user manual

Hydro Connect
Dositec Central Dosing Systems

HYDRO

a DOVER company

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index

1.00 overview

1.01 Introduction

Hydro Connect is a cloud-based Internet of Things (IoT) platform that gives chemical providers and end users increased visibility into their operations, optimizes production, reduces costs and increases customer satisfaction. Hydro Connect has been introduced to the commercial laundry market first, with products in the kitchen and facility cleaning not far behind.

Built on the Microsoft Azure platform, Hydro Connect utilizes data generated from the dispensers operating in the facility, a cellular modem and a data package to create professional reports, alert users of costly alarm conditions, and enable remote configuration changes without making unnecessary site visits.

1.02 Hardware and Services

Category	Hydro Part Number	Description
Hardware	HYDSPD0013-AT&TNA	Cellular Modem, AT&T Service, w/ 1 Year at 200MB Data per Month (North America)
	HYDSPD0013-AT&TEMEA	Cellular Modem, AT&T Service, w/ 1 Year at 200MB Data per Month (Europe/Middle East)
	HYDSPD0087-E	Hydro Connect Real-Time Module (RTM), Multi-Washer System
	HYDSPD0088-E	Hydro Connect Real-Time Module (RTM), Tunnel System
Service	HYDSPD-DATA-RENEW	1-Year Cellular Modem Data Plan Renewal, AT&T Service, at 200MB per Month
	HYD-CONNECT-REALTIME	Monthly Fee, Real-Time Laundry Dashboard and Alerts for 1 Dositec System
	HYD-CONNECT-MULTI-ANALYSIS	Monthly Fee, Data Analysis Service, Multi-Washer System
	HYD-CONNECT-TUNNEL-ANALYSIS	Monthly Fee, Data Analysis Service, Tunnel Washer System
	HYDSPD-WE-PROG 10	One Time Fee, Program 1 Washer Extractor with up to 10 Formulas
	HYDSPD-MAN-DAY	One Day Fee, Installation Labor, per Hydro Employee

1.03 Features

- **Scalable solutions across multiple cleaning environments:** Hydro Connect transmits data to the cloud in several ways, including cellular, Wi-Fi or Bluetooth depending the environment.
- **Remote configuration:** Users can make changes to their Dositec system configuration remotely from anywhere in the world with an Internet connection. Previously, these changes required costly site visits. Now, users are reporting up to 90% savings in maintenance costs. Common changes that can be made remotely include (but are not limited to) adding a formula, changing a dosing amount and switching a unit from flow meter to time mode.
- **A proven, reliable and secure platform:** The Microsoft Azure architecture provides users with a trusted and secure platform, used by hundreds of leading companies across multiple industries for their IoT solutions.
- **Enhanced knowledge to help run your business:** Current Hydro Connect capabilities allow customers and end users to log in and view professional reports in seconds. This reduces time-consuming data uploads, manipulation in Microsoft Excel and the use of a proprietary software package. The flexibility of Hydro Connect makes it a valuable tool for both tactical, day-to-day monitoring and monthly summaries to management. Areas of reporting insight include:
  - **Alarm reporting:** Proactively view alarms to rapidly eliminate abnormal conditions that drive profit loss.
  - **Production:** Eliminate the use of out-of-date paper logs to document the weight and number of loads run in your facility.
  - **Chemical usage:** Simplify and improve the accuracy of your billing procedures with metered usage reports on chemical product and formulas.
  - **Cost:** Quickly access a snapshot of the chemical cost by formula to actively manage and improve unprofitable formulas or accounts.
  - **Observations/recommendations:** Eliminate hours of data manipulation and analysis. For a minimal charge, a Hydro expert will review the monthly data and provide recommendations to help reduce rewash and optimize cleaning results.
  - **Real-time dashboard:** View washer status, alerts and key productivity metrics in real time to proactively pinpoint inefficiencies while reducing rewash.

2.00 installation

2.01 Connection Requirements

The requirements for connecting a Dositec dispenser to the Hydro Connect cloud service are essentially the same for all systems. You must have:

- A Dositec System (Mutli-Washer or Tunnel, PCB or PLC controlled)
- A Hydro Real-Time Module (RTM)
- A Hydro Connect Configured Modem
- The Hydro Connect Real-Time Cloud Service

A **PCB controlled** system has the RTM integrated into the controller, as standard. For both PCB and PLC controlled systems the required components (as shown below) are also available as add-ons for systems already in the field.
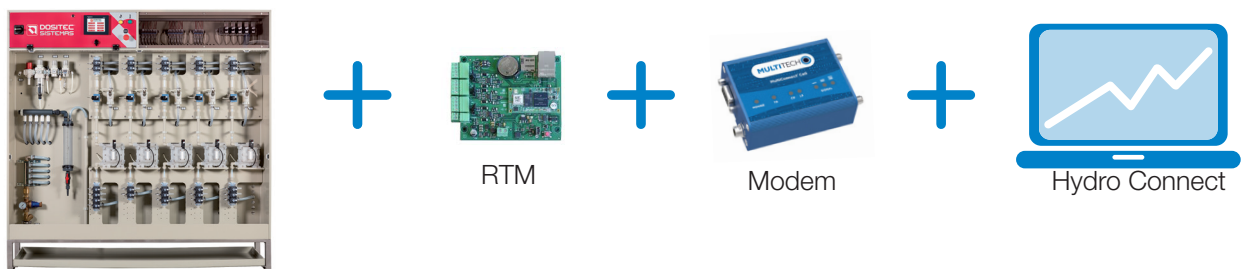
PCB Controlled Multi-Washer

RTM integrated into PCB Controllers

Modem   Hydro Connect

PLC Controlled Multi-Washer
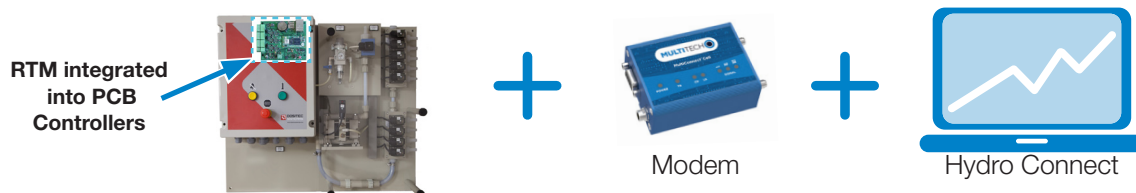
RTM   Modem   Hydro Connect

PLC Controlled Tunnel Washer
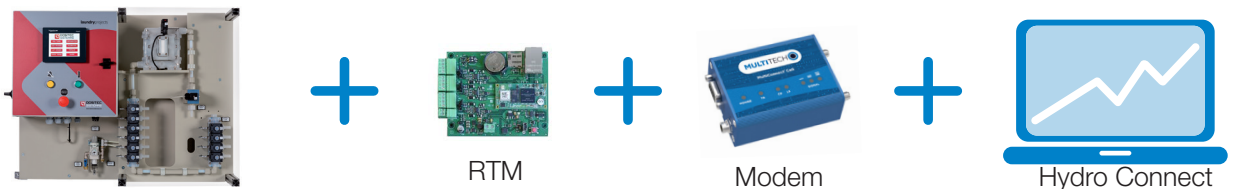
RTM   Modem   Hydro Connect

2.02 Setup Examples

It is possible to connect as many as three (3) nearby Dositec systems to the Hydro Connect service using a single modem, depending on the data usage and the limits of the cellular data plan selected. Some examples of how the systems can be setup are shown below.
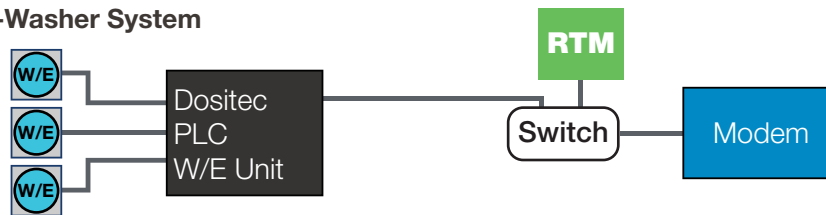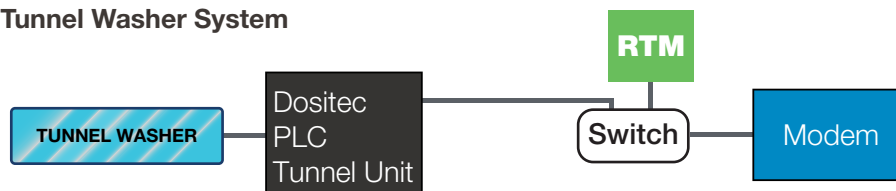
1 PCB Controlled Multi-Washer System

W/E
W/E
W/E

Dositec PCB W/E Unit   RTM   Modem

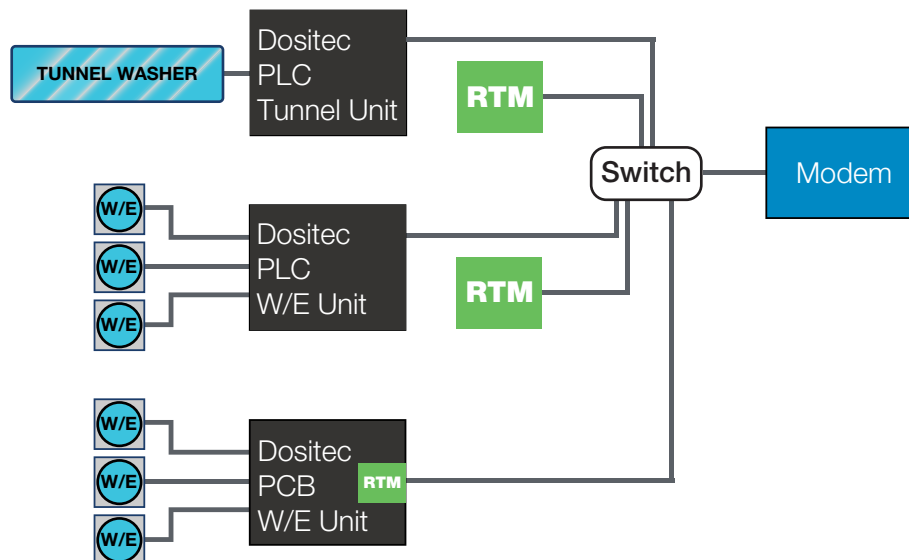## 2.02 Setup Examples (continued)

1 PLC Controlled Multi-Washer System

1 PLC Controlled Tunnel Washer System

1 PLC Tunnel & 2 W/E System (1 PLC & 1 PCB)

Notes:

- A PLC controlled Dositec unit should be connected to an Ethernet switch.
- A PLC system's RTM should be connected to that same Ethernet switch.
- Each PLC system's RTM is assigned a port on the Modem and that port number associates the RTM to the IP of the corresponding Dositec unit.
- The Ethernet switch should be connected to the Modem.
- A PCB controlled unit only needs an Ethernet switch when used in a multiple unit system.
- Notice that a PCB controlled Dositec unit has the RTM integrated into the controller, as standard.
- Up to three (3) Dositec units (in any combination) may be connected to a single Modem.

3.00 operation

3.01 Logging in to Hydro Connect

To access your dispenser via Hydro Connect, you must be set up as a user within your company hierarchy.

If you are not yet set up, you may:
- Contact your Company Admin who manages all the Hydro Connect users
- Contact Hydro via 800-543-7184 or contact-hydro@hydrosystemsco.com
- Fill out and submit a new user request form

Once your user profile is set up in Hydro Connect (by either a Hydro or Company Admin) you will be sent an email with your "username" and a temporary password.

Now you must log in to Hydro Connect using that username and temporary password, where you will be prompted to reset the temporary password with a personal password. At that point, you may navigate to any of the Sites to which you have been given Company access.

Log in at Hydro Connect:

Navigate to the Hydro Connect web page at "**www.hydroconnect.com**". At the Home page, enter your username (usually your first initial and last name, with no spaces) and click the field or press Return to move to the password entry. Enter your personal password and click the "Sign in" button.
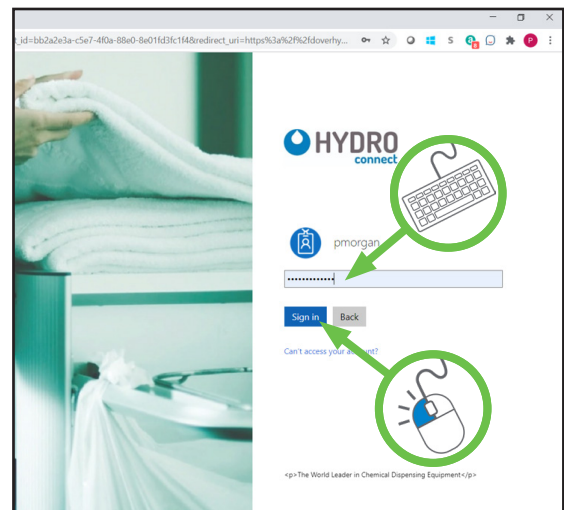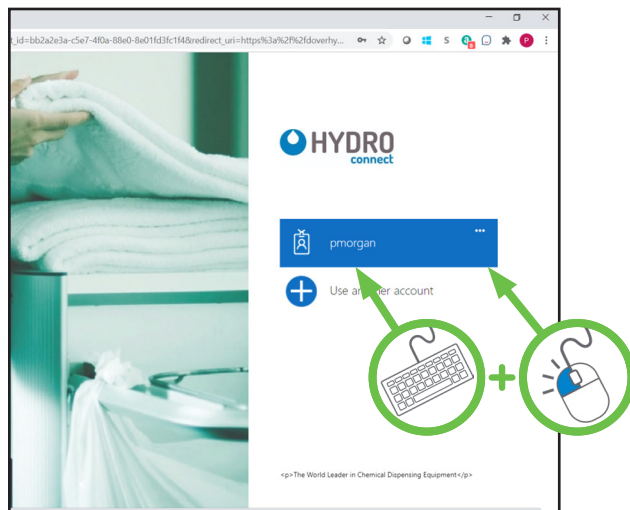
3.02 Basic Navigation

**Options on the Reports Landing Page:**

After logging in, by default you will land in the **Reports** section since this is the section of Hydro Connect that most users will use to access device data.

For the sites and dispensers you are responsible for, this section allows a user to access either the **Real-time Dashboard** or **Historical Reporting**, by clicking the corresponding item in the left side list.

Additionally, on the left side list there is an **Admin** access that allows certain users to create and edit company, account, site, user, and device settings. (See the images on the following page.)

## 3.02 Basic Navigation (continued)
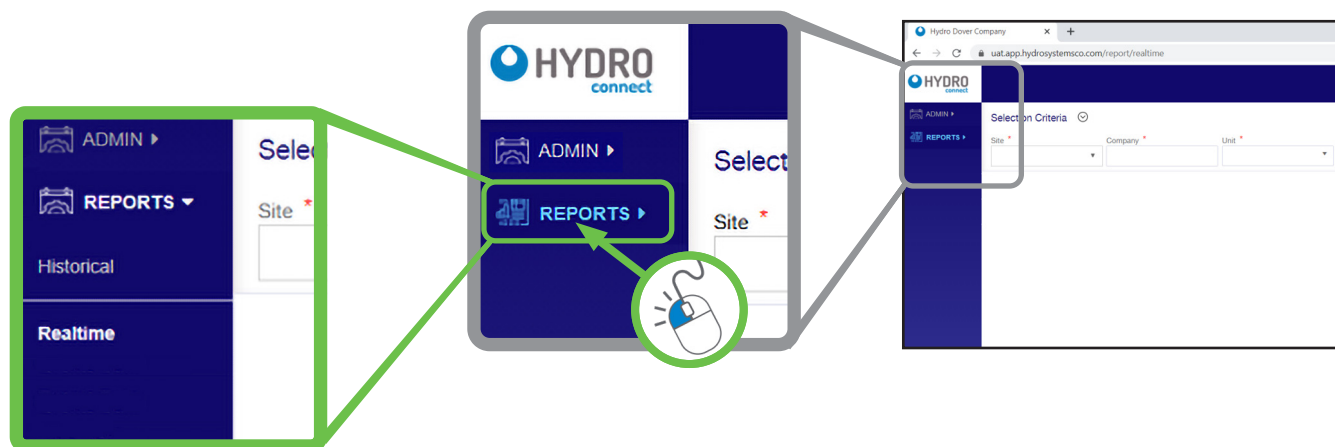
3.03 Real-time Dashboard for Washer Extractors

Systems that are equipped with the enabling hardware (e.g. cellular modem and RTM) and service will have access to the real-time dashboard.

This allows users to see a live display of the laundry (or other operating environment), the status of the washers, alarm conditions, and operational metrics like turn times and efficiency.

To access the real-time dashboard, select the **Site Name** from the drop-down menu. (You may enter part of the Site Name to limit the entries in the drop-down menu.) The **Company** field will self-populate once the site is selected. Pick the **Dositec Unit** at that site, whose status you wish to see, and then click **View**.
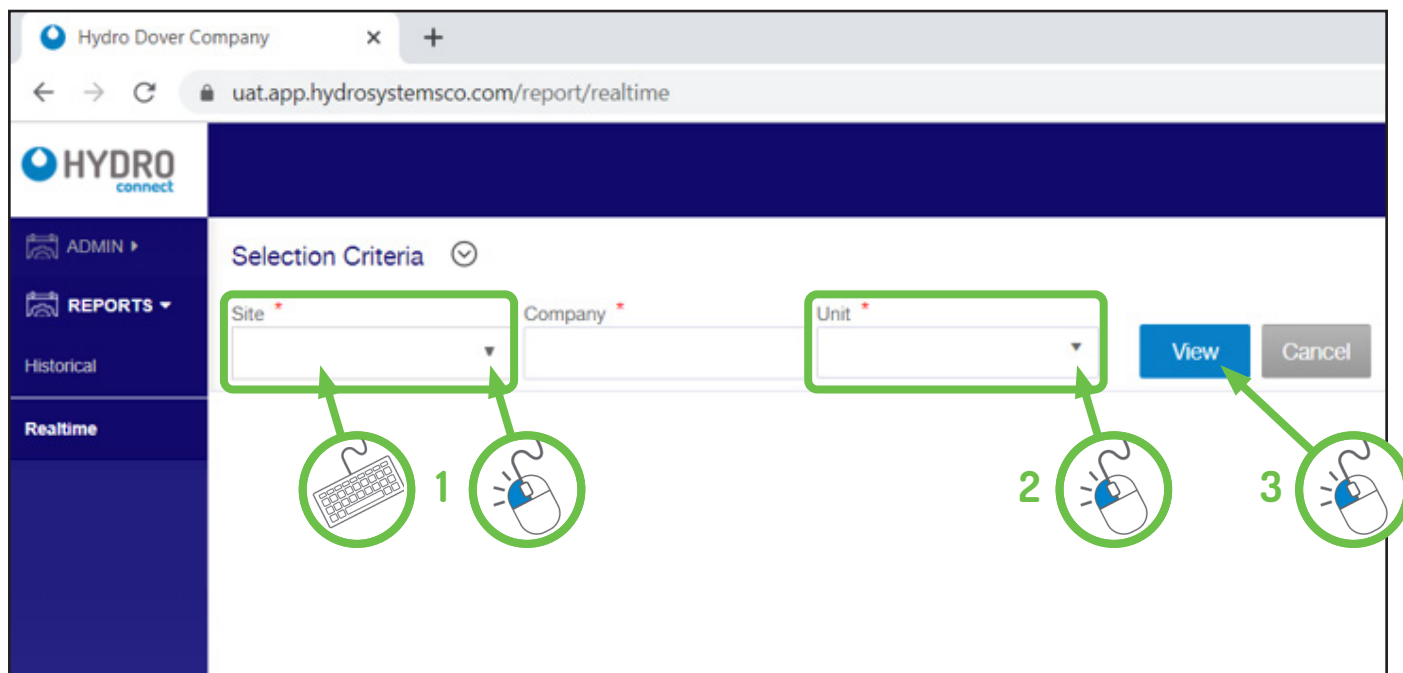

Note: Each user will only see those sites that they have responsibility for. If you do not see a site that you are responsible for listed, contact your Company Admin.

3.03 Real-time Dashboard for Washer Extractors
(continued)

Once you have selected a site location and a Dositec unit at that site; when you click View, the Real-time Dashboard for that Dositec unit will be displayed. See the examples shown below.
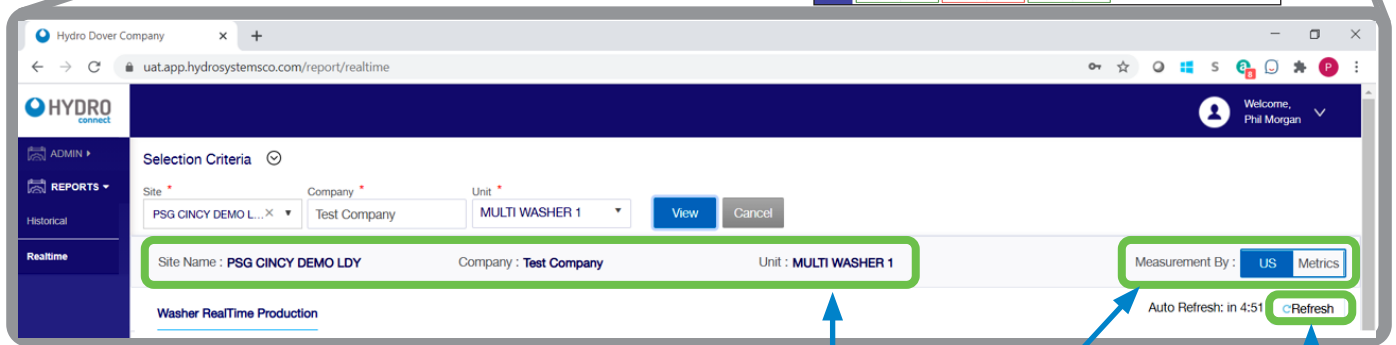
At the top of the screen, the name of the site, company, and unit will be summarized. Additionally, on the upper right-hand side of the screen there is a toggle to change the units of measure from US to Metric depending on the user's preference and a refresh button that will update the display with the latest information. If the refresh button is not pressed, the system will automatically countdown and refresh on a 5-minute interval.

In the middle of the screen is the Washer Real-Time Production display of the current date and time, shift and alarm status.

Site Summary   **Units of Measure Selector**   **Refresh**

Washer Real-Time Production
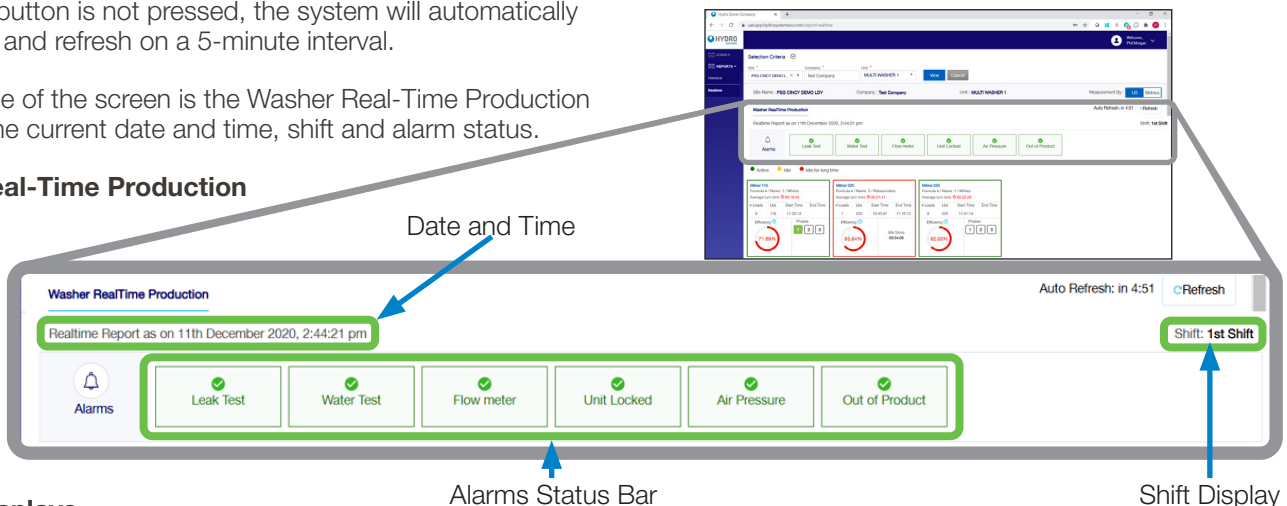
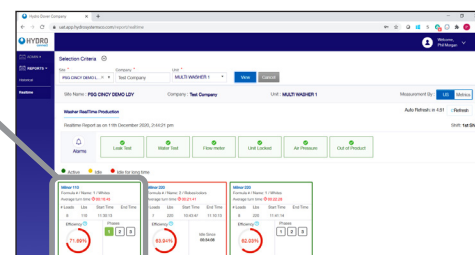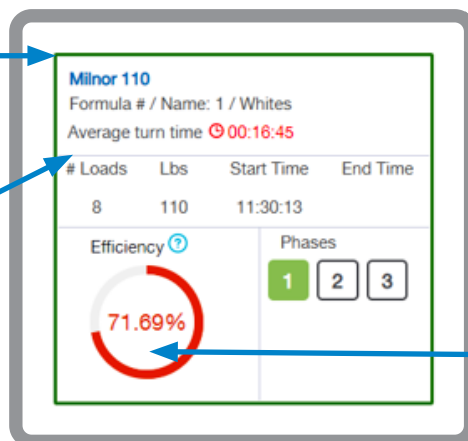Date and Time

Alarms Status Bar   Shift Display

Washer Displays

Toward the bottom of the screen you will see the washer displays, each with real-time status information for that particular washer.

Washer Box Color Indicates Status
- **Green** = Running
- **Yellow** = Idle
- **Red** = Idle "Too Long"

Load Data

Efficiency = Total Active Time divided by Total Elapsed Shift Time

Circle is Blue = Above User Percentage Setting
Circle is Red = Below User Percentage Setting

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3.03 Real-time Dashboard for Washer Extractors (continued)

Washer Displays (continued)

As illustrated on the previous page; at the bottom of the Washer Displays section are boxes that show all the critical data for each washer, including:

- **Washer status**: denoted by the box color, with green = washer is active, yellow = idle (not running a cycle), or red = idle for "too long" (beyond a user defined threshold in the Site Setup screen in the Admin menu).
- **Current Formula Name**: displays the current active formula or if idle/idle long, the last formula to complete.
- **Average turn time**: For all completed loads in the shift, this will show the average amount of time to turn the washer from the end of a cycle to the beginning of the next cycle.
- **# of Loads** run in the current shift.
- **Weight (Lbs or Kg)** is the weight of the current load or cycle.
- The **Start Time** of the current active load or last completed load (if idle).
- The **End Time** of the last completed load (if idle).
- **Washer efficiency**: This is calculated by taking the Active time in the shift divided by the total elapsed time in the shift. The color of the efficiency is blue if it is above a user defined threshold and red if it is below. Thresholds are defined in the Site Setup screen in the Admin menu.
- **Idle time**: a counter that displays the current idle time since the last load completed.

3.04 Historical Reports for Washer Extractors

In addition to the real-time information, historical reports on alarms, production (number of loads and weight), chemical usage, and costs are also available through Hydro Connect.

Simply click the **Historical** menu item in the left-side list to display the Selection Criteria, as shown below. Start by selecting the **Site Name** from the drop-down menu. (You may enter part of the Site Name to limit the entries in the drop-down menu.) The **Company** field will self-populate once the site is selected. Pick the **Dositec Unit** at that site, whose data you wish to see and then select the **View By** option. There are three "View By" options: Monthly, Date and Date Range. Each option has different criteria for the "time" range of the data retrieval. When you have set the View By criteria, click **View** to see the report.

View By Criteria:

- **Monthly**:
  You select the Month and Year.

- **Date**:
  You select the Calender Date and the Shift on that date.

- **Date Range**:
  You select a Start Date and End Date.

3.05 Historical Reports – Monthly & Date Range

Each of the View By criteria will produce slightly different Historical Reports. The Monthly and Date Range choices produce similar reports with the most options, so those two report formats will be discussed first.

Historical Reports - Monthly and Date Range:

When either Monthly or Date Range is selected in the View By drop-down menu, multiple tabs of reports will be displayed, starting with the Alarm Summary. Users can quickly cycle between the tabs to locate the specific information desired.

Alarm Summary:

The Alarm Summary lists the total number of warnings, the types and occurrences of each of the **nine** alarm types for each washer during the designated reporting period (not all shown above). Below is a description of each alarm type for reference:

1) **Air Pressure Failure (Pneumatic Systems only):** Occurs when the air pressure supply drops below the minimum requirement to operate the pneumatic valves, pump, and optional air assist module.

2) **Cycles with Missed Phases:** Occurs when a load receives the end of load signal without completing all of the programmed phases (dose request) on the formula.

3) **Flow Meter Error For Product Dosage:** Occurs when the programmed dosage of product did not occur in the time allowed. The time allowed is based on a value determined by calibration plus an added % of that time (defined by the user).

4) **Flow Meter Error For Water Flush:** Occurs when the programmed amount of water for flushing did not occur in the time allowed. The time allowed is based on a value determined by calibration.

5) **Leak Test Failure:** Occurs when a leak in the dosing system is detected by the flowmeter at the beginning of each dosing sequence.

6) **Minimum Levels Of Product:** Occurs when Depletion Wands are used on the system and the float switch is triggered, indicating that the product is depleted and needs to be replenished.

7) **Unfinished Cycle:** Occurs when the washer signals to start a new load without the dispenser receiving an "end of load" signal for the previous load.

8) **Unit Locked:** Occurs when the Emergency Stop Button is pressed on the unit

9) **Water Test Failure:** Occurs when insufficient water flow is detected by the flowmeter at the beginning of each dosing sequence.
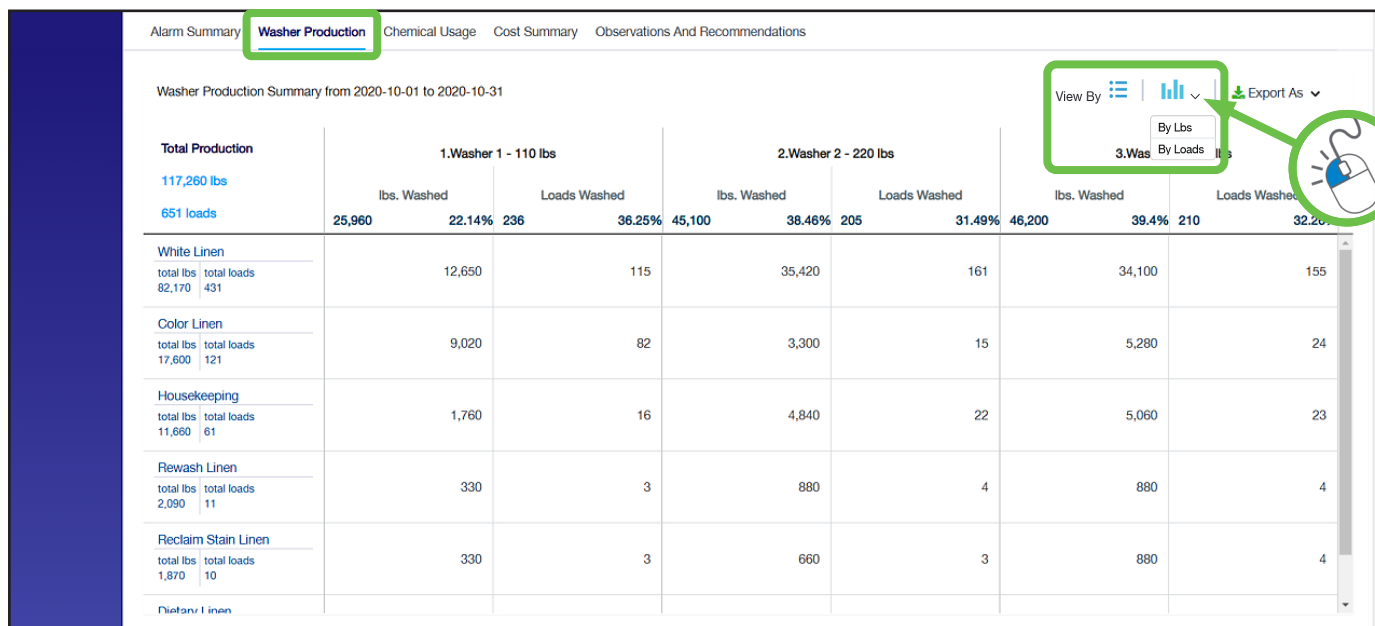
3.05 Historical Reports – Monthly & Date Range (continued)

Washer Production:

The Washer Production report provides a summary of the total weight and number of loads produced by the laundry during the reporting period.

This total is further broken down by washer and by formula to give a full picture of the site's absolute and percentage totals.

The default view for this report is a table, shown below, but by clicking the **View By** selector at the upper right, the user can toggle to a bar-chart view by weight or by loads as well.

In the bar chart views, there is a control at the top-left side of the chart that allows the user to view either a total for the whole system or view one bar per washer.
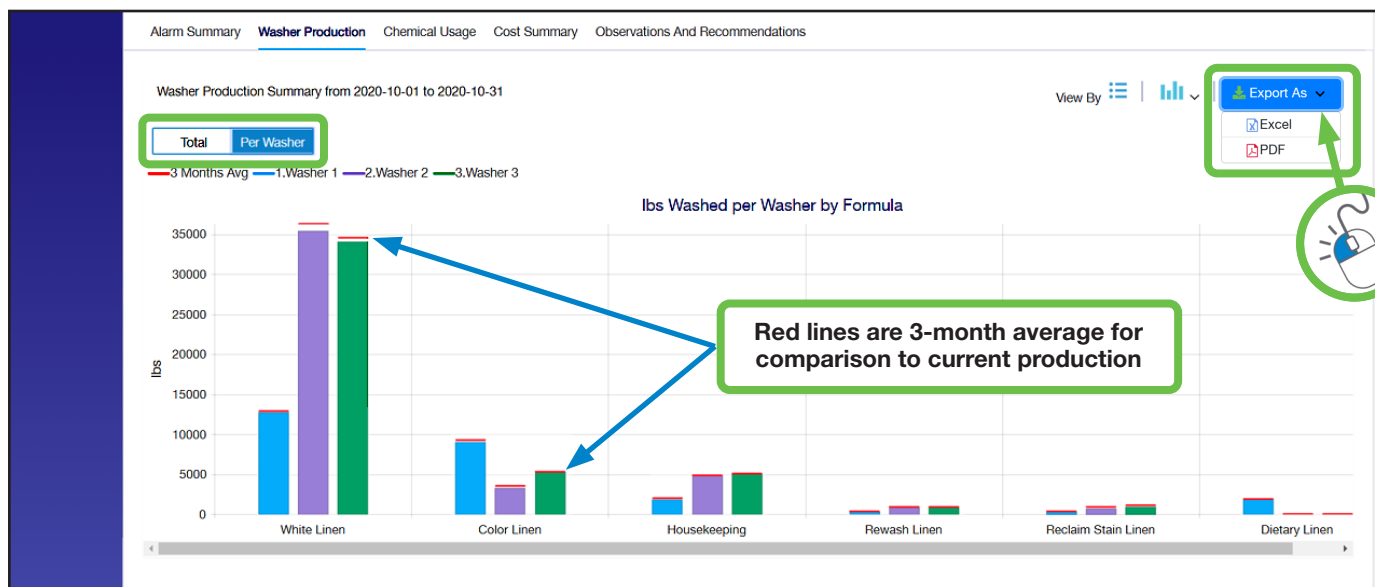
The red lines on these charts indicate the 3-month average production level as a method for gauging whether the current period is above or below normal.
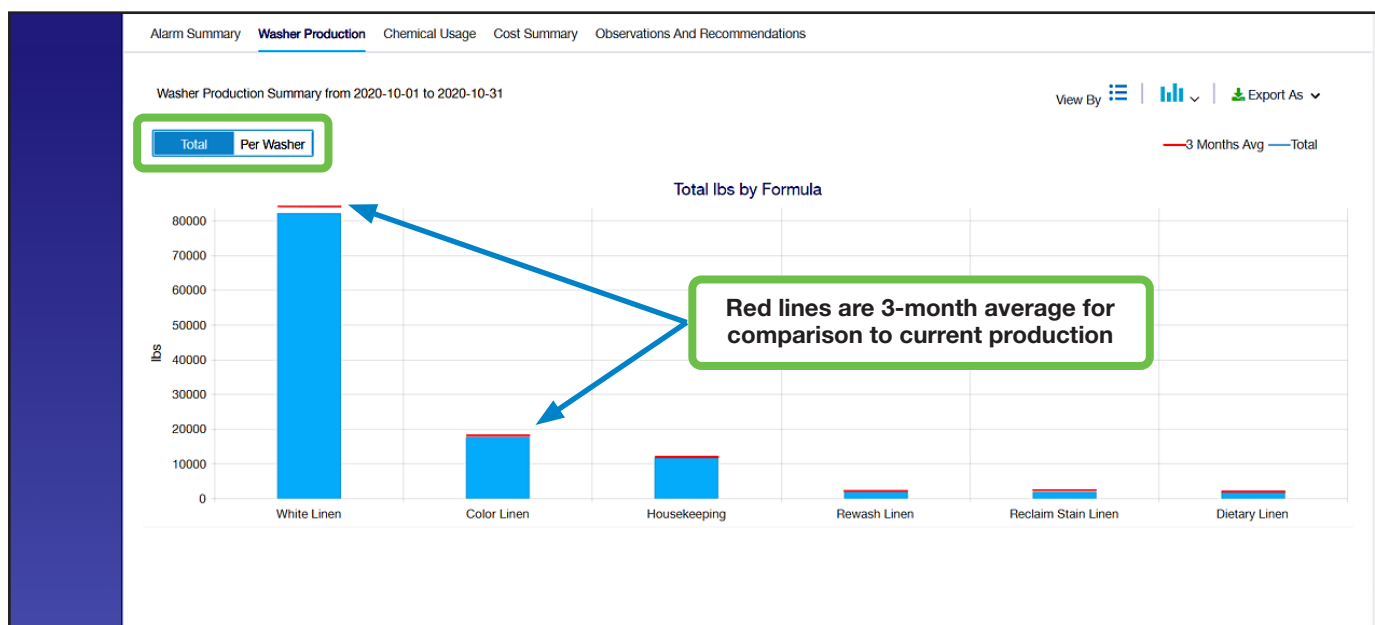
Red lines are 3-month average for comparison to current production

3.05 Historical Reports – Monthly & Date Range (continued)

Washer Production: (continued)

Note: There is a report export option at the upper right of the chart, as on all the Hydro Connect reports. Click **Export As** to download a digital copy of a report, in either Excel or PDF format.

Chemical Usage:

The Chemical Usage report provides a summary of the total volume of each chemical used with a breakdown by formula.

Additionally, any dosing errors where the actual dosage is different than a user defined threshold get flagged with red text and reported.

The default view for this report is a table, shown below, but by clicking the **View By** selector at the upper right, the user can toggle to a bar-chart view.

(The bar chart Chemical Usage Report is shown on the next page.)

3.05 Historical Reports – Monthly & Date Range (continued)

Chemical Usage: (continued)
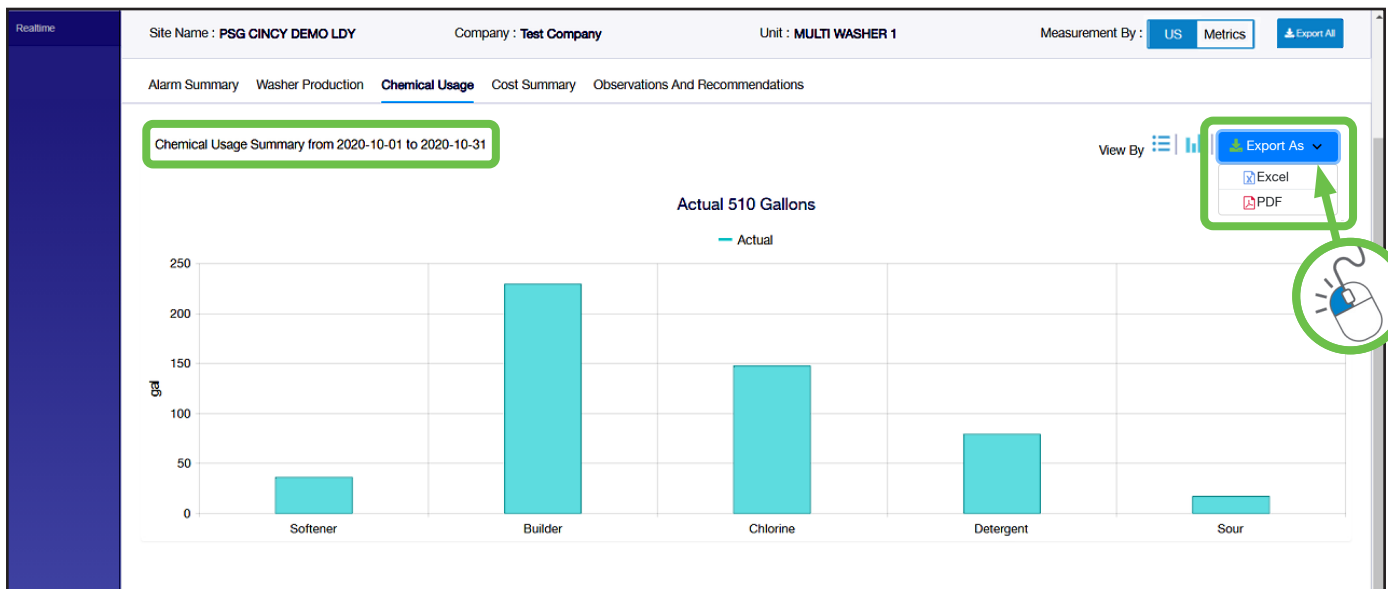
Note: There is a report export option at the upper right of the chart, as on all the Hydro Connect reports. Click **Export As** to download a digital copy of a report, in either Excel or PDF format.

Cost Summary:

The Cost Summary report provides a view of the absolute cost and the cost-per--weight (100 lbs or kg) in total and per formula.

The red "difference" value shows the impact from the dosage errors that were short from the usage summary.

The default view for this report is a table, shown below, but by clicking the **View By** selector at the upper right, the user can change to a bar-chart view for the absolute cost or cost-per-weight by formula.

(A bar-chart style Cost Summary Report is shown on the next page.)

3.05 Historical Reports – Monthly & Date Range (continued)

Cost Summary: (continued)
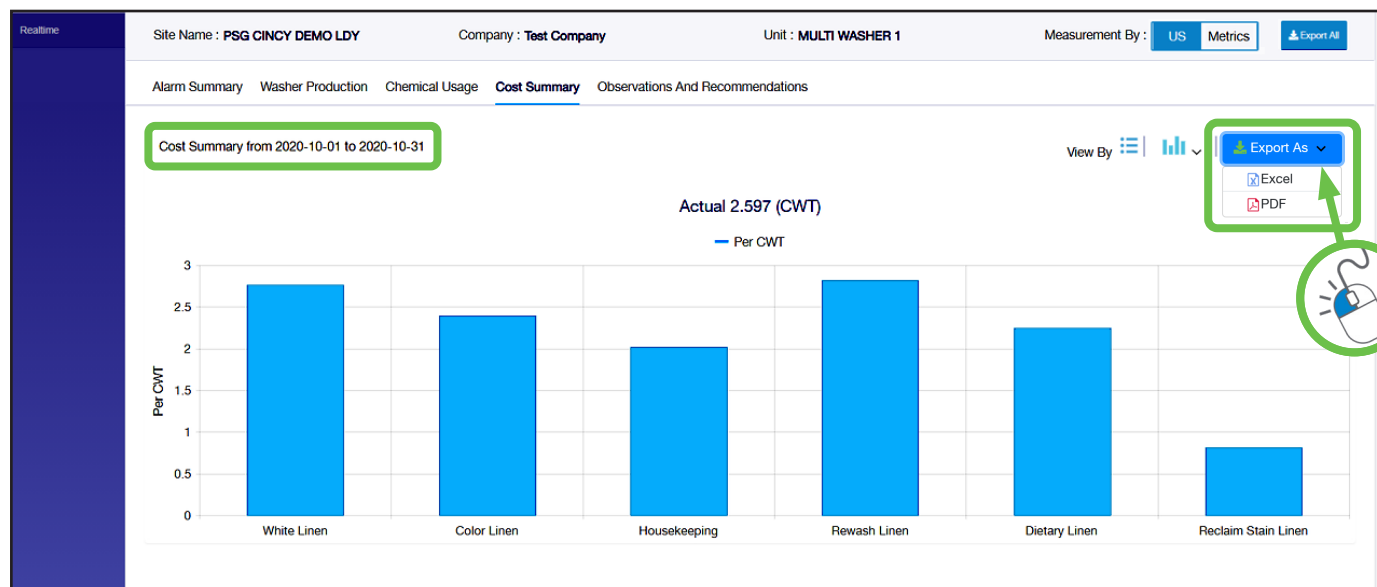
Note: There is a report export option at the upper right of the chart, as on all the Hydro Connect reports. Click **Export As** to download a digital copy of a report, in either Excel or PDF format.

Observations and Recommendations:

The **fifth tab** on the Historical **Monthly** Reports is for the monthly **Observations and Recommendations** Report and therefore is **not** shown on the Historical **Date Range** Reports.

The monthly Observations and Recommendations Report is available on a subscription basis. An experienced Hydro Laundry Specialist will review the Alarm Summary Report and make Observations regarding the various alarms reported along with Recommendations to correct the alarms or help pinpoint the source of the alarms.

3.06 Historical Reports – Date

If Date is selected in the View By menu, a summary for each washer's production will be displayed for a single day.

Just choose the Date from the calendar and the Shift from the drop-down menu and click View..

Click any individual washer display to access a detailed, machine-specific production report for this day.

The resulting View By Date report (shown above) allows operators to see a summary of each washer in the facility with a breakdown of loads and weight run along with washer efficiency and average turn time on that date. (For more details, including the definitions of turn time and efficiency see the **Washer Production** section that starts on page 12.)

To see the details for an individual washer, simply click the washer of interest to display its **Daily Washer Report**. This report will show specific information about the loads and formulas run for that particular washer on that day.

(An example of the individual Daily Washer Report is shown on the following page.)

3.06 Historical Reports – Date (continued)

Daily Washer Report:

The default view for the Daily Washer Report is the **FORMULA** view that displays each formula run and the number of occurrences of each formula.

To switch to the MACHINE view, simply click the Machine option, shown above at the left side of the report.

The **MACHINE** view shows each formula run, the start and stop time, total elapsed time, turn time, and whether there were any problems dosing the individual phases. This display can be used by laundry operators each day to check for any dosing issues that require attention. (As always, there is an **Export As** report option at the upper right of the page, to download a digital copy in either Excel or PDF format.)

An operator can simply **click the down arrow** on the left side of the formula entry (as shown below) to expand the selection to show each individual product dosage; including the product dosed, the actual volume dispensed, and the time to do so.

3.07 Admin - Company

Users that have been assigned **Administrator** privileges on Hydro Connect will be able to use the link to the Admin section, on the left side list of the Hydro Connect interface. The Admin section is where a user can configure the hierarchy and grouping of users, sites, and devices in Hydro Connect.
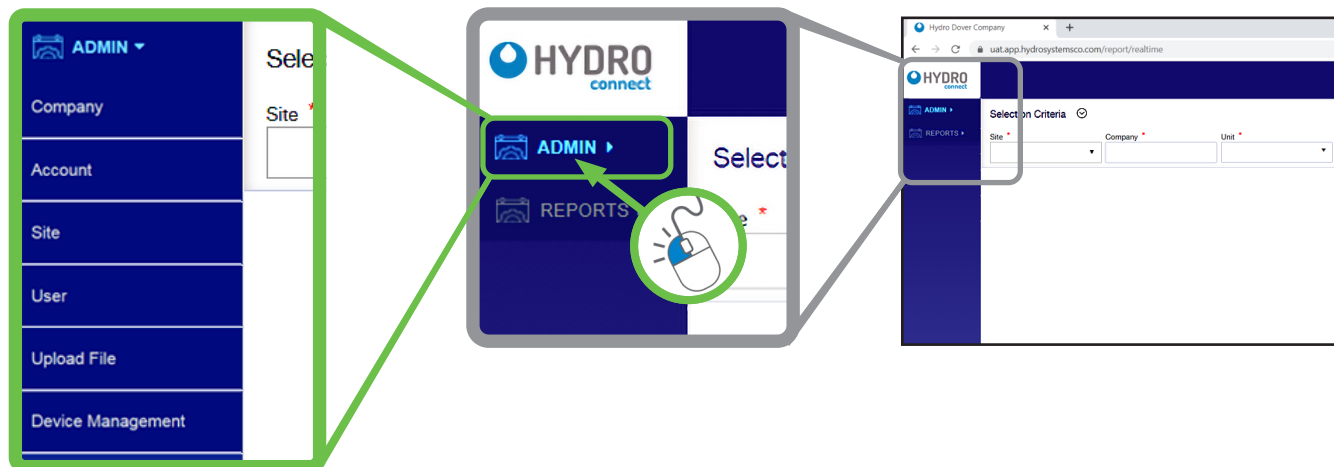
To navigate the Admin section, ignore the Search Criteria boxes left over from the Reports landing page and simply click the link in the left-side list to the sub-section of interest to configure those settings. The sub-sections of the Admin menu include:

- **Company:** The top level in Hydro Connect. They typically consist of multiple accounts, sites, and users of Hydro Connect.
- **Account:** A Company may service many Accounts (e.g. an end user). A single account (e.g. the Hydro Hotel Chain) may have multiple associated sites.
- **Site:** An individual location that houses equipment connected with Hydro Connect.
- **User:** A person who has access to Hydro Connect. There are varying levels of access within Hydro Connect with different responsibilities for each.
- **Upload File:** Allows users to manually upload new data or a configuration file to a specific site if the real-time service is not activated.
- **Device Management:** Provides a list of all devices in the user's hierarchy and allows qualified users to access device configuration settings.

Company:

When the Company sub-section is selected, a grid of "company cards" will be displayed automatically, for all the companies that the user can view or edit, as shown below:
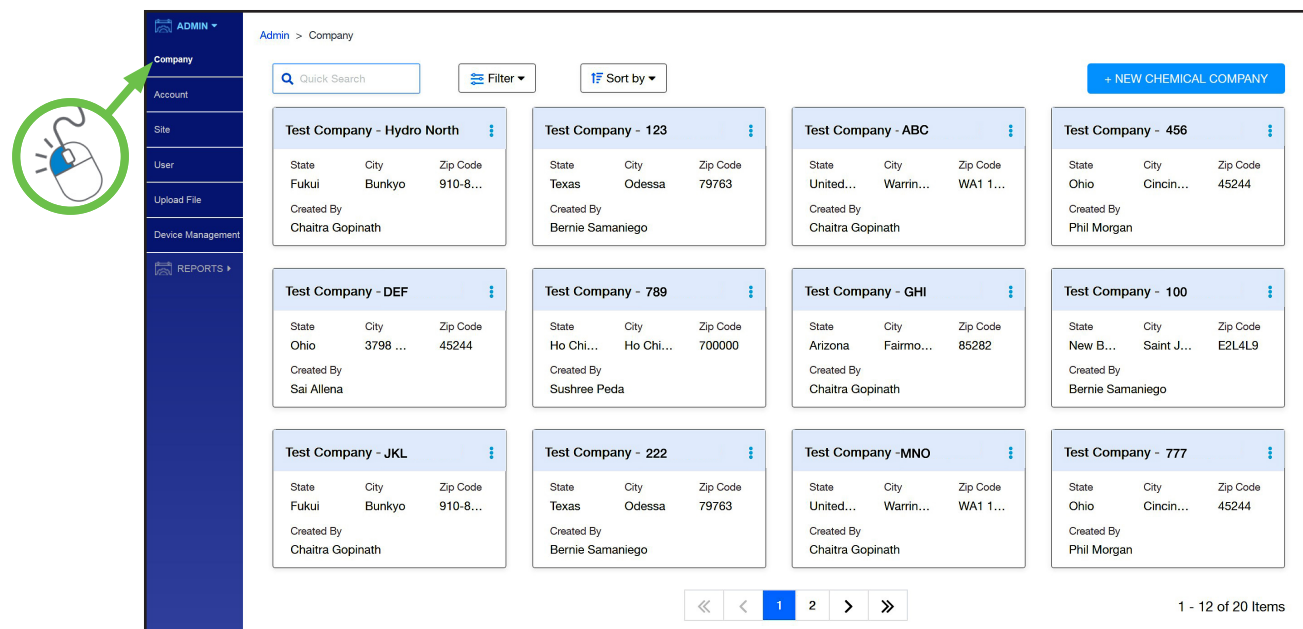
3.07 Admin – Company (continued)

Company: (continued)

If multiple company cards are shown, a search bar and filter (country, city, state, zip code) can be used to narrow down those listed and speed up the selection process, as demonstrated below:

Click the "three dots" at the upper-right corner of any company card to view or edit company details.

For most users, this will only be the company they work for. The summary card for a Company includes the company name, location state, location city, and location zip code. Additionally, the user that created the company will be shown (see above).

To view or edit (if allowed) a company's details, click the **three dots** in the upper right-hand corner of the company card.

Note: Not all users will have the rights to access or edit company details.

Company Card Details:

Clicking the "three dots" on a company card will invoke the Edit/View Company menu, with three tabs for viewing or editing the company information: **Chemical Company Details, Contact Info** and **Alert Settings**.

Chemical Company Details:

This section allows the user to view the company name, address and description. Any edits to this section can be saved or updated by clicking the blue **Update** button or canceled by clicking **Cancel**. The **Next** button advances to **Contact Info**.

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3.07 Admin – Company (continued)

Contact Info:

Contains any key contacts at the Company (these may or may not be users of Hydro Connect) and allows new contacts to be created. A card will exist for each contact. Clicking the three dots icon on the card will allow the existing contact information to be viewed or edited. To set up a new contact, enter the Title, Contact Name, Contact #, and Email and click Save.

Clicking **Update** will save any changes made, while **Cancel** will revert back without the changes. To go to the **Alert Settings** menu, click **Next**.

Alert Settings:

These are the alarm notification preferences for the Company. For each alarm type, an authorized Company Admin can customize the below alarm settings by user type.

- **Type of Notification:** Either SMS via the phone number listed or e-mail via the e-mail listed in the User profile
- **Threshold:** The number of alarms needed to trigger a notification
- **Reset Count Every:** Setting that resets the alarm count towards the threshold. Settings are every Shift, Every Day, Every Week, or Every Month

3.08 Admin – Account

When Account is selected, a grid of "account cards" will be displayed for the accounts that a user can view or edit.

An account card will indicate the account name, location state, location city, and location zip code. Additionally, the user that created the account will be shown.

If multiple accounts are shown, a search bar and filter (country, city, state, zip code) can be used to narrow down those listed and speed up the selection process.

To view or edit the account details (if allowed), click the **three dots** in the upper right-hand corner of the account card.

Note: Not all users will have the rights to access or edit account details.

Clicking the "**three dots**" on a account card will invoke the Edit/View Account menu, with two tabs for viewing or editing the account information: **End User Account Details** and **Contact Info**.

End User Account Details:

This section displays the address and comments for the Account along with which Companies are associated with the Account.

Note: Multiple companies can service the same account. For example, a large hotel chain may use different chemical companies in different regions.

Any edits to this section can be saved or updated by clicking the blue **Update** button or canceled by clicking **Cancel**, while clicking **Next** advances to the Contact Info tab.

3.08 Admin – Account (continued)

Contact Info:

Clicking the Contact Info option will display a grid of "contact cards" for this Account, showing any key contacts (these may or may not be users of Hydro Connect) and allowing new contacts to be created.

To set up a new contact, enter the Title, Contact Name, Contact #, and Email and click **Save**.

Clicking the **three dots** icon at the upper-right corner of any contact card will allow the existing contact information to be viewed or edited.

Clicking **Update** will save any changes made, while **Cancel** will revert back without the changes.

Click the "three dots" at the upper-right corner of any contact card to view or edit contact details.
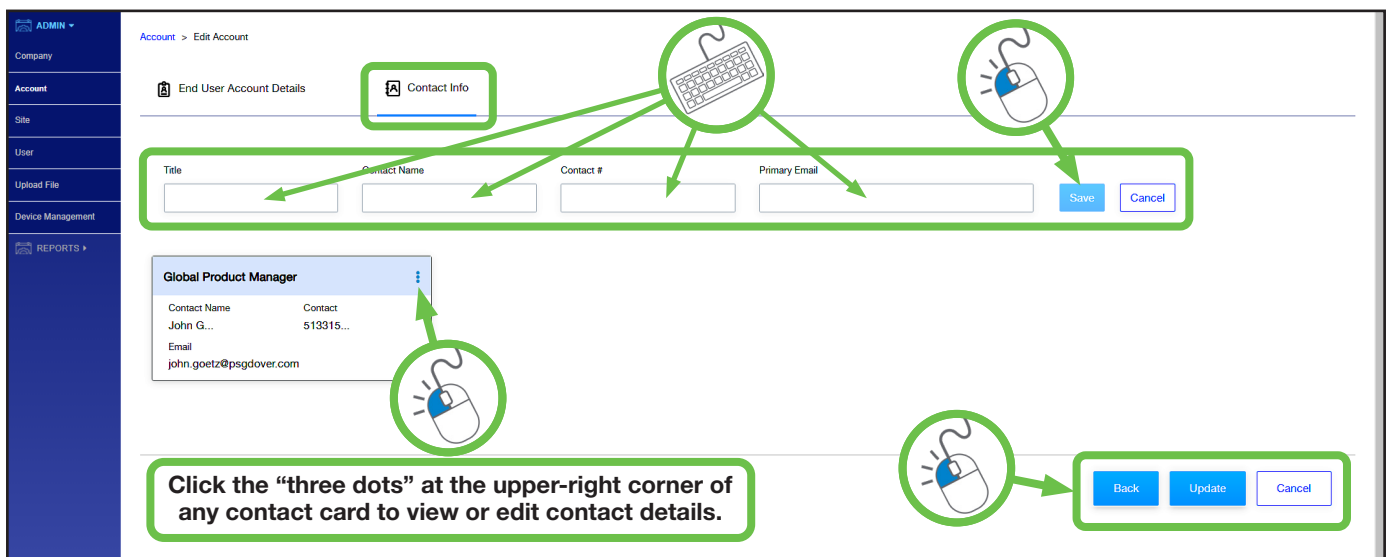
3.09 Admin – Site

Clicking the **Site** option in the left-side list will display a grid of site "summary cards" for the sites that a user can view or edit.

The summary card for a site includes the site name, which user created the site, the corresponding account and company, location state, location city, and location zip code. Additionally, the unique site identifier assigned by Hydro Connect will be shown.

If multiple sites are shown, a search bar and filter (company, account, country, city, state, and zip code) can be used to narrow down those listed and speed up the selection process.

Click the "three dots" at the upper-right corner of any summary card to view or edit site details.
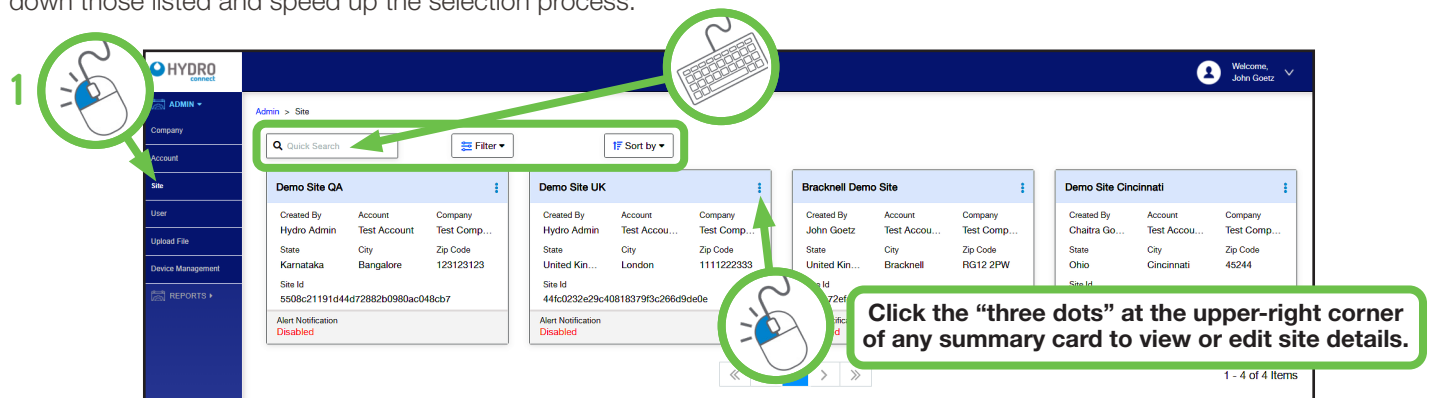
Click the **three dots** at the upper-right corner of any site summary card to view or edit the **Site Details**, **Contact Info**, **Site Preferences** or **Washer Settings.** (There are more details about these settings on the following pages.)

Note: Not all users will have the rights to access or edit these site details.

3.09 Admin – Site (continued)

Site Details:

The Site Details display includes the address and comments on the Site along with the Units of Measurement (US or Metric), Time zone, and associated Account and Company.

Any edits to this section can be saved or updated by clicking the blue **UPDATE** button or canceled by clicking **CANCEL**. **NEXT** advances to the Contact Info tab.

Contact Info:

Clicking the Contact Info option will display a grid of "contact cards" for this Site, showing any key contacts (these may or may not be users of Hydro Connect) and allowing new contacts to be created.

Clicking the **three dots** icon at the upper-right corner of any contact card will allow the existing contact information to be viewed or edited. To set up a new contact; enter the Title, Contact Name, Contact #, and Email, then click **Save**.

Click the "three dots" at the upper-right corner of any contact card to view or edit contact details.

Clicking **Update** will save any changes, **Cancel** will revert back without the changes and **Next** will go to the Site Preferences.

3.09 Admin – Site (continued)

Site Preferences:

Clicking the Site Preferences option will display the various preference settings for this site, which include:

- **Real-time Streaming**: Admin level users can toggle the real-time streaming of data on/off for the site.
- **Alert Settings**: Admin level users can toggle the real-time alerts via SMS or E-mail on/off for the site.
- **Washer Settings**: If the site has multiple washers an average turn time (minutes), idle long time (minutes), and efficiency threshold can be set, as shown below.
- **Tunnel Settings**: If the site has a tunnel washer cycle time (minutes), hold time (minutes), and efficiency threshold can be set, as shown below.
- **Shift settings**: Each site has different shifts that define its work schedule. To align the Hydro Connect reporting to these site-specific shifts, users can enter the shift name and define its start and end time. When this information is entered, click the **blue plus sign** to add the shift.

Clicking **Update** will save any changes, **Cancel** will revert back without the changes and **Next** will go to the Washer Settings.

Washer Settings:

These Washer Settings allow an end-of-load offset time (in seconds) to be added to the specific washers in the site. The user would want to do this if the end of cycle recorded by the dispenser (typically when the last phase doses) is followed by another washer step, such as a long extract process. Configuring the **correct Offset Time** will result in more accurate turn times and efficiency metrics.

Clicking **Update** will save any changes, while clicking **Cancel** will revert back without the changes.

3.10 Admin - User

Click the left-side **User** option to display a grid of "summary cards" in the hierarchy of the person logged in to Hydro Connect. The summary card for a user includes the name, username, e-mail, associated company, role, and which user created the user and when.

Click the "three dots" at the upper-right corner of any summary card to view or edit user details.

Typically, the users displayed would be any user that is lower in the user hierarchy described below. In the hierarchy, a user can create additional users at any level below their current level. For example a Chemical Company Admin can create a Chemical Company Manager downward. A Site Manager can only create Site Users and so on.

User Hierarchies:

Organization Type 1: Chemical Company
User Role 1: Chemical Company Admin
User Role 2: Chemical Company Manager
User Role 3: Chemical Company User
User Role 4: Chemical Company Distributor Manager
User Role 5: Chemical Company Distributor User

Organization Type 2: Site
User Role 1: Site Manager
User Role 2: Site User

To create a new user simply click the **blue "+ New User"** button. Clicking the **three dots** at the upper-right corner of any summary card will allow existing user information to be viewed or edited. In the **Edit/User** menu, there are one or two tabs depending on the user role selected. The **User Details** screen is shown below and the **Sites** screen is on the next page.

3.10 Admin – User (continued)

User Details: Contains the user's name, Hydro Connect username, address, e-mail, and organization type and role. Depending on the organization type and role, the user will either have a single site (e.g. if they are a user in a Site organization) on the User Details tab or multiple sites (e.g. if they are a user in a Chemical Company organization) on the Sites tab which need to be configured. (The User Details screen is shown on the previous page.)

Sites: Contains the names of all the sites in the Chemical Company hierarchy that can be assigned by the user logged in to Hydro Connect. To assign or edit the user's ability to access site data, check the boxes at the left for each site that applies and click **Submit**.
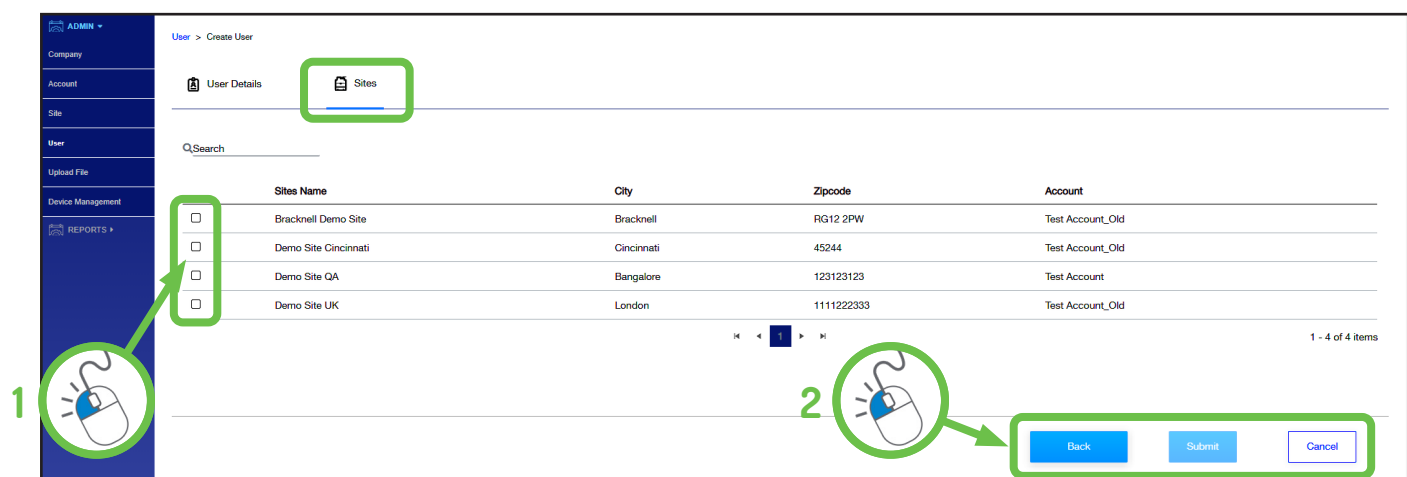
3.11 Admin – Upload File

Click the Admin sub-section **Upload File** to manually **upload a data or configuration file** to a specific site. This can be useful if the real-time service is not active.

When Upload File is selected, a grid of "summary cards" will be displayed for the files uploaded in the past. The summary card for a file includes the file name, who it was uploaded by on what date, and whether the upload was successful.

To upload a file, select the site name from the drop-down. The Company will self-populate. Then browse to find the file that you want to upload and then click the **white Upload button**. If you upload an invalid file type, you will get an error message.
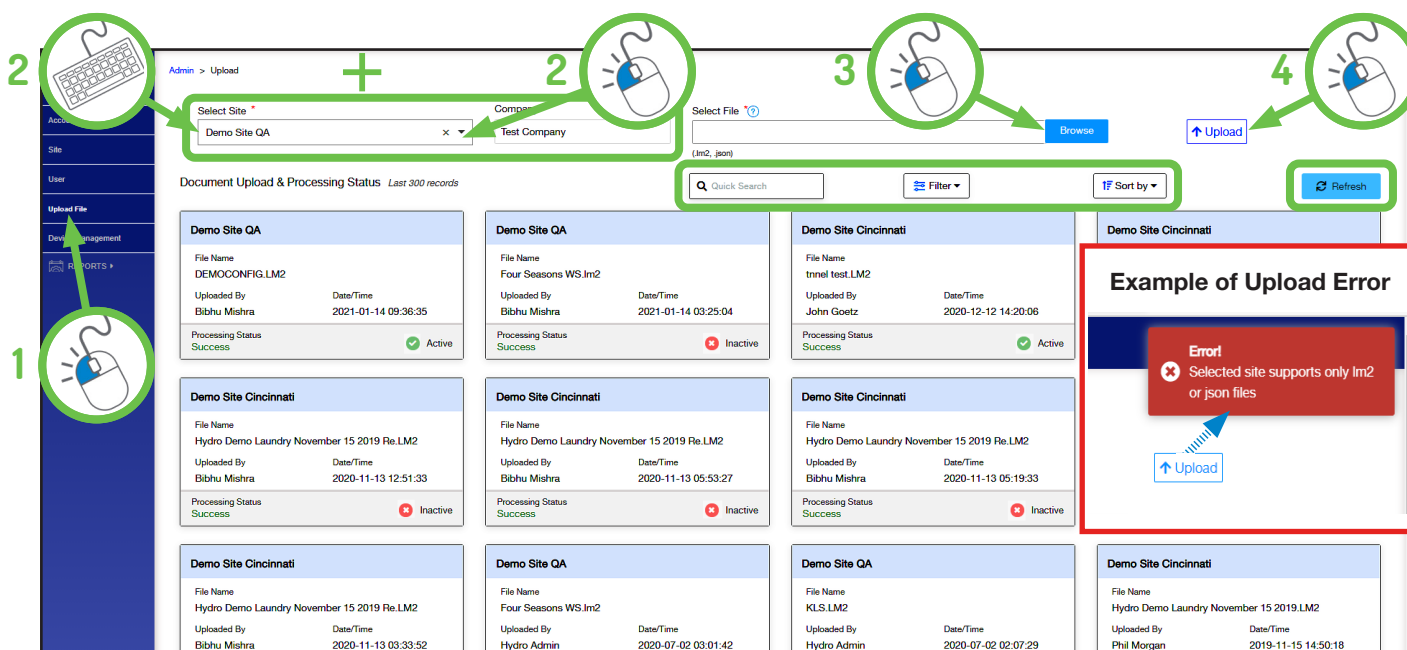
3.12 Admin – Device Management (Remote Configuration)

Clicking the Device Management sub-section on the left side list will display a grid of "summary cards" for all the devices for which the user can view or edit the devices installed, as shown below:
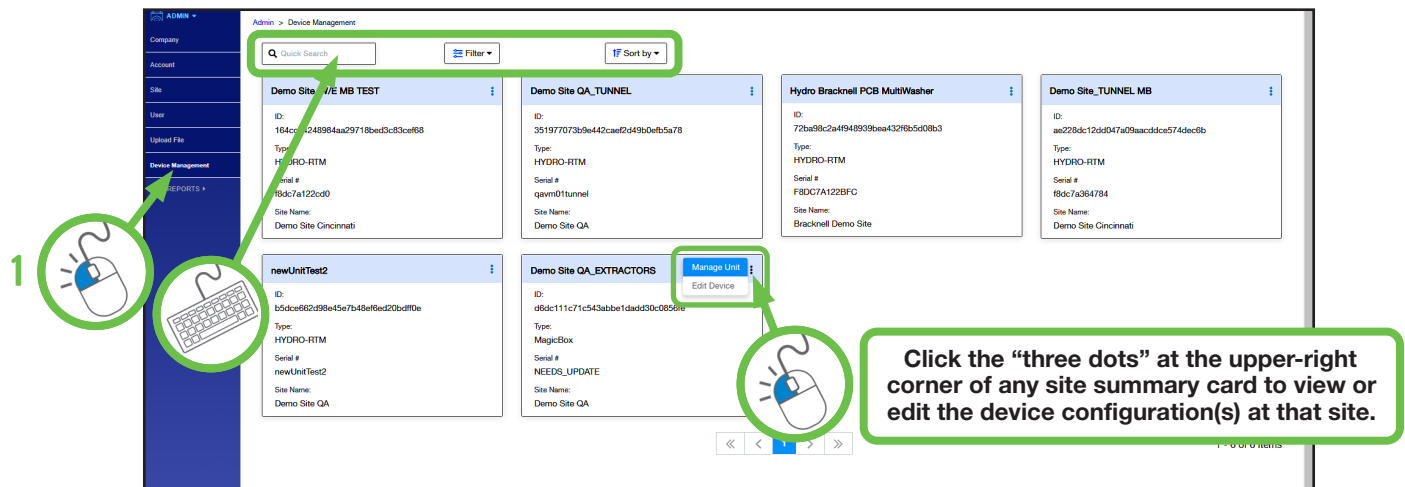
To view and edit the site configuration details remotely, **click the three dots** in the upper right-hand corner of the appropriate site card and select **Manage Unit**.

Note: Not all users will have the rights to access or edit device details.

The **Manage Unit** screen allows the user to remotely change the dispenser settings without making a costly visit to the site. At the top of the screen, the Site Name, Chemical Company name, device Serial Number, and associated Site Address are listed for reference purposes.
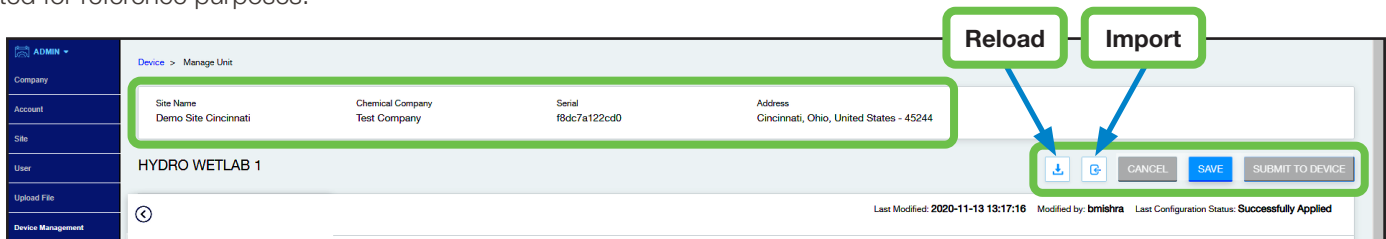
The device alias name and the buttons to Cancel, Save, or Submit changes are located on the bar below the device description with two additional buttons; one to **Reload/Undo** pending changes and another to **Import** a configuration file.

Making and Saving Changes:

Before examining the details of each configuration sub-section, how to **Save** and **Submit** your changes will be explained, since it is the same process on all the sub-section screens.

As soon as a user begins editing a configuration, any changes will be kept in draft form noted by the **red Draft logo** next to the Device Alias until saved to the user's computer or submitted to the unit.
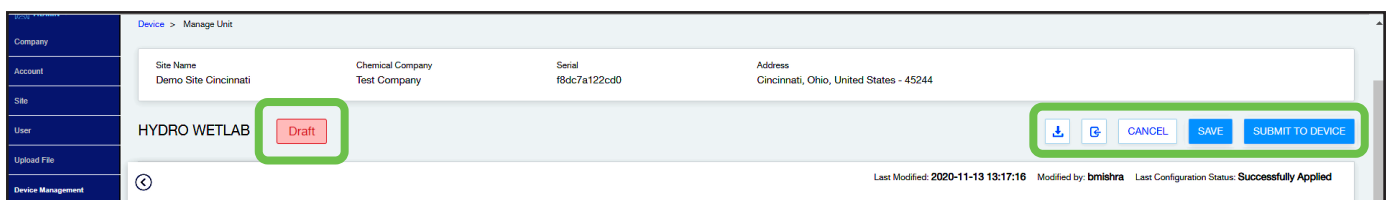
To revert and lose the changes, click **Cancel**. To save the configuration, without submitting the changes to the unit, click **Save**. This Save function will download the configuration .JSON file to the user's computer. This .JSON file can be imported using the **Import File** function to copy a configuration or resume work on an incomplete set of configuration changes. Once imported the configuration can be edited further and/or submitted to the device remotely using the **Submit to Device** button.

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3.12 Admin – Device Management (continued)

Making and Saving Changes: (continued)

When the desired changes have been indicated, the user would click Submit to Device to have the changes sent to the unit.

Any invalid fields that would prevent the change from being successfully implemented will be highlighted with a red caution symbol and explained in a pop-up Validation Error window. The caution symbol can also be clicked to review the error.

After a valid change or set of changes has been submitted, the Last Configuration Status will change to "**Requested**" as Hydro Connect attempts to transmit the changes to the Dositec unit remotely.

Once the changes has been successfully transmitted to the unit, a "Success!" message is displayed and the Last Configuration Status will change to "**Successfully Applied**", confirming the changes were accepted by the Dositec unit.

3.12 Admin – Device Management (continued)

Device Configuration:

Clicking the **Manage Unit** option will display the unit's configuration screen with the section-selection menu displayed in the left portion of the Manage Unit screen, as shown below. The configuration of the unit is split into **five** sections:

- **Unit Parameters:** Describes the basic parameters of the dosing system, such as how many washers or channels. Most of the unit parameters cannot be edited.
- **Washer Extractors:** Describes each washer in terms of size, signaling and other parameters.
- **Water:** Describes the dosing parameters related to the water for flushing.
- **Products:** Describes the dosing parameters related to each product.
- **Formulas:** Describes the phases and products that are assigned to each formula.

This is the selection menu for the 5 configuration sections.

Click the "three dots" at the upper-right corner of any unit summary card and click the Manage Unit option to configure the device.
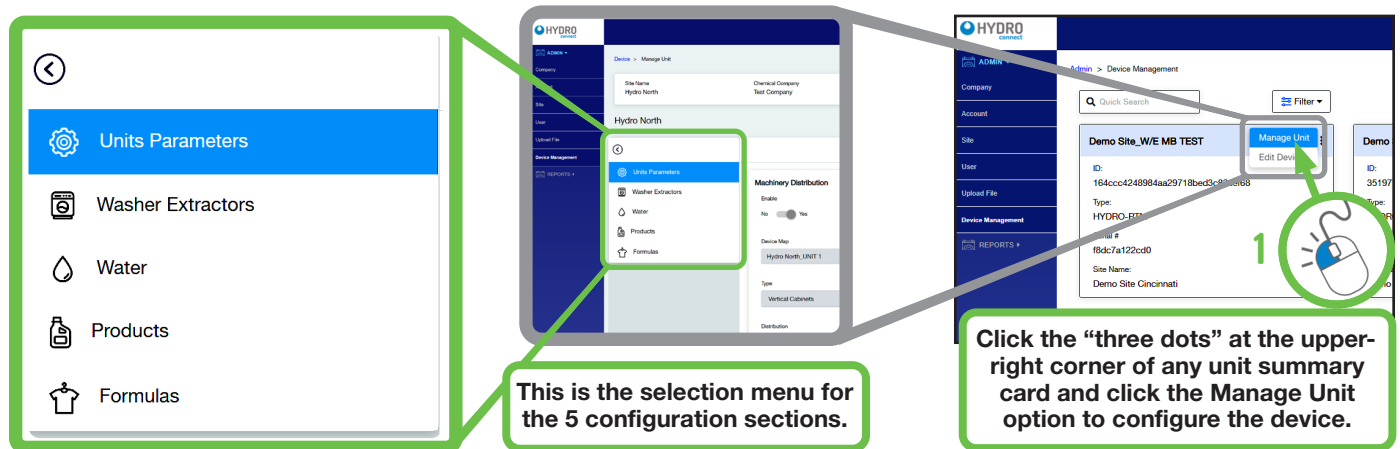
Unit Parameters:

The Unit Parameters configuration section is where the Manage Unit screen opens by default.

This section outlines the basic parameters of the dispensing system. Most of the fields in this section are not editable and are grayed out, indicating they are read-only. Each field is described in more detail below:

- **Controller Type:** This describes the type of Dositec System that has been purchased. MT10 corresponds to a PLC Controlled unit and MT6 or MT3 correspond to the PCB Controlled Multi-washer systems.
- **Device Map:** This lists the device name.
- **Device Alias:** This lists the device alias/shortened name.
- **Type:** Describes the type of Dositec unit, which is typically a vertical floor-standing cabinet or wall-mount panel.

3.12 Admin – Device Management (continued)

Unit Parameters: (continued)

- **IP Address:** Describes the IP Address of the unit's PLC or PCB controller.
- **Distribution:** Lists whether the unit is a Washer Extractor (Multi-Washer) or Tunnel Unit.
- **Washer Extractors:** This is the number of washers configured with the Multi-Washer system and can be adjusted based on the setup of the laundry. For MT10 Controllers the value can be set 1 to 10. For MT6, the value can be set 1 to 6.
- **W.E. Channels:** This shows how many dosing channels are configured on the dispenser.
- **Product Distribution:** For units with multiple channels, this shows how many of the products are used on each of the available dosing channels.

Washer Extractors:

This section allows the parameters for each washer extractor connected to the dispensing system to be configured.

> By clicking on each washer in the list, their Header information, and General and Threshold tabs, can be further configured on the right side of the screen.

On the left side of the screen there is a drop-down that allows the number of washers to be changed (**Note:** This field can also be modified in the Unit Parameters menu.)

This is the **number of washers** configured with the Multi-Washer system and can be edited depending on the setup of the laundry. For MT10 Controllers the value can be set 1 to 10. For MT6, the value can be set 1 to 6.

Underneath the number of washers is a list of boxes with a summary for each washer. The summary includes the washer name and size (lbs or kg), whether the washer is Active or Inactive, and the signal mode that is configured.

Header: Once a washer is selected, it can be named and set to be **Active** or **Inactive**. Inactivating a washer can be useful if the washer is physically present, but not in use for purposes of efficiency and other metrics in Hydro Connect.

General: This section defines the washer and how it is configured to send signals to the dispensing system. Each field to be configured on this tab is explained in more detail below:

- **Load:** This describes the weight capacity of the washer in terms of lb. or kg.

- **Load Selector:** Indicates whether formula selectors are used with the dispenser.

- **Flush Volume:** Indicates the amount of water configured to flush the products to the washer. This field is used if the system is not configured with the optional air flush.

- **No. of Signals:** Indicates the number of signals used on the washer to trigger formulas on the dispenser.

- **Voltage of Signals:** Indicates the voltage level of the signals that the washer will send.

3.12 Admin – Device Management (continued)

Washer Extractors: (continued)

- **ID Formula:** This indicates how formulas are identified and how new cycles are started. The options are:

Time of Signal 6: Formula selection starts with Formula 1, with each consecutive "signal time" duration that signal 6 is present increasing the Formula chosen by 1. The signal time (also called the acceptance time) can be user-defined as either 3 seconds or 5 seconds.* The formula number will be the duration of the signal divided by the signal time setting. This is shown in the tables below:

<table>
<tr><td colspan="2" align="center">Signal Time = 3 seconds</td></tr>
<tr><td>Duration of Signal 6</td><td>Formula Selected</td></tr>
<tr><td>3 seconds</td><td>Formula 1</td></tr>
<tr><td>6 seconds</td><td>Formula 2</td></tr>
<tr><td>9 seconds</td><td>Formula 3</td></tr>
<tr><td>12 seconds</td><td>Formula 4</td></tr>
<tr><td>15 seconds</td><td>Formula 5</td></tr>
<tr><td>18 seconds</td><td>Formula 6</td></tr>
<tr><td>N x 3 seconds</td><td>Formula N</td></tr>
</table>

Signal Time = 5 seconds	
Duration of Signal 6	**Formula Selected**
5 seconds	Formula 1
10 seconds	Formula 2
15 seconds	Formula 3
20 seconds	Formula 4
25 seconds	Formula 5
30 seconds	Formula 6
N x 5 seconds	Formula N

In this **Time of Signal 6** mode, signal 6 cannot be used for dosing because it is being used for Formula identification.

* Note: The signal time can be user-defined as 3 seconds or 5 seconds by adjusting DIP switches inside the Dositec communications boxes attached to each washer. For more information, contact Hydro Product Support.

Time of Signals 1 & 5: Similar to the "Time of Signal 6" mode, except this method detects both Signals 1 and 5 simultaneously. The Signal 1 durations to select Formulas start at 10 seconds, with 5 second upward increments. The Signal 5 durations start at 5 seconds with 5 second upward increments. These two signals are combined in groups of 9 combinations to select the Formula. This is shown in the tables below:

Signal 1 = 10 seconds			**Signal 1 = 15 seconds**			**Signal 1 = 20 seconds**		
Signal 1	**Duration of Signal 5**	**Formula Selected**	**Signal 1**	**Duration of Signal 5**	**Formula Selected**	**Signal 1**	**Duration of Signal 5**	**Formula Selected**
10 sec	5 seconds	Formula 1	15 sec	5 seconds	Formula 11	20 sec	5 seconds	Formula 21
10 sec	10 seconds	Formula 2	15 sec	10 seconds	Formula 12	20 sec	20 seconds	Formula 22
10 sec	15 seconds	Formula 3	15 sec	15 seconds	Formula 13	20 sec	15 seconds	Formula 23
10 sec	20 seconds	Formula 4	15 sec	20 seconds	Formula 14	20 sec	20 seconds	Formula 24
10 sec	25 seconds	Formula 5	15 sec	25 seconds	Formula 15	20 sec	25 seconds	Formula 25
10 sec	30 seconds	Formula 6	15 sec	30 seconds	Formula 16	20 sec	30 seconds	Formula 26
10 sec	35 seconds	Formula 7	15 sec	35 seconds	Formula 17	20 sec	35 seconds	Formula 27
10 sec	40 seconds	Formula 8	15 sec	40 seconds	Formula 18	20 sec	40 seconds	Formula 28
10 sec	45 seconds	Formula 9	15 sec	45 seconds	Formula 19	20 sec	45 seconds	Formula 29
10 sec	Forbidden	Forbidden	15 sec	Forbidden	Forbidden	20 sec	Forbidden	Forbidden

Note: The example tables show only a representation to conserve space, but the pattern would continue up to the maximum number of formulas. Time of Signals 1 & 5 mode cannot select Formula numbers that end with zero.

3.12 Admin – Device Management (continued)

Washer Extractors: (continued)

Pairs of Signals: Every time two signals are received simultaneously a new formula will be selected, based on the signals that are paired. This is shown in the tables below:

Pairs of Signals		Pairs of Signals		Pairs of Signals	
Signals	**Formula Selected**	**Signals**	**Formula Selected**	**Signals**	**Formula Selected**
1 & 2	Formula 1	3 & 5	Formula 11	6 & 7	Formula 21
1 & 3	Formula 2	3 & 6	Formula 12	1 & 8	Formula 22
1 & 4	Formula 3	4 & 5	Formula 13	2 & 8	Formula 23
1 & 5	Formula 4	4 & 6	Formula 14	3 & 8	Formula 24
1 & 6	Formula 5	5 & 6	Formula 15	4 & 8	Formula 25
2 & 3	Formula 6	1 & 7	Formula 16	5 & 8	Formula 26
2 & 4	Formula 7	2 & 7	Formula 17	6 & 8	Formula 27
2 & 5	Formula 8	3 & 7	Formula 18	7 & 8	Formula 28
2 & 6	Formula 9	4 & 7	Formula 19	Forbidden	Formula 29
3 & 4	Formula 10	5 & 7	Formula 20	Forbidden	Formula 30

In this Pairs of Signals mode, no time control is needed. This mode is recommended when the machine allows sending two simultaneous signals without the possibility to control their time. All signals are available after Formula identification as long as they are received independently.

Formula Selector: This is a manual way of identification using a dedicated formula selector. It is recommended when there is no possibility to control the signals of the washer extractor. By using the UP/DOWN buttons on the selector, it is possible to set the formula number. When the end of the cycle is reached (reset), the formula selector shows '00'.

Signal = Formula: Every time signal 6 is received, the unit gets ready to identify the new formula number. After this, the following incoming signal will determine the number of formula (no dosage will occur). The next time any signal comes (except from 6); the dosage associated to it will begin. This means we have a maximum of 7 formulas since the signal board has 8 inputs. Formula 6 is not available.

Binary: In this mode, the machine sends any combination of signals between 1 and 5 simultaneously with signal 6. The combination of signals defines a number in binary code. Signal 6 tells the unit to begin a new formula whose number is the one defined by the combination. All the signals must active for the same duration, greater than the "Signal Time" defined earlier. The signal combinations and resulting formula number are shown in the tables below:

Binary Mode Combinations

1	2	3	4	5	6	Formula Selected
•					•	Formula 1
	•				•	Formula 2
•	•				•	Formula 3
		•			•	Formula 4
•		•			•	Formula 5
	•	•			•	Formula 6
•	•	•			•	Formula 7
			•		•	Formula 8
•			•		•	Formula 9
	•		•		•	Formula 10
•	•		•		•	Formula 11

Binary Mode Combinations

1	2	3	4	5	6	Formula Selected
		•	•		•	Formula 12
•		•	•		•	Formula 13
	•	•	•		•	Formula 14
•	•	•	•		•	Formula 15
				•	•	Formula 16
•				•	•	Formula 17
	•			•	•	Formula 18
•	•			•	•	Formula 19
		•		•	•	Formula 20
•		•		•	•	Formula 21
	•	•		•	•	Formula 22

Binary Mode Combinations

| 1	2	3	4	5	6	Formula Selected
•	•	•		•	•	Formula 23
			•	•	•	Formula 24
•			•	•	•	Formula 25
	•		•	•	•	Formula 26
•	•		•	•	•	Formula 27
		•	•	•	•	Formula 28
•		•	•	•	•	Formula 29
	•	•	•	•	•	Formula 30
•	•	•	•	•	•	Formula 31
Forbidden						Formula 32

3.12 Admin – Device Management (continued)

- **Working Mode:** This indicates how formulas are identified and how new cycles are started.

    Signal Mode (Most recommended): The unit doses the set of products (called a phase) assigned to the number of the incoming signal. Once a signal has been accepted, it has no longer effect until the cycle re-starts. See the example below:

Signal 1 →	Phase 1	Signal 3 →	Phase 3	Signal 4 →	Phase 4
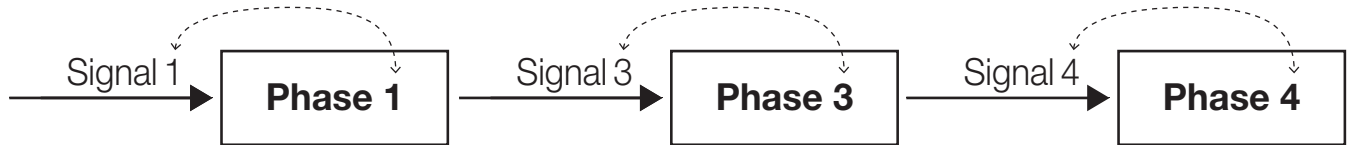
    Sequential Mode: Every time signal 1 or 2 is received, the unit advances one step in the formula and doses the products associated to it. Just for the first phase, we can also use signal 5. (E.g. we can connect a filling valve to signal 5.) The reception of signal 5 after having executed the first phase has no effect. See the example below:

Signal 1 or 2+5 →	Phase 1	Signal 1 or 2 →	Phase 2	Signal 1 or 2 →	Phase 3
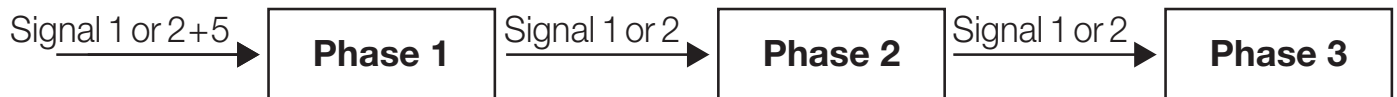
    Signal Mode with Repetition: It works the same as Signal Mode, but it allows the dosage associated to a signal every time it is received. See the example below:

Signal 1 →	Phase 1	Signal 1 →	Phase 1	Signal 3 →	Phase 3
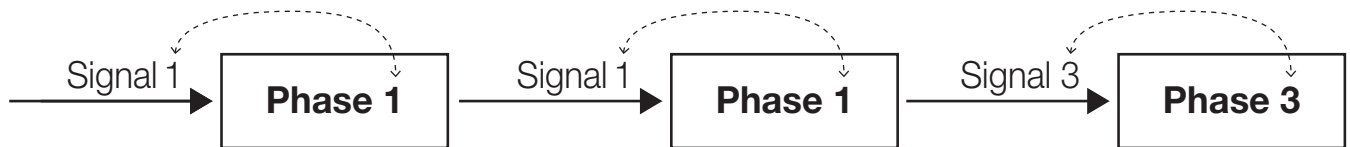
    Mixed Sequential Mode: Works the same as Sequential mode, but it requires exclusively signal 3 to advance to the third phase. See the example below:

Signal 1 or 2+5 →	Phase 1	Signal 1 or 2 →	Phase 2	Signal 3 →	Phase 3

    Signal 1 or 2 ↓

    Phase 4
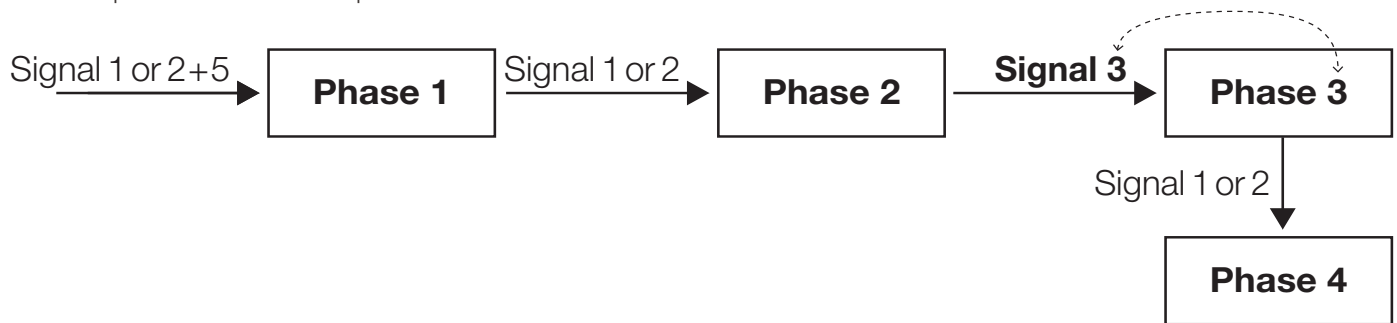
- **Destination (Dest.) Formula:** When a formula selector is used, this is the default value if no formula is chosen by the operator.

- **End Mode:** Indicates how the unit will detect that a load has completed. The options are:

    Signal: The formula will be stamped as completed when the selected signal is received.

    Pump: The formula will be stamped as completed when the selected product is dispensed on the last programmed phase.

3.12 Admin – Device Management (continued)

Thresholds: On the **Manage Unit** screen, there are two tabs for the device configuration, **General** and **Thresholds**.

The details of the General tab have been discussed above. **The Thresholds section defines the duration for signals and allows the configuration of the optional Machine Pause/Stop feature.** Each field to be configured on this screen is explained in more detail below.

- **Acceptance:** The amount of time that a signal from the washer must be present before the dispenser will acknowledge it.

- **Non-Repetition:** This is the amount of time that the dispenser will ignore other signals after a valid signal is received.

- **Lock After End:** If a formula selector is used, this is the amount of time that the selector is locked out after completing a load.

- **Machine Pause/Stop Type:**

    None: Disables the Machine Pause/Stop feature.

    While Queued: Pauses any machines waiting for a product dispense when a queue of dosing requests exists. With this selection, the washer pauses only while another product is being dosed.

    While Queued and During Dosages: Pauses any machines waiting for a product dispense when a queue of dosing requests exists. The unit pauses from the time the dosing request is received until it has received all the products, including delay times.

- **Machine Pause/Stop Delay:** The amount of time to wait before pausing a washer. This time can be useful if the relay is cutting the water inlet of the washer extractor. In this way, the machine will be paused when a certain amount of the configured water level is reached.

- **Machine Pause/Stop Timeout:** The maximum time that a machine can be paused. Once this time has elapsed, the machine continues the process normally although it is still in queue.

- **End of Load Offset:** A configurable amount of time to add to end of each formula. This is useful if there is an extraction or rinse process after the final dose is delivered or the final signal received.

3.12 Admin – Device Management (continued)

Water:

This section allows the parameters related to delivering the flush water for each dosing channel to be set up.

By clicking on each Channel, their water parameters can be edited on the right side of the screen.

Toward the left side of the screen a list of "channel boxes" is displayed with a summary for each channel. The summary includes the channel name, pump mode, the calibrated flow rate, and the KF value from calibration. By clicking on each channel in the list, the parameters for water in the center of the screen can be set. Below is a description of each field:

- **KF (fl. oz. per pulse):** This value is normally set during calibration so should not usually be set remotely. It represents the volume of water that passes each time a pulse from the flow meter is measured.

- **Flow Rate (fl. oz. per minute):** This value is normally set during calibration so should not usually be set remotely. It represents the volume of water delivered in one minute.

- **Dosing Mode:** This mode is used to determine how to dispense product or water. It can either be set by using the **flow meter** to measure the volume delivered or use the calibration and **time** to infer the amount dosed.

- **Product Gap (Fluid Oz.):** If multiple products are dosed as part of a phase, this is the amount of water that will be flushed between each product dose.

- **Pump Type:** Describes the type of pump being used on the dosing channel (e.g. pneumatic, electromagnetic, peristaltic, or motor). This is typically not changed once set.

- **Expansions:** This field refers to optional channel expansions. It is normally set to 0.

- **Alarm % Tolerance:** When in flow meter mode, this is an additional amount of time as a percentage of the estimated dosing time to allow before triggering/recording an alarm. For example if the estimated dosing time is 10s and 50% is chosen, the unit will attempt to dose for 15s before triggering a flow meter alarm.

- **Skipped Alarms:** When in flow meter mode, this is the number of alarm occurrences that must be registered before the buzzer and screen warning will activate.

- **Flush Mode Options:**

  No Flush or Direct Dosage: Only viable if there is one product on a channel and therefore no flushing is required.

  Water only: Flushing is done with water as described in the water properties.

  Water + Air or Air Flush: When the optional air flush is installed, additional values are required:

  Water Cleaning fl. oz.: The amount of water to flush before the air flush begins.

  Air time(s): The amount of time to activate the air flush after a product dosage.

3.12 Admin – Device Management (continued)

Products:

This section allows the parameters related to delivering the chemical products for each dosing channel to be set up.

> By clicking on each Channel, their Product settings can be viewed and edited on the right side of the screen.

Toward the left side of the screen there is a list of boxes with a summary for each channel and the products within that channel.

The summary includes the channel name and each product name, the calibrated flow rate, and the KF value from calibration.

Additionally, the priority of each product is listed [Pr. n].

By clicking on each product in the list, the parameters for that product appear to the right of the list, and can be viewed and configured. Below is a description of each field:

- **Name:** The name given to the product.

- **Specific Gravity:** Specific gravity is a unitless property of a fluid that relates its density to that of water. Values above 1 are more dense than water and values below 1 are less dense.

- **Concentration:** This is only used for solid products and describes the concentration of active ingredient per lb of product as a percentage. For most systems this will be 100%.

- **KF (fl. oz. per pulse):** This value is normally set during calibration so should not usually be set remotely. It represents the volume of product that passes each time a pulse from the flow meter is measured.

- **Flow Rate (fl. oz. per minute):** This value is normally set during calibration so should not usually be set remotely. It represents the volume of product delivered in one minute.

- **Product Priority:** The priority is used to determine which washer will be dosed next when a queue exists. The washer requesting the highest priority product will be dosed first. Each product in a channel gets a priority number from 0 to n with 1 being the highest priority. A priority of 0 indicates a product is not used or dosed in any formulas.

- **Dosing Mode:** This mode is used to determine how to dispense product. It can either be set by using the **flow meter** to measure the volume delivered or use the calibration and **time** to infer the amount dosed.

- **Alarm % Tolerance:** When in flow meter mode, this is an additional amount of time as a percentage of the estimated dosing time to allow before triggering/recording an alarm. For example if the estimated dosing time is 10s and 50% is chosen, the unit will attempt to dose for 15s before triggering a flow meter alarm.

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3.12 Admin – Device Management (continued)

Products: (continued)

- **Skipped Alarms:** When in flow-meter mode, this is the number of alarm occurrences that must be registered before the buzzer and screen warning will activate.
- **Level Contact:** In the event that depletion wands are used with the system to detect out of product conditions, it indicates whether the float switch is normally open or normally closed.
- **State:** Indicates whether the product is liquid or solid/stock solution.
- **Price/gal:** For purposes of creating reports in Hydro Connect, each product is assigned a cost in terms of the currency per unit volume (Cost/Gallon or Cost/kg).

Formulas:

This section allows the various formulas to be written and edited.

> By clicking on each Formula, their parameters can be viewed and edited on the right side of the screen.

Toward the left side of the screen there is a list of boxes with a summary for each formula that includes only the Formula name.

By clicking on each formula in the list, the parameters for that formula appear to the right of the list, and can be viewed and configured. Below is a description of each parameter field:

- **Formula Name:** The name of the formula to be displayed in Hydro Connect reports.
- **% CW:** This will scale the dosages in the formula by the percentage listed. This value is normally 100%. This parameter has no effect if the real load is acquired by a selector or protocol.
- **Phases used:** The 8 boxes indicate the possible phases that can be programmed for each formula. To add a phase, click a box to make it active/blue. When this is done, the phase will be added to the formula's list of active phases.

- **Copy:** If you would like to copy an existing formula and use it to speed up the process of writing a new formula, you can click copy, navigate to a different unprogrammed formula, and click paste.
- **Flow Rate (fl. oz. per minute):** This value is normally set during calibration so should not usually be set remotely. It represents the volume of product that passes each time a pulse from the flow meter is measured.

(continued)

3.12 Admin – Device Management (continued)

Formulas: (continued)

To write a formula, follow the steps below for each phase added:

1. Use the drop down menus to select the **products** to be dosed and enter the **amounts** (oz/100 lbs or ml/kg).

2. Enter a general delay to be used for the phase to begin, using the **Delay 1** box. This is the amount of time after the signal is received to when the dosing will begin.

3. Check the **D box** for any products that require a secondary/specific delay and enter the time in the box labeled **Delay 2**. This will enable a delay to the dosing of the specific product after the general/Delay 1 time has already elapsed.

In the example shown below, the entire phase would be delayed 15s and then the Detergent would experience an additional 30s delay before it is dosed.

4.00 legal

4.01 Limitation of Liability

Seller's warranty obligations and **Buyer's** remedies are solely and exclusively as stated herein. **Seller** shall have no other liability, direct or indirect, of any kind, including liability for special, incidental, or consequential damages or for any other claims for damage or loss resulting from any cause whatsoever, whether based on negligence, strict liability, breach of contract or breach of warranty.

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