

HydroSphere™ User Manual

FOR ACCOUNT ADMINISTRATORS, TECHNICIANS, AND DATA REVIEWERS



The information contained in this manual is subject to change without notice.

Effort has been made to make the information in this manual complete, accurate, and current.

The manufacturer shall not be held responsible for errors or omissions in this manual.

Consult YSI.com/HydroSphere for the most up-to-date version of this manual.

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Safety Information

Please read this entire manual before setting up or using this software. Pay attention to all precautionary statements. Do not use this software in any manner other than that specified in this manual.



This is an Interactive Document

When viewing this document as an Adobe™ PDF, hovering your cursor over certain phrases will bring up the finger-point icon. Clicking elements of the Table of Contents, website URLs, or references to certain sections will take you automatically to those locations.

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1. Product Description

1.1 – Introduction










HydroSphere™ is a cloud-based web application that supports the [Storm 3](#), [WaterLOG XL series](#), Campbell push data loggers, as well as [Aanderaa's Real Time Collector](#). A variety of sensors can be attached to these data logging devices, which then transmit sensor data via cellular or satellite telemetry to HydroSphere servers for display to the end user. The HydroSphere application is supported in the following browsers:









- Edge, latest version
- Chrome, latest version
- Firefox, latest version
- Safari, latest version

1.2 – Features

- HydroSphere's simple user interface allows users to view sensor data and quickly make data-based decisions.
- Sensor data can be viewed in a tabular or graphical format, downloaded, analyzed with many types of tools, and shared with others.
- Sensor data can be downloaded in one of the following methods:
 - Manually
 - Automatically to a customer's server
 - Via email to a user on a customer determined schedule
- Alarm notifications can be received via email and text messages.
- Creation of Contacts who have no access to HydroSphere but can receive alarm notifications and data exports.

1.3 – Common Icons

Icon	Name	Description
	Required Entry	A red asterisk to the right of any field label means that an entry is required.
	Multiple options	Provides the user with more options (e.g. edit, delete, etc.).
	Slider button	Allows the user to disable and enable certain functions.
	Single User or Contact	Indicates a single user or single contact. Refer to Definitions for more information.
	User Group or Contact Group	Indicates a user group or contact group. Refer to Definitions for more information.
	Email	Allows the user to select notifications via email to their profile email address.
	Text message	Allows the user to select notifications via text message to their profile telephone number.
	Trash can	Allows the user to delete items.
	Page navigation	Go to the first page.

Icon	Name	Description
	Page navigation	Go back one page.
	Page navigation	Go to the last page.
	Page navigation	Go forward one page.
	Calendar	Displays a pop-up calendar for entering specific dates into date fields.
	Drag and Drop	Clicking this icon will allow the user to change the order of certain items.
	Information	Displays additional information.
	Edit	Displays editable fields.
	Configure	Configures parameter inputs to dashboards.

1.4 – Definitions

Contact	<p>A contact is someone who will receive notifications or reports assigned to them by a HydroSphere user. A contact is not a HydroSphere user and does not have login privileges for HydroSphere.</p> <p>Refer to Create New Contact for more information.</p>
Contact Group	<p>HydroSphere users can create groups of contacts who have common report and notification needs. The user can then specify which reports and notifications are sent to the group saving time by not having to assign these reports and notifications to multiple individual contacts.</p> <p>Refer to Create New Contact Group for more information.</p>
Network	<p>Networks are groups of sites that usually have common characteristics such as close geographical proximity. Networks ease the administrative management of these groups of sites.</p> <p>Refer to Create New Network for more information.</p>
Remote server	<p>A remote server is a server that belongs to the customer which allows SFTP or SCP connections. The server can be configured on HydroSphere for automatic scheduled data exports to be directly delivered to it.</p> <p>Refer to Add a New Remote Server for more information.</p>
User Group	<p>HydroSphere users can create groups of users who have common report and notification needs. The user can then specify which reports and notifications are sent to the group saving time by not having to assign these reports and notifications to multiple individual users.</p> <p>Refer to Create New User Group for more information.</p>
User Roles	<p>A user is someone who has HydroSphere login privileges and will have access to HydroSphere components as described below.</p> <p>Refer to Create New User for more information.</p>

User Role	Access
Xylem Administrator	Full access to all HydroSphere customer and user accounts but no access to account level networks, sites, reports, alarms, contacts, and remote servers.
AccountAdministrator	Full access to their organization and user accounts as well as networks, sites, reports, alarms, contacts, and remote servers.
Technician	Full access to their own user account information as well as account level networks, sites, reports, alarms, contacts, and remote servers.
Data Reviewer	Full access to their own user account information and Read Only access to account level information (e.g. sites, alarms, etc.).

1.5 – User Authorization

Account list

User Action	Xylem Administrator	Account Administrator	Technician	Data Reviewer
View List of Accounts	✓	–	–	–
Creating New Account	✓	–	–	–
Editing Account Critical Info	✓	–	–	–
Editing Account Contact Info	✓	✓	–	–
Delete Account	✓	–	–	–
Request Subscription Renewal	✓	✓	–	–

Users

User Action	Xylem Administrator	Account Administrator	Technician	Data Reviewer
View Account Users	✓	✓	✓	–
Creating Account Users	✓	✓	–	–
Editing User Email & Role	✓	✓	–	–
Editing Username & Phone	✓	✓	✓	✓
Delete User	✓	✓	–	–

Data export

User Action	Xylem Administrator	Account Administrator	Technician	Data Reviewer
View Data Export Templates	–	✓	✓	✓
Create / Edit	–	✓	✓	–
Delete	–	✓	–	–

Contacts

User Action	Xylem Administrator	Account Administrator	Technician	Data Reviewer
View Contacts / Groups	–	✓	✓	✓
Create / Edit	–	✓	✓	–
Delete	–	✓	–	–

Remote servers

User Action	Xylem Administrator	Account Administrator	Technician	Data Reviewer
View Remote Servers	–	✓	✓	✓
Create / Edit	–	✓	✓	–
Delete	–	✓	–	–

Alarms

User Action	Xylem Administrator	Account Administrator	Technician	Data Reviewer
View Alarms	–	✓	✓	✓
Create / Edit	–	✓	✓	–
Delete	–	✓	–	–

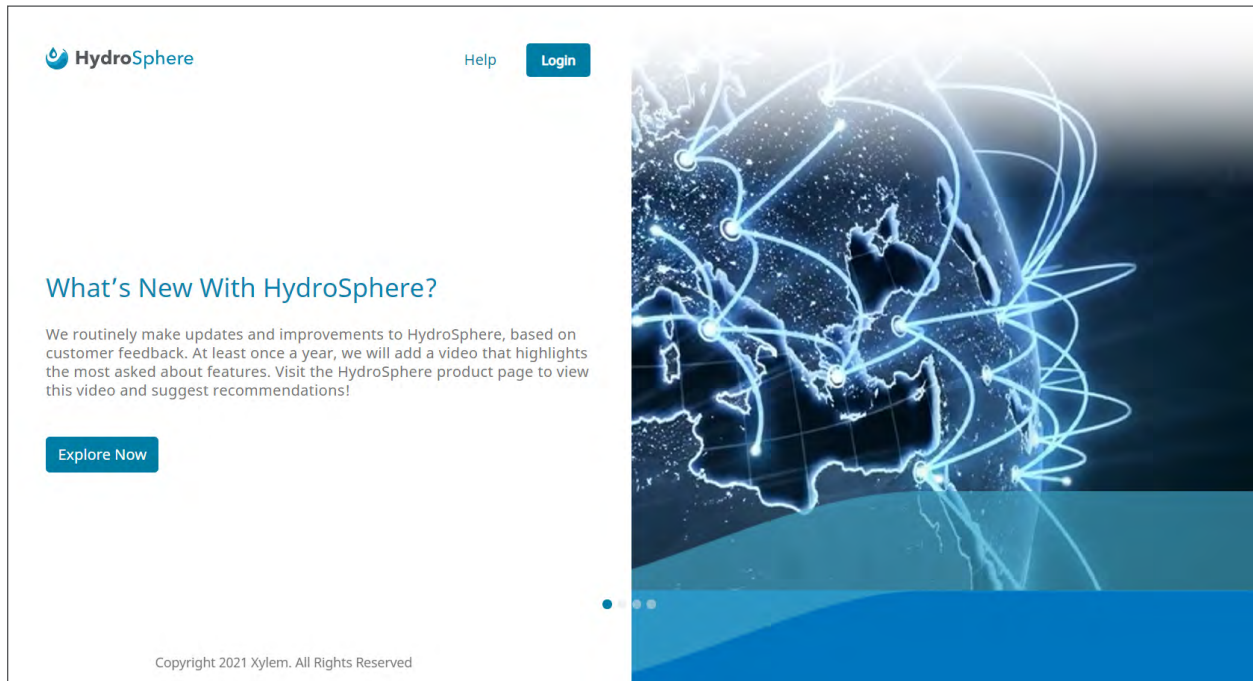
Network /Site

User Action	Xylem Administrator	Account Administrator	Technician	Data Reviewer
View Network- Site	–	✓	✓	✓
Create/Edit	–	✓	✓	–
Delete	–	✓	–	–

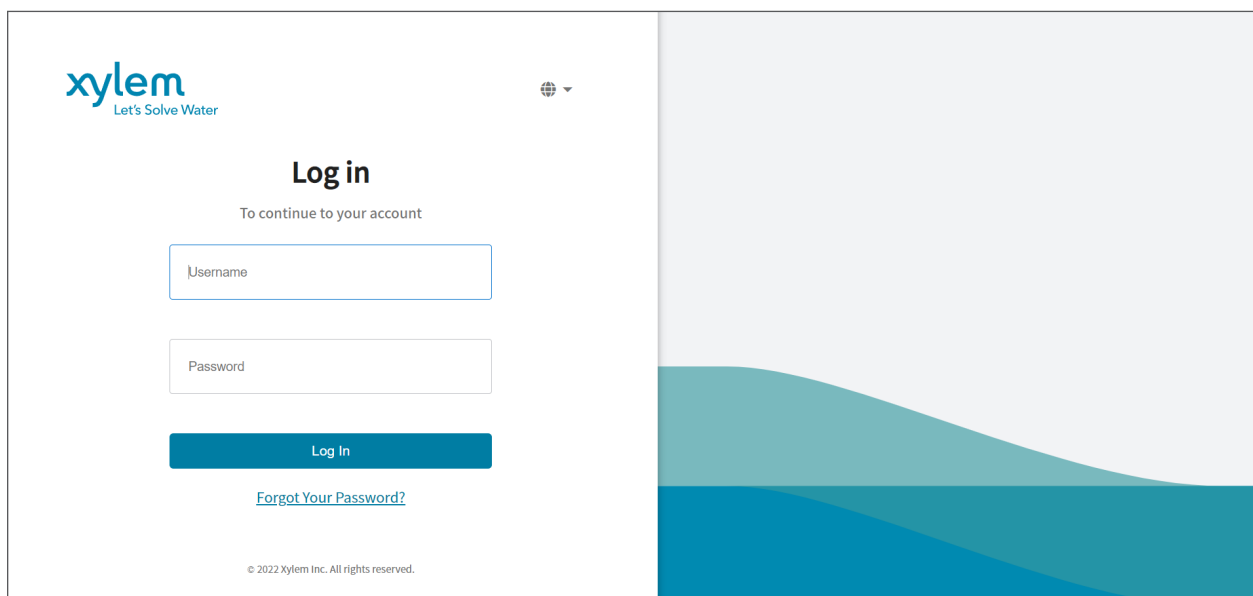
2. Operations

2.1 – Start the Application

1. Start the HydroSphere application at <https://cloud.xylem.com/hydrosphere>.

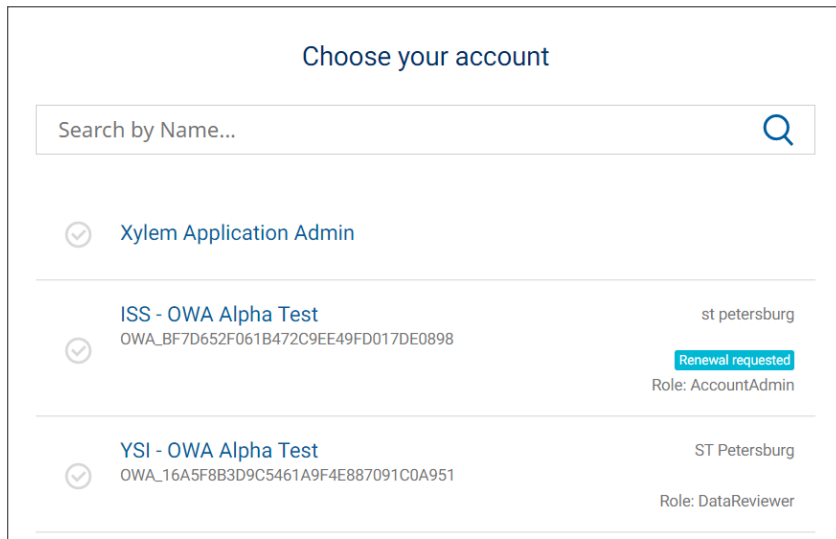


2. Click the Login button.
3. Type the username and password to login.
4. Click login.



Note: HydroSphere will automatically log off after 15 minutes of inactivity.

5. If the user has access to more than one account, click the account to be accessed via the display below.



Note: New users will receive an email with a **Verify Email Address** link. Clicking this link is required to complete the user account setup process. The link remains active for 24 hours. If the link times out, the user can click **Forgot Password?** and follow the instructions.

The username is the user's email address.

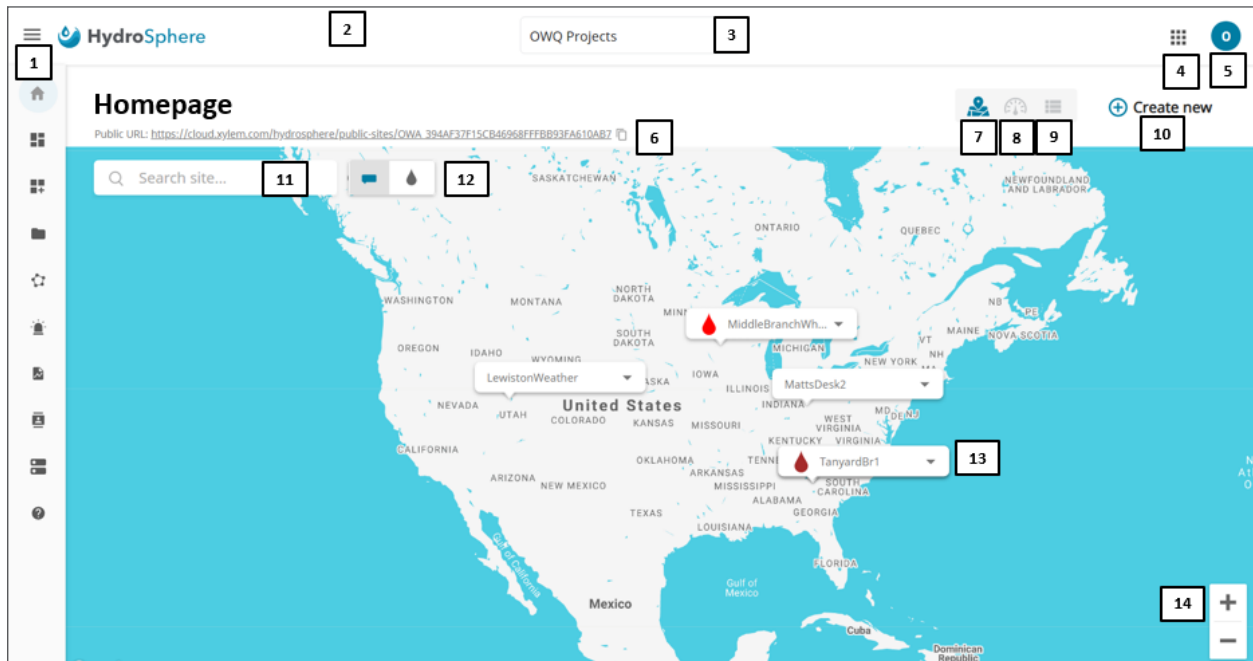
The password must contain at least:






- Twelve characters
- One upper-case letter
- One lower-case letter
- One number
- One special character (e.g. !@#\$%^&*)
- More than 2 identical characters in a row are not allowed (e.g. 111)


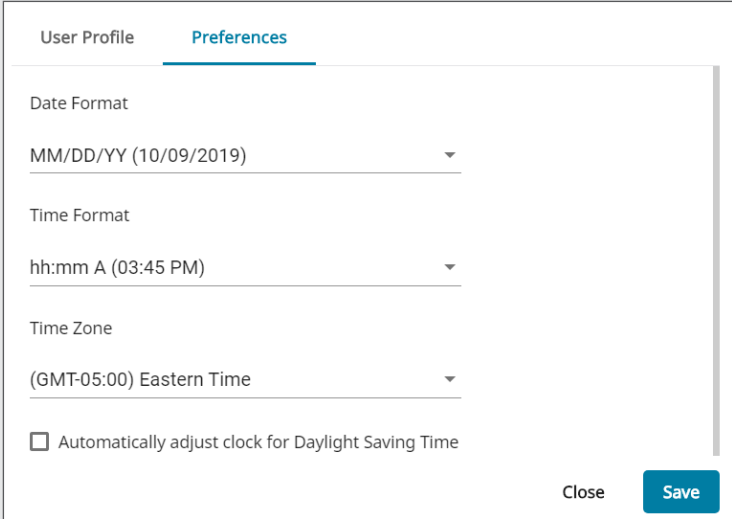






To change the password, click **Forgot Password**.




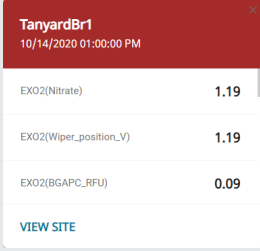

2.2 – Homepage

After logging in, the user will be presented with the HydroSphere Homepage.




#	Icon	Name	Description
1		Display Labels	This icon will display or hide the labels for the icons on the left side of the Homepage.
2		Page Loading Progress Indicator	A green bar at the top of the page will move from left to right to show page loading progress.
3		Account Access	If the user has access to more than one account, they can change which account they are viewing by clicking the down arrow on the right side of the icon and selecting which account they would like to view.
4		Multiple Applications	If the user has access to Xylem applications other than HydroSphere, those applications will be displayed when this icon is clicked allowing for seamless transition between applications.
5		User Profile and Preferences	<p>User Profile - Displays the following user profile information:</p> <ul style="list-style-type: none"> Name Email Phone Last Logged In Edit Download <p>The Edit button will allow the editing of Name and Phone Number. The Download button will download the user's profile information to a .txt file. Deleting users from being displayed in HydroSphere can be done on the User Accounts page. Refer to User Accounts for more information.</p> <p>Note: Because HydroSphere user accounts are tied to an email address, if a user needs to change their email address, a new account must be created and the old account deleted. For a user account to be permanently deleted from HydroSphere, the Account Administrator must contact the Xylem Administrator.</p>

#	Icon	Name	Description
5		User Profile and Preferences (continued)	<p>Preferences - Allows the user to select Date and Time formats, adjust the time zone and adjust for Daylight Savings Time.</p>  <p>Note: If the data loggers used for a HydroSphere account are set to Universal Time Coordinated (UTC) / Greenwich Mean Time (GMT), each users in the account should set the Time Zone to 'GMT+00:00 GMT (no daylight saving)' to ensure the time and data in Chart and Table View display properly.</p> <p>If the data loggers used for a HydroSphere account are set to local time, each user in the account should set the Time Zone to the correct local time zone to ensure the time and data in Chart and Table View display properly.</p> <p>Note: If the Automatically adjust clock for Daylight Saving Time is checked, the local time will automatically adjust for areas that observe DST on the appropriate dates.</p>
6	N/A	Public URL	Each account will be assigned a public web site (access via the Public URL) that can be shared with external customers giving those customers Read Only access to site data. Clicking the copy icon () will copy the public URL to the clipboard for pasting in other locations. Refer to Public Web Site for more information.
7		Geographic Display	Site geographic location and device details will be displayed.
8		Sensor Display	Sensor details will be displayed in tabular format.
9		Network/Site Display	This icon is only visible to Account Admins. Provides additional site and sensor details. Sites that have been deleted will be labeled as Inactive. These sites can be reactivated by contacting Tech Support.
10	 Create New	Create New	Clicking the Create New icon displays the following options: User - For more information, refer to Create New User . This is only visible to Account Admins. Site - For more information, refer to Create New Site . Network - For more information, refer to Create New Network .
11		Search Bar	Clicking on the search bar will show all account site names. Clicking on a site name will bring up that site's data. Refer to Homepage Site Information for more information.

#	Icon	Name	Description
12		Site Label/Water Drop Toggle	Allows the user to select the map display of a site label (<input type="text" value="Site Name"/>) or a water drop (). Water drops are defaulted blue. Refer to Create New Alarm for more information on changing the color of the drop.
13		Site Icon	<p>Clicking the Site icon on the map will display the site's most recently received data. Refer to Homepage Site Information for more information.</p> <p>The red water drop and red data header indicate that an alarm has been triggered and is still active. Refer to Create New Alarm for more information on changing the color of the drop and header.</p> <p>Note: The dashboard auto refreshes every 10 seconds so any triggered alarm will change the color of the water drop and data header within 10 seconds.</p> 
14		Zoom In / Zoom Out	Lets the user zoom the map display in and out.

Homepage Site Information

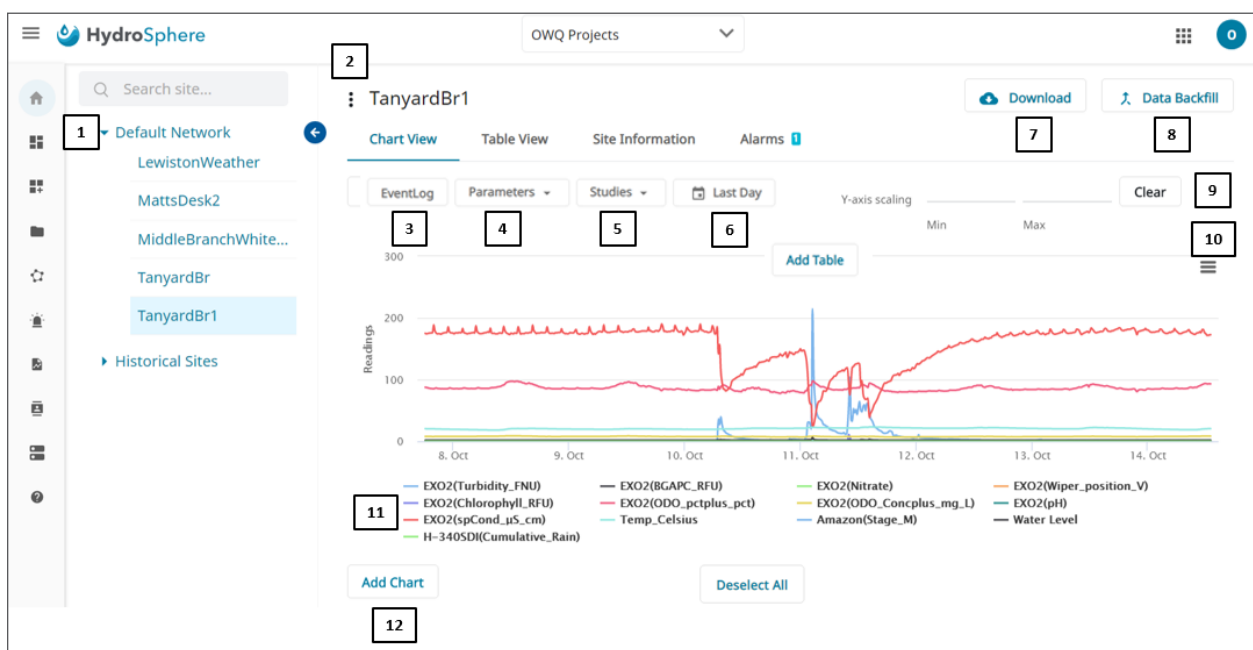
Homepage site information can be viewed two ways:




1. Clicking on the dashboard search bar will show all account site names. Clicking on a site name will display the site's data.
2. Clicking on the site map icon () or water drop () will display the most recently received sensor data and the View Site link. Clicking on the View Site link will display the site's data.

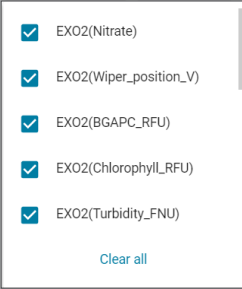
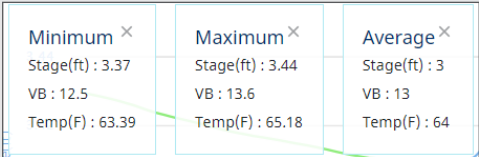
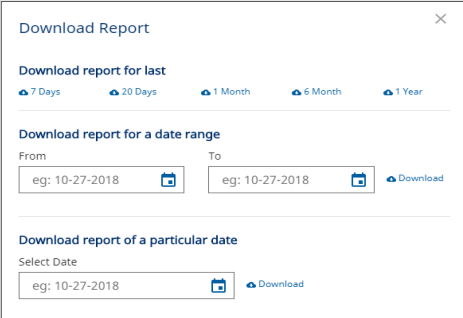
Four pages are available for viewing site data; Chart View, Table View, Site Information, and Alarms. These pages are described below.

Chart View

Chart View presents sensor data in a graphical format.



#	Name	Description
1	Networks	Networks are groups of sites. Refer to Create New Network for more information. Clicking the  and  icons will collapse and expand the Networks panel.
2	Multiple Option Icon	Clicking the  icon will display the following options: Edit - Allows the user to edit the site information details described in Create New Site . Deactivate - Deactivates the site and removes it from the Homepage.
3	EventLog	Note: Users will only see this button if they are a Campbell data logger using polled communications user. Clicking this button will display the available Campbell file names for display in the chart. To display any of the other files in a separate chart, see the Add Chart item below.

#	Name	Description
4	Parameters	<p>Clicking on the caret (▼) to the right of the Parameters label will provide the user with a list of all parameters available for display. All parameters listed can be selected for display on a single chart. For example:</p> 
5	Studies	<p>Clicking the caret (▼) to the right of the Studies label will provide the user with the following display options: Minimum, Maximum, and Average. The displays will be present in the format below.</p> 
6	Duration	<p>Clicking this button will provide the user with a list of available time durations for displaying site data:</p> <ul style="list-style-type: none"> • Last Day • Last Week • Last Month • Last Year • Custom Range
7	Download	<p>Download allows the user to create and download site data reports. Users can select data for:</p> <ul style="list-style-type: none"> • A set period of time. Click the appropriate icon (7 days, 20 days, 1 month, 6 months, or 1 year). • A date range. Enter the From and To date using the calendar icon and click Download. • A specific date. Enter the specific date using the calendar icon (📅) and click Download. <p>A .csv file will download to the user's desktop.</p> 
8	Data Backfill	Refer to Backfill for more information.

#	Name	Description
9	Y-axis scaling	If the user wishes to adjust the chart Y-axis scaling, a Minimum and Maximum Y-axis value can be entered. Clicking the Clear button will return the Y-axis scaling to its original values.
10	Print/Download	Clicking the ☰ icon will display the following options for printing and downloading charts: <ul style="list-style-type: none"> • View in Full Screen • Print Chart • Download PNG image • Download JPEG image • Download PDF document • Download SVG vector image
11	Parameter Selection	Individual parameters can be selected to display or hide by clicking on the parameter name. Hovering over the parameter name will highlight the parameter on the chart. All parameters can be hidden by clicking the Deselect All button. When clicked, the Deselect All button will become the Select All button. Clicking the Select All button will select all parameters for display on the chart.
12	Add Chart	Clicking Add Chart will add a chart below any charts already displayed. This will allow the user to display additional parameters and durations. Up to 3 charts can be displayed.

Table View

Table View presents sensor data in a tabular format.

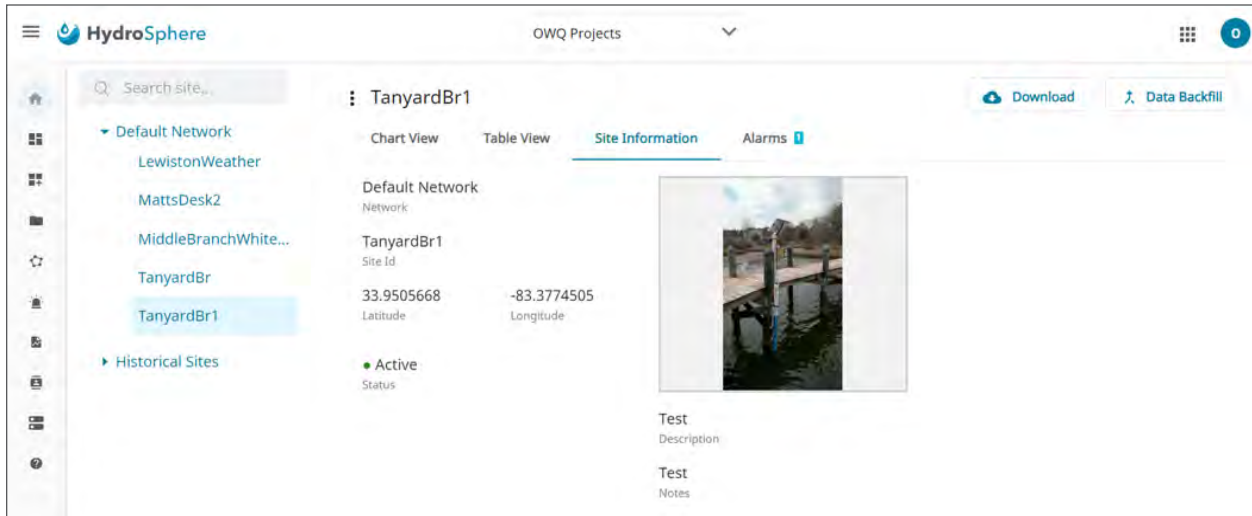
The screenshot displays the HydroSphere web application interface. On the left, a sidebar (1) lists various sites under 'Default Network', with 'TanyardBr1' selected. The main area shows the 'Table View' for 'TanyardBr1'. At the top of this view, there are tabs for 'Chart View', 'Table View', 'Site Information', and 'Alarms'. Below the tabs is an 'EventLog' section with a 'Last Day' filter (4). A table displays sensor data with columns: Result Date, Result Time, EX02(Nitrate), EX02(Wiper_position_V), EX02(BGAPC_RFU), EX02(Chlorophyll_RFU), EX02(Turbidity_FNU), and EX02(OO0_pctp). A dropdown menu (5) is positioned above the table, showing 'Items per page: 10' and '1 - 10 of 96'. At the bottom of the table view, there is an 'Add Table' button (6).

#	Name	Description
1	Networks	Networks are groups of sites. Refer to Create New Network for more information. Clicking the ⏪ and ⏩ icons will collapse and expand the Networks panel.
2	Multiple Option Icon	Clicking the ⋮ icon will display the following options: Edit - Allows the user to edit the site information details described in Create New Site . Delete - Deletes the site.
3	EventLog	Note: Users will only see this button if they are a Campbell data logger using polled communications user. Clicking this button will display the available Campbell file names for display in the table. To display any of the other files in a separate table, see the Add Table item below.
6	Duration	Clicking this button will provide the user with a list of available time durations for displaying site data: <ul style="list-style-type: none"> • Last Day • Last Week • Last Month • Last Year • Custom Range
4	Show Entries	Clicking the caret (▼) to the right of Show Entries will provide the user with the below list of available entries that will be displayed per page: 10, 25, 50, 100

#	Name	Description
5	Pagination	Allows user to select the number of data lines to display on each page and navigate from page to page within the table.
6	Add Table	Note: Users will only see this button if they are a Campbell data logger using polled communications user. Clicking this button will add a table so additional Campbell files can be displayed.

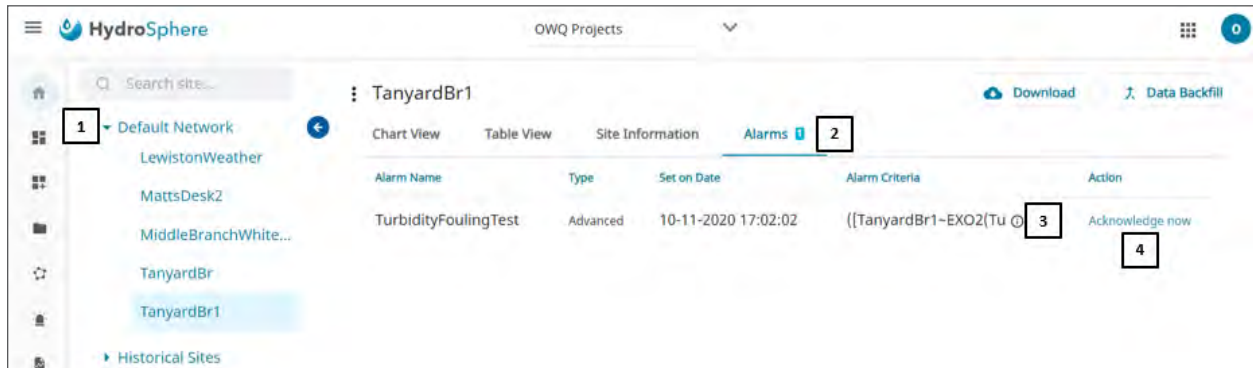
Site Information

The Site Information page provides read only site information. To edit the site information, click the Edit Icon to the left of the Site Name (⋮).



Alarms

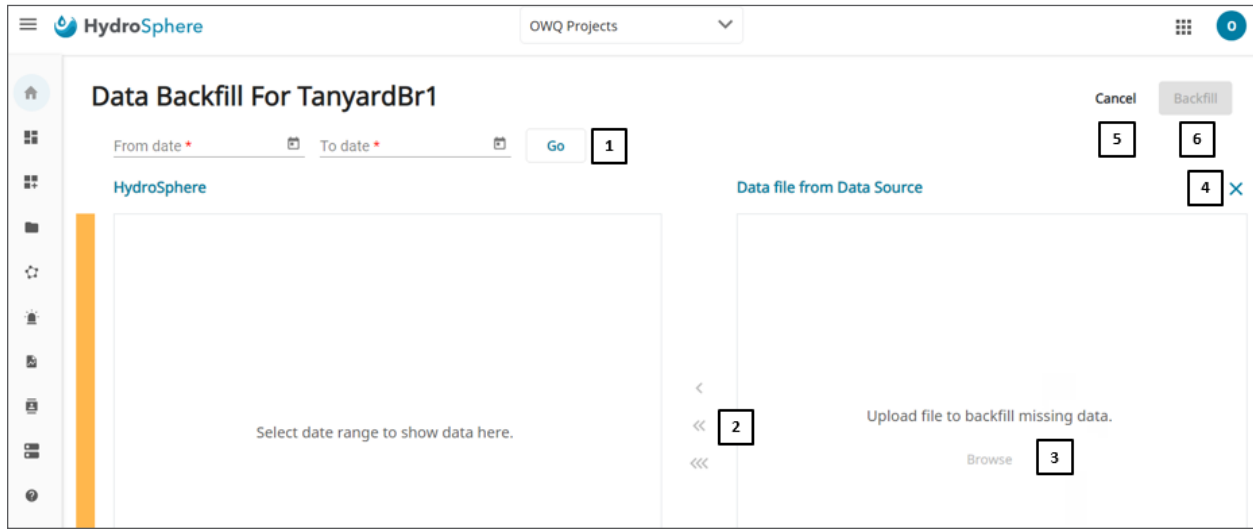
The Alarms page will show the user what alarms have activated and need to be acknowledged.
Refer to [Create New Alarm](#) for more information.



#	Name	Description
1	Networks	Networks are groups of sites. Refer to Create New Network for more information. Clicking the and will collapse and expand the Networks panel.
2	Alarms Tab	The Alarms Tab will also include the number of active alarm notifications () that need to be Acknowledged. Refer to Create New Alarm for more information.
3	Informational	Hovering the cursor over the informational icon () will show the complete Alarm expression.
4	Acknowledge Now	Clicking Acknowledge Now will display the following pop up window. <div data-bbox="483 1075 786 1213" data-label="Image"> </div> <p>The Acknowledge notes are optional. Clicking OK will Acknowledge the alarm and remove it from this list of activated alarms.</p>

Backfill

If any data is missing from HydroSphere, users can backfill the data using the following procedures.



#	Name	Description
1	Date Range	From and To Date Range for selecting HydroSphere Data. Clicking the calendar icon (📅) will display a pop-up calendar for selecting dates. Clicking GO will display the HydroSphere sensor data within the dates specified. Note: The date range entered must be no more than 90 days.
2	Data Transfer Icons	See explanation in next table below.
3	Browse	Lets the user search for and upload a backfill (.csv) file from their computer. See the correct file format on the next page.
4	X	Allows the user to delete uploaded backfill data.
5	Cancel	Clicking the Cancel button will exit the user from the Backfill page.
6	Backfill	When the Backfill button turns blue, all backfill requirements have been met. Clicking the blue Backfill button will upload the backfill data into HydroSphere.

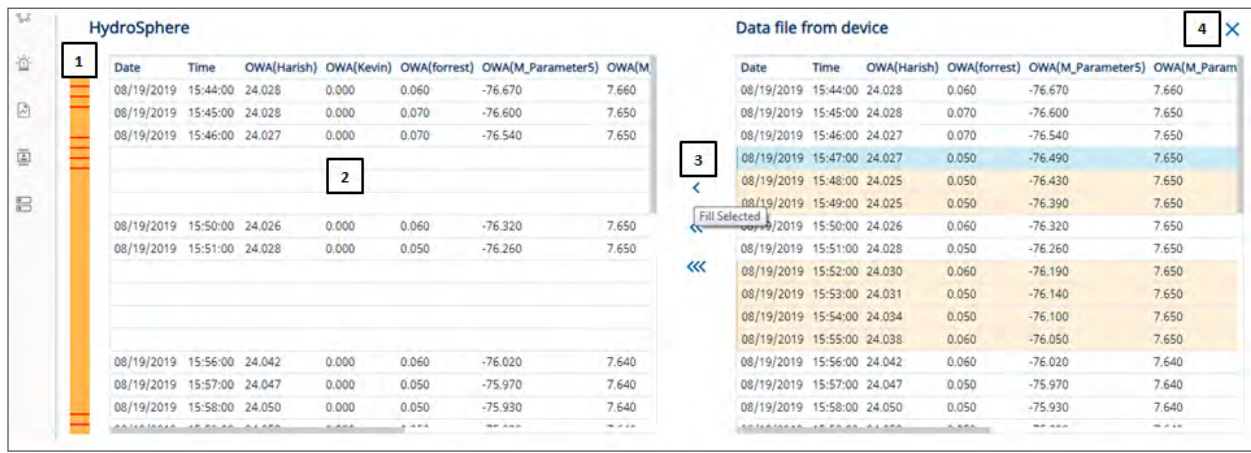
To backfill data

1. Enter a From and To Date.
2. Click **GO**. Sensor data will auto populate the HydroSphere Data field.
3. Click **Browse**. A window will open allowing the user to select backfill data from their computer or other storage device.
4. Click **Open**.
5. Click **Backfill**.

Below is the correct format for a backfill .csv file. Note the header in row one. This header can be any text. Also, note the date and time formats.

WaterLOG Storm Log File - SiteID: SemCo_SC2_test Serial#: 19G428 Firmware: v1.4.8					
Date	Time	Amazon (Stage)	Stage_M (StageM)	EXO2 (Temp_C)	EXO (spCond_uS_cm)
11/4/2019	0:00:00	2.76	0.84	14.27	181.13
11/4/2019	0:15:00	2.76	0.84	14.22	181.39

The display will look like below after all data has been imported to the Backfill page.



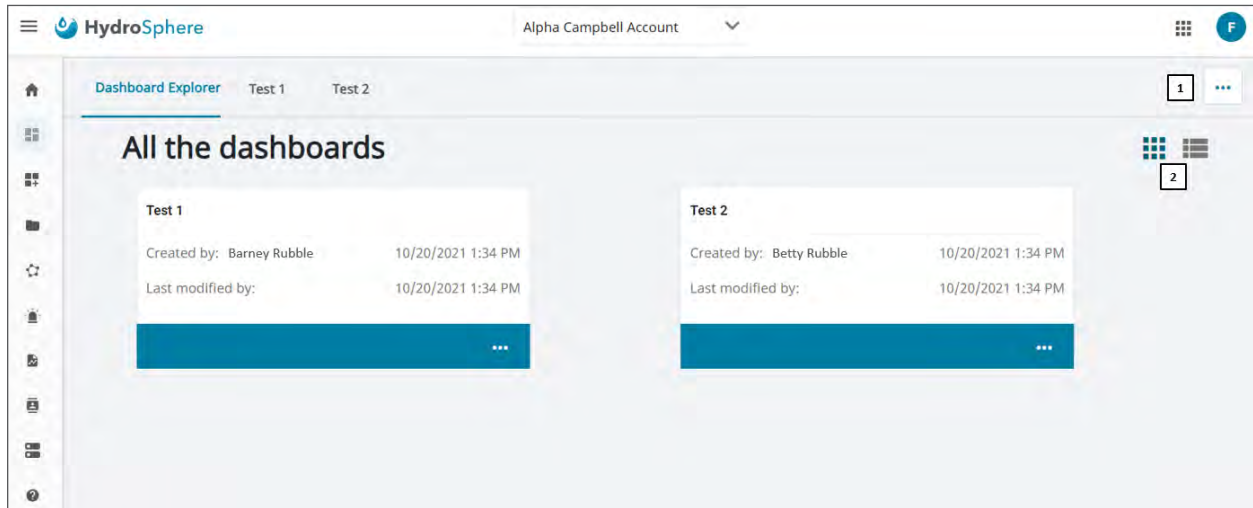
#	Name	Description
1	Data Gap Indicator	The orange bar is representative of all the HydroSphere data. The red line represents the gaps in HydroSphere data. Clicking on a red line will take the user to the represented gap.
2	Data Gaps	Gaps in the HydroSphere data are indicated by blank lines. The appropriate backfill data lines are the highlighted lines to the right of the gaps.
3	Data Transfer Icons	<p>◀ One arrow will transfer one selected line of missing data from the backfill data list to the HydroSphere data list.</p> <p>◀◀ Two arrows will transfer the selected group of lines of missing data from the backfill data list to the HydroSphere data list (i.e. in the screen shot above, the 3 highlighted lines would transfer).</p> <p>◀◀◀ Three arrows will transfer all missing lines of data from the backfill data list to the HydroSphere data list.</p>
4	X	Allows the user to delete uploaded backfill data.

2.3 – Customizable Dashboards

Users can build dashboards to continuously monitor the sensor data that is most important to them.

My Dashboards

The My Dashboards page will display all account dashboards that were created in Dashboard Builder (refer to [Dashboard Builder](#) for more information).



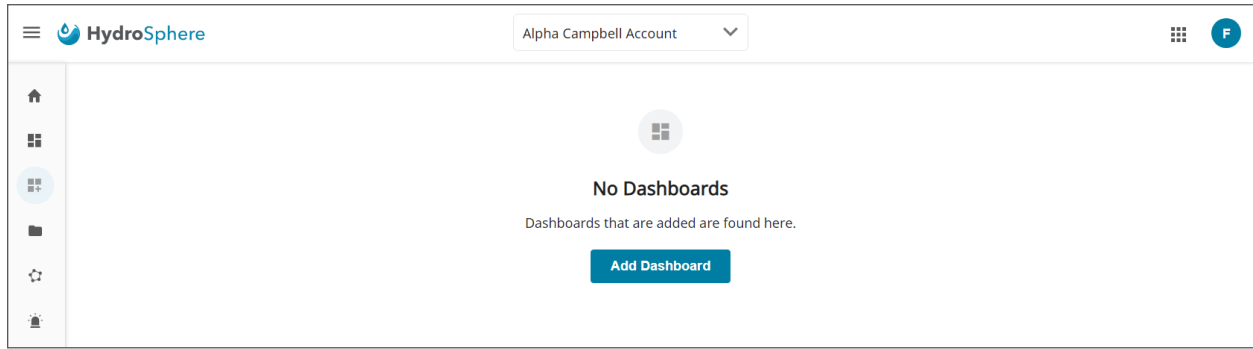
#	Name	Description
1	Dashboard Tab Options	When dashboards are opened, they are added to the tabs at the top of the page. Clicking the Tab Option button will display the following options. Close Shown DB Tab - Will close the displayed dashboard from the tab layout. Close All DB Tabs - Will close all tabs.
2	Dashboard List Format	Users can choose to display their dashboards in a grid or list.

Dashboard Builder

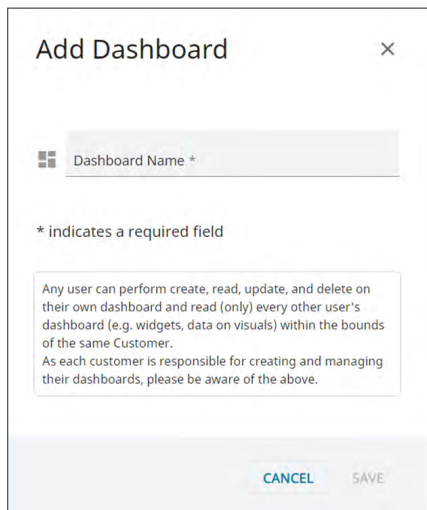
Dashboard Builder allows users to build and view customized dashboards so the water quality data that is most important can be easily and quickly viewed.

Dashboards

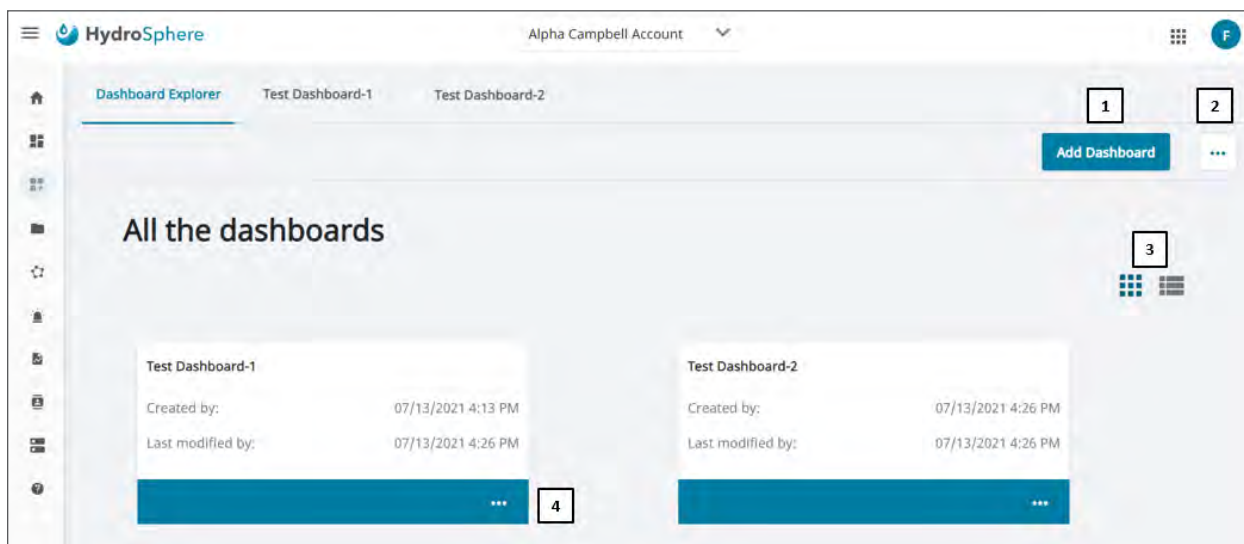
When the Dashboard Builder icon is clicked, if no dashboards have been created, the user will see the page below.



Clicking **Add Dashboard** will allow the user to create a new dashboard by entering the dashboard name in the window below and clicking **Save**.

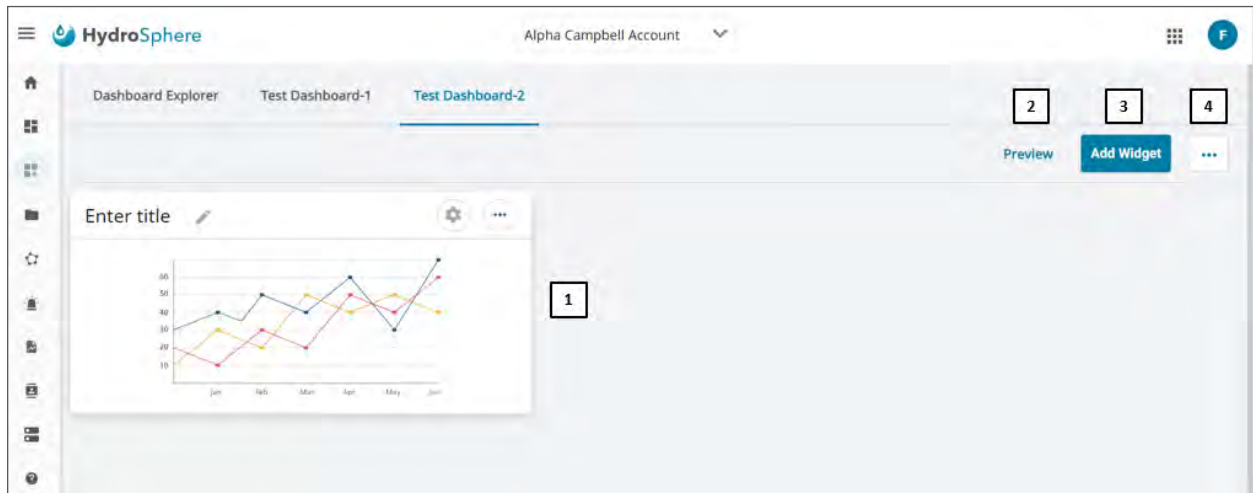
A screenshot of a modal dialog box titled 'Add Dashboard' with a close button (X) in the top right corner. It features a text input field with a grid icon on the left and the label 'Dashboard Name *'. Below the input field, there is a note: '* indicates a required field'. A larger text box contains the following text: 'Any user can perform create, read, update, and delete on their own dashboard and read (only) every other user's dashboard (e.g. widgets, data on visuals) within the bounds of the same Customer. As each customer is responsible for creating and managing their dashboards, please be aware of the above.' At the bottom of the dialog, there are two buttons: 'CANCEL' and 'SAVE'.

When the Dashboard Explorer icon is clicked, if dashboards have already been created, the user will see the dashboards listed on the page below.



#	Name	Description
1	Add Dashboard	The Add Dashboard button will allow the user to create a new dashboard via the Add Dashboard window discussed above.
2	Dashboard Tab Options	When dashboards are opened, they are added to the tabs at the top of the page. Clicking the ••• button will display the following options. Save DB Tab Layout - Will save the tab layout as displayed. Close All DB Tabs - Will close all tabs. The saved tab layout will be unaffected.
3	Dashboard List Format	Users can choose to display their dashboards in a grid or list.
4	Multiple Options Icon	Clicking the ••• icon will allow the user to perform the following functions. Open - Open the dashboard in the Edit page. Rename - Change the name of the dashboard. Duplicate - Copy the dashboard and give it a new name. Delete - Delete the dashboard.

Creating Dashboards



#	Name	Description
1	Dashboard Icons	Double clicking an icon will display the dashboard in the Edit mode.
2	Preview	Clicking Preview will display the dashboard as built populated with actual data. See Widgets for more information.
3	Add Widget	Clicking Add Widget will allow the user to drag and drop available widgets onto the dashboard. See Widgets for more information.
4	Multiple Options	Clicking the ••• icon will allow the user to perform the following functions. Save - Saves the dashboard. Save as - Saves the dashboard under a new name. Close - Closes the dashboard without saving. Save DB Tab Layout - Will save the tab layout as displayed. Close Shown DB Tab - Will close the currently viewed tab. The saved tab layout will be unaffected. Close All DB Tabs - Will close all tabs. The saved tab layout will be unaffected.

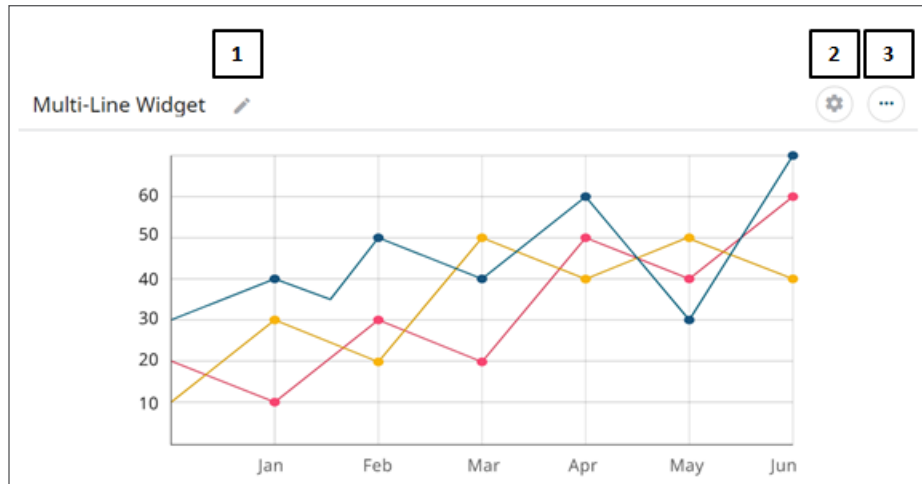
Widgets

Users have the option of adding seven different widgets to their dashboards.

Each dashboard can contain up to twenty-five widgets.

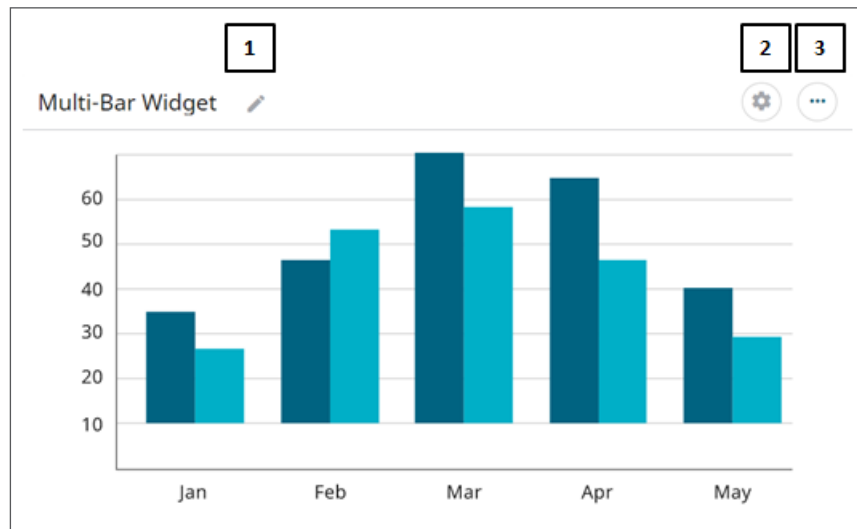
Note: Each widget can be moved and reordered by dragging and dropping. The widgets can be resized by grabbing and dragging the widget's lower right corner.

Multi-Line Widget



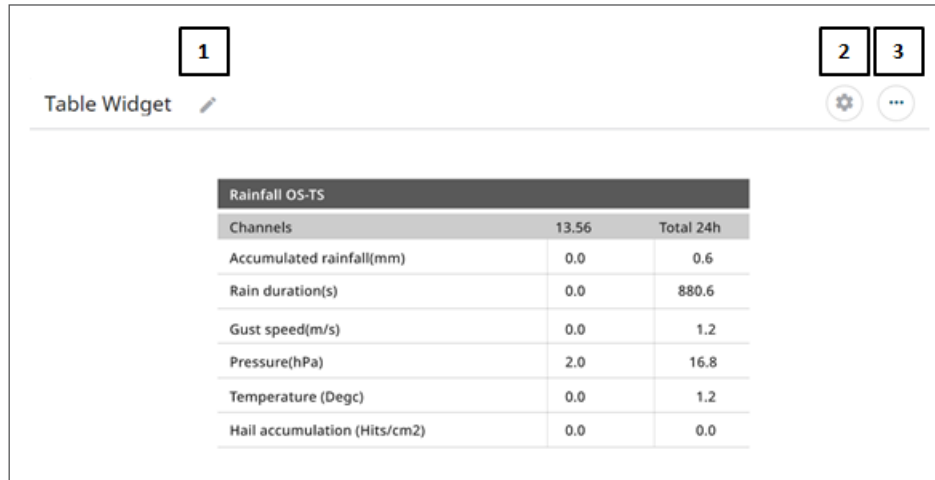
#	Name	Description
1	Widget Settings	<p>Clicking the Edit button will display the following options for modifying the multi-line widget settings.</p> <ul style="list-style-type: none"> • Title - User can change the name of the widget. • Title Font Style - Font options are normal, italic, bold, bold/italic. • Title Color - A color pallet is provided to change the title color. • Line Direction - Lines can be displayed vertically or horizontally. • Line Color - A color pallet is provided for each line title color. • Time Range - Parameters can be displayed 1 hour, 3 hours, 12 hours, 1 day, 3 days, 1 week, 2 weeks, 1 month, 2 months • Decimal Places - Data display options are x., x.x, x.xx, or x.xxx. • Axis Scale - Scale options are auto (scale is set based on the parameters), manual (scale is set manually by the user), or preferred (if value exceeds manually set scale, scale will revert to auto) • Line Label Text - Label options are Observed Property, Datastream Name, or Datastream Description. • Line Label Position - Options are right or bottom. • Show Value Per Line • Show Details on Hover • Show the UoM on the axis • Unit of Measure
2	Configure Widget	See Configure Widget for more information.
3	Multiple Options	<p>Clicking the ... icon will allow the user to perform the following functions.</p> <p>Delete - Delete the widget.</p> <p>Duplicate - Create a copy of the widget. The new widget will be named Copy of <Widget Title>.</p>

Multi-Bar Widget



#	Name	Description
1	Widget Settings	<p>The following options is available for modifying widgets.</p> <ul style="list-style-type: none"> • Title - User can change the name of the widget. • Title Font Style - Font options are normal, italic, bold, bold/italic. • Title Color - A color pallet is provided to change the title color. • Show the value per bar • Show the UoM on the axis • Bar direction - vertical, horizontal • Decimal places - x., x.x, x.xx, x.xxx • Axis scale - auto, manual • Bar label text - Observed Property, Datastream Name, Datastream Description • Bar label orientation • Unit of Measure
2	Configure Widget	See Configure Widget for more information.
3	Multiple Options	<p>Clicking the ⋮ icon will allow the user to perform the following functions.</p> <p>Delete - Delete the widget.</p> <p>Duplicate - Create a copy of the widget. The new widget will be named Copy of <Widget Title>.</p>

Table Widget



Rainfall OS-TS		
Channels	13.56	Total 24h
Accumulated rainfall(mm)	0.0	0.6
Rain duration(s)	0.0	880.6
Gust speed(m/s)	0.0	1.2
Pressure(hPa)	2.0	16.8
Temperature (Degc)	0.0	1.2
Hail accumulation (Hits/cm2)	0.0	0.0

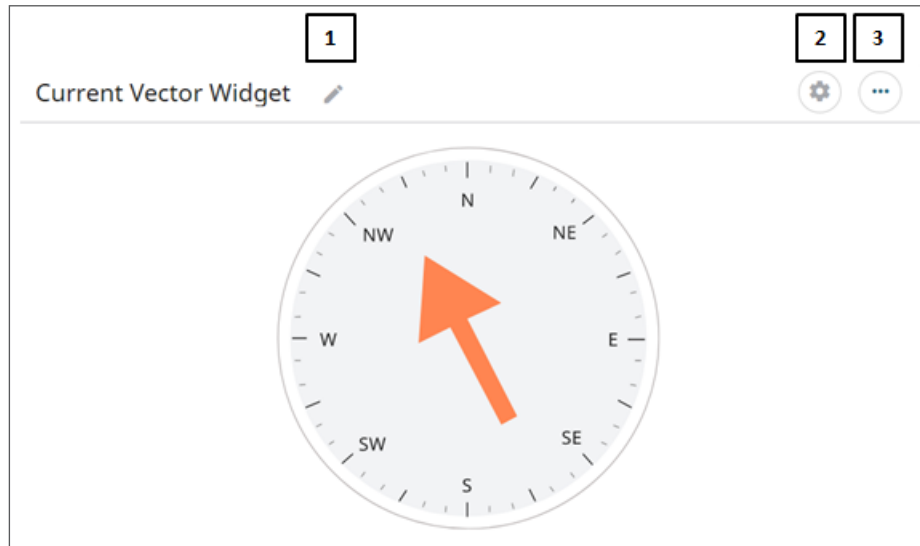
#	Name	Description
1	Widget Settings	<p>Clicking the Edit button will display the following options for modifying the widget settings.</p> <ul style="list-style-type: none"> • Title - User can change the name of the widget. • Title Font Style - Font options are normal, italic, bold, bold/italic. • Title Color - A color pallet is provided to change the title color. • Decimal places - x., x.x, x.xx, x.xxx • Row label text - Observed Property, Datastream Name, Datastream Description • Add Calculated Columns - Interval - 1m, 15m, 1h, 3h, 12h, 1d, 1w, 30d • Aggregation - Min, Max, Avg
2	Configure Widget	See Configure Widget for more information.
3	Multiple Options	<p>Clicking the ... icon will allow the user to perform the following functions.</p> <p>Delete - Delete the widget.</p> <p>Duplicate - Create a copy of the widget. The new widget will be named Copy of <Widget Title>.</p>

Wind Vector Widget



#	Name	Description
1	Widget Settings	Clicking the Edit button will display the following options for modifying the widget settings. <ul style="list-style-type: none">• Title - User can change the name of the widget.• Title Font Style - Font options are normal, italic, bold, bold/italic.• Title Color - A color pallet is provided to change the title color.• Show the direction• Show the speed• Show gust row• Vector Color• Vector Head Style - arrow, diamond, dot, line• Decimal places - x., x.x, x.xx, x.xxx• Speed of gust UoM
2	Configure Widget	See Configure Widget for more information.
3	Multiple Options	Clicking the ... icon will allow the user to perform the following functions. Delete - Delete the widget. Duplicate - Create a copy of the widget. The new widget will be named Copy of <Widget Title>.

Current Vector Widget



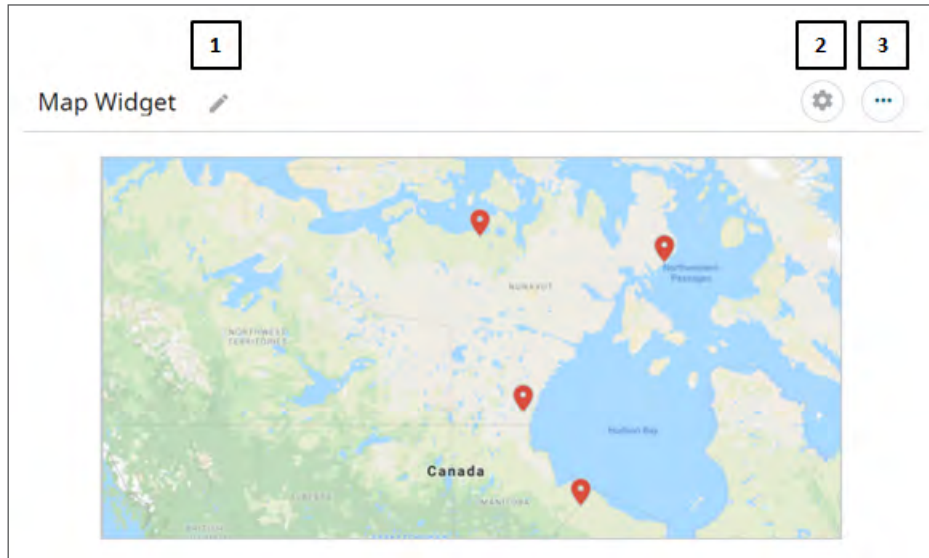
#	Name	Description
1	Widget Settings	<p>Clicking the Edit button will display the following options for modifying the widget settings.</p> <ul style="list-style-type: none"> • Title - User can change the name of the widget. • Title Font Style - Font options are normal, italic, bold, bold/italic. • Title Color - A color pallet is provided to change the title color. • Vector Head Style - arrow1, triangle, arrow2, chevron • Vector Color • Decimal places - x., x.x, x.xx, x.xxx • Speed UoM
2	Configure Widget	See Configure Widget for more information.
3	Multiple Options	<p>Clicking the ⋮ icon will allow the user to perform the following functions.</p> <p>Delete - Delete the widget.</p> <p>Duplicate - Create a copy of the widget. The new widget will be named Copy of <Widget Title>.</p>

Wave Vector Widget



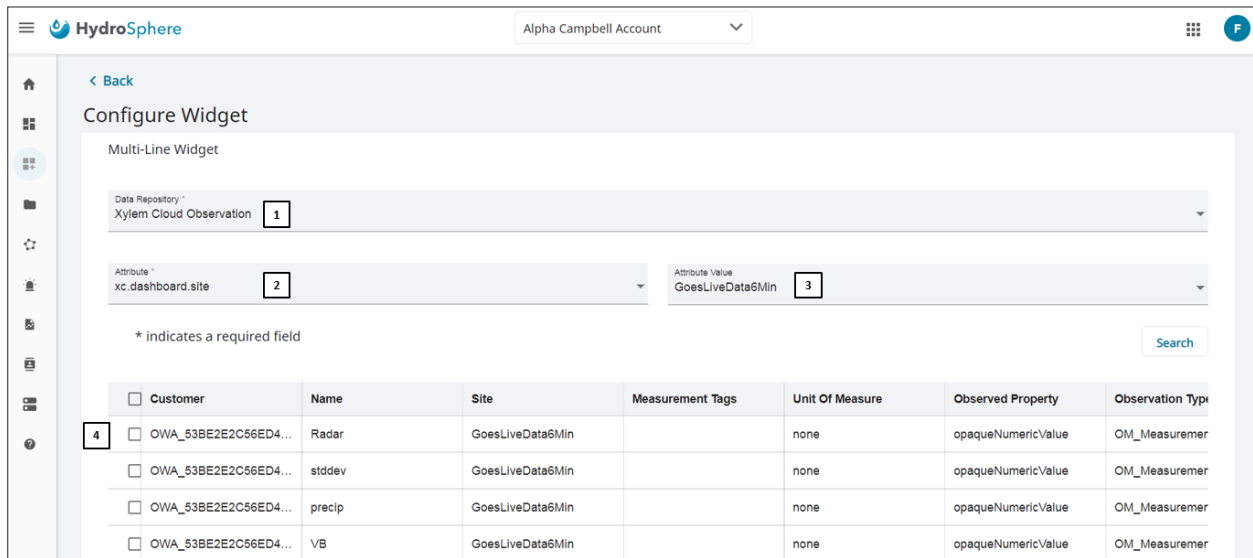
#	Name	Description
1	Widget Settings	<p>Clicking the Edit button will display the following options for modifying the widget settings.</p> <ul style="list-style-type: none"> • Title - User can change the name of the widget. • Title Font Style - Font options are normal, italic, bold, bold/italic. • Title Color - A color pallet is provided to change the title color. • Vector Head Style - arrow1, triangle, arrow2, chevron • Vector Color • Decimal places - x., x.x, x.xx, x.xxx • Height UoM • Show the direction • Show period Row • Show signif. height • Show max. height
2	Configure Widget	See Configure Widget for more information.
3	Multiple Options	<p>Clicking the ⋮ icon will allow the user to perform the following functions.</p> <p>Delete - Delete the widget.</p> <p>Duplicate - Create a copy of the widget. The new widget will be named Copy of <Widget Title>.</p>

Map Vector



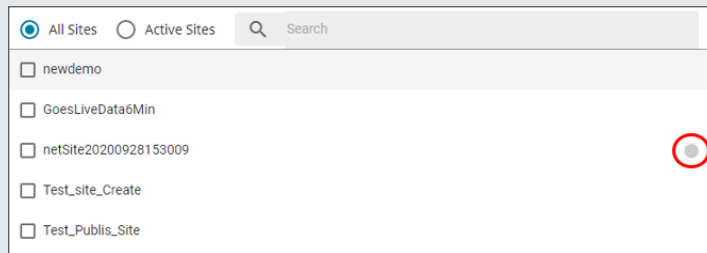
#	Name	Description
1	Widget Settings	Clicking the Edit button will display the following options for modifying the widget settings. <ul style="list-style-type: none">• Title - User can change the name of the widget.• Title Font Style - Font options are normal, italic, bold, bold/italic.• Title Color - A color pallet is provided to change the title color.• Site Pin Style• Site Pin Color• Location details on hover
2	Configure Widget	See Configure Widget for more information.
3	Multiple Options	Clicking the ••• icon will allow the user to perform the following functions. Delete - Delete the widget. Duplicate - Create a copy of the widget. The new widget will be named Copy of <Widget Title>.

Configure Widget



Users can select the source of data and specific parameters to display on the widget by using the following functions.

#	Name	Description
1	Data Repository	The database from which the data will be pulled, defaulted to Xylem Cloud Observation.
2	Attribute	The general category of the data to be displayed, defaulted to Site.
3	Attribute Value	The list of available options based on the Attribute field value. For example, if Site is selected in the Attribute field then all sites associated with that account will displayed. Sites with a gray dot are inactive sites.
4	Parameter selection	Based on the Attribute Value selected, the list of parameters available to display on the widget.

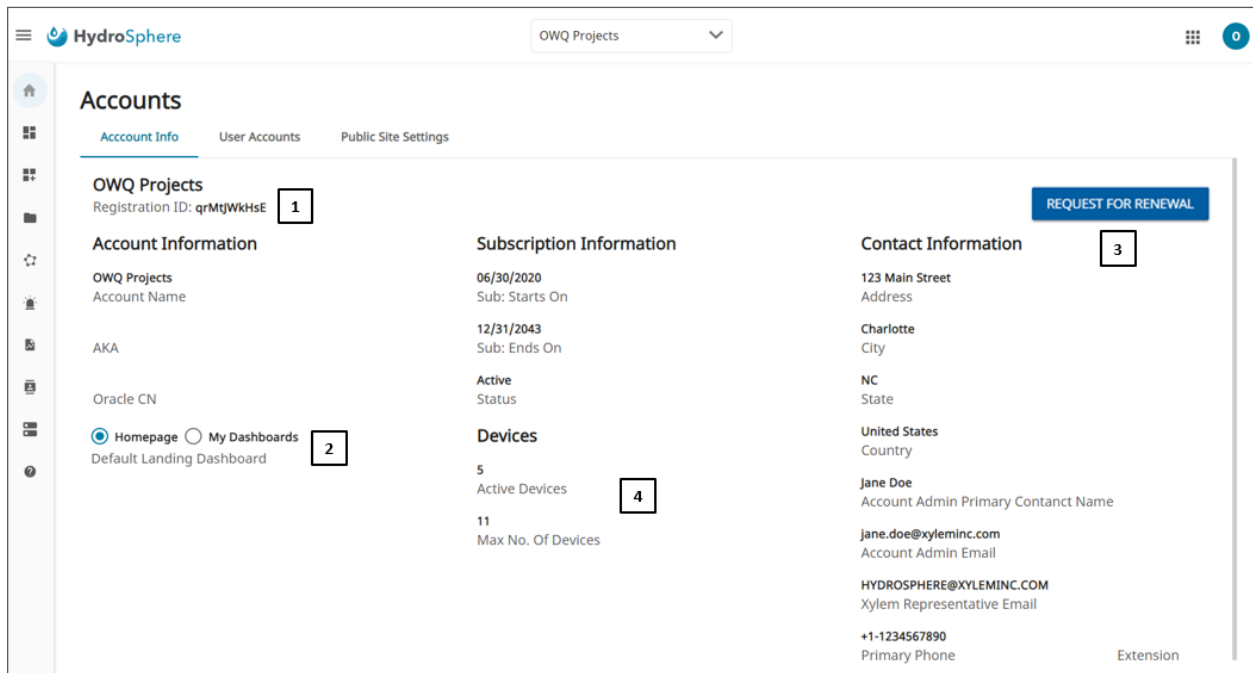


2.4 – Accounts

Three pages are available for Account Info; Account Info, User Accounts, and Public Site Settings. These pages are described below.

Account Info

Read only account details are displayed on the Account Info page.

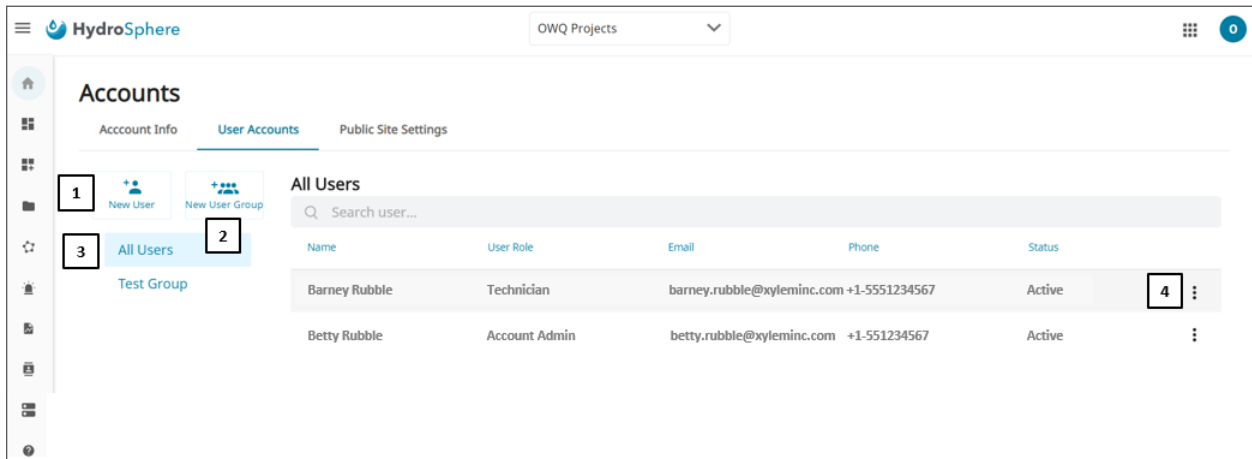


#	Name	Description
1	Registration ID	The Registration ID will be used to connect data loggers. Refer to Data Setup - Cellular for more information.
2	Default Landing Dashboard	Allows the Acct Admin to select which page account users will land on when they log into HydroSphere.
3	Request for Renewal	When the account subscription is within 60 days of expiration, the Request For Renewal button will display. Clicking the Request for Renewal button will initiate the renewal process. Once the button has been clicked, it will change to RENEWAL REQUESTED . Note: The Request for Renewal button is only visible to Account Administrators.
4	Devices	This section will show the maximum number of data devices allowed for your account and the number of data devices actually connected to HydroSphere. Note: If an increase in the maximum number of data devices is required, please contact Customer Service at hydrosphere@xylem.com .

User Accounts

Note: The User Accounts section is only visible to Account Administrators.


New Users and User Groups can be created using this page. Refer to [Definitions](#) for a discussion on User Groups.

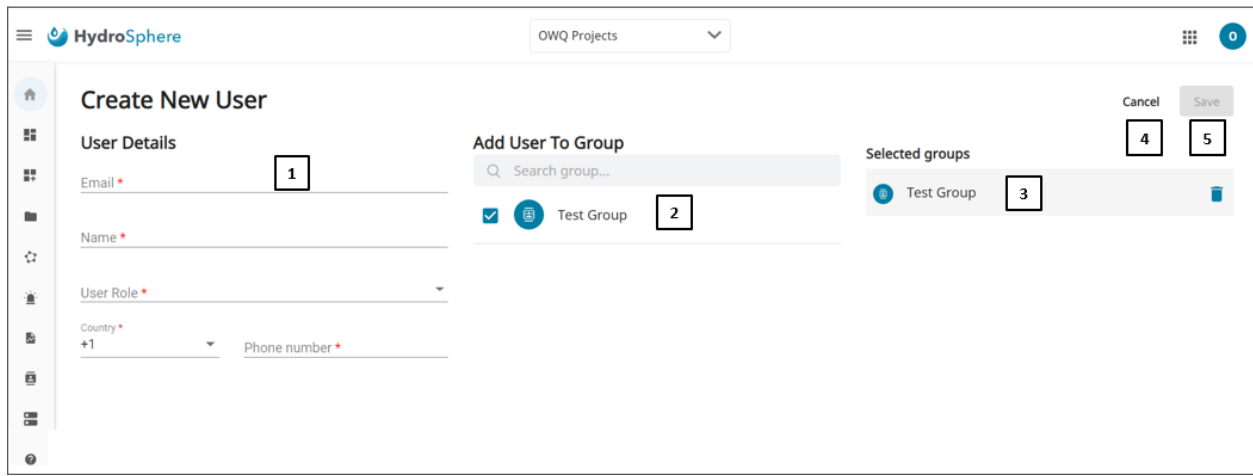



#	Name	Description
1	New User	Allows the user to create a new user. Refer to Create New User for more information.
2	New User Group	Allows the user to create a new user group. Refer to Create New User Group for more information.
3	Groups	Displays the user groups created for this account.
4	Multiple Options	For the All Users group, clicking the ⋮ icon will display the following options: Edit - Allows the user to edit user account details described in Create New User . Delete - Deletes the user account. If a user group is being viewed, clicking the ⋮ icon will display the following options: Edit - Allows the user to edit user account details described in Create New User . Delete from Group - Deletes the user from the group but will not delete the user account.

Create New User

Note: The User Accounts section is only visible to Account Administrators.

Clicking the  Create New and **USER** buttons on the dashboard will display the same page.



#	Name	Description
1	User Details	A red asterisk (*) indicates a required field. The User Role drop down presents three options: AccountAdmin, DataReviewer, and Technician. Refer to Definitions for more information on user roles.
2	Add User to Group	All user groups created for this account will be displayed. Users can be added to one or more user groups by clicking on the check box to the left of the user group name. Refer to Create New User Group for more information.
3	Selected Groups	User groups that have been checked in the Add User to Group section will display here. The user group can be disassociated from the user by clicking the trash can (). This will not delete the user account or the user group.
4	Cancel	Clicking the Cancel button will exit the user from the Create New User page.
5	Save	When the Save button turns blue, all new user requirements have been met. Clicking the blue Save button will save the new user to HydroSphere.

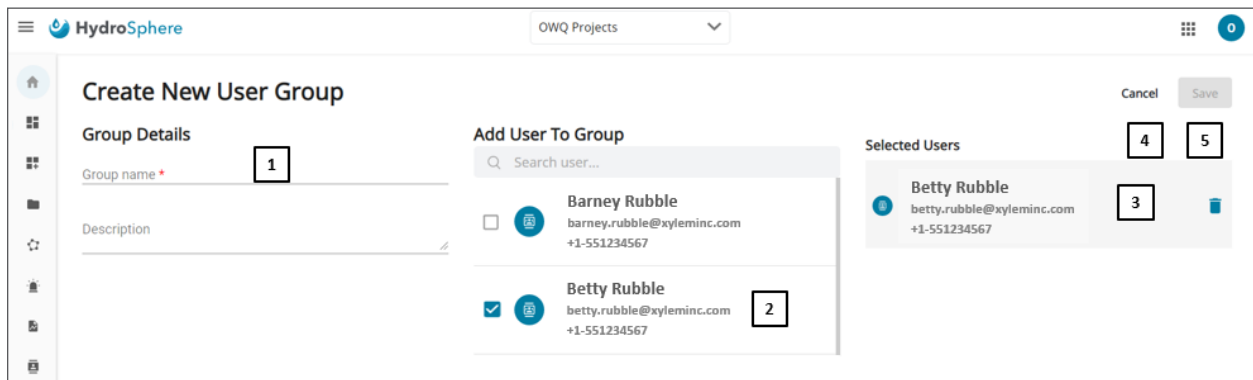
To create a new user


1. Enter the user's Email address, Name, User Role, Country Code, and Phone number.
2. If the user is to be assigned to a user group, click the box to the left of each appropriate user group.
3. Click **Save**.

Create New User Group

Note: The User Accounts section is only visible to Account Administrators.

Users can create groups of users who have common alarm notification and data export requirements saving time by not having to assign these notifications and exports to multiple individual users.



#	Name	Description
1	Group Details	A red asterisk (*) indicates a required field.
2	Add User to Group	All users created for this account will be displayed. Users can be added to the newly created user group by clicking on the check box to the left of the user's name. Refer to Create New User for more information.
3	Selected Groups	Users that have been checked in the Add User to Group section will display here. The user can be deleted from the group by clicking the trash can (). This will not delete the user account or the user group.
4	Cancel	Clicking the Cancel button will exit the user from the Create New User Group page.
5	Save	When the Save button turns blue, all new user group requirements have been met. Clicking the blue Save button will save the new user group to HydroSphere.

To create a new user group

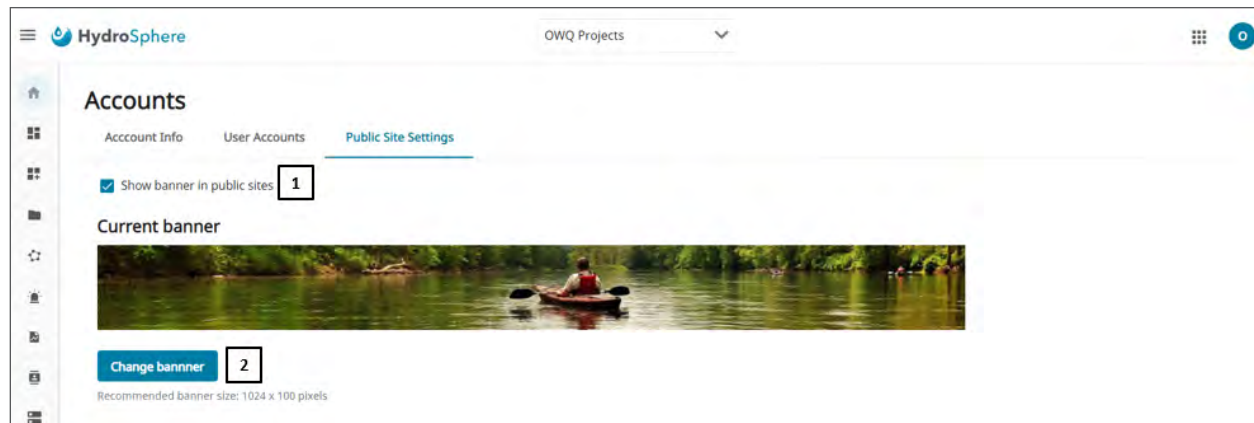
1. Enter a user group name.
2. Optional - add a user group description.
3. Click the box to the left of each user to be added to the user group.
4. Click **Save**.

Public Site Settings

Note: The Public Site Settings section is only visible to Account Administrators.

Users can customize the banner that is displayed on the Public Web Site.

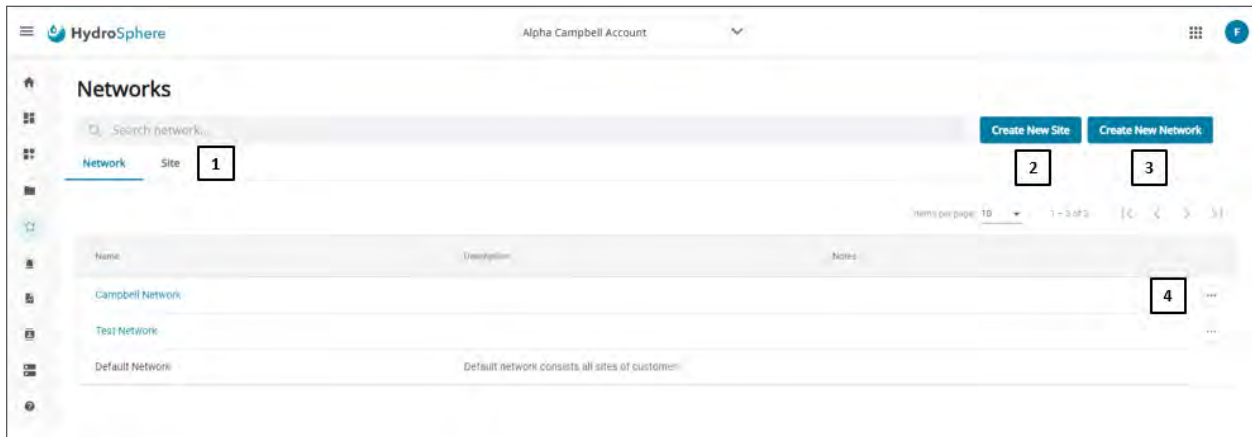
Refer to [Public Web Site](#) for more information.



#	Name	Description
1	Show banner in public site	Checking this box will display the Current banner on the public web site.
2	Change Banner	Allows the user to search their computer or other storage device for a photo file format (jpg, png, etc.) to be used as a public web site banner. Note: The required banner size is 1024 x 100 pixels. When uploading a file, the photo will open in an image cropper that will assist the user in cropping the photo to the 1024 x 100 requirement.

2.5 – Networks

Networks are groups of sites that may have common characteristics such as close geographical proximity. Networks ease the administrative management of these groups of sites.



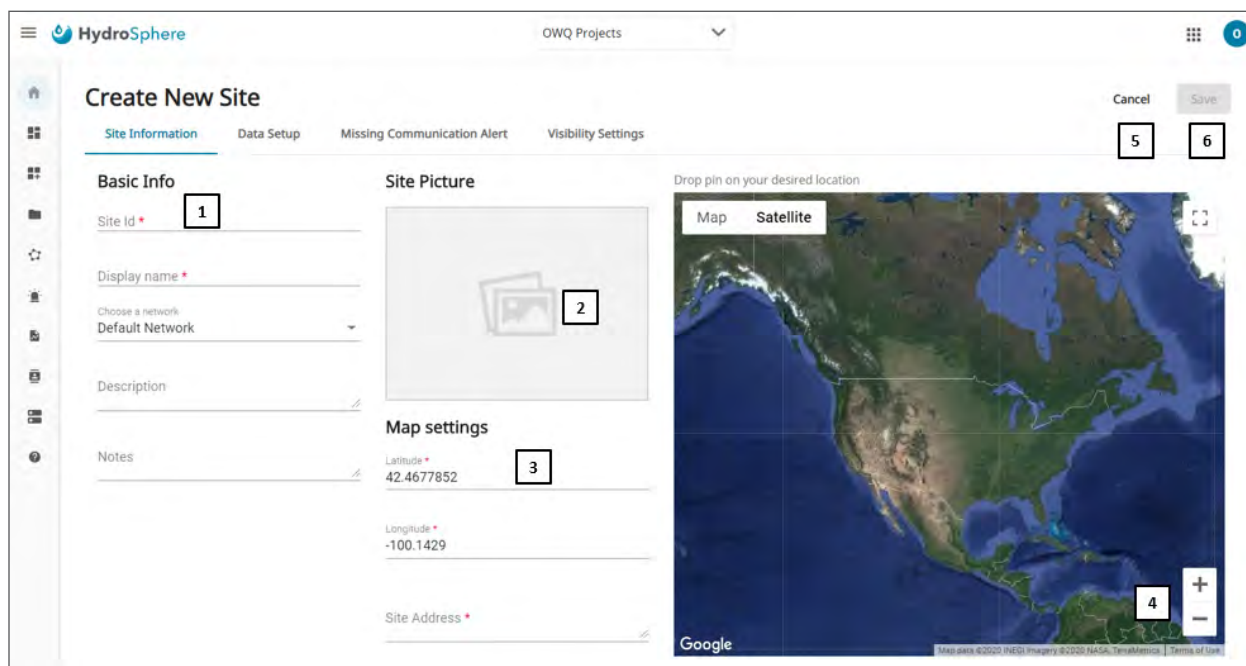
#	Name	Description
1	Networks/Sites	Selecting the appropriate tab will list all networks or sites.
2	Create New Site	Allows the user to create a new site. Refer to Create New Site for more information.
3	Create New Network	Allows the user to create a new network. Refer to Create New Network for more information.
4	Multiple Options	Clicking ●●● will display the following options: Edit - Allows the user to edit Network details described in Create New Network . Delete - Deletes the Network.


Create New Site


Four pages are available for creating new sites; Site Information, Data Setup, Missing Communications Alert, and Visibility Settings. These pages are described below.

Site Information

Clicking the  Create New and **SITE** buttons on the dashboard will display the same page.



#	Name	Description
1	Basic Info	A red asterisk (*) indicates a required field. Note: Spaces and special characters are not allowed in the SiteID field.
2	Site Picture	When the cursor is hovered over the Site Picture box, the display will change to read Add A Picture .  Clicking Add A Picture will allow the user to browse their computer or other storage device for a photo file format (jpg, png, etc.).

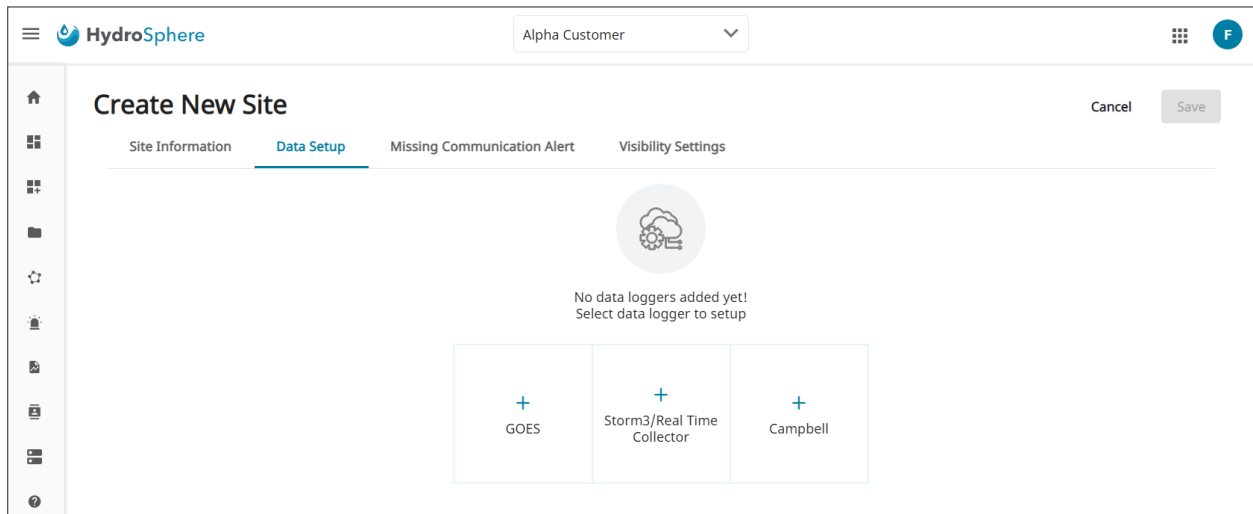
#	Name	Description
2	Site Picture (continued)	<p>When a photo has been selected, it will display in a photo cropper allowing the user to crop the photo to best fit the space available.</p>  <p>Clicking Crop will insert the photo into Site Picture.</p>
3	Map Settings	<p>The site location can be entered in two ways:</p> <ol style="list-style-type: none"> 1. Manually enter Latitude, Longitude, and Address. The map pin (📍) will relocate to the entered position. 2. Position the map pin (📍). Double clicking on the map will reposition the map pin to the cursor location. The Latitude, Longitude, and Address fields will automatically populate based on the new position of the map pin. <p>Note: Google Chrome users may see a 'Know your location' pop up message on any page where Google maps data is displayed (map and/or lat/long).</p> <p>On the Edit Site page, if Allow is clicked, the map pin and site location will change to the user's location. Be sure to click Block when on the Edit Site page to prevent the site location from moving.</p>
4	Zoom In / Zoom Out	Lets the user zoom the map display in and out.
5	Cancel	Clicking the Cancel button will exit the user from the New Site page.
6	Save	When the Save button turns blue, all new site requirements have been met. Clicking the blue Save button will save the new site to HydroSphere.

To create a new site - Step 1

1. Enter a Site ID and Display Name.
2. Choose a network.
3. Optional - add a site description and notes.
4. Optional - Upload a site photo.
5. Enter the site location by entering the latitude, longitude, and site address or use the map pin.
6. Click **Save**.

Data Setup - Data Source Selection

Users will select what data sources they are connecting to HydroSphere on this page by clicking the appropriate button.



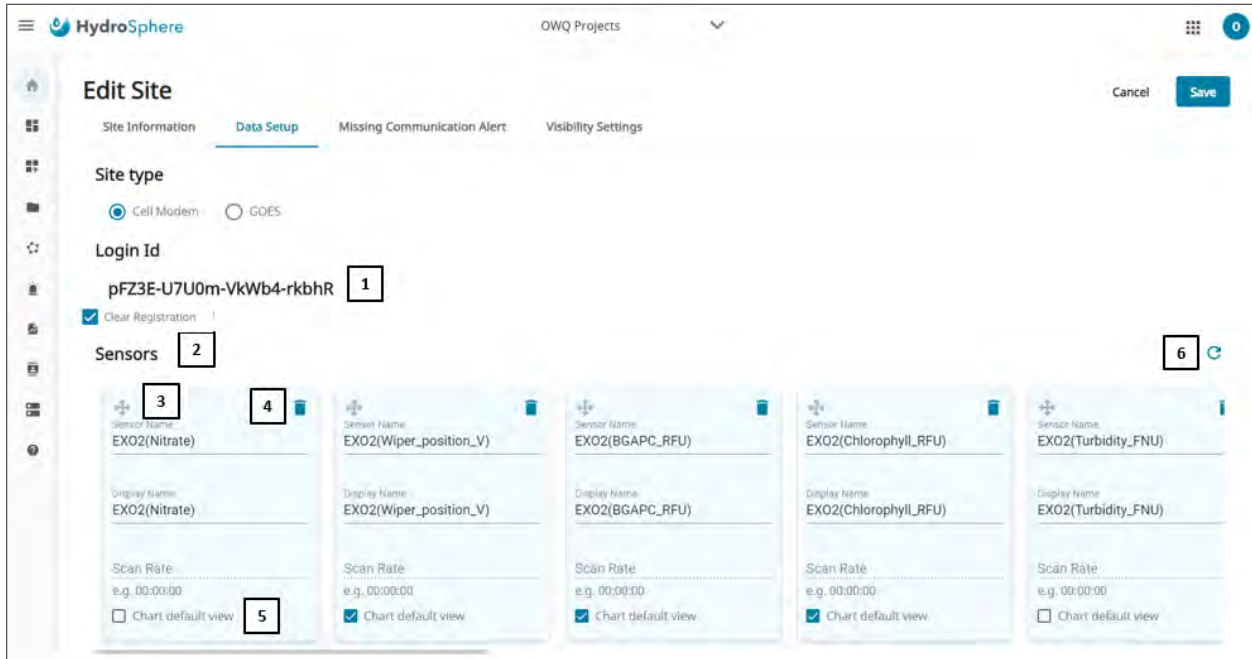
Data Setup - Storm 3 Cellular or Campbell (Push Mode)

Customers with Storm 3 and Campbell (push mode) data loggers will use these procedures to connect with their data loggers and sensors.

Before connection to the data loggers, the Data Setup page will look like the screen below.

#	Name	Description
1	Site Type	Two site type options are presented: Cell Modem - For Storm 3 and Campbell data loggers. GOES - For Geostationary Operational Environmental Satellite users.
2	Register	Campbell data logger users - Checking this box will display the following message. After clicking save, the Login ID will be displayed below the Login ID label. <div data-bbox="485 1047 784 1251" style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>Manual Registration of Site Confirmation</p> <p>All Storm dataloggers should register directly from the Storm menus. Non-Storm dataloggers must manually register. If this is for a Storm Site, press Cancel, otherwise press Confirm.</p> <p style="text-align: right;">CANCEL OK</p> </div> <p>Storm 3 data logger users - The Login ID will be created, and the Register checkbox will automatically be checked when the site is created in the WaterLOG app.</p> <p>After the data logger has been registered, if the user needs to clear the registration (to remove or change the data logger), unchecking the Register box will display the following message.</p> <div data-bbox="485 1430 784 1688" style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>Clear Site Registration Confirmation</p> <p>Are you sure you want to clear the Registration for LewistonWeather? NOTE: The data for this Site will NOT be deleted. New data will not be recorded in HydroSphere until a Storm with Site ID : LewistonWeatherhas been re-registered. Re-register a Storm by pressing the Verify Registration button within the Storm menus.</p> <p style="text-align: right;">CANCEL OK</p> </div> <p>Note: The Registration ID can be found on the Accounts/Accounts Info page.</p>
3	Cancel	Clicking the Cancel button will exit the user from the New Site page.
4	Save	When the Save button turns blue, all new site requirements have been met. Clicking the blue Save button will save the new site to HydroSphere.

After connection to the data logger, the Data Setup page will look like the screen below.



#	Name	Description
1	Login ID	The Login ID for connecting data loggers will be displayed. To clear the registration, uncheck this box.
2	Sensors	When site data loggers are connected, the associated sensors will be displayed.
3	Reorder Icon	The sensors can be reordered by clicking on the drag and drop icon (☰) and moving the sensor to a new position. Note: Parameter order for Chart View, Table View, Geographical Dashboard Site popup, and downloaded data will mimic the order of the sensor tiles on the Data Setup page.
4	Delete Icon	The trash can (🗑️) will delete the sensor from the Sensors list.
5	Chart Default View	Checking the Chart Default View box will set the Chart View default parameters (see Chart View for more information).
6	Refresh Icon	Clicking the Refresh Icon (🔄) will request an update of newly added / removed sensors. This refresh will not affect normal data transmissions. Note: If, after initial setup, any changes are made to the sensor configuration in the data logger, the user will need to either Re-deploy and re-map the data logger to HS OR Click on Refresh Icon

To create a new site - Step 2A: Connecting a Storm 3 Cellular or Campbell (Push Mode) data logger

1. Click the **Storm 3 Cellular/Campbell (Push Mode)** button on the initial Data Setup page.
2. Click the **Cellular Modem** radio button.
3. Click the check mark next to Register if using a Storm 3 data logger. Otherwise, leave Register unchecked.
4. Click **Save**.

5. Follow the normal procedures for connecting a cellular data logger.
6. Verify that the sensors are displayed on the Data Setup page.
7. Optional - reorder the sensors as needed.
8. Click **Save**.

Data Setup - Storm 3 GOES or WaterLOG GOES

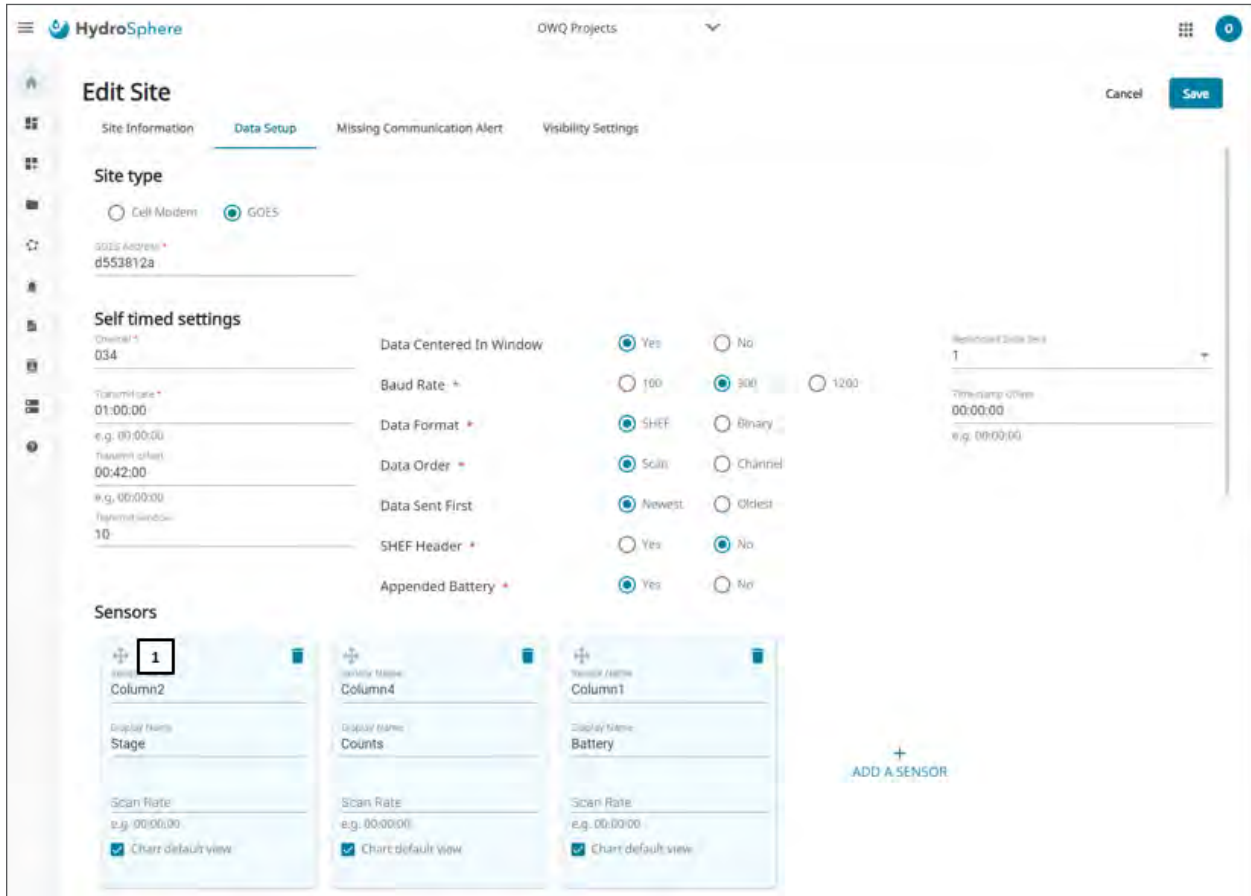
Customers who use GOES will use these procedures to connect their data loggers.


Before connection to the data loggers, the Data Setup page will look like the screen below.

#	Name	Description
1	Site Type	Two site type options are presented: <ul style="list-style-type: none"> • Cell Modem - For Storm 3 and Campbell data loggers. • GOES - For Geostationary Operational Environmental Satellite users.
2	GOES Information	The GOES address and Self Timed Settings will either be provided by NOAA or can be found on the data logger.

#	Name	Description
3	Add A Sensors	<p>Clicking Add A Sensor will provide the user with two displays based on which Data Format radio button is checked. This information can be found on the data logger.</p> <div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid #ccc; padding: 5px; width: 45%;"> <p style="text-align: center; margin: 0;">SHEF</p> <p>Sensor Name * <input type="text"/></p> <p>Display Name * <input type="text"/></p> <p>Scan Rate * <input type="text" value="00:15:00"/></p> <p><input type="checkbox"/> Chart default view</p> <p style="text-align: center;">CANCEL ADD</p> </div> <div style="border: 1px solid #ccc; padding: 5px; width: 45%;"> <p style="text-align: center; margin: 0;">Binary</p> <p>Sensor Name * <input type="text"/></p> <p>Display Name * <input type="text"/></p> <p>Scan Rate * <input type="text" value="00:15:00"/></p> <p><input type="checkbox"/> Chart default view</p> <p>Bytes * <input type="text" value=""/></p> <p>Digits * <input type="text" value=""/></p> <p>Sign mode * <input type="text" value=""/></p> <p style="text-align: center;">CANCEL ADD</p> </div> </div> <p>Clicking the Chart Default View box will allow the user to set the default parameters viewed on the Chart View (refer to Chart View for more information). Up to 3 sensors can be selected.</p>
4	Cancel	Clicking the Cancel button will exit the user from the Data Setup page.
5	Save	When the Save button turns blue, all data setup requirements have been met. Clicking the blue Save button will save the data setup information to HydroSphere.

After connection to the data loggers, the Data Setup page will look like the screen below.



#	Name	Description
1	Reorder Icon	The sensors can be reordered by clicking on the drag and drop icon () and moving the sensor to a new position. Note: If the sensor order is changed in the data logger, ensure the sensor order in HydroSphere matches the new order by using the reorder icons to prevent data mismatch.
2	Get Last Tx	If after clicking the Get Last Tx button, telemetry data populates the Get Last Tx text box, the user will know that connection with the data logger is successful and that GOES setup has been validated.

To create a new site - Step 2B: Connecting a Storm 3 GOES or WaterLOG GOES data logger

1. Click the **Storm 3 GOES /WaterLOG GOES** button on the initial Data Setup page.
2. Click the **GOES** radio button.
3. Enter the required GOES information.
4. Click **Add a Sensor** and enter the required sensor information.
5. Click the **Get Last Tx** button.
6. Click **Save**.

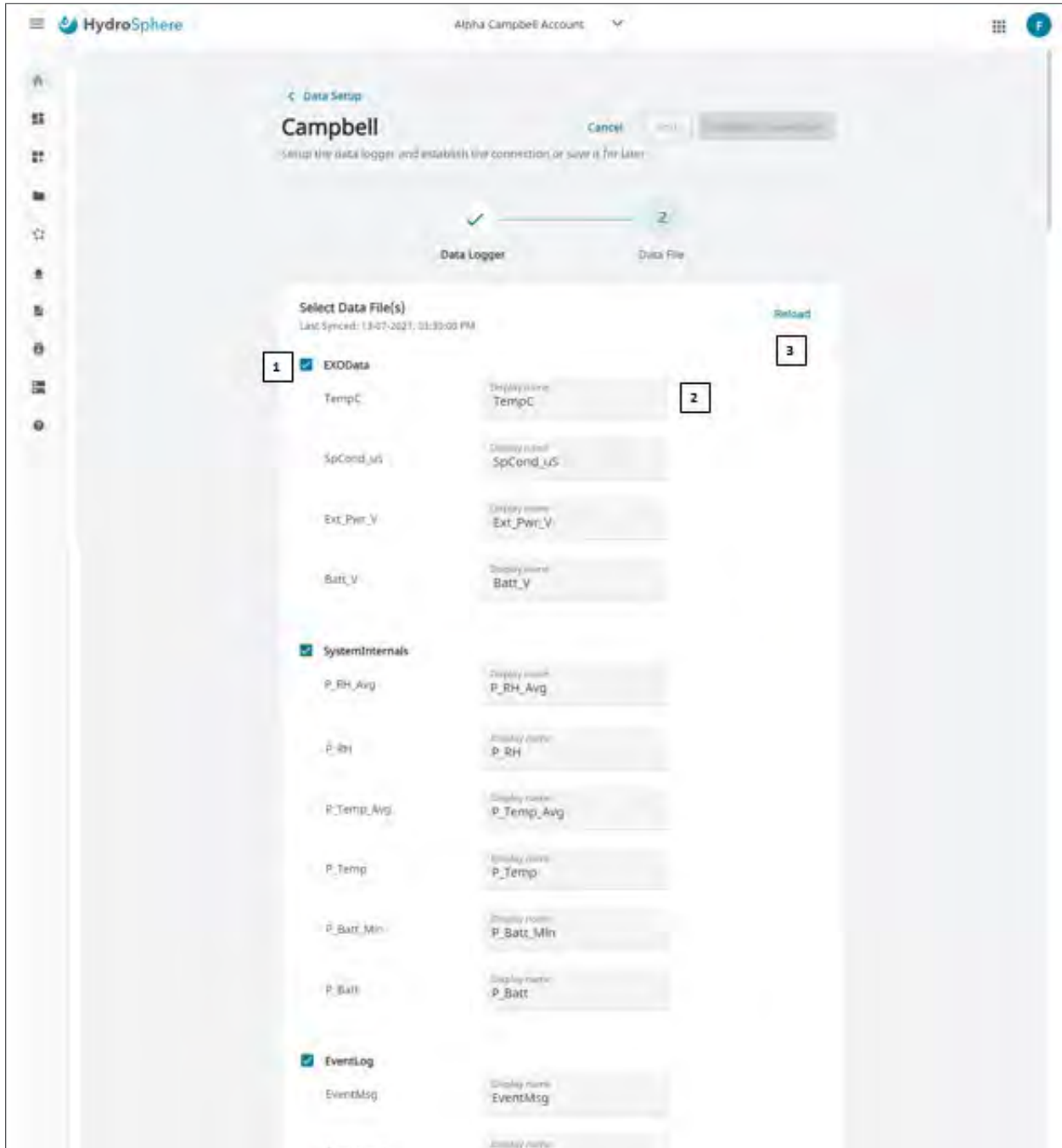
Data Setup - Campbell (Polled Mode)

Customers who use Campbell will use these procedures to connect with their data loggers and sensors. Before connection to the data loggers, the Data Setup page will look like the screen below.

The screenshot shows the 'Data Setup' page for a Campbell account. The page title is 'Campbell' and the subtitle is 'Setup the data logger and establish the connection or save it for later'. The page is divided into three main sections: 'Data Logger', 'Task File', and 'Basic info'. The 'Basic info' section is highlighted with a red box and a '1' callout. It contains the following fields: 'Data Logger Name', 'Model' (CR300), 'PakBus Address', 'PakBus Neighbor', and 'Security Code'. The 'Scheduling' section contains: 'Interval' (00 Hours, 15 Minutes, 00 Seconds), 'Collection Offset' (00 Hours, 15 Minutes, 00 Seconds), 'Primary Retry Interval' (00 Hours, 02 Minutes, 00 Seconds), and 'Number of Primary Retries' (3). The 'Advance' section contains: 'Maximum Polling Size' (999). At the top right, there are three buttons: 'Cancel' (2), 'Add' (3), and 'Establish Connection' (4). The 'Establish Connection' button is highlighted with a red box and a '4' callout.

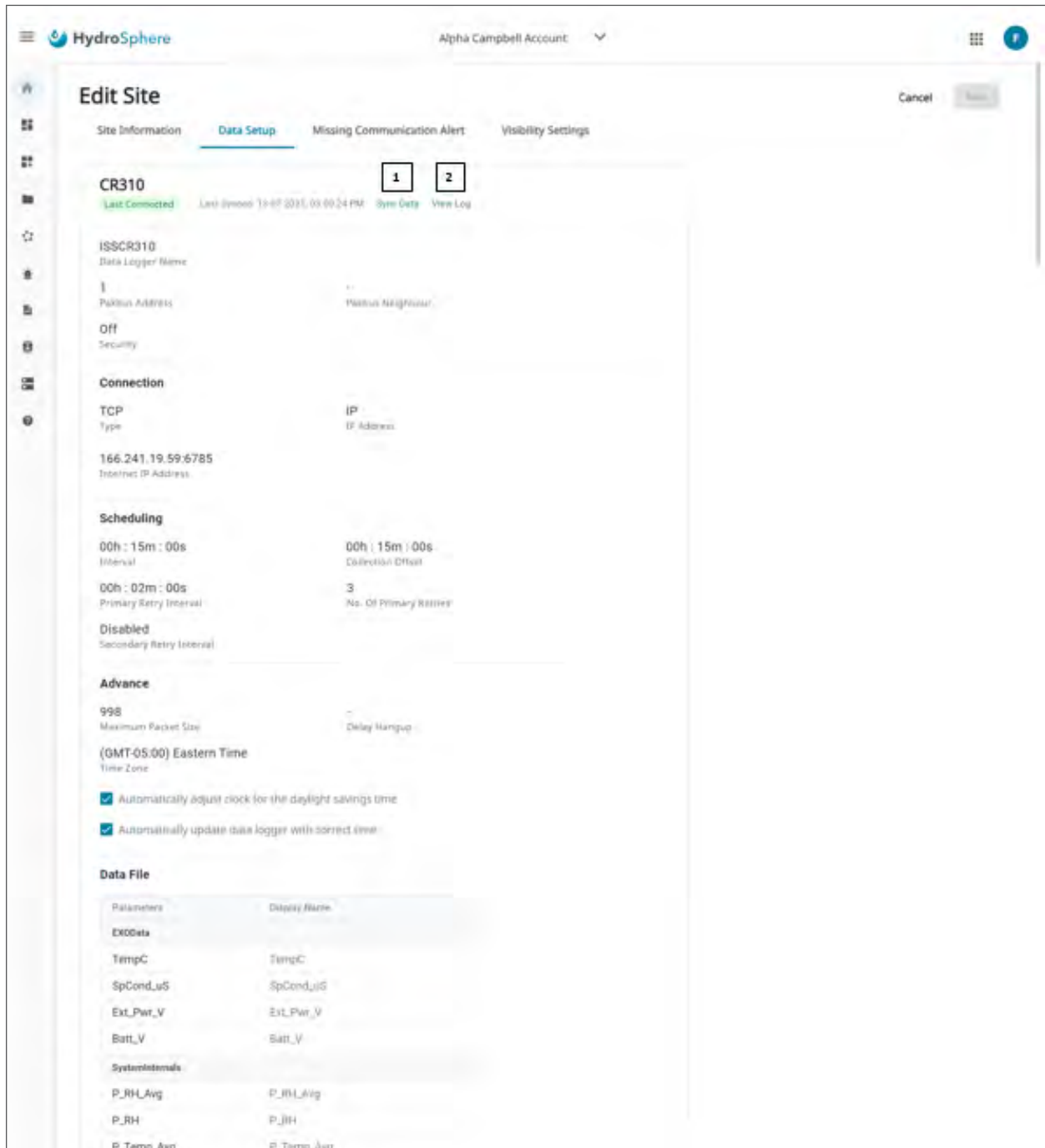
#	Name	Description
1	Campbell Info	Users will enter pertinent data logger information in these fields.
2	Cancel	Clicking the Cancel button will cancel the operation and return the user to the Data Setup page.
3	Add	Clicking Add will save the entered information without establishing a connection with the data logger. Clicking Edit on the Status page will allow the user to establish connection.
4	Establish Connection	Clicking Establish Connection will initiate the connection with the Campbell data logger.

Once the connection has been established, the Data File page below will display.



#	Name	Description
1	Data File Checkbox	The user can select which Campbell data files will be loaded into HydroSphere and available for download and display in Chart and Table View by clicking the checkbox next to the appropriate data file name.
2	Display Name	The parameter display name can be changed by entering a new name in this field.
3	Reload	Clicking the Cancel button will cancel the operation and return the user to the Data Setup page.

The Status page is displayed below.



#	Name	Description
1	Sync Data	Clicking Sync Data will resync the communications between HydroSphere and the data logger.
2	View Log	The View Log window will show the connection status each time HydroSphere tried to connect to the data logger.
3	Edit	Clicking Edit will allow the user to edit the Data Logger and Data File pages.




To create a new site - Step 2C: Connecting a Campbell (Polled Mode) data logger

1. Click the **Campbell (Polled Mode)** button on the initial Data Setup page.
2. Enter the appropriate data in the Campbell Info fields.
3. Click the **Establish Connection** Button.
4. Select the data files to be available for download and display.
5. Click **Save**.

Missing Communications Alert

A missing communications alert will inform select users when communications to a specific site has been interrupted for a user specified amount of time.

#	Name	Description
1	Enable Slider	This slider will allow the user to Enable and Disable the Missing Communications Alert. When clicked, the slider will change between ● Enabled and ● Disabled .
2	Alert Time	The user can specify the length of time in minutes after communication interruption the Missing Communication Alert will be sent. A red asterisk (*) indicates a required field. Note: To account for processing time, set the Alert time for no less than 5 minutes more than the transmit rate of the data logger (e.g. if the transmit rate is 15 minutes, the Alert Time should be no less than 20 minutes).
3	Alert Attempts	The user can specify the number of times an alert will be sent before stopping alert transmission. Communication restoration will stop any further alerts. A red asterisk (*) indicates a required field.
4	Add Note to Alert Notification	The user can add a note to the email and text alert notification by checking this box. Any verbiage added to the Note field will then be included with all notifications for this alert.

#	Name	Description
5	Delivery Method and Recipients	All users, user groups, contacts, and contact groups created for this account will be displayed. Selected users, user groups, contacts, and contact groups will receive enabled missing communication alerts. Refer to Create New User , Create New User Group , Create New Contact , and Create New Contact Group for more information.
6	Selected Recipients	Users, user groups, contacts and contact groups that have been checked in the Delivery Method and Recipient section will display here. If the email icon () is clicked, the recipient will receive alerts via email to their profile email address. If the text message icon () is clicked, the recipient will receive alerts via text message to their profile phone number. The recipient can be removed from the list by clicking the trash can (). This will not delete the user account or the missing communication alert.
7	Cancel	Clicking the Cancel button will exit the user from the Missing Communication Alert page.
8	Save	When the Save button turns blue, all new missing communication alert requirements have been met. Clicking the blue Save button will save the missing communication alert to HydroSphere.

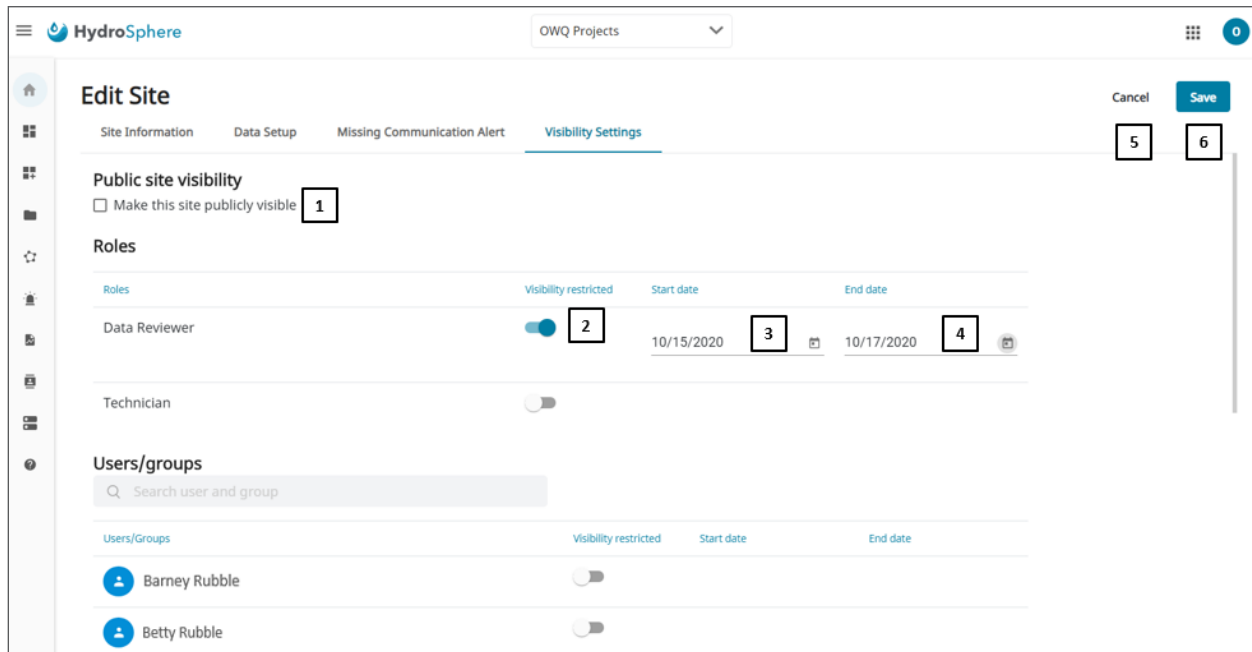
To create a missing communication alert

1. Click the slider to select **Disabled** or **Enabled**.
2. Enter the Alert Time and Alert Attempts.
3. Select the recipients.
4. Click **Save**.

Visibility Settings

Note: The Visibility Settings section is only visible to Account Administrators.

This function allows the Account Administrator to select which user, user role, or user group can and cannot view a specific site for a specified period of time.

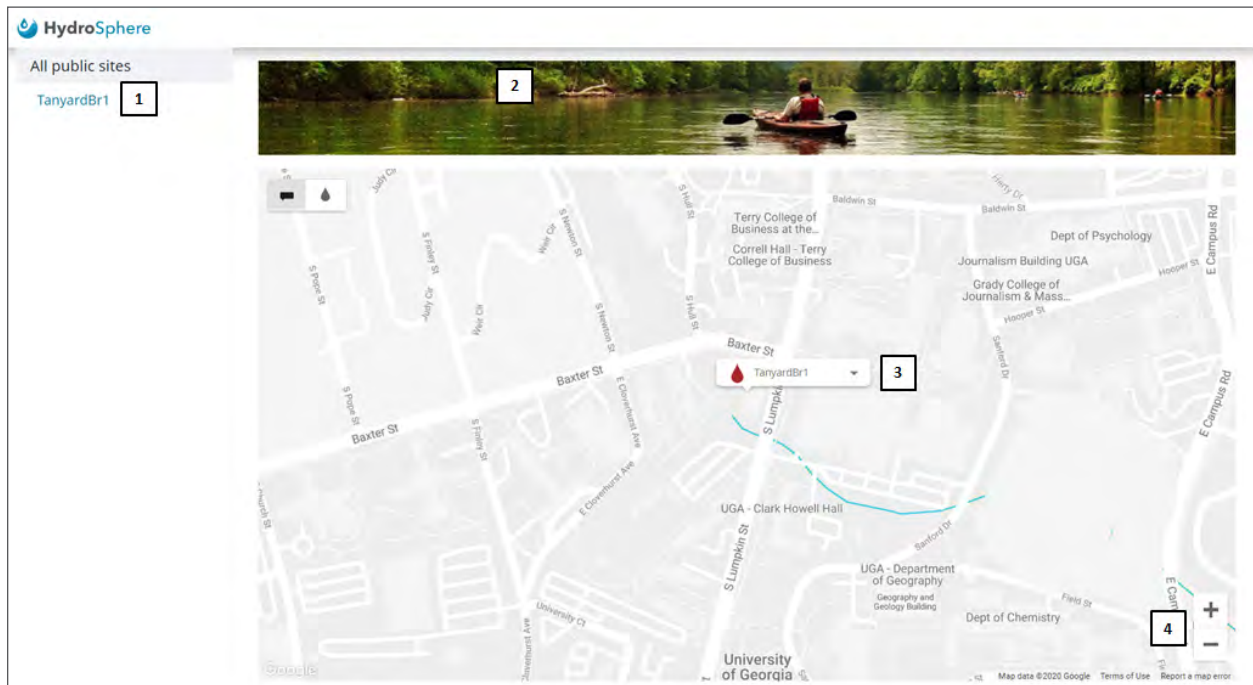


#	Name	Description
1	Public Site Visibility	Checking this box will make this site visible on the Public URL. Refer to Public Web Site for more information. Note: If this box is checked, all information below this line on the web page will not be displayed.
2	Visibility Restricted Slider	When clicked, the slider will change between ● Disabled visibility is not restricted and ● Enabled visibility restricted for this selected user roles, users, or user groups for the dates specified below.
3	Start Date	The date the restricted visibility will start. Clicking the calendar icon (📅) will display a pop-up calendar for selecting dates.
4	End Date	The date the restricted visibility will end. Clicking the calendar icon (📅) will display a pop-up calendar for selecting dates.
5	Cancel	Clicking the Cancel button will exit the user from the Visibility Restriction page.
6	Save	When the Save button turns blue, all visibility setting requirements have been met. Clicking the blue Save button will save the visibility settings to HydroSphere.

Public Web Site

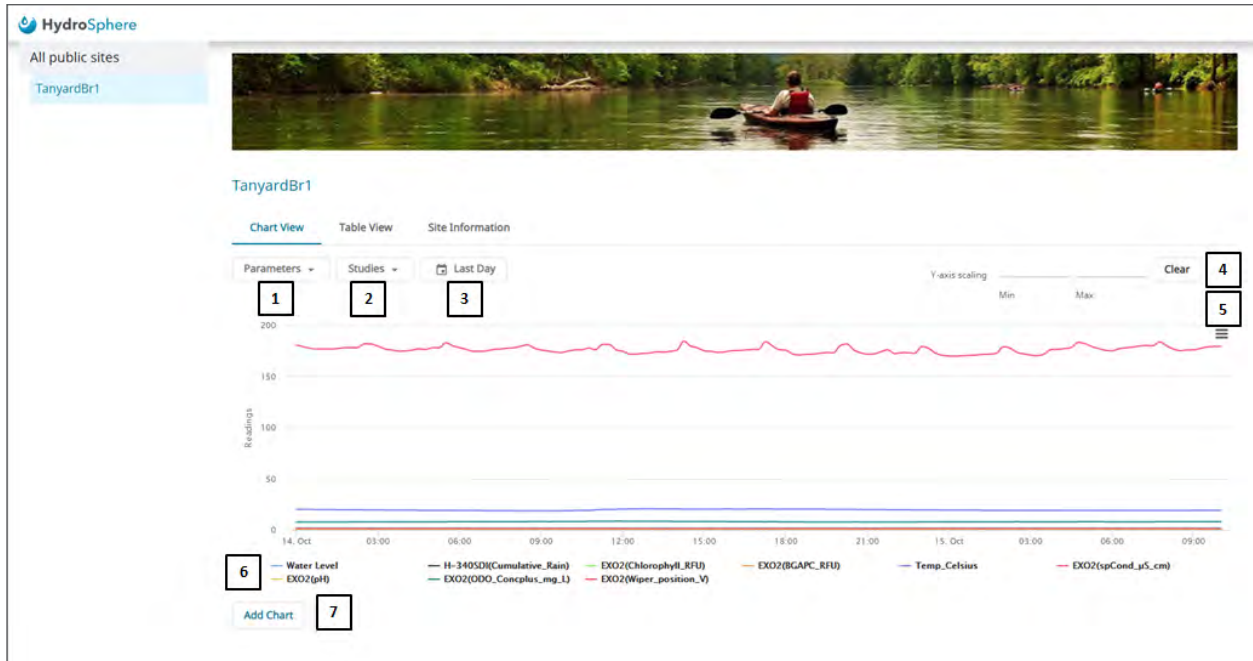
Each account will be assigned a public URL that can be shared with external customers giving those customers read only access to site data. Four pages are available to Public Web Site users: Dashboard, Chart View, Table View, and Site Information. These pages are described below.

Dashboard



#	Name	Description
1	Sites	Listing of all sites that have been tagged for public display. Refer to Visibility Settings for more information.
2	Customizable Banner	Refer to Public Site Settings for information on how to customize the banner.
3	Site Icon	Clicking the Site icon on the map will display the site's most recently received data. Clicking View Site will display the Chart View discussed in the next section.
4	Zoom In / Zoom Out	Lets the user zoom the map display in and out.

Chart View



#	Name	Description												
1	Parameters	<p>Clicking on the caret (▼) to the right of the Parameters label will provide the user with a list of all parameters available for display. All parameters listed can be selected for display on a single chart. For example:</p> <div data-bbox="456 1073 704 1367" style="border: 1px solid gray; padding: 5px;"> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> EXO2(Nitrate) <input checked="" type="checkbox"/> EXO2(Wiper_position_V) <input checked="" type="checkbox"/> EXO2(BGAPC_RFU) <input checked="" type="checkbox"/> EXO2(Chlorophyll_RFU) <input checked="" type="checkbox"/> EXO2(Turbidity_FNU) <p style="text-align: center; color: blue; margin-top: 5px;">Clear all</p> </div>												
2	Studies	<p>Clicking the caret (▼) to the right of the Studies label will provide the user with the following display options: Minimum, Maximum, and Average.</p> <p>The displays will be present in the format below.</p> <div data-bbox="456 1522 937 1680" style="border: 1px solid gray; padding: 5px;"> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Minimum ×</th> <th style="text-align: left;">Maximum ×</th> <th style="text-align: left;">Average ×</th> </tr> </thead> <tbody> <tr> <td>Stage(ft) : 3.37</td> <td>Stage(ft) : 3.44</td> <td>Stage(ft) : 3</td> </tr> <tr> <td>VB : 12.5</td> <td>VB : 13.6</td> <td>VB : 13</td> </tr> <tr> <td>Temp(F) : 63.39</td> <td>Temp(F) : 65.18</td> <td>Temp(F) : 64</td> </tr> </tbody> </table> </div>	Minimum ×	Maximum ×	Average ×	Stage(ft) : 3.37	Stage(ft) : 3.44	Stage(ft) : 3	VB : 12.5	VB : 13.6	VB : 13	Temp(F) : 63.39	Temp(F) : 65.18	Temp(F) : 64
Minimum ×	Maximum ×	Average ×												
Stage(ft) : 3.37	Stage(ft) : 3.44	Stage(ft) : 3												
VB : 12.5	VB : 13.6	VB : 13												
Temp(F) : 63.39	Temp(F) : 65.18	Temp(F) : 64												


#	Name	Description
3	Duration	<p>Clicking this button will provide the user with a list of available time durations for displaying site data:</p> <ul style="list-style-type: none"> • Last Day • Last Week • Last Month • Last Year • Custom Range
4	Y-axis scaling	<p>If the user wishes to adjust the chart Y-axis scaling, a Minimum and Maximum Y-axis value can be entered. Clicking the Clear button will return the Y-axis scaling to its original values.</p>
5	Print/Download	<p>Clicking the  icon will display the following options for printing and downloading charts:</p> <ul style="list-style-type: none"> • View in Full Screen • Print Chart • Download PNG image • Download JPEG image • Download PDF document • Download SVG vector image
6	Add Chart	<p>Clicking Add Chart will add a chart below any charts already displayed. This will allow the user to display additional parameters and durations. Up to 3 charts can be displayed.</p>

Table View

HydroSphere

All public sites

TanyardBr1

TanyardBr1

Chart View Table View Site Information

1 Last Day Show Entries 2

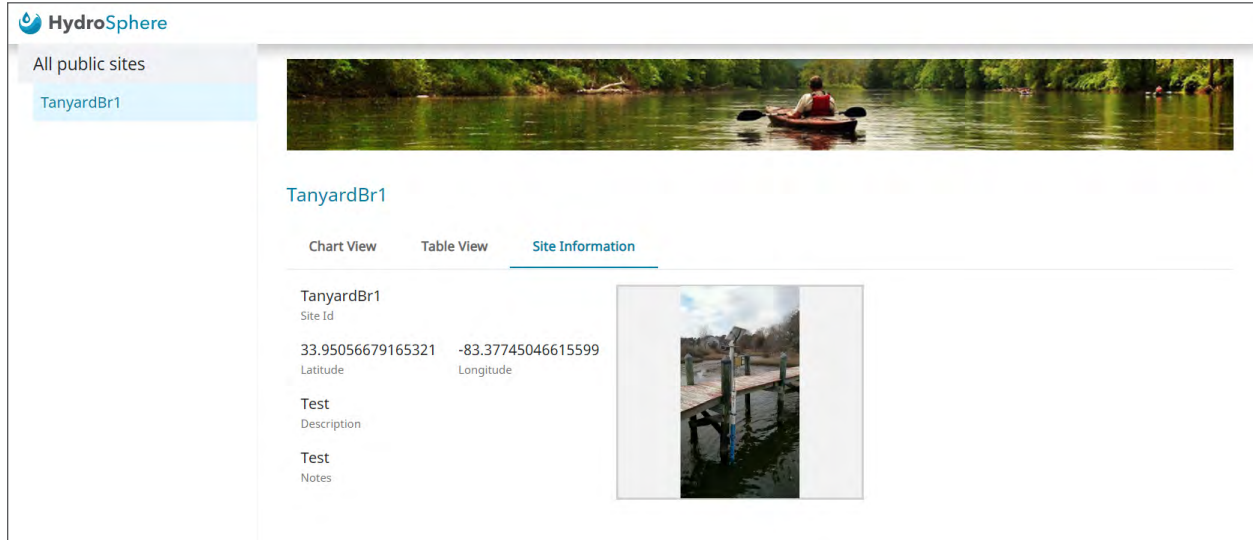
Result Date	Result Time	EXO2(Nitrate)	EXO2(Wiper_position_V)	EXO2(BGAPC_RFU)	EXO2(Chlorophyll_RFU)	EXO2(Turbi)
10/15/2020	12:00:00	1.19	1.19	0.16	0.05	1.43
10/15/2020	11:45:00	1.19	1.19	0.15	0.02	1.46
10/15/2020	11:30:00	1.2	1.2	0.16	0.03	1.41
10/15/2020	11:15:00	1.18	1.18	0.13	0.03	1.3
10/15/2020	11:00:00	1.18	1.18	0.13	0.04	1.27
10/15/2020	10:45:00	1.18	1.18	0.19	0.05	1.25
10/15/2020	10:30:00	1.19	1.19	0.17	0.04	1.2
10/15/2020	10:15:00	1.18	1.18	0.16	0.05	1.22
10/15/2020	10:00:00	1.18	1.18	0.17	0.05	1.29

79 total

#	Name	Description
1	Duration	Clicking this button will provide the user with a list of available time durations for displaying site data: <ul style="list-style-type: none"> Last Day Last Week Last Month Last Year Custom Range
2	Show Entries	Clicking the caret (▼) to the right of Show Entries will provide the user with the below list of available entries that will be displayed per page: 10, 25, 50, 100

Site Information

The Site Information page provides read only site information.



The screenshot shows the HydroSphere interface. On the left, a sidebar lists 'All public sites' and 'TanyardBr1'. The main content area features a banner image of a person kayaking on a river. Below the banner, the site name 'TanyardBr1' is displayed. There are three tabs: 'Chart View', 'Table View', and 'Site Information', with 'Site Information' being the active tab. The site information is presented in a table-like format with the following data:


TanyardBr1	
Site Id	
33.95056679165321	-83.37745046615599
Latitude	Longitude
Test	
Description	
Test	
Notes	

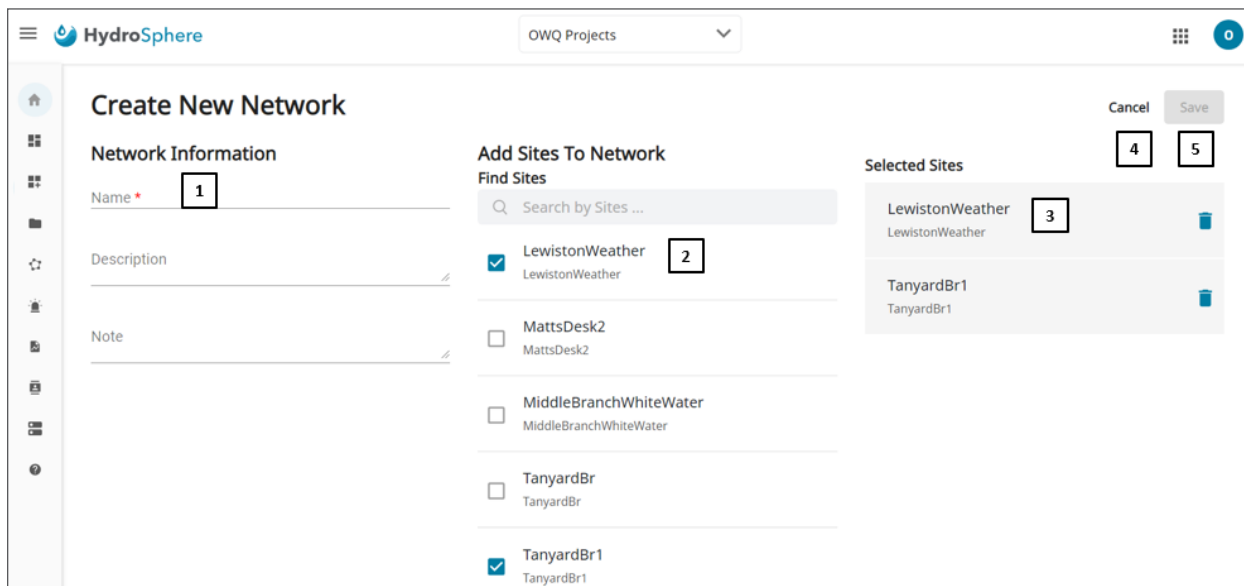
To the right of the text is a vertical image showing a wooden dock extending into a body of water.


To set up a Public Web Site

1. For each site to be displayed on the Public Web Site, check the Public Site Visibility box on the Visibility Settings page. See [Visibility Settings](#) for more information.
2. To customize the banner, see [Public Site Settings](#).
3. Share the Public URL with those interested in the site data.

Create New Network

Clicking the  Create New and **NETWORK** buttons on the dashboard will display the same page.



#	Name	Description
1	Network Information	A red asterisk (*) indicates a required field.
2	Add Sites to Network	All sites created for this account will be displayed. Sites can be added to the newly created network by clicking on the check box to the left of the site name. Refer to Create New Site for more information.
3	Selected Sites	Sites that have been checked in the Add Sites to Network section will display here. The site can be deleted from the network by clicking the trash can (). This will not delete the site.
4	Cancel	Clicking the Cancel button will exit the user from the Create New Networks page.
5	Save	When the Save button turns blue all new network requirements have been met. Clicking the blue Save button will save the new network to HydroSphere.

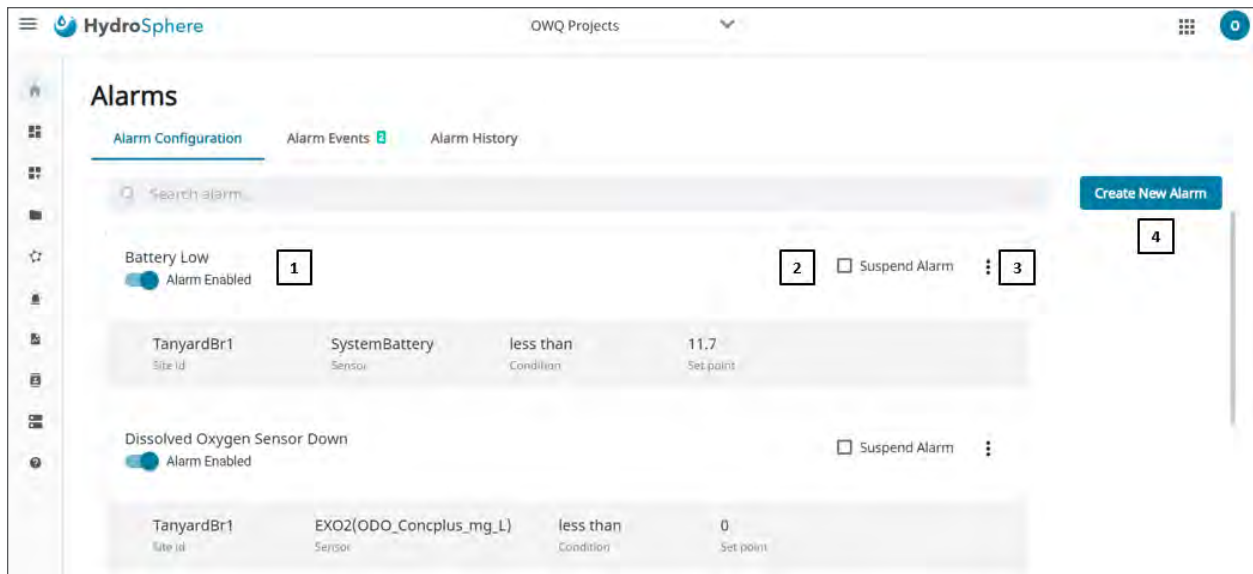
To create a new network

1. Enter a network name.
2. Optional - add a description and notes.
3. Click the box to the left of each site to be added to the network.
4. Click **Save**.

2.6 – Alarms

Users can create alarms that will send notifications via email and text message when selected site sensors meet certain measurement criteria. Three pages are available for Alarms; Alarm Configuration, Alarm Events, and Alarm History. These pages are described below.

Alarm Configuration



#	Name	Description
1	Alarm Name	Displays the created alarms. When clicked, the slider will change between Disabled and Enabled .
2	Suspend Alarm	See Suspending Alarms for more information Note: Suspend Alarm will only be visible if the alarm is Enabled.
3	Multiple Options	Clicking the ⋮ will display the following options: Edit - Allows the user to edit alarm details described in Create New Alarm . Delete - Deletes the alarm. Alarm History - Displays the history for the selected alarm. See Alarm History for more information.
4	Create New Alarm	See Create New Alarm for more information.

Suspending Alarms

Add Vacation allows the user to suspend the alarm for set dates.

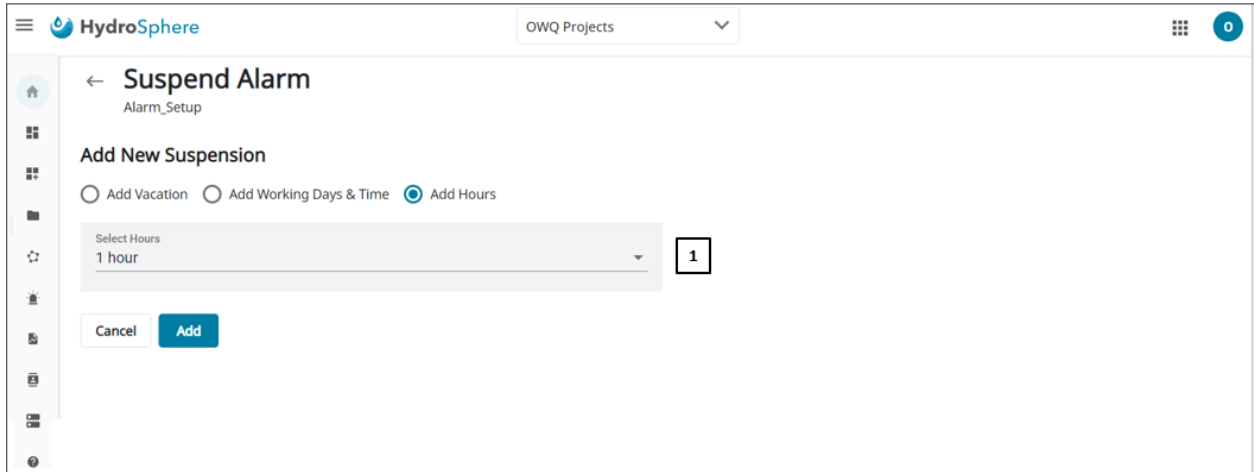
The screenshot shows the 'Suspend Alarm' configuration page in HydroSphere. The page is titled 'Suspend Alarm' and has a sub-header 'Alarm_Setup'. Under the heading 'Add New Suspension', there are three radio button options: 'Add Vacation' (which is selected), 'Add Working Days & Time', and 'Add Hours'. Below these options is a 'Date Range' input field with a calendar icon, which is highlighted with a box labeled '1'. Underneath is a 'Select Recipients' section with three checkboxes: 'All', 'Barney Rubble' (highlighted with a box labeled '2'), and 'Lisa Douglas'. At the bottom of the form are 'Cancel' and 'Add' buttons.

#	Name	Description
1	Date Range	Displays a calendar so the user can select the start and end dates of the alarm suspension.
2	Select Recipient	Allows the user to select which recipients to which this alarm suspension will apply.

Add Working Days & Time will suspend the alarm for select days and time.

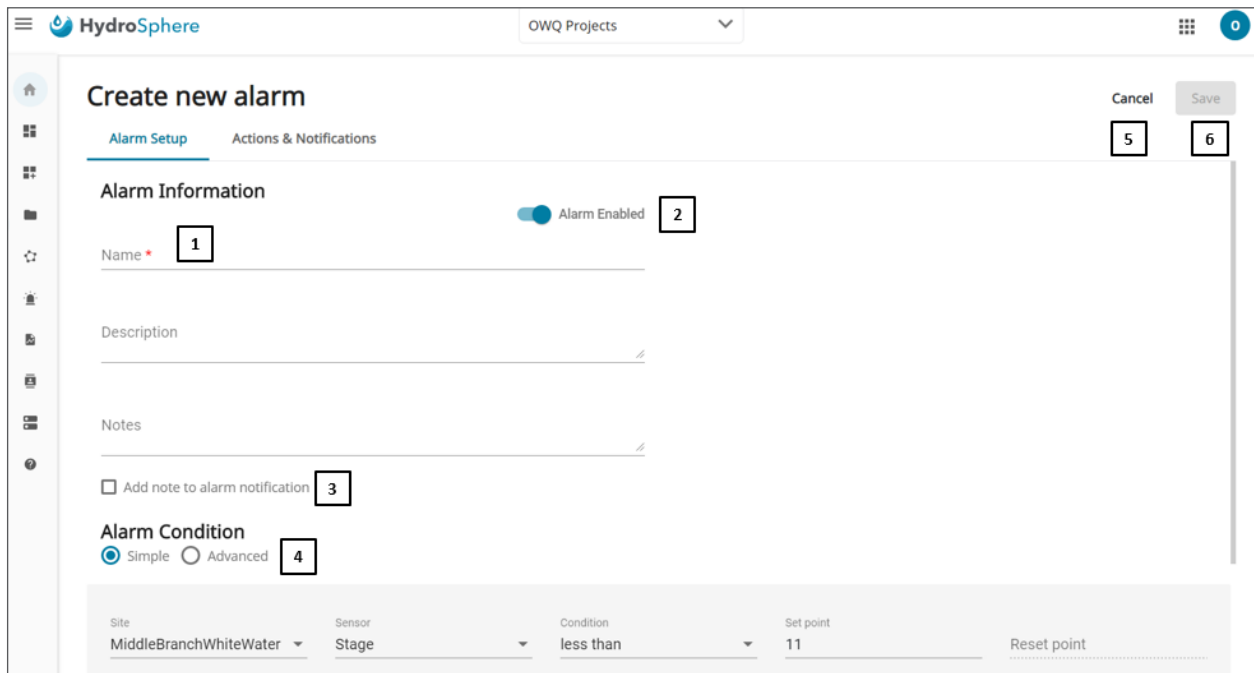
#	Name	Description
1	Days	Allows the user to select which days the alarm will be suspended.
2	Working Hours	Allows the user to select which hours the alarm will be suspended.
3	Suspend alarm outside the selected days and hours	If the user would like to have the alarm suspended during the days and hours outside of what is selected, check this box. This will allow the user to set the workdays and hours (e.g. Mon-Fri 7am-4pm) and then suspend the alarms for users not on call after hours.
4	Select Recipients	Allows the user to select which recipients to which this alarm suspension will apply.

Add Hours will suspend the alarm for all users for a set period of time.



#	Name	Description
1	Select Hours	Allows the user to select the number of hours the alarm will be suspended. Options are: 1 hour, 3 hours, 6 hours, 9 hours, or 12 hours. Note: The Add Hours alarm suspension will apply to all alarm recipients.

Create New Alarm - Alarm Setup



#	Name	Description
1	Alarm Information	A red asterisk (*) indicates a required field.
2	Disable / Enable Slider	The alarm can be disabled and enabled by clicking on the slider. When clicked, the slider will change between ● Disabled and ● Enabled .

#	Name	Description
3	Alarm Condition	Refer to the sections after this table for an explanation of Simple Alarms and Advanced Alarms .
4	Add note to alarm notification	The user can add a note to the email and text alarm notification by checking this box. Any verbiage added to the Note: field will then be included with all notifications for this alarm.
5	Cancel	Clicking the Cancel button will exit the user from the Create New Alarm page.
6	Save	When the Save button turns blue, all new alarm requirements have been met. Clicking the blue Save button will save the new alarm to HydroSphere.

Simple Alarms

A simple alarm contains only one alarm condition (e.g. temperature greater than 70°F).

#	Name	Description
1	Site	Dropdown containing all of the sites created for this account.
2	Sensor	Dropdown containing all of the sensors associated with the selected site.
3	Condition	The condition required to trigger the alarm. Refer to Alarm Conditions Explained for more on Conditions.
4 & 5		Alarm conditions including the first [4] and second [5] parameter are explained at Alarm Conditions Explained .
6	Formula	The site, sensor, condition, set point, and reset point written as a mathematical formula.
7	Evaluate	Clicking EVALUATE will cause the alarm condition to run using the most recently collected data and return the result based on the conditions and parameters at the time of the evaluation. A sample of an evaluation based on the conditions in the screen shot above would be: <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <pre>false ((65.59 < 32) (false && (65.59 < 36))) Status Debug</pre> </div> <p>The Status is false because the current temperature reading of 65.59°F is greater than the set point of 32°F.</p>

Advanced Alarms

An Advanced Alarm contains multiple alarm conditions (up to 3 AND/OR conditions (e.g. temperature greater than 70°F AND pH less than 7). Users can create new alarms using either the template method or by writing their own formulaic code. Both methods are discussed below.

The screenshot shows the 'Alarm Condition' configuration page. At the top, there are radio buttons for 'Simple' and 'Advanced' (selected). Below that is a 'Template' button (1). The first condition row includes a 'Site' dropdown (2) with 'MiddleBranchWhiteWater', a 'Sensor' dropdown (3) with 'Stage', a 'Condition' dropdown (4) with 'less than', a 'Set point' input (5) with '11', and a 'Reset point' input (6). Below this is an 'AND' operator dropdown (7). The second condition row includes a 'Site' dropdown with 'LewistonWeather', a 'Sensor' dropdown with 'Temp_F', a 'Condition' dropdown with 'less than', a 'Set point' input with '0', and a 'Reset point' input. Below the conditions is a 'Code' radio button (9) and an 'Add One More Condition' button (8). A code field (10) contains the formula: `([MiddleBranchWhiteWater~Stage] < 11)AND([LewistonWeather~Temp_F] < 0)`. At the bottom, there is an 'Evaluate' button and a status display (11) showing 'true' and '(10.65 < 11) Alarm'.

#	Name	Description
1	Template	Users who prefer to create a new alarm using the template method will click this button. Items 2-8 below apply to the template method.
2	Site	Dropdown containing all of the sites create for this account.
3	Sensor	Dropdown containing all of the sensors associated with the selected site.
4	Condition	The condition required to trigger the alarm. Refer to Alarm Conditions Explained for more on Conditions.
5&6		Alarm conditions including the first [5] and second [6] parameter are explained at Alarm Conditions Explained .
7	Operator	This dropdown provides the user with the options of AND/OR when adding additional conditions to the newly created alarm.
8	Add One More Condition	A total of 3 conditions can be used with Advanced Alarms. Clicking Add One More Condition will display one more AND/OR operator dropdown and fields to enter one more each site, sensor, condition, etc. Two conditions are always displayed. If the 3 rd condition is displayed, it can be removed by clicking the trash can ().
9	Code	Users who prefer to create a new alarm by writing their own formulaic code will click this button. Item 10 below applies to the code method. Note: Available mathematical expressions are listed in Advanced Code Mathematical Expressions .
10	Code Field	If using the code method, the user can type a formulaic code in this field.

#	Name	Description
11	Evaluate	<p>Clicking EVALUATE will cause the alarm condition to run using the most recently collected data and return the result based on the conditions and parameters at the time of the evaluation. A sample of an evaluation based on the conditions in the screen shot above would be:</p> <div style="border: 1px solid black; padding: 5px; width: fit-content;"> <pre>false (((65.59 < 32) (false && (65.59 < 36)))&&(3.54 > 10)) Status Debug</pre> </div> <p>The Status is false because the current temperature reading of 65.59°F is greater than the set point of 32°F and the current stage is 3.54 feet is less than the set point of 10 feet.</p>

Alarm Conditions Explained

Condition	First Entry	Second Entry	The alarm will activate when...
Less Than	Set Point	N/A	<p>The measured sensor value is less than the Set Point.</p> <p>Example:</p> <div style="border: 1px solid black; padding: 2px; display: inline-block;">Set Point = 10°C</div> <p>Any measured value less than 10°C will activate the alarm.</p>
Less Than with Reset	Set Point	Reset Point	<p>The measured sensor value is less than the Set Point. The alarm will terminate when the measured value rises above the Reset Point.</p> <p>Example:</p> <div style="border: 1px solid black; padding: 2px; display: inline-block;">Set Point = 10°C</div> <div style="border: 1px solid black; padding: 2px; display: inline-block;">Reset Point = 12°C</div> <p>Any measured value less than 10°C will activate the alarm. When the measured value rises above 12°C, the alarm will terminate.</p>
Less Than (Samples)	Set Point	# of Samples	<p>The X number of most recent measured sensor values (# of Samples) are less than the Set Point.</p> <p>Example:</p> <div style="border: 1px solid black; padding: 2px; display: inline-block;">Set Point = 10°C</div> <div style="border: 1px solid black; padding: 2px; display: inline-block;"># of Samples = 3</div> <p>The alarm will activate when the 3 most recent measured values are less than 10°C.</p>
Greater Than	Set Point	N/A	<p>The measured sensor value is greater than the Set Point.</p> <p>Example:</p> <div style="border: 1px solid black; padding: 2px; display: inline-block;">Set Point = 10°C</div> <p>Any measured value greater than 10°C will activate the alarm.</p>
Greater Than with Reset	Set Point	Reset Point	<p>The measured sensor value is greater than the Set Point. The alarm will terminate when the measured value drops below the Reset Point.</p> <p>Example:</p> <div style="border: 1px solid black; padding: 2px; display: inline-block;">Set Point = 10°C</div> <div style="border: 1px solid black; padding: 2px; display: inline-block;">Reset Point = 8°C</div> <p>Any measured value greater than 10°C will activate the alarm. When the measured value drops below 8°C, the alarm will terminate.</p>

Condition	First Entry	Second Entry	The alarm will activate when...					
Greater Than (Samples)	Set Point	# of Samples	<p>The X number of most recent measured sensor values (# of Samples) are greater than the Set Point.</p> <p>Example:</p> <table border="1"> <tr> <td>Set Point = 10°C</td> <td># of Samples = 3</td> </tr> </table> <p>The alarm will activate when the 3 most recent measured values are greater than 10°C.</p>	Set Point = 10°C	# of Samples = 3			
Set Point = 10°C	# of Samples = 3							
Low Value	Threshold	# of Samples	<p>The most recent measured sensor value is less than the average of the X number of most recent measured sensor values (# of Samples). An offset (Threshold) can be subtracted from the average of the X number of most recent measured sensor values (# of Samples). The Threshold can be negative.</p> <p>Example:</p> <table border="1"> <tr> <td>Threshold = 1°C</td> <td># of Samples = 3</td> <td>Sample 1 = 9°C</td> <td>Sample 2 = 10°C</td> <td>Sample 3 = 12°C</td> </tr> </table> <p>The alarm will activate when Sample 1 (9°C) is less than the average of all three samples $(9°C + 10°C + 12°C)/3 = 10.33°C$ minus the Threshold (1°C): $10.33°C - 1°C = 9.33°C$.</p>	Threshold = 1°C	# of Samples = 3	Sample 1 = 9°C	Sample 2 = 10°C	Sample 3 = 12°C
Threshold = 1°C	# of Samples = 3	Sample 1 = 9°C	Sample 2 = 10°C	Sample 3 = 12°C				
High Value	Threshold	# of Samples	<p>The most recent measured sensor value is greater than the average of the X number of most recent measured sensor values (# of Samples). An offset (Threshold) can be added to the average of the X number of most recent measured sensor values (# of Samples). The Threshold can be negative.</p> <p>Example:</p> <table border="1"> <tr> <td>Threshold = 1°C</td> <td># of Samples = 3</td> <td>Sample 1 = 12°C</td> <td>Sample 2 = 10°C</td> <td>Sample 3 = 9°C</td> </tr> </table> <p>The alarm will activate when Sample 1 (12°C) is greater than the average of all three samples $(12°C + 10°C + 9°C)/3 = 10.33°C$ plus the Threshold (1°C): $10.33°C + 1°C = 11.33°C$</p>	Threshold = 1°C	# of Samples = 3	Sample 1 = 12°C	Sample 2 = 10°C	Sample 3 = 9°C
Threshold = 1°C	# of Samples = 3	Sample 1 = 12°C	Sample 2 = 10°C	Sample 3 = 9°C				
Low Percentage	Percentage	# of Samples	<p>The most recent measured sensor value is less than the average of the X number of most recent measured sensor values (# of Samples). An offset (Percentage) can be subtracted. The offset is calculated by multiplying the Percentage and the average of the X number of most recent measured sensor values (# of Samples). The Percentage can be negative.</p> <p>Example:</p> <table border="1"> <tr> <td>Percentage = 0.01</td> <td># of Samples = 3</td> <td>Sample 1 = 9°C</td> <td>Sample 2 = 10°C</td> <td>Sample 3 = 12°C</td> </tr> </table> <p>The alarm will activate when Sample 1 (9°C) is less than the average of all three samples $(9°C + 10°C + 12°C)/3 = 10.33°C$ minus the Percentage $(9°C + 10°C + 12°C)*0.01 = 0.31°C$: $10.33°C - 0.31°C = 10.02°C$</p>	Percentage = 0.01	# of Samples = 3	Sample 1 = 9°C	Sample 2 = 10°C	Sample 3 = 12°C
Percentage = 0.01	# of Samples = 3	Sample 1 = 9°C	Sample 2 = 10°C	Sample 3 = 12°C				
High Percentage	Percentage	# of Samples	<p>The most recent measured sensor value is greater than the average of the X number of most recent measured sensor values (# of Samples). An offset (Percentage) can be added. The offset is calculated by multiplying the Percentage and the average of the X number of most recent measured sensor values (# of Samples). The Percentage can be negative.</p> <p>Example:</p> <table border="1"> <tr> <td>Percentage = 0.01</td> <td># of Samples = 3</td> <td>Sample 1 = 12°C</td> <td>Sample 2 = 10°C</td> <td>Sample 3 = 9°C</td> </tr> </table> <p>The alarm will activate when Sample 1 (12°C) is greater than the average of all three samples $(12°C + 10°C + 9°C)/3 = 10.33°C$ plus the Percentage $(12°C + 10°C + 9°C)*0.01 = 0.31°C$: $10.33°C + 0.31°C = 10.64°C$</p>	Percentage = 0.01	# of Samples = 3	Sample 1 = 12°C	Sample 2 = 10°C	Sample 3 = 9°C
Percentage = 0.01	# of Samples = 3	Sample 1 = 12°C	Sample 2 = 10°C	Sample 3 = 9°C				

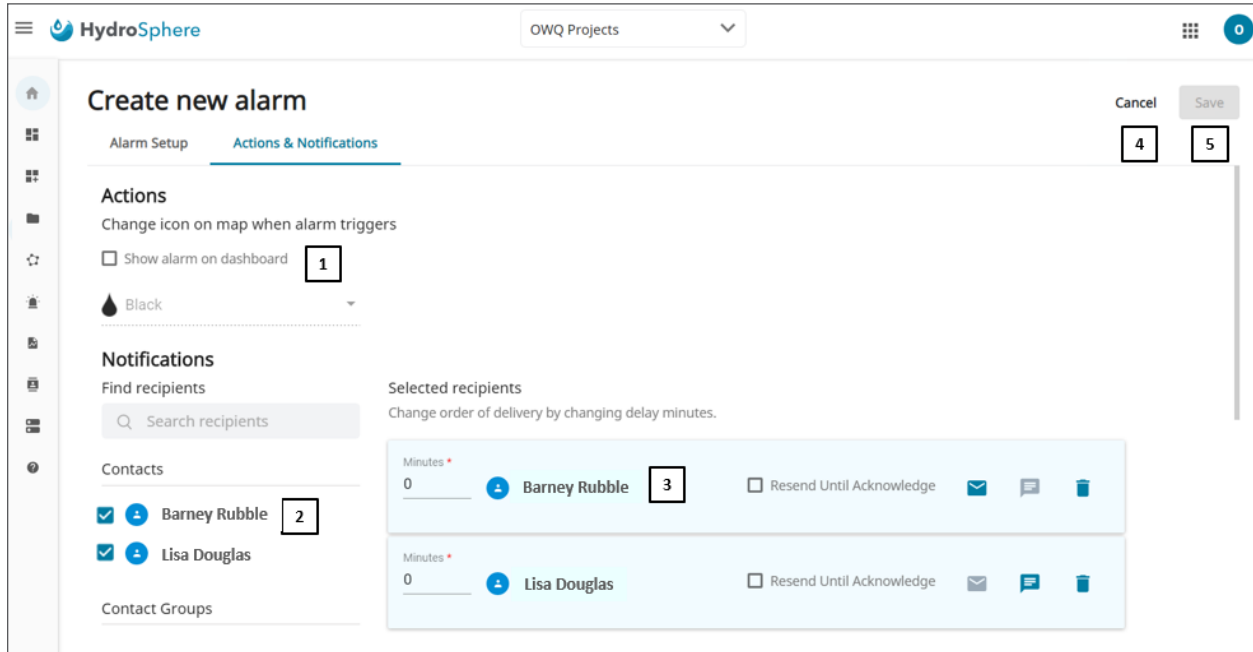
Condition	First Entry	Second Entry	The alarm will activate when...					
Magnitude Decreasing	Threshold	# of Samples	<p>The most recent measured sensor value is less than the highest value of X number of most recent sensor values (# of Samples). An offset (Threshold) can be subtracted from the highest value. The Threshold can be negative.</p> <p>Example:</p> <table border="1"> <tr> <td>Threshold = 1.0°C</td> <td># of Samples = 3</td> <td>Sample 1 = 12°C</td> <td>Sample 2 = 11°C</td> <td>Sample 3 = 14°C</td> </tr> </table> <p>The alarm will activate when Sample 1 (12°C) is less than the highest value sample (14°C) minus the Threshold: $14^{\circ}\text{C} - 1^{\circ}\text{C} = 13^{\circ}\text{C}$</p>	Threshold = 1.0°C	# of Samples = 3	Sample 1 = 12°C	Sample 2 = 11°C	Sample 3 = 14°C
Threshold = 1.0°C	# of Samples = 3	Sample 1 = 12°C	Sample 2 = 11°C	Sample 3 = 14°C				
Magnitude Increasing	Threshold	# of Samples	<p>The most recent measured sensor value is greater than the lowest value of X number of most recent sensor values (# of Samples). An offset (Threshold) can be added to the lowest value. The Threshold can be negative.</p> <p>Example:</p> <table border="1"> <tr> <td>Threshold = 1.0°C</td> <td># of Samples = 3</td> <td>Sample 1 = 14°C</td> <td>Sample 2 = 11°C</td> <td>Sample 3 = 12°C</td> </tr> </table> <p>The alarm will activate when Sample 1 (14°C) is greater than the lowest sample (12°C) plus the Threshold: $12^{\circ}\text{C} + 1^{\circ}\text{C} = 13^{\circ}\text{C}$</p>	Threshold = 1.0°C	# of Samples = 3	Sample 1 = 14°C	Sample 2 = 11°C	Sample 3 = 12°C
Threshold = 1.0°C	# of Samples = 3	Sample 1 = 14°C	Sample 2 = 11°C	Sample 3 = 12°C				

Advanced Code Mathematical Expressions

ABS(x)	Return the absolute value of the number x
ACOS(x)	Returns the arccosine of x, in radians
ACOSH(x)	Returns the hyperbolic cosine of x
ASIN(x)	Returns the arcsine of x, in radians
ASINH(x)	Returns the hyperbolic arcsine of x
ATAN(x)	Returns the arctangent of x as a numeric value between -PI/2 and PI/2 radians
ATAN2(x,y)	Returns the arctangent of the quotient of its arguments
ATANH(x)	Returns the arctangent of x as a numeric value between -PI/2 and PI/2 radians
CBRT(x)	Return the cubic root of the number x
CEIL(x)	Round the number x upward to its nearest integer
COS(x)	Returns the cosine of x (x is in radians)
COSH(x)	Returns the hyperbolic cosine of x
EXP(x)	Returns the value of E^x
FLOOR(x)	Round the number x downward to its nearest integer
LOG(x)	The natural logarithm of the number x

POW(x,y)	The value of the number x to the power of y
RANDOM(x)	Returns a random number between 0 and 1
ROUND(x)	Round the number x to the nearest integer
SIN(x)	Returns the sine of x (x is in radians)
SINH(x)	Returns the hyperbolic sine of x
SQRT(x)	Return the square root of the number x
TAN(x)	Returns the tangent of an angle
TANH(x)	Returns the hyperbolic tangent of a number
TRUNC(x)	Returns the integer part of a number (x)

Create New Alarm - Action & Notification



#	Name	Description									
1	Change icon on map when alarm triggers	<p>The user can elect to have the site label or water drop on the dashboard change color in response to triggered alarms by checking the 'Show alarm on dashboard' box and selecting a color from the dropdown. Color options are:</p> <table border="0"> <tr> <td> Black</td> <td> Green</td> <td> Red</td> </tr> <tr> <td> Brown</td> <td> Orange</td> <td> White</td> </tr> <tr> <td> Gray</td> <td> Purple</td> <td> Yellow</td> </tr> </table>	Black	Green	Red	Brown	Orange	White	Gray	Purple	Yellow
Black	Green	Red									
Brown	Orange	White									
Gray	Purple	Yellow									
2	Recipients	<p>All users, user groups, contacts, and contact groups, created for this account will be displayed. Selected users, user groups, contacts, and contact groups will receive enabled alarm notifications.</p> <p>Refer to Create New User, Create New User Group, Create New Contact, and Create New Contact Group for more information.</p>									
3	Selected Recipients	<p>Users, user groups, contacts, and contact groups that have been checked in the Recipients section will display here.</p> <p>Order of delivery to recipients can be set via the minutes delay field. Default is 0 minutes. The delay function allows escalation of the alarm notification if the alarm is not acknowledged in a set amount of time. First responders should have a 0 minute delay. Backup responders should have an increasing delay allowing them to receive the alarm after an appropriate delay if not acknowledged already.</p> <p>When an alarm triggers, one notification will be sent until the alarm is acknowledged. If the user would like to receive notifications every 15 minutes until the alarm is acknowledged, check the 'Resend Until Acknowledged' box.</p> <p>Notification delivery options are email () and/or text ().</p> <p>The recipient can be removed from the list by clicking the trash can (). This will not delete the contact's account or the alarm.</p>									

#	Name	Description
4	Cancel	Clicking the Cancel button will exit the user from the Notification page.
5	Save	When the Save button turns blue, all new notification requirements have been met. Clicking the blue Save button will save the notification details to HydroSphere.

To Create a New Alarm

On the Alarm Setup page

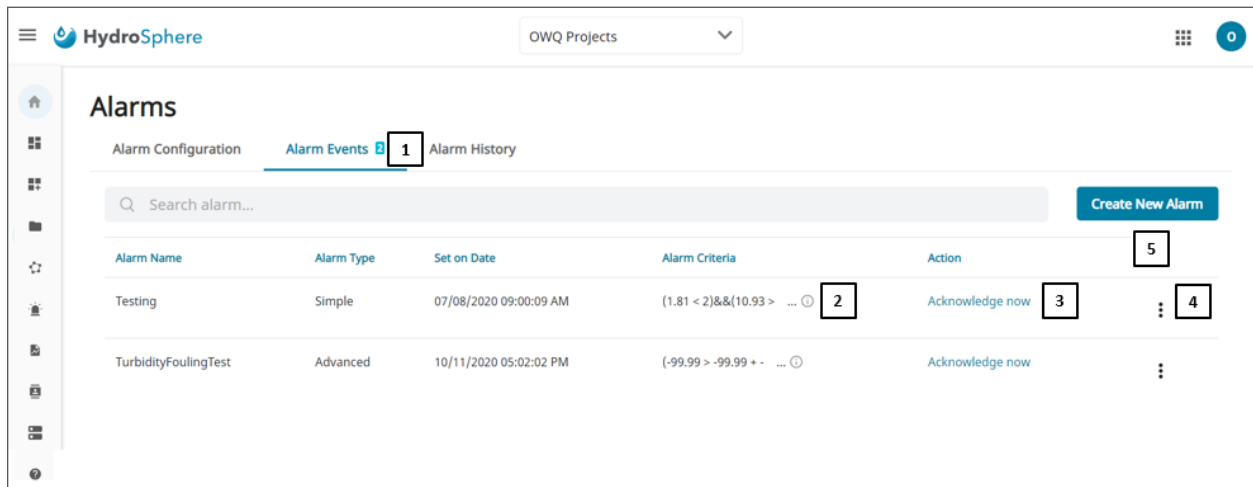
1. Click the slider to select **Disabled** or **Enabled**.
2. Enter an alarm name.
3. Optional - add a description and notes.
4. Select **Simple** or **Advanced**.
5. Build the alarm conditions.
6. Click **Save**.

On the Notification page

1. Select the water drop color to be displayed on the dashboard if the alarm activates.
2. Click the box to the left of each contact or contact group to receive the alarm notification.
3. Enter the notification delay minutes for each recipient.
4. Click **Save**.

Alarm Events

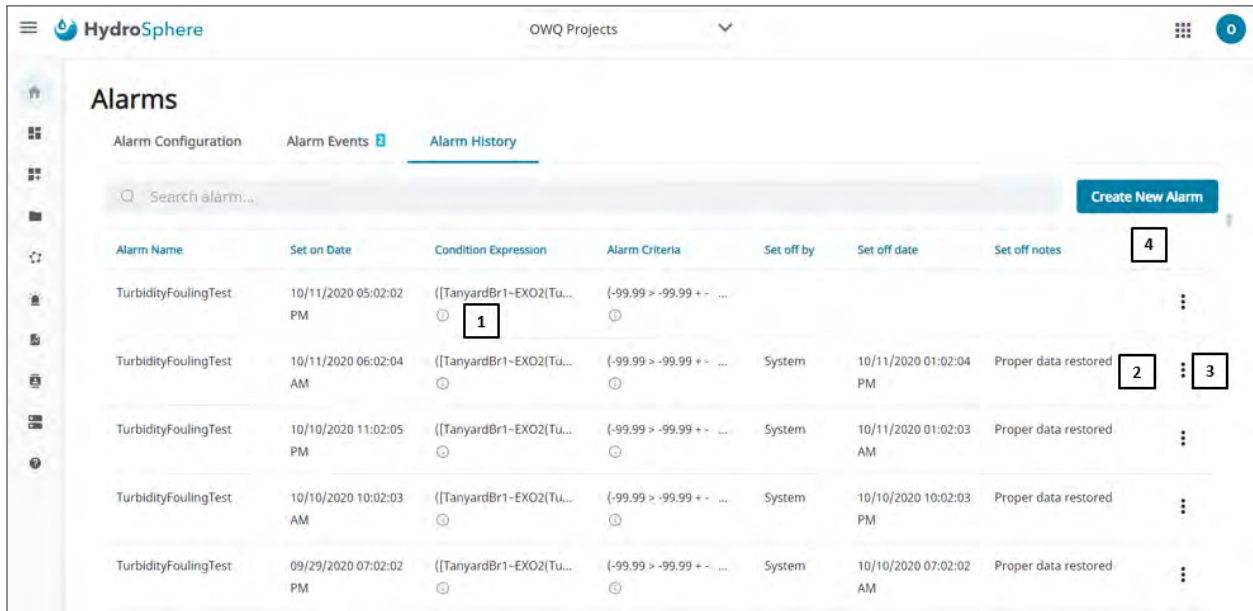
The Alarm Events page will show the user what alarms have activated and need to be acknowledged.



#	Name	Description
1	Alarm Events Tab	The number display (2) indicates how many alarms are currently triggered.
2	Informational	Hovering the cursor over the informational icon (2) will show the complete Alarm expression.
3	Acknowledge Now	Clicking Acknowledge Now will produce the following pop up window. <div data-bbox="483 1062 800 1211" data-label="Image"> </div> <p>The Acknowledge notes are optional. Clicking OK will Acknowledge the alarm and remove it from this list of activated alarms.</p>
4	Alarm Edit	Clicking on the Alarm name will allow the user to edit the alarm information and alarm conditions. Refer to Create New Alarm for more information.
5	Create New Alarm	Refer to Create New Alarm for more information.

Alarm History

The Alarm History page will display the history for all alarms created for this account.

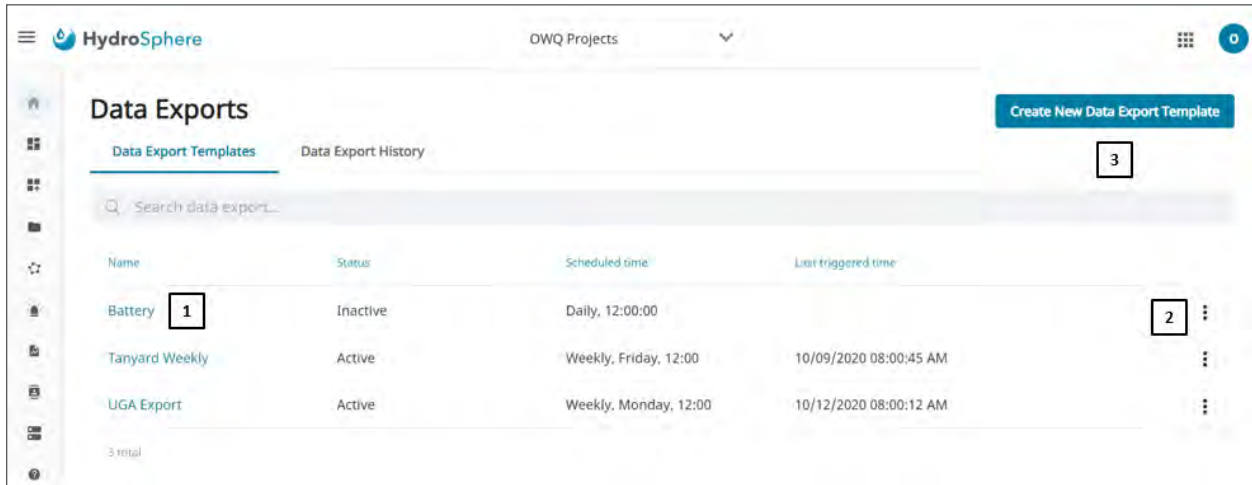


#	Name	Description
1	Informational	Hovering the cursor over the informational icon (ⓘ) will show the complete Alarm expression.
2	Alarm Edit	Clicking on the Alarm name will allow the user to edit the alarm information and alarm conditions. Refer to Create New Alarm for more information.
3	Set off notes	Note entered when acknowledging the alarm will display here.
4	Create New Alarm	Refer to Create New Alarm for more information.

2.7 – Data Exports

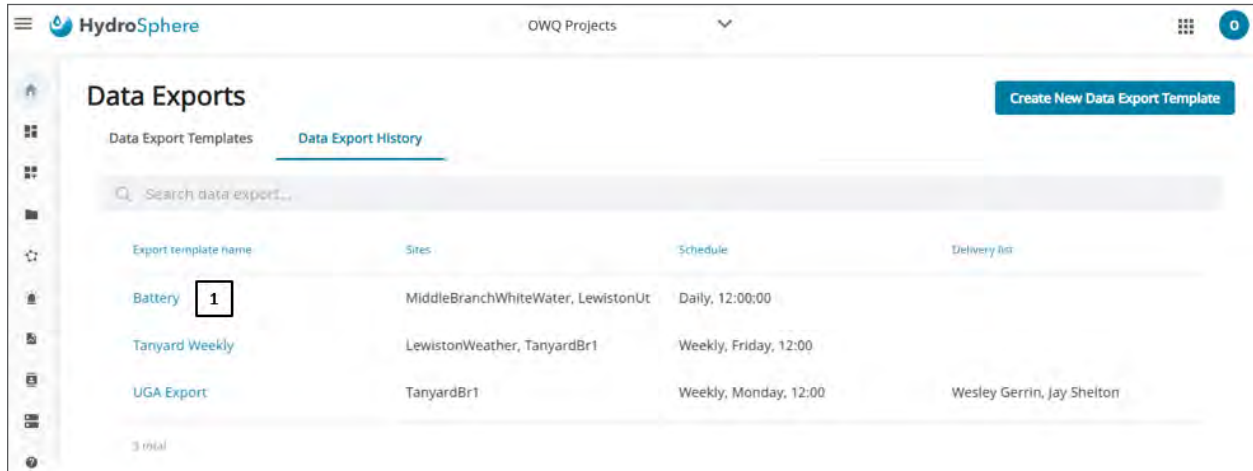
Data exports allow the user to setup and schedule recurring data downloads.

Data Export Templates



#	Name	Description																																								
1	Preview	<p>Clicking on the Report name will display a preview of the report that includes the most recent sensor data. Refer to Create New Data Export Template for more information.</p> <div data-bbox="456 1066 1010 1392" data-label="Table"> <table border="1"> <thead> <tr> <th colspan="4">Preview</th> </tr> <tr> <th colspan="4">Tanyard Weekly</th> </tr> <tr> <th>Site id</th> <th>Sensor</th> <th>Data Points</th> <th>Date/Time</th> </tr> </thead> <tbody> <tr> <td>TanyardBr1</td> <td>Water_Level</td> <td>1.84</td> <td>10/16/2020 02:00:00 AM</td> </tr> <tr> <td>TanyardBr1</td> <td>Temp_Celcius</td> <td>19.41</td> <td>10/16/2020 02:00:00 AM</td> </tr> <tr> <td>TanyardBr1</td> <td>EXO2(pH)</td> <td>0</td> <td>10/16/2020 02:00:00 AM</td> </tr> <tr> <td>TanyardBr1</td> <td>EXO2(spCond_µS_cm)</td> <td>177.11</td> <td>10/16/2020 02:00:00 AM</td> </tr> <tr> <td>TanyardBr1</td> <td>EXO2(ODO_pctplus_pct)</td> <td>84.75</td> <td>10/16/2020 02:00:00 AM</td> </tr> <tr> <td>TanyardBr1</td> <td>EXO2(DGAPC_RFU)</td> <td>0.15</td> <td>10/16/2020 02:00:00 AM</td> </tr> <tr> <td>TanyardBr1</td> <td>EXO2(ODO_Concplus_mg_L)</td> <td>7.79</td> <td>10/16/2020 02:00:00 AM</td> </tr> </tbody> </table> </div>	Preview				Tanyard Weekly				Site id	Sensor	Data Points	Date/Time	TanyardBr1	Water_Level	1.84	10/16/2020 02:00:00 AM	TanyardBr1	Temp_Celcius	19.41	10/16/2020 02:00:00 AM	TanyardBr1	EXO2(pH)	0	10/16/2020 02:00:00 AM	TanyardBr1	EXO2(spCond_µS_cm)	177.11	10/16/2020 02:00:00 AM	TanyardBr1	EXO2(ODO_pctplus_pct)	84.75	10/16/2020 02:00:00 AM	TanyardBr1	EXO2(DGAPC_RFU)	0.15	10/16/2020 02:00:00 AM	TanyardBr1	EXO2(ODO_Concplus_mg_L)	7.79	10/16/2020 02:00:00 AM
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TanyardBr1	EXO2(ODO_Concplus_mg_L)	7.79	10/16/2020 02:00:00 AM																																							
2	Multiple Options	<p>Clicking the ⋮ will display the following options:</p> <ul style="list-style-type: none"> Preview - Displays the same report preview described above. Edit - Allows the user to edit Data Export details described in Create New Data Export Template. Delete - Deletes the Data Export Template. 																																								
3	Create New Data Export Template	Refer to Create New Data Export Template for more information.																																								

Data Export History



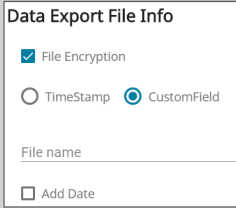

#	Name	Description																					
1	Preview	<p>Clicking on the Report name will display data export history (example below) which shows the date and status message for each sent report for this specific data export. Refer to Create New Data Export Template for more information.</p> <div data-bbox="483 890 1284 1318" data-label="Image"> <p>The screenshot shows a window titled 'Data Export History' for the 'Tanyard Weekly' report. It includes a 'Filter Date' field and a table with the following data:</p> <table border="1"> <thead> <tr> <th>Export Date</th> <th>Export Status Message</th> <th>Resend</th> </tr> </thead> <tbody> <tr> <td>10/09/2020 08:00:44 AM</td> <td>Delivered Successfully to all recipients</td> <td>Resend</td> </tr> <tr> <td>10/02/2020 08:00:14 AM</td> <td>Delivered Successfully to all recipients</td> <td>Resend</td> </tr> <tr> <td>09/25/2020 08:00:08 AM</td> <td>Delivered Successfully to all recipients</td> <td>Resend</td> </tr> <tr> <td>09/18/2020 08:00:41 AM</td> <td>Delivered Successfully to all recipients</td> <td>Resend</td> </tr> <tr> <td>09/11/2020 08:00:08 AM</td> <td>Delivered Successfully to all recipients</td> <td>Resend</td> </tr> <tr> <td>09/04/2020 08:00:49 AM</td> <td>Delivered Successfully to all recipients</td> <td>Resend</td> </tr> </tbody> </table> </div> <p>Note: Encrypted Data Exports are downloaded by recipients via a hyperlink included in a Data Export email. The data file is password protected. The hyperlink is active for 24 hours and is a one-time use link.</p> <p>If the link becomes inactive due to time out or previous use, the data export can be resent by clicking the Resend button. The Resend option is available for any data export sent in the previous 14 days.</p> <p>Refer to Create New Data Export Template for more information.</p>	Export Date	Export Status Message	Resend	10/09/2020 08:00:44 AM	Delivered Successfully to all recipients	Resend	10/02/2020 08:00:14 AM	Delivered Successfully to all recipients	Resend	09/25/2020 08:00:08 AM	Delivered Successfully to all recipients	Resend	09/18/2020 08:00:41 AM	Delivered Successfully to all recipients	Resend	09/11/2020 08:00:08 AM	Delivered Successfully to all recipients	Resend	09/04/2020 08:00:49 AM	Delivered Successfully to all recipients	Resend
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09/11/2020 08:00:08 AM	Delivered Successfully to all recipients	Resend																					
09/04/2020 08:00:49 AM	Delivered Successfully to all recipients	Resend																					

Create New Data Export Template

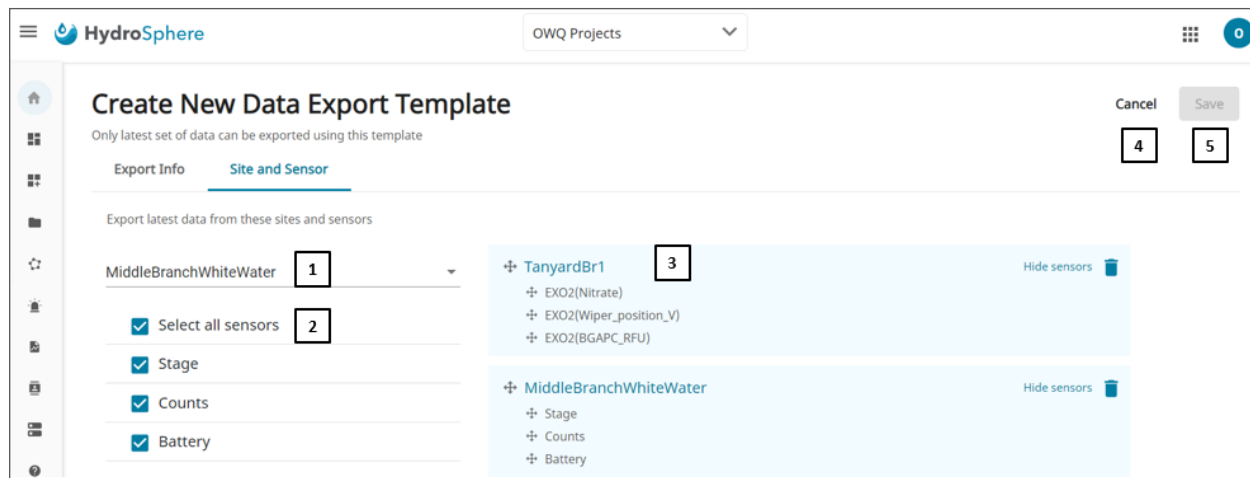
Two pages are available to create a new data export template; Export Info and Site and Sensor. These pages are described below.



Export Info

#	Name	Description
1	Disable / Enable Slider	The data report can be disabled and enabled by clicking on the slider (<input type="checkbox"/> <input checked="" type="checkbox"/>).
2	Data Export Information	A red asterisk (*) indicates a required field.
3	File Encryption	If the File Encryption box is checked, the recipients will receive 2 emails. One of the emails will contain a link to an encrypted zipped .csv file. The other email will contain a password. An unzipping program such as 7-Zip (https://www.7-zip.org/download.html) will be needed to unzip the encrypted files. The password will be required when the .csv file is opened. Note: The hyperlink is active for 24 hours and is a one-time use link. If the link becomes inactive due to time out or previous use, the data export can be resent by using the Resend function on the Data Export History page. Refer to Data Export History for more information. If the File Encryption box is not checked, the unencrypted data .csv file will be attached to an email.

#	Name	Description
4	Data File Name	<p>Timestamp will name the file the Unix timestamp at the time of file creation.</p> <p>Custom Field provides the user with the free text field below.</p> <p>Checking the Add Date box will add the date the data export file is sent to the Custom Field File name.</p> 
5	Data Export Schedule	<p>Users have six options for scheduling Data Export report generation:</p> <ul style="list-style-type: none"> • Every 15 minutes (:05, :20, :35, and :50 each hour) • Every 30 minutes (:05 and :35 each hour) • Hourly (:05 each hour) • Daily (user selects the time in 5 minute increments) • Weekly (user selects day of the week and the time in 5 minute increments) • Monthly (user selects day of the month and the time in 5 minute increments) <p>Note: The first time the data export is run, the report will contain all collected data. Subsequent data exports will only contain the data collected since the previous report.</p>
6	Delivery Recipients and Servers	<p>All users, user groups, contacts, contact groups, and remote servers created for this account will be displayed. Selected users, user groups, contacts, contact groups, and remote servers will receive enabled data exports files.</p> <p>Refer to Create New User, Create New User Group, Create New Contact, Create New Contact Group, and Add New Remote Server for more information.</p>
7	Selected Recipients	<p>Users, user groups, contacts, contact groups, and remote servers that have been checked in the Delivery Recipients and Servers section will display here.</p> <p>The recipient or server can be removed from the list by clicking the trash can (). This will not delete the recipient, server, or data export template.</p>
8	Cancel	Clicking the Cancel button will exit the user from the Export Info page.
9	Save	When the Save button turns blue, all new export info requirements have been met. Clicking the blue Save button will save the new export info to HydroSphere.

Site and Sensor



#	Name	Description
1	Site Dropdown	This dropdown list will display all of the sites created for this account.
2	Sensor Selection	Checking the box to the left of the sensor will include that sensor in the data export.
3	Included Site and Sensors	Once a site and sensors have been selected, they will display in this area. Site and sensor order can be changed by clicking the drag and drop icon () and moving the site or sensor to a new location. The site can be removed from the list by clicking the trash can (). This will not delete the site, sensor, or data export template.
4	Cancel	Clicking the Cancel button will exit the user from the Site and Sensor page.
5	Save	When the Save button turns blue, all new site and sensor requirements have been met. Clicking the blue Save button will save the new site and sensor data to HydroSphere.

To Create a New Data Export Template

On the Export Info page

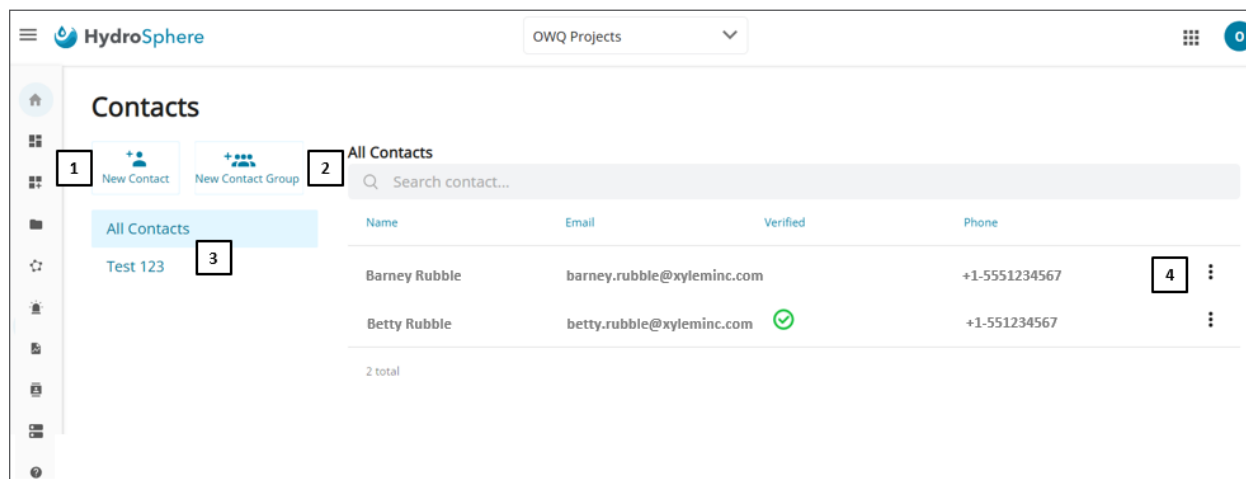
1. Click the slider to select **Disabled** or **Enabled**.
2. Enter a data export name.
3. Optional - add a description and notes.
4. Select a time interval.
5. Click the box to the left of each user, user group, contact, contact group, or remote server to receive the data export.
6. Click **Save**.



On the Site and Sensor page

1. Click the Site dropdown and click on the site to be added to the template.
2. Click on the box to the left of each sensor to be added to the template.
3. Repeat Steps 8 and 9 for additional sites and sensors.
4. Reorder the sites and sensors as appropriate.
5. Click Save.

2.8 – Contacts

A contact is someone who will receive notifications or data exports assigned to them by a HydroSphere user. A contact is not a HydroSphere user and does not have login privileges for HydroSphere.



#	Name	Description
1	New Contact	Allows the user to create a new contact. Refer to Create New Contact for more information.
2	New Contact Group	Allows the user to create a new user group. Refer to Create New Contact Group for more information.
3	Groups	Displays the Contact Groups created for this account.
4	Multiple Options	For the All Contact group, clicking the  icon will display the following options: Edit - Allows the user to edit contact details described in Create New Contact . Delete Contact - Deletes the contact. If a contact group is being viewed, clicking the  icon will display the following options: Edit - Allows the user to edit contact details described in Create New Contact . Delete from Group - Deletes the contact from the contact group but will not delete the user account.

Create New Contact

#	Name	Description
1	Contact Details	A red asterisk (*) indicates a required field.
2	Add Contact to Group	All contact groups created for this account will be displayed. Contacts can be added to one or more contact groups by clicking on the check box to the left of the Contact Group name. Refer to Create New Contact Group for more information.
3	Selected Groups	Contact Groups that have been checked in the Add Contact to Group section will display here. The Contact Group can be disassociated from the user by clicking the trash can (🗑️). This will not delete the contact or the Contact Group.
4	Cancel	Clicking the Cancel button will exit the user from the Create New Contact page.
5	Save	When the Save button turns blue, all new contact requirements have been met. Clicking the blue Save button will save the new contact to HydroSphere.

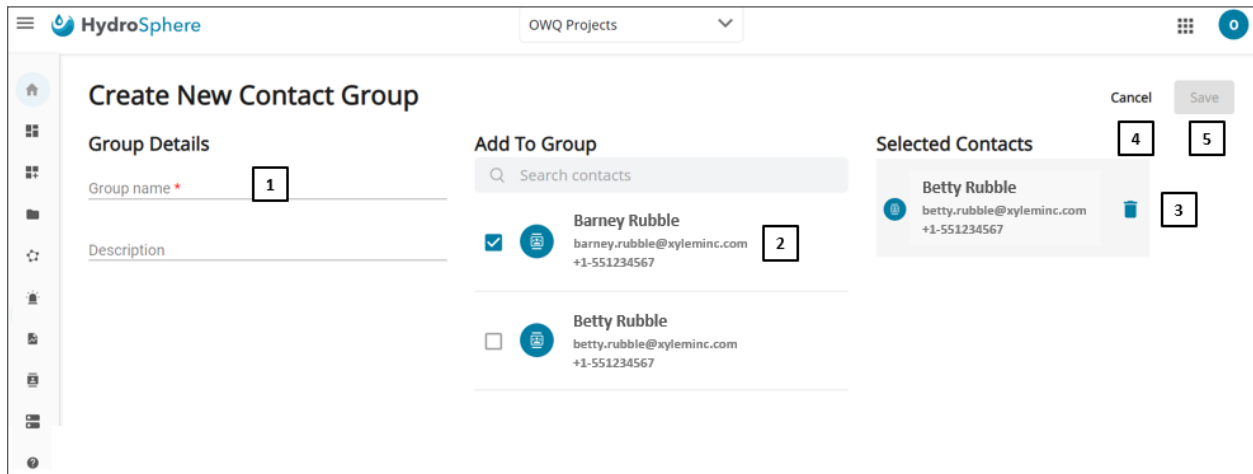
To create a new contact

1. Enter the contact's Name, Email address, Country Code, and Phone number.
2. If the contact is to be assigned to a contact group, click the box to the left of each appropriate contact group.
3. Click **Save**.

Note: New contacts will receive an email with a **Verify Email Address** link. Clicking this link is required to complete the contact setup process. The link remains active for 24 hours.

Create New Contact Group

A contact group is a group of contacts who have common notification and data export needs. Notifications and exports can be sent to the contact group saving time by not having to assign these items to multiple individual contacts.



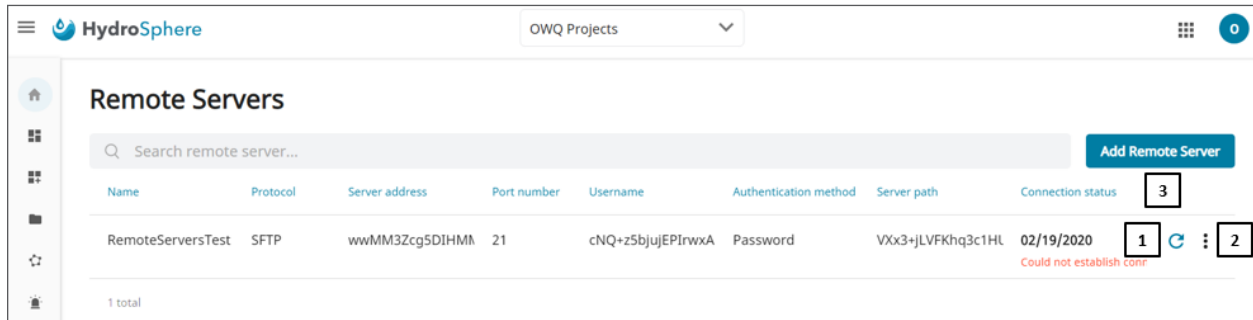
#	Name	Description
1	Group Details	A red asterisk (*) indicates a required field.
2	Add to Group	All contacts created for this account will be displayed. Contacts can be added to the newly added contact group by clicking on the check box to the left of the contact name. Refer to Create New Contact for more information.
3	Selected Contacts	Contacts that have been checked in the Add to Group section will display here. The contact can be deleted from the contact group by clicking the trash can (🗑️). This will not delete the contact or the contact group.
4	Cancel	Clicking the Cancel button will exit the user from the Create New Contact Group page.
5	Save	When the Save button turns blue, all new contact group requirements have been met. Clicking the blue Save button will save the new contact group to HydroSphere.



To create a new contact group

1. Enter a user group name.
2. Optional - add a user group description.
3. Click the box to the left of each contact to be added to the contact group.
4. Click **Save**.

2.9 – Remote Servers

Users can have data exports sent directly to their remote server for migration to other applications.



#	Name	Description
1	Connection Test Icon	Clicking the Connection Test Icon () will test the communication connection with the remote server and display the date and time the connection was verified. "Connection verified on" is displayed if test is successful. "Could not establish connection" is displayed if test unsuccessful. Note: A short verification message will be placed on the server each time the communication connection is verified.
2	Multiple Options	Clicking the  icon will display the following options: Edit - Allows the user to edit the remote server details described in Add New Remote Server . Delete - Deletes the remote server.
3	Add Remote Server	See Add New Remote Server for more information.

Add New Remote Server

The screenshot shows a dialog box titled "Add new remote server" with a close button in the top right corner. The dialog contains the following fields and options:

- Remote server name *
- Choose protocol * with radio buttons for SCP and SFTP.
- Server address * and Port number *
- Server path *
- Username *
- Authentication method * with radio buttons for Password and Certificate. A small box with the number "1" is positioned over the Certificate radio button.

At the bottom right, there is a "CANCEL" button and a partially visible "Save" button.

#	Name	Description
1	Authentication Method	Two options are available for authenticating the server: Password - A text box will appear for entering the password. Certificate - A window will open allowing the user to select a certificate from their computer or other storage device.


Adding a New Remote Server

1. Enter server name.
2. Choose SCP or SFTP protocol.
3. Enter Server Address, Port Number, Server Path, and Username.
4. Choose the Authentication Method.
5. Click **Save**.


Note: A short verification message will be placed on the server when the communication connection is established.

2.10 – My HydroSphere

Note: The My HydroSphere section is only visible to Technicians and is NOT visible to Account Administrators or Data Reviewers.

Each My HydroSphere page (My sites, My networks, My Alarms, and My Data Exports) will allow the Technicians to see only the items that they created. Each page will give the Technician the option to edit any item by clicking on the  icon to the right of each item and to also create new items.

2.11 – Help

Clicking the Help icon () will let users access:

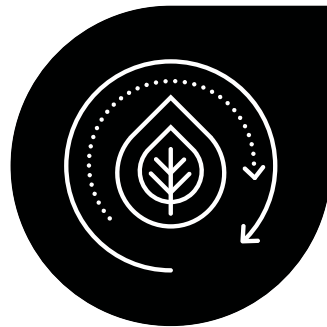
- a. This HydroSphere Users' manual
- b. HydroSphere training video
- c. Cybersecurity technical notes

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- 1) The tissue in plants that brings water upward from the roots;
- 2) a leading global water technology company.

We're a global team unified in a common purpose: creating advanced technology solutions to the world's water challenges. Developing new technologies that will improve the way water is used, conserved, and re-used in the future is central to our work. Our products and services move, treat, analyze, monitor and return water to the environment, in public utility, industrial, residential and commercial building services settings. Xylem also provides a leading portfolio of smart metering, network technologies and advanced analytics solutions for water, electric and gas utilities. In more than 150 countries, we have strong, long-standing relationships with customers who know us for our powerful combination of leading product brands and applications expertise with a strong focus on developing comprehensive, sustainable solutions.

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