data Collection*, for information on collecting data from a flow monitor or rain gauge.

3. (*Applies only when clearing alarms from the Flow Monitor/Rain Gauge Active Alarms table*) Repeat steps 1 through 2 to clear alarms for another flow monitor or rain gauge location.

Using the Active Alarm Log

The **Active Alarm Log** displays a complete list of alarms currently active in the system, including any alarms that have not been cleared. Note that when initially displayed, the **Active Alarm Log** contains alarming (unacknowledged) and alarms acknowledged within the past 24 hours.

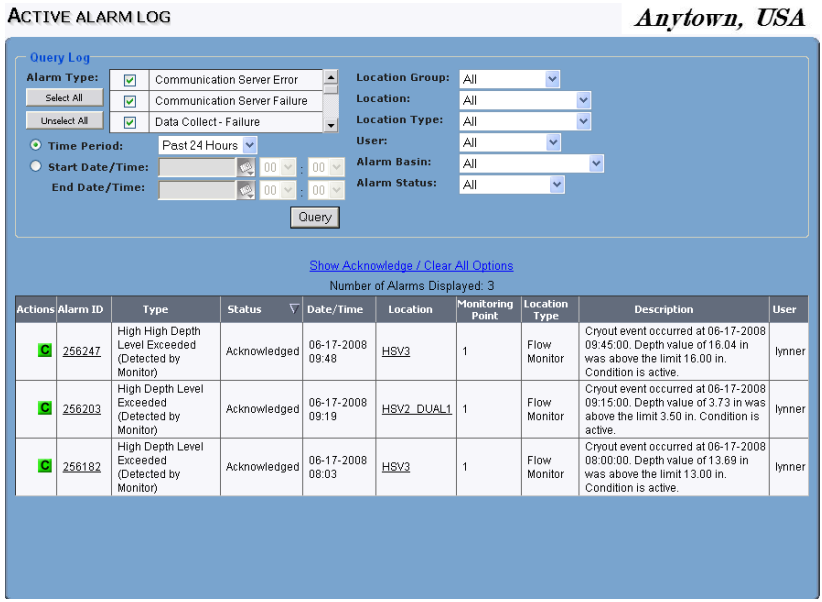
Using the **Active Alarm Log,** you can query and sort the active alarms displayed in the log. You also can acknowledge alarms, manually clear alarms, and view details of events associated with selected alarms.

You can retrieve specific active alarm information from the **Active Alarm Log** by generating a query. You can select one or more options from the **Query Log** depending on the extent (range) of the information you want to retrieve. The results from the query are displayed in the table in the bottom half of the **Active Alarm Log** window.

Query the **Active Alarm Log** in the following way:

1. Select **Alarms & Events** > **Active Alarm Log** from the **System Menu**.

*The **Active Alarm Log** window displays all alarms that have occurred in the previous 24 hours, including unacknowledged alarms.*



Active Alarm Log window

2. On the **Query Log**, select an option from one or more drop-down lists or checkbox fields to retrieve event information from the database. Selecting the default option ***All*** enables you to retrieve all the data existing in the database for the related item.

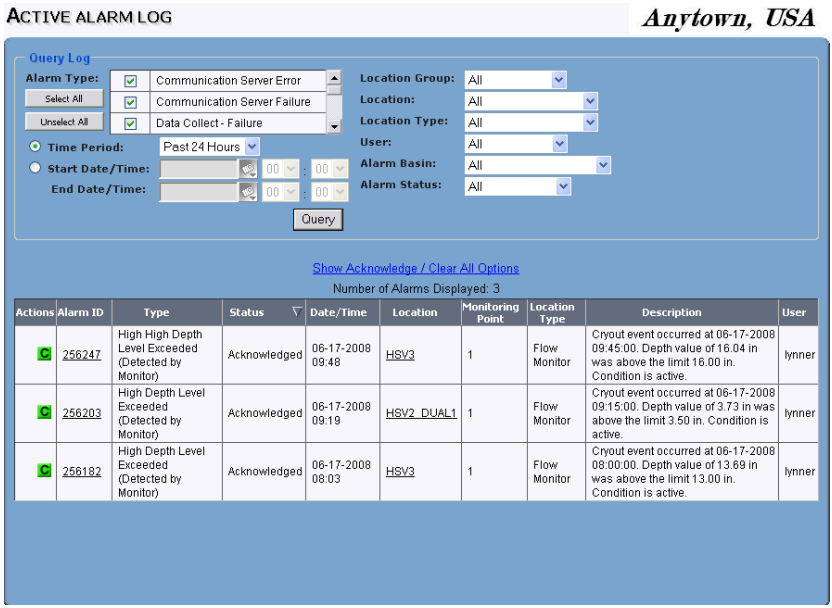
> **Note:** Selecting an option from *both* **Location Group** *and* **Location Name** will return data only if the selected location also exists in the selected location group.

- **Alarm Type** Select the type(s) of alarm(s) you want to include in the query.
- **Alarm Status** Select the alarm status you want to include in the query.
- Select a pre-defined time period or designate a specific time range for the alarms you want to view:
  - **Pre-Defined Time Period** Choose a pre-defined time range by selecting the **Time Period** button and selecting an option from the drop-down list, or set specific dates and times from the **Start Date/Time** and **End Date/Time** fields.
  - **Specified Date Range** Designate a specific date range by selecting the associated **Start/End Date/Time** radio button. Next, from **Start Date/Time**, enter or click on the calendar icon  to select the start date and then select the start time from the drop-down list. Then, from **End Date/Time**, enter or click on the calendar icon  to select the end date and then select the end time from the drop-down list.
- **Location Group** Select the location group you want to include in the query.
- **Location Name** Select the location logging events you want to include in the query.
- **Location Type** Select the location type logging events you want to include in the query.
- **User** If you selected **Acknowledged** in the **Alarm Status** field, select the system user who acknowledged events you want to include in the query.

- ❑ **Alarm Basin** Select the alarm basin containing locations logging alarms you want to include in the query.

3. Click on the **Query** button to display the list of alarms based on the selected filters.

The **Active Alarm Log** *window displays alarms based on the selected filters.*



Active Alarm Log window

Note: Sort the data in the results table for any column by clicking on the column heading. Click on the column heading a second time to reverse the order of the data under each column heading.

Note: The alarm log shows the number of alarms/events that returned for the query. If the number of alarms/events exceeds 2000, then the most recent 2000 are returned, and a message appears that states not all alarms/events were returned. If so, then you should modify the query so that fewer alarms/events are returned.

4. (*optional*) You can click on a name in the **Location** column of the alarm table to view the **Current Data** tab for the location.

Viewing Event Details

You can view the events associated with a selected alarm by clicking on the event ID in the **Alarm Events** window. While viewing event details, you also can add comments to the events associated with the selected alarm.

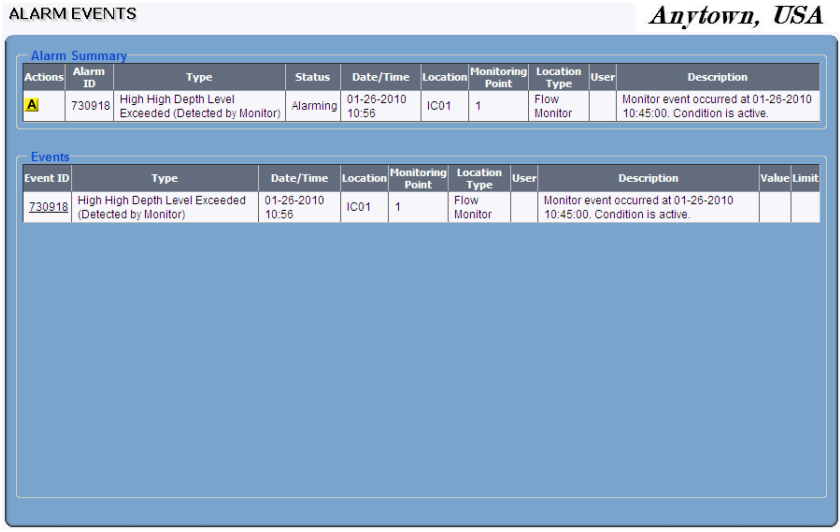
View event details in the following way:

1. Select **Alarms & Events** > **Active Alarm Log** from the **System Menu**,

*The **Active Alarm Log** window displays.*

2. Click on the **Alarm ID** to view event details for the alarm.

*The **Alarm Events** window displays a summary of the selected alarm and lists all events received by the system for the alarm.*



Alarm Events window

3. View the summary of an event by clicking on an Event ID in the **Events** table. The **Event Summary and Comments** window appears.

4. If appropriate, add information related to the event.

   - ❑ Click on the **Add Comment** button and enter comments (up to 1000 characters) in the **Comment** dialog.
   - ❑ Click on the **Save** button to save the comment.

*Clicking **Save** closes* the ***Add Comment** dialog. Your user ID, the date and time you entered the comments, and the comments you entered display in the **Event Comments** table.*

> **Note:** You can enter additional comments for the same event, but the system does not enable you to delete or modify a comment after it has been submitted.

Using the Alarm History Log

The **Alarm History Log** window displays a complete list of cleared alarms existing in the system. You can use the **Alarm History Log** to query and sort the cleared alarms displayed in the table and to access details of events associated with selected alarms.

Querying the Alarm History Log

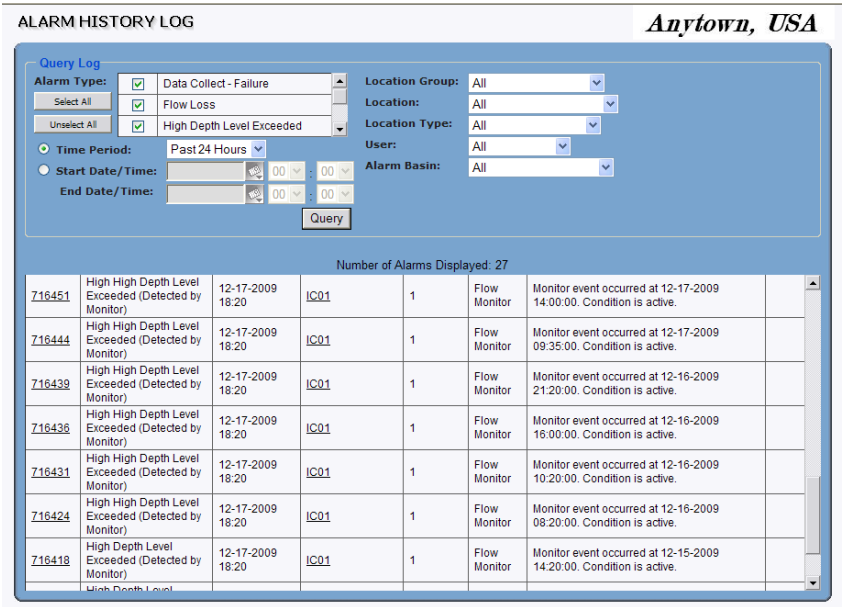
You can retrieve specific alarm information from the **Alarm History Log** by generating a query from the **Query Log**. Note that when the **Alarm History Log** is initially displayed, it displays the alarming and acknowledged alarms that have been cleared in the past 24 hours.

Query the **Alarm History Log** for multiple locations or an individual location using one of the following methods:

Query the Alarm History Log for Multiple Locations:

1. Select **Alarms & Events** > **Alarm History Log** from the **System Menu**,.

***The Alarm History Log** window displays the alarms cleared within the last 24 hours.*



Alarm History Log window

> **Note:** Refer to *Appendix A, Events*, for a description of the events/alarms configured in **IntelliServe**.
>
> **Note:** The alarm log shows the number of alarms/events that returned for the query. If the number of alarms/events exceeds 2000, the most recent 2000 will be returned with a message stating that not all alarms/events were returned. If this occurs, modify the query to return fewer alarms/events.

2. Query the **Alarm History Log** by selecting an option from one or more of the drop-down lists or checkbox fields in the **Query Log**. Refer to *Using the Active Alarm Log* on page 3-10 for more details on selecting query options.
3. Click on the **Query** button to display a list of alarms based on the selected filters.

The results table displays the cleared alarms matching the selected filters.

> **Note:** Sort the data in the results table of a **Query Log** for any column by clicking on the column heading. Click on the column heading a second time to reverse the order of the data under each column heading.

4. (*optional*) You can click on a name in the **Location** column of the history table to see the **Current Data** tab for the location.

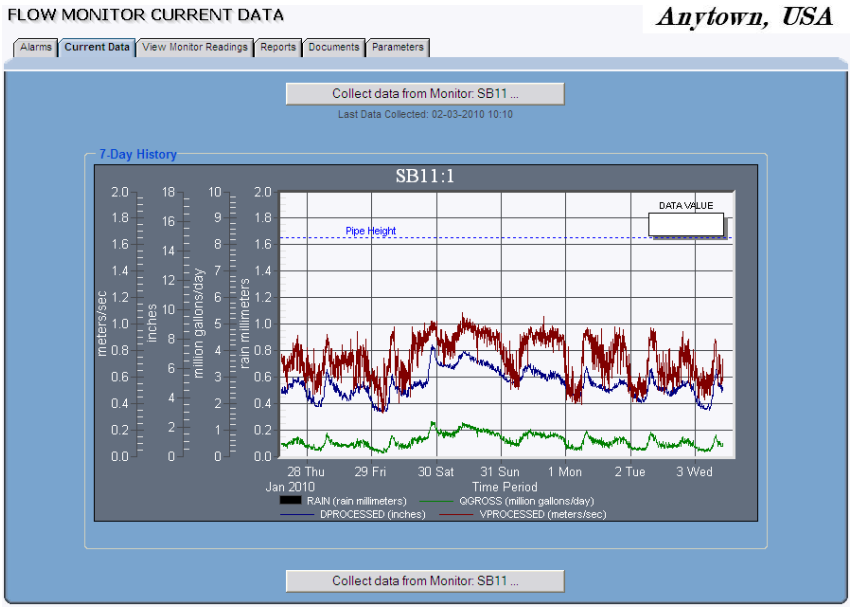
Querying the Alarm History Log for an Individual Location

1. Select **Locations** > **[*Flow Monitors or Rain Gauges*]** from the **System Menu**.

*The **Flow Monitors or Rain Gauges** window displays.*

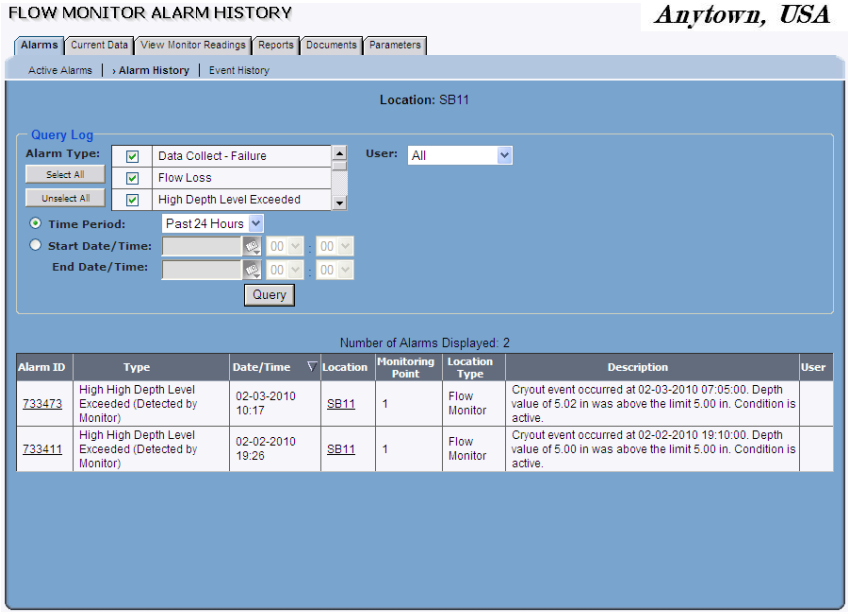
2. Click on the location for which you want to review historical alarms.

*The **Current Data** window displays for the selected location.*



Flow Monitor Current Data window

3. Select on the **Alarms** > **Alarm History** tab to display the **Flow Monitor/Rain Gauge Alarm History** window.



Flow Monitor Alarm History window

> **Note:** Refer to *Appendix A, Events*, for a description of the events/alarms configured in **IntelliServe**.
>
> **Note:** The alarm log shows the number of alarms/events that returned for the query. If the number of alarms/events exceeds 2000, the most recent 2000 will be returned with a message stating that not all alarms/events were returned. If this occurs, modify the query to return fewer alarms/events.

4. Query the **Alarm History Log** by selecting an option from one or more of the drop-down lists or checkbox fields in the **Query Log**. Refer to *Using the Active Alarm Log* on page 3-10 for more details on selecting query options.
5. Click on the **Query** button to display a list of alarms based on the selected filters.

The results table displays the cleared alarms matching the selected filters.

> **Note:** Sort the data in the results table of a **Query Log** for any column by clicking on the column heading. Click on the column heading a second time to reverse the order of the data under each column heading.

Viewing Alarm Details

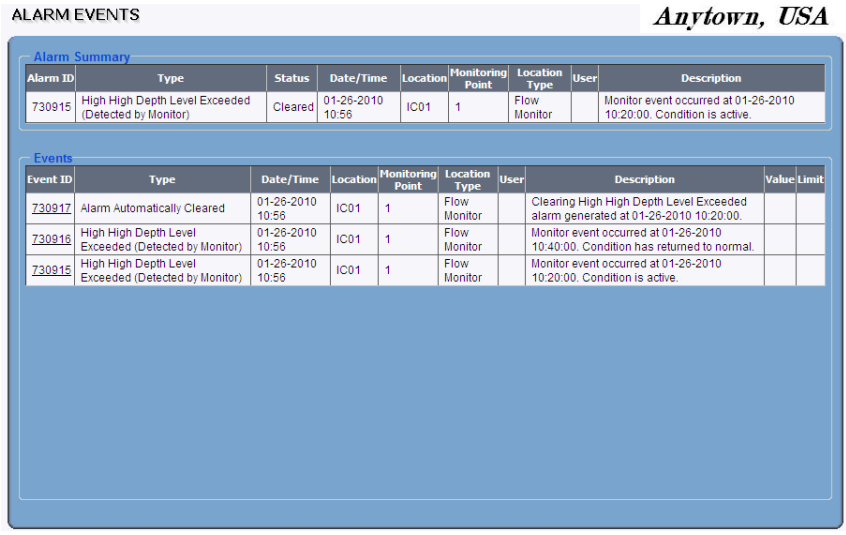
You can view specific alarm details and event comments for an alarm in the **Alarm History Log**. Each event received by the system is identified by a unique **Alarm ID** generated by the system.

View alarm details for multiple locations simultaneously or for an individual location using the following:

Viewing Alarm Details for Multiple Locations:

1. Select **Alarms & Events** > **Alarm History Log** from the **System Menu** to view alarm details for multiple locations.
2. Click on the **Alarm ID** to view event details corresponding to the alarm.

*The **Alarm Events** window displays a summary of the selected alarm and lists all events received by the system for the alarm.*


ALARM EVENTS

Anytown, USA

Alarm Summary

Alarm ID	Type	Status	Date/Time	Location	Monitoring Point	Location Type	User	Description
730915	High High Depth Level Exceeded (Detected by Monitor)	Cleared	01-26-2010 10:56	IC01	1	Flow Monitor		Monitor event occurred at 01-26-2010 10:20:00. Condition is active.

Events

Event ID	Type	Date/Time	Location	Monitoring Point	Location Type	User	Description	Value	Limit
730917	Alarm Automatically Cleared	01-26-2010 10:56	IC01	1	Flow Monitor		Clearing High High Depth Level Exceeded alarm generated at 01-26-2010 10:20:00.		
730916	High High Depth Level Exceeded (Detected by Monitor)	01-26-2010 10:56	IC01	1	Flow Monitor		Monitor event occurred at 01-26-2010 10:40:00. Condition has returned to normal.		
730915	High High Depth Level Exceeded (Detected by Monitor)	01-26-2010 10:56	IC01	1	Flow Monitor		Monitor event occurred at 01-26-2010 10:20:00. Condition is active.		

Alarm Events window

3. View the summary of an event by clicking an **Event ID** in the **Events** table. The **Event Summary and Comments** window displays.
4. If appropriate, add information related to the event.
   - ❑ Click on the **Add Comment** button and enter comments (up to 1000 characters) in the **Comment** dialog.
   - ❑ Click on the **Submit** button to save the comment.

*Clicking **Save*** closes the **Add Comment** *dialog. The **Event Comments** table displays your user ID, the date and time of your comments, and the comments you entered.*

> **Note:** You can enter additional comments for the same event, but you cannot delete or modify a comment after it has been submitted.

Viewing Alarm Details for an Individual Location

1. Select **Locations** > **[*Flow Monitors or Rain Gauges*]** from the **System Menu**.

*The **Flow Monitors** or **Rain Gauges** window displays.*

2. Click on the location for which you want to review alarm details.

*The **Current Data** window displays for the selected location.*

3. Select **Alarms** > **Alarm History** to display the **Alarm History** window.
4. Perform a **Query** in the **Alarm History** window to view alarms.
5. Click on the **Alarm ID** to view event details corresponding to the alarm.

*The **Alarm Events** window displays a summary of the selected alarm and lists all events received by the system for the alarm.*

Flow Monitor Alarm Events window

6. View the summary of an event by clicking on an **Event ID** in the **Events** table.

*The **Event Summary and Comments** window displays.*

7. If appropriate, add information related to the event.

   - ❑ Click on the **Add Comment** button and enter comments (up to 1000 characters) in the **Add Comment** dialog.
   - ❑ Click on the **Submit** button to save the comment.

*Clicking **Save** closes the **Add Comment** dialog. The **Event Comments** table displays your user ID, the date and time of your comments, and the comments you entered.*

> **Note:** You can enter additional comments for the same event, but you cannot delete or modify a comment after it has been submitted.

Working with Events

Events occur when measurements or data exceed specific thresholds or when certain conditions are present or arise. Three event types are available through **IntelliServe**:

- Monitor-level (MLI) events sent from the monitor to **IntelliServe** (example: *High Depth Level Exceeded*)
- Computer-level (CLI) events generated by **IntelliServe** (example: *Flow Imbalance in the Network*)
- System-related events (example: *Invalid Password*)

When **IntelliServe** generates an event, an entry is added to the **Event Log**. The **Event Log** contains an historical summary of all system events, including the location name, event type, date, time, and description of the event. Each time you display the **Event Log**, it displays the events that have occurred within the past 24 hours.

Using the **Event Log**, you can query and sort the system database. You also can view details related to each event and add additional information as comments.

> **Note:** You must have the *View Event Log* permission to display and query the **Event Log**.

Querying the Event Log

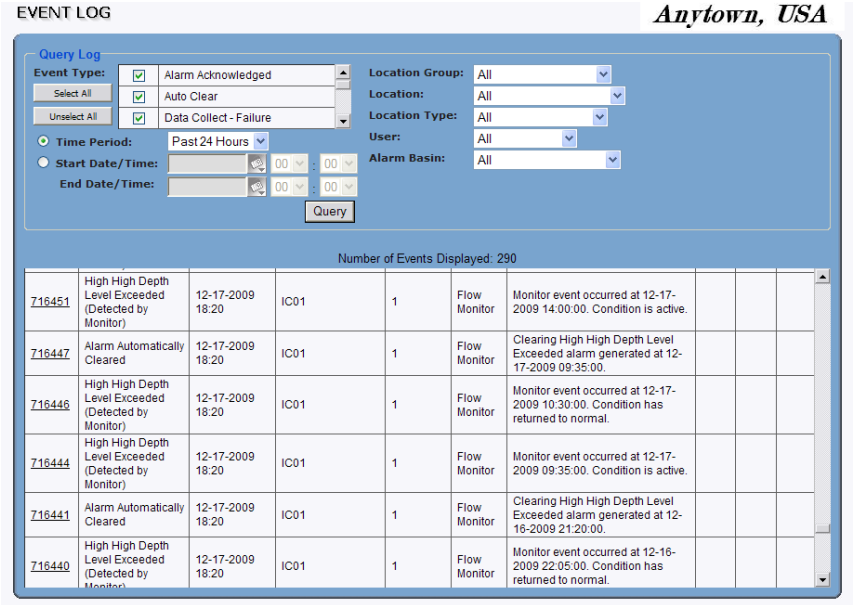
You can retrieve and display specific event information by selecting options and generating a query from the **Query Log**. You can select one or more options from the **Query Log** depending on the extent (range) of information you want to retrieve. The results from the query display in the **Events** table in the bottom half of the **Event Log** window.

Query the **Event Log** for multiple locations simultaneously or query the **Event Log** for an individual location using the following:

Querying the Event Log for Multiple Locations

1. Select **Alarms & Events** > **Event Log** from the **System Menu**.

*The **Event Log** window displays the events that have occurred within the past 24 hours.*



Event Log window

2. Select options from the **Query Log** to retrieve event information from the database. Selecting the default option ***All*** enables you to retrieve all of the data existing in the database for the related item.

   - **Event Type** Select the type(s) of event(s) you want to query.
   - Select the time range for the events you want to view:
     - **Pre-Defined Time Period** Choose a pre-defined time period by selecting the **Time Period** radio button and selecting the appropriate option from the corresponding drop-down list.

– **Specific Time Period** Designate a specific date/time range by selecting the corresponding **Start/End Date/Time** radio button. Next, from **Start Date/Time**, enter or click on the calendar icon  to select the start date and then select the start time from the drop-down list. Then, from **End Date/Time**, enter or click on the calendar icon  to select the end date and then select the end time from the drop-down list.

Note: Typically, you would only select an option from *one* of the following to create a query.

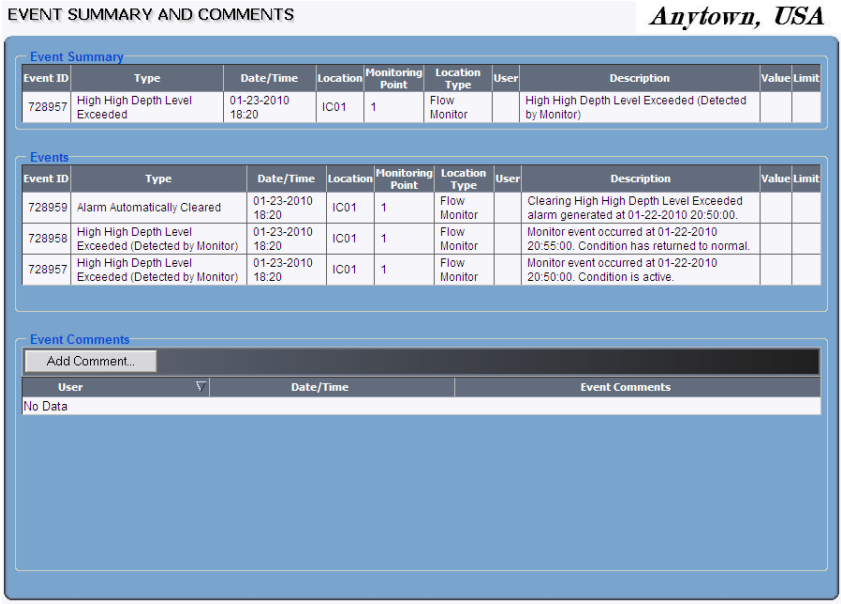
- **Location Group** Select the location group you want to include in the query.
- **Location Name** Select the location logging events you want to include in the query.
- **Location Type** Select the location type logging events you want to include in the query.
- **User** Select the system user who acknowledged events you want to include in the query.
- **Alarm Basin** Select the alarm basin containing locations logging events you want to include in the query.

3. Click on the **Query** button to display the list of events based on the selected filters.

*The **Event Log** displays events based on the selected filters.*

4. Click on any **Event ID** to view event details.

*The **Event Summary and Comments** window displays a summary of the selected alarm and lists all events received by the system for the alarm.*


EVENT SUMMARY AND COMMENTS

Anytown, USA

Event Summary

Event ID	Type	Date/Time	Location	Monitoring Point	Location Type	User	Description	Value	Limit
728957	High High Depth Level Exceeded	01-23-2010 18:20	IC01	1	Flow Monitor		High High Depth Level Exceeded (Detected by Monitor)		

Events

Event ID	Type	Date/Time	Location	Monitoring Point	Location Type	User	Description	Value	Limit
728959	Alarm Automatically Cleared	01-23-2010 18:20	IC01	1	Flow Monitor		Clearing High High Depth Level Exceeded alarm generated at 01-22-2010 20:50:00.		
728958	High High Depth Level Exceeded (Detected by Monitor)	01-23-2010 18:20	IC01	1	Flow Monitor		Monitor event occurred at 01-22-2010 20:55:00. Condition has returned to normal.		
728957	High High Depth Level Exceeded (Detected by Monitor)	01-23-2010 18:20	IC01	1	Flow Monitor		Monitor event occurred at 01-22-2010 20:50:00. Condition is active.		

Event Comments

Add Comment...

User	Date/Time	Event Comments
No Data		

Event Summary and Comments window

Querying the Event Log for an Individual Location

1. Select **Locations** > **[*Flow Monitors or Rain Gauges*]** from the **System Menu**.

*The **Flow Monitors** or **Rain Gauges** window displays.*

2. Click on the location for which you want to review the **Event Log**

*The **Current Data** window displays for the selected location.*

3. Select **Alarms** > **Event History** to display the **Event History** window.

4. Select options from the **Query Log** to retrieve event information from the database. Selecting the default option **All** enables you to retrieve all of the data existing in the database for the related item.

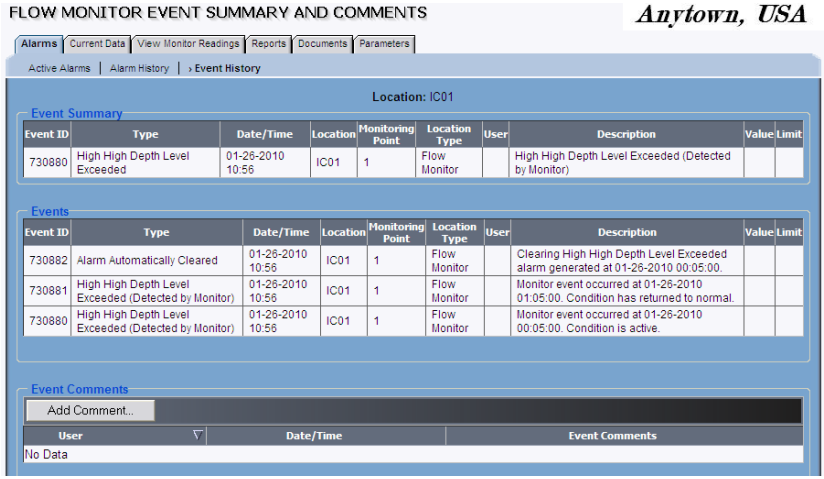
   - ❑ **Event Type** Select the type(s) of event(s) you want to query.
   - ❑ Select a pre-defined time period or designate a specific time range for the events you want to view:

- **Pre-Defined Time Period** Choose a pre-defined time period by selecting the **Time Period** radio button and selecting the appropriate option from the corresponding drop-down list.
- **Specific Time Period** Designate a specific date/time range by selecting the corresponding **Start/End Date/Time** radio button. Next, from **Start Date/Time**, enter or click on the calendar icon  to select the start date and then select the start time from the drop-down list. Then, from **End Date/Time**, enter or click on the calendar icon  to select the end date and then select the end time from the drop-down list.

❑ **User** Select the system user who acknowledged events you want to include in the query.

5. Click on the **Query** button to display the list of events based on the selected filters.
6. Click on any **Event ID** to view event details.

*The **Event Summary and Comments** window displays a summary of the selected alarm and lists all events received by the system for the alarm.*



Flow Monitor Event Summary and Comments window

*View the summary of an event by clicking an **Event ID** in the **Events** table. The **Event Summary and Comments** window appears.*

Sorting the Event Log Display

Sort the data in the results table of a **Query Log** for any column by clicking on the column heading. Click the column heading a second time to reverse the order of the data under each column heading.

The default setting of the data is in descending order (chronological) based on the date and time of the event; the most recent event is listed first. If two or more fields within a sorted column are the same, the system first sorts the field (for example, *user*) and then sorts the time an event occurred, ordering events from the most recent to the first occurrence.

Event Log (query) header

Viewing Event Details

You can view details for each event displayed in the **Event Log**. While viewing events, you also can add comments that provide additional information about the selected event.

View Event Details for Multiple Locations

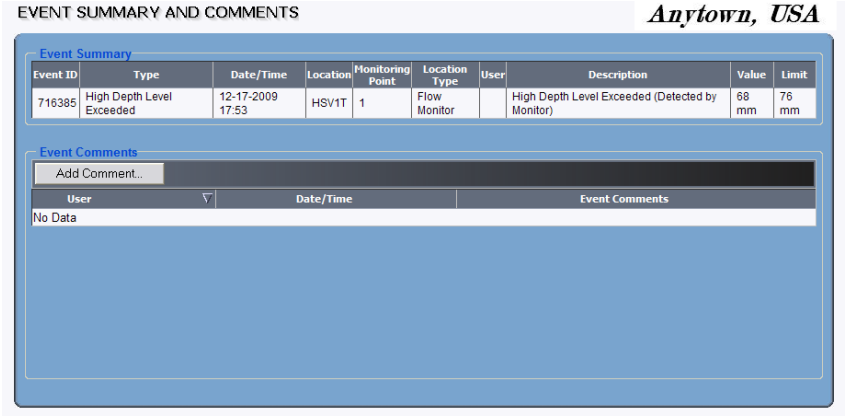
View event details in the following way:

1. From the **System Menu**, select **Alarms & Events** > **Event Log**.

*The **Event Log** window displays the events generated in the system in the last 24 hours.*

2. If necessary, perform a query to display the desired events.
3. Click on any **Event ID** to display event information for the selected event.

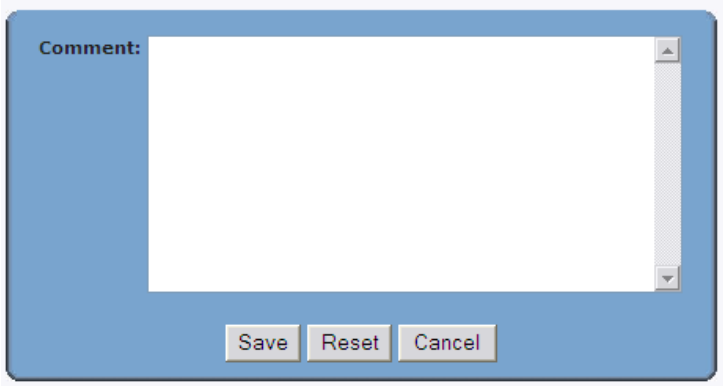
*The **Event Summary and Contents** window displays a summary of the selected event.*



Event Summary and Comments window

4. View the event details provided in the **Event Summary** table on the **Event Summary and Comments** window.

5. If appropriate, add information related to the event by clicking on the **Add Comment** button and entering comments (up to 1000 characters) in the **Comment** dialog.



Add Comment dialog

6. Click on the **Save** button to save the comment.

*The **Add Comment** dialog closes. The **Event Comments** table displays your user ID, the date and time of your comments, and the comments you entered.*

> **Note:** You can enter additional comments for the same event, but you cannot delete or modify a comment after it has been submitted.

> **Note:** You can sort the event comments by date/time by choosing the **Date/Time** column header of the **Event Comments** table.

View Event Details for an Individual Location

1. Select **Locations** > **[*Flow Monitors or Rain Gauges*]** from the **System Menu**.

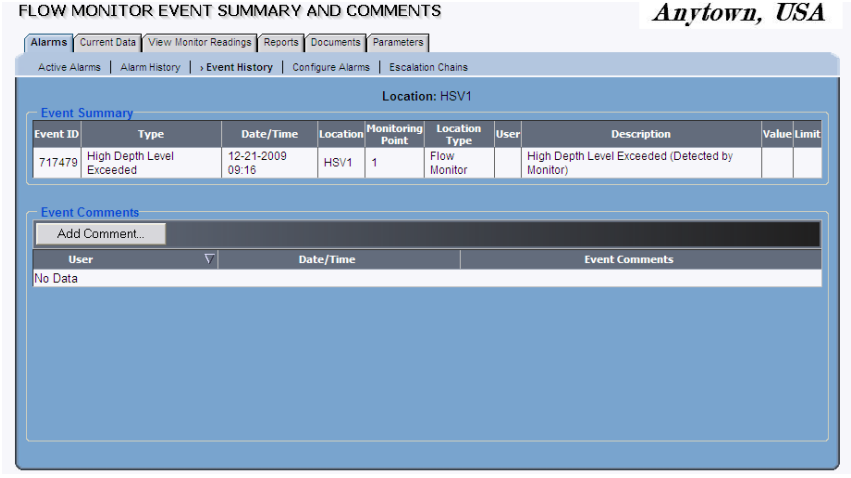
*The **Flow Monitors** or **Rain Gauges** window displays*

2. Click on the location for which you want to review the event log details.

*The **Current Data** window displays for the selected location.*

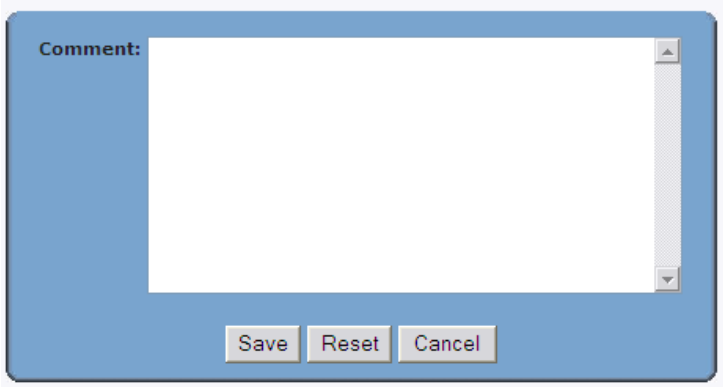
3. Select **Alarms** > **Event History** to display the **Event History** window.
4. If necessary, perform a query to display the desired events.
5. Click on any **Event ID** to display event information details.

The **Event Summary and Contents** *window displays a summary of the selected event.*



Flow Monitor Event Summary and Comments window

6. View the event details provided in the **Event Summary** table on the **Event Summary and Comments** window.
7. If appropriate, add information related to the event by clicking on the **Add Comment** button and entering comments (up to 1000 characters) in the **Add Comment** dialog.



Add Comment dialog

8. Click on the **Save** button to save the comment.

The **Add Comment** *dialog closes. The* ***Event Comments*** *table displays your user ID, the date and time of your comments, and the comments you entered.*

> **Note:** You can enter additional comments for the same event, but you cannot delete or modify a comment after it has been submitted.
>
> **Note:** Sort the event comments by date/time by choosing the **Date/Time** column header of the **Event Comments** table.

CHAPTER 4

Data Collection

IntelliServe® allows the collection of flow monitor and rain gauge data at scheduled intervals based on parameters set by the System Administrator. In addition to scheduled collects, **IntelliServe** allows users with the appropriate permission to collect data from flow monitors, rain gauges, location groups and composite locations on-demand to retrieve the most current data. **IntelliServe** saves this data to the database for reporting.

For more information about the different types of locations, refer to *Chapter 2, Maps and Locations*.

Collecting Data from a Location

Collect data from a flow monitor or rain gauge location on demand in the following way:

1. Select **Locations > [*Flow Monitors or Rain Gauges*]** from the **System Menu** to display the list of locations representing the flow monitors or rain gauges configured in **IntelliServe**.

*The **Flow Monitors** or **Rain Gauges** window displays.*

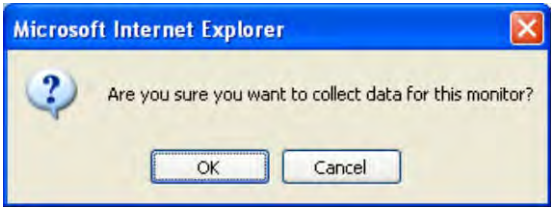
2. Click on the location name corresponding to the flow monitor or rain gauge containing the data you want to collect

*The **Flow Monitor** or **Rain Gauge Current Data** window displays the most recent flow or rain data in the database for the selected location in graphical format.*

> **Note:** You also can access this window from the **Flow Monitors** or **Rain Gauges** window by right-clicking on the location name for which you want to collect the data and then selecting **Current Data** from the drop-down menu.

3. Click on the **Collect Data from [*Monitor or Rain Gauge*]: [*name of selected location*]** button.

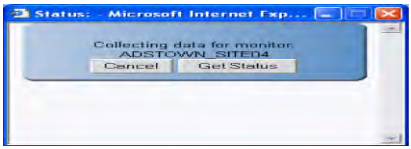
***IntelliServe** requests confirmation to start the data collection process.*



Data collect confirmation dialog

4. Click on the **OK** button to initiate data collection.

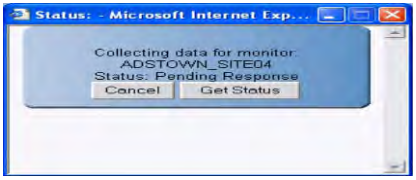
***IntelliServe** initiates the data collection process and the **Status** window displays.*



Status: Collecting data for monitor

5. (*optional*) Click the **Get Status** button to display the status of the collect. Collecting data can take several minutes.

*The **Status** dialog reports the status of the data collect in progress.*



Status: Pending Response

> **Note**: The **Pending Response** status indicates that data collection is in progress.
>
> **Note:** You can display other **IntelliServe** windows while the data collect is in progress by minimizing the **Status** dialog.

*When data collection is complete, the **Status** dialog displays **"Data collect request for monitor or rain gauge [location name] complete."***

Data collect request for monitor complete

6. Click on the **Close** button to exit the dialog.

*Once **IntelliServe** has collected the data, the graph on the **Flow Monitor Graphs** window reflects the most recently collected data.*

> **Note:** View the results of both on-demand and scheduled data collects in the **Event Log**. For more information on viewing the **Event Log**, refer to *Chapter 3, Alarms and Events.*

Collecting Data from a Location Group

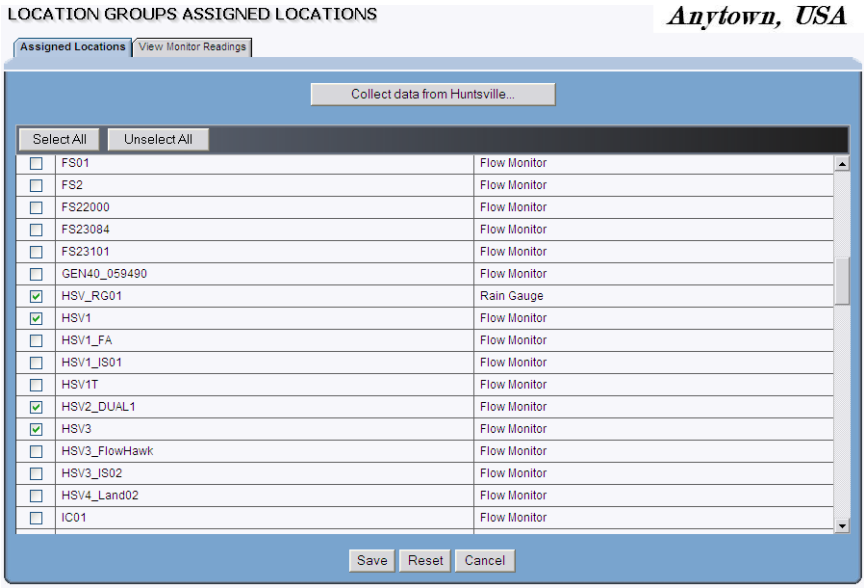
IntelliServe allows you to collect data from all flow monitors, rain gauges and composite locations that are included in a location group. The collection can take several minutes, during which, you can continue working in other areas of **IntelliServe** as needed. Follow these steps to collect data from a location group.

1. Select **Locations** > **Location Groups** from the **System Menu**.

*The **Location Groups** window displays.*

2. Click on the group for which you to collect data.

*The **Location Groups Assigned Location** window displays. This window shows all the locations currently assigned to the selected group.*



Location Groups Assigned Location window

3. Click on the **Collect Data from [*location group name*]** button.

***IntelliServe** requests confirmation to collect data from the location group.*

Data collect confirmation dialog

4. Click on the **OK** button to initiate the data collection process.

IntelliServe *begins the data collection process for all of the monitors in the location group.*

IntelliServe does not provide notification of collection progress, success/ failure, or completion. However, you can monitor progress and determine when collection is complete in one or both of the following ways:

- Reviewing the **Event Log** for *Data Collect* events
- Reviewing the **Current Data** windows for the monitors that are part of the selected location group

Collecting Data from a Composite Location

IntelliServe enables you to collect data on-demand (manually) from a composite location to retrieve the most recent data for display.

> **Note:** After collecting the most recent data, you can view the status of the success of on-demand data collects in the **Event Log**.

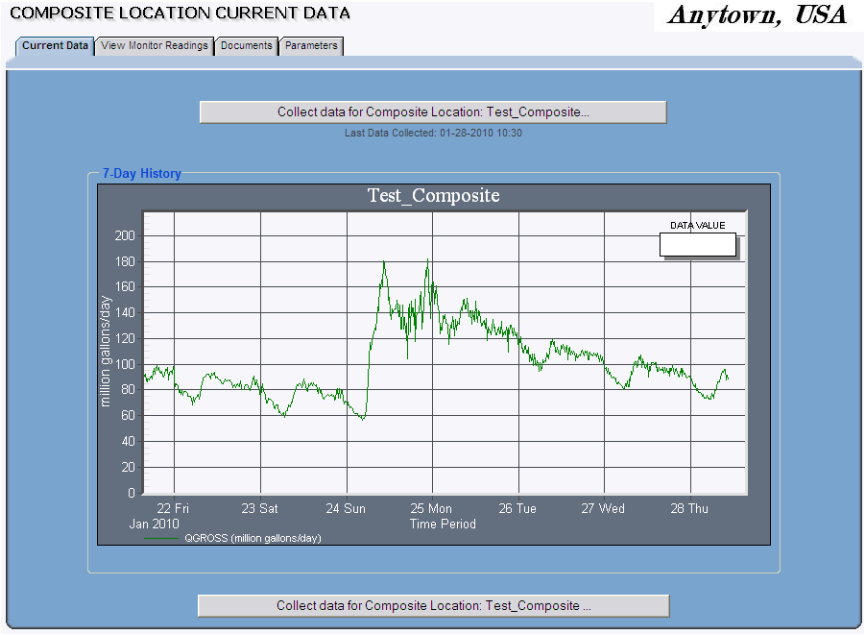
Collect data from a composite location in the following way:

1. Select **Locations** > **Composite Locations** from the **System Menu** to display a list of the composite locations in the **IntelliServe** database.

*The **Composite Locations** window displays.*

2. Click on the name corresponding to the location from which you want to collect data, *or* right-click on the location name and select **Current Data**.

*The **Composite Location Current Data** window displays the selected monitor's 7-day flow history and the most current readings from the database.*



Composite Location Current Data window

3. Click on the **Collect Data for Composite Location: [*composite location name*]** button.

> **Note:** This option is available only if you have permission to collect data.

A confirmation dialog displays.

Data collection confirmation dialog

4. Click on the **OK** button to initiate data collection

IntelliServe *begins the data collection process for all the associated monitors. To determine when the data collection is complete for all the associated monitors, review the event log for Data Collect events.*

Once ***IntelliServe*** *has collected the data, it will update the graph on the* ***Composite Location Current Data*** *window to reflect the most recently collected data. The* ***Parameters*** *tab will also show the most recent collect date for all configured monitors.*

CHAPTER 5

Data Presentation

IntelliServe enables you to display data for flow monitors, rain gauges, composite locations, location groups, and pseudo sites in graphical and tabular data views. Current data (from the past seven days) is displayed in hydrographs and bar charts. Historical data (in which you define the time period) is available in hydrograph, tabular, or scattergraph format for various location types. Available data is accessible through an additional viewing tool called an *uptime chart*.

- **Hydrograph** This view displays data for one or more monitors containing up to seven data entities (e.g., *depth)* over a specified time period.
- **Scattergraph** This view displays a depth entity (*e.g., Dprocessed*) in relation to a velocity entity (e.g., *Vprocessed*) for a specified time period.
- **Tabular Data** This view lists the numerical values for data entities over a specified time period. Up to ten data entities may be selected at one time for display.
- **Uptime Chart** This view displays the percentage of data that is available for a specific entity for each day within a defined date range. A single uptime chart may include multiple entities from multiple locations (flow monitors and rain gauges) and location groups.
- **Cumulative Rain** This view displays the total amount of rainfall that occurs over a specified time period. It also displays rain intensity (i.e., the rate at which rainfall occurs over a specified time period).
- **Pump Times** This view displays the times at which pumps associated with pump stations turn on and off over a specified time period.

Graphs will not display correctly if you do not have the required graphing control installed on your computer. See *Downloading the ADS Graph Control* in *Chapter 1* for more information on downloading this tool.

Note: If you are unable to download the control, please contact the ADS Support Center by phone at (877) 237-9585 or email at adssupportcenter@idexcorp.com for assistance.

Viewing Current Data

IntelliServe enables you to view current data (from the last seven days) for flow monitors, rain gauges, and composite locations. You can view a graphical representation of the c*urrent data* for a location on the **Current Data** tab for a location. For an explanation of the different location types, refer to *Chapter 2, Maps and Locations*.

> **Note:** Your System Administrator is responsible for configuring the entities that display in the **Current Data** window.

If the data on the **Current Data** tab is not current, you can collect the monitor to get up-to-date readings.

View current data for a location in the following way:

1. From the **System Menu**, select **Locations** > **[*location type*]** for the type of location for which you want to view the current data.

IntelliServe *displays the* ***[location type]*** *window, listing all the available locations in the database for the selected location type.*

> **Note:** If a specific location does not display on this list (but exists in the database), you may not have the necessary permission to view that particular location.

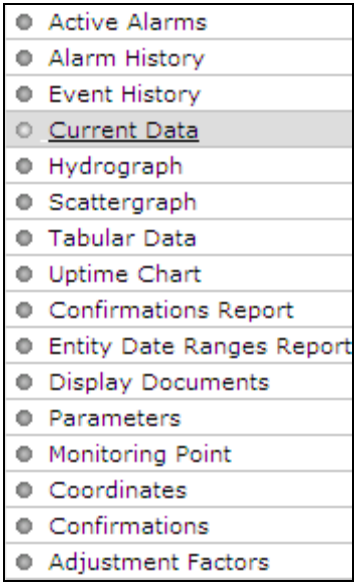
FLOW MONITORS

Location	Alarm Basin	Include in Network	Description
ADSTOWN_SITE01	ADSTown 1,1	Yes	
ADSTOWN_SITE02	ADSTown 1,1	Yes	
ADSTOWN_SITE03	ADSTown 1,1	Yes	
ADSTOWN_SITE04	ADSTown 1,1	Yes	
ADSTOWN_SITE05	ADSTown 1,1	Yes	
ADSTOWN_SITE06	ADSTown 1,1	Yes	
ADSTOWN_SITE07	ADSTown 1,2	Yes	
ADSTOWN_SITE08	ADSTown 1,2	Yes	
ADSTOWN_SITE09	ADSTown 1,2	Yes	
ADSTOWN_SITE10	ADSTown 1,2	Yes	
ADSTOWN_SITE11	ADSTown 1,2	Yes	
ADSTOWN_SITE12	ADSTown 1,2	Yes	
ADSTOWN_SITE13	ADSTown 1,2	Yes	
ADSTOWN_SITE14	ADSTown 1,2	Yes	
ADSTOWN_SITE15	ADSTown 1,2	Yes	
ADSTOWN_SITE16	ADSTown 1,2	Yes	
ADSTOWN_SITE17	ADSTown 1,2	Yes	
ADSTOWN_SITE18	ADSTown 1,3	Yes	
ADSTOWN_SITE19	ADSTown 1,3	Yes	
ADSTOWN_SITE20	ADSTown 1,3	Yes	
ADSTOWN_SITE21	ADSTown 1,3	Yes	
ADSTOWN_SITE22	ADSTown 1,3	Yes	

Example of **Flow Monitors** window

2. Display the current data for a location in one of the following ways:

   - ❑ Click on the name of the location for which you want to view data from the **Location** list.
   - ❑ Right-click on the name of the location for which you want to view data, and select **Current Data** from the options menu.



Options menu for locations

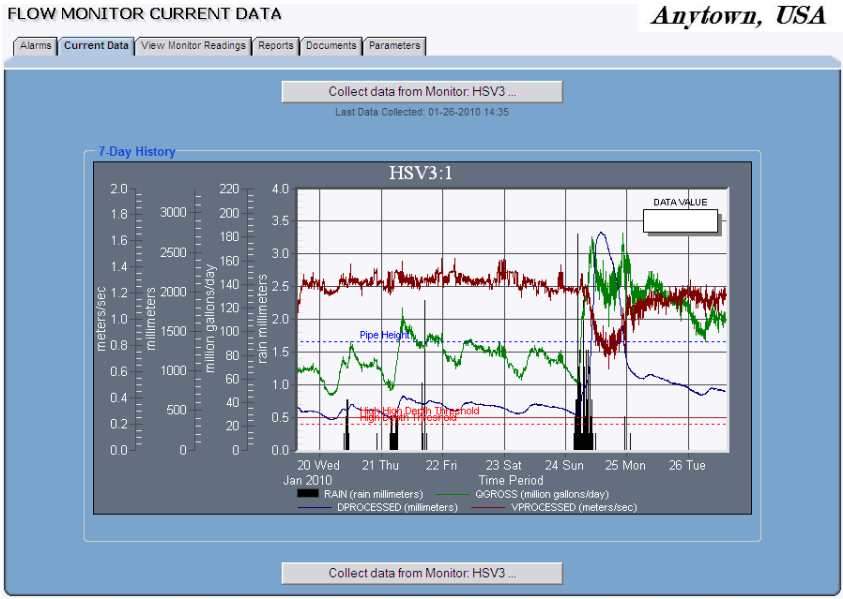
*The **Current Data** window for the selected location type displays.*

*The date on which the data was last collected from the flow monitor displays under the **Collect data** button.*

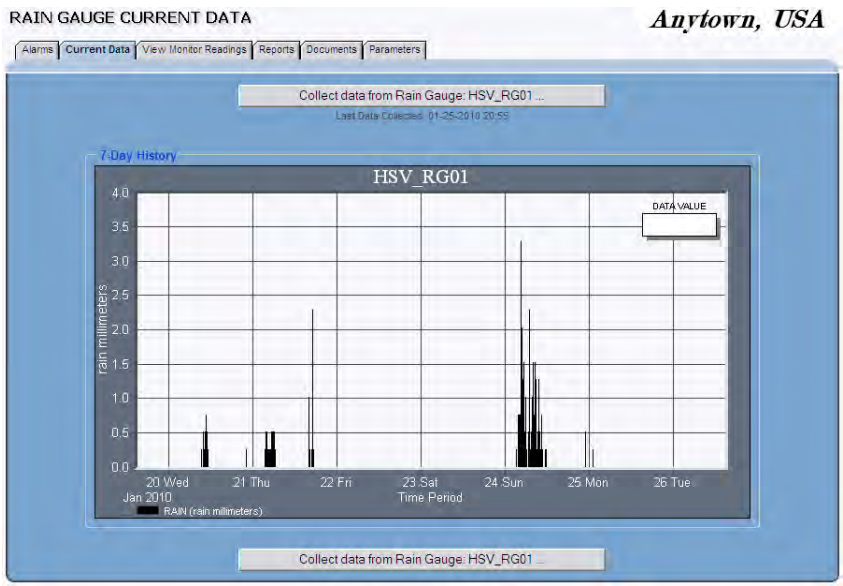
3. (*optional*) Click on the **Collect data** button to retrieve and update the graphs with the most recent data from the location.

> **Note:** The **Collect data** option is available only if you have permission to collect data. If you do not have permission, this option will not display.

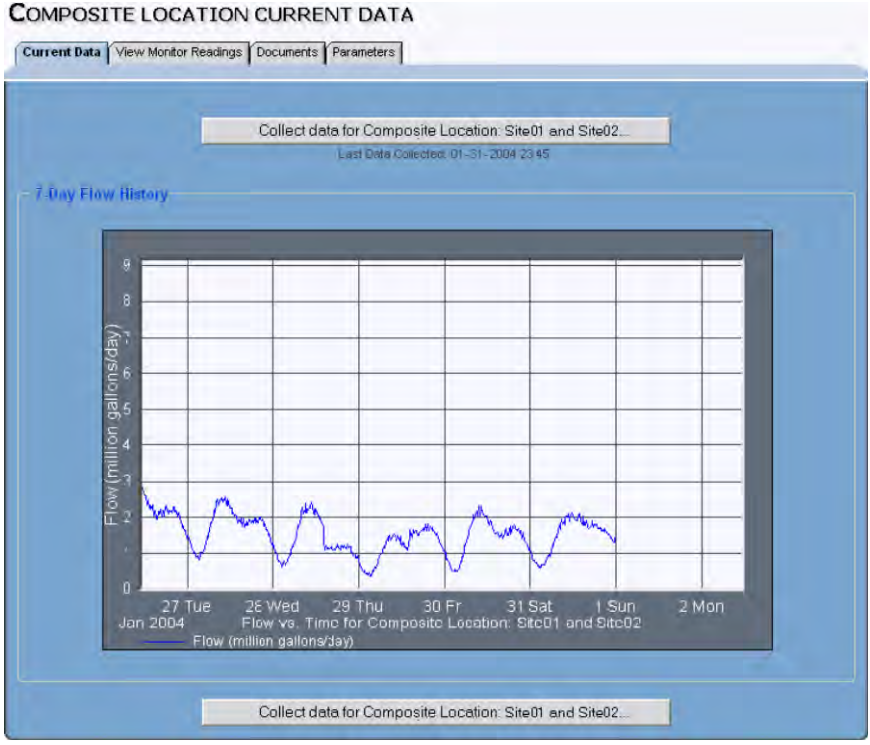
Sample Flow Monitor Current Data



Sample Rain Gauge Current Data



Sample Composite Location Current Data



Viewing Hydrographs

This section explains how to configure and generate hydrographs for flow monitors, rain gauges, pseudo sites, and composite locations. **IntelliServe** allows you to configure and review hydrograph data for an individual location on a single hydrograph page, or configure multiple locations and monitoring points on a single graph or separate graphs. You also can generate hydrographs for location groups.

Generating Hydrographs

Generate and display a hydrograph for an individual location or multiple monitoring points in the following way:

1. From the **System Menu**, select **Locations** > **[*location type*]**.

> **Note:** Generate hydrographs for multiple monitoring points by selecting **Locations > View Monitor Readings > Hydrograph** and then proceed to step 4.

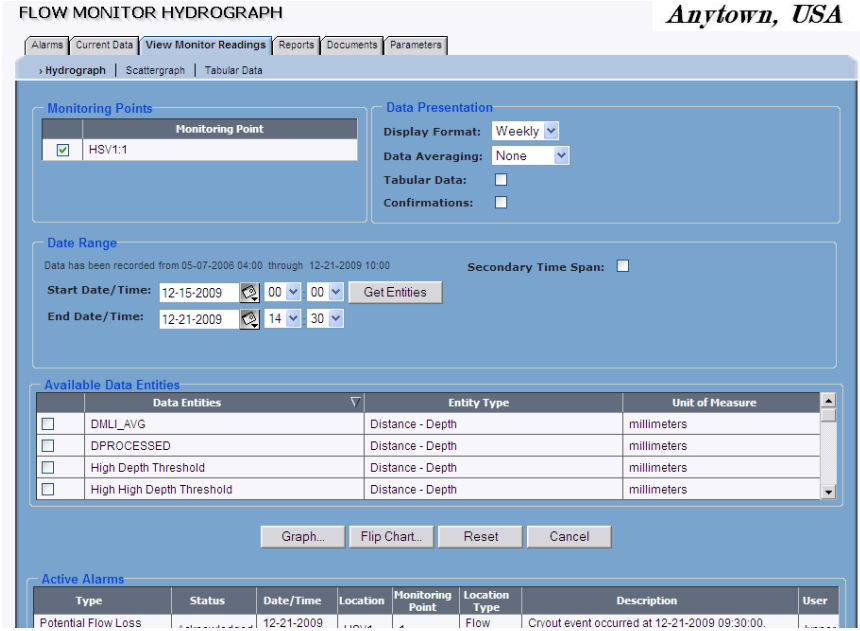
*The **[location type]** window displays the locations currently in the database.*

2. Click on the name of the location you want to view from the **Location** column.

*The **[location type] Current Data** window displays for the selected location.*

3. Select **View Monitor Readings** > **Hydrograph**.

*The **Hydrograph** window displays the options for generating the hydrograph for the selected location.*



Flow Monitor Hydrograph window

4. Select the monitoring point(s) for which you want to generate hydrographs from the **Monitoring Points** list.

5. Select the interval at which to display the data on the hydrograph from the **Display Format** drop-down list:

   - **Daily** This option displays data in a 24-hour format.
   - **Weekly** This option displays data in a 7-day weekly format.
   - **Monthly** This option displays data in a 30-day format.

6. Select the interval at which to average the data points on the hydrograph from the **Data Averaging** drop-down list:

   Note: IntelliServe performs data averaging for all data entities except *Rain*, which is presented as a total for the interval.

   - **None** Select this option to graph each data point and perform no data averaging for the selected time interval.
   - **15-minute** Select this option to average data on a 15-minute interval.

- **Hourly** Select this option to average data on an hourly interval.
- **Daily** Select this option to average data on a daily interval.

7. (*optional*) Select the **Tabular Data** checkbox to include an option on the hydrograph for viewing the data in the numerical, columnar format.
8. (*optional*) Select the **Plot Negative Depths** checkbox to include negative depth data on the hydrograph. In the default mode, **IntelliServe** does not include negative depth readings on hydrographs.
9. (*optional*) Select the **Confirmations** checkbox to include confirmations performed for the location within the designated date range on the hydrograph. Make sure all the confirmations you want to include on the graph have already been imported into the **IntelliServe** database.
10. Specify the time period of data for the hydrograph in the **Date Range** section:

    - **Start Date/Time** Enter or click the calendar icon  to select the start date and then select the corresponding time from the drop-down lists.
    - **End Date/Time** Enter or click the calendar icon  to select the end date and then select the corresponding time from the drop-down lists.

11. (*optional*) Select **Secondary Time Span** to add another separate time period to the graph. Enter only a start date and time; **IntelliServe** automatically calculates the end date and time for the secondary time span.
12. Click on the **Get Entities** button to display the list of entities for the selected monitoring point. Refer to *Appendix B, Data Entities*, for descriptions of the data entities available in **IntelliServe**.

Note: If you select entities that have no data, those entities will not display on the hydrograph or in the legend under the graph.

Note: If you select a location corresponding to a *non-ADS* flow monitor location, the only data entity you can view in a hydrograph is *Non_ADS_Flow_Quantity*.

Note: Each time you edit the date range or change the selected monitoring points, you must regenerate the list of entities by clicking on the **Get Entities** button.

13. Select the checkboxes corresponding to the entities you want on the hydrograph from the **Available Data Entities** table. Select up to seven entities at a time to graph.

> **Note:** Several data entities fall under common root entity types and, therefore, share common root entity names. To expedite and simplify the entity selection process, the **Available Data Entities** table lists these unique root entity names, in place of the individual entity names, to collectively represent the corresponding entities sharing the common root names. Selecting a root entity name causes **IntelliServe** to plot all the data available for the entities associated with that root entity type for the selected monitoring points. For example, consider **IntelliServe** supports several pressure depth entities (such as PDEPTH, PDEPTH_1, and PDEPTH_2) that share the same root name (PDEPTH), but may have different identifiers (numbers following the root name). Consequently, the entity available for selection from the **Available Data Entities** table under this configuration would be PDEPTH, but **IntelliServe** would plot all available PDEPTH, PDEPTH_1, and PDEPTH_2 data on the hydrograph.

14. View any current alarms associated with the selected location in the **Active Alarms** section. You can sort the alarms in the table by clicking on the column headings.

15. Graph the data.

    - **Graph** Choose this button to preview the selected data as a single graph. For example, if you have selected more than one monitoring point, data for all selected monitoring points will display on a single graph. Use the scroll button at the bottom of the page to scroll through data when more data is selected than can display on the screen.

    - **Flip Chart** Choose this button when you have selected multiple monitoring points and want to display each on a separate hydrograph. (This option is not available for a single monitoring point.) Use the scroll button at the bottom of the graphs to scroll through data when more data is selected than can display on the screen. Use the arrow buttons in the corners of the graph window to page through the different locations.

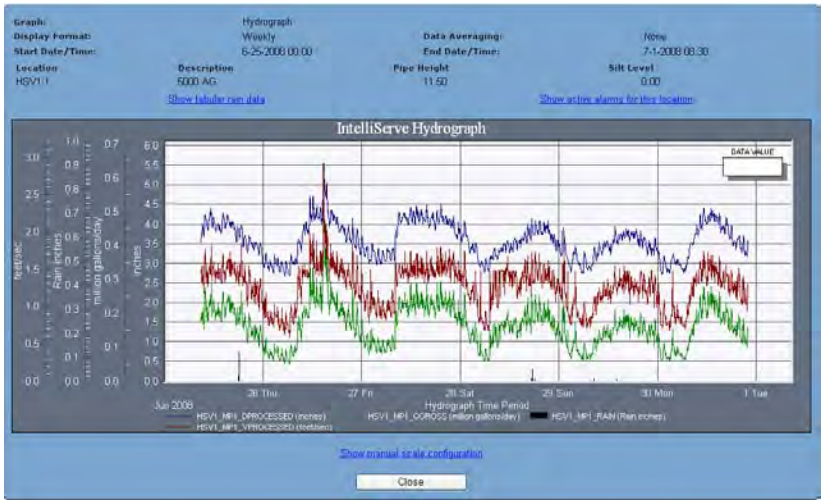
The hydrograph for the selected location and a summary of the plotted data appear in a new window.

> **Note:** Refer to *Hydrograph Display* on page 5-18 for an explanation of hydrograph viewing features.

16. Click **Close** to return to the **View Hydrograph** window.

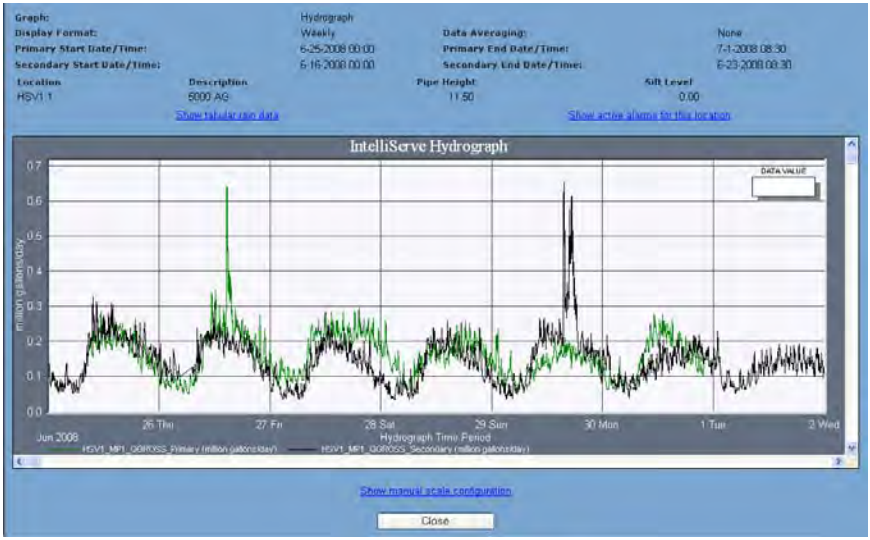
Sample Flow Monitor Hydrographs

The following example shows a hydrograph for a flow monitor with typical entities:



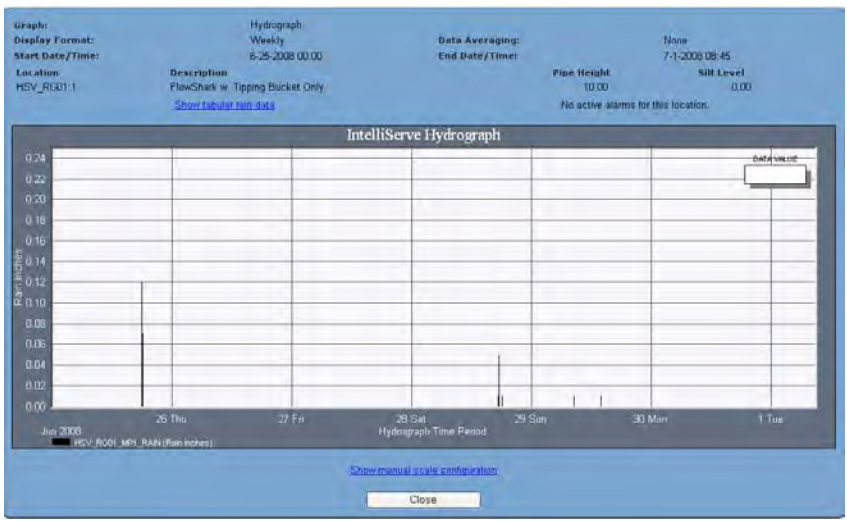
Hydrograph with typical entities

The following figure shows an example of a hydrograph using a **Secondary Time Span**. In this case, the upper data curve is the plot for the secondary time span (6-16-2008 through 6-23-2008) whereas the lower curve is the primary date range (6-25-2008 through 7-1-2008).



Hydrograph using **Secondary Time Span**

Sample Rain Gauge Hydrograph



Sample Pseudo Site Hydrograph

Sample Composite Location Hydrograph

Generating Hydrographs for a Location Group

With the proper permissions, you can generate hydrographs from location groups in the following way:

1. Select **Locations** > **Location Groups** from the **System Menu**.

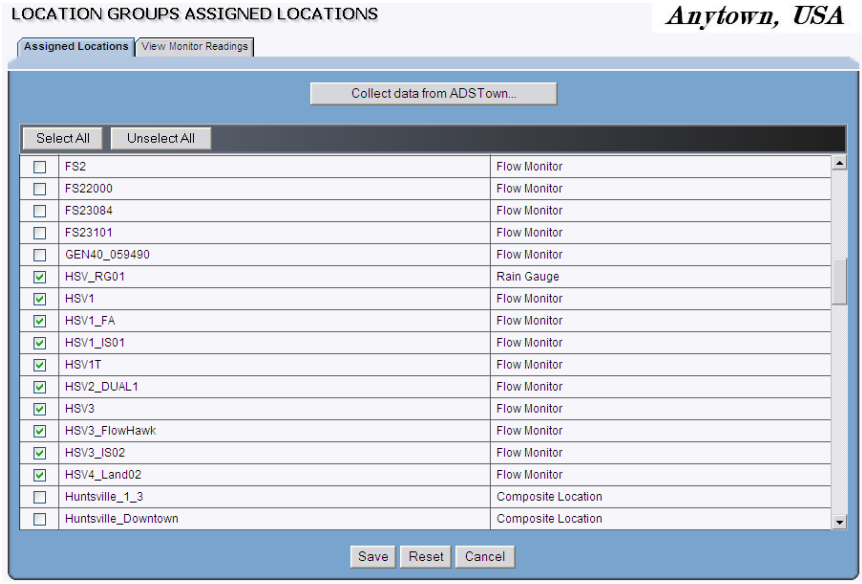
*The **Location Groups** window displays the location groups currently available in the database.*

Location Groups window

2. Click on the location group containing the locations you want to view.

*The **Location Groups Assigned Locations** window displays. This window displays all locations in the system; however, only those with a corresponding checkmark are in the selected location group.*

> **Note:** You can also right-click on the group name to see a menu for various viewing options.

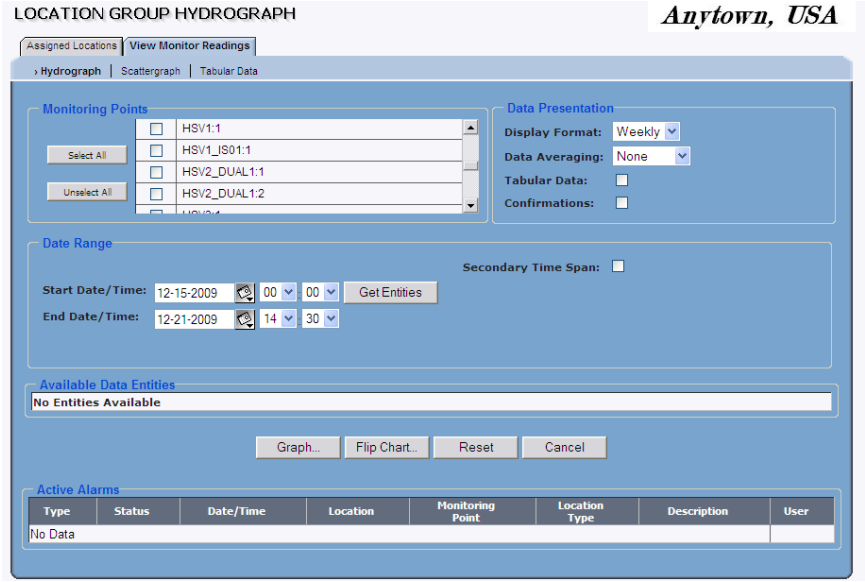


Location Groups Assigned Locations window

3. (*optional*) To collect the most recent data from the locations in the selected group, click on the **Collect Data from** button.

4. Select **View Monitor Readings** > **Hydrograph**.

*The **Location Group Hydrograph** window displays with the parameters for configuring a hydrograph. The **Monitoring Points** box only shows the locations associated with the selected location group.*



Location Group Hydrograph window

5. Select the locations you want to include in the hydrograph from the **Monitoring Points** box.

6. Choose the graph options. Refer to page 5-8 for more information on the hydrograph configuration options.

7. Graph the data.

   - **Graph** Choose this button to preview the selected data as a single graph. For example, if you have selected more than one monitoring point, data for all selected monitoring points will display on a single graph. Use the scroll button at the bottom of the page to scroll through data when more data is selected than can display on the screen.

   - **Flip Chart** Choose this button when you have selected multiple monitoring points and want to display each on a separate hydrograph. Use the scroll button at the bottom of the graphs to scroll through data when more data is selected than display on the screen. Use the arrow buttons in the corners of the graph window to page through the different locations.

The entity data for the selected location(s) within the location group appears on the hydrograph.

Hydrograph for location group

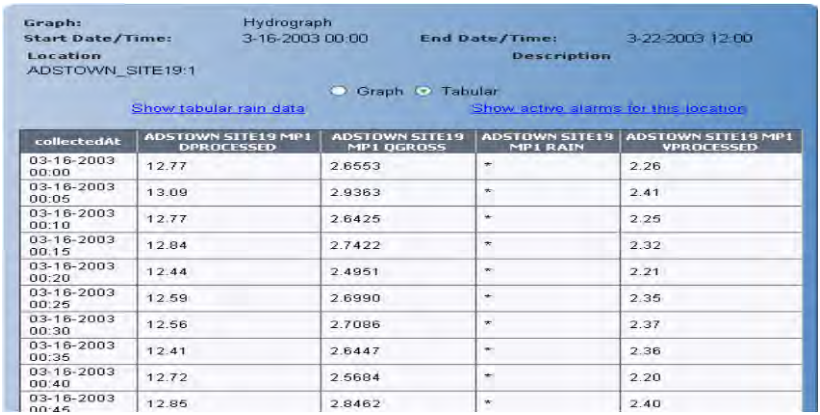
8. Click on the **Close** button to return to the **Location Group Hydrograph** window.

Hydrograph Display Options

Hydrographs include a variety of display options. Refer to the following section for details on toggling between graphical and tabular views, changing graph scale values, viewing rain data details, showing active alarms, plotting entity coordinates, zooming options, customizing the graph, exporting data, and printing.

Toggling Between Graphical and Tabular Views

Selecting the **Tabular** radio button during the hydrograph setup in **IntelliServe** allows you to toggle between graphical and tabular views of the hydrograph data. Choose the **Graph** radio button to view the data in the hydrograph view; choose the **Tabular** radio button to view numerical, columnar data.



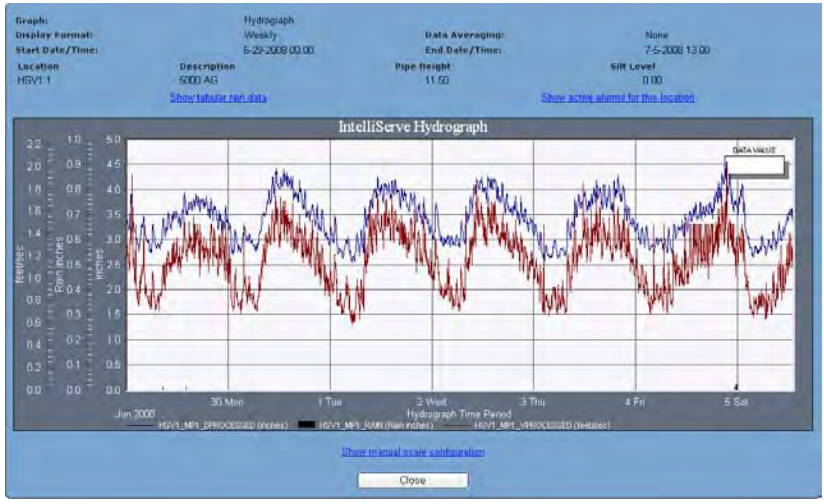
Graph: Hydrograph
Start Date/Time: 3-16-2003 00:00 End Date/Time: 3-22-2003 12:00
Location ADSTOWN_SITE19:1 Description
Graph Tabular
Show tabular rain data Show active alarms for this location

collectedAt	ADSTOWN SITE19 MP1 DPROCESSED	ADSTOWN SITE19 MP1 DGROSS	ADSTOWN SITE19 MP1 RAIN	ADSTOWN SITE19 MP1 VPROCESSED
03-16-2003 00:00	12.77	2.6553	*	2.26
03-16-2003 00:05	13.09	2.9363	*	2.41
03-16-2003 00:10	12.77	2.6425	*	2.25
03-16-2003 00:15	12.84	2.7422	*	2.32
03-16-2003 00:20	12.44	2.4951	*	2.21
03-16-2003 00:25	12.59	2.6990	*	2.35
03-16-2003 00:30	12.56	2.7086	*	2.37
03-16-2003 00:35	12.41	2.6447	*	2.36
03-16-2003 00:40	12.72	2.5684	*	2.20
03-16-2003 00:45	12.86	2.8462	*	2.40

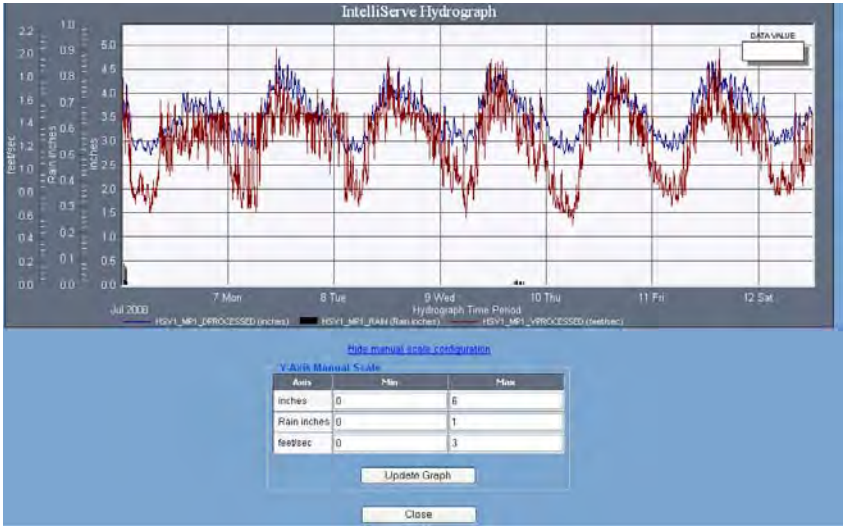
Tabular view of hydrograph

Changing Graph Scale Values

Manually change the hydrograph scale values by selecting **Show manual scale configuration** from below the hydrograph. Enter new **Min** and **Max** scale values into the **Y-Axis Manual Scale** table and then select the **Update Graph** button to apply the scale changes. Conceal the manual scaling option by choosing **Hide manual scale configuration**.



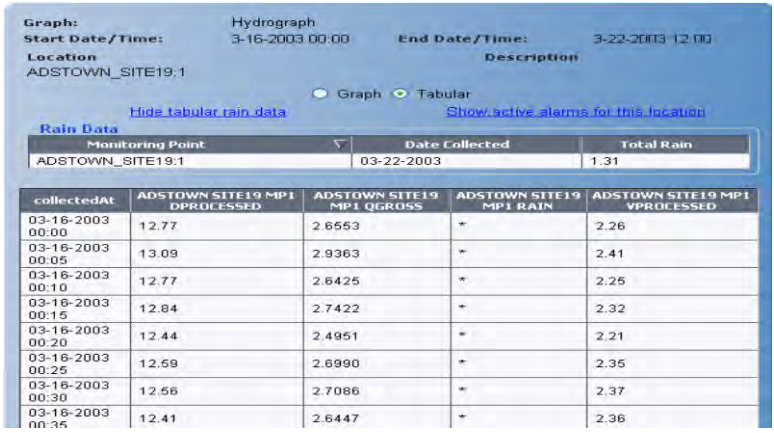
Show manual scale configuration



Hide manual scale configuration

Viewing Tabular Rain Data Details

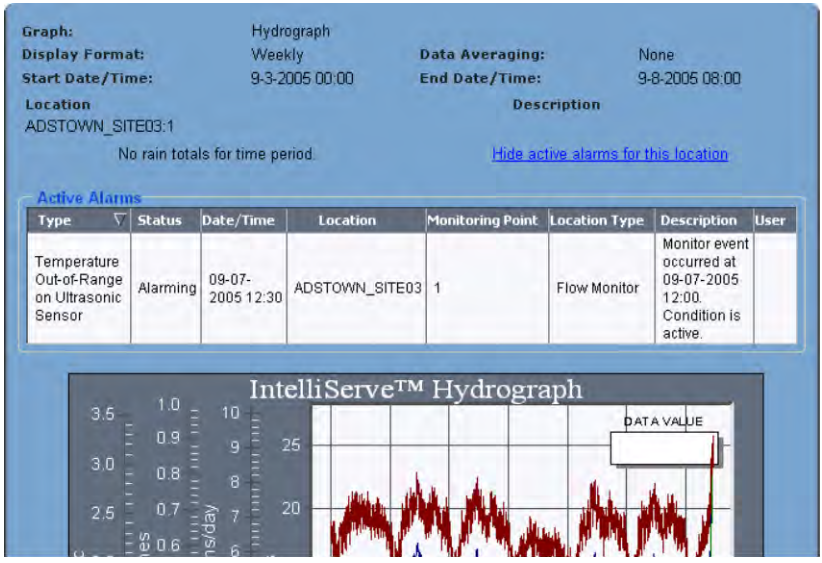
View rain data for the selected time period in tabular format by clicking **Show tabular rain data**. Hide the rain details by clicking **Hide tabular rain data**.



Rain data in tabular format

Showing Active Alarms

If any alarms currently exist for the location for which you are viewing hydrograph data, you can view the alarms by clicking **Show active alarms for this location**. Sort the active alarms table by clicking on the column headings.



Active alarms

Plotting Entity Coordinates

The **Data Value** box in the upper right corner of the graph displays the x- and y-axis value for a point you select from the curve.

Zooming

Enlarge an area of the graph for better viewing by clicking and dragging a rectangle over the area of interest. Return the view to its original size by right-clicking the mouse on the graph and selecting **Undo Zoom**.

Customizing the Graph

Customize the way the graph is displayed into a variety of formats by right-clicking on the hydrograph and selecting from the available options.

Customize graph menu

Exporting the Graph

Export the graph into a variety of formats by right-clicking on the hydrograph and selecting **Export Dialog**.

Printing the Hydrograph

Print the hydrograph, tabular data view, or rain data view by selecting **File** > **Print** from the browser menu *or* by right-clicking on the hydrograph and selecting **Print** from the popup menu.

Viewing Scattergraphs

This section explains how to generate scattergraphs for various location types in the system.

> **Note:** Scattergraphs cannot be generated for rain gauge locations.

Generating a Scattergraph

Generate a scattergraph view of data for individual flow monitor locations or multiple monitoring points using the following information. For instructions on generating scattergraphs for a location group, refer to *Generating Scattergraphs for a Location* Group on page 5-27.

Generate a scattergraph for an individual location or multiple monitoring points in the following way:

1. Select **Locations** > **Flow Monitor** from the **System Menu**.

> **Note:** Generate scattergraphs for multiple monitoring points by selecting **Locations > View Monitor Readings > Scattergraph** and then proceeding to step 4.

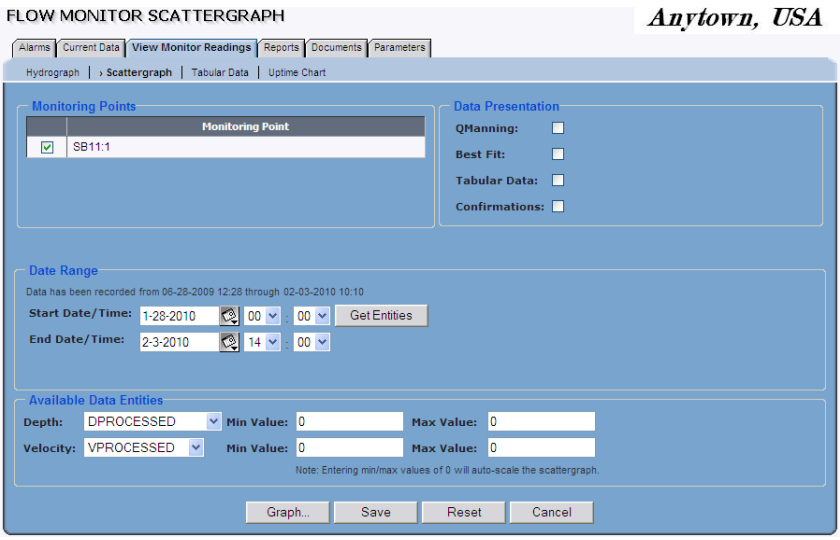
*The **Flow Monitors** window displays the flow monitor locations currently configured in the system.*

2. Click on the name corresponding to the location for which you want to generate a scattergraph from the **Location** column.

*The **Flow Monitor Current Data** window displays the most current data collected from the selected flow monitor.*

3. Click on the **View Monitor Readings** tab and then click on the **Scattergraph** tab.

*The **Flow Monitor Scattergraph** window displays the parameters for generating a scattergraph for the selected location.*



Flow Monitor Scattergraph window

4. Select the monitoring point(s) containing the data for which you want to generate the scattergraph(s) from the **Monitoring Points** list.
5. Specify the time period for generating the scattergraph in the **Date Range** section:

   - **Start Date/Time** Enter or click on the calendar icon  to select the start date and then select the start time from the associated drop-down lists.

   - **End Date/Time** Enter or click on the calendar icon  to select the end date and then select the start time from the associated drop-down lists.

6. Click on the **Get Entities** button to display the list of available entities with data available for the selected time period.

*The list of available entities appears in the **Depth** and **Velocity** drop-down lists. Refer to Appendix B, Data Entities*, for descriptions of the data entities.

7. (*optional*) Select the **QManning** checkbox to include the Manning curve on the scattergraph.
8. (*optional*) Select the **Best Fit** checkbox to include the Best Fit curve representing the plotted data points on the scattergraph.

> **Note:** These curves are based on only the last seven days of collected data; therefore, may not be accurate for earlier time periods.

9. From the **Depth** drop-down list, select the type of depth you want to graph against velocity. *DProcessed* is the default and recommended depth entity for viewing.

> **Note:** Several data entities fall under common root entity types and, therefore, share common root entity names. To expedite and simplify the entity selection process, the **Available Data Entities** table lists these unique root entity names, in place of the individual entity names, to collectively represent the corresponding entities sharing the common root names. Selecting a root entity name causes **IntelliServe** to plot all the data available for the entities associated with that root entity type for the selected monitoring points. For example, consider **IntelliServe** supports several pressure depth entities (such as PDEPTH, PDEPTH_1, and PDEPTH_2) that share the same root name (PDEPTH), but may have different identifiers (numbers following the root name). Consequently, the entity available for selection from the **Available Data Entities** table under this configuration would be PDEPTH, but **IntelliServe** would plot all available PDEPTH, PDEPTH_1, and PDEPTH_2 data on the scattergraphs.

10. In the **Min Value** and **Max Value** fields, modify the default minimum and maximum values you want to use to plot the selected depth. These fields both default to 0.

> **Note**: If 0 is in the **Max** field, the x-axis automatically scales to the highest depth reading recorded at the monitoring point for the selected date range *or* the pipe height of the location, whichever is greater.

11. Select the velocity type you want to graph against the selected depth from the **Velocity** drop-down list. *VProcessed* is the default velocity entity and the recommended velocity entity for viewing.

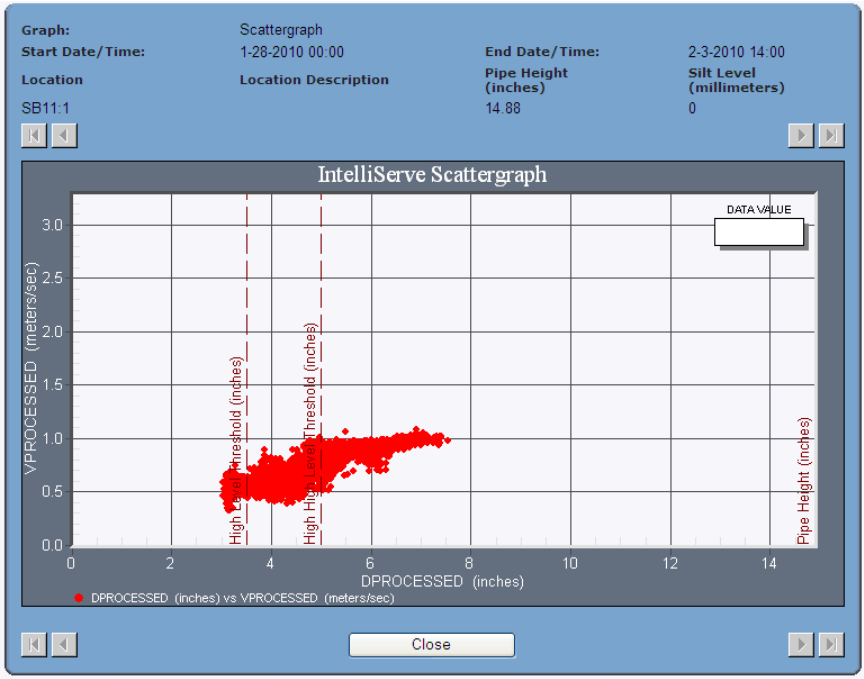
12. In the **Min Value** and **Max Value** fields, modify the default minimum and maximum values you want to use to plot the selected velocity-to-depth relationship.

> **Note**: Entering *0* in the **Max** field auto-scales the y-axis to the highest velocity reading recorded at the monitoring point for the selected date range.

> **Note:** Clicking the **Reset** button resets the scale values to their previously saved values. When you generate the scattergraph again at a later date, **IntelliServe** will maintain the settings for the axes from when last saved.

13. (*optional*) Select the **Tabular Data** checkbox to include an option for viewing the data in tabular format on the scattergraph.
14. (*optional*) Select the **Confirmations** checkbox to include confirmations performed for the location within the designated date range on the scattergraph. Make sure all confirmations you would like to include on the graph have already been imported into the **IntelliServe** database.
15. Click the **Graph** button to generate and display the scattergraph.

The scattergraph displays in a new window based on the selected options.



Scattergraph view for a flow monitor

16. Click on the **Close** button to return to the **Flow Monitor Scattergraph** window.

Generating Scattergraphs for a Location Group

With the proper permissions, you can generate scattergraphs for location groups in the following way:

1. Select **Locations** > **Location Groups** from the **System Menu**.

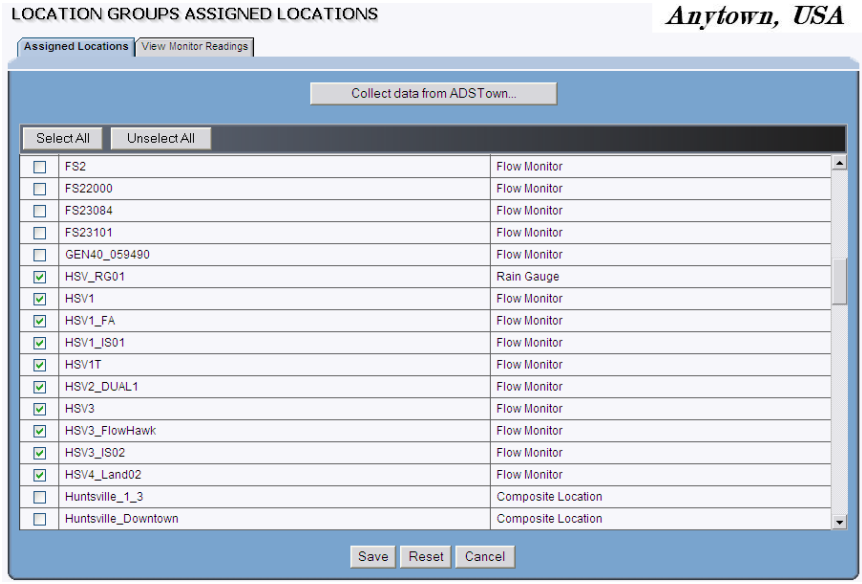
*The **Location Groups** window displays the location groups defined for the system.*

Location Groups window

2. Click on the location group containing the locations for which you want to generate a scattergraph.

*The **Location Groups Assigned Locations** window displays. This window shows all the locations in the system; however, only those with a corresponding checkmark are in the selected location group.*

> **Note:** Right-click on a **Location Group** name to see a menu for various viewing options.

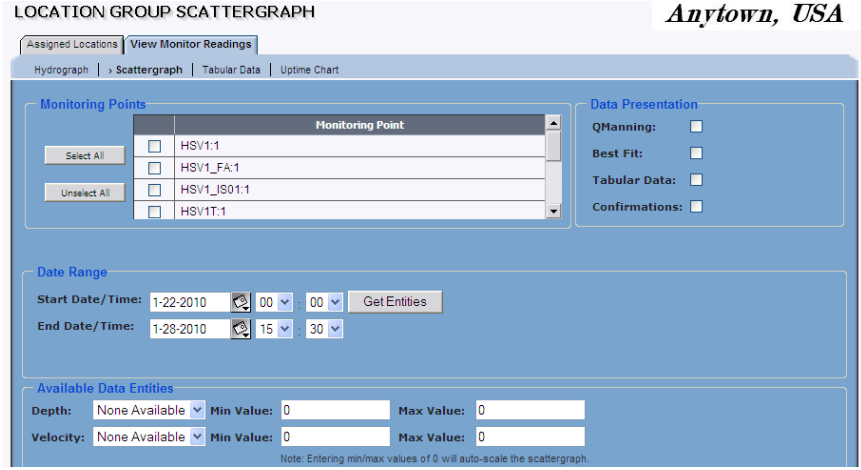


Location Groups Assigned Locations window

3. (*optional*) To collect the most recent data from the selected location group, click on the **Collect Data from** button.

4. Select the **View Monitor Readings** > **Scattergraph** tab.

*The **Location Group Scattergraph** window displays with the parameters for configuring a scattergraph. Only those locations associated with the selected location group will display in the **Monitoring Point** box.*

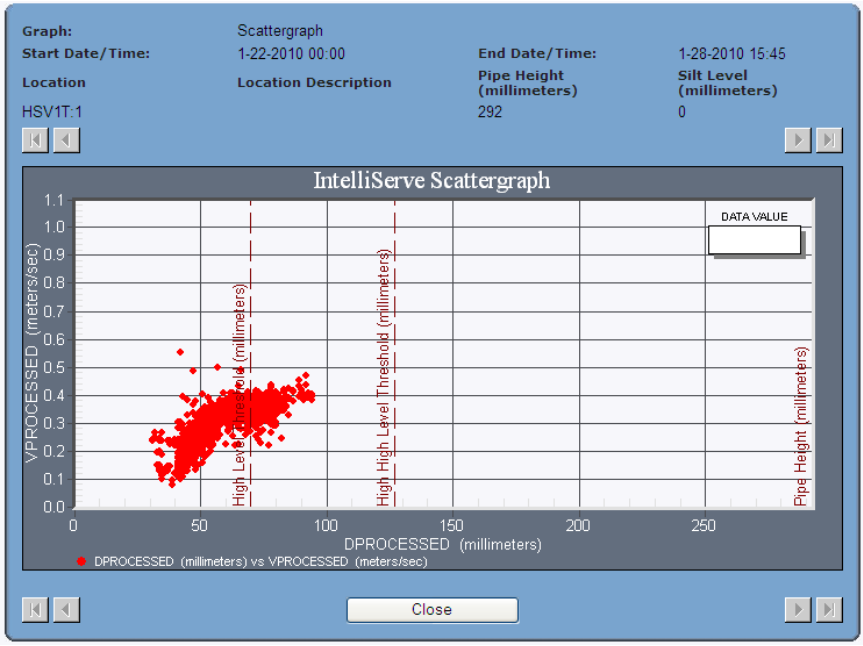


Location Group Scattergraph window

5. Refer to *Generating a Scattergraph* on page 5-23 for information about the scattergraph options.

6. Click on the **Graph** button to generate and display the scattergraph.

The entity data for the selected location(s) within the location group displays in scattergraph format.

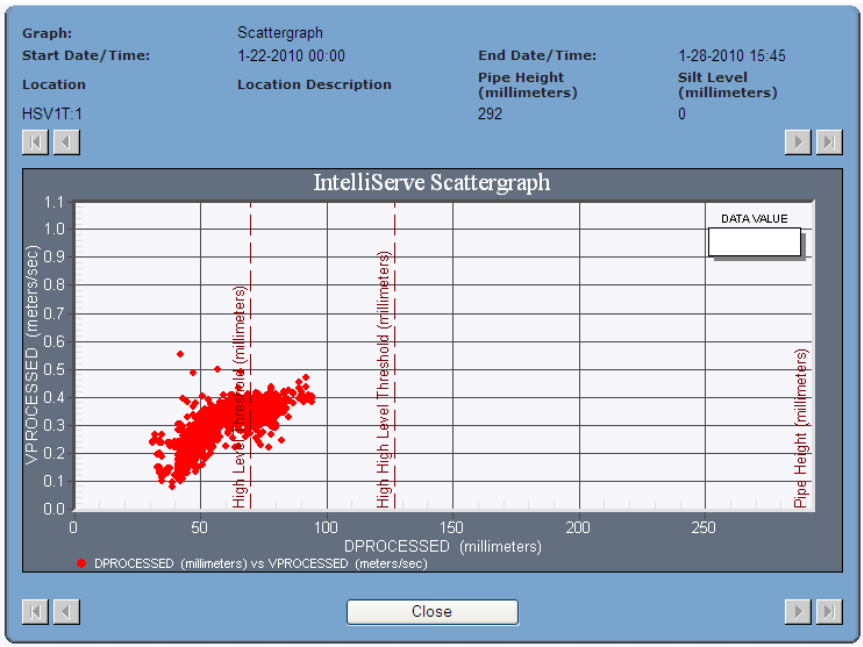


Scattergraph view

7. Click on the **Close** button to return to the **Location Group Scattergraph** window.

Scattergraph Display Features

All scattergraphs for flow monitors and location groups provide the following display options:



Plotting Entity Coordinates

The **Data Value** box in the upper corner of the graph plots the x- and y-axis value when you click a point on the graph.

Zooming Options

Enlarge a portion of the graph by clicking and dragging a rectangle over the area of interest. Return the graph to its original view by right-clicking on the graph and selecting **Undo Zoom** from the options menu.

Toggling Between Scattergraph and Tabular Views

Selecting the **Tabular** radio button during the scattergraph setup in **IntelliServe** allows you to toggle between a graphical and a tabular view of the data. Choose the **Graph** radio button to view the data in the scattergraph view; choose the **Tabular** radio button to view numerical, columnar data.

Customizing the Graph

Customize the way the graph displays into a variety of formats by right-clicking on the graph and selecting from the options.

Customize Graph menu

Exporting the Graph

Export the graph into a variety of formats by right-clicking on the scattergraph and selecting **Export Dialog**.

Printing the Scattergraph

Print the scattergraph or tabular data view by selecting **File** > **Print** from the browser menu *or* by right-clicking on the scattergraph and selecting **Print** from the options menu.

Viewing Tabular Data

This section describes how to generate tabular data views. In a tabular data view, each data point is displayed as a numerical value and arranged by data type in vertical columns. **IntelliServe** allows you to generate tabular data views for flow monitor, rain gauge, pseudo site, and composite location data.

Generating Tabular Views

This section provides instructions for generating tabular data views for flow monitors, rain gauges, pseudo sites, and composite locations.

For instructions on generating tabular views for a location group, refer to *Generating Tabular Data for a Location* Group on page 5-37.

Generate a tabular data view for an individual location or multiple monitoring points in the following way:

1. Select **Locations** > **[*location type*]** from the **System Menu**.

> **Note:** Generate tabular views for multiple monitoring points by selecting **Locations > View Monitor Readings > Tabular** and then proceeding to step 4.

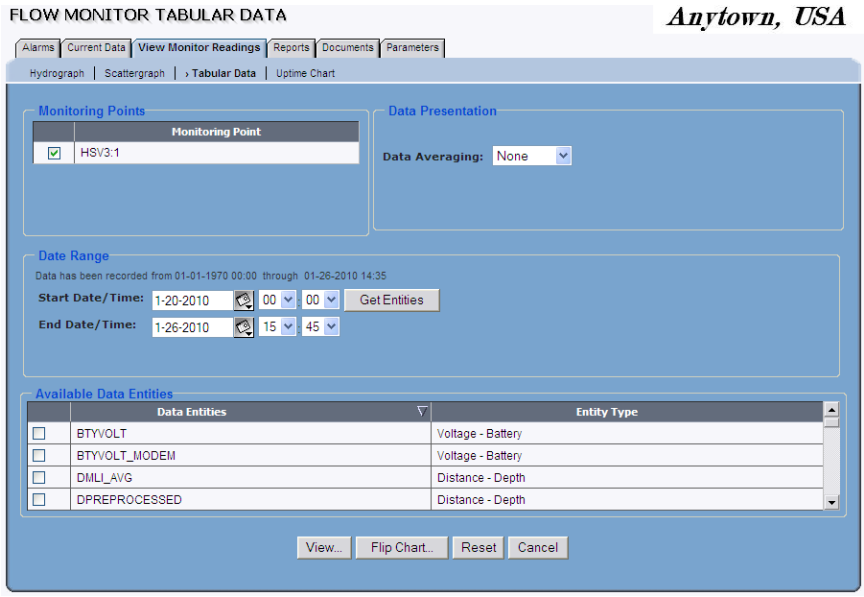
*The **[location type]** window displays the locations currently configured in the system for the selected location type.*

2. Click on the name of the location for which you want to generate a table In the **Location Name** column.

*The **[location type] Current Data** window displays for the selected location.*

3. Click on the **View Monitor Readings** tab, and then click on the **Tabular Data** tab.

*The **[location type] Tabular Data** window displays the parameters for generating tabular data for the selected location.*



Flow Monitor Tabular Data window

> **Note:** The **Monitoring Point** box displays the selected location. You can select a different location if desired.

4. Select the checkbox(es) corresponding to the monitoring point(s) for which you want to generate tabular data from the **Monitoring Point** list.

5. Specify the time period for which you would like to generate the table in the **Date Range** section:

   - **Start Date/Time** Enter or click the calendar icon  to select the start date and then select the start time from the associated drop-down lists.

   - **End Date/End Time** Enter or click the calendar icon  to select the end date and then select the start time from the associated drop-down lists.

6. Select the interval at which you want to average the data on the hydrograph from the **Data Averaging** drop-down list:

Note: IntelliServe performs data averaging for all data entities except for *Rain*. *Rain* is provided as a sum total for the interval.

- **None** This option graphs each data point within the selected time interval without performing data averaging.
- **15-minute** This option averages data on a 15-minute interval.
- **Hourly** This option averages data on an hourly interval.
- **Daily** This option averages data on a daily interval.

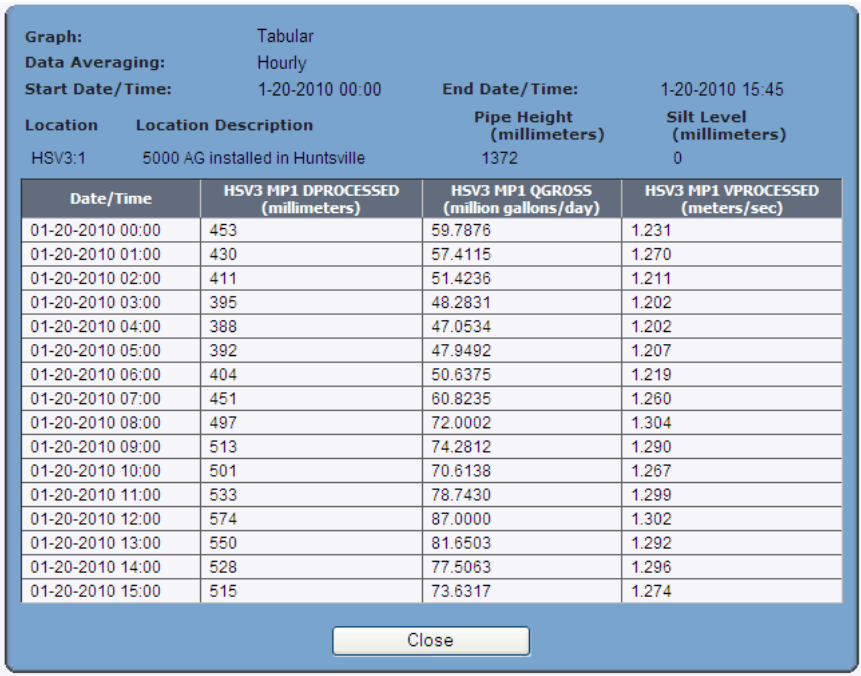
7. Click on the **Get Entities** button to display the entities available for the specified time period.
8. Select the checkboxes corresponding to the entities you want to display on the table from the **Available Data Entities** table. You may select up to ten entities at one time for display. Refer to *Appendix B, Data Entities*, for descriptions of the data entities available in **IntelliServe**.

Note: Several data entities fall under common root entity types and, therefore, share common root entity names. To expedite and simplify the entity selection process, the **Available Data Entities** table lists these unique root entity names, in place of the individual entity names, to collectively represent the corresponding entities sharing the common root names. Selecting a root entity name causes **IntelliServe** to list all the data available for the entities associated with that root entity type for the selected monitoring points. For example, consider **IntelliServe** supports several pressure depth entities (such as PDEPTH, PDEPTH_1, and PDEPTH_2) that share the same root name (PDEPTH), but may have different identifiers (numbers following the root name). Consequently, the entity available for selection from the **Available Data Entities** table under this configuration would be PDEPTH, but **IntelliServe** would list all available PDEPTH, PDEPTH_1, and PDEPTH_2 data in tabular view.

9. View the data in tabular format based on one of the following options:
   - **View** Choose this button to preview the selected data combined onto a single report. For example, data for all selected monitoring points will display on a single report. Use the scroll bars to the right and at the bottom of the page to scroll through data when more data is selected than can display on the screen.

- **Flip Chart** Choose this button when you have selected multiple monitoring points and want to display each one on a separate tabular view. (*There is no functionality when a single monitoring point is viewed*.) Use the scroll bars on the right and bottom of each tabular page to scroll through data when more data is selected than can display on the screen. Use the arrow buttons location in the corners of the window to page through the different locations.

The entity data for the selected flow monitor(s) displays.



Graph: Tabular
Data Averaging: Hourly
Start Date/Time: 1-20-2010 00:00 **End Date/Time:** 1-20-2010 15:45

Location	Location Description	Pipe Height (millimeters)	Silt Level (millimeters)
HSV3:1	5000 AG installed in Huntsville	1372	0

Date/Time	HSV3 MP1 DPROCESSED (millimeters)	HSV3 MP1 QGROSS (million gallons/day)	HSV3 MP1 VPROCESSED (meters/sec)
01-20-2010 00:00	453	59.7876	1.231
01-20-2010 01:00	430	57.4115	1.270
01-20-2010 02:00	411	51.4236	1.211
01-20-2010 03:00	395	48.2831	1.202
01-20-2010 04:00	388	47.0534	1.202
01-20-2010 05:00	392	47.9492	1.207
01-20-2010 06:00	404	50.6375	1.219
01-20-2010 07:00	451	60.8235	1.260
01-20-2010 08:00	497	72.0002	1.304
01-20-2010 09:00	513	74.2812	1.290
01-20-2010 10:00	501	70.6138	1.267
01-20-2010 11:00	533	78.7430	1.299
01-20-2010 12:00	574	87.0000	1.302
01-20-2010 13:00	550	81.6503	1.292
01-20-2010 14:00	528	77.5063	1.296
01-20-2010 15:00	515	73.6317	1.274

Close

View Tabular Data dialog displaying the entity data

> **Note:** An asterisk (*) displayed in place of a data value indicates that no data was recorded for the corresponding time stamp.

10. (*optional*) Print the table by right-clicking on the table and selecting **Print** from the drop-down menu *or* by selecting **File** > **Print** from the browser menu panel.
11. Click on the **Close** button to return to the **Flow Monitor Tabular Data** window.

Generating Tabular Data for a Location Group

With the proper permissions, you can generate tabular data for location groups. Generate a tabular data view of a location group in the following way:

1. Select **Locations** > **Location Groups** from the **System Menu**.

*The **Location Groups** window displays with the list of location groups defined for the system.*

Location Groups window

2. Click on the location group that includes the locations for which you want to generate tabular data.

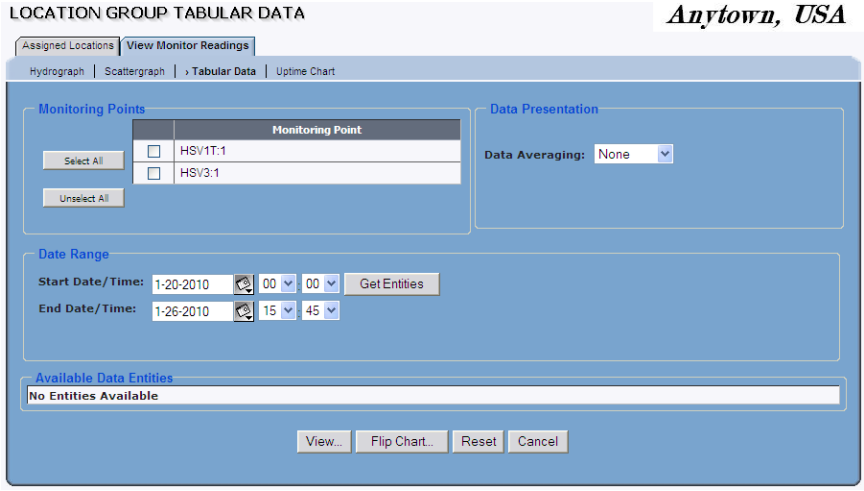
*The **Location Groups Assigned Locations** window displays. This window displays all locations in the system. The checkmarks indicate the locations included in the location group currently selected.*

> **Note:** You can also right-click on the group name to display a menu for various viewing options.

3. (*optional*) Click on the **Collect Data from** button to collect the most recent data from the locations included in the current location group.

4. Click on the **View Monitor Readings** tab, and then click on the **Tabular Data** tab.

*The **Location Group Tabular Data** window displays with the parameters for configuring a tabular view of the data. Only those locations included in the selected location group will display in the **Monitoring Point** box.*



Location Group Tabular Data window

5. Select the monitoring point(s) for which you want to generate a tabular data from the **Monitoring Point** list.

6. Specify the time period for which you want to generate the table from the **Date Range** area:

   - **Start Date/Time** Enter or click the calendar icon to select the start date and then select the start time from the associated drop-down lists.

   - **End Date/End Time** Enter or click the calendar icon to select the end date and then select the start time from the associated drop-down lists.

7. Select the interval at which to average the data on the table from the **Data Averaging** drop-down list:

> **Note: IntelliServe** performs data averaging for all data entities except for *Rain*. *Rain* is provided as a sum total for the interval.

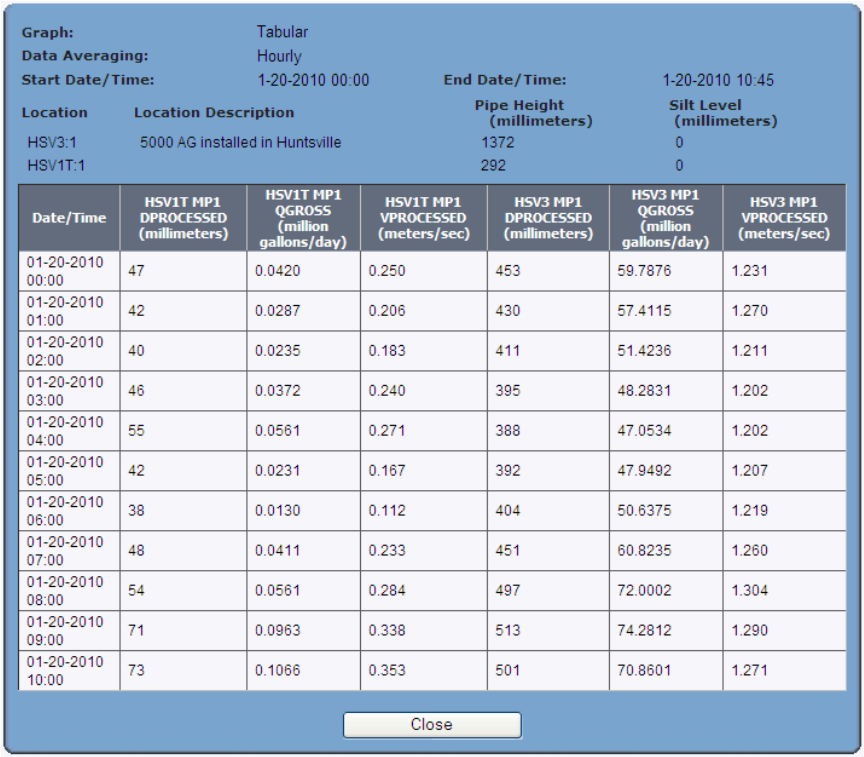
- **None** This option graphs each data point for the selected time interval without performing data averaging.
- **15-minute** This option averages data on a 15-minute interval.
- **Hourly** This option averages data on an hourly interval.
- **Daily** This option averages data on a daily interval.

8. Click the **Get Entities** button to display the available entities.
9. Select the checkboxes corresponding to the entities you want to display on the table from the **Available Data Entities** table. You may select up to ten entities at one time for display. Refer to *Appendix B, Data Entities*, for descriptions of the available data entities.

> **Note:** Several data entities fall under common root entity types and, therefore, share common root entity names. To expedite and simplify the entity selection process, the **Available Data Entities** table lists these unique root entity names, in place of the individual entity names, to collectively represent the corresponding entities sharing the common root names. Selecting a root entity name causes **IntelliServe** to list all the data available for the entities associated with that root entity type for the locations in the selected location group. For example, consider **IntelliServe** supports several pressure depth entities (such as PDEPTH, PDEPTH_1, and PDEPTH_2) that share the same root name (PDEPTH), but may have different identifiers (numbers following the root name). Consequently, the entity available for selection from the **Available Data Entities** table under this configuration would be PDEPTH, but **IntelliServe** would list all available PDEPTH, PDEPTH_1, and PDEPTH_2 data in tabular view.

10. View the data in tabular format based on one of the following options:
    - **View** Choose this button to preview the selected data combined on a single report. For example, data for all selected monitoring points will display on a single report. Use the scroll bars to the right and at the bottom of the page to scroll through data when more data is selected than can display on the screen.
    - **Flip Chart** Choose this button when you have selected multiple monitoring points and want to display each on a separate tabular view. Use the scroll bars on the right and bottom of the page to scroll through data when more data is selected than display on the screen. Use the arrow buttons located in the corners of the window to page through the different locations.

The entity data for the selected location(s) within the location group displays in the table.



Graph: Tabular
Data Averaging: Hourly
Start Date/Time: 1-20-2010 00:00 End Date/Time: 1-20-2010 10:45

Location	Location Description	Pipe Height (millimeters)	Silt Level (millimeters)
HSV3:1	5000 AG installed in Huntsville	1372	0
HSV1T:1		292	0

Date/Time	HSV1T MP1 DPROCESSED (millimeters)	HSV1T MP1 QGROSS (million gallons/day)	HSV1T MP1 VPROCESSED (meters/sec)	HSV3 MP1 DPROCESSED (millimeters)	HSV3 MP1 QGROSS (million gallons/day)	HSV3 MP1 VPROCESSED (meters/sec)
01-20-2010 00:00	47	0.0420	0.250	453	59.7876	1.231
01-20-2010 01:00	42	0.0287	0.206	430	57.4115	1.270
01-20-2010 02:00	40	0.0235	0.183	411	51.4236	1.211
01-20-2010 03:00	46	0.0372	0.240	395	48.2831	1.202
01-20-2010 04:00	55	0.0561	0.271	388	47.0534	1.202
01-20-2010 05:00	42	0.0231	0.167	392	47.9492	1.207
01-20-2010 06:00	38	0.0130	0.112	404	50.6375	1.219
01-20-2010 07:00	48	0.0411	0.233	451	60.8235	1.260
01-20-2010 08:00	54	0.0561	0.284	497	72.0002	1.304
01-20-2010 09:00	71	0.0963	0.338	513	74.2812	1.290
01-20-2010 10:00	73	0.1066	0.353	501	70.8601	1.271

Close

View Tabular Data window

> **Note:** An asterisk (*) displaying in place of a data value indicates that no data was recorded for the corresponding time stamp.

11. (*optional*) Print tabular data by right-clicking on the table and selecting **Print** from the options menu *or* by selecting **File** > **Print** from the browser menu.

12. Click on the **Close** button to close the tabular view.

Viewing Uptime Data

This section describes how to generate an uptime chart. Uptime charts enable you to view and evaluate the amount of data that is available for a single or multiple entities for each day within a designated period of time. **IntelliServe** allows you to generate uptime charts for flow monitors, rain gauges, and location groups at the monitoring point level.

Generating Uptime Charts

This section describes the process for generating uptime reports for individual flow monitors and rain gauges.

> **Note:** For instructions on generating uptime reports for multiple monitoring points or location groups, refer to *Generating an Uptime Chart for a Location Group* on page 5-44.

Generate an uptime chart for an individual location in the following way:

1. Select **Location > [*Flow Monitors or Rain Gauges*]** from the **System Menu**.

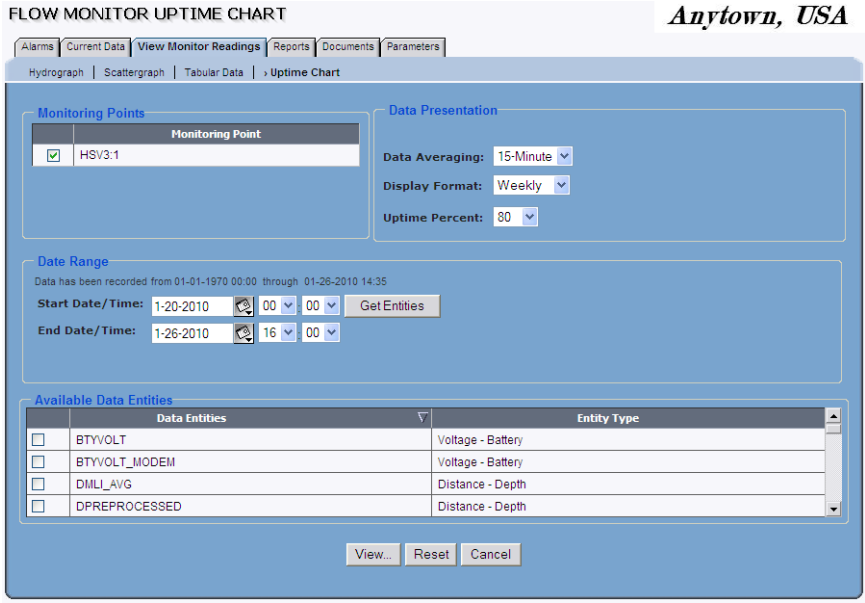
IntelliServe *displays the* ***Flow Monitors/Rain Gauges*** *window showing all the locations currently in the database corresponding to the selected location type.*

2. Click on the location for which you want to generate the uptime chart from the **Locations** column.

The ***Flow Monitors/Rain Gauges Current Data*** *window displays for the selected location.*

3. Click on the **View Monitor Readings** tab, and then click on the **Uptime Chart** tab.

The ***Flow Monitor/Rain Gauge Uptime Chart*** *window displays for the selected location.*



Flow Monitor Uptime Chart window

4. Select the checkbox(es) corresponding to the monitoring point(s) for which you want to generate the chart from the **Monitoring Points** section.

5. Designate the date and time period over which to display uptime data from the **Date Range** section.

   - **Start Date/Time** Enter or click on the calendar icon to select the start date and then select the start time from the corresponding drop-down lists.

   - **End Date/Time** Enter or click on the calendar icon to select the end date and then select the end time from the corresponding drop-down lists.

6. Click on the **Get Entities** button to display the entity data that is available in the database for the selected date/time range.

*The **Available Data Entities** section displays the entities from the monitoring point(s) for which data exists in the database for the selected date/time range.*

7. Select the checkboxes on the **Available Data Entities** table corresponding to the entities you want to include on the uptime chart. Refer to *Appendix B, Data Entities,* for brief descriptions of the entities supported in **IntelliServe**.

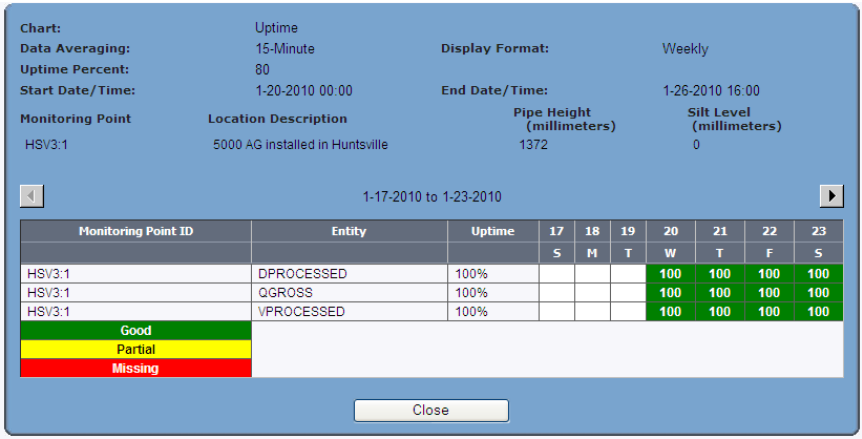
8. Select the interval at which to average the data for the uptime chart from the **Data Averaging** drop-down list. ADS recommends using the same interval in which the data is stored.

9. Select the period over which to display the data on the screen from the **Data Format** drop-down list.

10. Select the percentage of available readings an entity must have, at a minimum, for a day to receive a *Good* rating from the **Uptime Percent** drop-down list. *Good* is the highest rating available.

11. Click on the **View** button to display an uptime chart for the selected entities and date/time range.

The uptime chart displays for the selected entities and date/time range.



View Uptime Chart for a flow monitor location

12. (*optional*) Print the uptime chart by selecting **File > Print** from the browser menu or by right clicking outside the image area and selecting the **Print** option.

13. Click on the **Close** button to return to the **Flow Monitor/Rain Gauge Uptime Chart** screen.

> **Note:** Clicking the **Reset** button resets the uptime chart parameters to the default settings.

Generating an Uptime Chart for a Location Group

IntelliServe allows you to generate an uptime chart for a location group, provided you have the proper permissions.

> **Note:** This section also includes instructions on generating an uptime chart for multiple monitoring points.

Generate an uptime chart for a location group in the following way:

1. Select Locations > Location Groups from the System Menu.

> **Note:** You can generate an uptime chart for multiple monitoring points that are not associated with the same location group by selecting **Locations > View Monitor Readings > Uptime Chart** and then proceeding to step 4.

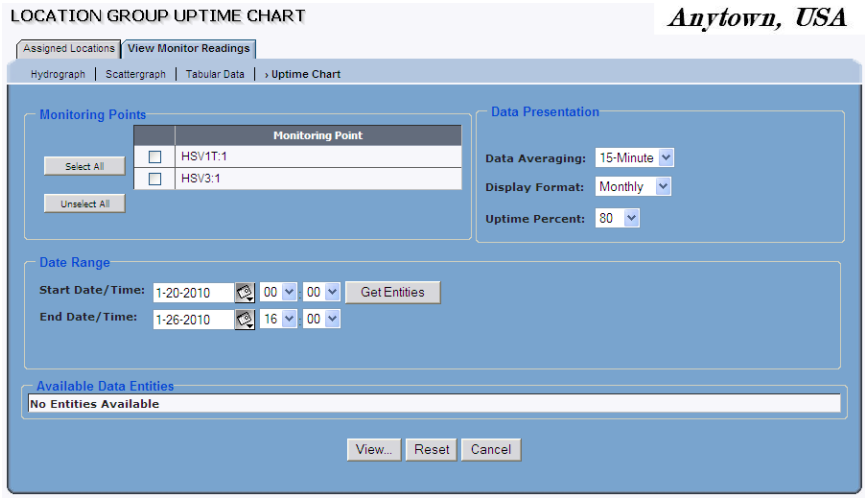
***IntelliServe** displays the **Location Groups** screen showing all the location groups currently in the database.*

2. Click on the location group containing the locations with entities for which you want to generate an uptime chart from the **Location Groups** column.

*The **Location Groups Assigned Locations** window displays the locations included in the selected location group.*

3. Click on the **View Monitoring Readings** tab, and then click on the **Uptime Chart** tab.

*The **Location Group Uptime Chart** window displays.*



Location Group Uptime Chart window

4. Select the checkbox(es) corresponding to the monitoring point(s) for which to generate the uptime chart from the **Monitoring Points** list.

5. Designate the date and time period for which to display uptime data in the **Date Range** section:

   - **Start Date/Time** Enter or click on the calendar icon to select the start date and then select the start time from the corresponding drop-down lists.

   - **End Date/Time** Enter or click on the calendar icon to select the end date and then select the end time from the corresponding drop-down lists.

6. Click on the **Get Entities** button to display the entity data that is available in the database for the selected monitoring points and date/time range.

*The **Available Data Entities** section displays the entities from the monitoring point(s) for which data exists in the database for the selected date/time range.*

7. Select the checkboxes on the **Available Data Entities** table corresponding to the entities you want to include on the uptime chart. Refer to *Appendix B, Data Entities*, for brief descriptions of the entities supported in **IntelliServe**.

Note: Several data entities fall under common root entity types and, therefore, share common root entity names. To expedite and simplify the entity selection process, the **Available Data Entities** table lists these unique root entity names, in place of the individual entity names, to collectively represent the corresponding entities sharing the common root names. Selecting a root entity name causes **IntelliServe** to provide uptime data for the entities associated with that root entity type from the selected monitoring points or locations in the selected location group. For example, consider **IntelliServe** supports several pressure depth entities (such as PDEPTH, PDEPTH_1, and PDEPTH_2) that share the same root name (PDEPTH), but may have different identifiers (numbers following the root name). Consequently, the entity available for selection from the **Available Data Entities** table under this configuration would be PDEPTH, but **IntelliServe** would provide uptime data for PDEPTH, PDEPTH_1, and PDEPTH_2.

8. Select the interval at which to average the data for the uptime chart from the **Data Averaging** drop-down list. ADS recommends using the same interval in which the data is stored.
9. Select the period over which to display the data on the screen from the **Data Format** drop-down list.
10. Select the percentage of available readings an entity must have, at a minimum, for a day to receive a *Good* rating from the **Uptime Percent** drop-down list. *Good* is the highest rating available.
11. Click on the **View** button to display an uptime chart for the selected entities and date/time range.

The uptime chart displays for the selected entities and date/time range.

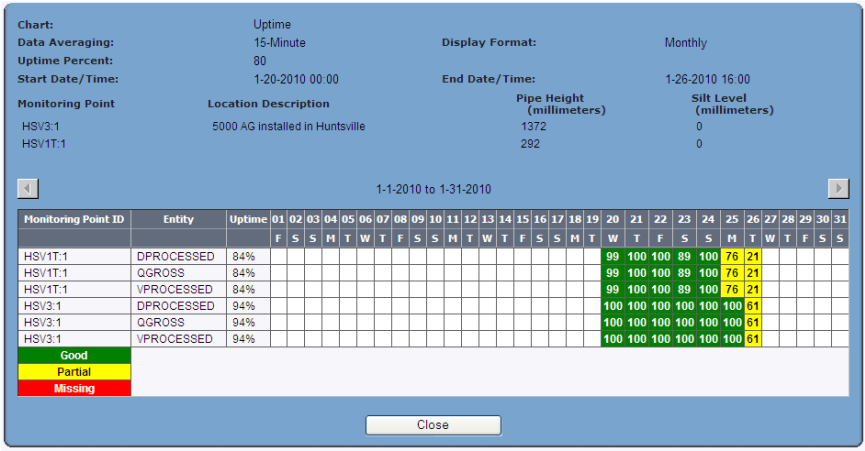


Chart: Uptime
Data Averaging: 15-Minute
Display Format: Monthly
Uptime Percent: 80
Start Date/Time: 1-20-2010 00:00
End Date/Time: 1-26-2010 16:00

Monitoring Point	Location Description	Pipe Height (millimeters)	Silt Level (millimeters)
HSV3:1	5000 AG installed in Huntsville	1372	0
HSV1T:1		292	0

1-1-2010 to 1-31-2010

Monitoring Point ID	Entity	Uptime	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
			F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S
HSV1T:1	DPROCESSED	84%																				99	100	100	89	100	76	21					
HSV1T:1	QGROSS	84%																				99	100	100	89	100	76	21					
HSV1T:1	VPROCESSED	84%																				99	100	100	89	100	76	21					
HSV3:1	DPROCESSED	94%																				100	100	100	100	100	100	61					
HSV3:1	QGROSS	94%																				100	100	100	100	100	100	61					
HSV3:1	VPROCESSED	94%																				100	100	100	100	100	100	61					

Good
Partial
Missing

Close

View Uptime Chart for a location group

12. (*optional*) Print the uptime chart by selecting **File > Print** from the browser menu or by right-clicking outside the image area and selecting the **Print** option.

13. Click on the **Close** button to return to the **Location Group Uptime Chart** (*or **the View Uptime Chart***) window.

Viewing Cumulative Rain Data

This section describes how to generate hydrographs or tables containing cumulative rain and/or rain intensity data from flow monitors and rain gauges. Cumulative rain data represents the total amount of rainfall that occurred over a designated period of time. Rain intensity data indicates the rate at which rainfall occurred within a configured period of time. You can view data in hydrograph/ tabular format for a single location, multiple monitoring points/locations, and a location group.

Viewing Cumulative Rain Data for a Location

The following section describes the process for viewing cumulative rain data for a single flow monitor or rain gauge location.

> **Note:** For instructions on generating cumulative rain data for multiple monitoring points or location groups, refer to *Viewing Cumulative Rain Data for a Location Group* on page 5-52.

1. Select **Locations > (*Flow Monitors or Rain Gauges*)** from the **System Menu**.

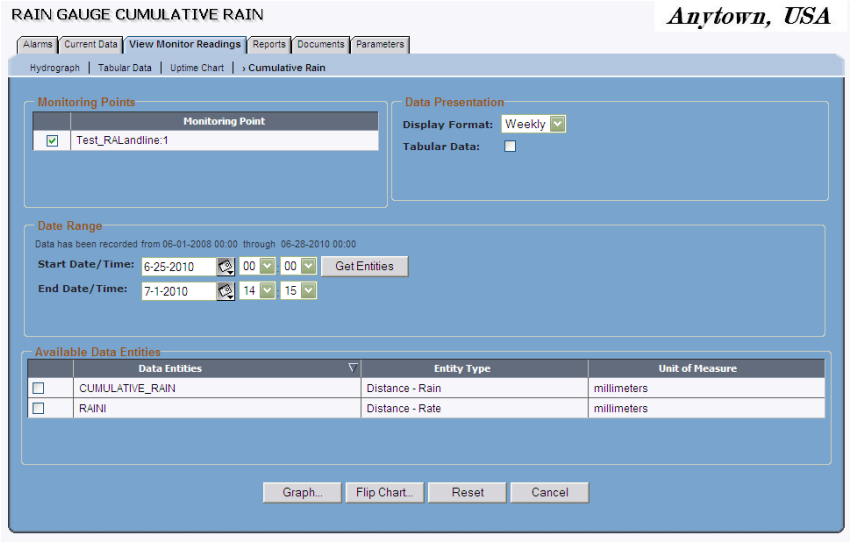
IntelliServe *displays the* ***Flow Monitor/Rain Gauges*** *window showing all the locations currently in the database for the selected location type.*

2. Click on the name of the location for which you want to view cumulative rain and/or rain intensity data.

The ***Flow Monitor/Rain Gauge Current Data*** *window displays for the selected location.*

3. Click on the **View Monitor Readings** tab, and then click on the **Cumulative Rain** tab.

The ***Flow Monitor/Rain Gauge Cumulative Rain*** *window displays for the selected location.*



Rain Gauge Cumulative Rain window

4. Verify that the monitoring point selected in the **Monitoring Points** section represents the location for which you want to view data. If another monitoring point is available, increase or modify the selections as necessary.

5. Designate the date and time period for which you want to view the cumulative rain and/or rain intensity data in the **Date Range** section.

   - **Start Date/Time** Enter or click on the calendar icon  to select the starting date of the period for which you want to view data and then select the associated starting time from the corresponding drop-down lists.

   - **End Date/Time** Enter or click on the calendar icon  to select the ending date of the period for which you want to view data and then select the associated end time from the corresponding drop-down lists.

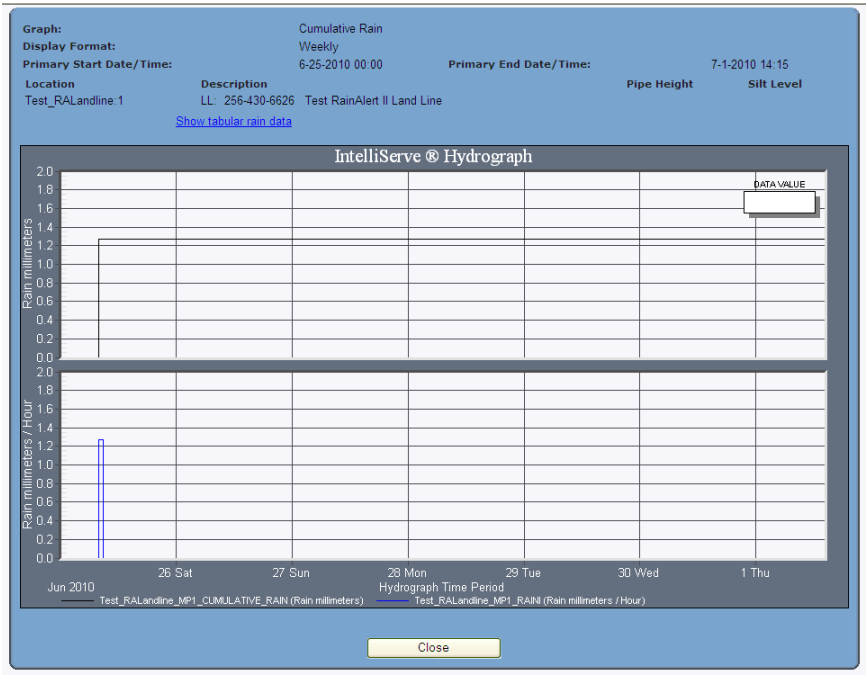
6. Click on the **Get Entities** button.

*The **Available Data Entities** section displays the cumulative rain and/or rain intensity entities from the selected monitoring point(s) for which data exists in the database for the selected date/time range. The only entities that may be available for this kind of hydrograph are CUMULATIVE_RAIN, RAINI, and RAINI_UK.*

> **Note:** Every time you change the date range, you must refresh the list of entities by clicking on the **Get Entities** button.

7. Select the checkboxes on the **Available Data Entities** table corresponding to the entities you want to include on the hydrograph.
8. Select the period over which to display data on the screen at one time from the **Display Format** drop-down list.
9. (*optional*) Select the **Tabular Data** checkbox to include an option on the hydrograph for viewing the data in tabular format.
10. Select the **Graph** button to display the cumulative rain and/or rain intensity data on a hydrograph. For multiple monitoring points, you can select the **Flip Chart** button instead to view data for each monitoring point on a separate hydrograph. Otherwise, **IntelliServe** will display the data for both monitoring points on one hydrograph.

*The cumulative rain data and/or rain intensity data displays on the **IntelliServe Hydrograph** dialog. Use the scroll bar at the bottom of the dialog to scroll through the data when additional data is available, but not visible on the window. For multiple hydrographs, move between the graphs using the arrow buttons or by clicking on the number link directly above the hydrograph.*



Cumulative rain and rain intensity data displayed on a hydrograph

> **Note:** Refer to *Hydrograph Display Options* beginning on page 5-18 for instructions on toggling between the graphical and tabular views, viewing tabular rain data, and customizing, exporting, or printing the graph.

11. Click on the **Close** button to exit the hydrograph and return to the **Flow Monitor/Rain Gauge Cumulative Rain** window.

> **Note:** Clicking on the **Reset** button resets the cumulative rain parameters to the default settings.

Viewing Cumulative Rain Data for a Location Group

IntelliServe allows you to view cumulative rain and/or rain intensity data for a location group on a hydrograph(s) and table(s), provided you have the appropriate permissions.

> **Note:** This section also includes instructions for viewing the data for multiple monitoring points.

View cumulative rain and/or rain intensity data for a location group in the following way:

1. Select **Locations > Location Groups** from the **System Menu**.

> **Note:** View data for multiple monitoring points that are not associated with the same location group by selecting **Locations > View Monitor Readings > Cumulative Rain** and then proceeding to step 4.

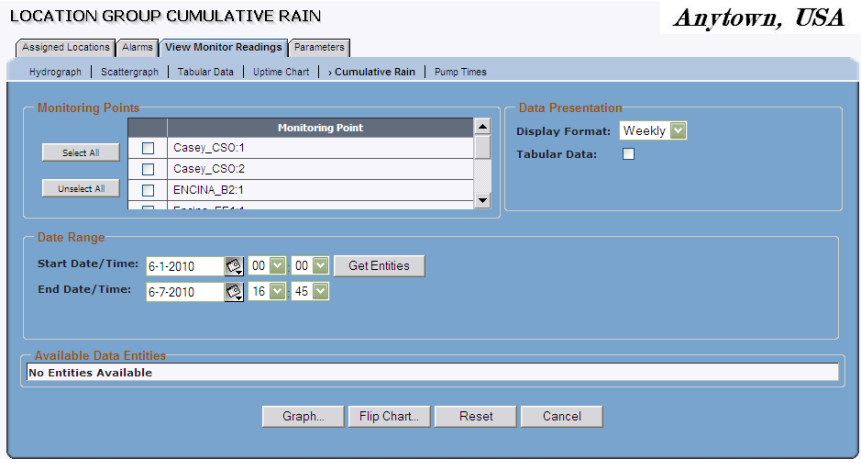
IntelliServe *displays the* ***Location Groups*** *window showing all the location groups currently in the database.*

2. Click on the location group containing the locations for which you want to view cumulative rain and/or rain intensity data.

The ***Location Groups Assigned Locations*** *window displays identifying the locations that are contained within the selected location group.*

3. Click on the **View Monitor Readings** tab, and then click on the **Cumulative Rain** tab.

The ***Location Group Cumulative Rain*** *window displays.*



Location Group Cumulative Rain window

4. Select the checkboxes in the **Monitoring Points** section corresponding to the monitoring points/locations for which you want to view cumulative rain and/or rain intensity data.

> **Note:** You can select all monitoring points/locations in the location group at one time by clicking on the **Select All** button.

5. Designate the date and time period for which you want to view the data in the **Date Range** section.

   - **Start Date/Time** Enter or click on the calendar icon  to select the starting date of the period for which you want to view data and then select the associated starting time from the corresponding drop-down lists.

   - **End Date/Time** Enter or click on the calendar icon  to select the ending date of the period for which you want to view data and then select the associated end time from the corresponding drop-down lists.

6. Click on the **Get Entities** button.

*The **Available Data Entities** section displays the entities corresponding to the selected monitoring points for which data exists in the database for the selected date/time range. The only entities that may be available for this kind of hydrograph are CUMULATIVE_RAIN, RAINI, and RAINI_UK.*

> **Note:** Some of the selected monitoring points/locations may not have data in database for the specified time period. In addition, every time you change the date range, you must refresh the list of entities by clicking on the **Get Entities** button.

7. Select the checkboxes on the **Available Data Entities** table corresponding to the cumulative rain and/or rain intensity entities you want to graph.
8. Select the period over which you want **IntelliServe** to display the data on the screen at one time from the **Display Format** drop-down list.
9. (*optional*) Select the **Tabular Data** checkbox to include an option on the hydrograph(s) for viewing the data in tabular format.
10. Click on one of the following buttons based on the type of graphing method you want to apply to the selected data.
    - **Graph** Select this button to display the designated data for all selected monitoring points on a single hydrograph.
    - **Flip Chart** Select this button to display the designated data for each selected monitoring point on a separate hydrograph.

*An **IntelliServe Hydrograph** dialog displays the selected data in the chosen format. Use the scroll bar at the bottom of the hydrograph to scroll through the data if more data has been selected than can display on the screen at one time. For multiple hydrographs, page through use the hydrographs representing the individual monitoring points/locations arrow using the arrow buttons or by clicking on the number links directly above the hydrograph.*

IntelliServe Hydrograph displaying the data for one of the selected monitoring points

> **Note:** Refer to *Hydrograph Display Options* beginning on page 5-18 for instructions on toggling between the graphical and tabular views, viewing tabular rain data, and customizing, exporting, or printing the graph.

11. Click on the **Close** button to exit the hydrograph and return to the **Flow Location Group Cumulative Rain** window (or the **View Cumulative Rain** window, when applicable).

> **Note:** Clicking on the **Reset** button resets the cumulative rain parameters to the default settings.

Viewing Pump Times

This section describes how to generate hydrographs and tables based on pump time event data from flow monitors. Pump times represent the times at which the pumps associated with pump stations turn on and off. **IntelliServe** enables you to graph and list the times at which designated pumps turn on and off within a specified interval. You can view pump time data for a single location, multiple monitoring points/ locations, and a location group.

Viewing Pump Time Data for a Location

The following section describes the process for viewing pump time data from a single flow monitor location.

> **Note:** For instructions on viewing pump time data for multiple monitoring points or location groups, refer to *Viewing Pump Time Data for a Location Group* on page 5-59.

1. Select **Locations > Flow Monitors** from the **System Menu**.

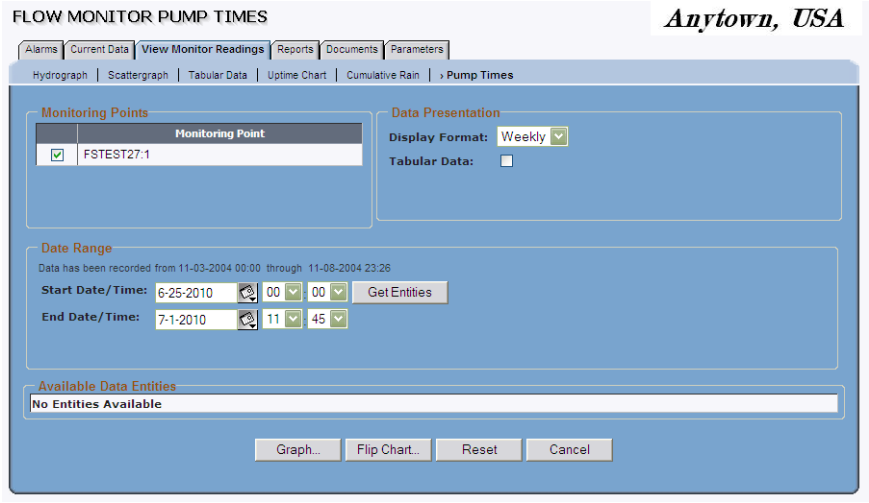
IntelliServe *displays the* ***Flow Monitors*** *window listing all the flow monitors currently in the database.*

2. Click on the flow monitor for which you want to view pump time data.

The ***Flow Monitor Current Data*** *window displays for the selected location.*

3. Click on the **View Monitor Readings** tab, and then click on the **Pump Times** tab.

The ***Flow Monitor Pump Times*** *window displays.*



Flow Monitor Pump Times window

4. Verify that the monitoring point selected in the **Monitoring Points** section represents the location for which you want to the view data. If the location has two monitoring points, increase or modify the selections as necessary.

5. Designate the date and time period for which you want to view the pump time data in the **Date Range** section.

   - **Start Date/Time** Enter or click on the calendar icon to select the starting date of the period for which you want to view data and then select the associated starting time from the corresponding drop-down lists.

   - **End Date/Time** Enter or click on the calendar icon to select the ending date of the period for which you want to view data and then select the associated end time from the corresponding drop-down lists.

6. Click on the **Get Entities** button.

*The **Available Data Entities** section displays the pump time entities from the selected monitoring point(s) for which data exists in the database for the selected date/time range. The only entities that may be available for this type of hydrograph are PUMP_1 through PUMP_8.*

> **Note:** Every time you change the date range, you must refresh the list of entities by clicking on the **Get Entities** button.

7. Select the checkboxes in the **Available Data Entities** section corresponding to the entities for which you want to view pump time data.
8. Select the period over which you want **IntelliServe** to display the data on the screen at one time from the **Display Format** drop-down list.
9. (*optional*) Select the **Tabular Data** checkbox to include an option on the hydrograph(s) for viewing the data in tabular format.
10. Click on the **Graph** button to display the pump time data on a hydrograph based on the selected parameters. For multiple monitoring points, you can select the **Flip Chart** button instead to view data for each monitoring point on a separate hydrograph. Otherwise, **IntelliServe** will display the data for both monitoring points on one hydrograph.

*An **IntelliServe Hydrograph** dialog displays the selected pump time data in the chosen format. Use the scroll bar at the bottom of the hydrograph to scroll through the data if more data has been selected than can display on the screen at one time. For multiple hydrographs, move between the graphs using the arrow buttons or by clicking on the number link directly above the hydrograph.*

Pump Times graph for selected monitor location

> **Note:** Refer to *Hydrograph Display Options* beginning on page 5-18 for instructions on toggling between the graphical and tabular views and customizing, exporting, or printing the graph.

11. Click on the **Close** button to exit the hydrograph and return to the **Flow Monitor Pump Times** window.

> **Note:** Clicking on the **Reset** button resets the pump time parameters to the default settings.

Viewing Pump Time Data for a Location Group

IntelliServe allows you to generate a hydrograph(s) and table(s) displaying pump time data for all or a portion of the locations comprising a location group, provided you have the appropriate permissions.

> **Note:** This section also includes instructions for viewing data for multiple monitoring points that may not be included in the same location group.

Generate a hydrograph and table containing pump time data for the monitoring points/locations in a location group in the following way:

1. Select **Locations > Location Groups** from the **System Menu**.

> **Note:** Generate a hydrograph for multiple monitoring points that are not associated with the same location group by selecting **Locations > View Monitor Readings > Pump Times** and then proceeding to step 4.

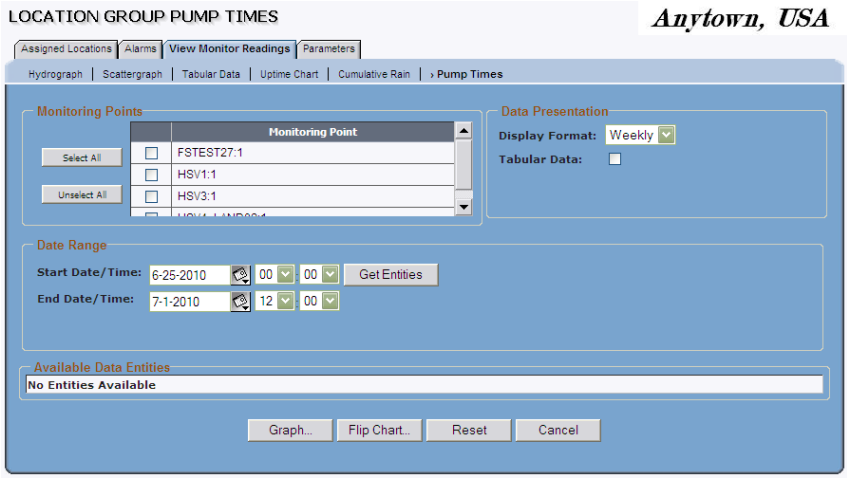
IntelliServe *displays the* ***Location Groups*** *window listing all of the location groups currently available in the database.*

2. Click on the location group containing the monitoring points/locations for which you want to view pump time data.

The ***Location Groups Assigned Locations*** *window displays identifying the locations included within the selected location group.*

3. Click on the **View Monitor Readings** tab, and then click on the **Pump Times** tab.

The ***Location Group Pump Times*** *window displays.*



Location Group Pump Times window

4. Select the checkboxes in the **Monitoring Points** section corresponding to the monitoring points/locations you want to include on a hydrograph(s) of pump time data.

   Note: You can select all monitoring points/locations in the location group at one time by clicking on the **Select All** button.

5. Designate the date/time period for which you want to view the pump time data in the **Date Range** section.

   - **Start Date/Time** Enter or click on the calendar icon  to select the starting date of the period for which to display the data and then select the associated starting time from the corresponding drop-down lists.

   - **End Date/Time** Enter or click on the calendar icon  to select the ending date of the period for which to display the data and then select the associated ending time from the corresponding drop-down lists.

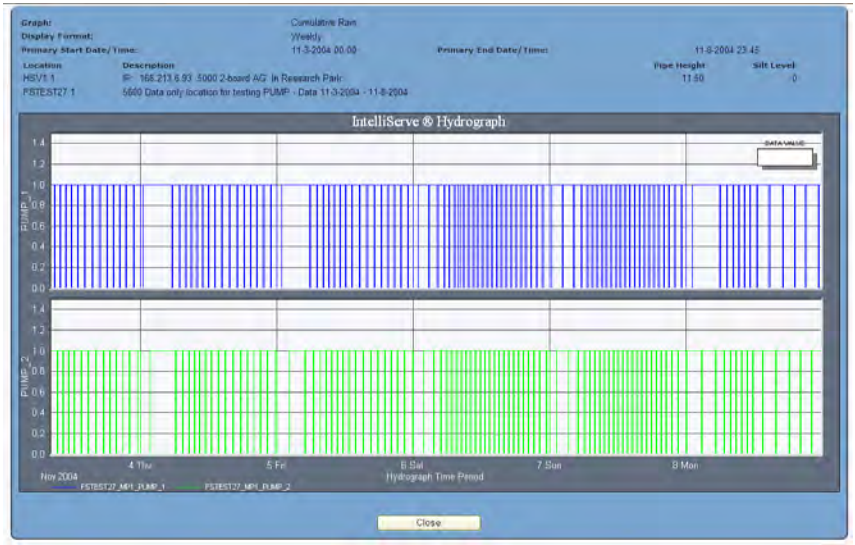
6. Click on the **Get Entities** button.

*The **Available Data Entities** section displays the entities from the selected monitoring points for which data exists in the database for the selected date/time range. The only entities that may be available for this type of hydrograph are PUMP_1 through PUMP_8.*

> **Note:** Some of the selected monitoring points/locations may not have data in database for the specified time period. In addition, every time you change the date range, you must refresh the list of entities by clicking on the **Get Entities** button.

7. Select the checkboxes on the **Available Data Entities** table corresponding to the entities you want to graph.
8. Select the period over which you want **IntelliServe** to display the data on the screen at one time from the **Display Format** drop-down list.
9. (*optional*) Select the **Tabular Data** checkbox to include an option on the hydrograph(s) for viewing the data in tabular format.
10. Click on one of the following buttons based on the type of graphing method you want to apply to the selected data.
    - **Graph** Select this button to display the data for all of the selected entities and monitoring points on a single hydrograph.
    - **Flip Chart** Select this button to display the data from each monitoring point on a separate hydrograph.

*An **IntelliServe Hydrograph** dialog displays the selected data in the chosen format. Use the scroll bar at the bottom of the hydrograph to scroll through the data if more data has been selected than can display on the screen at one time. For multiple hydrographs, page through the hydrographs representing the individual monitoring points/locations using the arrow buttons or by clicking on the number links directly above a hydrograph.*



Pump Times graph for selected location in location group

> **Note:** Refer to *Hydrograph Display Options* beginning on page 5-18 for instructions on toggling between the graphical and tabular views and customizing, exporting, or printing the graph.

11. Click on the **Close** button to exit the hydrograph and return to the **Location Group Pump Times** window (or the **View Pump Times** window, when applicable).

> **Note:** Clicking on the **Reset** button resets the pump time parameters to the default settings.

CHAPTER 6

Data Import and Export

IntelliServe® enables users to import raw and processed location data and location information files (LIFs) from the local directory or network to the **IntelliServe** database as well as export LIFs or data in other formats from the database to other file locations. The exporting capability converts the data to formats suitable for viewing or analysis through the **Profile®** software or for importing into other database or spreadsheet applications.

Following are the file types and formats available for exporting or importing through **IntelliServe**:

- **Location Information Files (LIFs)** Contain location configuration information and parameters and are essential for processing raw monitor data.
- **Raw Data Files (bin.dat)** Contain raw, unprocessed flow monitor or rain gauge data.
- **Profile Data Files (IFV)** Contain processed location data collected through **Profile** or formatted for viewing and analysis using **Profile**.
- **Comma-Separated Value Files (CSV)** Contain exported data files in a text file format for importing data into a database or spreadsheet application, such as **Excel®**.

This chapter provides instructions on importing and exporting LIFs and location data into and from the **IntelliServe** database.

Importing Data

The following sections describe the processes for importing LIFs, raw data, and processed data into the **IntelliServe** database.

Importing a LIF

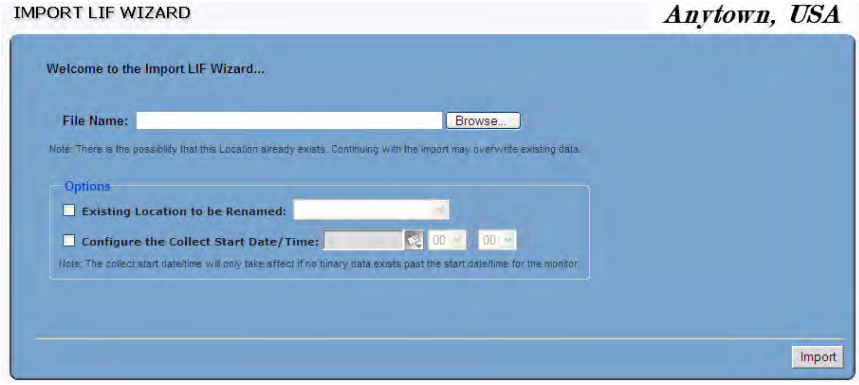
Updating the configuration information in **IntelliServe** for a location that already exists in the database involves importing a new LIF that will overwrite the existing LIF corresponding to that location. **IntelliServe** can import raw and processed data into the database only if a LIF already exists in the database for the same location. Therefore, make sure the appropriate LIFs have been imported into the database before attempting to import any associated location data.

> **Note:** Import the LIFs for all rain gauge locations before importing the LIFs for the flow monitor locations.

Import a LIF in the following way:

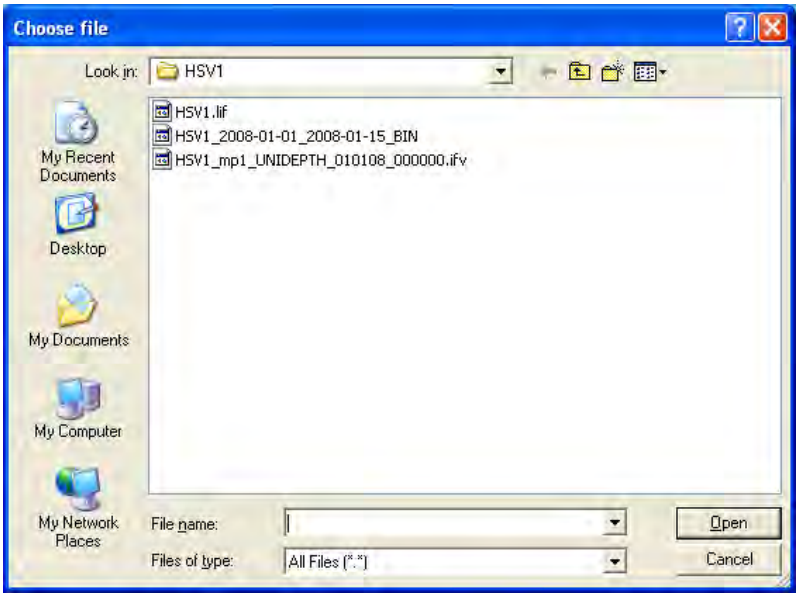
1. Select **Locations > Import Location Data > LIF** from the **System Menu**.

*The **Import LIF Wizard** displays.*



Import LIF Wizard

2. Click on the **Browse** button to open the **Choose File** dialog, browse to the location in your local directory or network containing the LIF you want to import, and then select the file.



Choose file dialog

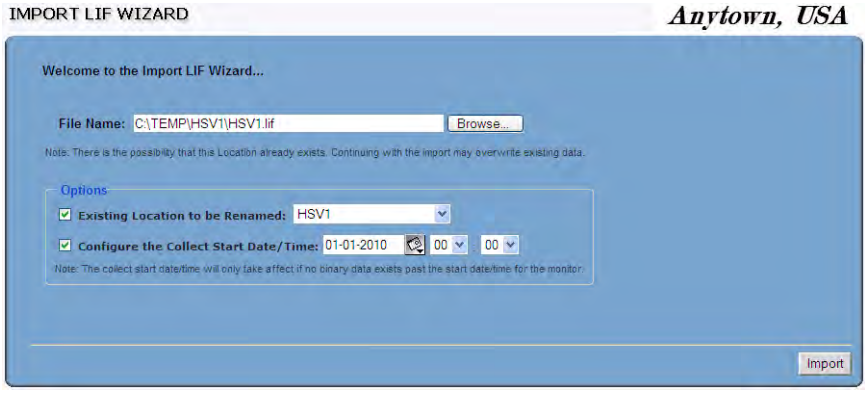
*The file name (including the file path) of the selected LIF displays in the **File Name** field.*

3. The following options are available for selection and setup when applicable:

   - **Existing Location to be Renamed** Select this checkbox when the location for which you are importing a LIF already exists in the **IntelliServe** database, but under a different name than the name referenced in the new LIF. Selecting this option replaces the existing LIF and name of with the new LIF and name following the import process. You also must select the location for which to replace the LIF from the corresponding drop-down list.

   - **Configure the Collect Start Date/Time** Select this checkbox to designate the date and time from which to begin collecting data from the corresponding location. Enter or click on the calendar icon  to designate the starting date and then select the starting time from the corresponding drop-down lists.

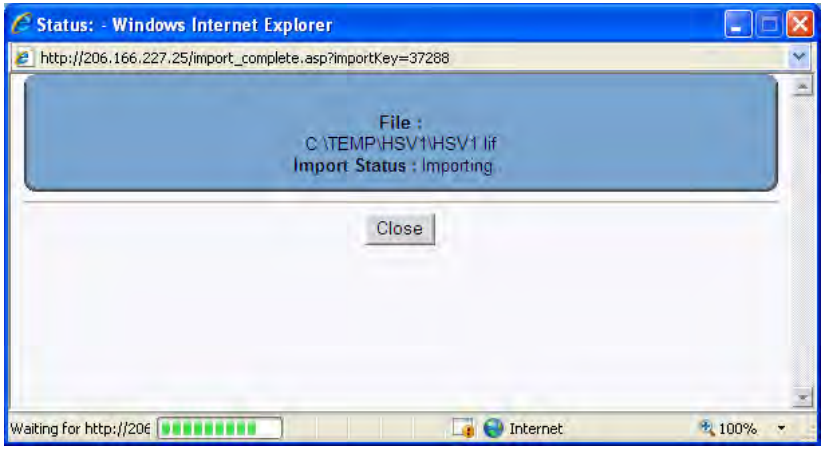
Note: **IntelliServe** will not collect any data from the location for the same period for which raw (binary) data already exists in the database for the same location. Therefore, when using this option, ADS recommends designating a start date/time following the timestamp of the most recent raw data stored in the **IntelliServe** database.



Completed **Import LIF Wizard** window

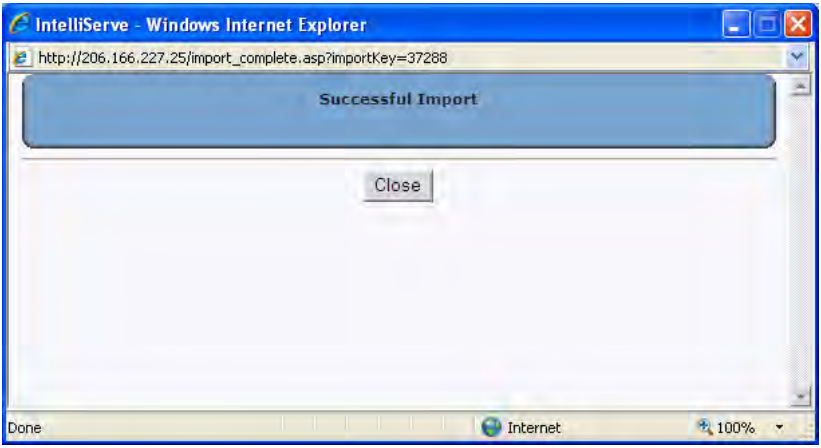
4. Click on the **Import** button to initiate the import process.

IntelliServe *initiates the import process and displays an import status dialog.*



Import status dialog

IntelliServe *provides notification when the import is successful and complete.*



Successful Import dialog

5. Click on the **Close** button.

*The **Import LIF Wizard** window displays.*

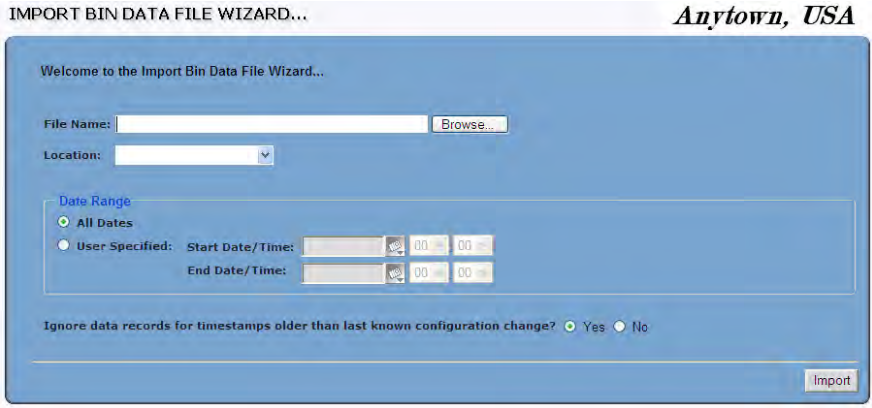
6. Repeat steps 2 through 5 for each additional LIF you want to import.

Importing a Raw Data (bin.dat) File

IntelliServe allows you to import raw location data in binary (bin.dat) format into the **IntelliServe** database through the **Import Location Data** function. Import raw data in the following way:

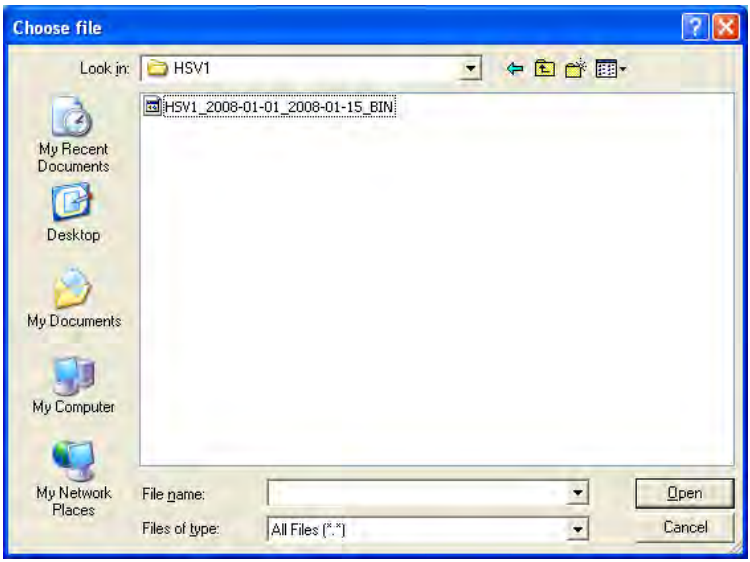
1. Select **Locations** > **Import Location Data** > **Bin.dat** from the **System Menu**.

*The **Import Bin Data File Wizard** displays.*



Import Bin Data File Wizard

2. Click on the **Browse** button to open the **Choose File** dialog, browse to the location in your local directory or network containing the raw data file you want to import, and then select the file.



Choose file dialog

3. Click on the **Open** button.

*The selected file name (including the file path) displays in the **File Name** field.*

4. Select the location with which to associate the data from the **Location** drop-down list.

5. Choose the range of data to import:

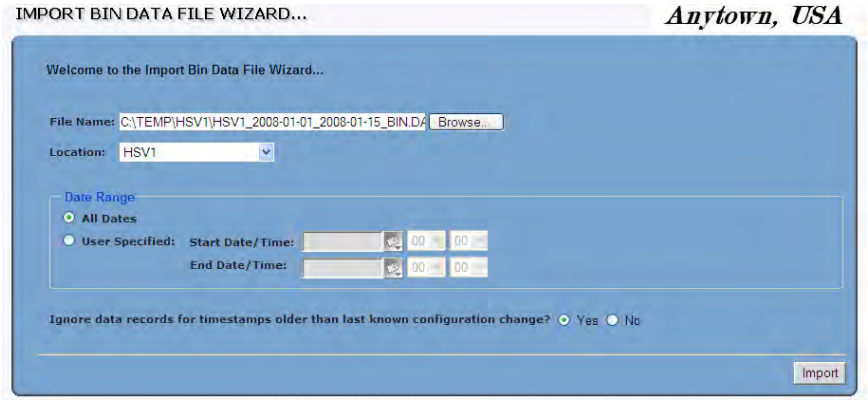
   - **All Dates** Select this option to import all of the raw data included in the file.

   - **User-Specified** Select this option to designate the range of data you want to import from the file.

     – **Start Date/Time** Enter or click on the calendar icon to designate the date from which to begin importing data from the file. Select the starting time from the corresponding drop-down lists.

     – **End Date/Time** Enter or click on the calendar icon to designate the date up to which to import data from the file. Select the ending time from the corresponding drop-down lists.

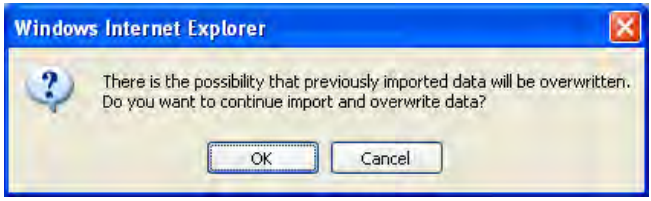
6. Designate whether to include data from the file that precedes the date of the last configuration update to the LIF for the location in the database from the **Ignore data records for timestamps older than last known configuration change** field. The current LIF may contain entries for parameters that are inconsistent with the entries included with a previous LIF, potentially altering data collected previously. Select **Yes** to *exclude* the data; select **No** to *include* the data.



Completed **Import Bin Data File Wizard** window

7. Click on the **Import** button.

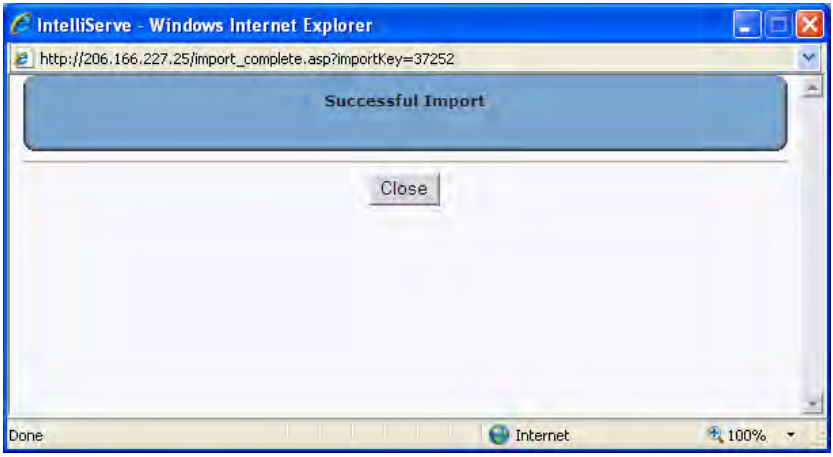
The overwrite confirmation dialog displays.



Overwrite confirmation dialog

8. Click on the **OK** button to give **IntelliServe** permission to overwrite any pre-existing data for the designated time period during the import process.

IntelliServe *initiates the import process and provides notification when the import is successful and complete.*



Successful Import dialog

9. Click on the **Close** button to close the dialog and return to the **Import Bin Data File Wizard**.

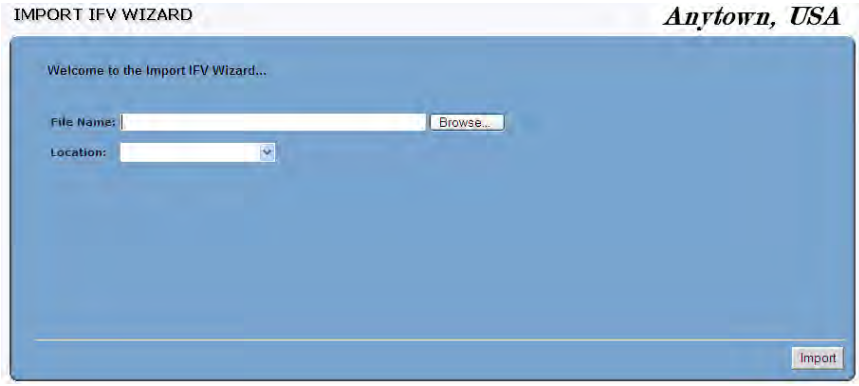
10. Repeat steps 2 through 9 for each additional raw data file you want to import.

Importing a Profile Data (.IFV) File

IntelliServe does not generate final depth, velocity, and quantity data. Final data is generated through the **Profile** software. Import a **Profile** data (*.IFV*) file into the **IntelliServe** database in the following way:

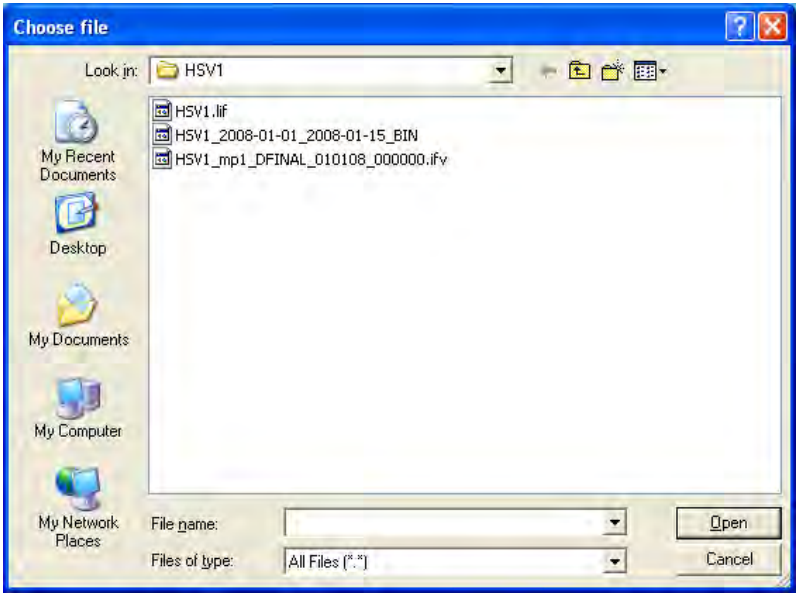
1. Select **Locations > Import Location Data > IFV** from the **System Menu**.

IntelliServe *displays the* ***Import IFV Wizard****.*



Import IFV Wizard

2. Click on the **Browse** button to open the **Choose File** dialog, browse to the location in your local directory or network containing the **Profile** data file you want to import, and then select the file.

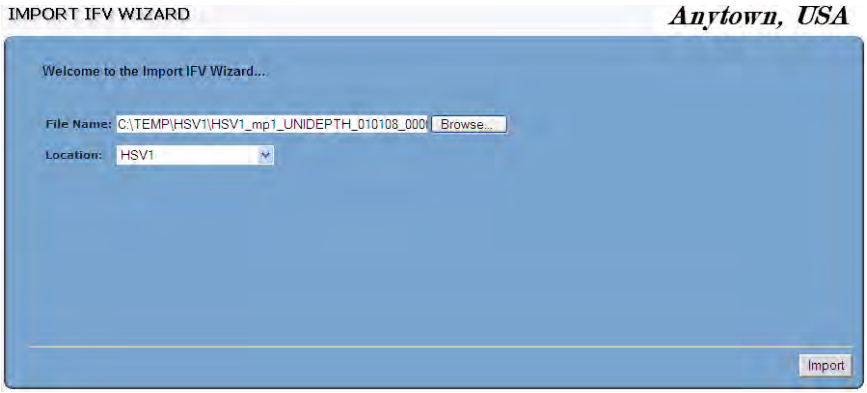


Choose file dialog

3. Click on the **Open** button.

*The selected file name (including the file path) displays in the **File Name** field.*

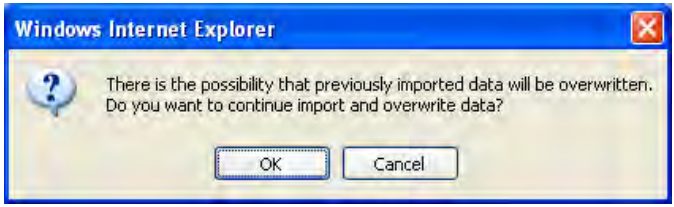
4. Select the location to which you want to import the file in the **IntelliServe** database from the **Location** drop-down list.



Completed **Import IFV Wizard** window

5. Click on the **Import** button.

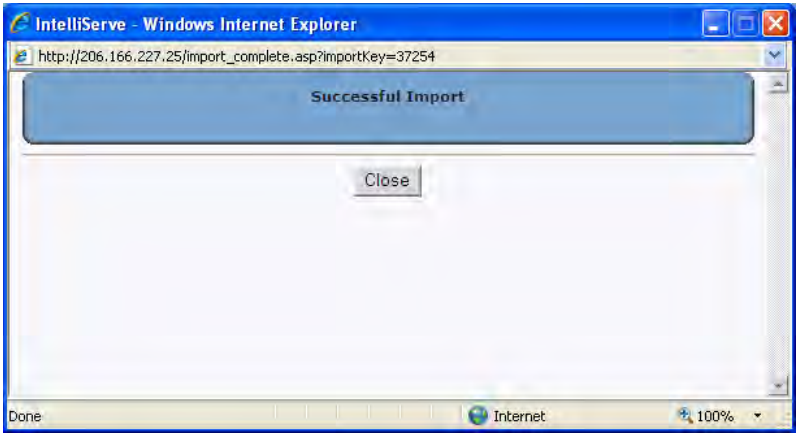
The overwrite confirmation dialog displays.



Overwrite confirmation dialog

6. Click on the **OK** button to give **IntelliServe** permission to overwrite any pre-existing data for the designated time period during the import process.

IntelliServe *initiates the import process and provides notification when the import is successful and complete.*



Successful Import dialog

7. Click on the **Close** button to close the dialog and return to the **Import IFV Wizard**.

8. Repeat steps 2 through 7 for each additional **Profile** data file you want to import.

Exporting Data

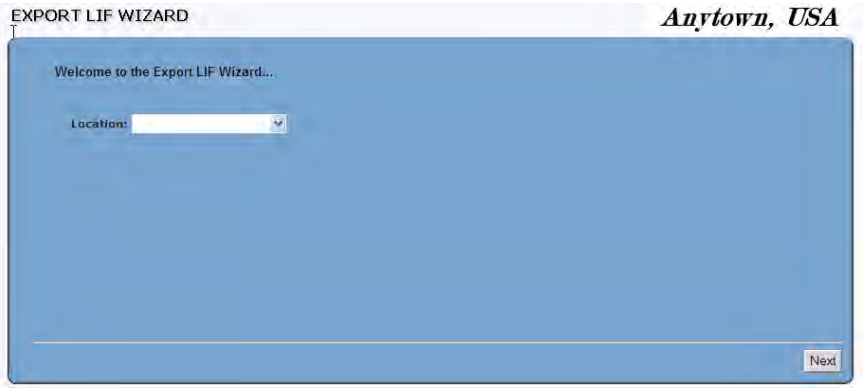
The following sections describe the processes for exporting location information to LIFs and location data in raw and processed data formats from the **IntelliServe** database.

Exporting a LIF

Export a LIF from the **IntelliServe** database in the following way:

1. **S**elect **Locations > Export Location Data > LIF** from the **System Menu**.

IntelliServe *displays the* ***Export LIF Wizard****.*



Export LIF Wizard

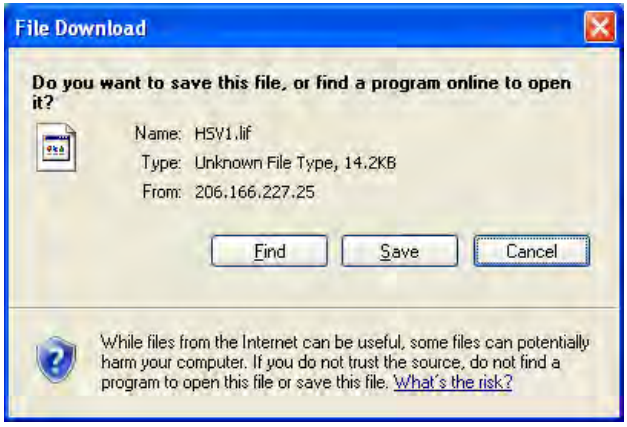
2. Select the location from which to export the LIF from the **Location** drop-down list, and then click on the **Next** button.

IntelliServe *displays the* ***Export Location Data Successful*** *window posting the filename and size.*

Export Location Data Successful window

3. Click on the filename.

*The **File Download** dialog displays.*



File Download dialog

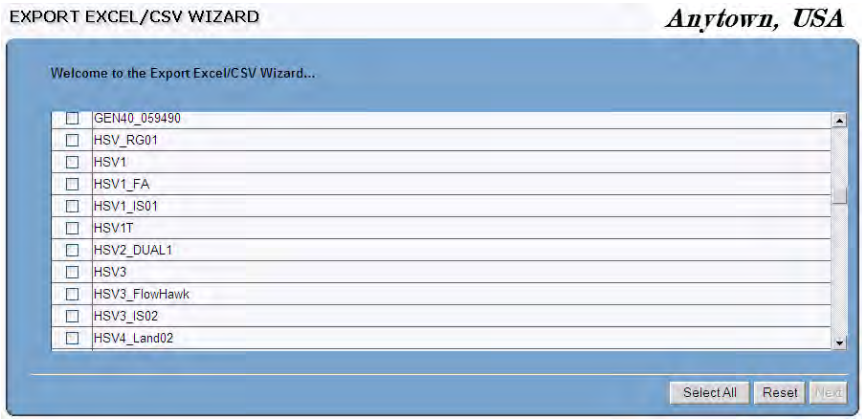
4. Click on the **Save** button on the **File Download** dialog to browse to the appropriate location in your local directory or network to save the LIF.

Exporting Data in a Text File (.CSV) Format

IntelliServe's Export Location Data feature enables you to export data files in a text file (*.CSV)* format, simplifying the process of importing data into a spreadsheet program, such as **Excel**. When exporting location data in a text file format, the system writes all location data records to a single file. This file contains the date and time of the export and a header row containing the column names from the database.

1. Select **Locations > Export Location Data > Excel/CSV** from the **System Menu**.

*The **Export Excel/CSV Wizard** window displays all the configured locations.*



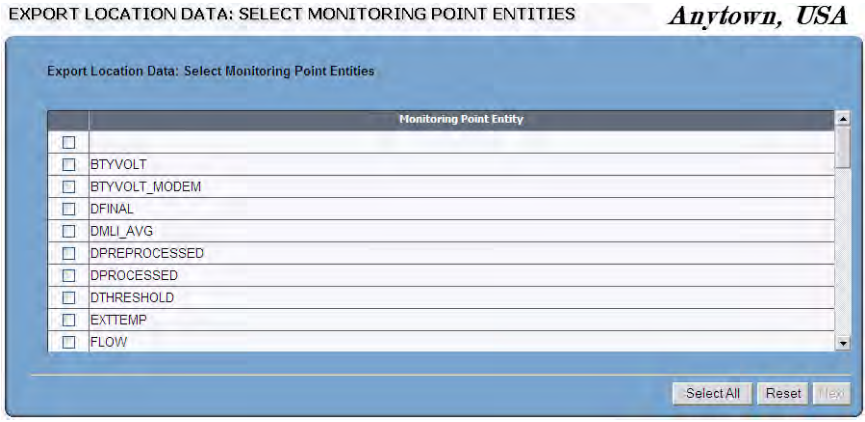
Export Excel/CSV Wizard

2. Select the location(s) from which to export data from the **Locations** table. To export data for all locations, click the **Select All** button.

> **Note:** Selecting too many locations and/or an extended date/time range may prevent you from exporting the data successfully. If an export is not successful, reduce the number of locations and/or the date/time range and attempt to export the data again.

3. Click on the **Next** button.

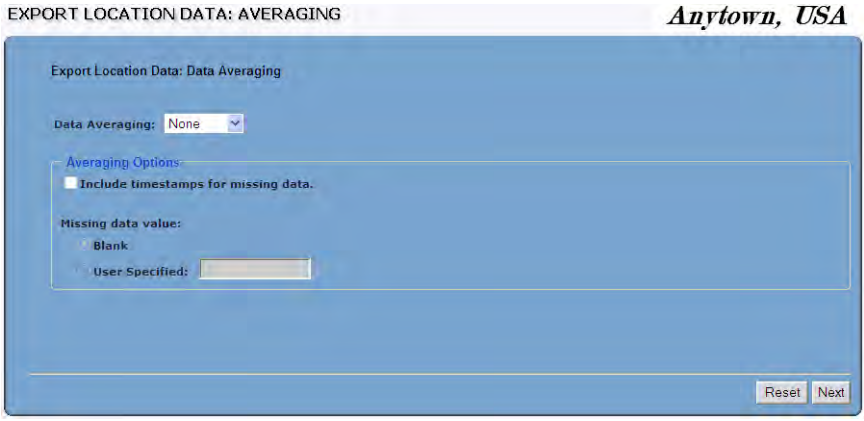
*The **Export Location Data: Select Monitoring Point Entities** window displays all entities containing data available for export from the selected location(s).*



Export Location Data: Select Monitoring Point Entities window

4. Select the checkboxes corresponding to the entities you want to export *or* click on the **Select All** button to select all the available data entities.
5. Click on the **Next** button**.**

*The **Export Location Data: Data Averaging** window displays the options for handling the exported data.*



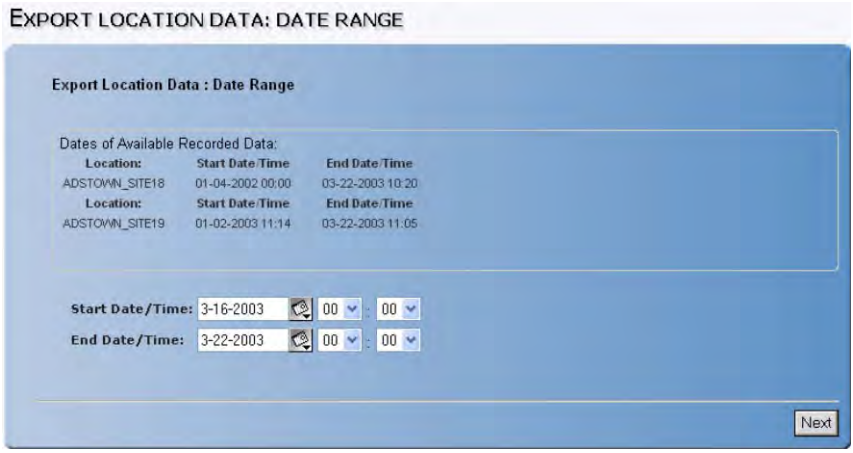
Export Location Data: Averaging window

6. Complete the options on the **Data Averaging** window in the following way:

   - Select the appropriate option from the **Data Averaging** drop-down list.
     - **None** Selecting this option disables data averaging.
     - **5-minute** Selecting this option averages data on a 5-minue interval.
     - **15-minute** Selecting this option averages data on a 15-minute interval.
     - **Hourly** Selecting this option averages data on an hourly interval.
     - **Daily** Selecting this option averages data on a daily interval.
   - Select the **Include timestamps for missing data** checkbox to ensure timestamp placeholders exist for dates/times where data is not available. This is only available for **5-minute**, **15-minute**, **Hourly**, or **Daily** data averaging. Designate one of the following options for the **Missing Data Value** box:
     - **Blank** Choose this option to ensure **IntelliServe** leaves an empty field at every timestamp without available data.
     - **User Specified** Choose this option to ensure **IntelliServe** includes a user-defined value at every timestamp without available data. In the corresponding field, enter the value you want **IntelliServe** to insert at the empty timestamps.

7. Click on the **Next** button**.**

*The **Export Location Data: Date Range** window displays the date range of the data that is available for the selected entities.*



Export Location Data: Date Range window

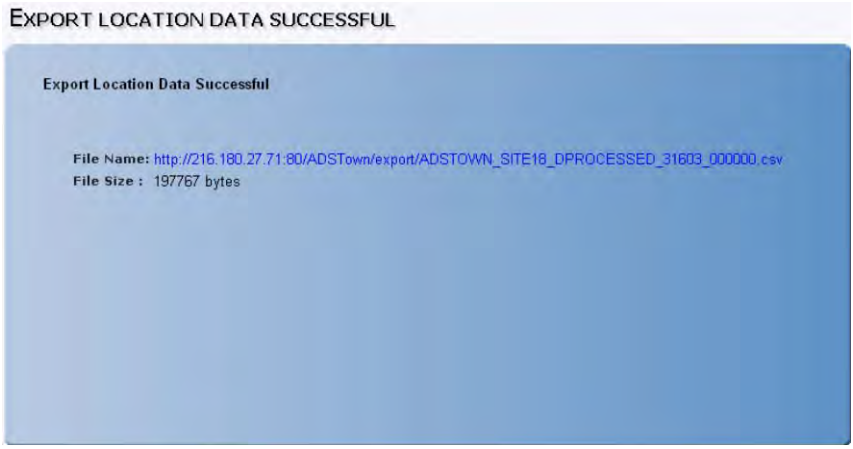
8. Enter the date/time period for which to export the data.

   - **Start Date/Time** Enter or click on the calendar icon to select the start date and then select the start time from the drop-down lists.

   - **End Date/Time** Enter or click on the calendar icon to select the end date and then select the end time from the drop-down lists.

9. Click on the **Next** button to export the data.

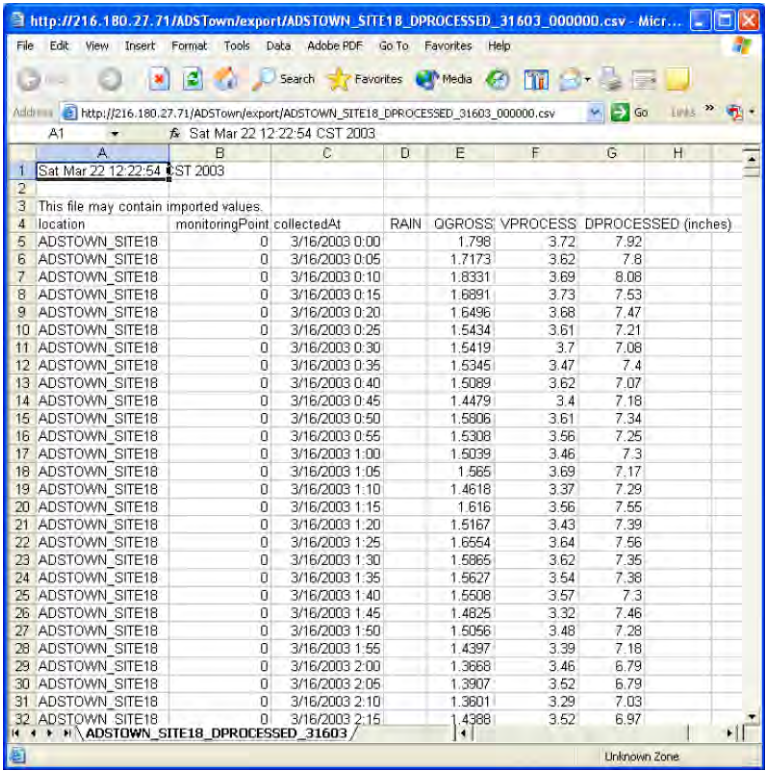
*The **Export Location Data Successful** window displays the name and size of the exported file.*



Export Location Data Successful window

10. Click on the file name, and then click on the **Open** button on the **File Download** dialog to view the contents of the file.

The data displays in a spreadsheet application in the proper format.



http://216.180.27.71/ADSTown/export/ADSTOWN_SITE18_DPROCESSED_31603_000000.csv - Micr...

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Search Favorites Media

Address http://216.180.27.71/ADSTown/export/ADSTOWN_SITE18_DPROCESSED_31603_000000.csv Go Links

A1 Sat Mar 22 12:22:54 CST 2003

	A	B	C	D	E	F	G	H
1	Sat Mar 22 12:22:54 CST 2003							
2								
3	This file may contain imported values.							
4	location	monitoringPoint	collectedAt	RAIN	QGROSS	VPROCESS	DPROCESSED (inches)	
5	ADSTOWN_SITE18	0	3/16/2003 0:00		1.798	3.72	7.92	
6	ADSTOWN_SITE18	0	3/16/2003 0:05		1.7173	3.62	7.8	
7	ADSTOWN_SITE18	0	3/16/2003 0:10		1.8331	3.69	8.08	
8	ADSTOWN_SITE18	0	3/16/2003 0:15		1.6891	3.73	7.53	
9	ADSTOWN_SITE18	0	3/16/2003 0:20		1.6496	3.68	7.47	
10	ADSTOWN_SITE18	0	3/16/2003 0:25		1.5434	3.61	7.21	
11	ADSTOWN_SITE18	0	3/16/2003 0:30		1.5419	3.7	7.08	
12	ADSTOWN_SITE18	0	3/16/2003 0:35		1.5345	3.47	7.4	
13	ADSTOWN_SITE18	0	3/16/2003 0:40		1.5089	3.62	7.07	
14	ADSTOWN_SITE18	0	3/16/2003 0:45		1.4479	3.4	7.18	
15	ADSTOWN_SITE18	0	3/16/2003 0:50		1.5806	3.61	7.34	
16	ADSTOWN_SITE18	0	3/16/2003 0:55		1.5308	3.56	7.25	
17	ADSTOWN_SITE18	0	3/16/2003 1:00		1.5039	3.46	7.3	
18	ADSTOWN_SITE18	0	3/16/2003 1:05		1.565	3.69	7.17	
19	ADSTOWN_SITE18	0	3/16/2003 1:10		1.4618	3.37	7.29	
20	ADSTOWN_SITE18	0	3/16/2003 1:15		1.616	3.56	7.55	
21	ADSTOWN_SITE18	0	3/16/2003 1:20		1.5167	3.43	7.39	
22	ADSTOWN_SITE18	0	3/16/2003 1:25		1.6554	3.64	7.56	
23	ADSTOWN_SITE18	0	3/16/2003 1:30		1.5865	3.62	7.35	
24	ADSTOWN_SITE18	0	3/16/2003 1:35		1.5627	3.54	7.38	
25	ADSTOWN_SITE18	0	3/16/2003 1:40		1.5508	3.57	7.3	
26	ADSTOWN_SITE18	0	3/16/2003 1:45		1.4825	3.32	7.46	
27	ADSTOWN_SITE18	0	3/16/2003 1:50		1.5056	3.48	7.28	
28	ADSTOWN_SITE18	0	3/16/2003 1:55		1.4397	3.39	7.18	
29	ADSTOWN_SITE18	0	3/16/2003 2:00		1.3668	3.46	6.79	
30	ADSTOWN_SITE18	0	3/16/2003 2:05		1.3907	3.52	6.79	
31	ADSTOWN_SITE18	0	3/16/2003 2:10		1.3601	3.29	7.03	
32	ADSTOWN_SITE18	0	3/16/2003 2:15		1.4388	3.52	6.97	

ADSTOWN_SITE18_DPROCESSED_31603

Unknown Zone

Contents of the exported data file

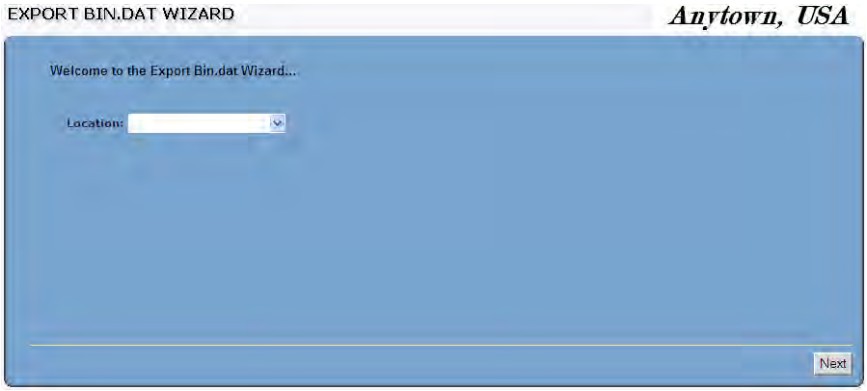
11. To save the file, select **File** > **Save As** from the application's main menu, browse to the desired location in the local directory or network folder, and then click on the **Save** button.

Exporting Data in a Raw Data (bin.dat) Format

Occasionally, you may want to export raw data (bin files) from the **IntelliServe** database so that it is available for importing into the **Profile** database. Export location data from the **IntelliServe** database in a raw data file (*bin.dat*) format in the following way:

1. Select **Locations > Export Location Data > Bin.dat** from the **System Menu**.

IntelliServe *displays the* ***Export Bin.dat Wizard****.*



Export Bin.dat Wizard

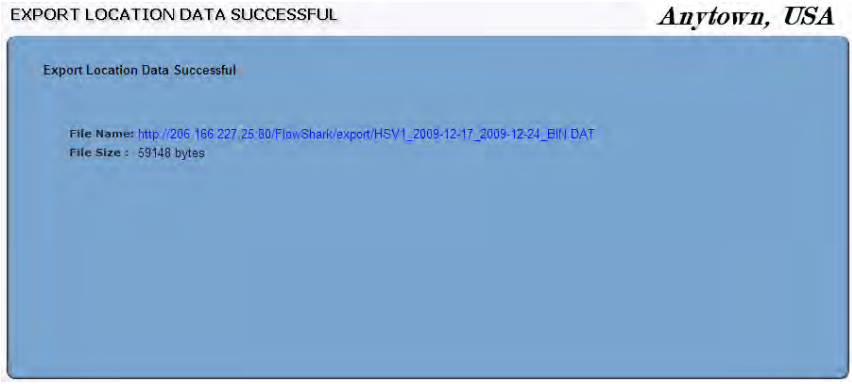
2. Select the location from which to export the raw data from the **Location** drop-down list, and then click on the **Next** button.

The ***Export Location Data: Date Range*** *window displays, indicating the range of data available for export.*

Export Location Data: Date Range window

3. Enter or select the calendar icon  to designate the starting date from which to begin exporting the data through the **Start Date/Time** field, and then select the starting time using the corresponding drop-down arrows. Repeat this process to designate the date and time up to which you want to export the data through the **End Date/Time** field. Click on the **Next** button.

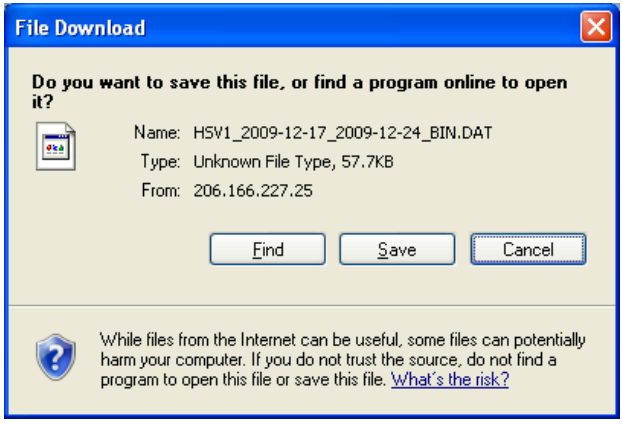
*The **Export Location Data Successful** window displays the name and size of the file containing the data. for export.*



Export Location Data Successful window

4. Click on the **File Name** link.

*The **File Download** dialog displays.*



File Download dialog

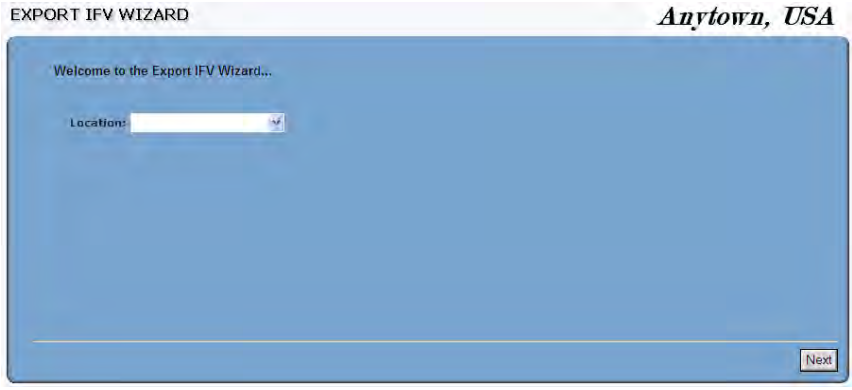
5. Click on the **Save** button to browse to the location in the local directory or network to save the raw data.

Exporting Data in Profile File (.IFV) Format

Export location data in the appropriate format through **IntelliServe** for viewing and analysis using the **Profile** software in the following way:

1. Select **Locations > Export Location Data > IFV** from the **System Menu**.

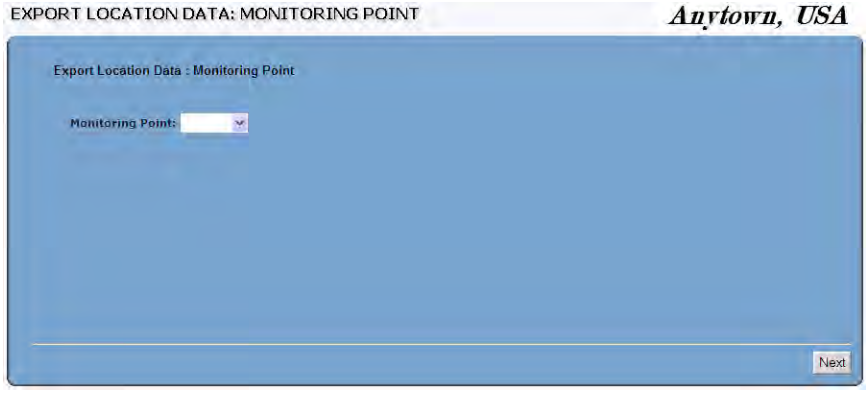
IntelliServe *displays the* ***Export IFV Wizard****.*



Export IFV Wizard

2. Select the location from which to export the data from the **Location** drop-down list, and then click on the **Next** button.

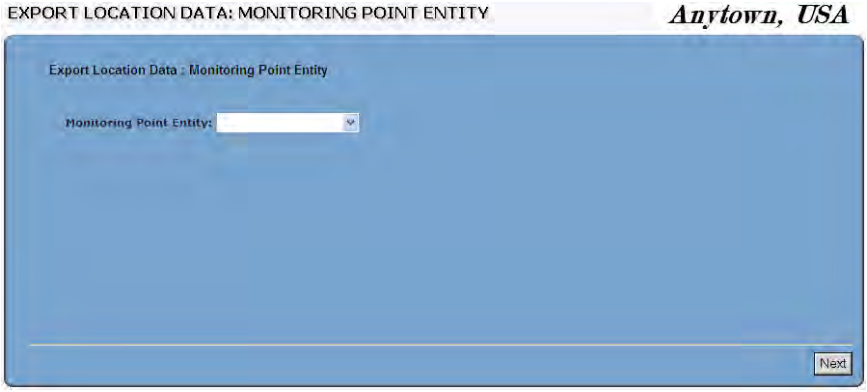
The ***Export Location Data: Monitoring Point*** *window displays.*



Export Location Data: Monitoring Point window

3. Select the monitoring point from which to export the data from the **Monitoring Point** drop-down list, and then click on the **Next** button.

*The **Export Location Data: Monitoring Point Entity** window displays.*



Export Location Data: Monitoring Point Entity window

4. Select the entity for which to export the data from the **Monitoring Point Entity** drop-down list, and then click on the **Next** button.

*The **Export Location Data: Date Range** window displays.*

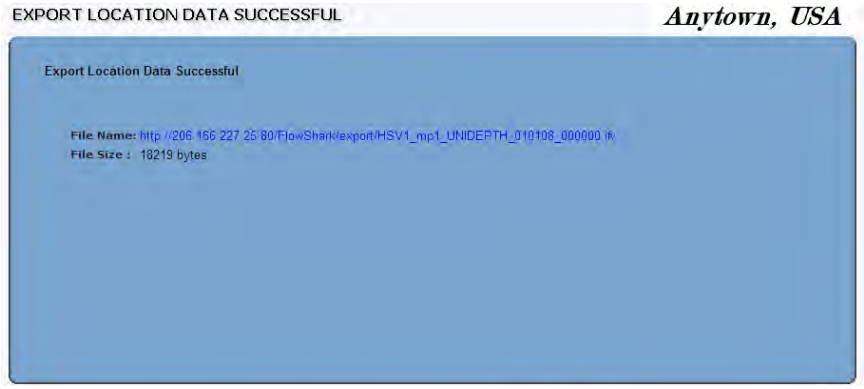
Export Location Data: Date Range window

5. Designate the range of data you want to export, and then click on the **Next** button.

   - **Start Date/Time** Enter or click on the calendar icon to designate the date at which you want to begin exporting the data, and then select the corresponding start time from the drop-down lists.

   - **End Date/Time** Enter or click on the calendar icon to designate the date up to which you want to export the data, and then select the corresponding end time from the drop-down lists.

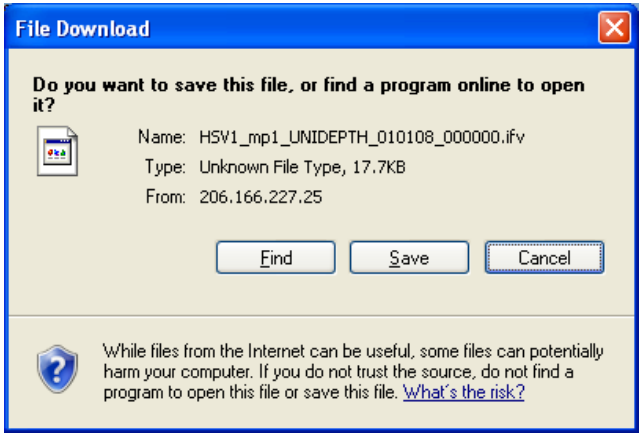
*The **Export Location Data Successful** window displays the name and size of the file containing the entity data.*



Export Location Data Successful window

6. Click on the filename.

*The **File Download** dialog displays.*



File Download dialog

7. Click on the **Save** button to browse to the location in the local directory or network to save the entity data.

CHAPTER 7

Location Information

IntelliServe® primarily reserves the function of configuring the parameters for most location types (flow monitors, rain gauges, pseudo sites and composite locations) to System Administrators. Therefore, users with the appropriate permissions typically can view, but not set or modify, the parameters for most locations. However, **IntelliServe** does allow users with the appropriate permissions to both view and configure composite locations.

Since location groups consist of multiple rain gauges, flow monitors, and composite locations, detailed parameters are not available for the groups.

In addition to location parameters, users with the appropriate permission can upload supplemental documents to the system and associate these documents with locations. Most users also can view the documents.

For an explanation of the different location types, refer to *Chapter 2, Maps and Locations*.

Configuring and Viewing Location Parameters

IntelliServe enables you to view detailed information about the locations in the system. This information may include the location's address, physical description, communications, associated monitoring points, and other details.

Users with the appropriate permission also may configure composite locations.

Composite Locations

IntelliServe allows you to configure new composite locations and modify and view the parameters for existing composite locations.

Configuring a Composite Location

Configuring a composite location involves adding the new location, assigning monitoring points to the location, and setting other parameters. The location parameters include a data collection feature and flow rate threshold settings. Assigning monitoring points involves designating the amount of flow to include from the monitoring point when calculating flow totals.

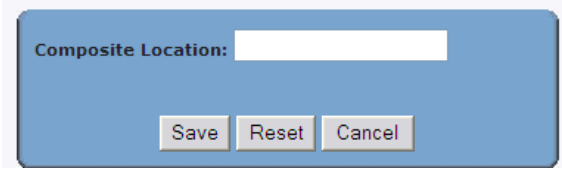
Create and configure a composite location in the following way:

1. Select **Locations > Composite Locations** from the **System Menu**.

*The **Composite Locations** window displays the locations that already exist in the database.*

2. Click on the **Add** button.

*The **Add Composite Location** dialog displays.*



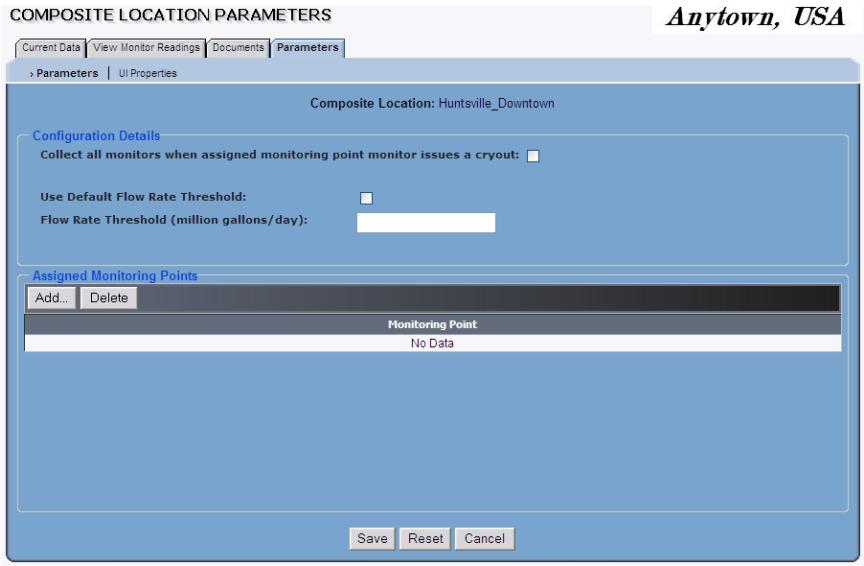
Add Composite Location dialog

3. Enter a name for the new location in the **Composite Location** field, and then click on the **Save** button.

*The new composite location displays on **Composite Locations** window.*

4. Click on the new location.

*The **Composite Location Parameters** window displays.*



Composite Location Parameters window

5. (*optional*) Select the **Collect all monitors when the assigned monitoring point monitor issues a cryout** checkbox to ensure **IntelliServe** collects data from all the remaining monitors supporting monitoring points assigned to the current composite location when a cryout occurs from one of the monitors.

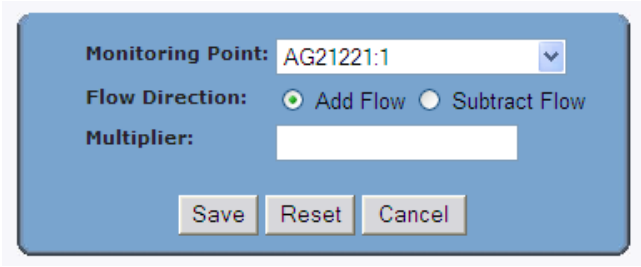
6. (*optional*) Select the **Use Default Flow Rate Threshold** checkbox to apply the flow rate thresholds configured for the individual monitoring points included in the composite location when creating Excess Reports or tables or graphs displaying the QEXCESS entity.

7. (*optional*) Enter the flow rate threshold value to apply in the Excess Report, graph, or table for the composite location in the **Flow Rate Threshold** field.

8. Click on the **Save** button to save your selections to the database.

9. Click on the **Add** button in the **Assigned Monitoring Points** section.

*The **Add Composite Location** dialog displays.*



Add Composite Location dialog

10. Select a monitoring point you would like to assign to the composite location from the **Monitoring Point** drop-down list.

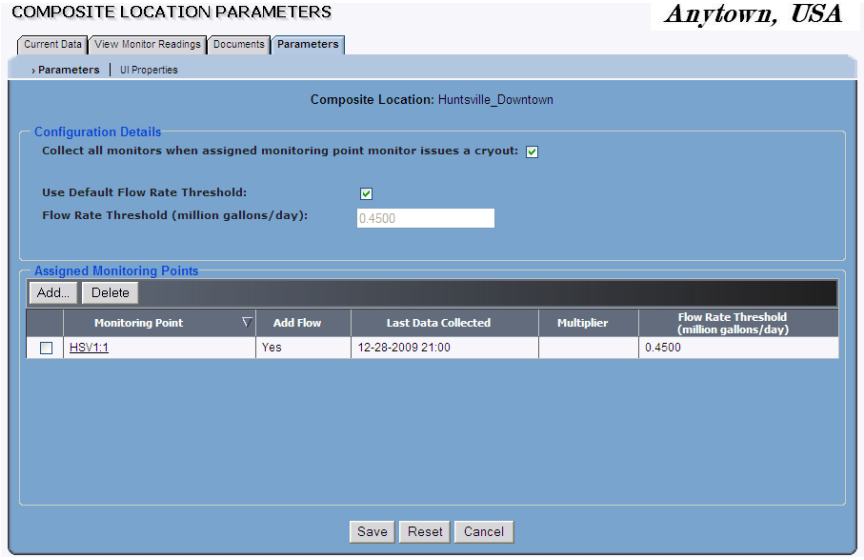
11. Choose the **Add Flow** or **Subtract Flow** radio button for the **Flow Direction** to indicate whether to include or exclude all or a portion of the flow from the selected monitoring point when calculating the total flow for the composite location. Add or subtract only a portion of the flow from the selected monitoring point by entering a decimal value that represents a percentage of the flow in the **Multiplier** field.

    For example, to add only 75 percent of the flow from a specific monitoring point to the total flow for a composite location, select the **Add Flow** option and enter 0.75 in the **Multiplier** field.

> **Note:** If no multiplier is entered, **IntelliServe** automatically will apply a multiplier of 1, which represents either adding or subtracting all the flow coming from the monitoring point.

12. Click on the **Save** button.

*The monitoring point and settings display on the list of **Assigned Monitoring Points** on the **Composite Location Parameters** window.*



Composite Location Parameters window

13. Repeat steps 9 through 12 for each additional monitoring point you want to assign to the current composite location.

> **Note:** To edit an existing monitoring point, click on the monitoring point name in the **Assigned Monitoring Points** table.

14. Click on the **Save** button.

> **Note:** Clicking on the **Reset** button before saving the new or modified parameters causes **IntelliServe** to clear all the fields and options or restore them with the parameter settings stored in the database for the selected location.

Viewing Composite Location Parameters

Once the composite locations are configured, the existing locations and settings are available for viewing by users with the appropriate permissions. The **Parameters** tab displays the current parameter settings for a selected location and indicates the date on which the last data collect occurred for each monitoring point.

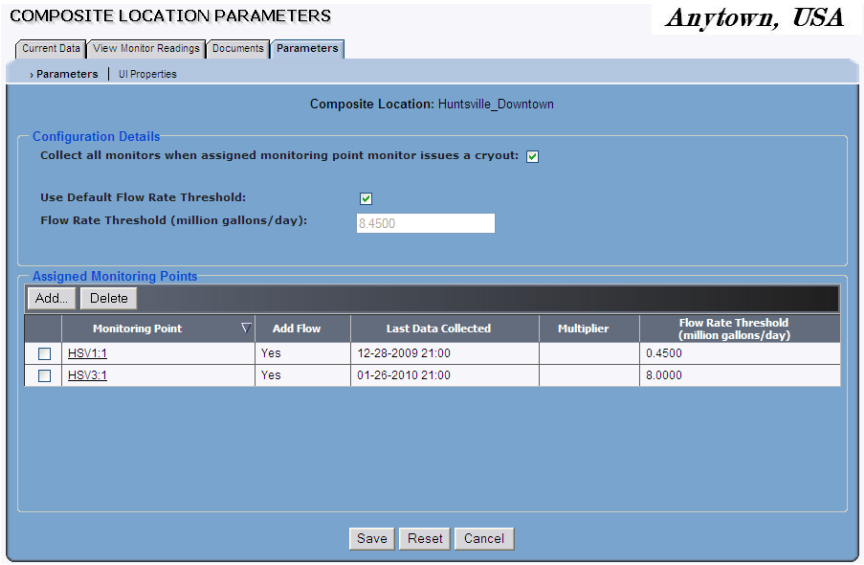
View the parameters for a composite location in the following way:

1. Select **Locations** > **Composite Locations** from the **System Menu** to display the list of composite locations in the system.

*The **Composite Locations** window displays.*

2. Right-click on the location for which you want to view the parameters, and then select the **Parameters** option on the popup menu.

*The **Composite Locations Parameters** window displays.*



Composite Location Parameters window

3. Click on the **Cancel** button to exit this dialog and return to the **Composite Locations** window.

Pseudo Sites

IntelliServe allows you to view the parameters for pseudo sites configured in the system. The parameters identify the monitoring points assigned to the pseudo site, the monitoring point or pseudo site located immediately downstream of the pseudo site, and the method by which **IntelliServe** determines the travel time between the pseudo site and the downstream location.

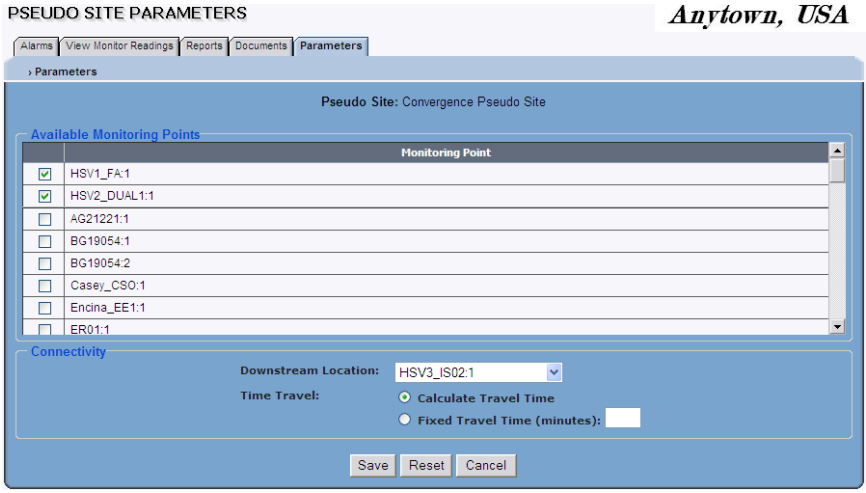
View the pseudo site parameters in the following way:

1. Select **Locations** > **Pseudo Sites** from the **System Menu** to display the list of pseudo sites in the system.

*The **Pseudo Sites** window displays.*

2. Right-click on the location for which you want to view the parameters, and then select the **Parameters** option on the popup menu.

*The **Pseudo Sites Parameters** window displays the current information about the location.*



Pseudo Site Parameters window

3. Click the **Cancel** button to exit this dialog and return to the **Pseudo Sites** window.

Rain Gauges

Rain gauge location information is detailed on two windows (**Parameters** and **Coordinates**) and includes the following information:

- Location address
- Monitor series and model number
- Alarm basin
- Description and map label
- Communication speed and type
- Previous data collect date and next scheduled collect
- Geographical location coordinates

Viewing Rain Gauge Parameters

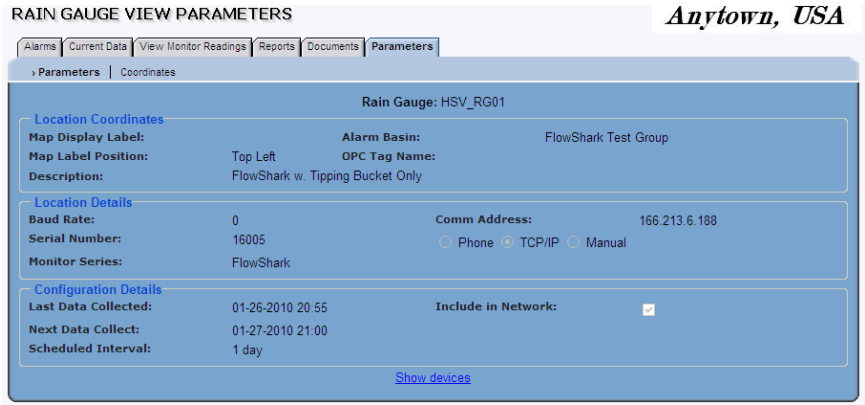
View rain gauge parameters in the following way:

1. Select **Locations** > **Rain Gauges** from the **System Menu** to display the list of rain gauges in the system.

*The **Rain Gauges** window displays.*

2. Right-click on the location for which you want to view the parameters, and then choose the **Parameters** option from the list.

*The **Rain Gauges Parameters** window displays the current location information.*



Rain Gauge Parameters window

Following are brief descriptions of the information included on the **Rain Gauge Parameters** window:

- **Configuration Details**
  - **Map Display Label** This represents the designation for the location label on the map.
  - **Map Label Position** This represents the position of the location label in relation to the corresponding symbol on the map.
  - **Description** This represents descriptive and other information concerning the rain gauge location.
  - **Alarm Basin** This represents the alarm basin in which the rain gauge is included.
  - **OPC Tag Name** This field displays the applicable tag name for IntelliServe systems with OPC functionality.
- **Location Details**
  - **Baud Rate** This represents the baud rate used for communications for the rain gauge.
  - **Serial Number** This represents the serial number of the rain gauge.
  - **Monitor Series** This represents the series of the rain gauge.
  - **Comm Address** This represents the phone number (*for modem communication*) or the IP address (*for wireless communication*) for the rain gauge. The **Phone** and **TCP/IP** (*for wireless communication*) radio buttons indicate the *method* of communication in use. The **Manual** radio button indicates this location has no remote communications and is currently configured for manual communications only.
- **Data Collection Details**
  - **Last Data Collected** This represents the date and time of the last collected data from the selected rain gauge.
  - **Next Data Collect** This represents the date and time the next scheduled data collection from the selected rain gauge will occur.
  - **Scheduled Interval** This indicates the time interval between (scheduled) data collects from the selected rain gauge.

– **Include in Network** When selected, this option indicates that **IntelliServe** collects data from and responds to alarms corresponding to the selected rain gauge.

❑ **Show devices** Select this link to view a list of devices associated with the currently selected **location**. Close the device list by choosing the **Hide devices** link.

3. To view parameters for a different rain gauge, repeat steps 1 and 2.

Viewing Rain Gauge Coordinates

View the geographic map coordinates for a rain gauge monitor from the **Coordinates** window. Perform the following to view the location coordinates for a rain gauge:

1. Select **Locations** > **Rain Gauges** from the **System Menu** to display the list of rain gauges in the system.

*The **Rain Gauges** window displays.*

2. Right-click on the location for which you want to view the coordinates, and then choose the **Coordinates** option from the lists.

*The **Rain Gauge Coordinates** window displays the geographic coordinates for the location.*

Rain Gauge Coordinates window

❑ **Configure using**

– **Latitude/Longitude** Choose this radio button if you want to use the latitude/longitude method for location identification which uses the latitudinal and longitudinal coordinates to geographically identify the location.

- **GPS** Choose this radio button if you are using the global positioning system (GPS) method of geographical location identification which employs use of the Universal Transverse Mercator (UTM) coordinates system.

❑ **Latitude/Longitude**

- **Latitude** This represents the latitude of the location where the rain gauge is installed.
- **Longitude** This represents the longitude of the location where the rain gauge is installed.

❑ **GPS**

- **Zone** This identifies the UTM zone for the location of the rain gauge monitor for the GPS method of geographical identification.
- **Northing** This number identifies the UTM y-coordinate for the rain gauge.
- **Easting** This identifies the UTM x-coordinate for the rain gauge location.

❑ **Address**

- **Street Address** This represents the street address for the location where the rain gauge is installed.
- **City** This represents the city for the location where the rain gauge is installed.
- **State** This represents the state for the location where the rain gauge is installed.
- **Zip Code** This represents the zip code for the location where the rain gauge is installed.

3. To view coordinates for a different rain gauge, repeat steps 1 and 2.

Flow Monitors

Flow monitor location information is detailed on four windows (**Parameters**, **Coordinates**, **Confirmations**, and **Adjustment Factors)** and includes the following:

- Location address
- Alarm basin
- Description and map label
- Communication speed and type
- Monitor series and model number
- Previous data collect date and next scheduled collect
- Monitoring points
- Geographical coordinates
- Field confirmations
- Factors applied to data during report and graph generation

Since flow monitors can have multiple monitoring points, you can also view specific parameters for each monitoring point of a location.

Viewing Flow Monitor Parameters

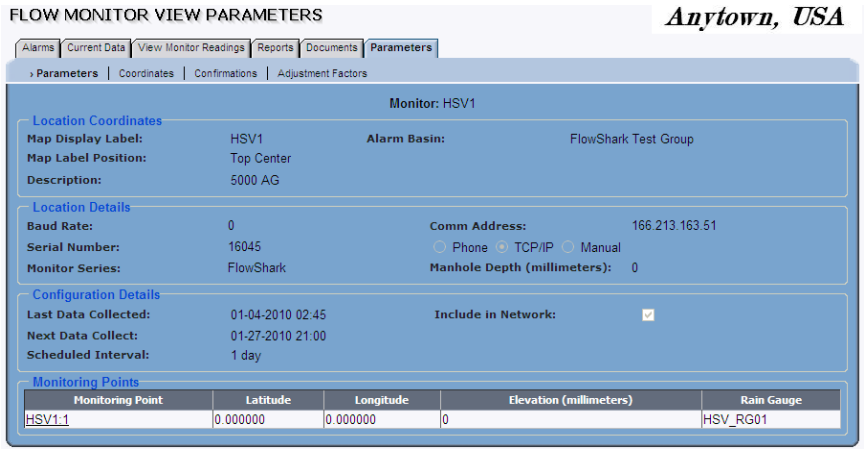
View flow monitor parameters in the following way:

1. Select **Locations** > **Flow Monitors** from the **System Menu** to display the list of flow monitor locations currently in the system.

*The **Flow Monitor** window displays.*

2. Right-click on the location for which you want to view the parameters, and then select the **Parameters** option from the popup menu.

*The **Flow Monitor View Parameters** window displays the current information for the location.*



Flow Monitor View Parameters window

The information on this window is organized as follows:

- **Configuration Details**
  - **Map Display Label** This represents the designation for the location label on the map.
  - **Map Label Position** This represents the position of the location label in relation to the corresponding symbol on the map.
  - **Description** This represents descriptive and other information concerning the flow monitor location.
  - **Alarm Basin** This represents the alarm basin in which the flow monitor is included.
- **Location Details**
  - **Baud Rate** This represents the baud rate used for communications for the flow monitor.
  - **Serial Number** This represents the serial number of the flow monitor.
  - **Monitor Series** This represents the series of the flow monitor.

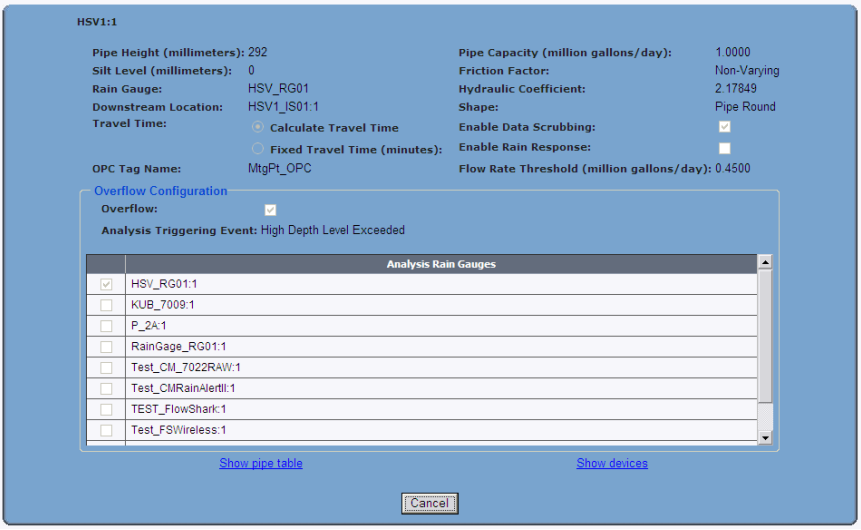
- **Comm Address** This represents the phone number (*for modem communication*) or the IP address (*for wireless communication*) for the flow monitor. The **Phone** and **TCP/IP** (*for wireless communication*) radio buttons indicate the *method* of communication in use. The **Manual** radio button indicates this location has no remote communications and is currently configured for manual communications only.
- **Manhole Depth** This represents the distance from the manhole rim to the bottom of the manhole invert.

❑ **Data Collection Details**

- **Last Data Collected** This represents the date and time of the last collected data from the selected flow monitor.
- **Next Data Collect** This represents the date and time the next scheduled data collection from the selected flow monitor will occur.
- **Scheduled Interval** This indicates the time interval between (scheduled) data collects from the selected flow monitor.
- **Include in Network** If checked, this option indicates that **IntelliServe** collects data from and responds to alarms corresponding to the selected flow monitor.

❑ **Monitoring Points** This table shows the individual flow monitors that are configured for the site. Display monitoring point parameters by clicking the relevant monitoring point in the table.

*The **Monitoring Point** dialog displays.*



Monitoring Point dialog

- **Pipe Height/Depth Range** For pipes, this value indicates the height of the pipe and for Parshall flumes, this indicates the distance from the face of the bat to the floor of the flume at the designated measurement point.
- **Silt Level** This indicates the depth of the silt existing at the monitoring point
- **Rain Gauge** This indicates the rain gauge associated with the selected monitoring point.
- **Downstream Location** This indicates the monitoring point located immediately downstream from the currently selected monitoring point.
- **Travel Time** This represents the expected amount of time (in minutes) for flow to travel from the selected monitoring point in the **Downstream Location**. If selected, **Calculate Travel Time** indicates that **IntelliServe** will determine the travel time between the upstream and downstream locations based on historical flow analysis. If selected, **Fixed Travel Time** indicates that the System Administrator has specified the elapsed time for flow to travel between the upstream and downstream locations. This field also provides the elapsed time (when applicable).

- **OPC Tag Name** This field displays the OPC tag name for **IntelliServe** systems with OPC functionality.
- **Pipe Capacity/Flume Capacity** For pipes, this value indicates the monitoring point capacity. For flumes, this value indicates the maximum capacity of the flume with the given characteristics, as determined by you or ADS.
- **Friction Factor** This indicates the factor **IntelliServe** applies when calculating quantity using the *Manning* equation to compensate for the degree of resistance the flow experiences from the pipe surface at different flow depths. The **Non-Varying** option applies a constant friction factor at all depths. The **Camp's Curve** option applies a friction factor that varies based on the depth of the flow.
- **Hydraulic Coefficient** (HC) Represents the square root of the slope of the pipe divided by the friction factor for the pipe where the sensors are installed. The HC is used in the modified Manning equation to compute average velocity. For monitoring points where there is depth and velocity data, **IntelliServe** back-calculates the HC based on the measured depth and velocity readings at the installation point. For monitoring points where there is no velocity data, the System Administrator can manually enter an HC that has been calculated for the location based on manual confirmations performed by ADS field crews.
- **Shape** This indicates the shape of the pipe or flume where the monitor is located.
- **Enable Data Scrubbing** If selected, **IntelliServe** evaluates and analyzes the collected monitor data, and edits as needed, based on learned typical curves for the monitoring location.
- **Enable Rain Response** If selected, **IntelliServe** evaluates the monitor data in relation to rainfall to determine the location's typical response to rainfall events.
- **Flow Rate Threshold** This field displays the threshold value used for Excess reports. Flows reported above this value are reported as *excess* flows.

- **Overflow Configuration** This section contains the parameters defined by the System Administrator that indicate whether the location should be considered an overflow location and threshold that must be exceeded in order to initiate the overflow analysis.
  - **Overflow** Select this checkbox to enable overflow analysis for this monitoring point.
  - **Analysis Triggering Event** This specifies the occurring event for **IntelliServe** to begin analyzing if an overflow occurred and whether the overflow was a dry or wet weather overflow event.
  - **Analysis Rain Gauges** This table identifies which rain gauges are included in the overflow analysis. A selected rain gauge is collected to determine if a reported overflow is due to a dry or wet-weather event.
- **Show pipe table** Select this link to view the pipe table for the current location. Close the pipe table by choosing the **Hide pipe table** link.
- **Show devices** Select this link to view a list of devices associated with the current location. Close the device list by choosing the **Hide devices** link.

3. View parameters for a different rain gauge by repeating steps 1 and 2.

Viewing Flow Monitor Coordinates

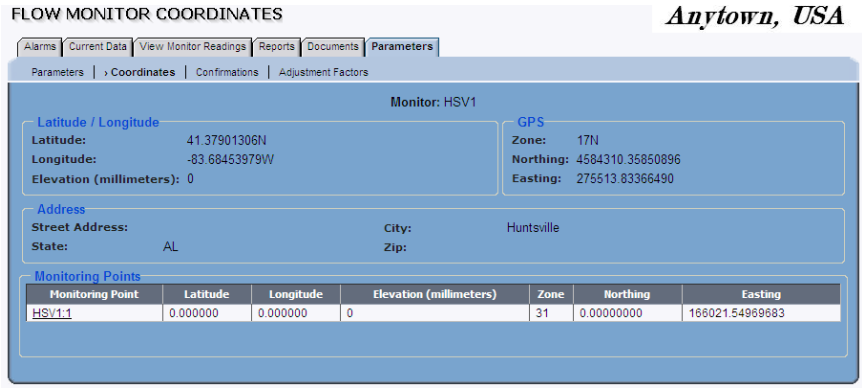
View the geographic coordinate information for the flow monitor from the **Coordinates** window. Perform the following to view the location coordinates for a flow monitor:

1. Select **Locations** > **Flow Monitors** from the **System Menu** to display the list of flow monitors in the system.

*The **Flow Monitors** window displays.*

2. Right-click on the location for which you want to view the coordinates, and then choose the **Coordinates** option from the list.

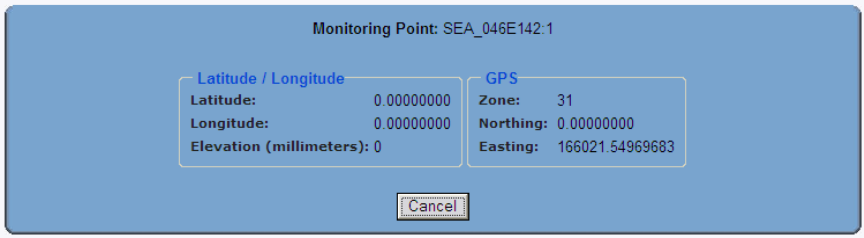
*The **Flow Monitor Coordinates** window displays the current information about the location.*



Flow Monitor Coordinates window

- **Configure using**
  - **Latitude/Longitude** Choose this radio button if you want to use the latitude/longitude method for geographic location identification.
  - **GPS** Choose this radio button if you are using the global positioning system (GPS) method of geographical location identification which employs use of the Universal Transverse Mercator (UTM) coordinates system.
- **Latitude/Longitude**
  - **Latitude** This represents the geographic latitude of the location at which the flow monitor is installed.
  - **Longitude** This represents the geographic longitude of the location at which the flow monitor is installed.
  - **Elevation** This represents the geographic elevation of the location at which the flow monitor is installed.
- **GPS**
  - **Zone** This identifies the UTM zone for the flow monitor when the GPS method of geographical identification is being used.
  - **Northing** This number identifies the UTM y-coordinate for the flow monitor.
  - **Easting** This identifies the UTM x-coordinate for the flow monitor location.

- **Address**
  - **Street Address** This represents the street address for the location at which the flow monitor is installed.
  - **City** This represents the city in which the flow monitor is installed.
  - **State** This represents the state in which the flow monitor is installed.
  - **Zip** This represents the zip code in which the flow monitor is installed.
- **Monitoring Points** This section shows the geographical location coordinates specific to the monitoring point.



Coordinates for a monitoring point

- **Latitude/Longitude**
  - **Latitude** This represents the geographic latitude at the monitoring point.
  - **Longitude** This represents the geographic longitude at the monitoring point.
  - **Elevation** This represents the geographic elevation of the monitoring point.
- **GPS**
  - **Zone** This identifies the UTM zone for the monitoring point when the GPS method of geographical identification is being used.
  - **Northing** This number identifies the UTM y-coordinate for the monitoring point.
  - **Easting** This identifies the UTM x-coordinate for the monitoring point.

Viewing Flow Monitor Confirmations

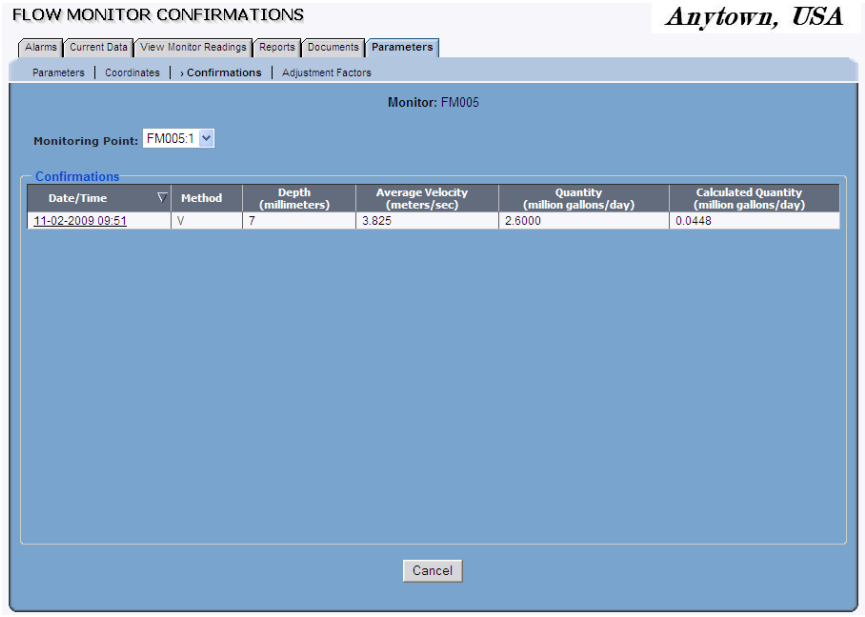
View field confirmation information imported into the **IntelliServe** database for the flow monitor from the **Confirmations** window. View the confirmations for a specific flow monitor in the following way:

1. Select **Locations > Flow Monitors** from the **System Menu**.

*The **Flow Monitors** window displays.*

2. Right-click on the flow monitor for which you want to view confirmations, and then select the **Confirmations** option from the menu.

*The **Flow Monitor Confirmations** window displays the confirmation information available in the database for the selected flow monitor.*



Flow Monitor Confirmations window

Following are descriptions of the items displayed on the window:

- **Monitoring Point** This drop-down list represents the monitoring points available for the **current** flow monitor. The Confirmations table displays the confirmation information corresponding to the monitoring point currently selected.

- **Confirmations** This section contains the table providing the details for all confirmations available in **the** database.
  - **Date/Time** This column represents the dates and times at which field confirmations were performed.
  - **Method** This column represents the type of confirmations performed. **Q** represents a quantity confirmation (such as a weir); **V** represents a velocity/depth confirmation.
  - **Depth** This column represents the manual depth measurements taken at the monitoring point (+/- represents the margin of error of the depth measurement).
  - **Average Velocity** This column represents the average velocities determined based on the manual peak velocity measurements taken at the monitoring point and the Average-to-Peak ratios (+/- represents the margin of error of the peak velocity measurement).
  - **Quantity** This column represents the manual quantity measurements taken at the monitoring point (+/- represents the margin of error of the quantity measurement).
  - **Calculated Quantity** This column represents the quantities calculated using the confirmation information.

Working with Flow Monitor Adjustment Factors

IntelliServe can apply multipliers called *adjustment factors* to DPROCESSED, QFINAL, QGROSS, and VPROCESSED values when generating graphs and reports. Adjustment factors are created or modified by a user (with the appropriate permissions) or an administrator for individual flow monitor locations at the parameter level. You can create factors for up to all four entities, and each location can have multiple factors associated with a single entity based on designated dates on which the factors are applied.

The following sections provide instructions on viewing, creating, and deleting adjustment factors.

Viewing Flow Monitor Adjustment Factors

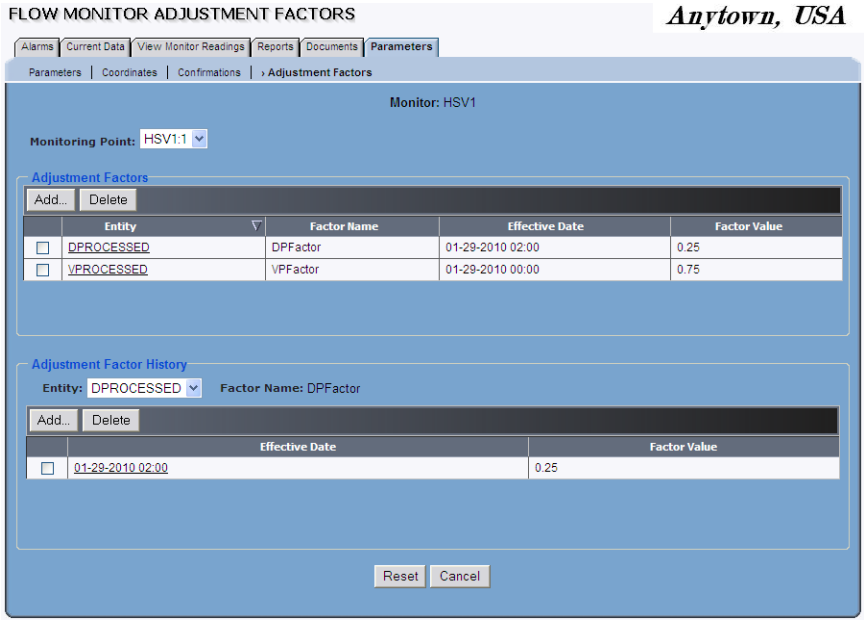
View the adjustment factors for a specific flow monitor location from the **Flow Monitor Adjustment Factors** window in the following way:

1. Select **Locations > Flow Monitors** from the **System Menu**.

*The **Flow Monitors** window displays.*

2. Right-click on the flow monitor for which you want to view the adjustment factors, and then select the **Adjustment Factors** option from the menu.

*The **Flow Monitor Adjustment Factors** window displays the current and historical adjustment factors stored in the database for the selected flow monitor.*



Flow Monitor Adjustment Factors window

Following are descriptions of the sections and tables on the **Flow Monitor Adjustment Factors** window.

- **Monitoring Point** This drop-down list represents the monitoring points available for the current flow monitor location. The **Adjustment Factors** and **Adjustment Factor History** sections display the factor information corresponding to the monitoring point currently selected.
- **Adjustment Factors** This section displays detailed information concerning the latest adjustment factors for the selected monitoring point.
  - **Entity** This column displays the entities for which adjustment factors have been established. DPROCESSED, QFINAL,

QGROSS, and VPROCESSED are the only entities for which users/administrators can create adjustment factors.

- **Factor Name** This column displays the names representing the latest adjustment factor entities. You can modify a current factor name by clicking on the corresponding entity name in the **Entity** column, provided you have the appropriate permissions.
- **Effective Date** This column displays the dates and times corresponding to the time stamps of the entity readings at which **IntelliServe** begins applying the adjustment factors (**Factor Value**) when generating graphs and reports.
- **Factor Value** This column displays the latest (*based on the **Effective Date***) adjustment factors **IntelliServe** applies to the entity readings.

❑ **Adjustment Factor History** This section provides detailed information concerning all the adjustment factors created **for** the monitoring point. The information displayed corresponds only to the entity currently selected from the **Entity** drop-down list.

- **Entity** This drop-down list contains the entities associated with the currently selected monitoring point for which adjustment factors have been created. The adjustment factor information displayed in this section corresponds only to the entity currently selected from this list.
- **Factor Name** This field displays the factor name corresponding to the selected entity.
- **Effective Date** This column displays the starting dates and times corresponding to the factor values created for the selected entity. **IntelliServe** applies the value corresponding to a particular effective date to each entity reading up to the next (later) effective date (when applicable) for which an adjustment factor has been created for the same entity.
- **Factor Value** This column displays all the adjustment factors that have been created for the selected entity. **IntelliServe** applies these adjustment factors to the readings in the database for the selected entity on and following the corresponding effective dates. With the appropriate permissions, you can modify an existing factor value by clicking on the corresponding effective date.

Creating Flow Monitor Adjustment Factors

Create an adjustment factor(s) for a specific flow monitor location from the **Flow Monitor Adjustment Factors** window in the following way:

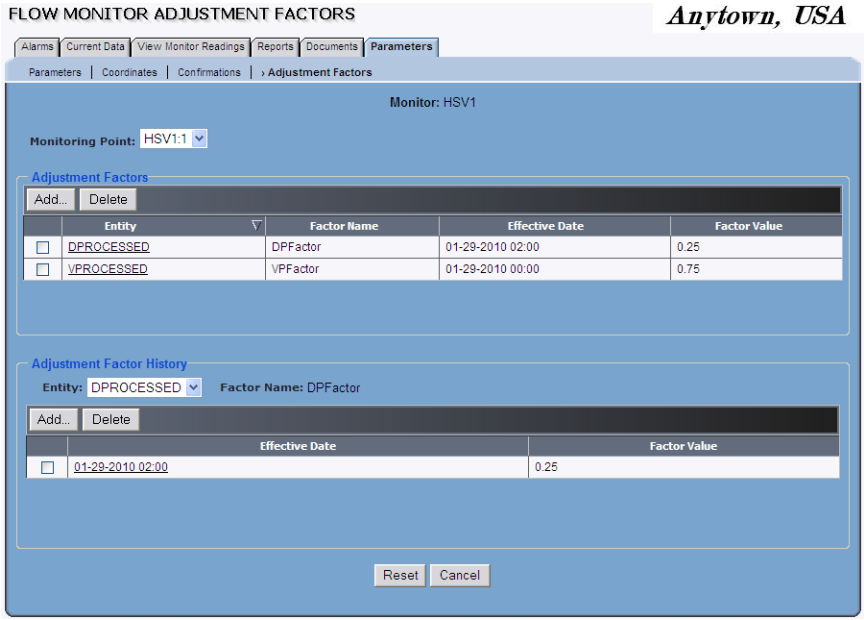
> **Note:** To create or modify adjustment factors in **IntelliServe**, you must have the appropriate permissions.

1. Select **Locations > Flow Monitors** from the **System Menu**.

*The **Flow Monitors** window displays.*

2. Right-click on the flow monitor for which you want to create an adjustment factor(s), and then select the **Adjustment Factors** option from the menu.

*The **Flow Monitor Adjustment Factors** window displays the adjustment factors stored in the database for the selected flow monitor.*

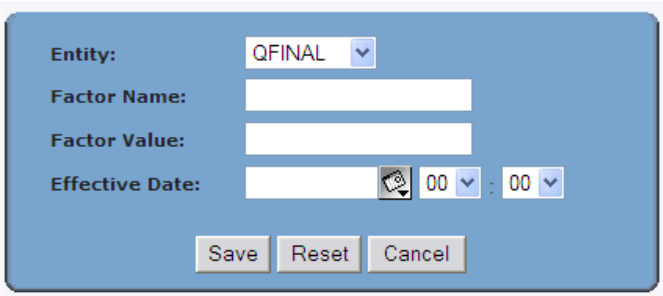


Flow Monitor Adjustment Factors window

3. Select the monitoring point for which you want to create an adjustment factor from the **Monitoring Point** drop-down list. The **Adjustment Factors** and **Adjustment Factor History** sections display the existing factor information corresponding to the selected monitoring point.

4. Click on the **Add** button in the **Adjustment Factors** section.

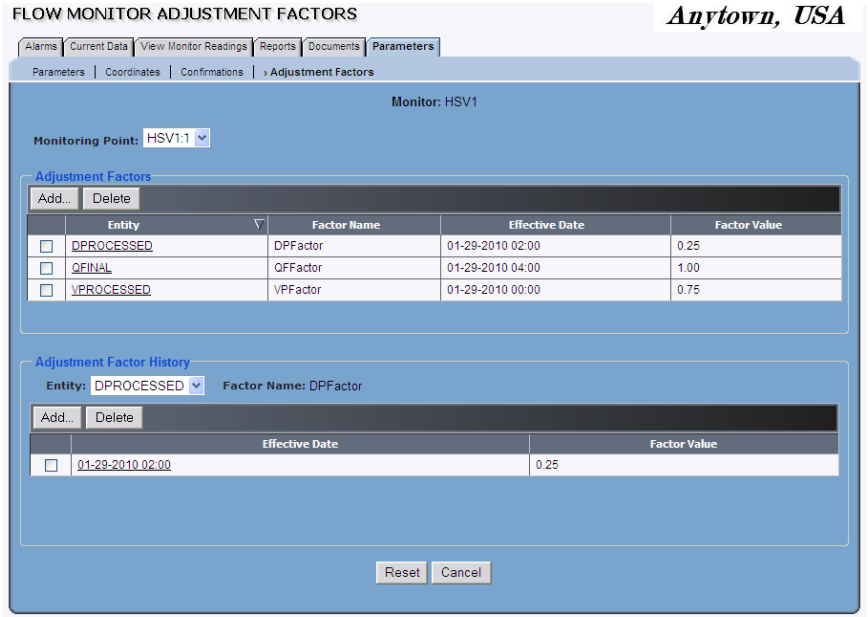
*The **Add Adjustment Factor** dialog displays.*



Add Adjustment Factor dialog

5. Select the entity to which you want **IntelliServe** to apply the adjustment factor from the **Entity** drop-down list. DPROCESSED, QFINAL, QGROSS, and VPROSCESSED are the only entities for which you can create adjustment factors.
6. Enter a name by which to reference the factor being created in the **Factor Name** field.
7. Enter the factor you want **IntelliServe** to apply to the selected entity's readings in graphs and reports in the **Factor Value** field.
8. Enter or click on the calendar icon corresponding to the **Effective Date** field to designate the date upon which to begin applying the adjustment factor to the selected entity when generating graphs and reports. Then, select the hour and minute on the designated date to begin applying the adjustment factor from the associated drop-down lists. This date and time correspond to the time stamp of the selected entity's readings.
9. Click on the **Save** button.

*The **Flow Monitor Adjustment Factors** screen displays the new adjustment factor in the **Adjustment Factors** and **Adjustment Factor History** sections. Change the **Factor Name** of an adjustment factor in the **Adjustment Factors** section by clicking on the link corresponding to the associated **Entity**.*



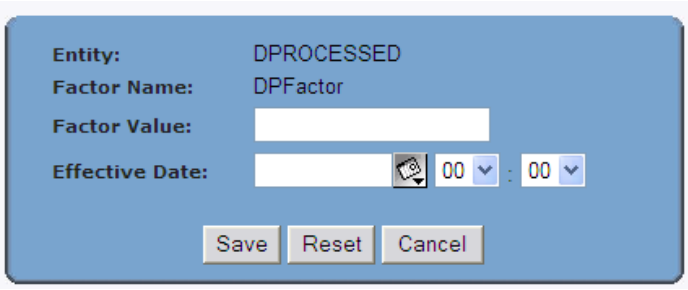
Flow Monitor Adjustment Factors window with new factor

10. (*optional*) Repeat steps 3 through 9 for each additional adjustment factor you want to create, provided an adjustment factor does not exist already for that entity.

11. (*optional*) Create an additional adjustment factor for an entity that already has at least one adjustment factor through the **Adjustment Factor History** section in the following way:

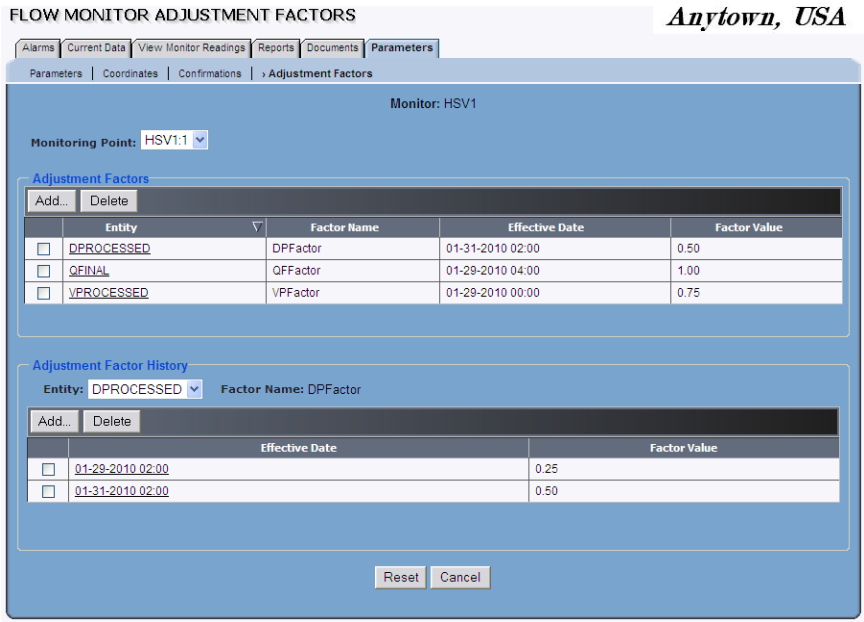
    - ❑ Select the entity for which to create an additional adjustment factor from the **Entity** drop-down list.
    - ❑ Click on the **Add** button.

*The **Add Adjustment Factor Date** dialog displays.*



Add Adjustment Factor Date dialog

- ❑ Enter the value to apply to the entity reading in the **Factor Value** field.
- ❑ Enter or click on the calendar icon corresponding to the **Effective Date** field to designate the date upon which to begin applying the adjustment factor to the selected entity. Then, select the hour and minute on the designated date to begin applying the adjustment factor from the associated drop-down lists.
- ❑ Click on the **Save** button.



Flow Monitor Adjustment Factors window with new factor and date

- ❑ Repeat the previous 5 procedures in this step for each additional adjustment factor you want to create for an entity with an existing factor.

> **Note:** With the appropriate permissions, you can modify an existing factor value by clicking on the corresponding date and time in the **Effective Date** column.

Deleting an Adjustment Factor

Remove an adjustment factor from the **IntelliServe** database in the following way:

1. Select **Locations > Flow Monitors** from the **System Menu**.

*The **Flow Monitors** window displays.*

2. Right-click on the flow monitor for which you want to delete an adjustment factor(s), and then select the **Adjustment Factors** option from the menu.

*The **Flow Monitor Adjustment Factors** window displays the adjustment factors stored in the database for the selected flow monitor.*

3. Proceed based on the following conditions:

   - ❑ **Delete individual, but not all, adjustment factors associated with a single entity**
     - Select the entity type from the **Entity** drop-down list in the **Adjustment Factor History** section.
     - Select the checkboxes corresponding to the factor values you want to delete from the database, and then select the **Delete** button.
     - Click on the **OK** button on the confirmation dialog.
   - ❑ **Delete all adjustment factors associated with a single entity or entities**
     - In the **Adjustment Factors** section, select the checkboxes corresponding to the entities for which you want to delete all the associated adjustment factors.
     - Click on the **Delete** button.

– Click on the **OK** button on the confirmation dialog. ***IntelliServe*** *removes the entity from the* ***Adjustment Factors*** *section and clears all factor values associated with the entity from* ***Adjustment Factor History*** *section.*

Location Groups

IntelliServe allows you to create new and delete existing location groups of flow monitors, rain gauges, composition locations, or pseudo sites.

> **Note:** You cannot delete location groups created by other users. You can only delete a location group of which you are the original creator.

Creating a Location Group

Creating a location group involves adding the new group and assigning existing locations to the group.

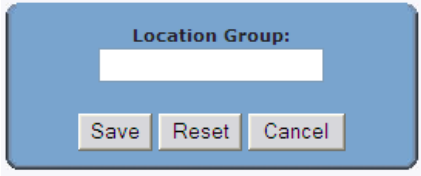
Create a location group in the following way:

1. Select **Location > Location Groups** from the **System Menu**.

The ***Location Groups*** *window displays the location groups currently available in the* ***IntelliServe*** *database.*

2. Click on the **Add** button.

The ***Add Location Group*** *dialog box displays.*



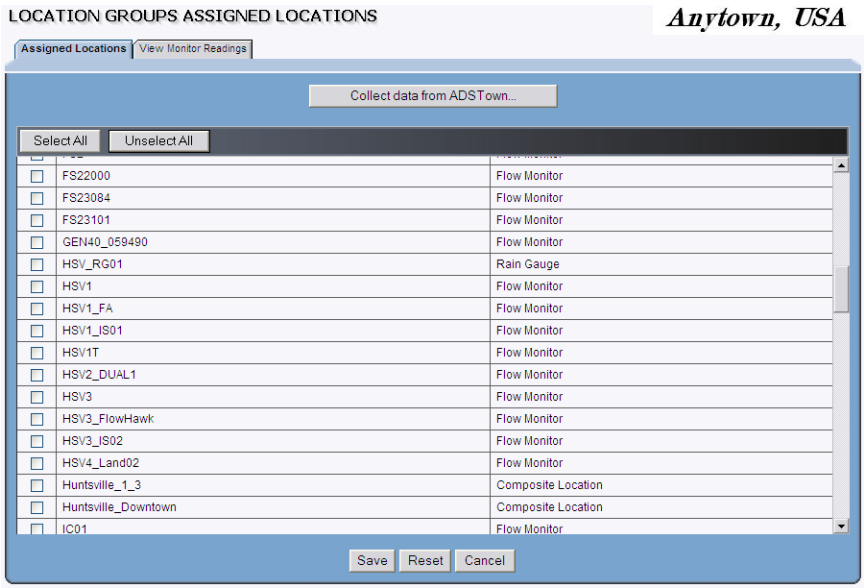
Add Location Group dialog box

3. Enter a name for the new group in the **Location Group** field, and then click on the **Save** button.

The new location group displays in the list of ***Location Groups****.*

4. Click on the name of the new location group.

*The **Location Groups Assigned Locations** window displays, listing all the locations available for assignment in the system.*



Location Groups Assigned Locations window

5. Select the checkboxes corresponding to the locations you want to include in the location group.
6. Click on the **Save** button to save the selected locations to the new location group.

Deleting a Location Group

Delete a location group in the following way:

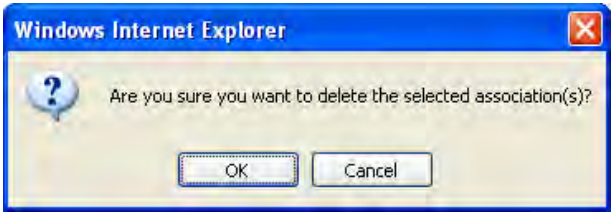
1. Select **Location > Location Groups** from the **System Menu**.

*The **Location Groups** window displays.*

Location Groups window

2. Select the checkbox(es) corresponding to the location group(s) you want to delete, and click on the **Delete** button.

A confirmation dialog displays.



Delete confirmation dialog

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

IntelliServe *removes the location group from the database and it no longer displays on the* ***Location Groups*** *window. This action does not remove the locations previously assigned to the location group from the database.*

Working with Documents

IntelliServe allows users to store and review uploaded documents. Documents related to a specific location, such as site sheets, can be stored at the *location* level. More generic documents with no relationship to a particular location, such as a spreadsheet containing alarm thresholds for the entire system, can be stored on the *system* level. Store up to 10MB of documents with your database. Organize documents using folders— create up to three levels of folders for document management within *public* and *private* document areas.

> **Note:** All **IntelliServe** users have access to view *public* documents. Users with additional permissions can also view *private* documents and upload *private* or *public* documents.

Uploading Documents

Upload a document for association with a location or upload a documents to the *system* level in the following way:

1. Select **Locations** > **[*Flow Monitors*, *Rain Gauges*, *Pseudo Sites*, *or Composite Locations*]** from the **System Menu**.

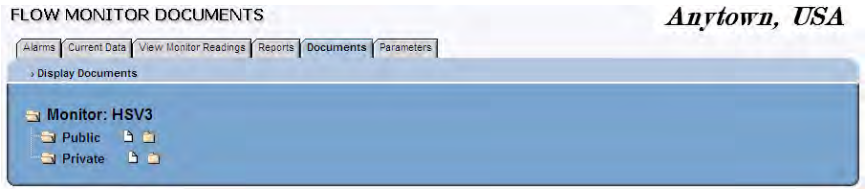
> **Note:** Upload documents to the *system* level by choosing **System Menu** > **Documents** > **Manage Documents** and then proceeding to step 4.

2. Click on the location to which you want to upload a document.

*The **[location type] Current Data** window displays for the selected location.*

3. Click on the **Documents** tab.

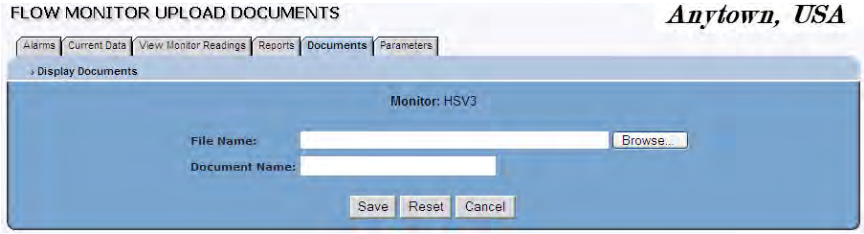
*The **[location type] Documents** window displays.*



Flow Monitor Documents window

4. Click on the upload document icon corresponding to the folder with which you want to associate the document.

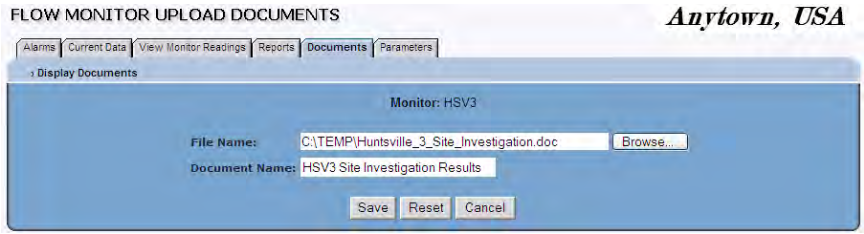
*The **[location type] Upload Document** window displays.*



Flow Monitor Upload Documents window

5. In the **File Name** box, enter the complete folder path and file name for the document you want to upload. You also can use the Browse... button to locate the file in your local directory or network.

6. Enter a name for the document in the **Document Name** field. This name will display in the **Manage Documents** window regardless of the *actual* file name.

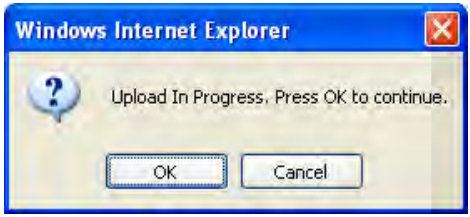


Completed **Flow Upload Document** window

> **Note:** All uploaded documents will include the **User ID** indicating the user responsible for uploading the document.

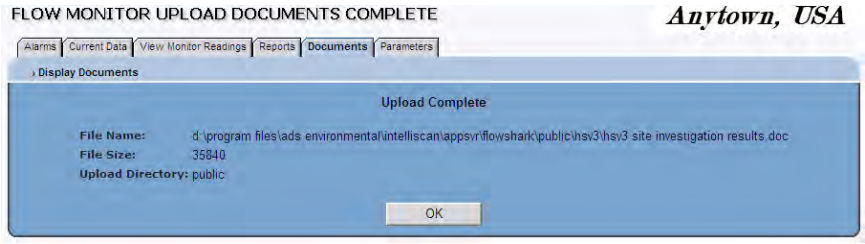
7. Click on the **Save** button to begin uploading.

8. Click on the **OK** button when the ***Upload In Progress*** message appears.



Upload in Progress

*The **Flow Monitor Upload Complete** window displays when the upload is complete.*



Flow Monitor Upload Documents Complete window

9. Click on the **OK** button to close the window.

Viewing Documents

IntelliServe enables you to view previously uploaded documents. View a document associated with a location in the following way:

1. Select **Locations > [*Flow Monitors, Rain Gauges, Pseudo Sites, or Composite Locations*]** from the **System Menu**.

> **Note:** View documents located at the *system* level by selecting **System Menu** > **Documents** > **Manage Documents** and proceeding to step 4.

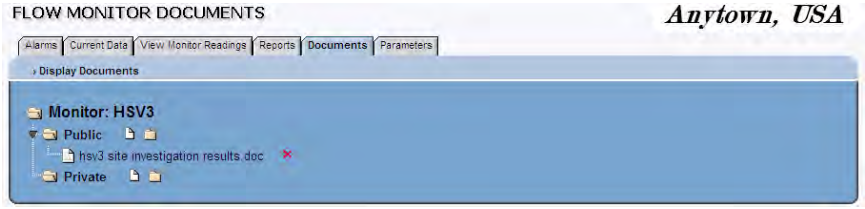
*The **[location type]** window displays.*

2. Click on the location for which you want to view an associated document.

*The **[location type] Current Data** window displays.*

3. Click on the **Documents** tab.

*The **[location type] Documents** window displays.*



Flow Monitor Documents window

> **Note**: If you have the *Private Folder Access* permission, the window also displays a list of private documents.

4. Click on the file name corresponding to the document you want to view.

> **Note:** If you do not have the appropriate application through which to view the file, **IntelliServe** will provide the option to save the file.

IntelliServe *opens the document in the appropriate application.*

5. Select the **File** > **Exit** command in the application to close the file.

Creating Document Folders

IntelliServe enables you to manage documents associated with a location by allowing you to store them in folders. You can create up to three levels of folders to store and organize your downloaded files. Create a new folder in the following way:

1. Select **Locations > [*Flow Monitors, Rain Gauges, Pseudo Sites, or Composite Locations*]** from the **System Menu**.

> **Note:** Create document folders from the system level by selecting **System Menu** > **Documents** > **Manage Documents** and then proceeding to step 4.

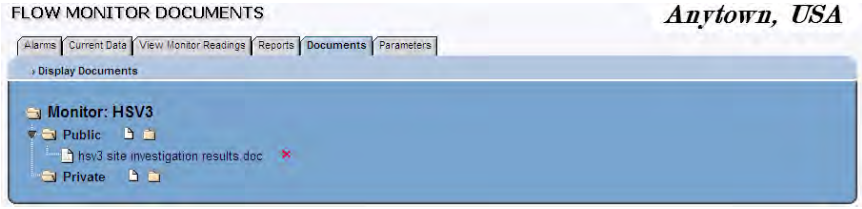
*The **[location type]** window displays.*

2. Click on the location for which you want to create a folder.

*The **[location type] Current Data** window displays.*

3. Click on the **Documents** tab.

*The **[location type] Documents** window displays.*



Flow Monitor Documents window

> **Note**: If you have the *Private Folder Access* permission, the window also displays a list of private documents.

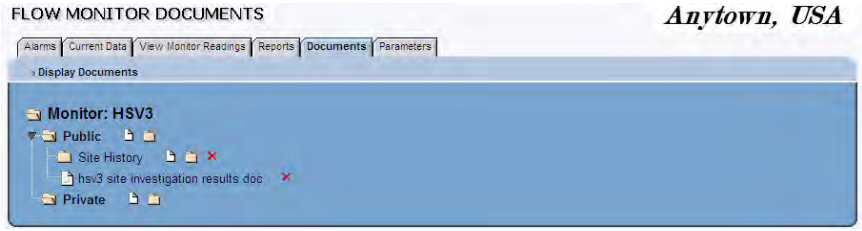
4. Click on the new folder icon  . **IntelliServe** allows you to create up to three levels of folders to store documents.

*The **Add Folder** dialog displays.*

Add Folder dialog

5. Enter a descriptive name for the folder to identify the folder contents in the **Folder Name** field, and click on the **Save** button.

*The new folder displays in the **[location type] Documents** window.*



Flow Monitor Documents window displays new folder

Deleting a Document Folder

Remove unused document folders from the location level in the following way:

1. Select **Locations > [*Flow Monitors, Rain Gauges, Pseudo Sites, or Composite Locations*]** from the **System Menu**.

> **Note:** To delete a folder at the *system* level, select **System Menu** > **Documents** > **Manage Documents** and then proceed to step 4.

*The **[location type]** window displays.*

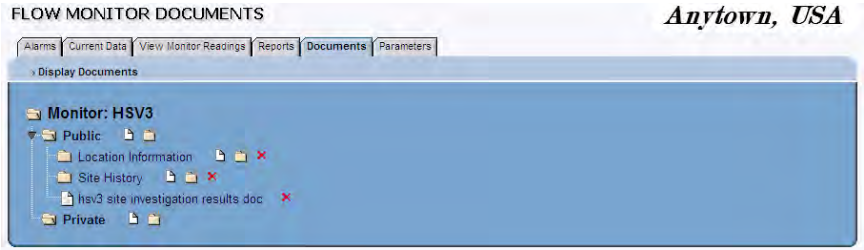
2. Click on the location from which you want to delete a folder.

*The **[location type] Current Data** window displays.*

> **Note**: If you have the *Private Folder Access* permission, the window also displays a list of private documents.

3. Click on the **Documents** tab.

*The **[location type] Documents** window displays.*

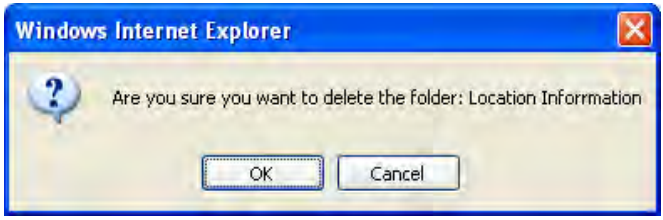


Flow Monitor Documents window

4. Select the delete icon  next to the empty folder you wish to delete.

> **Note: IntelliServe** will not allow you to delete a folder containing a document. To delete a folder containing a document, you first must remove the document from the folder. Refer to *Deleting a Document* on page 7-38 for more information.

IntelliServe *prompts you to confirm the deletion.*



Delete folder confirmation

5. Click on the **OK** button to confirm.

Deleting a Document

Remove unwanted documents from the location level in the following way:

1. Select **Locations > [*Flow Monitors, Rain Gauges, Pseudo Sites, or Composite Locations*]** from the **System Menu**.

> **Note:** To remove a document at the *system* level, select **System Menu** > **Documents** > **Manage Documents** and then proceed to step 4.

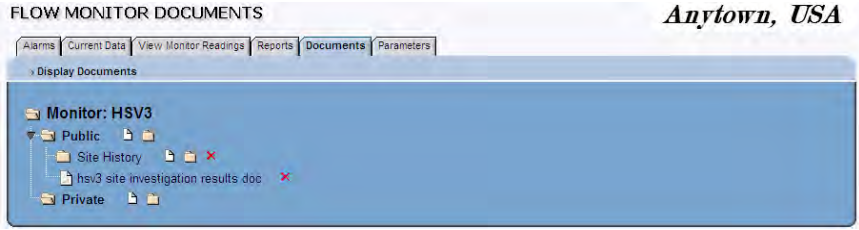
*The **[location type]** window displays.*

2. Click on the location from which you want to delete a document.

*The **[location type] Current Data** window displays.*

3. Click the **Documents** tab.

*The **[location type] Documents** window displays.*

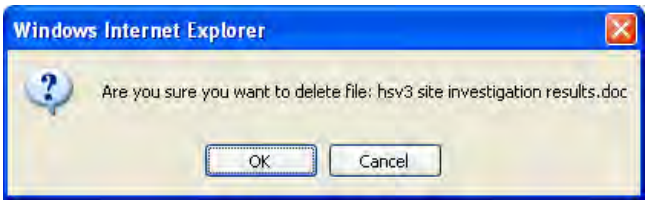


Flow Monitor Documents window

> **Note**: If you have the *Private Folder Access* permission, the window also displays a list of private documents.

4. Click on the delete icon  next to the document you wish to delete.

IntelliServe *displays a prompt to confirm the deletion.*



Confirmation to delete file

5. Click on the **OK** button to delete the document.

CHAPTER 8

Reports

The *Reports* features in **IntelliServe®** enables users to generate and display reports based on alarms, events, monitors, and other data. Monitor reports include *Battery Voltage*, *Confirmations*, *Data Collect Error*, *Data Collect Summary*, and *Monitor Performance*. Data reports include *Entity Date Ranges*, *Percent Full*, *Percent Surcharge*, *Percent Theoretical Capacity Used*, *Severe Rain*, and *Excess* flow events within the system. Users can create and use templates and automatic reports to streamline report generation.

This chapter provides instructions for creating report templates, generating and viewing reports, and configuring automatic reports.

Creating Reports and Templates

Templates allow you to define and save report options, so you can generate the same type of report each time. If you define a template for a report you frequently use, you do not have to set up the same report each time you want to generate it. You just select the template and then generate the report. **IntelliServe** enables you to create alarm, alarm summary, event, event summary, monitor, and other data report templates provided you have the appropriate permissions.

> **Note:** You must have the *Create Report Template* permission for generating at least one report to create a report template. To generate a specific type of report, you must have the permission corresponding to that report type to generate the report. If you have permission to generate a report but do *not* have permission to create a report template, you only will be able to generate reports based on *existing* templates for that report type.

After a report template has been defined, you can view a report based on that template, as described in *Generating, Viewing, and Printing Reports* on page 8-53.

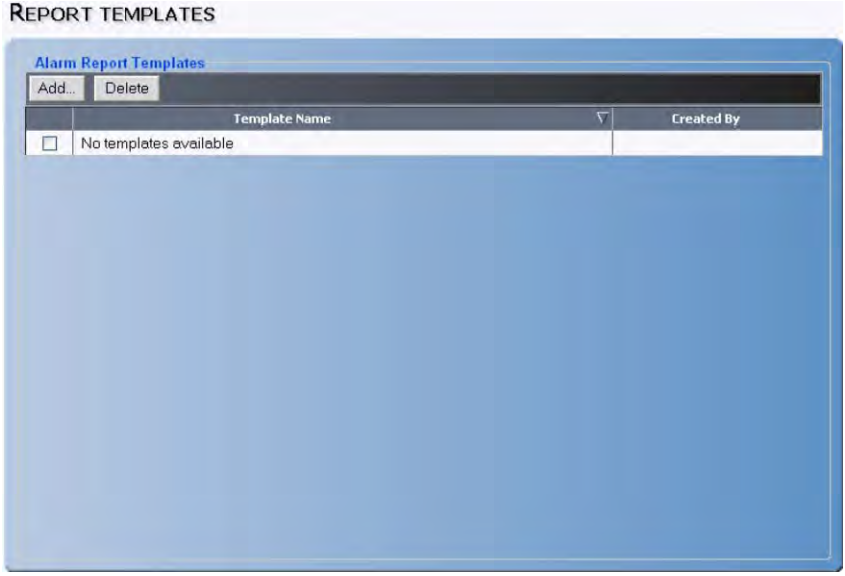
Creating an Alarm Report

The *Alarm Report* provides information about all alarms generated by **IntelliServe**, including alarm type, alarm status, and users who have acknowledged alarms. The filters selected for the report are listed in the top portion of the report; the results of the filter display in the table.

Create an alarm report template in the following way:

1. Select **Reports** > **Alarm** from the **System Menu**.

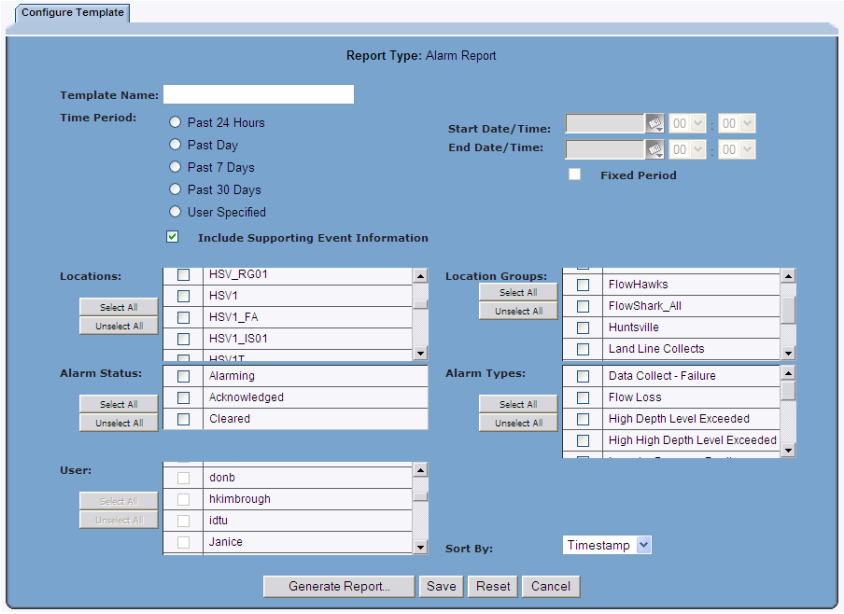
*The **Report Templates** window displays.*



Report Templates (Alarm Report Templates) window

2. Click the **Add** button.

*The **Configure Report** window displays the parameters for configuring the alarm report template.*



Configure Report window

3. Enter a unique name for the report in the **Template Name** field.
4. Select one of the following methods by which to filter the report results from the **Time Period** section:

   - **Past 24 Hours** Choose this radio button to create a report template for the past 24 hours.
   - **Past Day** Select this radio button to create a report template for the previous calendar day.
   - **Past 7 Days** Select this radio button to create a report template for the previous 7 calendar days.
   - **Past 30 Days** Select this radio button to create a report template for the previous 30 calendar days.
   - **User Specified** Select this radio button to create a report template for a specific date/time range. Selecting this option displays the **Start** and **End Date/Time** fields for establishing the range.

- **Start Date/Time** Enter or click the calendar icon  to designate the date from which you want to begin reporting the data. Then, use the drop-down lists to select the time at which you want to begin reporting the data on that date.

- **End Date/Time** Enter or click the calendar icon  to designate the date up to which you want to report the data. Then, use the drop-down lists to select the time up to which you want to report the data for that date.

- **Fixed Period** Select this checkbox to indicate the manually entered **Start Date/Time** and **End Date/Time** remain unchanged. If this check box is not selected (default), the manually entered dates adjust forward one day for each 24-hours passed (based on the originally entered **Start Date/Time**).

5. Select the **Include Supporting Event Information** checkbox if you want the report to show the events (acknowledge and clear) that are related to the alarms in the report. Triggering events are always shown in the alarm report.

6. Select the checkboxes corresponding to the locations you want to include in the report from the **Locations** section. Click on the **Select All** or **Unselect All** button to select or deselect all the options from the list at one time.

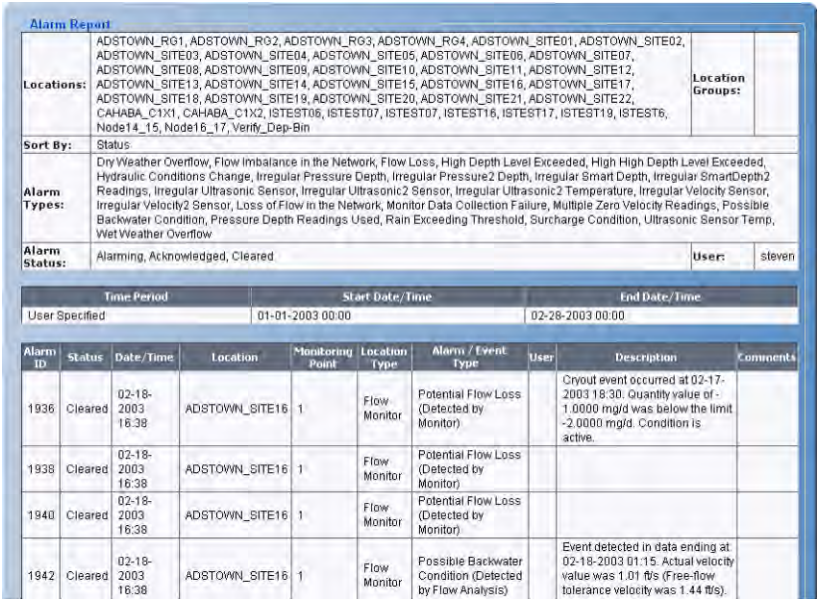
7. Select the checkboxes corresponding to the location groups you want to include in the report from the **Location Groups** section. If you select a location group, you do not need to select the individual locations.

> **Note**: Generating a report for too many locations and/or for an extensive date range may overburden the system, preventing **IntelliServe** from successfully generating the report. If the report does not generate, decrease the number of locations and/or the date range and then try to generate the report.

8. Select the checkboxes corresponding to the statuses you want to include in the report in the **Alarm Status** section.

> **Note:** You must select an option from both *alarm status* and *alarm type* to configure the alarm report. Selecting a system alarm from **Alarm Types** does not require you to select a location or location group; however, you must specify a location or location group to receive a *non-system* alarm. While *non-system alarms* involve events related to specific locations or basins, *system alarms* typically involve the **IntelliServe** system hardware and functional activities, such as communications or login issues.

9. Select the checkboxes corresponding to the alarm types you want to include in the report in the **Alarm Types** section.
10. Select the checkboxes corresponding to the users you want to include in the report in the **Users** section. You only can select users if you already have selected *Acknowledged* from the **Alarm Status** list.
11. Select the method by which you want **IntelliServe** to sort the report from the **Sort By** drop-down list.
    - **Alarm Type** This method sorts the results by the alarm type in alphabetical order.
    - **Location** This method sorts the results by location name in alphabetical order.
    - **Status** This method sorts the results by status name in alphabetical order.
    - **Timestamp** This method sorts the results by date and time in numerical order.
    - **User** This method sorts the results by user name in alphabetical order.
12. (*optional*) To save the template for future use, click on the **Save** button. You also can save the template after generating the report.
13. Click on the **Generate Report** button to display the report template configuration and the report.



Alarm Report

Locations:	ADSTOWN_RG1, ADSTOWN_RG2, ADSTOWN_RG3, ADSTOWN_RG4, ADSTOWN_SITE01, ADSTOWN_SITE02, ADSTOWN_SITE03, ADSTOWN_SITE04, ADSTOWN_SITE05, ADSTOWN_SITE06, ADSTOWN_SITE07, ADSTOWN_SITE08, ADSTOWN_SITE09, ADSTOWN_SITE10, ADSTOWN_SITE11, ADSTOWN_SITE12, ADSTOWN_SITE13, ADSTOWN_SITE14, ADSTOWN_SITE15, ADSTOWN_SITE16, ADSTOWN_SITE17, ADSTOWN_SITE18, ADSTOWN_SITE19, ADSTOWN_SITE20, ADSTOWN_SITE21, ADSTOWN_SITE22, CAHABA_C1X1, CAHABA_C1X2, ISTEST06, ISTEST07, ISTEST07, ISTEST16, ISTEST17, ISTEST19, ISTEST6, Node14_15, Node16_17, Verify_Dep-Bin	**Location Groups:**	
Sort By:	Status		
Alarm Types:	Dry Weather Overflow, Flow Imbalance in the Network, Flow Loss, High Depth Level Exceeded, High High Depth Level Exceeded, Hydraulic Conditions Change, Irregular Pressure Depth, Irregular Pressure2 Depth, Irregular Smart Depth, Irregular SmartDepth2 Readings, Irregular Ultrasonic Sensor, Irregular Ultrasonic2 Sensor, Irregular Ultrasonic2 Temperature, Irregular Velocity Sensor, Irregular Velocity2 Sensor, Loss of Flow in the Network, Monitor Data Collection Failure, Multiple Zero Velocity Readings, Possible Backwater Condition, Pressure Depth Readings Used, Rain Exceeding Threshold, Surcharge Condition, Ultrasonic Sensor Temp, Wet Weather Overflow		
Alarm Status:	Alarming, Acknowledged, Cleared	**User:**	steven

Time Period	Start Date/Time	End Date/Time
User Specified	01-01-2003 00:00	02-28-2003 00:00

Alarm ID	Status	Date/Time	Location	Monitoring Point	Location Type	Alarm / Event Type	User	Description	Comments
1936	Cleared	02-18-2003 16:38	ADSTOWN_SITE16	1	Flow Monitor	Potential Flow Loss (Detected by Monitor)		Cryout event occurred at 02-17-2003 18:30. Quantity value of -1.0000 mg/d was below the limit -2.0000 mg/d. Condition is active.	
1938	Cleared	02-18-2003 16:38	ADSTOWN_SITE16	1	Flow Monitor	Potential Flow Loss (Detected by Monitor)			
1940	Cleared	02-18-2003 16:38	ADSTOWN_SITE16	1	Flow Monitor	Potential Flow Loss (Detected by Monitor)			
1942	Cleared	02-18-2003 16:38	ADSTOWN_SITE16	1	Flow Monitor	Possible Backwater Condition (Detected by Flow Analysis)		Event detected in data ending at 02-18-2003 01:15. Actual velocity value was 1.01 ft/s (Free-flow tolerance velocity was 1.44 ft/s).	

Alarm Report sample

> **Note**: If you are viewing or modifying an *existing* template, clicking the **Reset** button displays the settings last saved to the database for the selected template. If you are creating a *new* template (and have not saved any settings to the database), clicking the **Reset** button completely clears the template. Click the **Cancel** button to exit the **Configure Report** window and return to the **Report Templates** window.

14. Click on the **Close** button to exit the report and return to the **Configure Report** window.

> **Note:** If you did not save the report template to the database before generating the report, you can still save the template by clicking on the **Save** button on the **Configure Report** window.

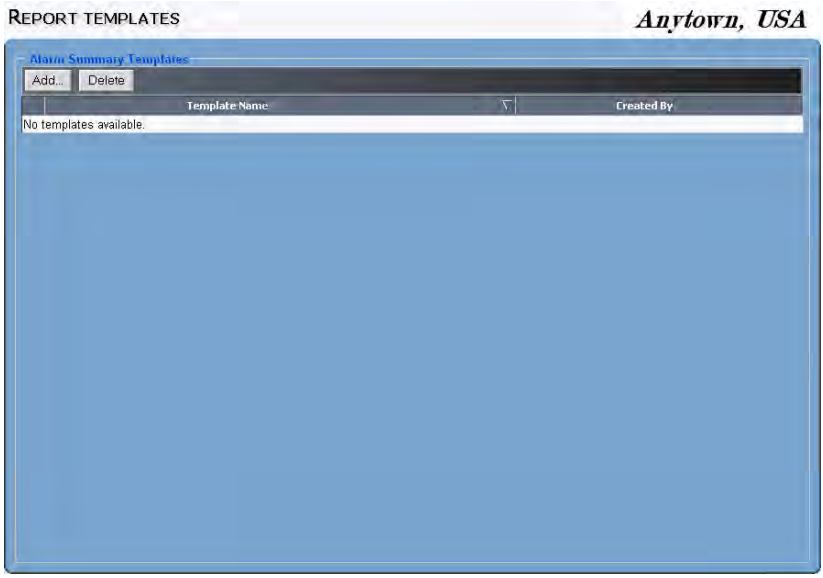
Creating an Alarm Summary Report

The *Alarm Summary* report provides a statistical summary of alarm information generated by **IntelliServe**. Users configure a timespan, alarm types, and locations to include on the report and the report summarizes the number of alarms that occurred for each location during the selected timespan and the corresponding percent of the total alarms for the alarm type.

Create an *Alarm Summary* report template in the following way:

1. Select **Reports** > **Alarm Summary** from the **System Menu**.

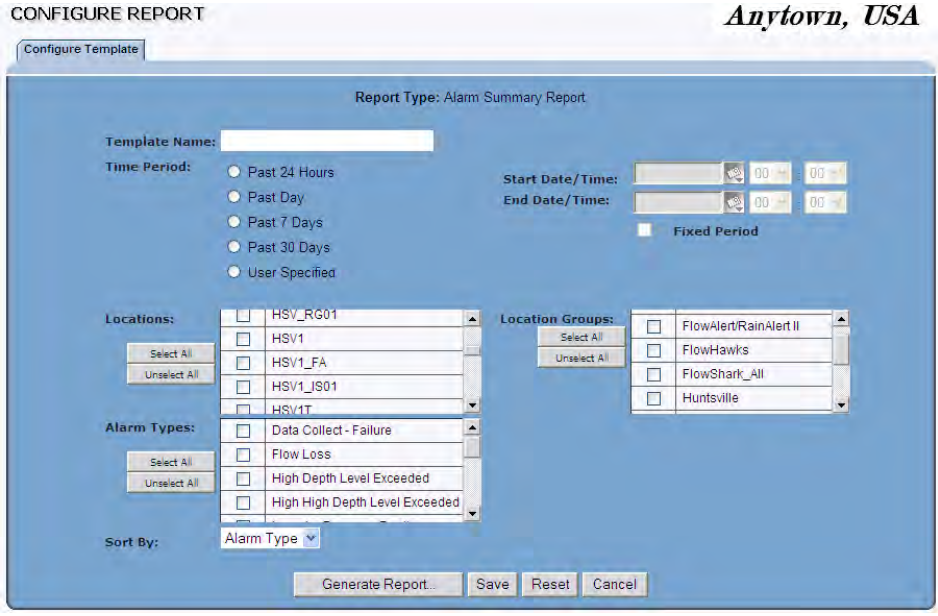
*The **Report Templates** window displays.*



Report Templates (Alarm Summary Templates) window

2. Click on the **Add** button.

*The **Configure Report** window displays the parameters for configuring the Alarm Summary Report template.*



Configure Report window

3. Enter a unique name for the report in the **Template Name** field.
4. Select the radio button from the **Time Period** section corresponding to the method by which you want **IntelliServe** to filter the report results:
   - **Past 24 Hours** Select this radio button to create a report template for the past 24 hours.
   - **Past Day** Select this radio button to create a report template for the previous calendar day.
   - **Past 7 Days** Select this radio button to create a report template for the previous 7 calendar days.
   - **Past 30 Days** Select this radio button to create a report template for the previous 30 calendar days.
   - **User Specified** Select this radio button to create a report template for a specific date/time range. Selecting this option displays the **Start** and **End Date/Time** fields for establishing the range.

- **Start Date/Time** Enter or click the calendar icon  to designate the date from which you want to begin reporting the data. Then, use the drop-down lists to select the time at which you want to begin reporting the data on that date.

- **End Date/Time** Enter or click the calendar icon  to designate the date up to which you want to report the data. Then, use the drop-down lists to select the time up to which you want to report the data for that date.

- **Fixed Period** Select this checkbox to indicate the manually entered **Start Date/Time** and **End Date/Time** remain unchanged. If this check box is not selected (default), the manually entered dates adjust forward one day for each 24-hours passed (based on the originally entered **Start Date/Time**).

5. Select the checkboxes corresponding to the locations you want to include in the report from the **Locations** section. Choose the **Select All** or **Unselect All** button to select or deselect all the options from the list at one time.

6. Select the checkboxes corresponding to the location groups you want to include in the report from the **Location Groups** section. If you select a location group, you do not need to select the individual locations which are included in the selected group.

> **Note**: Generating a report for too many locations and/or for an extensive date range may overburden the system, preventing **IntelliServe** from successfully generating the report. If the report does not generate, decrease the number of locations and/or the date range and then try to generate the report.

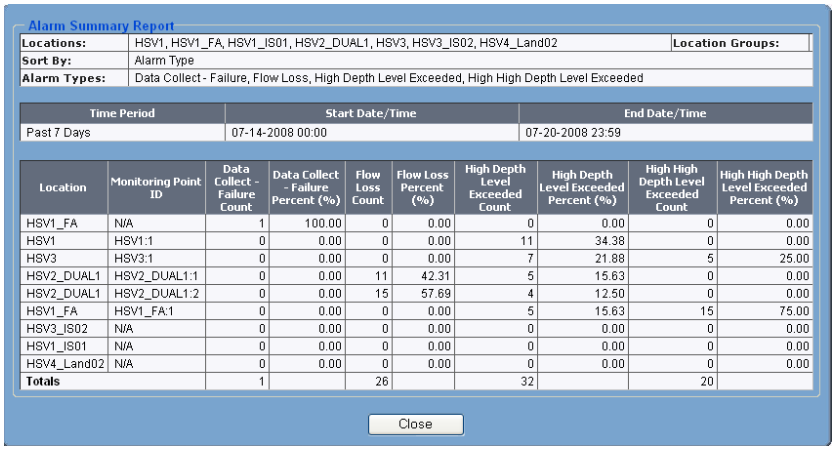
7. Select the checkboxes corresponding to the types of alarms you want to include in the report from the **Alarm Types** section. You are limited to 10, but must select at least one **Alarm Type** to configure the report. Selecting a *system* alarm from **Alarm Types** does not require you to select a location or location group; however, you must specify a location or location group to receive a *non-system* alarm. While *non-system alarms* involve events related to specific locations or basins, *system alarms* typically involve the **IntelliServe** system hardware and functional activities, such as communications or login issues.

8. Select the method by which you want **IntelliServe** to sort the report results from the **Sort By** drop-down list:

- ❑ **Alarm Type** This method sorts the results by the alarm type in alphabetical order.
- ❑ **Location** This method sorts the results by location name in alphabetical order.

9. (*optional*) To save the template for future use, click on the **Save** button. You also can save the template after generating the report.

10. Click on the **Generate Report** button to display the report template configuration and the report.



Alarm Summary Report

Locations:	HSV1, HSV1_FA, HSV1_IS01, HSV2_DUAL1, HSV3, HSV3_IS02, HSV4_Land02	Location Groups:
Sort By:	Alarm Type	
Alarm Types:	Data Collect - Failure, Flow Loss, High Depth Level Exceeded, High High Depth Level Exceeded	

Time Period	Start Date/Time	End Date/Time
Past 7 Days	07-14-2008 00:00	07-20-2008 23:59

Location	Monitoring Point ID	Data Collect - Failure Count	Data Collect - Failure Percent (%)	Flow Loss Count	Flow Loss Percent (%)	High Depth Level Exceeded Count	High Depth Level Exceeded Percent (%)	High High Depth Level Exceeded Count	High High Depth Level Exceeded Percent (%)
HSV1_FA	N/A	1	100.00	0	0.00	0	0.00	0	0.00
HSV1	HSV1:1	0	0.00	0	0.00	11	34.38	0	0.00
HSV3	HSV3:1	0	0.00	0	0.00	7	21.88	5	25.00
HSV2_DUAL1	HSV2_DUAL1:1	0	0.00	11	42.31	5	15.63	0	0.00
HSV2_DUAL1	HSV2_DUAL1:2	0	0.00	15	57.69	4	12.50	0	0.00
HSV1_FA	HSV1_FA:1	0	0.00	0	0.00	5	15.63	15	75.00
HSV3_IS02	N/A	0	0.00	0	0.00	0	0.00	0	0.00
HSV1_IS01	N/A	0	0.00	0	0.00	0	0.00	0	0.00
HSV4_Land02	N/A	0	0.00	0	0.00	0	0.00	0	0.00
Totals		1		26		32		20	

Close

Alarm Summary Report sample

> **Note**: If you are viewing or modifying an *existing* template, clicking on the **Reset** button displays the settings last saved to the database for the selected template. If you are creating a *new* template (and have not saved any settings to the database), clicking the **Reset** button completely clears the template. Click the **Cancel** button to exit the **Configure Report** window and return to the **Report Templates** window.

11. Click on the **Close** button to exit the report and return to the **Configure Report** window.

> **Note:** If you did not save the report template to the database before generating the report, you can still save the template by clicking on the **Save** button on the **Configure Report** window.

Creating an Event Report

The *Event Report* provides information about all events, user log ins/outs, data collection activities, alarm status, and other activities performed by authorized users through **IntelliServe**.

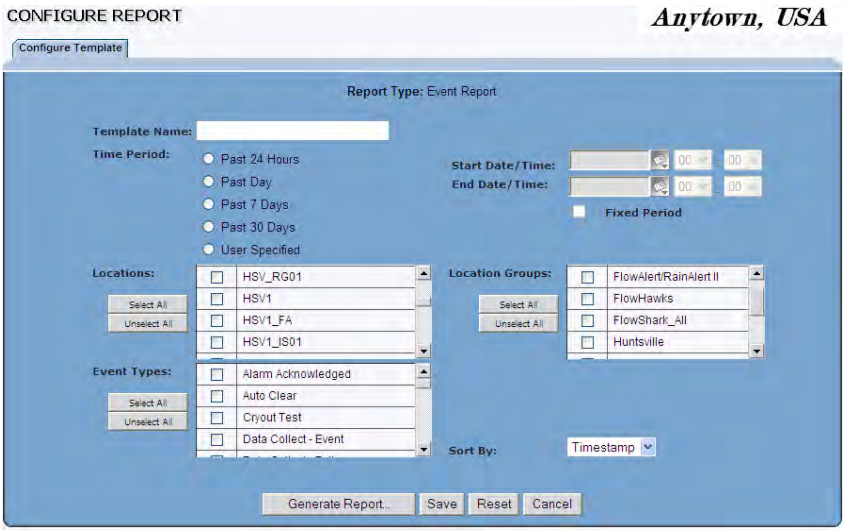
Create an event report template in the following way:

1. Select **Reports** > **Event** from the **System Menu**.

*The **Report Templates** window displays.*

2. Click on the **Add** button.

*The **Configure Report** window displays the parameters for configuring the event report template.*



Configure Report (Event Report) window

3. Enter a unique **Template Name** for the report.

4. Select the radio button in the **Time Period** section corresponding to the method by which you want **IntelliServe** to filter the report results:

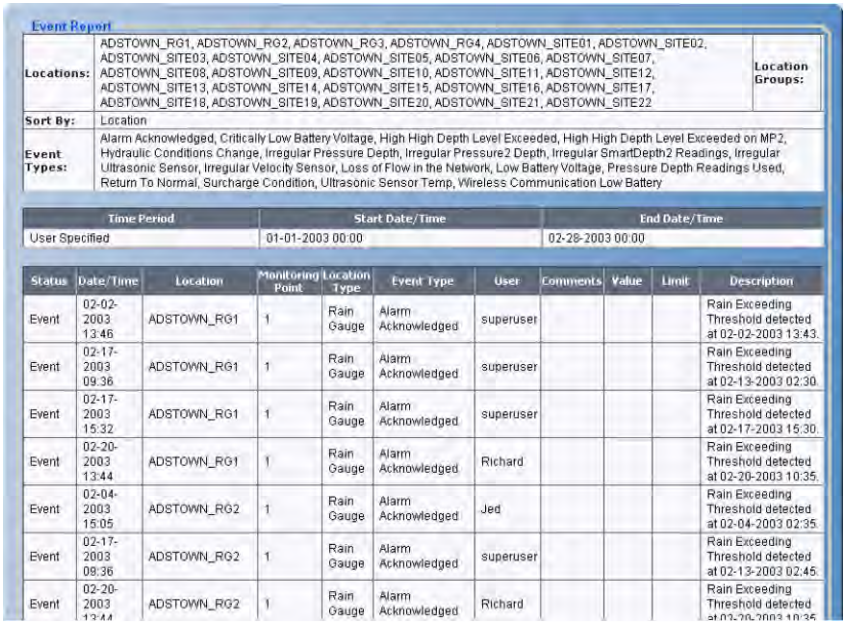
   - **Past 24 Hours** Choose this radio button to create a report template based on the past 24 hours.
   - **Past Day** Select this radio button to create a report template based on the previous calendar day.

- **Past 7 Days** Select this radio button to create a report template based on the previous 7 calendar days.
- **Past 30 days** Select this radio button to create a report template based on the previous 30 calendar days.
- **User Specified** Select this radio button to create a report template for a user-specified date/time range. Selecting this option displays the **Start** and **End Date/Time** fields for establishing the range.
  - **Start Date/Time** Enter or click the calendar icon  to designate the date from which you want to begin reporting the data. Then, use the drop-down lists to select the time at which you want to begin reporting the data on that date.
  - **End Date/Time** Enter or click the calendar icon  to designate the date up to which you want to report the data. Then, use the drop-down lists to select the time up to which you want to report the data for that date.
  - **Fixed Period** Select this checkbox to indicate the manually entered **Start Date/Time** and **End Date/Time** remain unchanged. If this check box is not selected (default), the manually entered dates adjust forward one day for each 24-hours passed (based on the originally entered **Start Date/Time**).

5. Select the checkboxes corresponding to the locations you want to include in the report from the **Locations** section. Choose the **Select All** or **Unselect All** button to select or deselect all the options from the list at one time.
6. Select the checkboxes in the **Location Groups** section corresponding to the location groups you want to include in the report. If you select a location group, you do not need to select the individual locations included in the selected group.
7. Select the checkboxes corresponding to the event types you want to include in the final report from the **Event Types** section.
8. Select the method by which you want **IntelliServe** to sort the report from the **Sort By** drop-down list.
   - **Timestamp** This method sorts the results by date and time in numerical order.

- ❑ **Event Type** This method sorts the results by the event type in alphabetical order.
- ❑ **Location** This method sorts the results by location name in alphabetical order.

9. (*optional*) To save the template for future use, click on the **Save** button. You also can save the template after generating the report.
10. Click on the **Generate Report** button to generate the report based on the selected parameters.



Event Report

Locations:	ADSTOWN_RG1, ADSTOWN_RG2, ADSTOWN_RG3, ADSTOWN_RG4, ADSTOWN_SITE01, ADSTOWN_SITE02, ADSTOWN_SITE03, ADSTOWN_SITE04, ADSTOWN_SITE05, ADSTOWN_SITE06, ADSTOWN_SITE07, ADSTOWN_SITE08, ADSTOWN_SITE09, ADSTOWN_SITE10, ADSTOWN_SITE11, ADSTOWN_SITE12, ADSTOWN_SITE13, ADSTOWN_SITE14, ADSTOWN_SITE15, ADSTOWN_SITE16, ADSTOWN_SITE17, ADSTOWN_SITE18, ADSTOWN_SITE19, ADSTOWN_SITE20, ADSTOWN_SITE21, ADSTOWN_SITE22	Location Groups:
Sort By:	Location	
Event Types:	Alarm Acknowledged, Critically Low Battery Voltage, High High Depth Level Exceeded, High High Depth Level Exceeded on MP2, Hydraulic Conditions Change, Irregular Pressure Depth, Irregular Pressure2 Depth, Irregular SmartDepth2 Readings, Irregular Ultrasonic Sensor, Irregular Velocity Sensor, Loss of Flow in the Network, Low Battery Voltage, Pressure Depth Readings Used, Return To Normal, Surcharge Condition, Ultrasonic Sensor Temp, Wireless Communication Low Battery	

Time Period	Start Date/Time	End Date/Time
User Specified	01-01-2003 00:00	02-28-2003 00:00

Status	Date/Time	Location	Monitoring Point	Location Type	Event Type	User	Comments	Value	Limit	Description
Event	02-02-2003 13:46	ADSTOWN_RG1	1	Rain Gauge	Alarm Acknowledged	superuser				Rain Exceeding Threshold detected at 02-02-2003 13:43.
Event	02-17-2003 09:36	ADSTOWN_RG1	1	Rain Gauge	Alarm Acknowledged	superuser				Rain Exceeding Threshold detected at 02-13-2003 02:30.
Event	02-17-2003 15:32	ADSTOWN_RG1	1	Rain Gauge	Alarm Acknowledged	superuser				Rain Exceeding Threshold detected at 02-17-2003 15:30.
Event	02-20-2003 13:44	ADSTOWN_RG1	1	Rain Gauge	Alarm Acknowledged	Richard				Rain Exceeding Threshold detected at 02-20-2003 10:35.
Event	02-04-2003 15:05	ADSTOWN_RG2	1	Rain Gauge	Alarm Acknowledged	Jed				Rain Exceeding Threshold detected at 02-04-2003 02:35.
Event	02-17-2003 09:36	ADSTOWN_RG2	1	Rain Gauge	Alarm Acknowledged	superuser				Rain Exceeding Threshold detected at 02-13-2003 02:45.
Event	02-20-2003 13:44	ADSTOWN_RG2	1	Rain Gauge	Alarm Acknowledged	Richard				Rain Exceeding Threshold detected at 02-20-2003 10:35.

Event Report sample

> **Note**: If you are viewing or modifying an *existing* template, clicking on the **Reset** button displays the settings last saved to the database for the selected template. If you are creating a *new* template (and have not saved any settings to the database), clicking on the **Reset** button completely clears the template. Click on the **Cancel** button to exit the **Configure Report** window and return to the **Report Templates** window.

11. Click on the **Close** button to exit the report and return to the **Configure Report** window.

> **Note:** If you did not save the report template to the database before generating the report, you can still save the template by clicking on the **Save** button on the **Configure Report** window.

Creating an Event Summary Report

The *Event Summary Report* provides statistical information about all events, user log ins/outs, data collection activities, alarm status, and other activities performed by authorized users through **IntelliServe**.

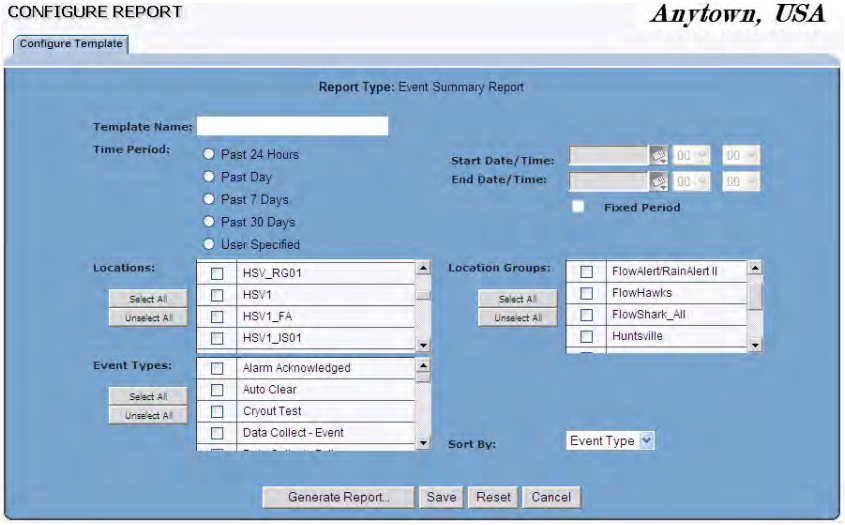
Create an event summary report in the following way:

1. Select **Reports** > **Event Summary** from the **System Menu**.

*The **Report Templates** window displays.*

2. Click on the **Add** button.

*The **Configure Report** window displays the parameters for configuring the event report template.*



Configure Report (Event Summary Report) window

3. Enter a unique **Template Name** for the report into this field.

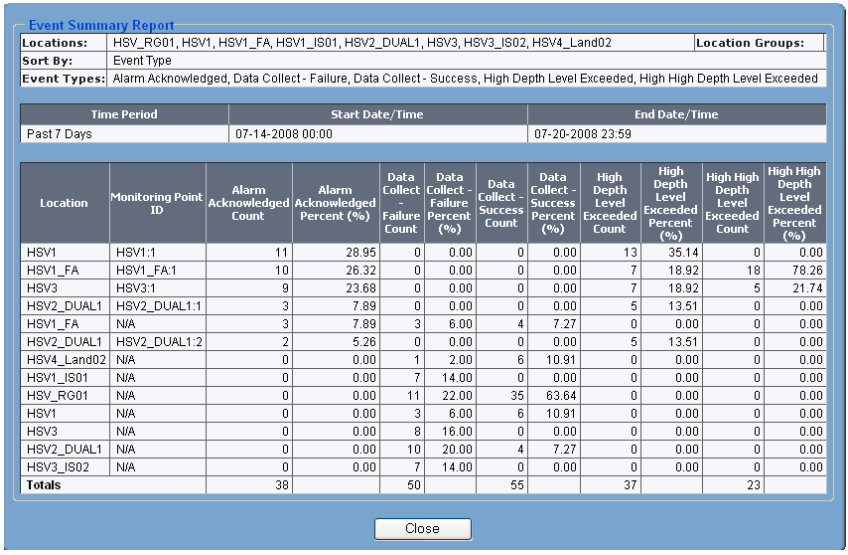
4. Select the radio button in the **Time Period** section corresponding to the method you want **IntelliServe** to use to filter the report results:

   - **Past 24 Hours** Choose this radio button to create a report template for the past 24 hours.
   - **Past Day** Select this radio button to create a report template for the previous calendar day.
   - **Past 7 Days** Select this radio button to create a report template for the previous 7 calendar days.
   - **Past 30 days** Select this radio button to create a report template for the previous 30 calendar days.
   - **User Specified** Select this radio button to create a report template for a specific date/time range. Selecting this option displays the **Start** and **End Date/Time** fields for establishing the range.
     - **Start Date/Time** Enter or click the calendar icon  to designate the date from which you want to begin reporting the data. Then, use the drop-down lists to select the time at which you want to begin reporting the data on that date.
     - **End Date/Time** Enter or click the calendar icon  to designate the date up to which you want to report the data. Then, use the drop-down lists to select the time up to which you want to report the data for that date.
     - **Fixed Period** Select this checkbox to indicate the manually entered **Start Date/Time** and **End Date/Time** remain unchanged. If this check box is not selected (default), the manually entered dates adjust forward one day for each 24-hours passed (based on the originally entered **Start Date/Time**).

5. Select the checkboxes in the **Locations** section corresponding to the locations you want to include in the report. Click the **Select All** or **Unselect All** button to select or deselect all the options from the list at one time.

6. Select the checkboxes in the **Location Groups** section corresponding to the location groups you want to include in the report. If you select a location group, you do not need to select the individual locations included in the selected group.

7. Select the checkboxes in the **Event Types** section corresponding to the event types you want to include in the final report.
8. Select the method by which you want **IntelliServe** to sort the report from the **Sort By** drop-down list.
   - **Event Type** This method sorts the results by the event type in alphabetical order.
   - **Location** This method sorts the results by location name in alphabetical order.
9. (*optional*) To save the template for future use, click on the **Save** button. You also can save the template after generating the report.
10. Click on the **Generate Report** button to generate the report based on the selected parameters.



Event Summary Report

Locations:	HSV_RG01, HSV1, HSV1_FA, HSV1_IS01, HSV2_DUAL1, HSV3, HSV3_IS02, HSV4_Land02	**Location Groups:**
Sort By:	Event Type	
Event Types:	Alarm Acknowledged, Data Collect - Failure, Data Collect - Success, High Depth Level Exceeded, High High Depth Level Exceeded	

Time Period	Start Date/Time	End Date/Time
Past 7 Days	07-14-2008 00:00	07-20-2008 23:59

Location	Monitoring Point ID	Alarm Acknowledged Count	Alarm Acknowledged Percent (%)	Data Collect - Failure Count	Data Collect - Failure Percent (%)	Data Collect - Success Count	Data Collect - Success Percent (%)	High Depth Level Exceeded Count	High Depth Level Exceeded Percent (%)	High High Depth Level Exceeded Count	High High Depth Level Exceeded Percent (%)
HSV1	HSV1:1	11	28.95	0	0.00	0	0.00	13	35.14	0	0.00
HSV1_FA	HSV1_FA:1	10	26.32	0	0.00	0	0.00	7	18.92	18	78.26
HSV3	HSV3:1	9	23.68	0	0.00	0	0.00	7	18.92	5	21.74
HSV2_DUAL1	HSV2_DUAL1:1	3	7.89	0	0.00	0	0.00	5	13.51	0	0.00
HSV1_FA	N/A	3	7.89	3	6.00	4	7.27	0	0.00	0	0.00
HSV2_DUAL1	HSV2_DUAL1:2	2	5.26	0	0.00	0	0.00	5	13.51	0	0.00
HSV4_Land02	N/A	0	0.00	1	2.00	6	10.91	0	0.00	0	0.00
HSV1_IS01	N/A	0	0.00	7	14.00	0	0.00	0	0.00	0	0.00
HSV_RG01	N/A	0	0.00	11	22.00	35	63.64	0	0.00	0	0.00
HSV1	N/A	0	0.00	3	6.00	6	10.91	0	0.00	0	0.00
HSV3	N/A	0	0.00	8	16.00	0	0.00	0	0.00	0	0.00
HSV2_DUAL1	N/A	0	0.00	10	20.00	4	7.27	0	0.00	0	0.00
HSV3_IS02	N/A	0	0.00	7	14.00	0	0.00	0	0.00	0	0.00
Totals		38		50		55		37		23	

Close

Event Summary Report sample

Note: If you are viewing or modifying an *existing* template, clicking on the **Reset** button displays the settings last saved to the database for the selected template. If you are creating a *new* template (and have not saved any settings to the database), clicking on the **Reset** button completely clears the template. Click on the **Cancel** button to exit the **Configure Report** window and return to the **Report Templates** window.

11. Click on the **Close** button to exit the report and return to the **Configure Report** window.

Note: If you did not save the report template to the database before generating the report, you can still save the template by clicking on the **Save** button on the **Configure Report** window.

Creating Monitor Report Templates

The monitor reports include battery voltage, confirmations, data collect errors, data collect summary, and monitor performance.

Battery Voltage Report

The *Battery Voltage Report* shows the battery voltage and last collection date for the flow monitors and rain gauges at the locations selected in the report. The report includes a battery status to indicate whether the voltage reading is *OK* or in need of attention.

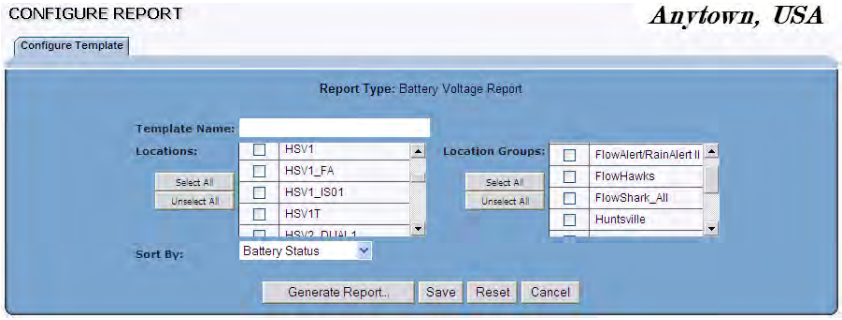
Create a *Battery Voltage Report* template in the following way:

1. Select **Reports > Monitor** > **Battery Voltage** from the **System Menu**.

*The **Report Templates** window displays.*

2. Click on the **Add** button.

*The **Configure Report** window displays the parameters for configuring the battery voltage report template.*



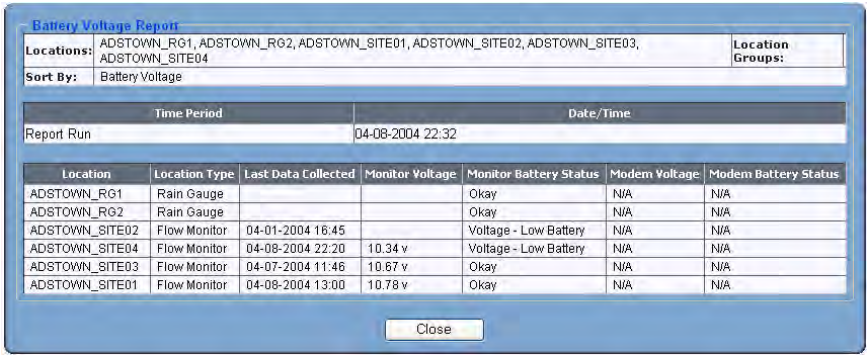
Configure Report (Battery Voltage Report) window

3. Enter a unique name for the report in the **Template Name** field.
4. Select the checkboxes corresponding to the locations you want to include in the report from **Locations**.

> **Note:** Click on the **Select All** or **Unselect All** button to select or deselect all the options from the list at one time.

5. Select the checkboxes corresponding to the location groups you want to include in the report from the **Location Groups** section. If you select a location group, you do not need to select the individual locations included in the selected group.
6. Select the method by which you want **IntelliServe** to sort the report from the **Sort By** drop-down list:
   - **Battery Status** This method sorts the results by the battery status in alphabetical order.
   - **Battery Voltage** This method sorts the results by voltage in numerical order.
   - **Last Data Collected** This method sorts the results by date when data was last collected for the included locations.
   - **Location** This method sorts the results by location name in alphabetical order.
   - **Location Type** This method sorts the results by location type (monitor, rain gauge, etc.) in alphabetical order.
7. (*optional*) To save the template for future use, click on the **Save** button. You also can save the template after generating the report.

8. Click on the **Generate Report** button to generate the report based on the selected parameters.



Battery Voltage Report

Locations:	ADSTOWN_RG1, ADSTOWN_RG2, ADSTOWN_SITE01, ADSTOWN_SITE02, ADSTOWN_SITE03, ADSTOWN_SITE04	Location Groups:
Sort By:	Battery Voltage	

Time Period	Date/Time
Report Run	04-08-2004 22:32

Location	Location Type	Last Data Collected	Monitor Voltage	Monitor Battery Status	Modem Voltage	Modem Battery Status
ADSTOWN_RG1	Rain Gauge			Okay	N/A	N/A
ADSTOWN_RG2	Rain Gauge			Okay	N/A	N/A
ADSTOWN_SITE02	Flow Monitor	04-01-2004 16:45		Voltage - Low Battery	N/A	N/A
ADSTOWN_SITE04	Flow Monitor	04-08-2004 22:20	10.34 v	Voltage - Low Battery	N/A	N/A
ADSTOWN_SITE03	Flow Monitor	04-07-2004 11:46	10.67 v	Okay	N/A	N/A
ADSTOWN_SITE01	Flow Monitor	04-08-2004 13:00	10.78 v	Okay	N/A	N/A

Close

Battery Voltage Report sample

> **Note**: If you are viewing or modifying an *existing* template, clicking on the **Reset** button displays the settings last saved to the database for the selected template. If you are creating a *new* template (and have not saved any settings to the database), clicking on the **Reset** button completely clears the template. Click on the **Cancel** button to exit the **Configure Report** window and return to the **Report Templates** window.

9. Click on the **Close** button to exit the report and return to the **Configure Report** window.

> **Note:** If you did not save the report template to the database before generating the report, you can still save the template by clicking on the **Save** button on the **Configure Report** window.

Confirmations Report

The *Confirmations Report* provides a listing of confirmations performed within a specific date range for flow monitor locations. This list is generated based on a date range, location/location group(s), and confirmation type designated by the user. The report configuration also includes the option to include ignored confirmations. Confirmations must be imported into the **IntelliServe** database before they can be available to be included into a report.

Create a *Confirmations Report* template in the following way:

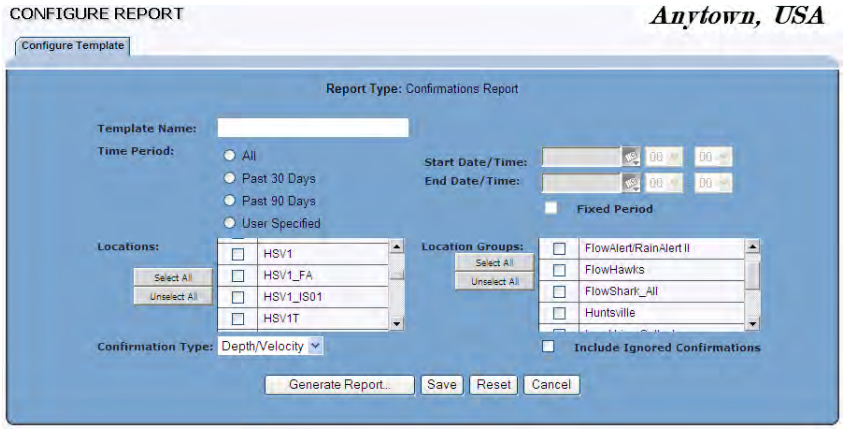
Note: The following procedure involves creating Confirmations Reports and templates for one or more flow monitors and location groups from the **Reports** menu. However, **IntelliServe** also provides a feature that allows you to create a Confirmations Report for an individual location at the location level. Simply select **Locations > Flow Monitors** from the **System Menu**, click on the location for which you want to create the report, click on the **Reports** tab, configure the parameters to setup the report, and then generate the report. Refer to relevant steps in the following procedure for descriptions of the various parameters.

1. Select **Reports > Monitor > Confirmations** from the **System Menu**.

*The **Report Templates** window displays.*

2. Click on the **Add** button.

*The **Configure Report** window displays the parameters required for configuring a confirmations report.*



Configure Report (Confirmations Report) window

3. Enter a unique name for the report in the **Template Name** field.

4. Select the radio button in the **Time Period** section corresponding to the period from which you want **IntelliServe** to include confirmations in the report:

   - **All** Choose this radio button to create a report template based on all the confirmations available.

- **Past 30 Days** Choose this radio button to create a report template based on confirmations from the last 30 days.
- **Past 90 Days** Choose this radio button to create a report template based on confirmations from the last 90 days.
- **User Specified** Choose this radio button to create a report template based on confirmations from a user-defined date/time range. Selecting this option requires that you designate the start and end dates.
  - Enter or click on the calendar icon  to designate the date from which you want to begin including confirmations on the report.
  - Enter or click on the calendar icon  to designate the date up to which you want to include confirmations on the report.
  - **Fixed Period** Select this checkbox to ensure the manually entered **Start Date/Time** and **End Date/Time** remain unchanged. If this checkbox is left unselected (*default*), the manually entered dates/times will adjust forward one day for each 24-hour period that passes (*based on the **Start Date/Time** originally entered*).

5. Select the checkboxes corresponding to the locations for which you want to include confirmations in the report from the **Locations** list.

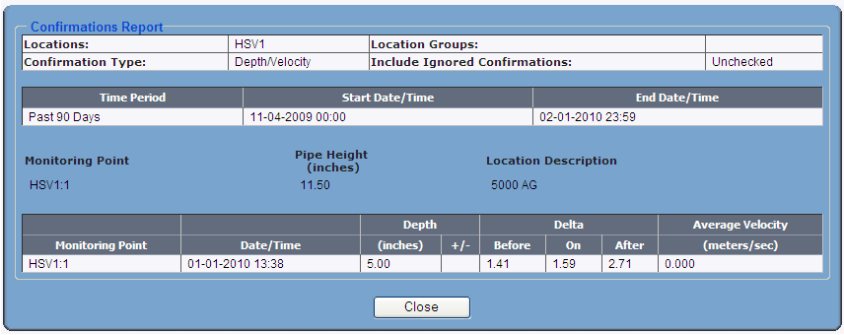
   Note: Click on the **Select All** or **Unselect All** button to select or deselect all the options in the list.

6. Select the checkboxes corresponding to the location groups including locations for which you want to include confirmations in the report from the **Location Groups** list. If you select a particular location group, you do not need to select the individual locations included in that location group.
7. Select the type of confirmation you want to include in the report from the **Confirmation Type** drop-down list. The list contains the following options:
   - **Depth/Velocity** Choosing this option provides confirmations listing the differences between the depth and velocity measurements taken manually in the field and the corresponding depth and velocity

readings taken by the monitor before, during, and after the field measurements.

- ❑ **Final** Choosing this option provides confirmations listing the differences between the manual (field) depth, velocity, and quantity measurements and the corresponding monitor readings.
- ❑ **Standard** Choosing this option provides confirmations listing all valid field confirmations used in calculating the hydraulic coefficients and the resulting coefficients.

8. (*optional*) Select the **Include Ignored Confirmations** checkbox to include confirmations in the report that were previously designated as invalid.
9. (*optional*) Click on the **Save** button to save the template for future use. You also can save the template after generating the report.
10. Click on the **Generate Report** button to generate the report based on the selected parameters.



Confirmations Report

Locations:	HSV1	**Location Groups:**	
Confirmation Type:	Depth/Velocity	**Include Ignored Confirmations:**	Unchecked

Time Period	Start Date/Time	End Date/Time
Past 90 Days	11-04-2009 00:00	02-01-2010 23:59

Monitoring Point	Pipe Height (inches)	Location Description
HSV1:1	11.50	5000 AG

		Depth		Delta			Average Velocity
Monitoring Point	Date/Time	(inches)	+/-	Before	On	After	(meters/sec)
HSV1:1	01-01-2010 13:38	5.00		1.41	1.59	2.71	0.000

Close

Sample **Confirmations Report**

> **Note**: When viewing or modifying an *existing* template, clicking on the **Reset** button displays the settings last saved to the database for the selected template. When creating a *new* template (before saving any settings to the database), clicking on the **Reset** button clears the template. Click on the **Cancel** button to exit the **Configure Report** window and return to the **Report Templates** window.

11. Click on the **Close** button to exit the report and return to the **Configure Report** window.

> **Note:** If you did not save the report template to the database before generating the report, save the template now by clicking on the **Save** button on the **Configure Report** window.

Data Collect Errors Report

The *Data Collect Errors Report* provides pertinent information concerning monitor locations that experienced data collection failures during scheduled or on-demand collection attempts.

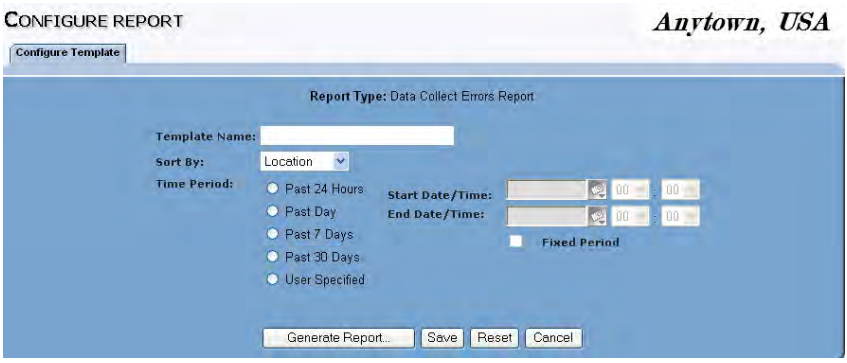
Create a *Data Collect Errors Report* template in the following way:

1. Select **Reports** > **Monitor** > **Data Collect Errors** from the **System Menu**.

*The **Report Templates** window displays.*

2. Click on the **Add** button.

*The **Configure Report** window displays the parameters for configuring the event report template.*



Configure Report (Data Collect Errors Report) window

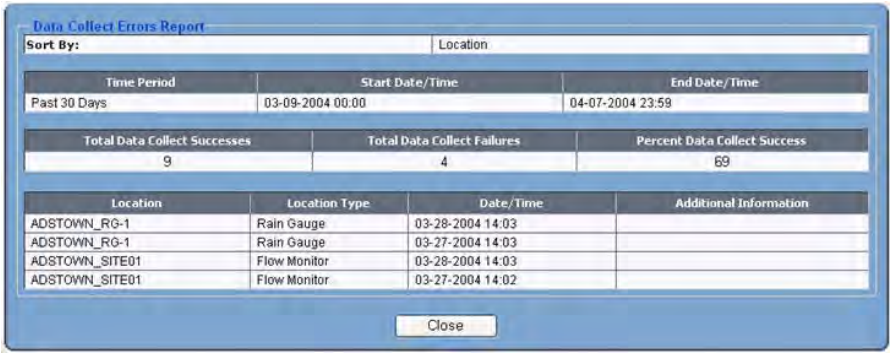
3. Enter a unique name for the report in the **Template Name** field.
4. Select the method by which you method by which you want **IntelliServe** to sort the report from the **Sort By** drop-down list.
   - **Location** This method sorts the results by location name in alphabetical order.
   - **Timestamp** This method sorts the results by date and time in numerical order.

5. Select the radio button from the **Time Period** section corresponding to the method by which you want **IntelliServe** to filter the report results:

   - **Past 24 Hours** Select this radio button to create a report template for the past 24 hours.
   - **Past Day** Select this radio button to create a report template for the previous calendar day.
   - **Past 7 Days** Select this radio button to create a report template for the previous 7 calendar days.
   - **Past 30 Days** Select this radio button to create a report template for the previous 30 calendar days.
   - **User Specified** Select this radio button to create a report template for a specific date/time range. Selecting this option displays the **Start** and **End Date/Time** fields for establishing the range.
     - **Start Date/Time** Enter or click the calendar icon  to designate the date from which you want to begin reporting the data. Then, use the drop-down lists to select the time at which you want to begin reporting the data on that date.
     - **End Date/Time** Enter or click the calendar icon  to designate the date up to which you want to report the data. Then, use the drop-down lists to select the time up to which you want to report the data for that date.
     - **Fixed Period** Select this checkbox to indicate the manually entered **Start Date/Time** and **End Date/Time** remain unchanged. If this check box is not selected (default), the manually entered dates adjust forward one day for each 24-hours passed (based on the originally entered **Start Date/Time**).

6. (*optional*) To save the template for future use, click on the **Save** button. You also can save the template after generating the report.

7. Click on the **Generate Report** button to generate the report based on the selected parameters.



Data Collect Errors Report

Sort By: Location

Time Period	Start Date/Time	End Date/Time
Past 30 Days	03-09-2004 00:00	04-07-2004 23:59

Total Data Collect Successes	Total Data Collect Failures	Percent Data Collect Success
9	4	69

Location	Location Type	Date/Time	Additional Information
ADSTOWN_RG-1	Rain Gauge	03-28-2004 14:03	
ADSTOWN_RG-1	Rain Gauge	03-27-2004 14:03	
ADSTOWN_SITE01	Flow Monitor	03-28-2004 14:03	
ADSTOWN_SITE01	Flow Monitor	03-27-2004 14:02	

Close

Data Collect Errors Report sample

> **Note**: If you are viewing or modifying an *existing* template, clicking on the **Reset** button displays the settings last saved to the database for the selected template. If you are creating a *new* template (and have not saved any settings to the database), clicking on the **Reset** button completely clears the template. Click on the **Cancel** button to exit the **Configure Report** window and return to the **Report Templates** window.

8. Click on the **Close** button to exit the report and return to the **Configure Report** window.

> **Note:** If you did not save the report template to the database before generating the report, you can still save the template by clicking on the **Save** button on the **Configure Report** window.

Data Collect Summary Report

The *Data Collect Summary* report provides the number of successful and failed attempts and the percentage of successful attempts to collect data (scheduled or on-demand) from a selected location or locations within a location group over a specific period of time.

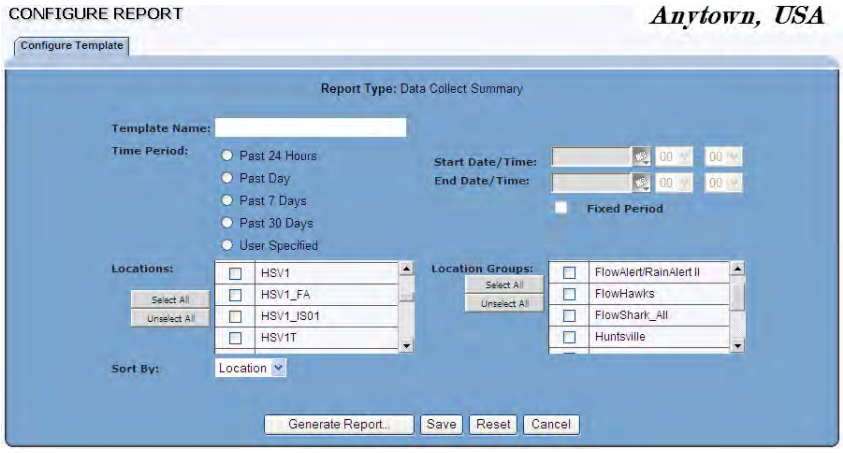
Create a *Data Collect Summary Report* template in the following way:

1. Select **Reports > Monitor > Data Collect Summary** from the **System Menu**.

*The **Report Templates** window displays.*

2. Click on the **Add** button.

*The **Configure Report** window displays the parameters required for configuring a data collect summary report.*



Configure Report (Data Collect Summary) window

3. Enter a unique name for the report in the **Template Name** field.
4. Select the radio button from the **Time Period** section corresponding to the period from which you want **IntelliServe** to take data collect summary information to include in the report:

   - **Past 24 Hours** Choose this radio button to create a report template based on data collection attempts performed during the last 24 hours.
   - **Past Day** Choose this radio button to create a report template based on data collection attempts performed during the previous calendar day.
   - **Past 7 Days** Choose this radio button to create a report template based on data collection attempts performed during the last 7 days.
   - **Past 30 Days** Choose this radio button to create a report template based on data collection attempts performed during the last 30 days.
   - **User Specified** Choose this radio button to create a report template based on data collection attempts performed during a user-defined date/time range. Selecting this option requires you to designate the start and end dates.

- Enter or click on the calendar icon  to designate the date from which you want to begin including data collection attempts on the report.

- Enter or click on the calendar icon  to designate the date up to which you want to include data collection attempts on the report.

- **Fixed Period** Select this checkbox to ensure the manually entered **Start Date/Time** and **End Date/Time** remain unchanged. If this checkbox is left unselected (*default*), the manually entered dates/times will adjust forward one day for each 24-hour period that passes (*based on the **Start Date/Time** originally entered*).

5. Select the checkboxes corresponding to the locations for which you want to include data collection summary information in the report from the **Locations** list.

   Note: Click on the **Select All** or **Unselect All** button to select or deselect all the options in the list.

6. Select the checkboxes corresponding to the location groups including locations for which you want to include data collection summary information in the report from the **Location Groups** list. If you select a particular location group, you do not need to select the individual locations included in that location group.

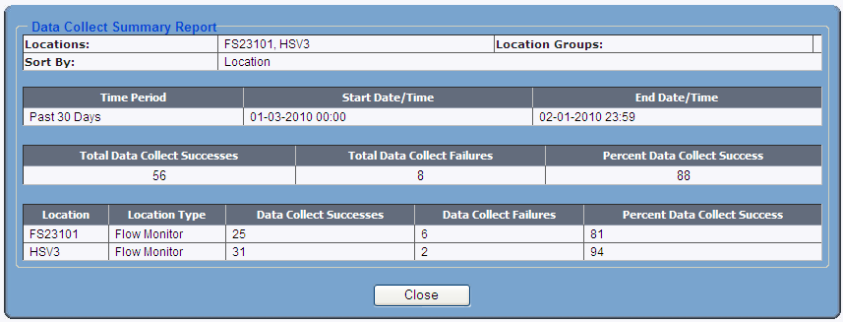
7. Select the method according to which you want **IntelliServe** to sort the data on the report from the **Sort** drop-down list.

   - **Location** Select this option to sort the results in alphabetical order based on the location.

   - **Percent** Select this option to sort the results by percentage, from the location with the lowest percentage of successful collects to the highest.

8. (*optional*) Click on the **Save** button to save the template for future use. The template also can be saved after generating the report.

9. Click on the **Generate Report** button to generate the report based on the selected parameters.



Data Collect Summary Report

Locations:	FS23101, HSV3	Location Groups:	
Sort By:	Location		

Time Period	Start Date/Time	End Date/Time
Past 30 Days	01-03-2010 00:00	02-01-2010 23:59

Total Data Collect Successes	Total Data Collect Failures	Percent Data Collect Success
56	8	88

Location	Location Type	Data Collect Successes	Data Collect Failures	Percent Data Collect Success
FS23101	Flow Monitor	25	6	81
HSV3	Flow Monitor	31	2	94

Close

Data Collect Summary Report sample

> **Note**: When viewing or modifying an *existing* template, clicking on the **Reset** button displays the settings last saved to the database for the selected template. When creating a *new* template (before saving any settings to the database), clicking on the **Reset** button completely clears the template. Click on the **Cancel** button to exit the **Configure Report** window and return to the **Report Templates** window.

10. Click on the **Close** button to exit the report and return to the **Configure Report** window.

> **Note:** If you did not save the report template to the database before generating the report, save the template now by clicking on the **Save** button on the **Configure Report** window.

Monitor Performance Report

The *Monitor Performance* report shows the percentage of time that the flow monitor sensors were generating irregular data during the specified time period.

A “0” zero percent reading means the sensor was operating normally during the report's time period. The higher the percentage numbers (up to 100 percent) indicates the more time the sensor was generating data that was suspect.

> **Note:** *Monitor Performance* reports are not available for FlowShark, FlowAlert, or RainAlert series monitors.

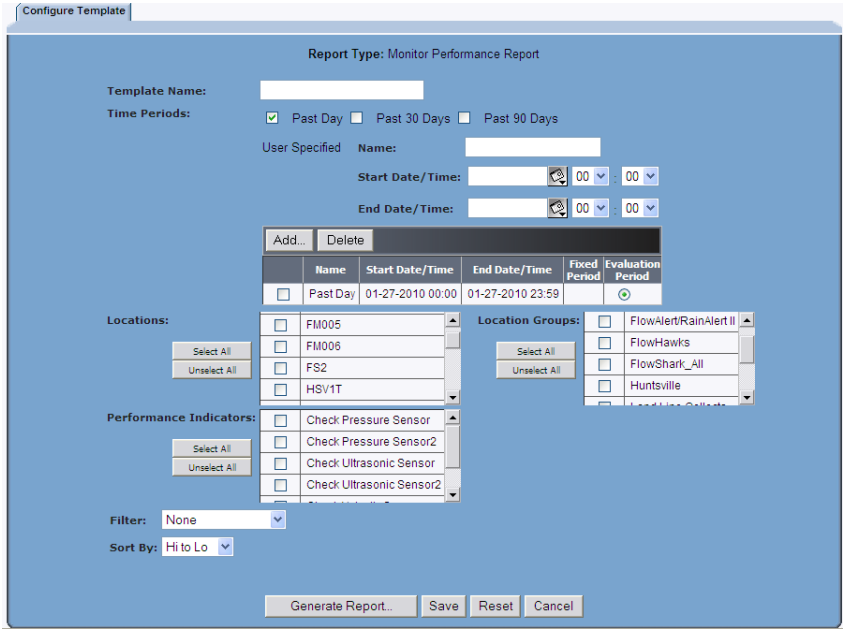
Define a template for the monitor performance report in the following way:

1. Select **Reports** > **Monitor** > **Monitor Performance** from the **System Menu**.

*The **Report Templates** window displays.*

2. Click on the **Add** button.

*The **Configure Report** window displays the parameters for configuring the selected template.*



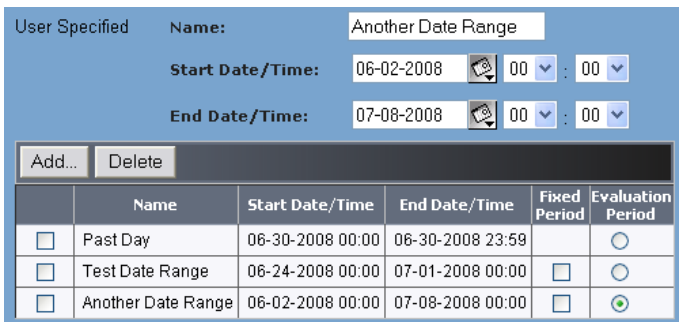
Configure Report (Monitor Performance Report) window

3. Enter a unique name for the report template into the **Template Name** field.

4. Select the radio button from the **Time Period** section corresponding to the period from which you want **IntelliServe** to generate the report:

   - **Past Day** Select this radio button to use information from the previous calendar day in the report. (*This is the default option.*)
   - **Past 30 Days** Select this radio button to report the previous 30 calendar days.
   - **Past 90 Days** Select this radio button to report the previous 90 calendar days.

- ❑ *(Optional)* **IntelliServe** allows you to create up to eight time periods to use for your report using the **User Specified** option. Enter a unique name for your time span into the **Name** field, choose a start and end date from the **Start Date/Time** and **End Date/Time** fields, and select the **Add** button. The new time span will be added to the table.
  - **Name** Enter a user-friendly unique name to identify your manual timespan.
  - **Start Date/Time** Enter or click the calendar icon  to designate the date from which you want to begin reporting the data. Then, use the drop-down lists to select the time at which you want to begin reporting the data on that date.
  - **End Date/Time** Enter or click the calendar icon  to designate the date up to which you want to report the data. Then, use the drop-down lists to select the time up to which you want to report the data for that date.



Sample **User Specified** option showing custom date ranges

> **Note:** Generating a report for an extensive date range and/or for too many locations may overburden the system, preventing **IntelliServe** from successfully generating the report. If the report does not generate, decrease the date range and/or the number of locations and then try to generate the report.

5. *(Optional)* Select the checkbox to the left of any timespan you no longer wish to include in your **User Specified** table and choose **Delete** to remove the date range from the table.

6. Select the **Fixed Period** checkbox for any date ranges that you want the date range to remain *static*. If **Fixed Period** is unchecked (default), the corresponding date range increments forward one day for each 24-hour period of time passed since it was created.

7. Select the **Evaluation Period** radio button corresponding to the date range to which you want the primary sorting and filtering applied. **Past Day** is selected by default.

8. Select the checkboxes corresponding to the locations you want to include in the report from the **Locations** section. *You must select at least one location or location group to generate the report.* If you select a location group, you do not have to select the individual locations in the location group from the **Locations** list.

   Note: Click on the **Select All** or **Unselect All** button to select or deselect all the options from the list at one time.

9. Select the checkboxes corresponding to the location groups you want to include in the final report from the **Location Groups** section. *You must select at least one location or location group to generate the report.*

10. Select the **Performance Indicators** you want to include in the report.

11. Select the method by which you want **IntelliServe** to limit the number of locations displayed in the report from the **Filter** drop-down list.

    - **Min to Max Range** This option displays the **Min Value** and **Max Value** fields that limit the number of locations displayed in the report. In the **Min Value** field, enter the minimum value (*percentage*) for including locations in the report. In the **Max Value**, enter a maximum value (*percentage*) for including locations in the report.
    - **Top 10** This option filters the top 10 locations based on a selection from the **Sort By** field.
    - **None** This option returns all of the locations.

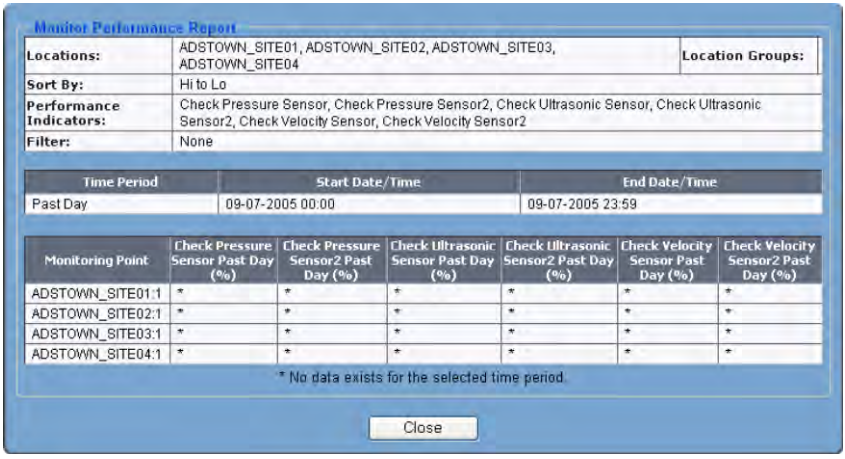
12. Select the method by which you want **IntelliServe** to sort the values included in the report from the **Sort By** drop-down list.

    - **Hi to Lo** This option sorts results from the highest to the lowest values.
    - **Lo to Hi** This option sorts results from the lowest to the highest values.

- ❑ **Location** This option sorts results by location name from the lowest to the highest values.

13. (*optional*) To save the template for future use, click on the **Save** button. You also can save the template after generating the report.

14. Click on the **Generate Report** button to generate the report based on the selected parameters.



Monitor Performance Report

Locations:	ADSTOWN_SITE01, ADSTOWN_SITE02, ADSTOWN_SITE03, ADSTOWN_SITE04	Location Groups:
Sort By:	Hi to Lo	
Performance Indicators:	Check Pressure Sensor, Check Pressure Sensor2, Check Ultrasonic Sensor, Check Ultrasonic Sensor2, Check Velocity Sensor, Check Velocity Sensor2	
Filter:	None	

Time Period	Start Date/Time	End Date/Time
Past Day	09-07-2005 00:00	09-07-2005 23:59

Monitoring Point	Check Pressure Sensor Past Day (%)	Check Pressure Sensor2 Past Day (%)	Check Ultrasonic Sensor Past Day (%)	Check Ultrasonic Sensor2 Past Day (%)	Check Velocity Sensor Past Day (%)	Check Velocity Sensor2 Past Day (%)
ADSTOWN_SITE01:1	*	*	*	*	*	*
ADSTOWN_SITE02:1	*	*	*	*	*	*
ADSTOWN_SITE03:1	*	*	*	*	*	*
ADSTOWN_SITE04:1	*	*	*	*	*	*

* No data exists for the selected time period.

Close

Sample **Monitor Performance Report**

> **Note**: If you are viewing or modifying an *existing* template, clicking on the **Reset** button displays the settings last saved to the database for the selected template. If you are creating a *new* template (and have not saved any settings to the database), clicking on the **Reset** button completely clears the template. Click on the **Cancel** button to exit the **Configure Report** window and return to the **Report Templates** window.

15. Click on the **Close** button to exit the report and return to the **Configure Report** window.

> **Note:** If you did not save the report template to the database before generating the report, you can still save the template by clicking on the **Save** button on the **Configure Report** window.

Creating Data Report Templates

The data reports enable you to generate several percentage-based reports that you can use to highlight certain hydraulic characteristics of your collection system and pinpoint areas where excessive surcharge and backwater may be occurring. An additional report allows you to generate a report indicating the entity data available in the database for a certain amount of time. These reports are generated for a pre-defined or user-specified time periods.

You can view data reports in graphical, tabular, and three-dimensional (3-D) graph formats.

- The graphical format displays a bar graph for each location/monitoring point selected to configure the report. Each time period is represented by a different color on the bar graph.
- The tabular format displays a table listing the locations and monitoring points and other details configured in the report.
- The 3-D Graph format provides a three-dimensional display of all locations/monitoring points on one graph for the selected report and utilities for rotating and customizing the graphical view.

Refer to the examples of each data report provided later in this chapter.

> **Note: IntelliServe** cannot display graphs if you do not have the required graphing control installed on your computer. If this occurs, **IntelliServe** will instruct you on how to download the control. If you are unable to download the control, please contact the ADS Support Center by phone at 1-877-237-9585 or email at adssupportcenter@idexcorp.com for assistance.

IntelliServe provides the following data reports:

- **Entity Date Ranges** This report shows the range of the data that is available for designated entities in the **IntelliServe** database within a specified time period.
- **Percent Full** This report compares *Average Depth* and *Maximum Depth* values to the *Pipe Height* for a specified time period.
- **Percent Surcharge** This report provides the percentage of time the depth was at or above the *Pipe Height* for a specified time period.

- **Percent Theoretical Capacity Used** This report compares the maximum quantity values for the specified time period to the *Pipe Capacity* of a selected location.
- **Severe Rain** This report shows which rain gauges had severe rain events during the specified time period. This report only shows rain data, and does not include any flow data. For the rain gauge locations, the administrator defines the criteria, which constitute a severe rain event.
- **Excess** Generate this report to display average flow rates and volumes of flows which exceed a predefined threshold. Define the threshold in the monitoring point parameters (can only be performed by a System Administrator) using the **Flow Rate Threshold** parameter. Calculations for excess values are generated during a data collect or after processing a .bin file.

Entity Date Ranges Report Template

Create an *Entity Date Ranges* report template in the following way:

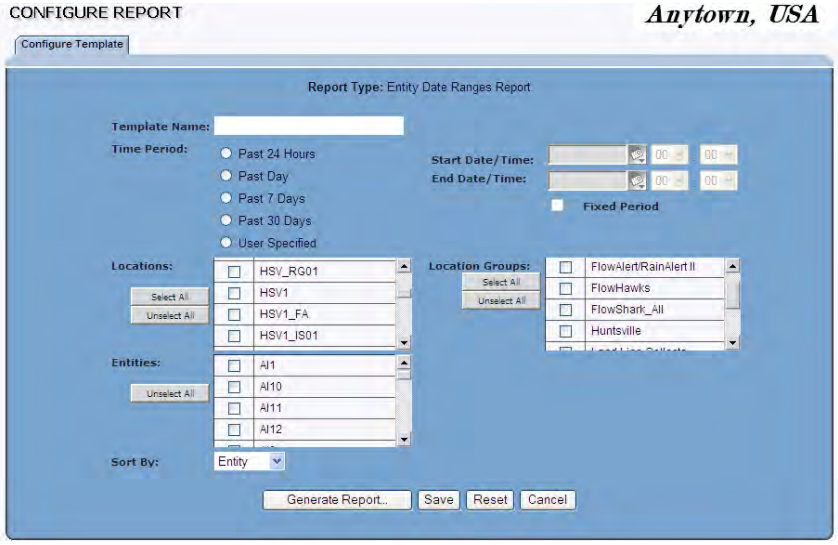
> **Note:** The following procedure involves creating entity date ranges reports and templates for one or more flow monitors, rain gauges, pseudo sites, and location groups from the **Reports** menu. However, **IntelliServe** also provides a feature that allows you to create an entity date ranges report for an individual location at the location level. Simply select **Locations > Flow Monitors/Rain Gauges/Pseudo Sites** from the **System Menu**, click on the location for which you want to create the report, click on the **Reports** tab (and then the **Entity Date Ranges Report** sub-tab, if necessary), configure the parameters to setup the report, and then generate the report. Refer to relevant steps in the following procedure for descriptions of the various parameters.

1. Select **Reports > Data > Entity Date Ranges** from the **System Menu**.

*The **Report Templates** window displays.*

2. Click on the **Add** button.

*The **Configure Report** window displays the parameters for configuring the Entity Date Ranges report template.*



Configure Report (Entity Date Ranges Report) window

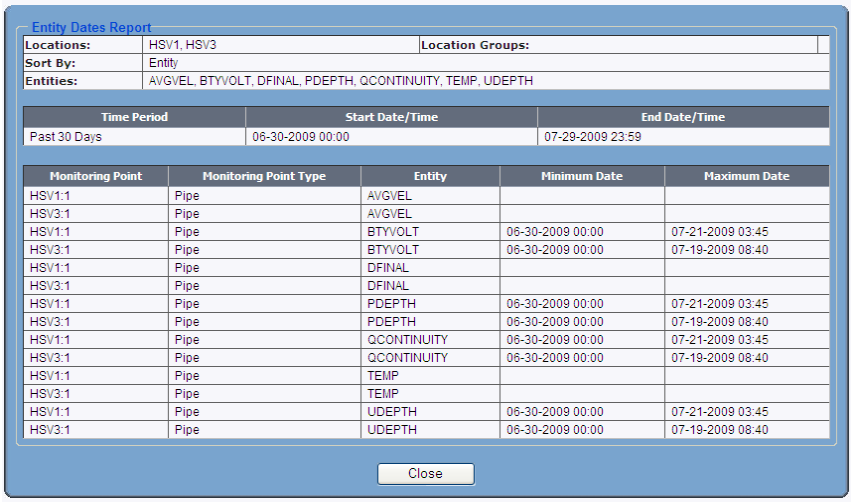
3. Enter a unique name for the report in the **Template Name** field.
4. Select the radio button in the **Time Period** section corresponding to the period over which you want **IntelliServe** to report the date range of available entity data:
   - **Past 24 Hours** Choose this radio button to create a report template based on data from the last 24 hours.
   - **Past Day** Choose this radio button to create a report template based on data from the previous calendar day.
   - **Past 7 Days** Choose this radio button to create a report template based on data from the last 7 days.
   - **Past 30 Days** Choose this radio button to create a report template based on data from the last 30 days.
   - **User Specified** Choose this radio button to create a report template based on data from a user-defined date/time range. Selecting this option requires you to designate the start and end dates.
     - Enter or click on the calendar icon  to designate the date from which you want to begin including data on the report.

- Enter or click on the calendar icon  to designate the date up to which you want to include data on the report.
- **Fixed Period** Select this checkbox to ensure the manually entered **Start Date/Time** and **End Date/Time** remain unchanged. If this checkbox is left unselected (*default*), the manually entered dates/times will adjust forward one day for each 24-hour period that passes (*based on the **Start Date/Time** originally entered*).

5. Select the checkboxes in the **Locations** section corresponding to the locations (including flow monitors, rain gauges, and pseudo sites) with entities for which you want to include date range data in the final report.

> **Note:** Click the **Select All** or **Unselect All** button to select or deselect all the options from the list at one time.

6. Select the checkboxes in the **Location Groups** section corresponding to the location groups including locations with entities for which you want to include date range data in the final report. If you select a location group, you do not need to select the individual locations included in the selected group.
7. Select the checkboxes in the **Entities** section corresponding to the entities for which you to include date range data in the final report.
8. Select the method by which you want **IntelliServe** to sort the data on the report from the **Sort** drop-down list.
   - ❑ **Entity** Select this option to sort the results in alphabetical order based on the entity name.
   - ❑ **Location** Select this option to sort the results in alphabetical order based on the location.
9. (*optional*) Click on the **Save** button to save the template for future use. The template also can be saved after generating the report.
10. Click on the **Generate Report** button to generate the report based on the selected parameters.



Entity Dates Report

Locations:	HSV1, HSV3	Location Groups:	
Sort By:	Entity		
Entities:	AVGVEL, BTYVOLT, DFINAL, PDEPTH, QCONTINUITY, TEMP, UDEPTH		

Time Period	Start Date/Time	End Date/Time
Past 30 Days	06-30-2009 00:00	07-29-2009 23:59

Monitoring Point	Monitoring Point Type	Entity	Minimum Date	Maximum Date
HSV1:1	Pipe	AVGVEL		
HSV3:1	Pipe	AVGVEL		
HSV1:1	Pipe	BTYVOLT	06-30-2009 00:00	07-21-2009 03:45
HSV3:1	Pipe	BTYVOLT	06-30-2009 00:00	07-19-2009 08:40
HSV1:1	Pipe	DFINAL		
HSV3:1	Pipe	DFINAL		
HSV1:1	Pipe	PDEPTH	06-30-2009 00:00	07-21-2009 03:45
HSV3:1	Pipe	PDEPTH	06-30-2009 00:00	07-19-2009 08:40
HSV1:1	Pipe	QCONTINUITY	06-30-2009 00:00	07-21-2009 03:45
HSV3:1	Pipe	QCONTINUITY	06-30-2009 00:00	07-19-2009 08:40
HSV1:1	Pipe	TEMP		
HSV3:1	Pipe	TEMP		
HSV1:1	Pipe	UDEPTH	06-30-2009 00:00	07-21-2009 03:45
HSV3:1	Pipe	UDEPTH	06-30-2009 00:00	07-19-2009 08:40

Close

Sample **Entity Date Range Report**

> **Note**: When viewing or modifying an *existing* template, clicking on the **Reset** button displays the settings last saved to the database for the selected template. When creating a *new* template (before saving any settings to the database), clicking on the **Reset** button completely clears the template. Click on the **Cancel** button to exit the **Configure Report** window and return to the **Report Templates** window.

11. Click on the **Close** button to exit the report and return to the **Configure Report** window.

> **Note:** If you did not save the report template to the database before generating the report, save the template now by clicking on the **Save** button on the **Configure Report** window.

Percent Full, Percent Surcharge, or Percent Theoretical Capacity Used Report Templates

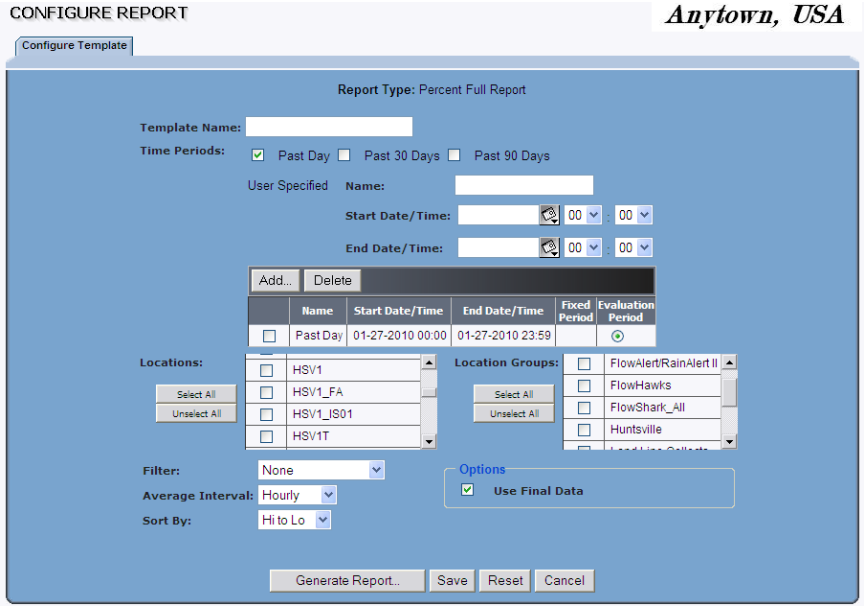
Create a *Percent Full*, *Percent Surcharge*, or *Percent Theoretical Capacity Used* report template in the following way:

1. Select **Reports** > **Data** from the **System Menu**.
2. Select the type of report for which you want to make a template.

*The **Report Templates** window displays, corresponding to the selected report.*

3. Click on the **Add** button.

*The **Configure Report** window displays the parameters for configuring the selected template.*



Configure Report (Percent Full) window

4. Enter a unique name for the report in the **Template Name** field.

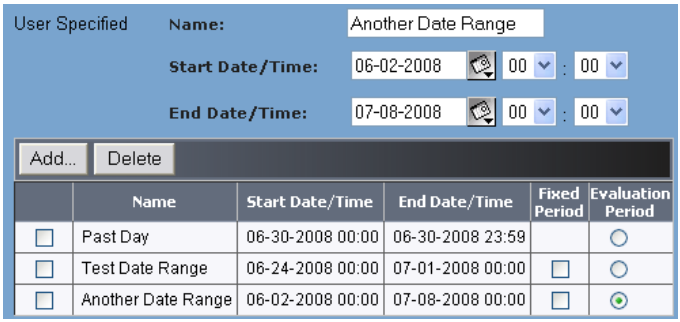
5. Select the radio button in the **Time Period** section corresponding to the time span you want to include on the report.

   - **Past Day** Use information for the previous calendar day in the report. (This time span is selected by default.)
   - **Past 30 Days** Select this radio button to report the previous 30 calendar days.
   - **Past 90 Days** Select this radio button to report the previous 90 calendar days.
   - *(Optional)* **IntelliServe** allows you to create up to eight time periods to use for your report using the **User Specified** option. Enter a unique name for your time span into the **Name** field, choose a start and end date from the **Start Date/Time** and **End Date/Time** fields, and select the **Add** button. The new time span will be added to the table.

- **Name** Enter a user-friendly unique name to identify your manual timespan.

- **Start Date/Time** Enter or click the calendar icon  to designate the date from which you want to begin reporting the data. Then, use the drop-down lists to select the time at which you want to begin reporting the data on that date.

- **End Date/Time** Enter or click the calendar icon  to designate the date up to which you want to report the data. Then, use the drop-down lists to select the time up to which you want to report the data for that date.



Sample **User Specified** option showing custom date ranges

> **Note:** Generating a report for an extensive date range and/or for too many locations may overburden the system, preventing **IntelliServe** from successfully generating the report. If the report does not generate, decrease the date range and/or the number of locations and then try to generate the report.

6. *(Optional)* Select the checkbox to the left of any timespan you no longer wish to include in your **User Specified** table and choose **Delete** to remove the date range from the table.

7. Select the **Fixed Period** checkbox for any date ranges for which you want the date range to remain *static*. If **Fixed Period** is unselected (default), the corresponding date range increments forward one day for each 24-hour period of time passed since it was created.

8. Select the **Evaluation Period** radio button corresponding to the date range to which you want the primary sorting and filtering applied. **Past Day** is selected by default.

9. Select the checkboxes corresponding to the locations you want to include in the report from the **Locations** section. *You must select at least one location or location group to generate the report.* If you select a location group, you do not have to select the individual locations in the location group from the **Locations** list.

> **Note:** Click on the **Select All** or **Unselect All** button to select or deselect all the options from the list at one time.

10. Select the checkboxes corresponding to the location groups you want to include in the final report from the **Location Groups** section. *You must select at least one location or location group to generate the report.*

11. Select method by which you want IntelliServe to limit the number of locations displayed in the report from the **Filter** drop-down list.

    - **Min to Max Range** This option displays the **Min Value** and **Max Value** fields that limit the number of locations displayed in the report. In the **Min Value** field, enter the minimum value (*percentage*) for including locations in the report. In the **Max Value**, enter a maximum value (*percentage*) for including locations in the report.
    - **Top 10** This option returns the top 10 locations based on a selection from the **Sort By** field.
    - **None** This option returns all of the locations.

12. Select the interval over which you want **IntelliServe** to average data points from individual data readings from the **Average Interval** drop-down list.

    - **Hourly** This option performs pre-report averaging based on an hour.
    - **15-Minute** This option performs pre-report averaging based on 15 minutes.
    - **None** This option does not perform pre-report averaging.

13. Select the method by which you want **IntelliServe** to sort the values included in the report from the **Sort By** drop-down list:

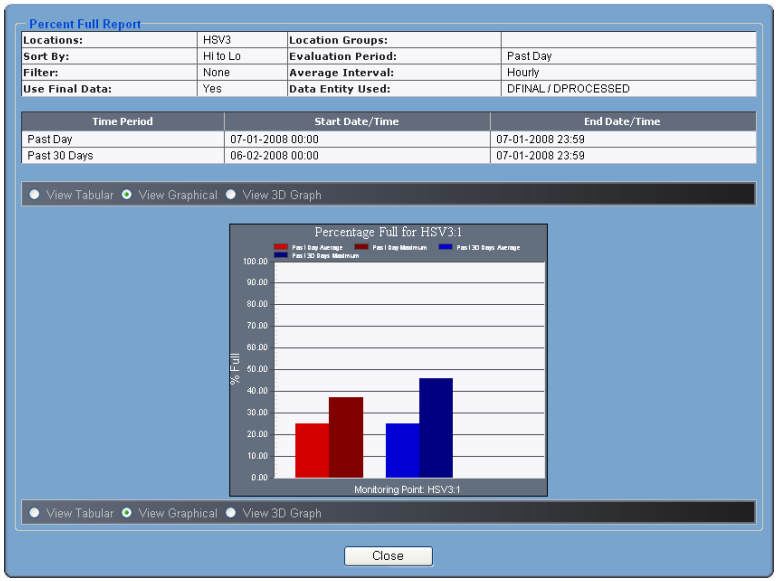
    - **Hi to Lo** This option sorts results from the highest to the lowest values.
    - **Lo to Hi** This option sorts results from the lowest to the highest values.

- ❑ **Location** This option sorts results by location name from lowest to highest value.

14. (*optional*) Select the **Use Final Data** checkbox to use the final data generated through **Profile** when producing the report. **IntelliServe** will fill in any missing final data with other applicable data, including data processed directly through **IntelliServe**.

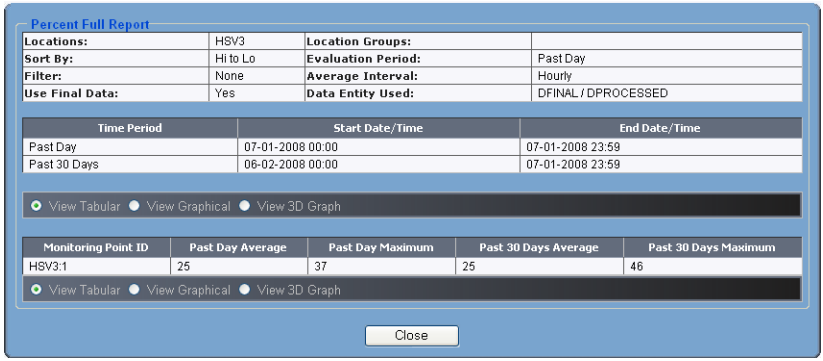
15. (*optional*) To save the template for future use, click on the **Save** button. You also can save the template after generating the report.

16. Click on the **Generate Report** button to generate the report based on the selected parameters.



Percent Full Report (sample graphical view)

17. *(optional)* Select the **View Tabular** or **View 3D Graph** radio buttons to view the report in tabular or three-dimensional format.



Percent Full Report

Locations:	HSV3	**Location Groups:**	
Sort By:	Hi to Lo	**Evaluation Period:**	Past Day
Filter:	None	**Average Interval:**	Hourly
Use Final Data:	Yes	**Data Entity Used:**	DFINAL / DPROCESSED

Time Period	Start Date/Time	End Date/Time
Past Day	07-01-2008 00:00	07-01-2008 23:59
Past 30 Days	06-02-2008 00:00	07-01-2008 23:59

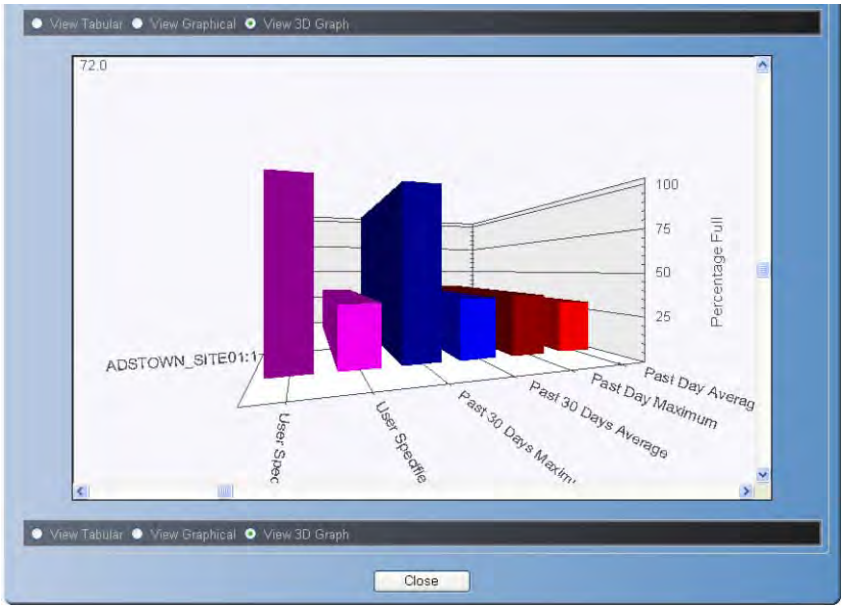
View Tabular ● View Graphical ● View 3D Graph

Monitoring Point ID	Past Day Average	Past Day Maximum	Past 30 Days Average	Past 30 Days Maximum
HSV3:1	25	37	25	46

View Tabular ● View Graphical ● View 3D Graph

Close

Percent Full Report (sample tabular view)



Percent Full Report (sample 3-dimensional view)

18. (*optional*) View bar graphs on the **View 3-D Graph** dynamically by moving the horizontal and vertical sliders.

19. (*optional*) Access graph display options by right-clicking on the graph in the **3-D View Graph** format and selecting from the menu.

Menu for 3D graphical reports

> **Note**: If you are viewing or modifying an *existing* template, clicking on the **Reset** button displays the settings last saved to the database for the selected template. If you are creating a *new* template (and have not saved any settings to the database), clicking on the **Reset** button completely clears the template. Click on the **Cancel** button to exit the **Configure Report** window and return to the **Report Templates** window.

20. Click on the **Close** button to exit and return to the **Configure Report** window.

> **Note:** If you did not save the report template to the database before generating the report, you can still save the template by clicking on the **Save** button on the **Configure Report** window.

Severe Rain Report Template

The *Severe Rain Report* shows which rain gauges had severe rain events during the specified time period. This report only shows rain data, and does not include any flow data. For the rain gauge locations, the administrator defines the criteria, which constitute a severe rain event.

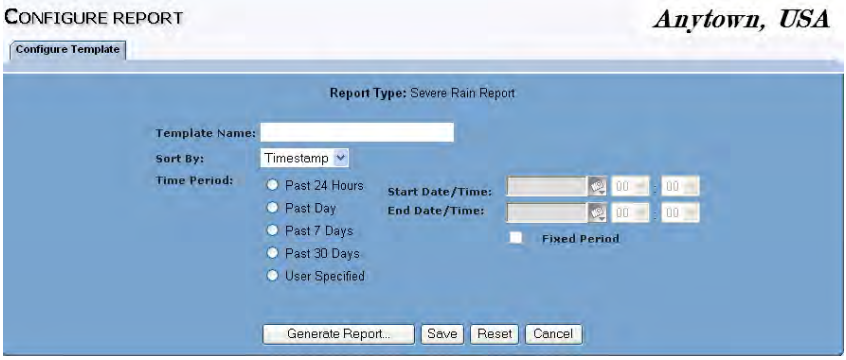
Create a *Severe Rain Report* template in the following way:

1. Select **Reports > Severe Rain** from the **System Menu**.

*The **Report Templates** window displays.*

2. Click the **Add** button.

*The **Configure Report** window displays the parameters for configuring the severe rain report template.*

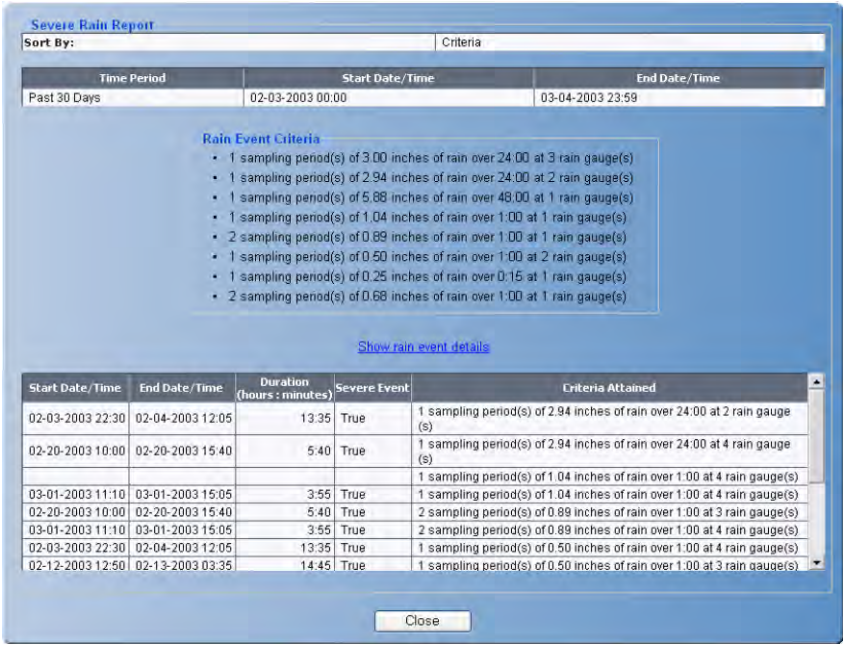


Configure Report (Severe Rain) window

3. Enter a unique name for the report in the **Template Name** field.
4. Select the method by which you want **IntelliServe** to sort the report from the **Sort By** drop-down list.
   - **Timestamp** This method sorts the report results by date and time in numerical order.
   - **Criteria** This method sorts the report results by flow condition that indicates a severe rain event.
5. Select the radio button in the **Time Period** section corresponding to the span over which you want **IntelliServe** to filter the report results:
   - **Past 24 Hours** Choose this radio button to create a report template for the past 24 hours.
   - **Past Day** Select this radio button to create a report template for the previous calendar day.
   - **Past 7 Days** Select this radio button to create a report template for the previous 7 calendar days.

- **Past 30 Days** Select this radio button to create a report template for the previous 30 calendar days.
- **User Specified** Select this radio button to create a report template for a specific date/time range. Selecting this option displays the **Start** and **End Date/Time** fields for establishing the range.
  - **Start Date/Time** Enter or click the calendar icon  to designate the date from which you want to begin reporting the data. Then, use the drop-down lists to select the time at which you want to begin reporting the data on that date.
  - **End Date/Time** Enter or click the calendar icon  to designate the date up to which you want to report the data. Then, use the drop-down lists to select the time up to which you want to report the data for that date.
  - *(Optional)* Select the **Fixed Period** checkbox for any date ranges that you want the date range to remain *static*. If **Fixed Period** is unchecked (default), the corresponding date range increments forward one day for each 24-hour period of time passed since it was created.

6. *(Optional)* Save the template for future use by clicking on the **Save** button. You also can save the template after generating the report.
7. Click on the **Generate Report** button to generate the report based on the selected parameters.



Sample **Severe Rain Report**

> **Note**: If you are viewing or modifying an *existing* template, clicking on the **Reset** button displays the settings last saved to the database for the selected template. If you are creating a *new* template (and have not saved any settings to the database), clicking on the **Reset** button completely clears the template. Click on the **Cancel** button to exit the **Configure Report** window and return to the **Report Templates** window.

8. Select the **Show rain event details** link to view additional details of rain events, including rain gauge names and corresponding rain depth.
9. Click on the **Close** button to exit the report and return to the **Configure Report** window.

> **Note:** If you did not save the report template to the database before generating the report, you can still save the template by clicking on the **Save** button on the **Configure Report** window.

Excess Report Template

Create an *Excess* report template in the following way:

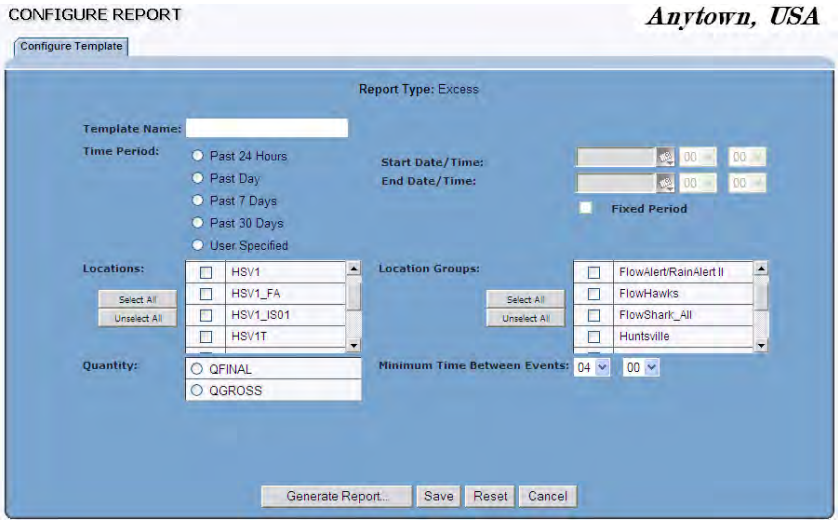
> **Note:** Generating *Excess* reports for a timespan that includes missing data will cause the Excess report to contain invalid flows and averages.

1. Select **Reports > Data > Excess** from the **System Menu.**

*The **Report Templates** window displays.*

2. Click on the **Add** button.

*The **Configure Report** window displays.*



Configure Report (Excess) window

3. Enter a unique name for the report in the **Template Name** field.
4. Select the radio button in the **Time Period** section corresponding to the period over which you want **IntelliServe** to filter the report results:
   - **Past 24 Hours** Choose this radio button to create a report template for the past 24 hours.
   - **Past Day** Select this radio button to create a report template for the previous calendar day.

- **Past 7 Days** Select this radio button to create a report template for the previous 7 calendar days.
- **Past 30 Days** Select this radio button to create a report template for the previous 30 calendar days.
- **User Specified** Select this radio button to create a report template for a specific date/time range. Selecting this option displays the **Start** and **End Date/Time** fields for establishing the range.
  - **Start Date/Time** Enter or click the calendar icon to designate the date from which you want to begin reporting the data. Then, use the drop-down lists to select the time at which you want to begin reporting the data on that date.
  - **End Date/Time** Enter or click the calendar icon to designate the date up to which you want to report the data. Then, use the drop-down lists to select the time up to which you want to report the data for that date.
  - Select the **Fixed Period** checkbox for any date ranges that you want the date range to remain *static*. If **Fixed Period** is unchecked (default), the corresponding date range increments forward one day for each 24-hour period of time passed since it was created.

5. Select the checkboxes corresponding to the locations you want to include in the report from the **Locations** section. *You must select at least one location or location group to generate the report.* If you select a location group, you do not have to select the individual locations in the location group from the **Locations** list.

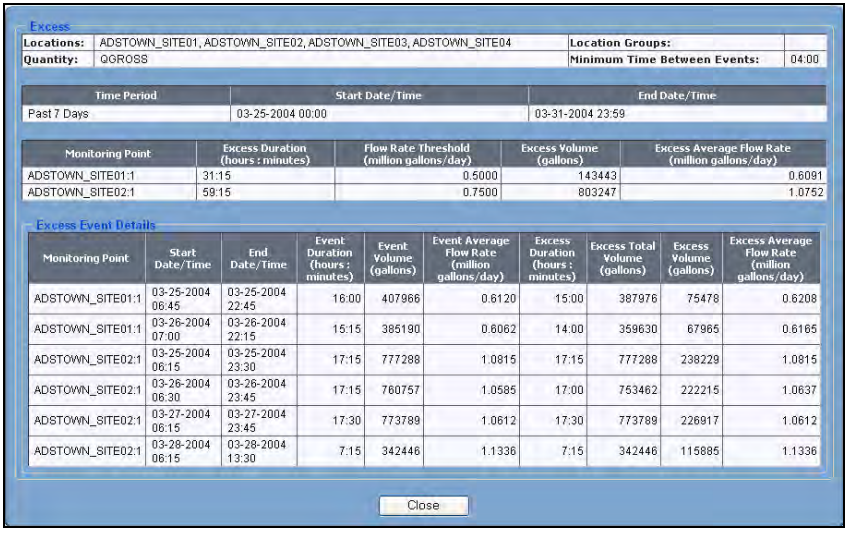
   Note: Click the **Select All** or **Unselect All** button to select or deselect all the options from the list at one time.

6. Select the checkboxes corresponding to the location groups you want to include in the final report from the **Location Groups** section. *You must select at least one location or location group to generate the report.*
7. Select **QFinal** or **QGross** for the **Quantity Type** you want to report.
8. Specify the duration of time which must occur between excess events (duration of time from one excess event to the occurrence of the next excess event) before the next excess event is reported as separate event in the **Minimum Time Between Events** field.

9. (*optional*) To save the template for future use, click on the **Save** button. You also can save the template after generating the report.

> **Note:** If you are viewing or modifying an existing template, clicking on the **Reset** button displays the settings last saved to the database for the selected template. If you are creating a new template (and have not saved any settings to the database), clicking on the **Reset** button completely clears the template. Click on the **Cancel** button to exit the Configure Report window and return to the Report Templates window.

10. Click on the **Generate Report** button to generate the excess report based on the selected parameters.



Excess

Locations:	ADSTOWN_SITE01, ADSTOWN_SITE02, ADSTOWN_SITE03, ADSTOWN_SITE04	Location Groups:	
Quantity:	QGROSS	Minimum Time Between Events:	04:00

Time Period	Start Date/Time	End Date/Time
Past 7 Days	03-25-2004 00:00	03-31-2004 23:59

Monitoring Point	Excess Duration (hours : minutes)	Flow Rate Threshold (million gallons/day)	Excess Volume (gallons)	Excess Average Flow Rate (million gallons/day)
ADSTOWN_SITE01:1	31:15	0.5000	143443	0.6091
ADSTOWN_SITE02:1	59:15	0.7500	803247	1.0752

Excess Event Details

Monitoring Point	Start Date/Time	End Date/Time	Event Duration (hours : minutes)	Event Volume (gallons)	Event Average Flow Rate (million gallons/day)	Excess Duration (hours : minutes)	Excess Total Volume (gallons)	Excess Volume (gallons)	Excess Average Flow Rate (million gallons/day)
ADSTOWN_SITE01:1	03-25-2004 06:45	03-25-2004 22:45	16:00	407966	0.6120	15:00	387976	75478	0.6208
ADSTOWN_SITE01:1	03-26-2004 07:00	03-26-2004 22:15	15:15	385190	0.6062	14:00	359630	67965	0.6165
ADSTOWN_SITE02:1	03-25-2004 06:15	03-25-2004 23:30	17:15	777288	1.0815	17:15	777288	238229	1.0815
ADSTOWN_SITE02:1	03-26-2004 06:30	03-26-2004 23:45	17:15	760757	1.0585	17:00	753462	222215	1.0637
ADSTOWN_SITE02:1	03-27-2004 06:15	03-27-2004 23:45	17:30	773789	1.0612	17:30	773789	226917	1.0612
ADSTOWN_SITE02:1	03-28-2004 06:15	03-28-2004 13:30	7:15	342446	1.1336	7:15	342446	115885	1.1336

Close

Sample **Excess Report**

11. Click on the **Close** button to exit the report and return to the **Configure Report** window.

> **Note:** If you did not save the report template to the database before generating the report, you can still save the template by clicking on the **Save** button on the **Configure Report** window.

Modifying a Report Template

IntelliServe allows you to modify an existing report template if you originally created the template. Modify a report template in the following way:

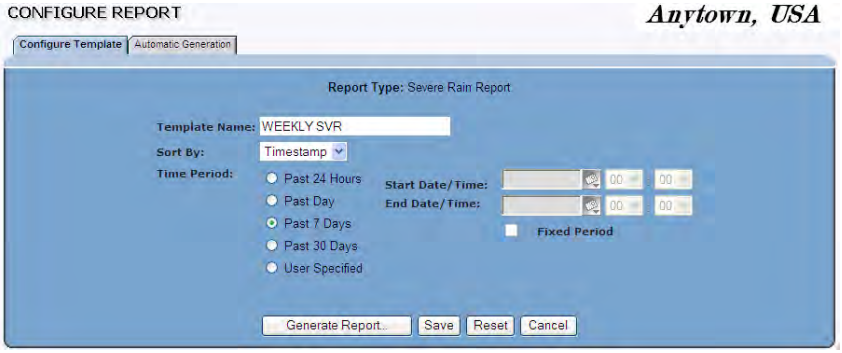
1. Select **Reports** from the **System Menu**.
2. Click on the report type corresponding to the template you want to modify.

*The **Report Templates** window displays the templates available in the database for the selected report type.*

Report Templates (Severe Rain Report Templates) window

3. Click on the report template you want to modify from the **Template Name** column. You can only modify reports that you created!

*The **Configure Report** window displays the parameters for the selected report template.*



Configure Report (Severe Rain Report Template) window

4. Modify the parameters as necessary. Refer to *Creating Reports and* Templates on page 8-2 for information on the template parameters for the selected report.
5. Click on the **Generate Report** button to generate the report based on the modified parameters.

> **Note:** Print the report by selecting **File** > **Print** from the browser menu.

6. Click on the **Close** button to return to the **Configure Report** window.
7. Click on the **Save** button to save the revised template to the database.

> **Note:** Refer to *Configuring an Automatic Report* on page 8-55 for instructions on configuring an automatic report template.

Generating, Viewing, and Printing Reports

IntelliServe's report feature enables you to generate, view, and print reports. View a report in the following way:

1. Select **Reports** from the **System Menu**.
2. Click on the report type for the template you want to generate or view.

*The **Report Templates** window displays, showing the templates stored in the database for the selected report type.*

3. Click on the report template you want to view.
4. Click on the **Generate Report** button to generate the selected report.

The report displays in a new browser window for viewing.

5. (*optional*) Print the report by selecting **File** > **Print** from the browser menu.
6. Click on the **Close** button to exit the report.

Deleting a Report Template

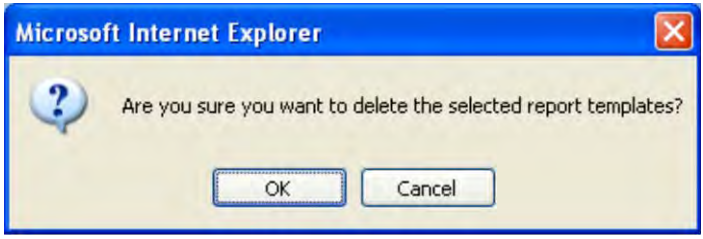
IntelliServe allows you to delete one or more report templates from the database, provided you are the original creator of the report template. When you delete a template, **IntelliServe** removes it from the database, making it no longer accessible from the system. Delete an existing report template from the database in the following way:

1. Select **Reports** > [***Report Type***] from the **System Menu**.

*The **Report Templates** window displays the report templates saved to the database for the selected report type.*

2. Select the checkboxes corresponding to the report templates you want to delete.
3. Click on the **Delete** button.

***IntelliServe** displays a message requesting confirmation to delete the selected templates.*



Confirmation dialog

4. Click on the **OK** button confirm to remove the report template(s) from the database.

Working with Automatic Reports

Using **IntelliServe's** *Automatic Generation* feature, you can configure the parameters for a report template that will automatically generate reports at specified time intervals and send copies of the report to designated recipients through e-mail. You can create multiple automatic configurations for each report type template.

> **Note:** You must possess the *Configure Automatic Report Settings* permission to configure an automatic report.

The following sections provide instructions on configuring, modifying, and deleting automatic reports.

Configuring an Automatic Report

IntelliServe enables you to configure automatic reports by entering the e-mail addresses of recipients, date, time, and the number of hours you want the system to wait before automatically generating each subsequent report. Report recipients do not have to be registered users of **IntelliServe**.

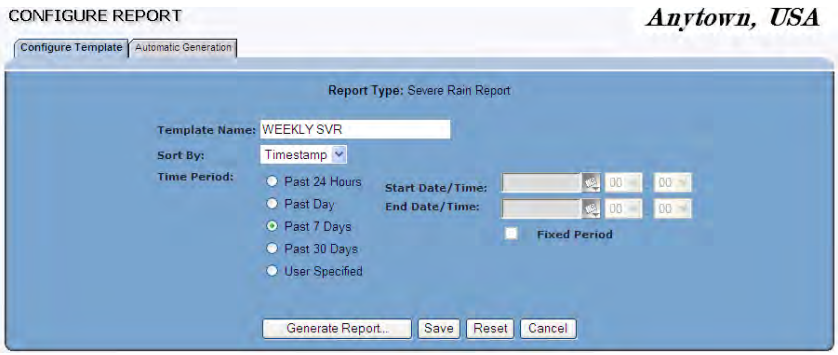
Configure an automatic report based on an existing report template in the following way:

1. Select on **Reports** from the **System Menu.**
2. Select the type of report you want to be generated automatically.

*The **Report Templates** window displays the report templates generated for the selected report type.*

3. Click on the template for which you want to generate an automatic report in the **Template Name** column.

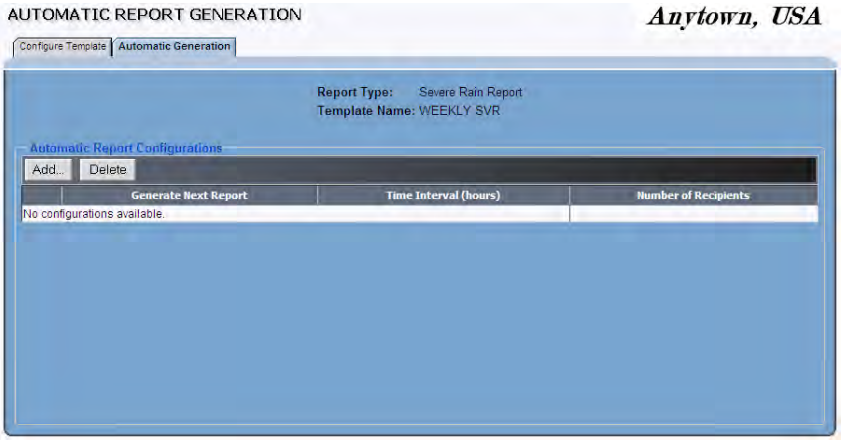
*The **Configure Report** window displays the parameters of the selected report.*



Configure Report (Severe Rain Report) window

4. Click on the **Automatic Generation** tab.

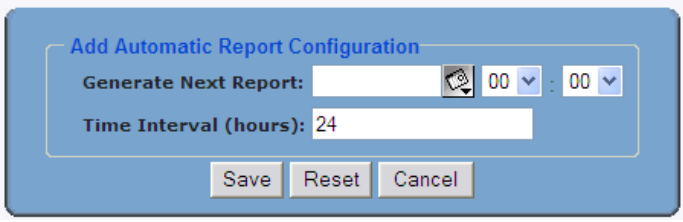
*The **Automatic Generation** tab displays.*



Automatic Report Generation (Severe Rain Report) window

5. Click on the **Add** button to define an automatic configuration.

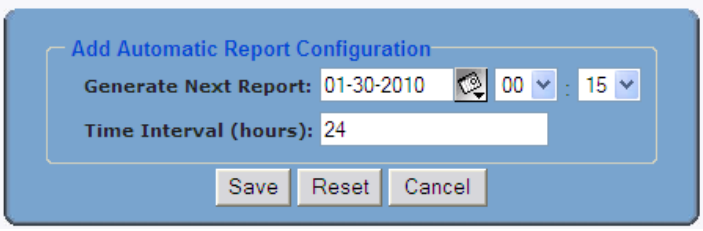
*The **Add Automatic Report Configuration** displays.*



Add Automatic Report Configuration dialog

6. Enter or click the calendar icon to select the date you want **IntelliServe** to generate the first report in the **Generate Next Report** field. Select the specific time on that date from corresponding drop-down lists.

7. Enter the number of hours you want the system to wait between generating reports in the **Time Interval** field.



Completed **Add Automatic Report Configuration** dialog

8. Click on the **Save** button to save the configuration to the database.

*The **Automatic Report Generation** window appears, showing the new entry in the **Automatic Generation** tab.*

Automatic Report Generation window

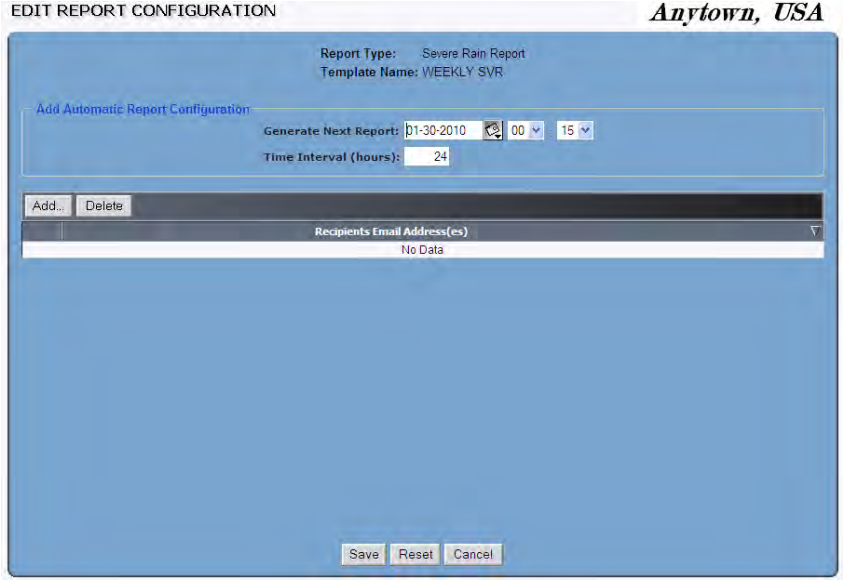
*The **Generate Next Report** column shows the next date and time when that report will be generated. Initially, no one will receive any report when it is generated. The **Number of Recipients** column shows "0". You will have to add email addresses to the report as described next if you want to distribute the report.*

Adding E-mail Addresses to an Automatic Report

Add email recipients to an automatic report configuration in the following way:

1. Click on the report date entry in the **Generate Next Report** column on the **Automatic Generation** tab.

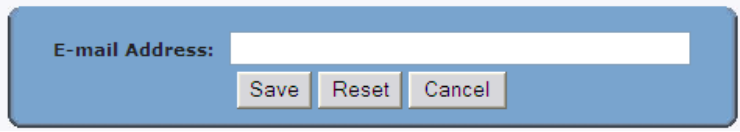
*The **Edit Report Configuration** window displays.*



Edit Report Configuration window

2. Click on the **Add** button to add an email address.

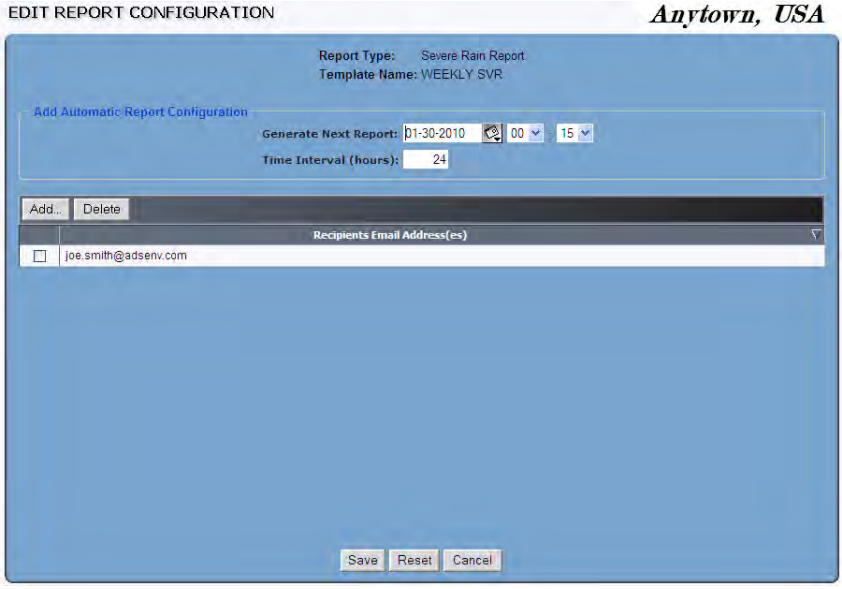
*The **Add E-mail Address** screen displays.*



Add E-mail Address dialog

3. Enter one e-mail address to which you want **IntelliServe** to send a report in the **E-mail Address** field.
4. Click on the **Save** button to save the address to the database and return to the **Edit Report Configuration** screen.

***IntelliServe** saves the address to the database and displays the **Edit Report Configuration** window.*

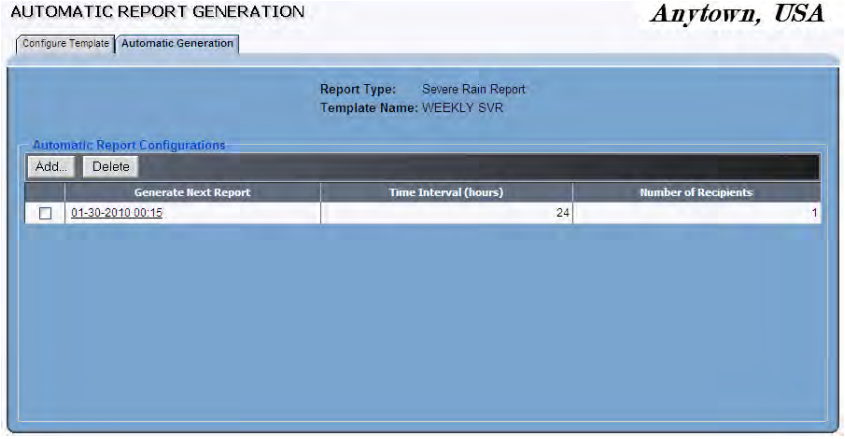


Edit Report Configuration window with new Email address

5. Repeat steps 2 through 4 for each additional e-mail address you want to add.

6. Once you have entered all the e-mail addresses for this report, click on the **Save** button in the **Edit Report Configuration** window.

*The **Number of Recipients** column on the **Automatic Generation** tab shows the number of email addresses added to the report.*



Automatic Report Generation (Severe Rain Report) window

Modifying an Automatic Report

IntelliServe allows you to modify an existing automatic report, provided you originally created the report. Edit an existing report in the following way:

1. Select **Report** from the **System Menu.**
2. Select the type of report that contains the automatic configuration you want to modify.

*The **Report Templates** window displays the templates for the selected report type.*

3. Click on the report template you want to modify in the **Template Name** column.

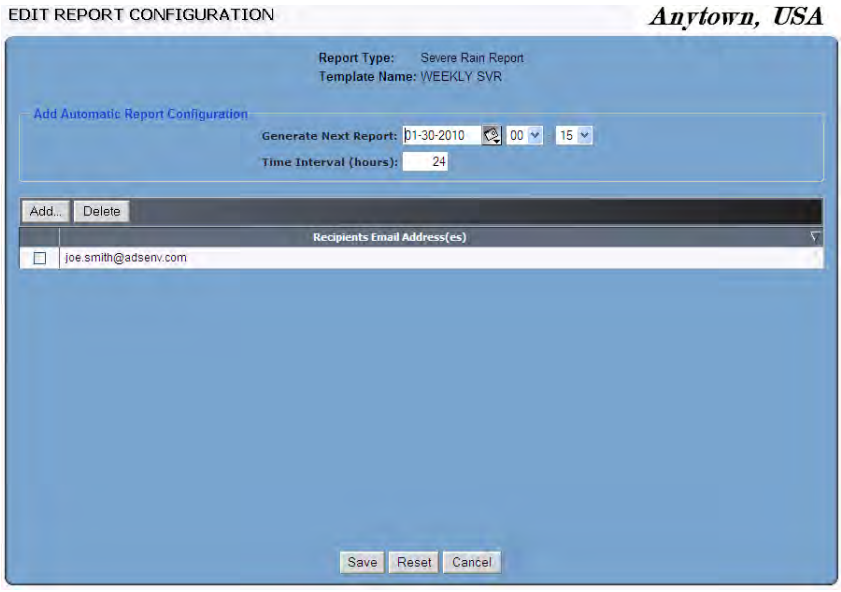
*The **Configure Report** window displays the parameters of the selected report template.*

4. Click on the **Automatic Generation** tab.

*The **Automatic Report Generation** window displays the automatic configurations.*

5. Click on the automatic report configuration you want to modify.

*The **Edit Report Configuration** window displays the existing parameters for the selected report configuration.*



Edit Report Configuration (**Severe Rain Report)** window

6. Modify the parameters as necessary. Refer to *Configuring an Automatic Report* on page 8-55 for information on the configuration parameters.
7. Click on the **Save** button to save your changes to the database.

*The **Automatic Report Generation** window displays the revised automatic report configuration.*

Deleting an Automatic Report

IntelliServe allows you to delete one or more automatic report configurations from the database, provided you originally created the automatic report. Delete a report configuration from the database in the following way:

1. Select **Reports** from the **System Menu**.
2. Select the type of report that contains the automatic configuration you want to delete.

*The **Report Templates** window displays the templates corresponding to the selected report type.*

3. Click on the report template from which you want to delete an existing automatic report configuration in the **Template Name** column.

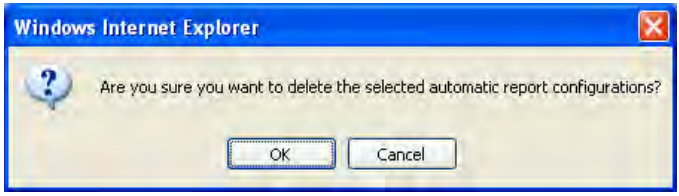
*The **Configure Report** window displays the parameters of the selected report template.*

4. Click on the **Automatic Generation** tab.

*The **Automatic Report Generation** window displays the existing automatic report configurations.*

5. Select the checkbox(es) corresponding to the automatic report configurations you want to delete, and then click on the **Delete** button.

The confirmation message displays.



Confirmation dialog

6. Click on the **OK** button to confirm the deletion.

***IntelliServe** removes the selected configuration(s) from the database.*

APPENDIX A

Events

This appendix provides descriptions of the events configured as part of **IntelliServe®**. Please note that, based on your *permissions*, some users may not have access to all of the events available through **IntelliServe**.

Alarm Acknowledged	This event indicates that an alarm has been acknowledged.
Auto Clear	This event indicates that an alarm has been cleared automatically.
Cross Check Depth (detected by monitor)	This event indicates that an inconsistency exists between the readings obtained from two different depth entities at the same monitoring point for the same date/time stamp.
Cross Check Velocity (detected by monitor)	This event indicates that an inconsistency exists between the readings obtained from two different velocity entities at the same monitoring point for the same date/time stamp.
Cryout Test	This event indicates that a cryout was initiated manually from the monitor to test communications.
Data Collect – Failure	This event indicates a failure occurred when an attempt was made to collect data from a location.
Data Collect – Success	This event indicates that data has been collected successfully from a monitor.
Data Collect Event	This event indicates that the monitor sent a cryout to **IntelliServe** to initiate data collection from the monitor.
EMU AC Power Fail	This event indicates that the EMU is no longer receiving power from the AC power source.
Event Escalated	This event indicates an alarm has occurred and the system has attempted to notify the appropriate users (escalation chain members for a location or system administrator for a system alarm).
Flow Imbalance in the Network (detected by	This event indicates that a higher quantity of flow exists upstream than downstream. This may be the result of a spill,

Flow Analysis)	incorrect downstream network configuration, or inaccurate data from a monitor that may require further confirmations. **IntelliServe** initiates an alarm when Qnet readings are *negative* consecutively for one hour. Alarm conditions clear (return to normal) when **IntelliServe** receives Qnet readings of *zero or higher* consecutively for one hour.
Flow Loss (detected by monitor)	This event indicates that the flow expected at the monitor is below historically expected flow rates (QTHRESHOLD) or flow depths (DTHRESHOLD) and could indicate that a spill has occurred or that further confirmations are needed at the flow monitor to verify accuracy of the data.
High Depth Level Exceeded	This event indicates that the flow depth has exceeded the specified threshold, reflecting warning conditions.
High High Depth Level Exceeded	This event indicates that the flow depth has exceeded the specified threshold, reflecting critical conditions. This event commonly follows a *High Depth Level Exceeded* event.
Hydraulic Conditions Change	This event indicates a significant change has occurred in the hydraulic conditions present in the flow. The depth/velocity relationship is no longer consistent with the expected data.
Import Data	This event indicates the administrator has imported data from the local directory or network to the **IntelliServe** database.
Invalid Password	This event indicates that a user has entered a password that does not correspond with the user name in the database when attempting to log in.
Invalid User ID	This event indicates that a user has entered a user name that does not exist in the database when attempting to log in.
Irregular Pressure Depth	This event represents a potential problem with the pressure depth sensor indicated by pressure depth readings that do not track with ultrasonic depth readings.
Irregular Pressure2 Depth	This event represents a potential problem with the second pressure depth sensor, as indicated by pressure depth readings that do not track with ultrasonic depth readings.
Irregular Smart Depth	This event indicates a significant inconsistency in Smart Depth readings based on historical data.
Irregular Smart Depth2	This event indicates a significant inconsistency in Smart Depth readings on the second sensor based on historical data.
Irregular Ultrasonic Sensor	This event indicates possible problems with the ultrasonic depth sensor evidenced by an inconsistency between current readings and historical data.

Irregular Ultrasonic2 Sensor	This event indicates possible problems with the second ultrasonic depth sensor, as evidenced by an inconsistency between current readings and historical data.
Irregular Velocity Sensor	This event indicates possible problems with the velocity sensor evidenced by an inconsistency between current readings and historical data.
Irregular Velocity2 Sensor	This event indicates possible problems with the second velocity sensor, as evidenced by an inconsistency between current readings and historical data.
Login	This event indicates that a user has logged in.
Logout	This event indicates that a user has logged out.
Loss of Flow in the Network	This event indicates that the network has potentially experienced a loss of flow and that this condition has been detected by **IntelliServe's** review of the data. **IntelliServe** initiates an alarm when Qnet readings fall *below* the designated threshold consecutively for one hour. Alarm conditions clear (return to normal) when **IntelliServe** receives Qnet readings *above* the threshold consecutively for one hour.
Low Depth	This FlowShark event indicates the flow depth has fallen below the value set for Low Depth Alarm at the monitor. When this occurs, the *Low Depth* alarm will be broadcast in IntelliServe. The Low Depth Alarm is a static value and does not fluctuate with time of day or flow conditions at the monitor.
Low Depth on MP2	This FlowShark event indicates the flow depth has fallen below the value set for Low Depth Alarm at the monitor (on the second monitoring point). When this occurs, the *Low Depth* alarm will be broadcast in IntelliServe. The Low Depth Alarm is a static value and does not fluctuate with time of day or flow conditions at the monitor.
Manual Clear	This event indicates that an alarm has been cleared manually.
Monitor Not in Network	This event indicates that this monitor is not currently configured as part of the flow monitoring network and that **IntelliServe** will not attempt to retrieve data from this monitor.
Multiple Zero Velocity Readings (detected by Flow Analysis)	This event indicates that at least 25 percent of the most recent 24 hours of velocity readings return a value of zero.

Overflow – Dry Weather	This event indicates that a dry weather overflow may be occurring (or has occurred) at the specified location. A *High* or *High High* alarm was received from the location, **IntelliServe** collected and evaluated the rain data collected from the rain gauges configured for the wet/dry overflow evaluation and determined that little or no rainfall occurred during the specified time period. An overflow during a dry weather condition warrants immediate investigation of the data reported, perhaps including a field visit to the monitoring location.
Overflow – Wet Weather	This event indicates that a wet weather overflow may be occurring (or has occurred) at the specified location. A *High* or *High High* alarm was received from the location, **IntelliServe** collected and evaluated the rain data collected from the rain gauges configured for the wet or dry overflow evaluation and determined that sufficient rainfall occurred during the specified time period. Investigation of the potential wet weather overflow should follow local, state, and federal regulation criteria.
Possible Backwater Conditions	This event detects an increase in the flow depth concurrent with a decrease or less-than-expected increase in the velocity. These conditions could indicate a blockage downstream. **IntelliServe** initiates an alarm when average velocity reads less than 75 percent of velocity back-calculated from the Manning SAG equation for 1 hour of consecutive readings. Alarm conditions cease when average velocity readings are equal to or more than 75 percent of velocity back-calculated from the Manning SAG equation for 1 hour of consecutive readings.
Pressure Depth Readings Used	This event indicates the system no longer referenced the ultrasonic depth sensor to obtain *Unidepth*, but obtained depth readings from the pressure depth sensor for a specific time period. This may have occurred due to a submerged ultrasonic depth sensor during surcharge conditions.
Rain Exceeding Threshold	This event indicates a rain event in progress has exceeded a specified threshold.
Surcharge Conditions	This event indicates that a location is experiencing surcharge conditions. A surcharge exists when the flow completely fills the pipe and begins to fill the manhole. **IntelliServe** must detect this condition for 4 consecutive depth readings to initiate an alarm. **IntelliServe** clears this alarm (returns to normal) when the depth readings fall to at least 2 inches below the pipe height for 4 consecutive readings.
Ultrasonic Sensor Temperature	This event indicates that the temperature sensor in the first ultrasonic depth sensor is producing invalid temperature readings. Temperatures are reading either extremely high or extremely low.

Ultrasonic2 Sensor Temperature

This event indicates that the temperature sensor in the second ultrasonic depth sensor is producing invalid temperature readings. Temperatures are reading either extremely high or extremely low.

Voltage – Critically Low Battery

This event indicates that the battery voltage in an ADS Model 3600™ flow monitor or a Rain Alert monitor has exceeded the second threshold and ADS recommends replacing the battery. See also *Voltage - Low Battery*.

Voltage – Low Battery

This event indicates that the battery voltage has fallen below an acceptable level. For an ADS Model 3600™ flow monitor or a Rain Alert monitor this is the first warning that the battery voltage has fallen below the specified threshold (refer to *Voltage - Critically Low Battery*). For the ADS Model 3500™, 4000™, and FlowShark™ monitors, this event is the only warning that the battery voltage has fallen below the specified threshold.

Voltage – Low Wireless Battery

This event indicates that the battery voltage in the device used for wireless communication with the flow monitor or rain gauge has fallen below the specified threshold.

APPENDIX B

Data Entities

This appendix provides descriptions of the data entities used in **IntelliServe®**. Please note that, based on permissions, some users may not have access to all of the entities available in **IntelliServe**. In addition, some data entities may not be available for display using all data display formats. The keys associated with each entity indicate the formats in which each individual entity can be displayed (hydrograph – *H*; scattergraph – *S*; tabular – *T*).

> **Note:** For entities representing events detected by the monitor, a value of 1 indicates an event is occurring and a value of 0 indicates that conditions have returned to normal.

AIRTEMP_3 [HT]	*Air Temperature3*	This represents the air temperature measured by the Surface Combo Sensor.
BTYCRIT [T] **(detected by monitor)**	*Battery Critical*	This event (Critically Low Battery Voltage) indicates that the battery requires replacement.
BTYLOW [T] **(detected by monitor)**	*Low Battery*	This event (Low Battery Voltage) indicates that the battery voltage is low and the battery should be monitored for replacement.
BTYVOLT [T] **(detected by monitor)**	*Battery Voltage*	This represents a daily battery reading from a flow monitor.
BTYVOLT_MODEM [T]	*Battery Voltage*	This represents the battery voltage reading for the wireless modem.

CHECK_PD [T] (detected by monitor)	*Check Pressure Depth*	This event (Irregular Pressure Depth) indicates a potential problem with the pressure depth sensor based on pressure depth readings that do not track with ultrasonic depth readings.
CHECK_PD2 [T] (detected by monitor)	*Check Pressure Depth*	This event (Irregular Pressure Depth) indicates a potential problem with the pressure depth sensor at the second monitoring point because pressure depth readings do not track with ultrasonic depth readings.
CHECK_UD [T] (detected by monitor)	*Check Ultra Depth*	This event (Irregular Ultrasonic Sensor) indicates potential problems with the ultrasonic depth sensor evidenced by an inconsistency between current readings and historical data.
CHECK_UD2 [T] (detected by monitor)	*Check Ultra Depth*	This event (Irregular Ultrasonic Sensor) indicates potential problems with the ultrasonic depth sensor at the second monitoring point evidenced by an inconsistency between current readings and historical data.
CHECK_UT [T] (detected by monitor)	*Check Ultra Temperature*	This event (Ultrasonic Sensor Temperature) indicates invalid temperature readings from the temperature sensor in the ultrasonic depth sensor. The temperature readings are either extremely high or extremely low.
CHECK_UT2 [T] (detected by monitor)	*Check Ultra Temperature*	This event (Ultrasonic Sensor Temperature) indicates invalid temperature readings from the temperature sensor in the ultrasonic depth sensor at the second monitoring point. The temperature readings are either extremely high or extremely low.
CHECK_V [T]	*Check Velocity*	This event (Irregular Velocity Sensor) indicates potential problems with the velocity sensor evidenced by an inconsistency between current readings and historical data.

CHECK_V2 [T]	*Check Velocity*	This event (Irregular Velocity Sensor) indicates potential problems with the velocity sensor at the second monitoring point evidenced by an inconsistency between current readings and historical data.
CROSS_DEPTH [HT] **(detected by monitor)**	*Cross Check Depth*	This event indicates that an inconsistency exists between the readings obtained from two different depth entities at the same monitoring point for the same date/time stamp.
CROSS_VELOCITY [HT] **(detected by monitor)**	*Cross Check Velocity*	This event indicates that an inconsistency exists between the readings obtained from two different velocity entities at the same monitoring point for the same date/time stamp.
CUMULATIVE_RAIN [HT]	*Cumulative Rain*	This represents the rain total for a user-defined time period.
DEPTH_A1 through DEPTH_A12 [HST]	*Analog Input Depth*	These represent the depth data values returned from an analog input device.
DFINAL [HST]	*Final Depth Data*	This represents finalized depth data that has been edited and processed by a data analyst.
DPREPROCESSED [HST]	*Preprocessed Depth Data*	This refers to raw depth data retrieved from the monitor.
DPROCESSED [HST]	*Processed Depth Data*	This represents the depth data generated after **IntelliServe** applies scrubbing to the *Dpreprocessed* data, provided the *Enable Data Scrubbing* option is selected for the location. If it is not, *DPROCESSED* will share the same values as *DPREPROCESSED*.
DMLI_AVG [HST]	*Monitor Level Intelligence (MLI®) Depth Average*	This represents the average of two or more *Unidepth* readings from the monitor. This average is calculated by the monitor and collected by **IntelliServe**.

D2MLI_AVG [HST]	*Monitor Level Intelligence (MLI) Depth Average*	This is the average of two or more *Unidepth* readings at the second monitoring point. This average is calculated by the monitor and collected by **IntelliServe**.
DTHRESHOLD [HT]	*Low Depth Threshold*	This represent a depth threshold calculated by the monitor based on historical daily depth patterns. It is updated continuously based on flow conditions at the monitoring point. Typically, DTHRESHOLD is set at 25 to 30% below the normal flow depths at the monitoring point. If the monitor readings fall below the threshold, **IntelliServe** generates a *Flow Loss* alarm.
EMU_AC_POWER_FAIL [T]	*EMU AC Power Failure*	This event indicates whether the EMU is receiving power from the corresponding AC power source.
FLOAT [HT]	*Float State*	This represents the on/off state returned from a float device.
FLOAT2 [HT]	*Float State2*	This represents the on/off state returned from a second float device.
FLOW1 [HT]	*Flow1*	This represents the flow rate calculated based on the Continuity flow equation and stored in the monitor.
FLOW2 [HT]	*Flow2*	This represents a second flow rate calculated based on the Continuity flow equation and stored in the monitor.
GATEDVEL_2 [HST]	*Gated Average Velocity*	This represents the average velocity calculated in the monitor based on multiple measurements from the Profiler Combo Sensor.
HC [HT]	*Hydraulic Coefficient*	This represents the interaction between pipe slope and friction, factors related to the velocity of the flow. It is used in the modified Manning flow equation.

HIGH_DEPTH_ THRESHOLD [HST]	*High Level Flow Depth*	This refers to the depth threshold value, that, when exceeded, indicates alarming conditions exist at the location. This threshold value is available for display in both the hydrograph and scattergraph formats. For example, setting a monitor High Depth Level threshold set at 23” and selecting "High Depth Level" will display a colored line (horizontal on a hydrograph, vertical on a scattergraph). When this threshold is exceeded, **IntelliServe** broadcasts a High Depth Level Exceeded event.
HIGH_HIGH_DEPTH_ THRESHOLD [HST]	*High High Level Flow Depth*	This refers to the depth threshold value, that, when exceeded, indicates alarming conditions exist at the location. This threshold value is available for display in both the hydrograph and scattergraph formats. For example, setting a monitor High High Depth Level threshold set at 48 ” and selecting "High High Depth Level" will display a colored line (horizontal on a hydrograph, vertical on a scattergraph). When this threshold is exceeded, **IntelliServe** broadcasts a High High Depth Level Exceeded event.
LOW_BTY [T] **(detected by monitor)**	*Low Battery*	This entity indicates the battery voltage in the monitor has dropped below the specified threshold (8.0 volts for the 4000™ and the FlowShark monitors, 9.6 volts for the 3500™ monitor).
LOW_BTY_MODEM [T]	*Low Wireless Modem Battery*	This indicates whether the wireless modem battery requires replacement. It is logged at midnight.
LOW_FLOW [T] **(detected by monitor)**	*Flow Loss*	This event indicates that the flow has fallen below the percent loss value set for DTHRESHOLD or QTHRESHOLD (through **Profile**). When this occurs, **IntelliServe** broadcasts a *Flow Loss* event.

LOW_LEVEL [T] **(detected by monitor)**	*Low Depth*	This event indicates that the flow depth has fallen below the Low Depth threshold (configured in **Profile**). When this occurs, **IntelliServe** broadcasts a *Low Depth* event.
NO_CURVE [T] **(detected by monitor)**	*No Curve*	This indicates that no depth-to-velocity relationship exists.
NON_ADS_FLOW_ QUANTITY [HT]	*Quantity of Flow (non-ADS flow monitor)*	This represents the flow quantity measured using a non-ADS flow monitor.
PEAKVEL_1 [HST]	*Peak Velocity1*	The represents the peak velocity data from the Peak Combo Sensor.
PEAKVEL_3 [HST]	*Peak Velocity3*	This represents the peak velocity data from the Surface Combo Sensor.
PDEPTH [HST]	*Pressure Depth*	This represents depth data from the pressure depth sensor.
PDEPTH_1 [HST]	*Pressure Depth1*	This represents pressure depth data from the Peak Combo Sensor.
PDEPTH_2 [HST]	*Pressure Depth2*	This represents pressure depth data from either the pressure depth sensor or the Profiler Combo Sensor.
PDEPTH_3 [HST]	*Pressure Depth3*	This represents pressure depth data from the Surface Combo Sensor.
PD_USED [T] **(detected by monitor)**	*Pressure Depth Used*	This event (Pressure Depth Readings Used) indicates that *Pressure Depth* represents *Unidepth* in the monitor.
PIPE_CAPACITY [HT]	*Pipe Capacity*	This represents the pipe capacity (defined by the System Administrator).
PIPE_HEIGHT [HT]	*Pipe Height*	This represents the height of the pipe at which the sensors are installed (defined by the System Administrator).

PIPE_WIDTH [HT]	*Pipe Width*	This represents the width of the pipe at which the sensors are installed (defined by the System Administrator).
PRESSK [HT]	*Pressure Compensation*	This represents the value applied to the pressure depth reading to compensate for differences between the pressure depth and ultrasonic depth measurements taken at the same monitoring point.
PRESSK2 [HT]	*Pressure Compensation2*	This represents the value applied to the pressure depth reading to compensate for differences between the pressure depth and ultrasonic depth measurements taken at a second monitoring point.
PTEMP [HT]	*Pressure Connector Temperature*	This represents the temperature at the pressure sensor connector.
PUMP_1 through PUMP_8 [HT] **(detected by monitor)**	*Pump On/Off Times*	These events indicate that a pump station pump has turned on(1) or off(0)**.**
Q_A1 — Q_A12 [HT]	*Analog Input Quantity*	These represent the quantity data values returned from an analog input device.
Q2THRESHOLD [HT]	*Quantity Threshold*	This represents a quantity threshold for the second monitoring point calculated by the monitor based on historical flow patterns. It is updated continuously based on flow conditions at the monitoring point. Typically, QTHRESHOLD is set to 25 to 30% below the normal flow rates at the monitoring point. If the monitor readings fall below the threshold, **IntelliServe** generates a *Flow Loss* (detected by monitor) alarm.
QAVERAGE_DRY_DAY [HT]	*Average Flow Quantity for Dry Days*	This represents the typical dry curve for weekends and weekdays for that site, based on the data collected most recently. **IntelliServe** updates this value automatically based on historical trends. This entity is used in the data scrubbing process.

QCONTINUITY [HT]	*Quantity of Flow (Q = A (wetted area) (Unidepth) x V (Vavg)*	This represents the flow quantity generated by **IntelliServe** based on Unidepth and average velocity.
QEXCESS [H]	*Quantity Threshold*	This represents the designated flow quantity thresholds used in **IntelliServe** Excess Reports.
QFINAL [HT]	*Finalized Quantity Data*	This represents finalized quantity data that has been edited and processed by a data analyst.
QGROSS [HT]	*Quantity of Flow (Q=A (wetted area) (Dprocessed) x V (Vprocessed)*	This represents the flow quantity generated by **IntelliServe** based on processed depth and velocity values.
QMANNING [HT]	*QManning*	This represents the flow quantity calculated using the standard Manning equation.
QMANNING_SAG [HT]	*QManning Sag*	This represents the flow quantity calculated using a modified Manning equation developed by ADS. It often reflects flow conditions better than the standard Manning equation.
QMLI_AVG [HT]	*Averaged MLI Flow Quantity*	This represents the average of two or more flow rate readings calculated by the monitor using the *Unidepth* and average velocity readings in conjunction with the pipe dimensions.
Q2MLI_AVG [HT]	*Averaged MLI Flow Quantity2*	This represents the average of two or more flow rate readings calculated by the monitor for the second monitoring point using the *Unidepth* and average velocity readings in conjunction with the pipe dimensions.
QNET [HT]	*Quantity Net*	This represents the net flow for a specific monitoring point calculated through **IntelliServe**.

QPSFILL [HT]	*Quantity Pump On/Off and Wet Well Volume*	This represents the flow rate calculated by the pump station monitor based on the pump on and off times and wet well volume.
QPSRUN [HT]	*Quantity Run Time*	This represents the flow rate calculated by the pump station monitor based on pump run times.
QTHRESHOLD [HT]	*Quantity Threshold*	This represents a quantity threshold calculated by the monitor based on historical flow patterns. It is updated continuously based on flow conditions at the monitoring point. Typically, QTHRESHOLD is set to 25 to 30% below the normal flow rates at the monitoring point. If the monitor readings fall below the threshold, **IntelliServe** generates a *Flow Loss* (detected by monitor) alarm.
RAIN [HT]	*Rain*	This represents rain totals collected from a rain gauge.
RAIN_ALERT [HT]	*Rain Alert*	This indicates that the rain intensity value has crossed the user-defined threshold for alarming or returning to normal.
RAINI [HT]	*Rain Intensity*	This represents the rain total per configured unit of time.
RAINI_UK [HT]	*Rain Intensity (United Kingdom)*	This represents the rain intensity based on the standards applied in the United Kingdom.
RAWVEL [HST]	*Raw Velocity*	This represents peak velocity data from the monitor.
RAWVEL2 [HST]	*Raw Velocity2*	This represents peak velocity data from a second velocity sensor.
SAMPLE [HT]	*Samples*	This indicates when the monitor triggered a water-quality sampler to take a sample.
SDEPTH [HST]	*Smart Depth*®	This represents a single ultrasonic reading derived by a special (*Smart*) algorithm in the monitor using all 12 ultrasonic depth sensor readings.

SDEPTH2 [HST]	*Smarth Depth2*	This represents a single ultrasonic reading derived by the *Smart* algorithm in the monitor using all 12 ultrasonic depth sensor readings from a second sensor.
SILT [HT]	*Silt*	This represents the depth of the layer of dirt and debris that has collected at the bottom of a pipe over time. This value is entered manually.
SURFACEVEL_3 [HST]	*Surface Velocity3*	This represents raw velocity measurements from the Surface Combo Sensor.
TEMP [HT]	*Temperature*	This represents the temperature read using the temperature sensor in an active ultrasonic temperature sensor. It is recorded by the monitor once a day at midnight.
TEMP2 [HT]	*Temperature2*	This represents the temperature read using the temperature sensor in a second active ultrasonic temperature sensor. It is recorded by the monitor once a day at midnight.
U2 - U15 [HST]	*Ultrasonic Sensor Pairs*	These represent raw depth data from the ultrasonic depth sensor pairs.
UNIDEPTH [HST]	*Unidepth*	This represents the MLI depth entity generated by the monitor using ultrasonic depth sensor data and/or pressure sensor depth data.
UpDEPTH_1 [HST]	*Ultrasonic Depth1*	This represents ultrasonic depth from the Peak Combo Sensor (uplooking).
UpDEPTH_2 [HST]	*Ultrasonic Depth2*	This represents ultrasonic depth from the Profiler Combo Sensor (uplooking).
UTEMP [HT]	*Ultrasonic Temperature*	This represents the temperature read using the temperature sensor in an active ultrasonic sensor. It is recorded by the monitor once a day at midnight.
UTEMP2 [HT]	*Ultrasonic Temperature2*	This represents the temperature read using the temperature sensor in a second active ultrasonic sensor. It is recorded by the monitor once a day at midnight.

VAVG [HST]	*Velocity Average*	This represents the average velocity generated by applying a Gain value to RAWVEL (peak velocity). Average velocity is used when calculating *QContinuity*.
VFINAL [HST]	*Final Velocity Data*	This represents finalized velocity data that has been edited and processed by a data analyst.
VPROCESSED [HST]	*Processed Velocity Data*	This represents *VAVG* that has been scrubbed (evaluated) using the **IntelliServe** scrubbing routines.
WATERTEMP_1 [HT]	*Water Temperature1*	This represents the flow temperature measured by the Peak Combo Sensor.
WATERTEMP_2 [HT]	*Water Temperature2*	This represents the flow temperature measured by the Profiler Combo Sensor.

APPENDIX C

Glossary

The following table represents a glossary of terms applicable to **IntelliServe®**.

Acknowledged Alarm	An acknowledged alarm is an escalated event to which an operator has responded, but the alarm has not yet cleared.
Alarm	An alarm represents an escalated event. An alarm can exist in one of three states: alarming, acknowledged, or cleared.
Alarm Basin	An alarm basin is a user-configured map region containing multiple locations.
Alarming Event	An alarming event is an escalated event identified by audible notification, a red symbol on the map, and a basin in red text in the **System Alarms** menu.
Computer-Level Intelligence (CLI)	CLI refers to the algorithms that enable **IntelliServe** to analyze monitor data.
Cleared Alarm	A cleared alarm is an event that has returned to a normal status or has been manually cleared by a user.
Composite Location	A composite location totals the flows for two or more monitoring points. The flows can be designated as *add flow* or *subtract flow*. The composite location is not a physical location within the collection system, but rather a mathematical totaling of multiple monitoring locations to obtain the desired flow information. Composite locations are often defined when multiple monitored lines enter a wastewater treatment plant, and a total flow into the plant is needed. Composite locations are defined in the system by users with appropriate permissions.

Connectivity

Connectivity refers to the relationship of upstream to downstream flow in the network. Only the System Administrator has the permission to configure network connectivity. On the **IntelliServe** basin maps, connectivity is shown by a line with directional arrows.

Cryout

A cryout occurs when a flow monitor or rain gauge calls (unsolicited) into the **IntelliServe** system to report an event that is occurring at the location.

Data Collect

A data collect refers to the process of retrieving data readings from flow monitors and rain gauges and storing the data in the **IntelliServe** database. **IntelliServe** allows both on-demand and scheduled data collects.

Data Warehouse

A data warehouse refers to the secure data-sharing repository where **IntelliServe** data is stored and is accessible to **IntelliServe** users.

Entity

An entity is a data type representing a measurement, condition, or event corresponding to flow conditions, hardware status, or other performance information involving the flow monitoring network. **IntelliServe** collects this data from the flow monitors and rain gauges and logs and stores this information to the database for processing, viewing, and analysis.

Escalation Chain

An escalation chain is an ordered list of escalation groups to receive notification of an alarm generated by a particular location or location group. Each group in the chain receives notification of an alarm after a user-specified time interval passes if the alarm remains unacknowledged.

Escalation Group

An escalation group consists of a collection of contacts to receive notification (via email, pager URL, and/or telephone) if an alarm is not acknowledged within a specified period of time. Contacts are not required to be registered users.

Escalation Interval

An escalation interval refers to the number of minutes that an alarm must remain unacknowledged in order for the next escalation group in a chain to receive notification.

Event

Events occur when measurements or data exceed specific thresholds or when special conditions are present or occur.

Flow Monitor

A flow monitor measures open-channel flow in sanitary sewers, storm sewers, and other environments using sensor devices installed in at a monitoring point in a pipe. One flow monitor can support up to two monitoring points.

Hydraulic Coefficient (HC)

The HC represents the square root of the slope of the pipe divided by the friction factor for the pipe where the sensors are installed. The HC is used in the modified Manning equation to compute average velocity. For monitoring points where there is depth and velocity data, **IntelliServe** back-calculates the HC based on the measured depth and velocity readings at the installation point. For monitoring points where there is no velocity data, the System Administrator can manually enter an HC that has been calculated for the location based on manual confirmations performed by ADS field crews.

Hydrograph

A hydrograph is a graph that displays one or more data entities over a specified time period.

Location

A location represents a flow monitor installed in a manhole or a rain gauge.

Location Group

A location group is a user-defined grouping of locations. The groups allow data collection to be performed, and reports to be organized for similar locations.

Limit (Event)

An event limit refers to the threshold value that triggers an event or alarm.

Map Extent

The map extent is the distance (in degrees) from the center point to the edge of the map display.

Monitoring Point

A monitoring point represents the physical location at which the sensors are installed in a sewer pipe to measure the flow, or where rain gauges are installed for measuring rain fall amounts.

Monitor-Level Intelligence (MLI®)

MLI represents the first level of signal processing to ensure data integrity. MLI scans readings within the flow monitor to determine signal sensitivity and then compares the readings to *learned* hydraulic patterns at the location.

On-demand Collect

An on-demand collect refers to the process where a user manually requests that **IntelliServe** retrieve the current flow data from a flow monitor or rain gauge outside the specified data collection time interval.

Overflow – Dry

This indicates that a cryout has been received by **IntelliServe** indicating that a defined threshold at an overflow location has been exceeded. Collected rain data indicates that no significant rainfall has been measured; and therefore the overflow has been designated a dry-weather overflow.

Overflow – Wet

This indicates that a cryout has been received by **IntelliServe** indicating that a defined threshold at an overflow location has been exceeded. Collected rain data indicates that sufficient rainfall has been measured, meeting the criteria set for wet-weather, and therefore; the overflow has been designated a wet-weather overflow.

Overflow Monitoring Point

An overflow monitoring point measures flow transferring from one sewerage basin to another or exiting the collection system completely.

Pseudo Site

A pseudo site is a logical grouping of two or more monitoring points existing in parallel in the network.

Query

A query is a method used for filtering information to obtain specific information falling within user-defined parameters.

Rain Gauge

Rain gauges record the amount of rainfall that occurs over a specific rain event using a collection device called a tipping bucket. The tipping bucket contains a calibrated rainfall collection mechanism that tips once it receives a user-defined quantity of rainfall. The number of tips recorded throughout a given interval provides the total rainfall for the rain event.

This data can be used in inflow and infiltration calculations and to measure rainfall intensity.

Scattergraph

A scattergraph is a type of graph that shows a depth (*Dprocessed*) data type in relation to a velocity (*Vprocessed*) data type.

Scheduled Data Collect

This represents the number of days, hours, or minutes the system waits before automatically collecting data from a configured flow monitor or rain gauge and storing the data in the database.

System Alarms (Menu)

The **System Alarms** menu shows the active alarms (in the basins or system-related) with statuses of alarming *or* acknowledged and not cleared.

System Alarm

A system alarm (*Invalid Password ID*, for example) is an alarm associated with **IntelliServe** rather than with an alarm basin.

System Menu

The **System Menu** provides access to the application through hyperlinked titles for each functional area.

Unacknowledged Alarm

An unacknowledged alarm represents an alarm that has not been acknowledged and, therefore, is still in an active state.

User Group

A user group is a defined set of users to which permissions are assigned. The groups allow permissions to be set up easily for a number of users who perform similar functions.

Value (Event)

Value refers to the value that triggers an event or alarm in **IntelliServe**.

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