

ABB + **frog**

ABB NGHLA Web UI Guidelines

August 22, 2012



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PURPOSE OF THIS DOCUMENT

This document outlines the design system for NGHLA and serves as a high-level implementation guide for interaction and visual design of this application.

- The document does not define all screens for NGHLA. However, it explains the design rationale and details for some key screens.
- A global elements library is provided for building additional screens.
- It presents a design language that can be used to define more screens in NGHLA as well as other applications for the Oil and Gas Measurement group at ABB.

1. NGHLA DESIGN SYSTEM OVERVIEW

DESIGN RATIONALE

DESIGN PRINCIPLES

PHYSICAL



Connect the physical and digital systems. Follow the operators' mental model of the pad. Use inspiration from physical surfaces and affordances.

TASK FOCUSED



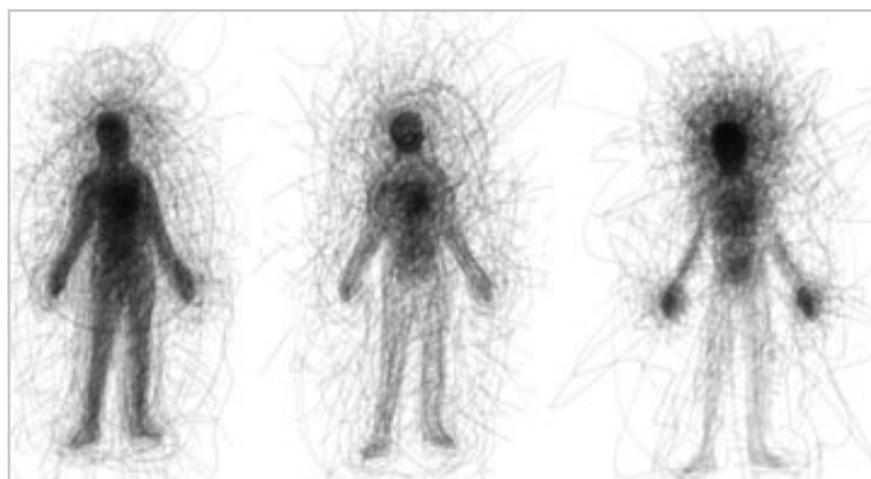
Every element in the UI should help the user complete the task at hand. Navigation is action driven.

MODULAR



Create an expandable, configurable system that is ready for future customization features.

HUMAN



Make data meaningful. Use plain English. Ensure daylight accessibility. Integrate into users' lives.

USABILITY RECOMMENDATIONS

NAVIGATION

- Navigation to every part of the system needs to be quick and obvious.
- The user must always know where they are in the system and have clear next steps.

ORGANIZATION

- Differentiate between read only and actionable areas.
- Create distinct facility and well level screens.

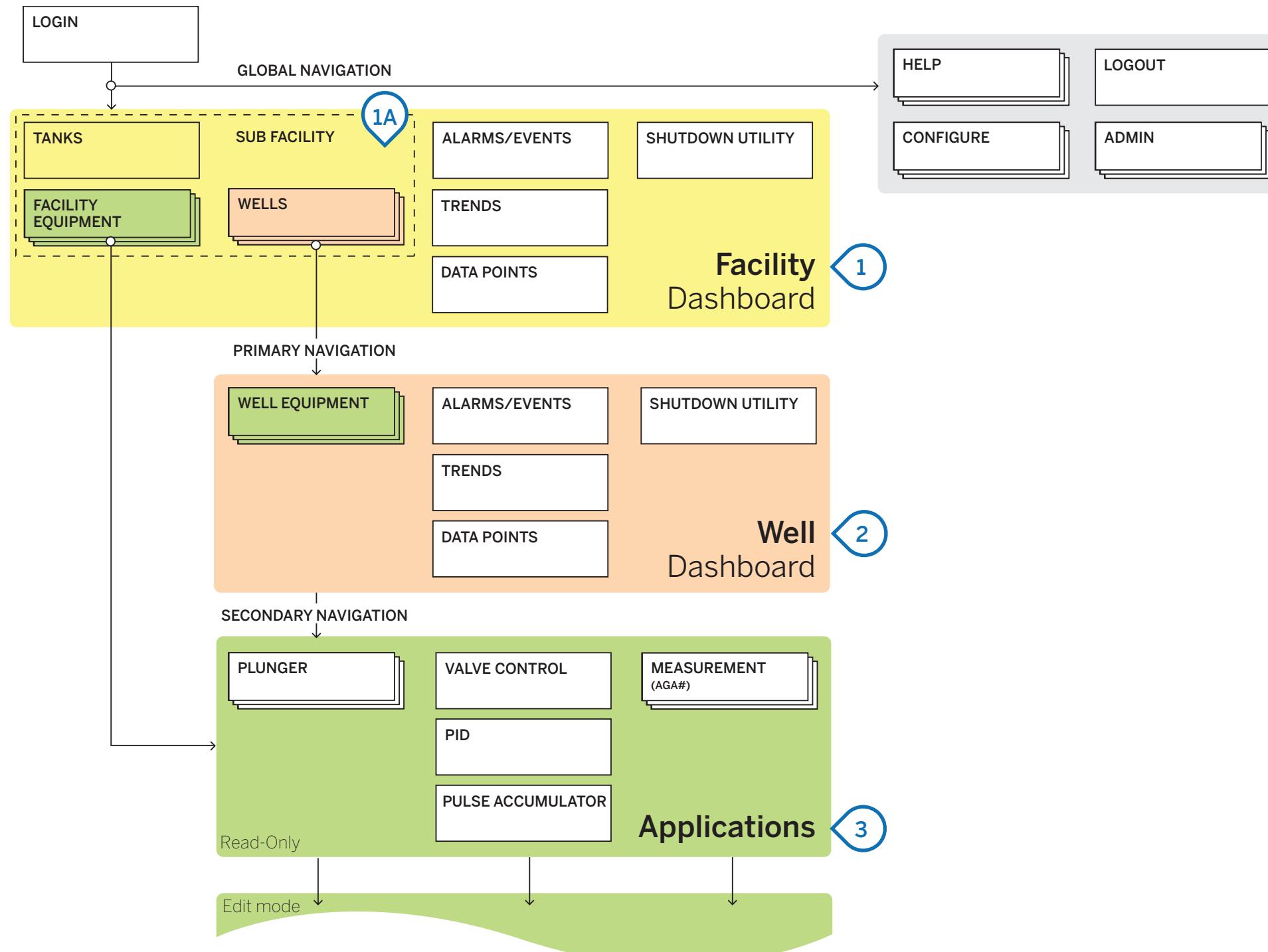
HIERARCHY AND CONTRAST

- Ensure the UI is readable and usable in daylight situations.
- Make the most important information quickly readable.
- Create clear systems for typography and color usage.

FLEXIBLE

- The design system must be scalable to various installations.
- It must also be scalable to other applications in the oil and gas business unit.

INFORMATION ARCHITECTURE



MAPPING THE PHYSICAL ARCHITECTURE:

The physical architecture of the pad has been mapped to different levels of information:

1. Facility Dashboard:

- **High level information** for the facility with important trends, alarms, events and datapoints, any utilities and quick tasks.
- **Links** to the wells on the next level, tanks and any orphan facility equipment/application.
- The **primary navigation** allows movement between facility and wells.

1a. Sub-Facility: Sub-facilities are groups of wells, tanks and equipment. These are optional and are only visible in the primary navigation.

2. Well Dashboard:

- **High level information** for the well with important trends, alarms, events and datapoints, any utilities and quick tasks.
- **Links** to the applications on the next level
- The **secondary navigation** allows movement between wells and equipment.

3. Applications:

- **Detailed information** about an equipment presented in read-only format.
- This information can be edited on modal **overlays** on the application page.

“TOOLBOX” VISUAL DESIGN LANGUAGE



SALIENT FEATURES

Overall, this design has a masculine tone with nods to construction and engineering languages.

There's a generous amount of space between components, giving a sense of organization and calm. Subtle gradients in the background and along the edges of containers and buttons create a sense of tactile depth.

Buttons are large, colorful, easy to use. Large, bold type allows for quick scanning. Dark screens are energy efficient.

Description	Unit
Flare Temp 1	°C
Flare Temp 2	°C

10 DESIGN RULES

1. THE COMPLETE SCREEN NEVER SCROLLS.

The only exception to this rule is when the sitemap drawer pushes the content down.

2. INDIVIDUAL SECTIONS ON ANY SCREENS CAN SCROLL.

However you should try to limit the number of sections that scroll on a screen.

3. CONTROL, EDITING OR MANIPULATION IS NEVER DONE DIRECTLY ON THE ANY SCREEN.

Editable items are indicated with a triangular tab on the corner of the list item on the screen aside from any buttons, dropdowns etc where a value is selected. However, the actual control, editing or manipulation always happens in an overlay.

4. THE TOP SECTION IN ANY DASHBOARD MUST PROVIDE A HIGH LEVEL OVERVIEW.

The most important information is listed, usually as information graphics.

5. THE LEFT SECTION (OVERVIEW) IN ANY APPLICATION SCREEN SHOULD LIST COMMON INFORMATION & CONTROLS.

The basic rule is to pull out any information or control links that are commonly needed across all tabs in that screen. Incase there is no common information, the overview section can be removed. The right section should have specific controls/options, tabbed if there are multiple sections.

6. ANY SECTION ON ANY SCREEN IS ALWAYS, AT LEAST ONE-COLUMN WIDE.

A column is approximately one-third of the complete screen space, where we are applying a 3-column grid.

7. ANY ALARM SHOULD BE VISIBLE AT 3 LEVELS.

On the site map, the alarm section on dashboards and in the respective application screen if any.

8. ALL ACTIVE INFORMATION ON ANY SCREEN AND THE PRIMARY MENU IS NAVIGABLE THROUGH KEYBOARD.

The exception to this rule is the active information on global header, except the primary menu control which can be opened by pressing "M". By active information we mean links to controls and overlays. Buttons, editable list items, form fields interactive information visualizations, dropdown menus, etc.

9. THERE CAN NEVER BE MORE THAN 3 BUTTONS ON THE BOTTOM CHROME OF AN OVERLAY.

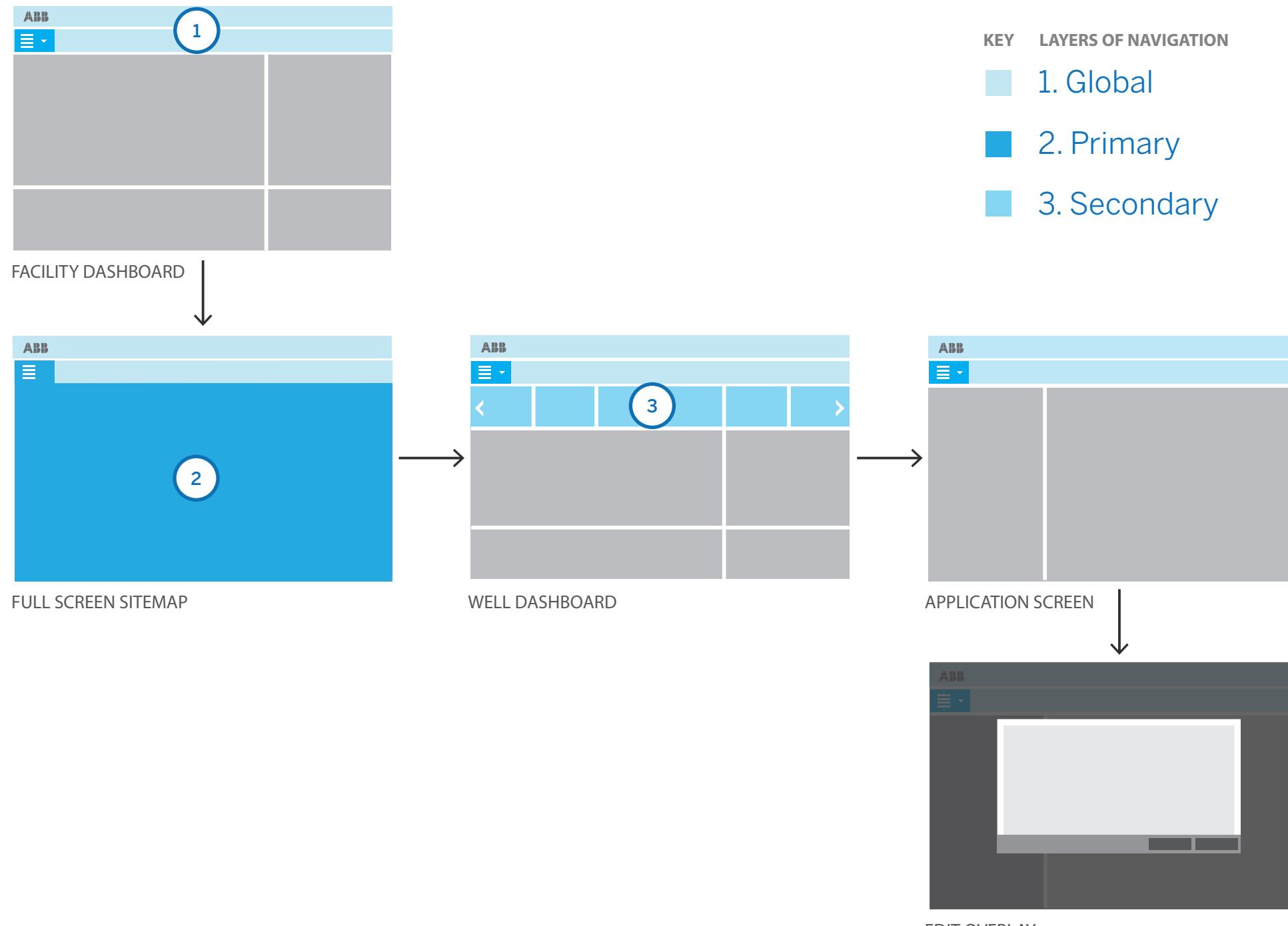
At least two of them are means to cancel/abort and save any changes. The third is optional, but should be used thoughtfully.

10. MAKE THINGS SIMPLE.

Make effective and full use of our 4 levels of information: Facility, Wells, Application and Overlay. Only surface important information at higher levels and tuck details into the lower levels.

2. NAVIGATION

3-LAYERED NAVIGATION SYSTEM



HOME > FACILITY > WELL > APPLICATION

There are three layers of navigation that we have incorporated in this design to ensure easy access to information across the application.

1 Global Navigation: This persistent, globally available space includes information and controls that provide context to the rest of the application such as:

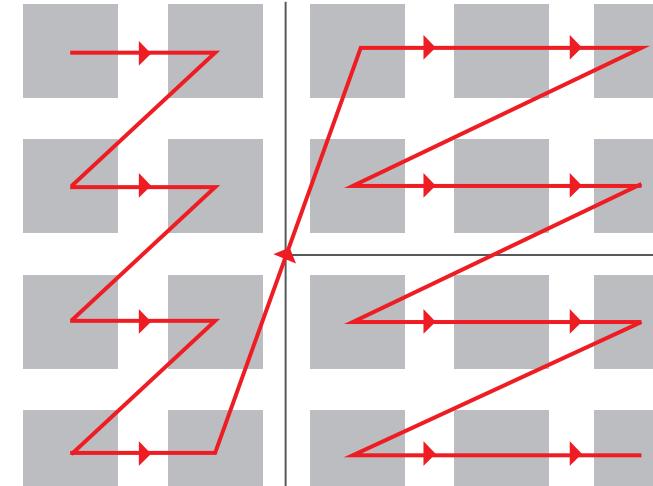
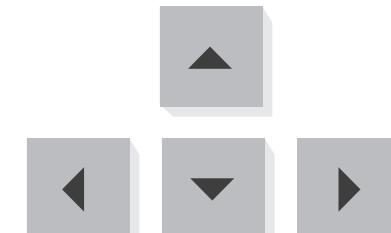
- Application and section name, help and login details.
- Breadcrumbs that indicate a user's location the application.
- Toggle for the primary navigation.

2 Primary Navigation: This navigation or sitemap of the facility provides access to all wells, tanks and facility level applications from a common point on every screen i.e. the left top corner.

- It presents small pieces of information like trends and alarms so that a user can decide which well or tank he wants to look at.
- This is also a place where wells and tanks can be optionally grouped into sub-facilities.

3 Secondary Navigation: This carousel-based navigation system is presented on the well dashboard. It lists each application for the well with an important nugget of information that allows the user to decide which application he wants to navigate to.

KEYBOARD NAVIGATION

	SHORTCUT KEY	RULES
1 JUMP TO NEXT	tab	 <p>The first element for keyboard navigation is always the Facility Site Menu button.</p>
1A JUMP LEFT/UP/DOWN/RIGHT		
2 SCROLL TO NEXT VIEW	space	
3 SELECT/DESELECT	enter esc	
3a OPEN PRIMARY MENU	M	

1. Jump to Next: Pressing the TAB key successively allows the user to navigate through all the actionable information. Some basic rules that apply as follows:

- Within the same section:
 1. The user moves from Left to Right AND Top to Bottom.
 2. UNTIL the end of that section.
- From one section to another:
 1. After the end of a section the user jumps to a new section.
 2. The user is taken to a next section from Left to Right AND Top to Bottom.
 3. UNTIL there are no new sections.

1a. Jump Left/Up/Down/Right: Arrow keys allow the user to move directionally, keeping the rules above.

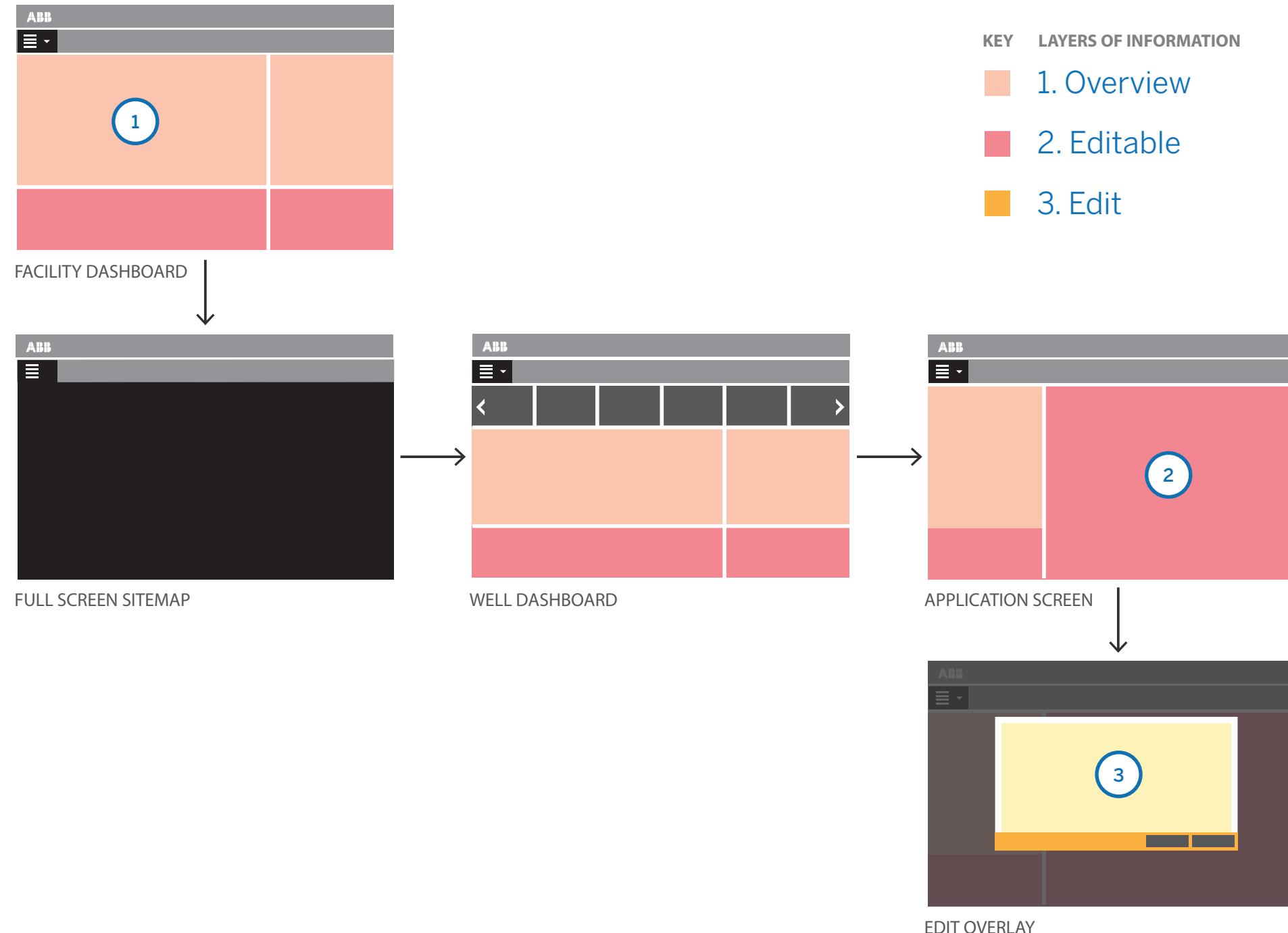
2. Scroll to Next View: The SPACE key allows the user to scroll to the next view of content.

3. Select/DeSelect: ENTER key allows the user to select or open something, whereas the ESC key allows the user to close something.

3a. Open Primary Menu: Pressing the "M" key opens sitemap navigation drawer. Pressing "M" again closes this drawer.

3. LAYOUT AND INTERACTION SPECIFICATIONS

OVERVIEW



LAYERS OF INFORMATION:

The NGHLA system has different layers of information. These have been defined such that the user can engage in **different levels of activity** with the system.

There is a clear mapping between these and the three levels of our information architecture:

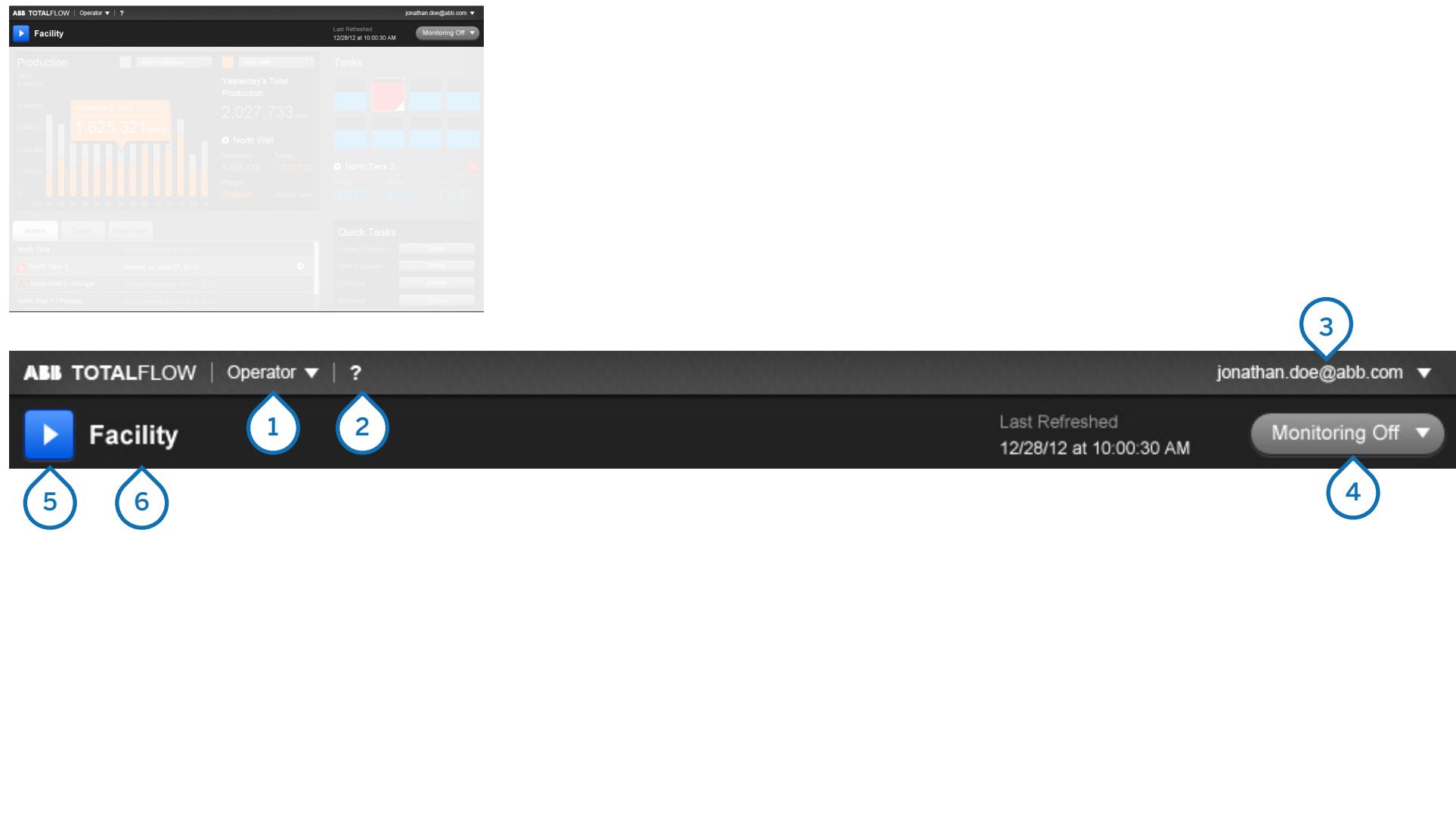
1 Overview: The **read-only information** is defined in the overview sections of Dashboards and Application Screen. This section gives a snapshot of the **current status** of the Facility, a well or an equipment. This information is abstracted to show **relevant and critical information** up front.

2 Editable: The **editable controls** are grouped. Their **current values** are presented. The user should make a decision if they need to edit it. These editable information have a visual cue to distinguish from the read-only information.

3 Edit: All edits happen in an **overlay**. Hence when the editable information is clicked, the user is presented with the **editing options** in an overlay.

Layout and Interaction Specifications

GLOBAL CONVENTIONS



INTERACTION NOTES:

The global navigation contains many settings within NGHLA. It is persistent on all screens and lives up top.

1 Global Navigation Combo box: Using the drop-down, the user can select if they need to **configure, administer or operate** the NGHLA system.

2 Help: Gives access to global Help in NGHLA.

3 User Login: The user's login ID are displayed.

4 Monitoring Interval: The current monitoring status for entire NGHLA is displayed. Using the drop-down, the user can setup time intervals to monitor NGHLA and **receive real-time values**. Monitoring only happens in Operator selection.

5 Primary Navigation: Gives access to the persistent Facility Site Map.

6 Breadcrumbs: Allows to jump to any level of navigation.

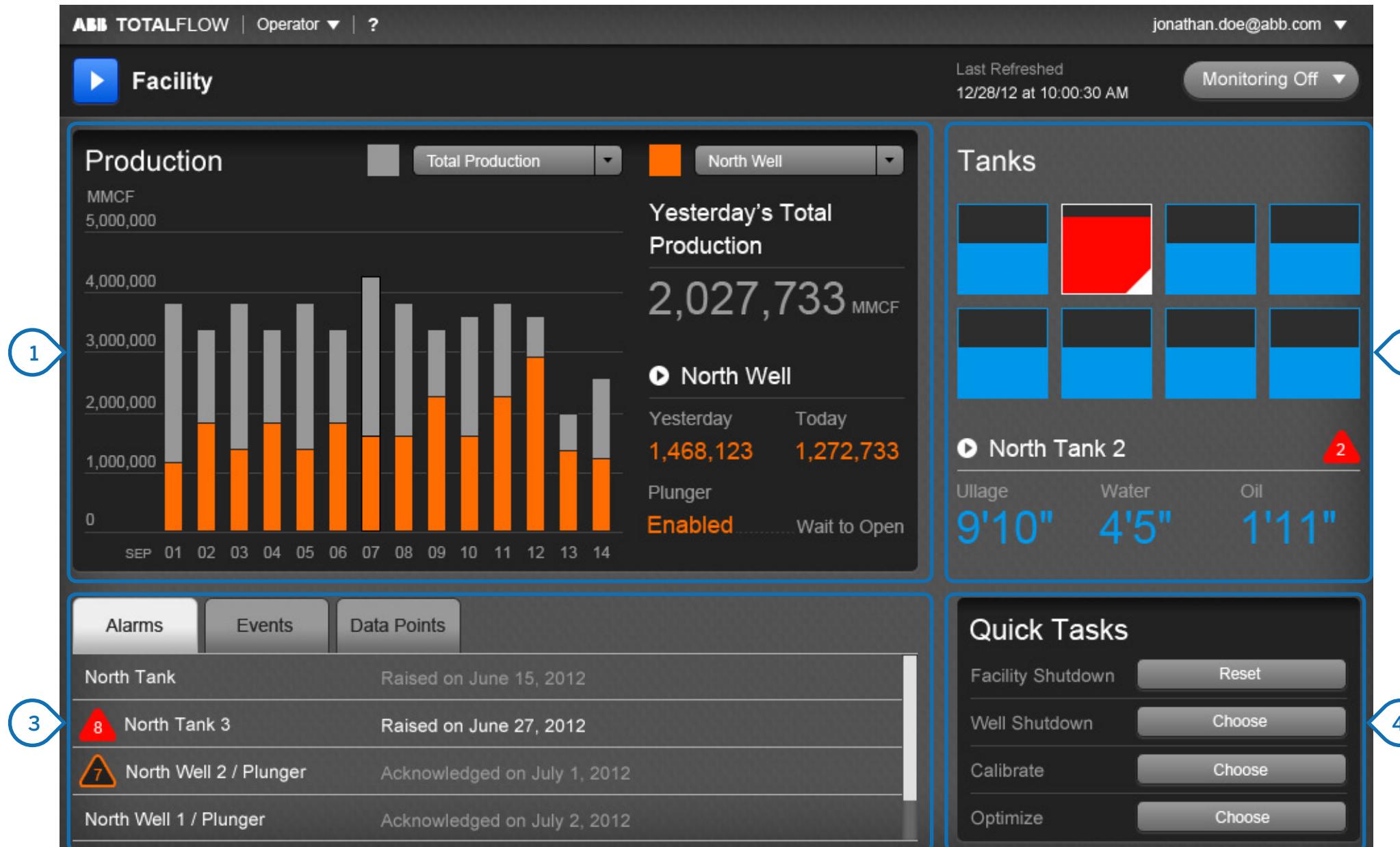
REDLINES: GLOBAL CONVENTIONS



TYPE: GLOBAL CONVENTIONS



FACILITY DASHBOARD SCREEN



INTERACTION NOTES

The Facility dashboard is the landing page when the user is in the operator mode. The dashboard gives a high level information of the facility through widgets.

SECTIONS OF THE DASHBOARD

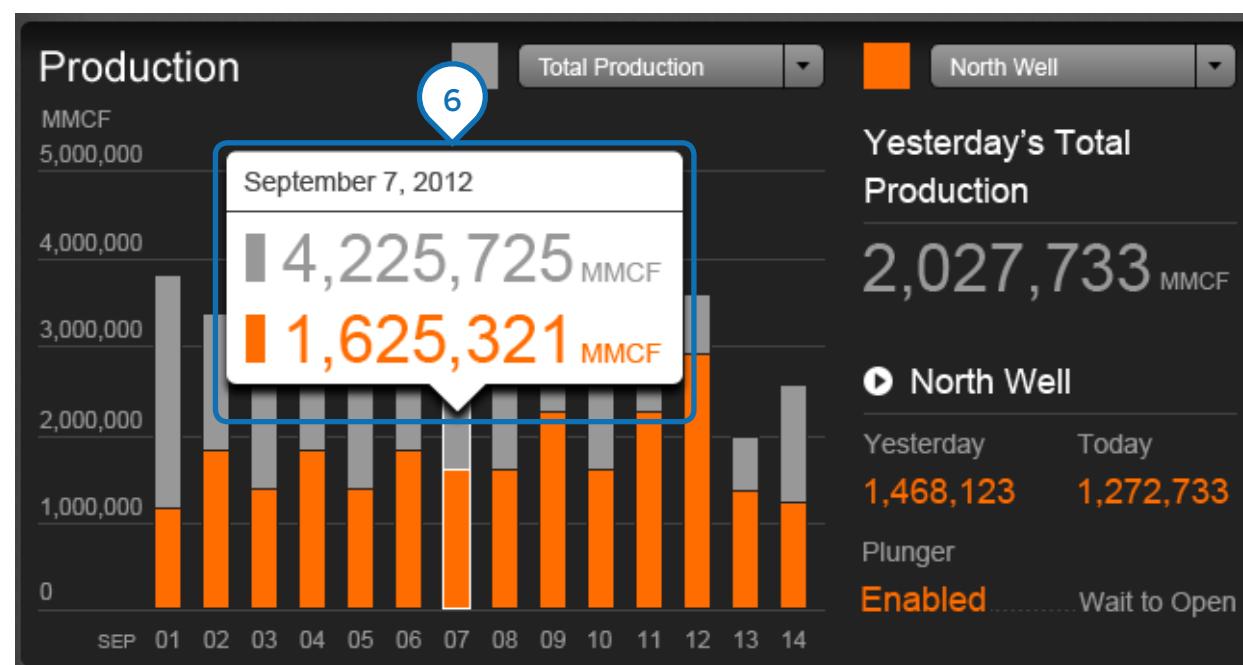
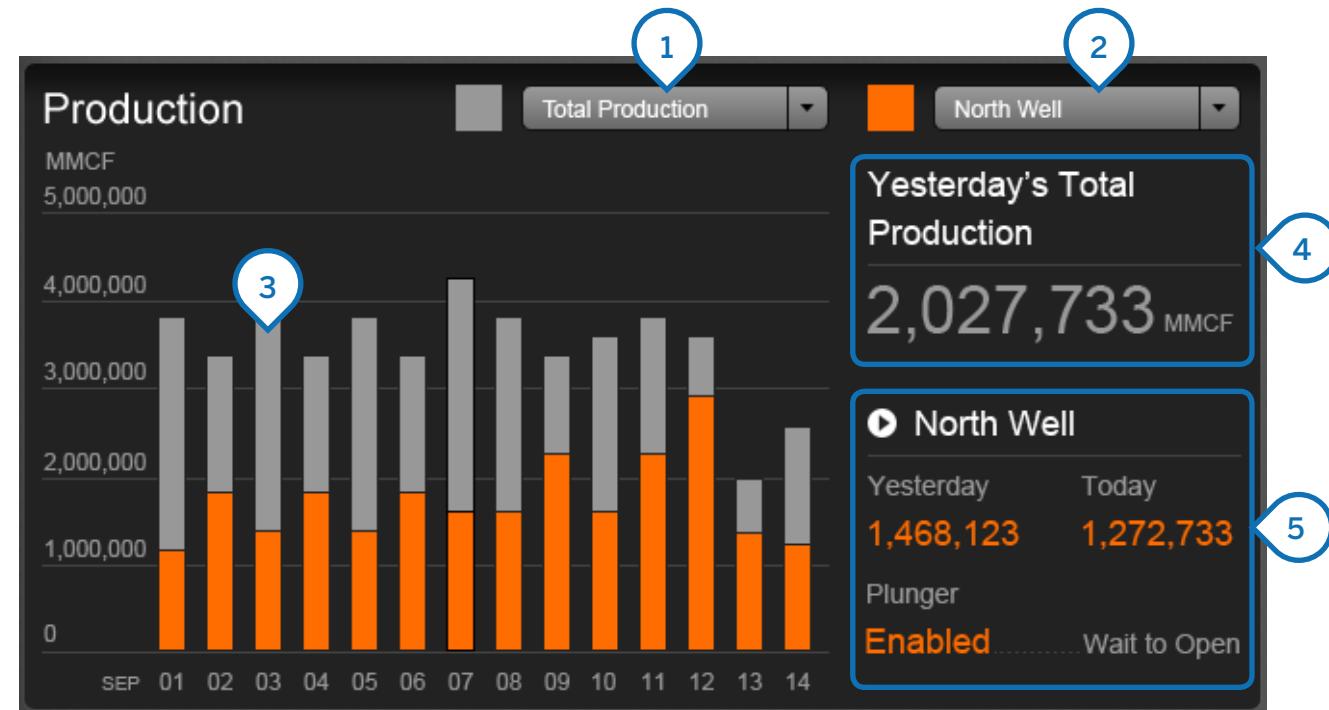
1 Production Widget: This section contains an **interactive bar chart**. It visualizes the total production of gas from the facility (or sub-facility) and depicts how much a well has contributed to the total production over the **past 14 days**.

2 Tanks Widget: This section depicts the **liquid levels** of Tanks in a facility. It indicates alarming levels of tanks, if any.

3 Facility Information Widget: The table surfaces certain applications at the facility level. These application values and **alarm levels** are surfaced in the dashboard.

4 Quick Tasks Widget: Specific tasks for the facility, well or equipment are provided through this section.

FACILITY PRODUCTION WIDGET



INTERACTION NOTES

This widget contains high-level information and status about the facility (or sub-facility, if any) and wells production.

1 Facility Combo Box: This combo box allows selection of a sub-facility. If there are no sub-facility, there will be no combo box, instead only a label "Total Production".

2 Well Combo Box: This combo box allows to select a well belonging to the facility/sub-facility.

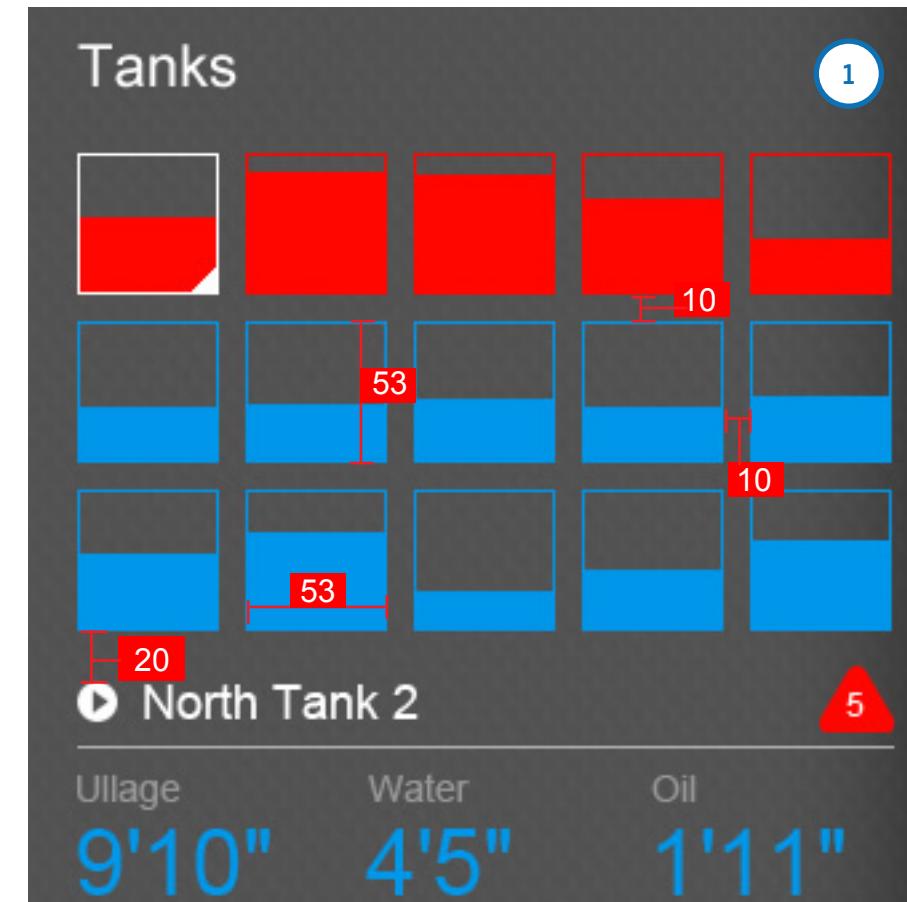
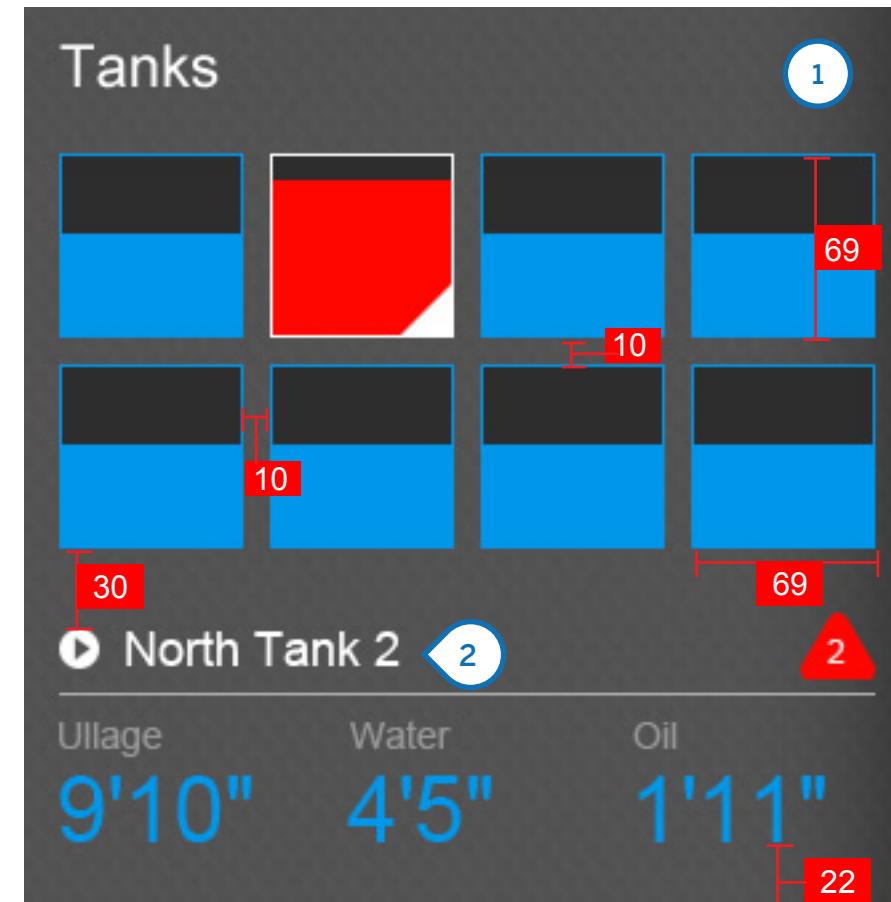
3 Production Visualization: This visualization shows how much a well has contributed to the overall production of the facility or sub-facility. The grey bars correspond to the facility or the selected sub-facility and the orange bars correspond to the selected well. Both these values are shown over the past 14 days. If the X-axis falls over successive months, the numbering would read e.g.: SEP / OCT 28 29 30 01 02.

4 Facility Information: Displays the total production value of the facility/sub-facility for the previous day.

5 Well Information: Displays the production values of the selected well and the plunger status. Clicking the well opens the well dashboard.

6 Production Information: On clicking any production bar from the graph, the overlay appears. It contains the production bar values. The overlay can be dismissed by clicking elsewhere on the screen or hitting ESC key.

TANKS WIDGET



The tanks can be scaled to accommodate a **maximum of 15 tanks** within the same space.

INTERACTION NOTES

This widget contains information and status about all the tanks in the facility.

1 Tank Grid: This visualization shows a grid of tanks in a facility. Each square represents a tank's **vertical cross-section**. The **water and oil levels** combined are shown.

All squares show the combined **liquid in blue**. If they have **alarmingly** high levels of liquid and need the operator's attention, the tank is shown in **red**.

The entire area of the square is interactive. Hovering over a square, shows a white line.

Clicking a square, shows the information in (2). The selected tank is indicated by the triangle in the corner.

This visualization is scalable. The higher the number of tanks, the square dimensions reduce, accommodating more squares in this screen space. Accordingly, the vertical scale of the tank reduces.

The first tank is always in the selected state.

2 Tank Information: The tank name, liquid levels and alarms associated, if any, of the selected tank are listed out here. Clicking on the tank name takes the operator to the Tank page.

The first tank's information is shown by default on this widget.

INFORMATION WIDGET

North Tank	Raised on June 15, 2012
North Tank 3	Raised on June 27, 2012
North Well 2 / Plunger	Acknowledged on July 1, 2012
North Well 1 / Plunger	Acknowledged on July 2, 2012

INTERACTION NOTES

This widget lists important facility information.

1 Facility Information Tabs: The applications which have **specific information** to the facility get their own tabs. In this case, the alarms, events and data points of the facility are individual tabs.

There should not be a maximum of 6 tabs.

Clicking on each tab shows the data and a scroll bar appears, if necessary. There should not be more than 10 line items.

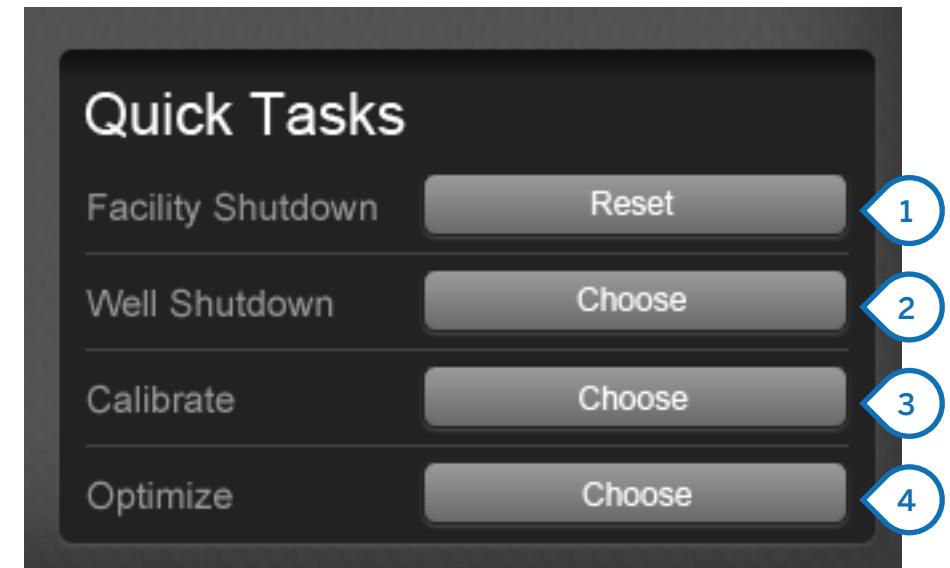
2 Facility Information Line Item: Within each tab, the line item shows high level and relevant information about the application.

Within Alarms tab, the well, tank or equipment which has an alarm associated with it is shown. Along with this the severity of the alarm is depicted using the color of the triangle. Also the number of alarms are depicted inside the triangle. The date when the alarm was raised or acknowledged appears to the right.

Upon hovering, the line item is highlighted. The arrow is a visual cue that this is a link.

The line item links to the relevant application page.

QUICK TASKS WIDGET



INTERACTION NOTES

This widget is a means of deep linking to common tasks.

1 Facility Shutdown Button: Launches the facility shutdown application.

2 Well Shutdown Button: The operator can shutdown a well from the facility dashboard. Clicking 'choose', the operator selects a well and then proceeds to shut it down. All these actions happen in an overlay.

3 Calibrate: The operator can 'choose' from an overlay the particular measurement application that requires calibration.

4 Optimize: The operator can 'choose' from an overlay the particular equipment measurement application that requires to be optimized.

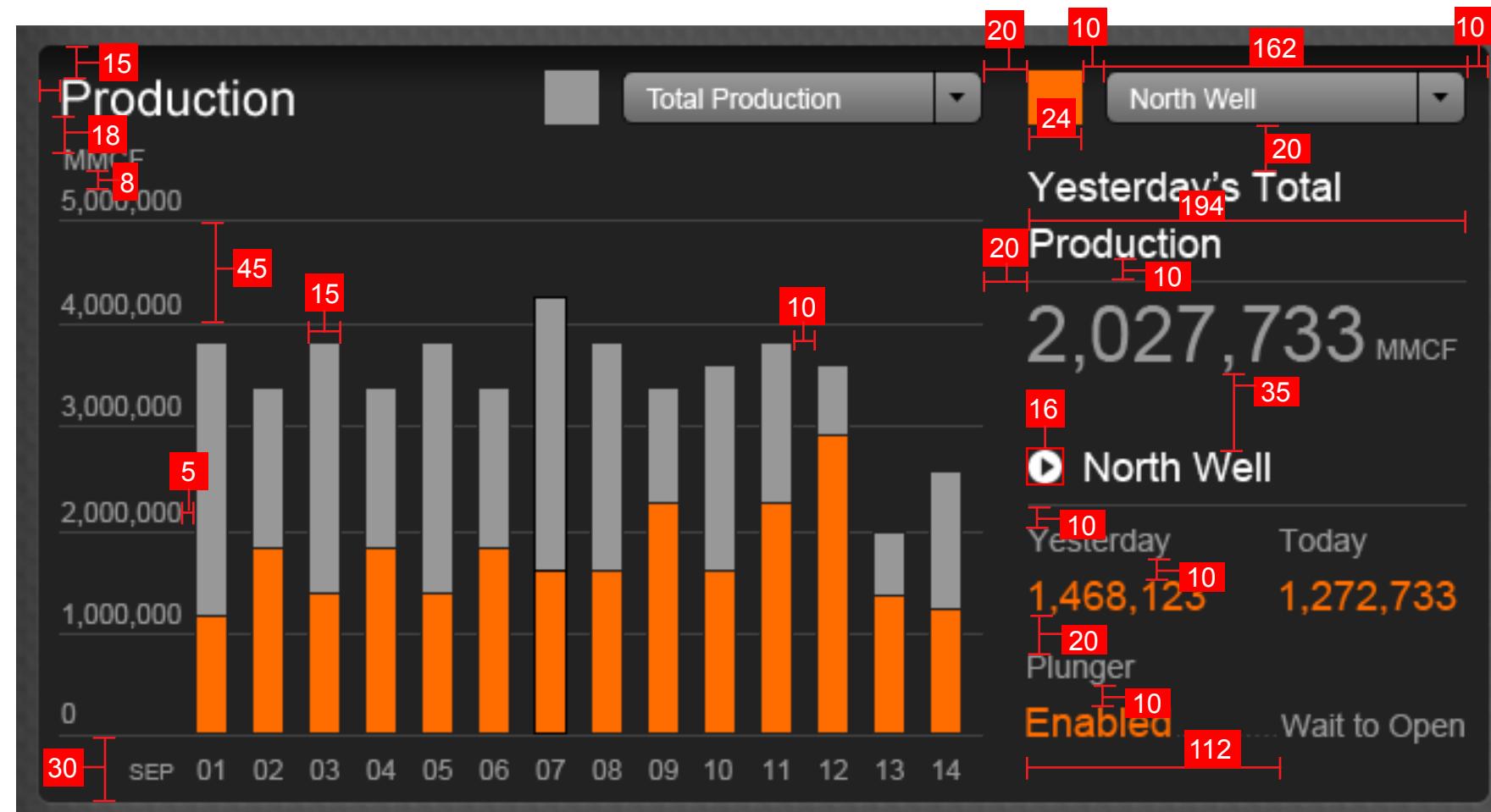
REDLINES: FACILITY DASHBOARD SCREEN

The screenshot displays the ABB TOTALFLOW Facility dashboard. The top navigation bar includes 'ABB TOTALFLOW' (with a blue triangle icon), 'Operator ▾', and '?'. On the right, it shows 'jonathan.doe@abb.com' and a dropdown menu. The main title 'Facility' is on the left with a red '10' badge. The dashboard features several key sections:

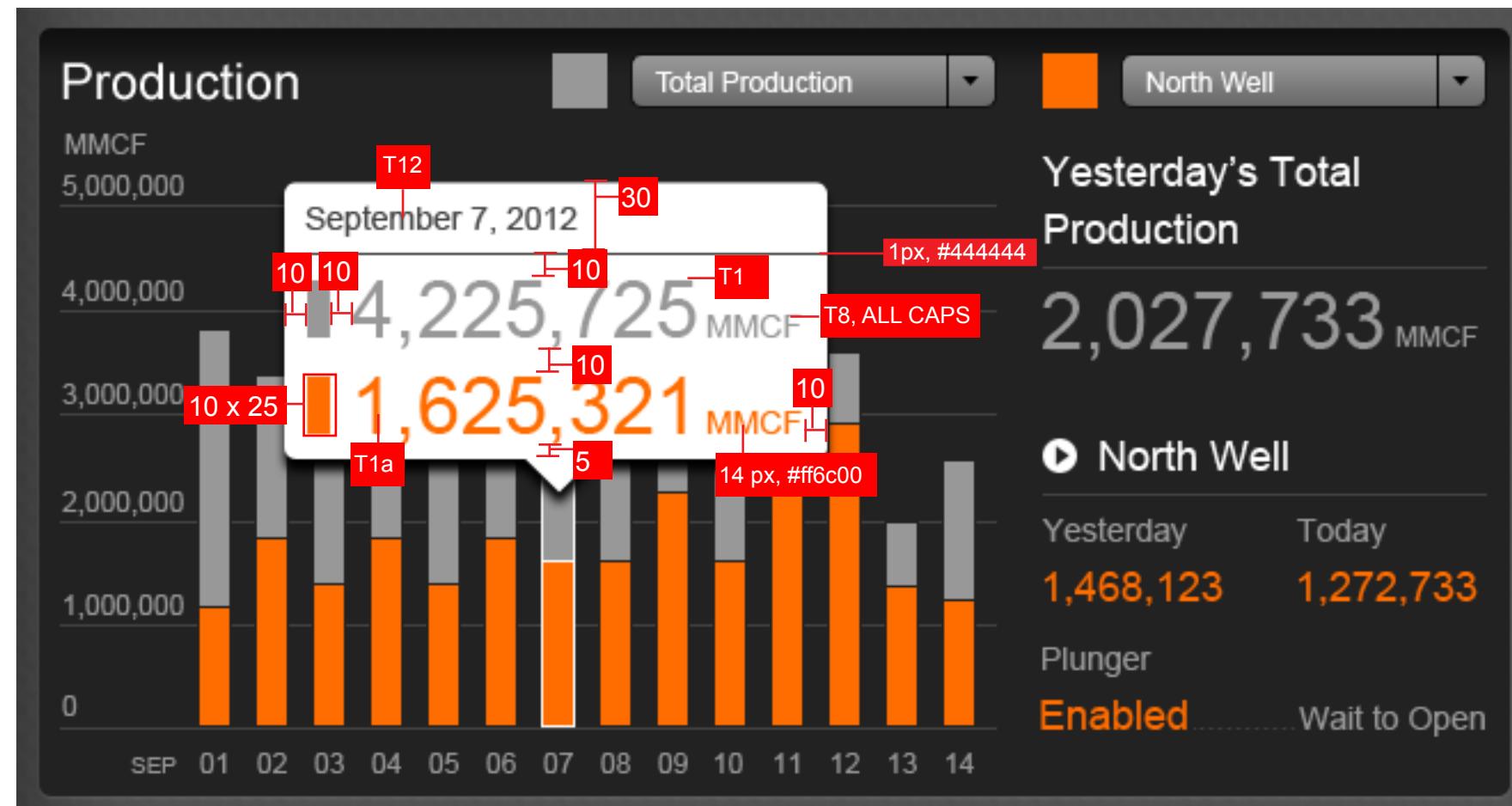
- Production:** A stacked bar chart from SEP 01 to 14 showing 'Total Production' (grey) and 'North Well' (orange). The y-axis ranges from 0 to 5,000,000 MMCF.
- Tanks:** A section titled 'Yesterday's Total Production' showing 2,027,733 MMCF. It includes a legend for 'North Well' (orange circle), a switch between 'Yesterday' (1,468,123) and 'Today' (1,272,733), and a 'Plunger Enabled' status. Below this are four tank icons labeled 31, 25, 30, and 15, representing different tank levels. A callout box notes: "The distance changes to 20 px when a the tanks increases to 3 rows."
- Alarms:** A list of active alarms:
 - North Tank (Raised on June 15, 2012)
 - North Tank 3 (Raised on June 27, 2012)
 - North Well 2 / Plunger (Acknowleged on July 1, 2012)
 - North Well 1 / Plunger (Acknowleged on July 2, 2012)
- Quick Tasks:** A list of tasks with 'Choose' buttons:
 - Facility Shutdown
 - Well Shutdown
 - Calibrate
 - Optimize

Red numerical badges are scattered throughout the interface, indicating active alerts or pending tasks. The bottom navigation bar includes 'Alarms', 'Events', and 'Data Points' buttons.

REDLINES: FACILITY PRODUCTION WIDGET

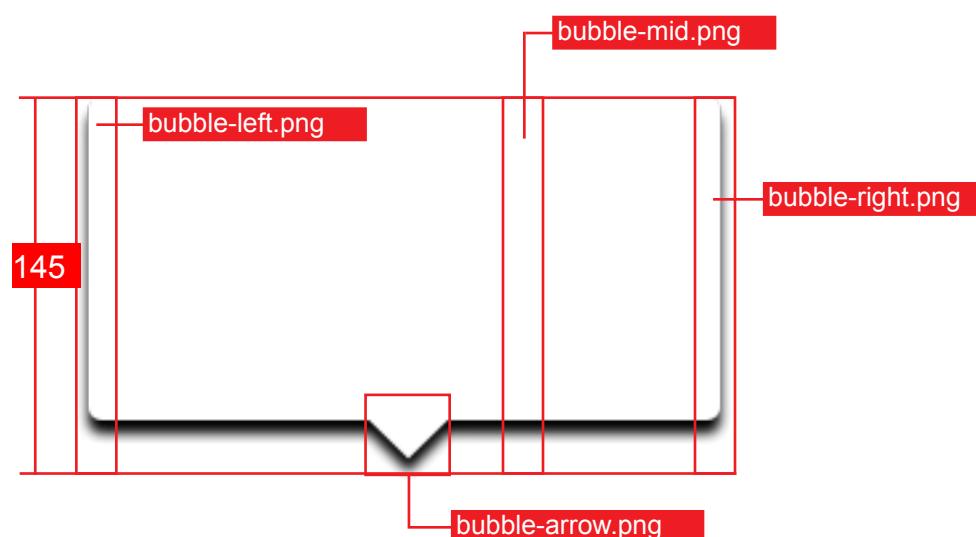


REDLINES: FACILITY PRODUCTION WIDGET OVERLAY



INTERACTION NOTES

The overlay height is fixed, whereas the width is variable.



TYPE & COLOR: FACILITY DASHBOARD SCREEN

ABB TOTALFLOW | Operator ▾ | ? jonathan.doe@abb.com ▾

Facility

Last Refreshed
12/28/12 at 10:00:30 AM Monitoring Off ▾

Production T3

MMCF

5,000,000 T10

4,000,000

3,000,000

2,000,000

1,000,000 #ff6c00

0

Total Production T3

North Well T3

Yesterday's Total Production

2,027,733 MMCF T10

Plunger Enabled T5

Yesterday T8 Today T8

1,468,123 T6 1,272,733 T6

Wait to Open

1px #444444 T1

border 1px, #222222 T1

#989898 T3

#ff6c00 T3

Tanks T3

bg #222222 T1

ff0700 T3

#0096ea T3

#2d2d2d T3

2

1px, #b3b3b3 T2

Ullage Water Oil

9'10" T2 **4'5"** T2 **1'11"** T2

Alarms

Events

Data Points

North Tank Raised on June 15, 2012

8 North Tank 3 Raised on June 27, 2012

7 North Well 2 / Plunger Acknowledged on July 1, 2012

North Well 1 / Plunger Acknowledged on July 2, 2012

Quick Tasks T3

Facility Shutdown T8 Reset

Well Shutdown Choose

Calibrate Choose

Optimize Choose

FACILITY SITE MENU



INTERACTION NOTES

The Facility Site Menu behaves as a **drawer**. It is used for primary navigation and is **persistent** on all screens. It gives access to all secondary and tertiary levels of information: wells, tanks and facility applications.

The drawer animates to open up. It is a **Split Apart View** animation. (It is identical to the animation used by iOS to open a folder on the phone top). Once opened, it pushes the screen content down such that the facility site menu never requires a scroll bar.

1 Wells: This section lists wells, indicates their trends and any associated alarms. This is also grouped under sub-facilities, if any.

2 Tanks: Lists all tanks in the facility.

3 Facility Apps: Lists all orphan applications at the facility level.

REDLINES: FACILITY SITE MENU



TYPE & COLOR: FACILITY SITE MENU

ABB TOTALFLOW | Operator ▾ | ? jonathan.doe@abb.com ▾

Facility Last Refreshed 12/28/12 at 10:00:30 AM Monitoring Off ▾

Wells T5

North Sub-Facility T7 1px, #b3b3b3

North Well 1 T8 8 North Well 2 3

North Well 3 7 1 1px, #444444

East Sub-Facility East Well 1 #666666 5

South Sub-Facility South Well 1 #a4a4a4

South Well 2

Tanks

North Tank - 1

North Tank - 2

North Tank - 3

North Tank - 4 1px, #444444

East Tank - 1

East Tank - 2

South Tank - 1

South Tank - 2

Facility Apps

Data Points

Value Control

PID

Production Total Production North Well Yesterday's Total Production

MMCF 5,000,000

Tanks

WELL DASHBOARD SCREEN

1 ALARMS
3 Critical

2 SHUTDOWN
ON Production

3 PLUNGER
Arrived Normal

4 AGA 3 - 1
9,999,999 MCF/Day

5 VALVE 1
22.3 MCF/Day

6 VALVE 2
11.7 MCF/Day

7 PID 1
34.0 MCF/Day

8 PID 2
87.6 Inches H2O

Production

Yesterday: 4,263,136 MMCF

Today: 3,956,875 MMCF

Plunger

TUBING: 1,257,321

CASING: 197.41

LINE: 144.32

FLOW RATE: 127.67

Plunger: Enabled

Wait to Open

9 Alarms

10 Events

11 Data Points

12 PID

13 PLUNGER

14 VALVE

15 Raised on June 15, 2012

16 Raised on June 27, 2012

17 Acknowledged on July 1, 2012

18 Quick Tasks

19 Shutdown

20 Reset

21 Calibrate

22 Choose

23 Optimized

24 Choose

INTERACTION NOTES

Navigating to a well from the facility dashboard or site menu, brings the user to the well dashboard. It contains high level information of the well and links to various applications.

SECTIONS OF THE DASHBOARD

1 Application Tiles Carousel: This carousel contains tiles for each application associated with the well.

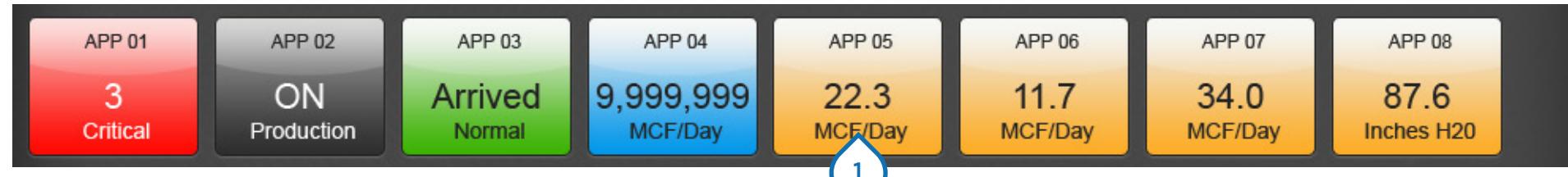
2 Production Widget: This section contains an **interactive bar chart**. It visualizes the total production of from the well over the past 14 days.

3 Plunger Status Widget: This section contains plunger trends.

4 Well Information Widget: The table surfaces certain applications of the well. These application values and alarm levels are surfaced in the dashboard. The interaction is similar to that described in **Facility Information Widget**.

5 Quick Tasks Widget: Specific tasks for the well or equipment are provided through this section. There are only three buttons in comparison to four in the Quick Tasks Widget under Facility Dashboard screen, the behavior of the buttons is identical.

APPLICATION TILE CAROUSEL



INTERACTION NOTES

1 Application Tiles: This carousel contains tiles for applications associated with the well.

The tiles are colored differently, each application given a unique color. The critical applications are placed towards the left in the carousel.

Information in the tiles: The tiles, each, have important status information of the application. Only one value is surfaced per tile.

Row 1: Application Name. If long names, use truncation rules in the Global Elements.

Row 2: Value or status. A maximum of 7 digit value is displayed.

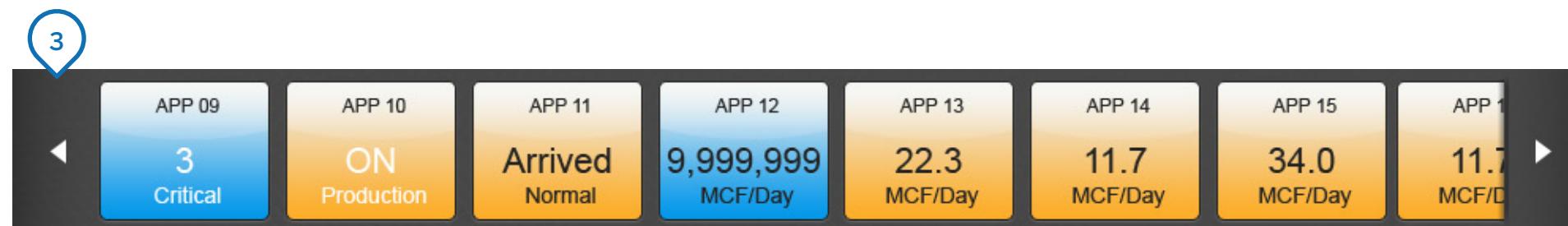
Row 3: The unit of the value/status is displayed here.

2 Carousel Button: This carousel button moves the next set of tiles into the carousel.

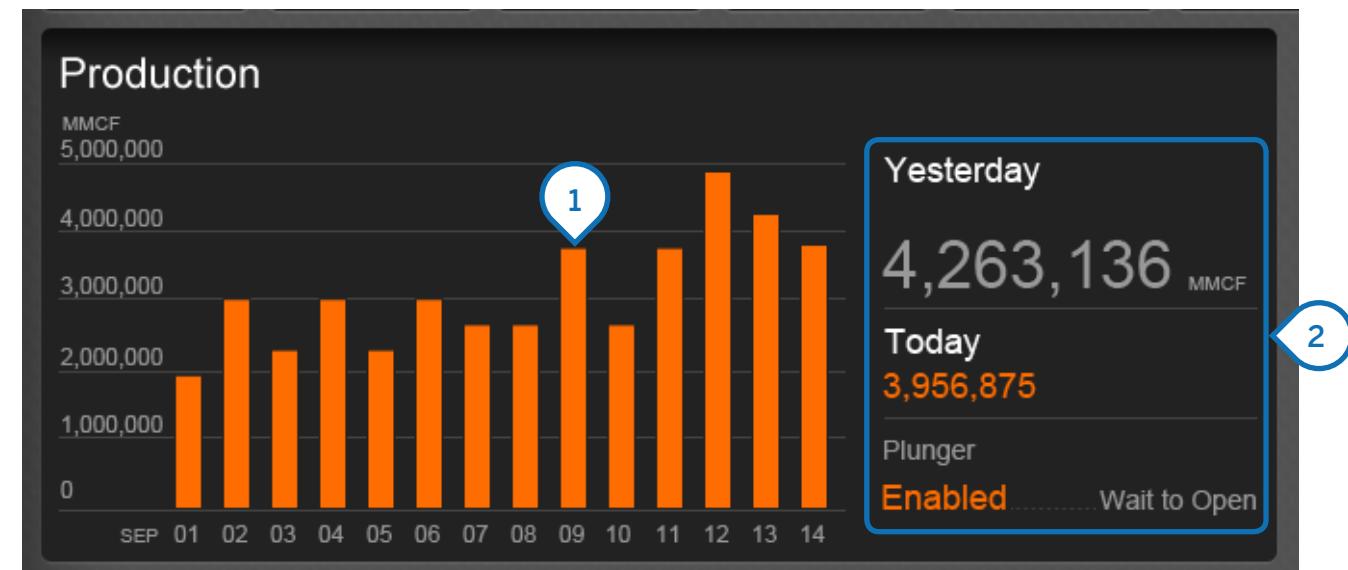
3 Next Carousel State: The left arrow button appears on the left end of the carousel once new set of tiles appear in the carousel.

The right end of the carousel displays the last tile as though tucking into the next button.

If the carousel has more than 8 application tiles:



WELL PRODUCTION WIDGET

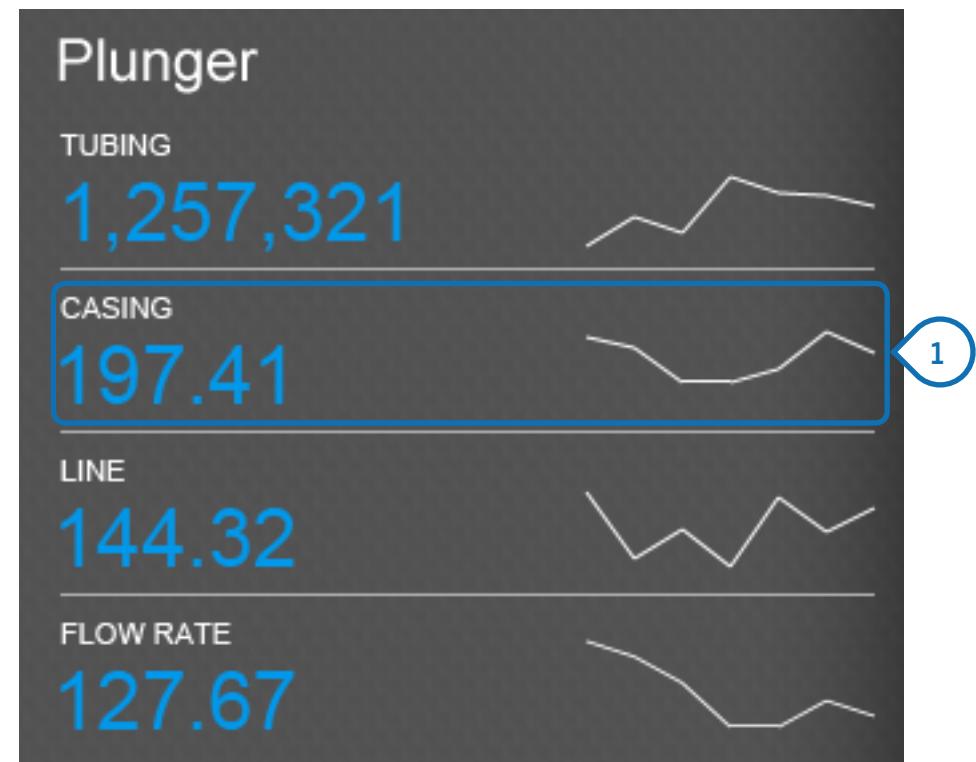


INTERACTION NOTES

1 Bar Graph: The bars indicate the production level for a day over the past 14 days.

2 Well Production Information: The **read-only information** containing numeric value of today's and yesterday's production along with the status of the plunger are shown here.

PLUNGER STATUS WIDGET



INTERACTION NOTES

1 Plunger Values: The plunger's current values are displayed numerically. The 7 day trends are shown using a sparkline.

REDLINES: WELL DASHBOARD SCREEN



TYPE & COLOR: WELL DASHBOARD SCREEN

ABB TOTALFLOW | Operator ▾ | ? jonathan.doe@abb.com ▾

Facility ▶ North Well 1 Last Refreshed 12/28/12 at 10:00:30 AM Monitoring Off ▾

ALARMS 3 Critical **SHUTDOWN** ON Production Refer Global Elements

PLUNGER Arrived Normal **AGA 3 - 1** 9,999,999 MCF/Day **VALVE 1** 22.3 MCF/Day **VALVE 2** 11.7 MCF/Day **PID 1** 34.0 MCF/Day **PID 2** 87.6 Inches H2O

Production

MMCF
5,000,000

Yesterday 4,263,136 MMCF

Today 3,956,875

Plunger Enabled Wait to Open

Plunger

TUBING T9 #ffffff 1,257,321

CASING T2A 197.41

LINE 144.32

FLOW RATE 127.67

Alarms **Events** **Data Points**

PID Raised on June 15, 2012

PLUNGER 8 Raised on June 27, 2012

VALVE Acknowledged on July 1, 2012

Quick Tasks

Shutdown Reset

Calibrate Choose

Optimized Choose

Facility ▶ North Well 1 ▶ Plunger

Last Refreshed
12/28/12 at 10:00:30 AM Monitoring Off

Overview

1

Arrival: Normal
Stage: Falling
Tubing: 146.19
Line: 146.19
Casing: 197.41
Flow Rate: 127.67

Plunger Control: Off
Optimization: Enabled
Swabbing: Enabled

Trends &... Falling Waiting Arriving Flowing

Wait Options Edit All

- Open On: Tubing-Line & Case...
- Open On: Tubing-Line & Case...
- Tubing Enabled: Tubing-Line
- Tubing Line: 28
- Casing Line: 53.09
- Casing Tube: 52.21
- Foss & Gaul: 124.21
- Lord Ratio: 0.96
- Casing: 197.41
- Tubing: 144.32
- SP: 146.92
- Open 1: 0.00

Hold Options Edit All

- Open On: 00:00:00
- Hold Once: 00:00:00
- Hold External: Low
- Hold Schedule: 3
- Hold Pressure: 224.77

3-COLUMN GRID

Content-type Division: The left column(s) is always the **overview section** and the right is always the **control section**.

Column 1 and/or 2: The Overview sections could be 1-column or 2-columns wide. For e.g., if there is a graph the overview section takes up 2 columns.

Column 2 and/or 3: The Specific Control section would take up the remaining columns.

CONTENT: APPLICATION SCREEN

The following few pages illustrate how content from the Operator UI Application Screen can be translated to the Toolbox UI Application Screen.

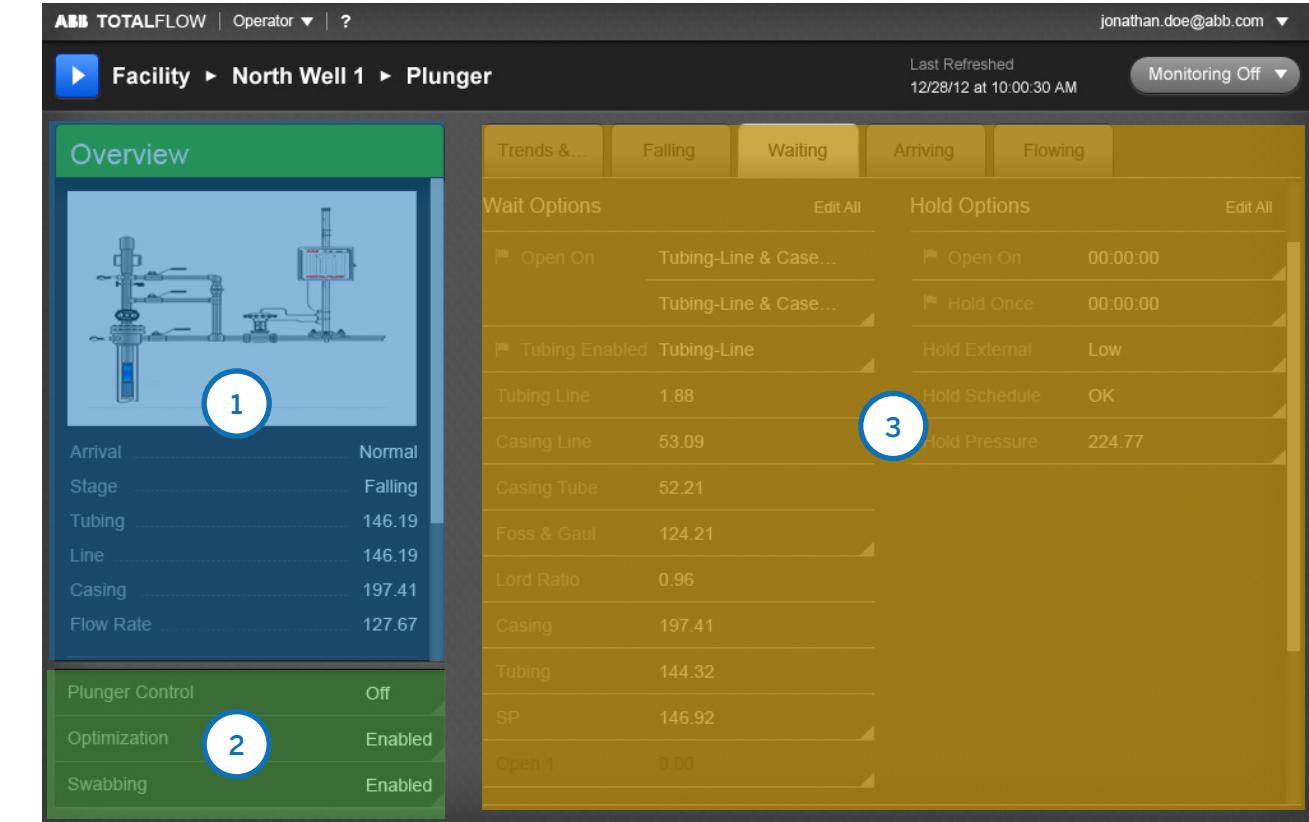


OPERATOR UI APPLICATION SCREEN

1 Read-only information in the current application. It contains diagrams, status information and values.

2 Higher level editable information about the current status of the equipment/application and related controls.

3 Editable specific information and controls.



NEW APPLICATION SCREEN

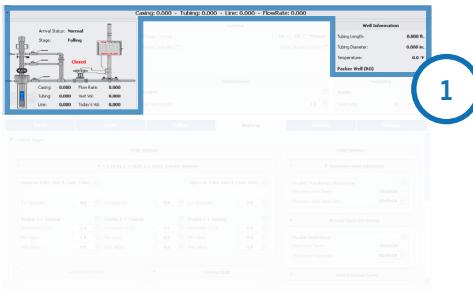
1 Overview Read-Only: The **read-only information** containing graphs, diagrams, status information and current values are all collated and displayed here. For instances where the content is huge a scroll is added.

2 Overview Controls: The **higher level controls** are all grouped here with their current status displayed. If there are more values associated with the control, it is important to note that only the most **critical value** or **current status** is displayed in the list here. If there are no such controls, then the Overview Read-Only section would take up the entire column.

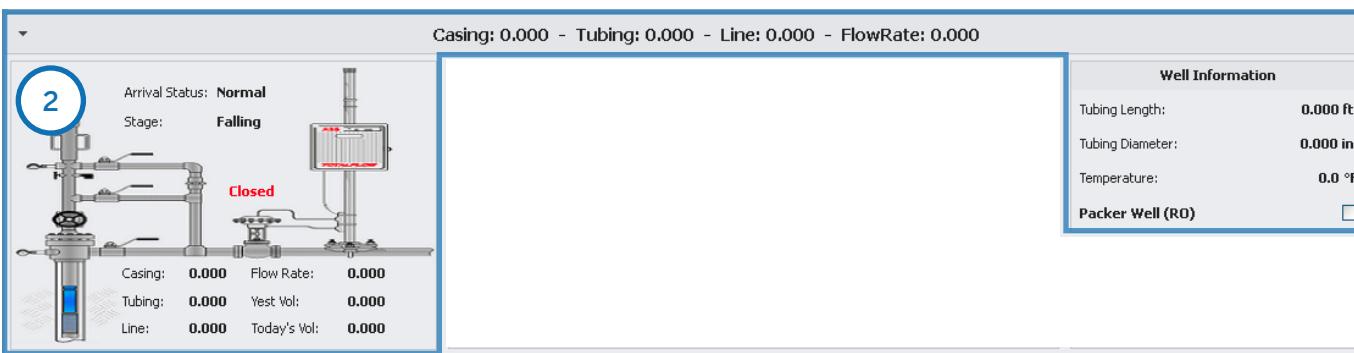
3 Specific Controls: These are the **detailed controls** which form all the specifics of the application. The current status or value is displayed here and the editable information and controls are presented in an overlay.

OVERVIEW READ-ONLY: APPLICATION SCREEN

OPERATOR UI APPLICATION SCREEN



1



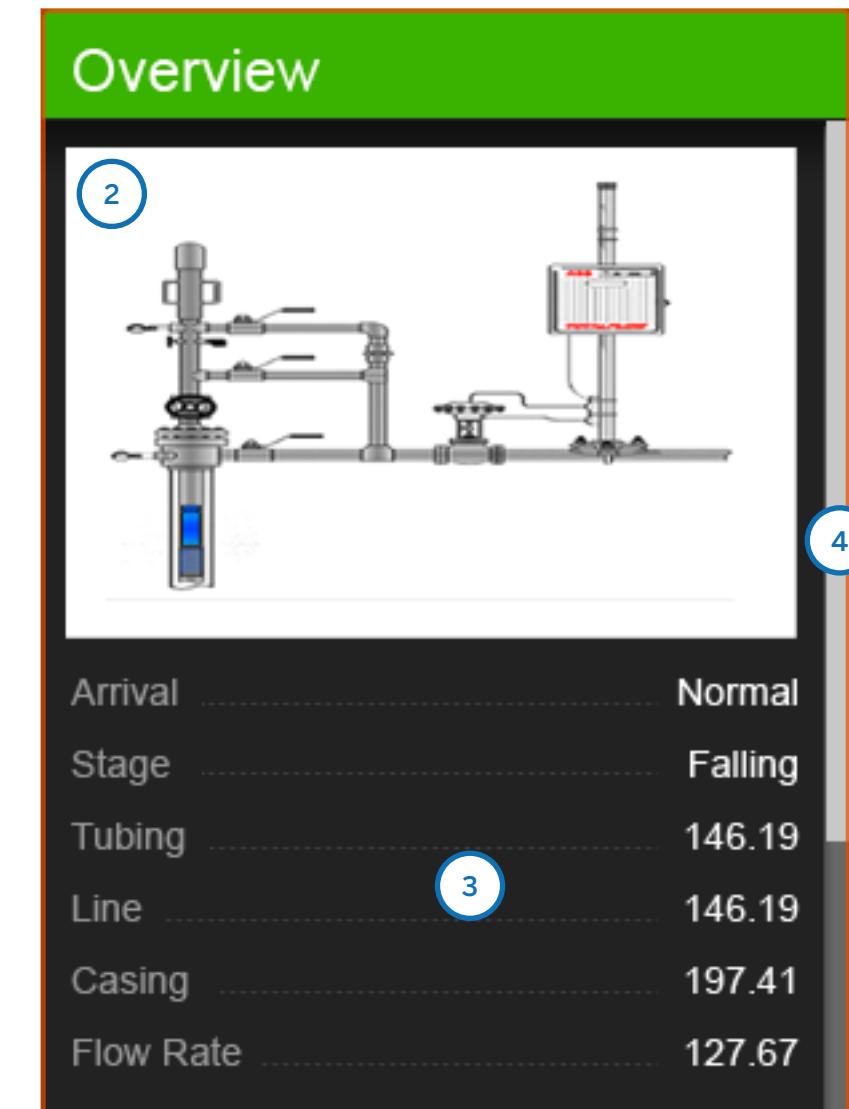
RULES OF TRANSLATION FROM OPERATOR UI TO TOOLBOX APPLICATION SCREEN

- 1 The read-only information of the equipment/application from the Operator UI is taken over to the Overview Read-only Section in the Toolbox application screen.
- 2 Any **diagram**, graph constitutes a part of this Overview Section. If a diagram, it appears always on the top of the Overview Section.
- 3 The labels and their values are laid out row wise, being left and right aligned respectively.
- 4 If the content height is more than the section height in the Toolbox UI, the section gets a scroll bar.

TOOLBOX UI APPLICATION SCREEN

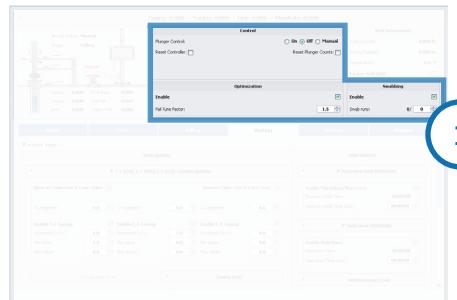


1



OVERVIEW CONTROL: APPLICATION SCREEN

OPERATOR UI APPLICATION SCREEN



Control

Plunger Control: On Off Manual

Reset Controller:

Reset Plunger Counts:

Optimization	Swabbing
Enable <input checked="" type="checkbox"/> Fail Tune Factor: <input type="text" value="1.5"/>	Enable <input checked="" type="checkbox"/> Swab runs: <input type="text" value="0"/>

TOOLBOX UI APPLICATION SCREEN



Plunger Control	Off
Optimization	Enabled
Swabbing	Enabled

RULES OF TRANSLATION FROM OPERATOR UI TO TOOLBOX APPLICATION SCREEN

1 The **higher level controls** from the Operator UI are translated to the Overview Control section in the Toolbox UI Application screen. In the Operator UI, **accordions** were used as the primary organizational structure, while in the Toolbox UI, editable lists are how items are organized.

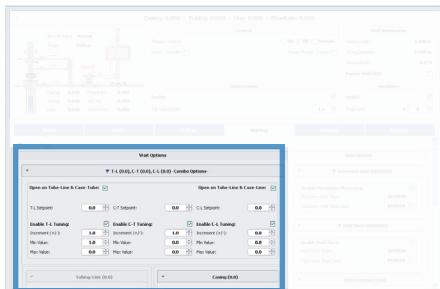
2 The **accordion labels and their current values** in the Operator UI are laid out in line items in the Toolbox UI. The label is left aligned and the value is right aligned in a 2-column grid within a section.

3 The line items have a **triangle in the bottom right corner** in the Toolbox UI, indicating that there is **related, editable content**. For example, the Swabbing controls in the Operator UI including Swab runs are all hidden in the Toolbox UI. These related control values are available when the list item is opened in the overlay (as explained in the **Single Edit Overlay**).

4 The Overview Control section will take up no more than **1/2 of the column height**. In such a case, the Overview read-only section will take up a scroll, if needed.

SPECIFIC CONTROLS: APPLICATION SCREEN

OPERATOR UI APPLICATION SCREEN



RULES OF TRANSLATION FROM OPERATOR UI TO TOOLBOX APPLICATION SCREEN

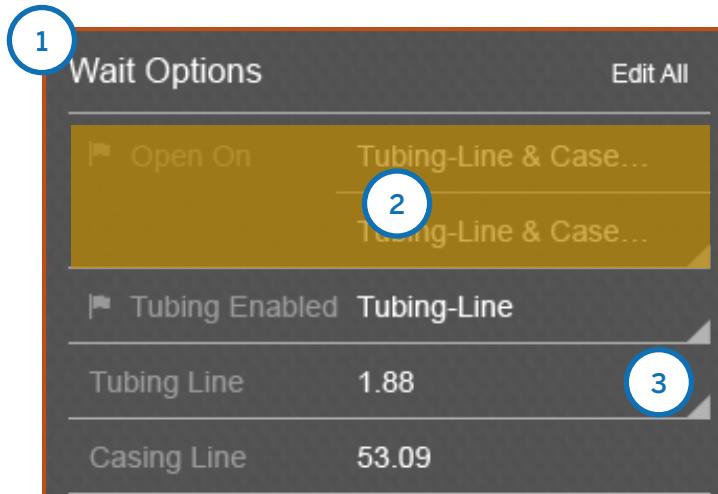
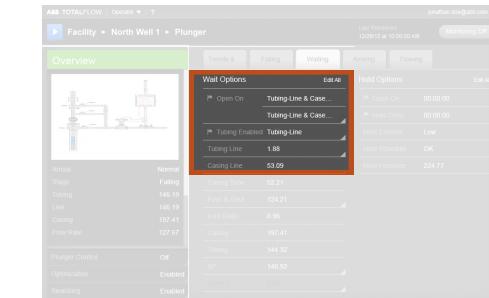
1 The specific controls in the Operator UI are in **groups** (in this case Wait options) and have a dedicated section in the Toolbox application screen. This entire group has an '**Edit All**' option in the Toolbox UI so as to have easy access to editing all controls at one-go.

2 As in the Overview Control section, the accordion labels and their current values from the Operator UI are laid out in line items in the Toolbox UI.

These controls could be grouped, hence having two values in a **split line item** for one accordion label.

Also, an active accordion, as defined in the Operator UI, has a flag on the left of the label in the Toolbox UI.

TOOLBOX UI APPLICATION SCREEN



The labels and values are **left aligned** in the 2-column grid within the section. (Refer the Global Elements section to see the details of these list items).

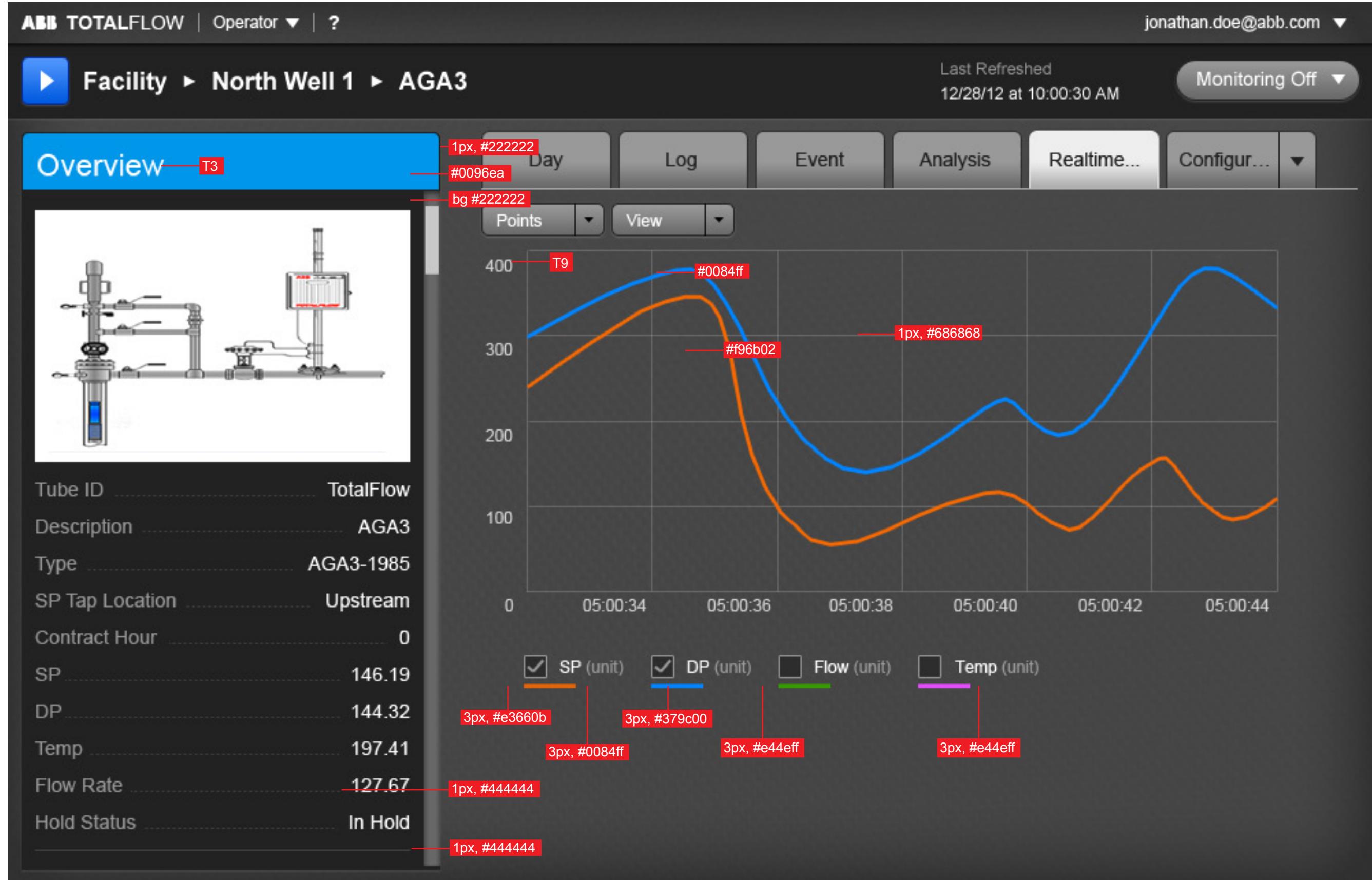
3 As in the Overview Control section, the line items have a **triangle in the bottom right corner** in the Toolbox UI, indicating that there is related, editable content. These related control values in the Operator UI are available when the list item is opened in the overlay (as explained in the Single Edit Overlay).

4 If the content overflows the section height, a **scroll bar** shall be introduced.

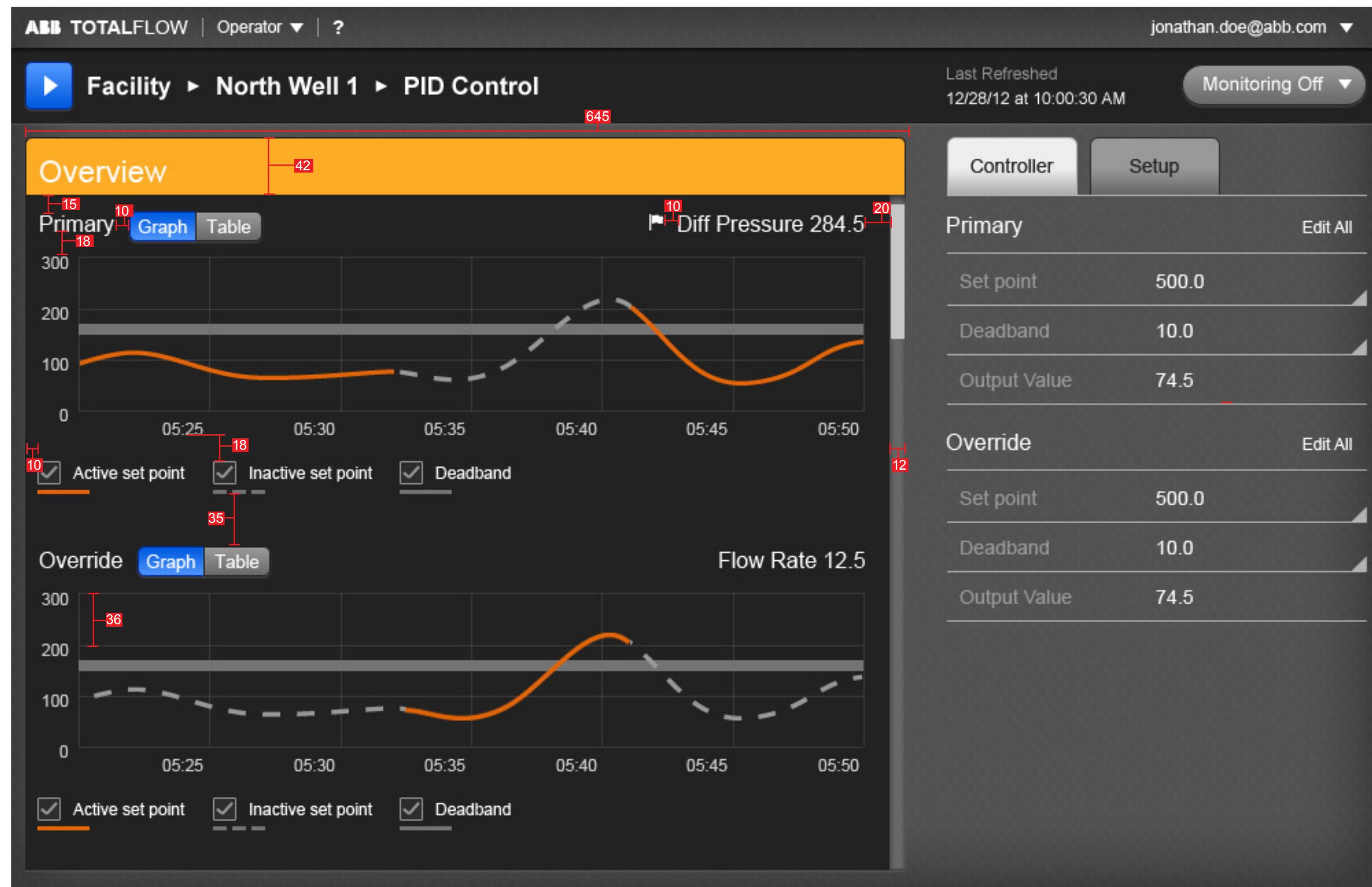
REDLINES: APPLICATION SCREEN - AGA3 REALTIME DATA



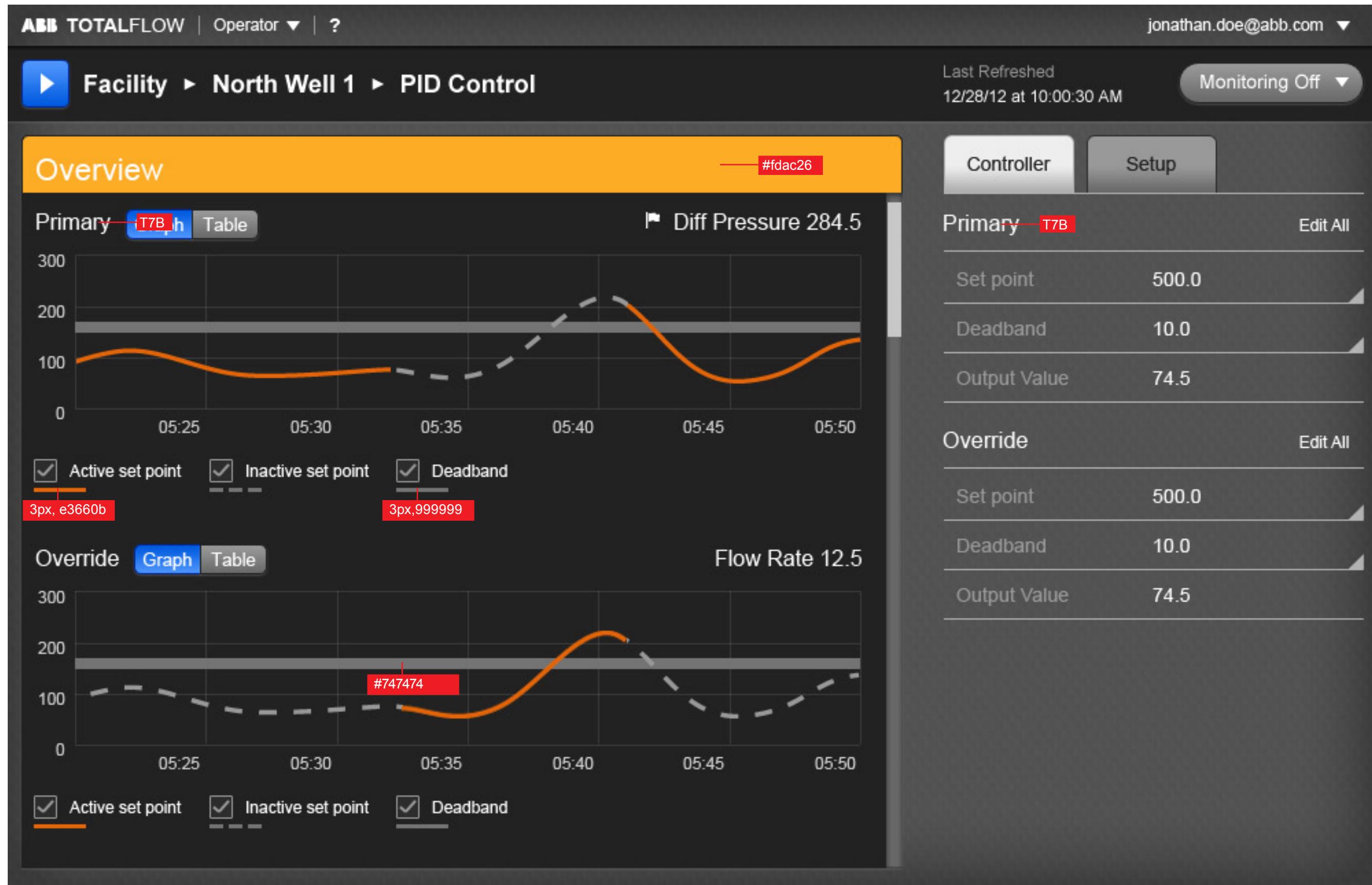
TYPE & COLOR: APPLICATION SCREEN - AGA3 REALTIME DATA



REDLINES: APPLICATION SCREEN - PID CONTROL



TYPE & COLOR: APPLICATION SCREEN - PID CONTROL

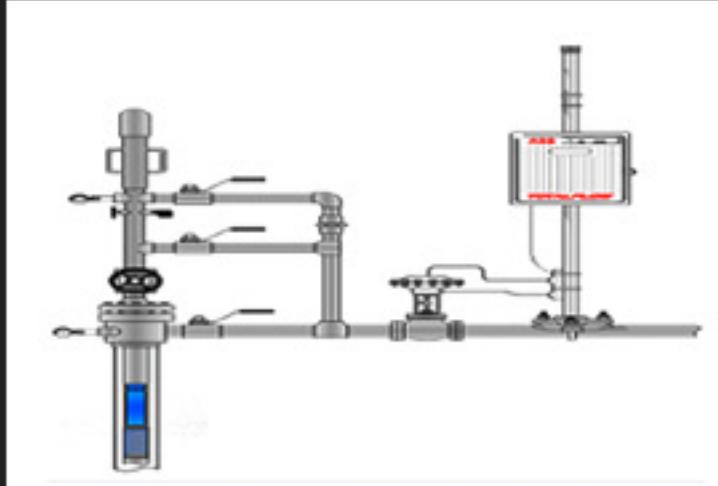


APPLICATION SCREEN - AGA3 CALIBRATION

ABB TOTALFLOW | Operator ▾ | ? jonathan.doe@abb.com ▾

Facility ▶ North Well 1 ▶ Plunger Last Refreshed
12/28/12 at 10:00:30 AM Monitoring Off ▾

Overview #0096ea Day Log Event Analysis Calibration Configur... ▾



Select Calibration Type

Differential Pressure ▾

Calibration Options

Do you want to calibrate in gauge?	Yes
Tolerance (% Diff)	2%
Hold Timeout	00:60:00
Calibration Points	3 Points

Start Calibration

New Calibration Records

SP Calibration	0	Temp. Calibration	0
DP Calibration	0	DP-SP Check	0

Generate Report

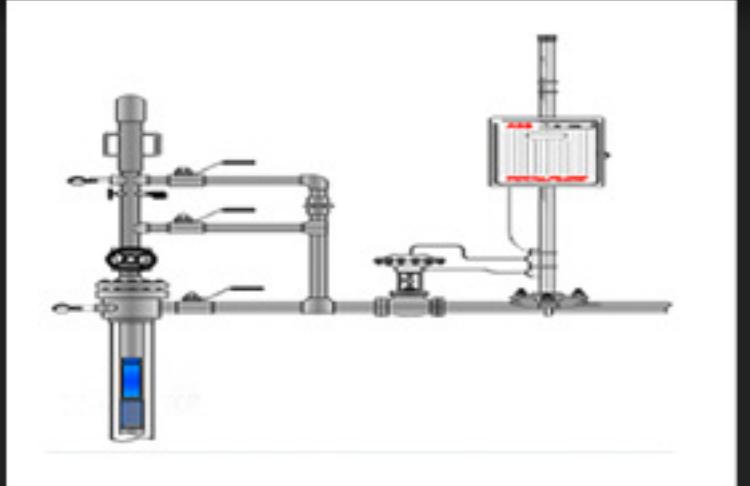
Tube ID: TotalFlow
 Description: AGA3
 Type: AGA3-1985
 SP Tap Location: Upstream
 Contract Hour: 0
 SP: 146.19
 DP: 144.32
 Temp: 197.41
 Flow Rate: 127.67
 Hold Status: In Hold

APPLICATION SCREEN - PLUNGER WAITING TAB

ABB TOTALFLOW | Operator ▾ | ? jonathan.doe@abb.com ▾

Facility ▶ North Well 1 ▶ Plunger Last Refreshed 12/28/12 at 10:00:30 AM Monitoring Off ▾

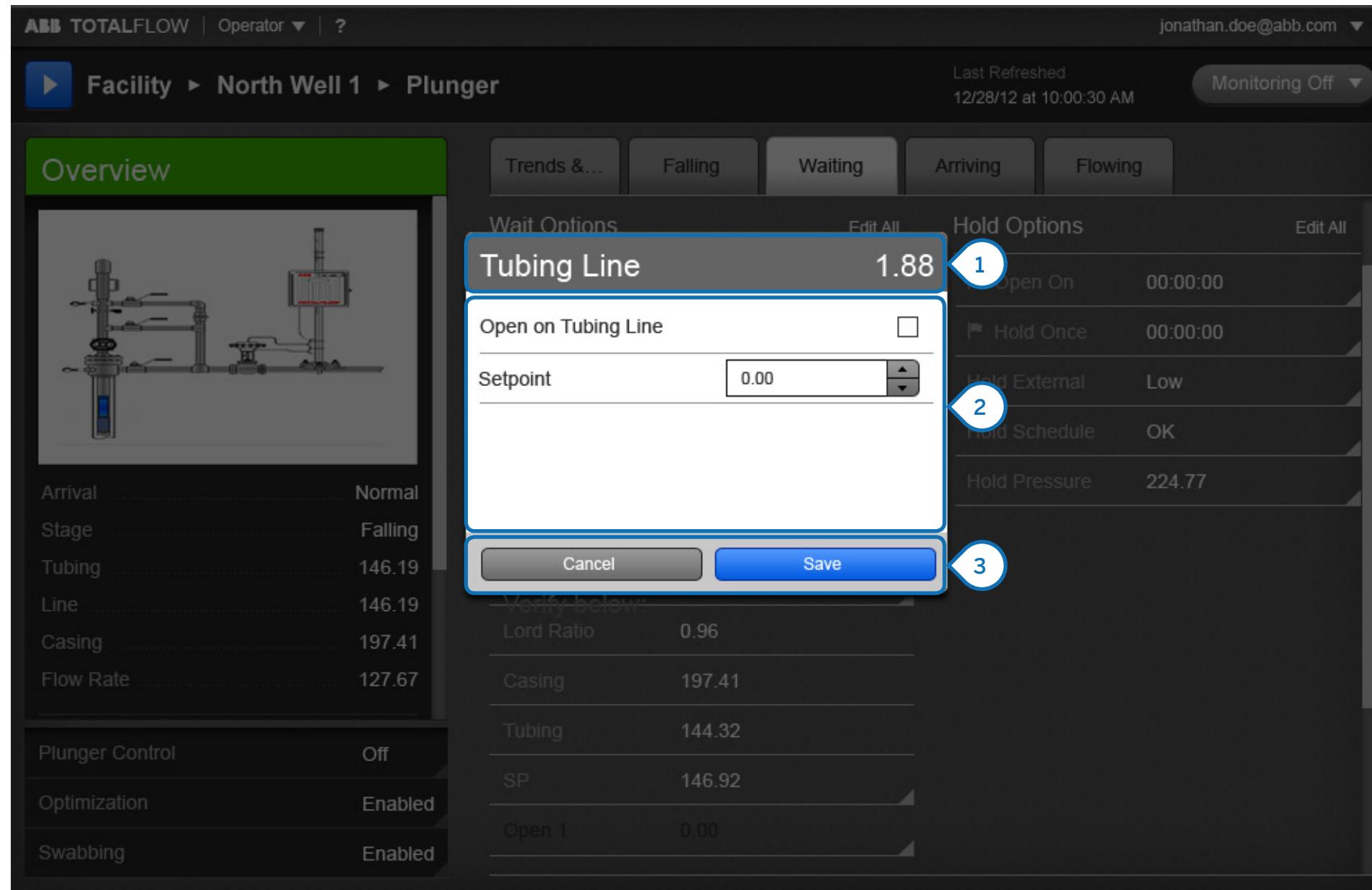
Overview #3ab200ends &... Falling Waiting Arriving Flowing



	Wait Options	Edit All	Hold Options	Edit All
Arrival	Normal			
Stage	Falling			
Tubing	146.19	Open On Tubing-Line & Case...	Open On 00:00:00	
Line	146.19	Tubing Enabled Tubing-Line	Hold Once 00:00:00	
Casing	197.41	Tubing Line 1.88	Hold External Low	
Flow Rate	127.67	Casing Line 53.09	Hold Schedule OK	
		Casing Tube 52.21	Hold Pressure 224.77	
		Foss & Gaul 124.21		
		Lord Ratio 0.96		
		Casing 197.41		
		Tubing 144.32		
		SP 146.92		
		Open 1 0.00		

	Plunger Control	Optimization	Swabbing
Arrival	Normal	Enabled	Enabled
Stage	Falling	Enabled	Enabled
Tubing	146.19		
Line	146.19		
Casing	197.41		
Flow Rate	127.67		
	Plunger Control Off	Optimization Enabled	Swabbing Enabled

SINGLE EDIT OVERLAY



INTERACTION NOTES

An overlay opens on clicking an **editable line item** in the **Overview and Specific Control sections** in any Application Screen. The operator can **edit** the control values in this overlay.

1 Overlay Header: The control label and the current value, as in the line item, are in the header of the overlay.

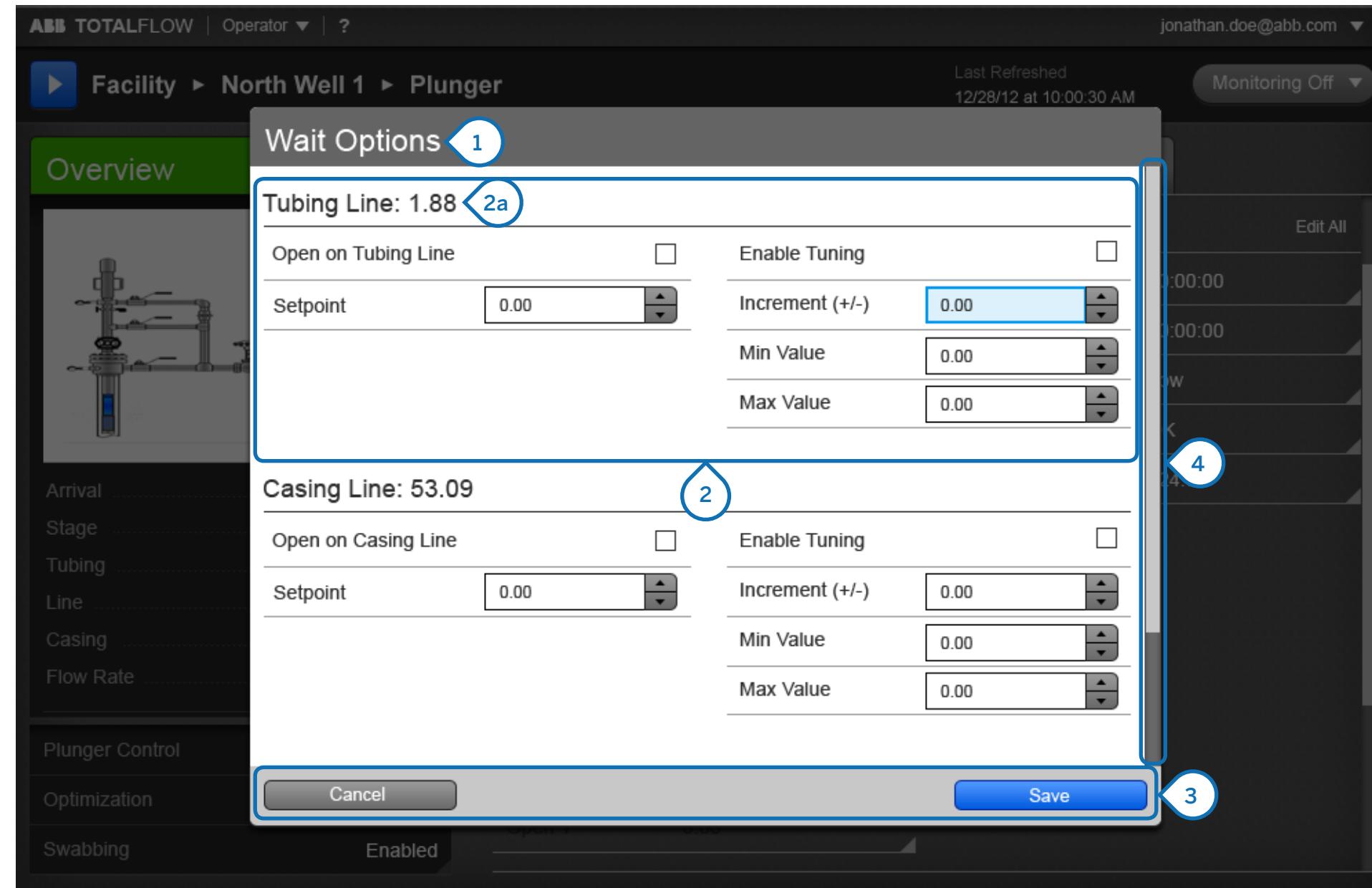
2 Overlay Body: The overlay contains controls and its related values. (All values within the accordion of the Operator UI are listed in this area). The operator can edit using UI controls (e.g. check boxes, increment/decrement button). Many of these have been listed in Form Elements under 4.Global Elements section.

3 Overlay Buttons: The operator can decide to save the changes or disregard them by canceling the action. Once a button is pressed, the action is taken and the overlay dismisses to return to the application screen.

REDLINES: SINGLE EDIT OVERLAY

The screenshot shows a software interface for ABB TOTALFLOW. At the top, there's a header bar with the ABB logo, 'TOTALFLOW', 'Operator ▾', '?', and a user email 'jonathan.doe@abb.com ▾'. Below the header, the navigation path is 'Facility ▶ North Well 1 ▶ Plunger'. On the right side, there are tabs for 'Last Refreshed' (12/28/12 at 10:00:30 AM) and 'Monitoring Off ▾'. The main area has a green 'Overview' bar. To its right is a table with various operational parameters like Arrival, Stage, Tubing, Line, Casing, Flow Rate, Plunger Control, Optimization, and Swabbing. A red box highlights a specific row in the table. Overlaid on the interface is a 'Tubing Line' configuration dialog. This dialog includes sections for 'Wait Options' (with a red notification badge '354' and 'Edit All' button), 'Hold Options' (with 'Edit All' button), and a central panel for 'Tubing Line' settings. The central panel shows a value of '1.88' and two input fields: 'Open on Tubing Line' (checkbox) and 'Setpoint' (slider set to '0.00'). At the bottom of the dialog are 'Cancel' and 'Save' buttons. A red box also highlights the 'Save' button. Below the dialog, a section titled 'Verify below:' lists values for Lord Ratio (0.96), Casing (197.41), Tubing (144.32), SP (146.92), and Open 1 (0.00). The entire interface is styled with dark grey and black backgrounds, with red highlights for notifications and the edit overlay.

GROUP EDIT OVERLAY



INTERACTION NOTES

A group edit overlay opens on clicking **Edit All** option for a **group** in the **Specific Control** section of an application screen. The operator can edit all the control values in one go. This can be thought of as a group of all the Single Edit Overlays for controls within a specific group.

The **height of the overlay is fixed**, however, the width is variable. With fewer controls, the overlay starts as a single column (as wide as the Single Edit Overlay). If there are more controls, the overlay grows to become 2-columns wide (see Redlines in the next page). If there are more controls, beyond two columns for the fixed height, **4 Scroll Bar** is introduced to scroll vertically in the fixed height.

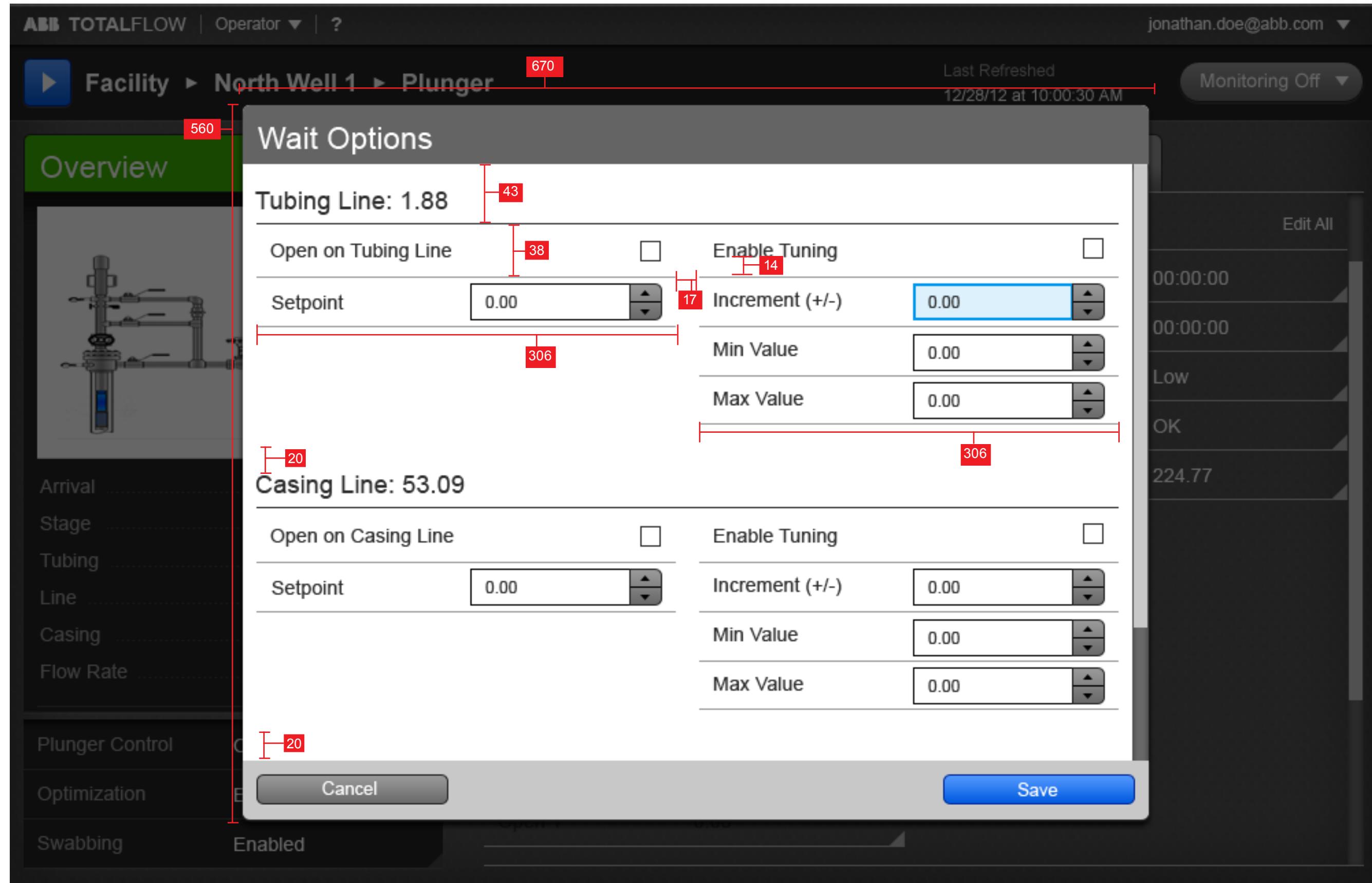
1 Overlay Header: The header contains the name of the grouped control.

2 Overlay Body: The overlay contains all editable controls in the group under Specific Controls. These controls are expanded and laid out under the specific control.

2a Control Label and Value: Each control and its value, as displayed in the Single Edit Overlay is shown here.

3 Overlay Buttons: The operator can decide to save the changes or disregard them by canceling the action. Once a button is pressed, the action is taken and the overlay dismisses to return to the application screen.

REDLINES: GROUP EDIT OVERLAY



TYPE & COLOR: GROUP EDIT OVERLAY

The screenshot shows the ABB TOTALFLOW software interface. At the top, it displays "ABB TOTALFLOW | Operator ▾ | ?" and "jonathan.doe@abb.com ▾". Below the header, the navigation path is "Facility ▶ North Well 1 ▶ Plunger". On the right side, there's a status bar with "Last Refreshed 12/28/12 at 10:00:30 AM" and a "Monitoring Off" button. The main area features a green "Overview" tab and a "Wait Options" dialog box. The "Wait Options" dialog contains two sections: "Tubing Line: 1.88" and "Casing Line: 53.09". Each section has "Open on [Line] Line" checkboxes, "Setpoint" input fields (with "T12" and "T15" labels), and tuning parameters ("Enable Tuning", "Increment (+/-)", "Min Value", "Max Value"). The "Tubing Line" section also includes a small diagram of a wellhead. The "Casing Line" section has a "Flow Rate" label. At the bottom of the dialog are "Cancel" and "Save" buttons. The background shows other tabs like "Arrival", "Stage", "Tubing", "Line", "Casing", "Flow Rate", "Plunger Control", "Optimization", and "Swabbing". To the right of the dialog, there's a sidebar with "Edit All" and a list of values: "00:00:00", "00:00:00", "Low", "OK", and "224.77".

Wait Options T3

Tubing Line: 1.88 T15

Open on Tubing Line 1px, #2d2d2d

Setpoint T12 1px, #2d2d2d

1px, #999999

Enable Tuning

Increment (+/-)

Min Value

Max Value

Casing Line: 53.09

Open on Casing Line 1px, #2d2d2d

Setpoint

Enable Tuning

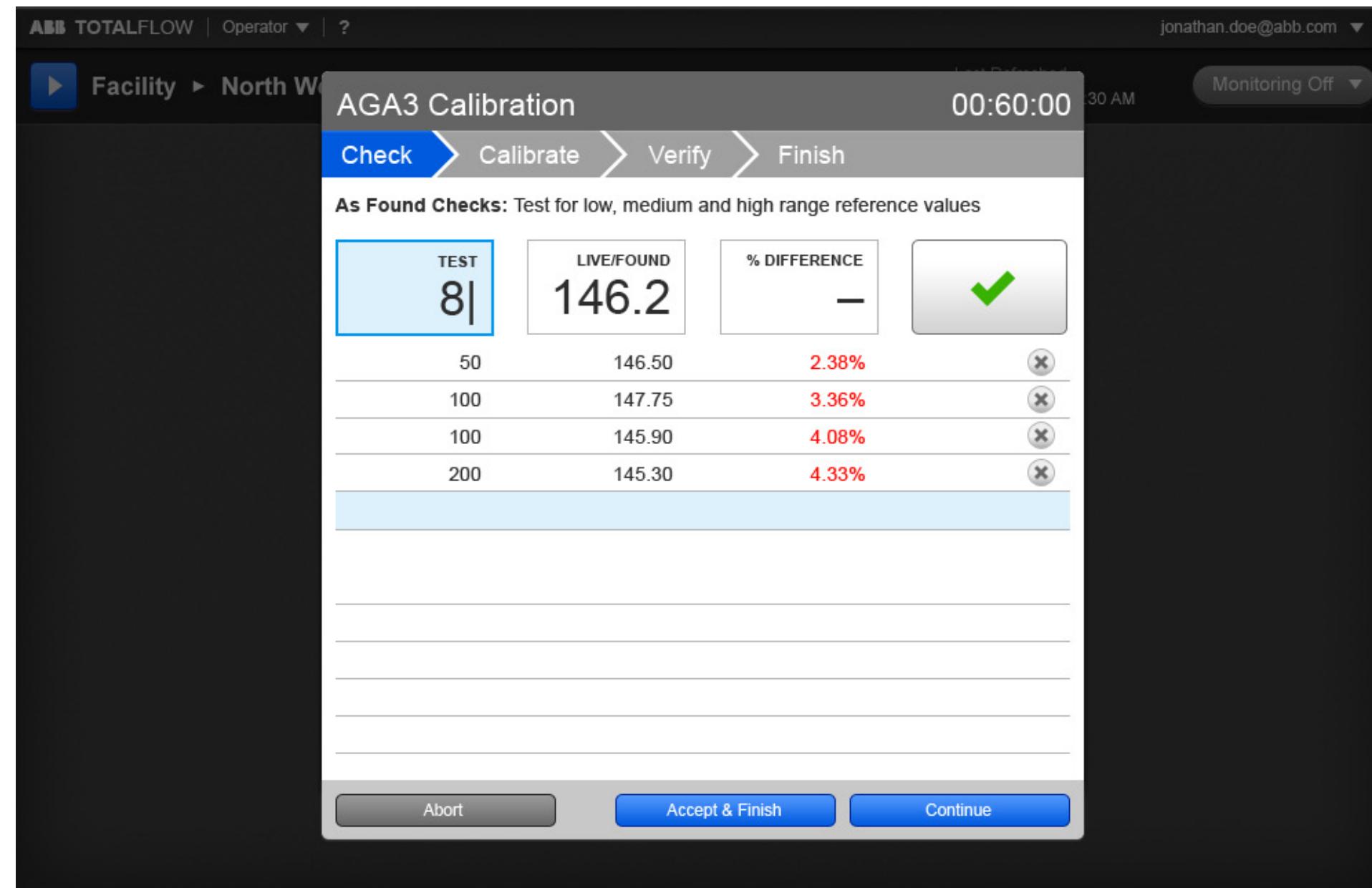
Increment (+/-)

Min Value

Max Value

Cancel **Save**

CALIBRATION WIZARD OVERLAY



INTERACTION NOTES

As part of the foundational design process, we designed Calibration screen for the AGA 3 measurement application. We designed it such that calibration is a **task flow** of four main steps. (To see the entire flow, refer the appendix section).

The Calibration task flow happens in a wizard, whereby the operator focuses wholly on the flow and cannot access the application screen beneath.

The overall layout is similar to the Group Edit Overlay, however, the maximum width of the Group Edit Overlay is more than the width of the Calibration Wizard Overlay. Also, the wizard restricts any vertical or horizontal scrolling.

The overlay header contains the name of the application.

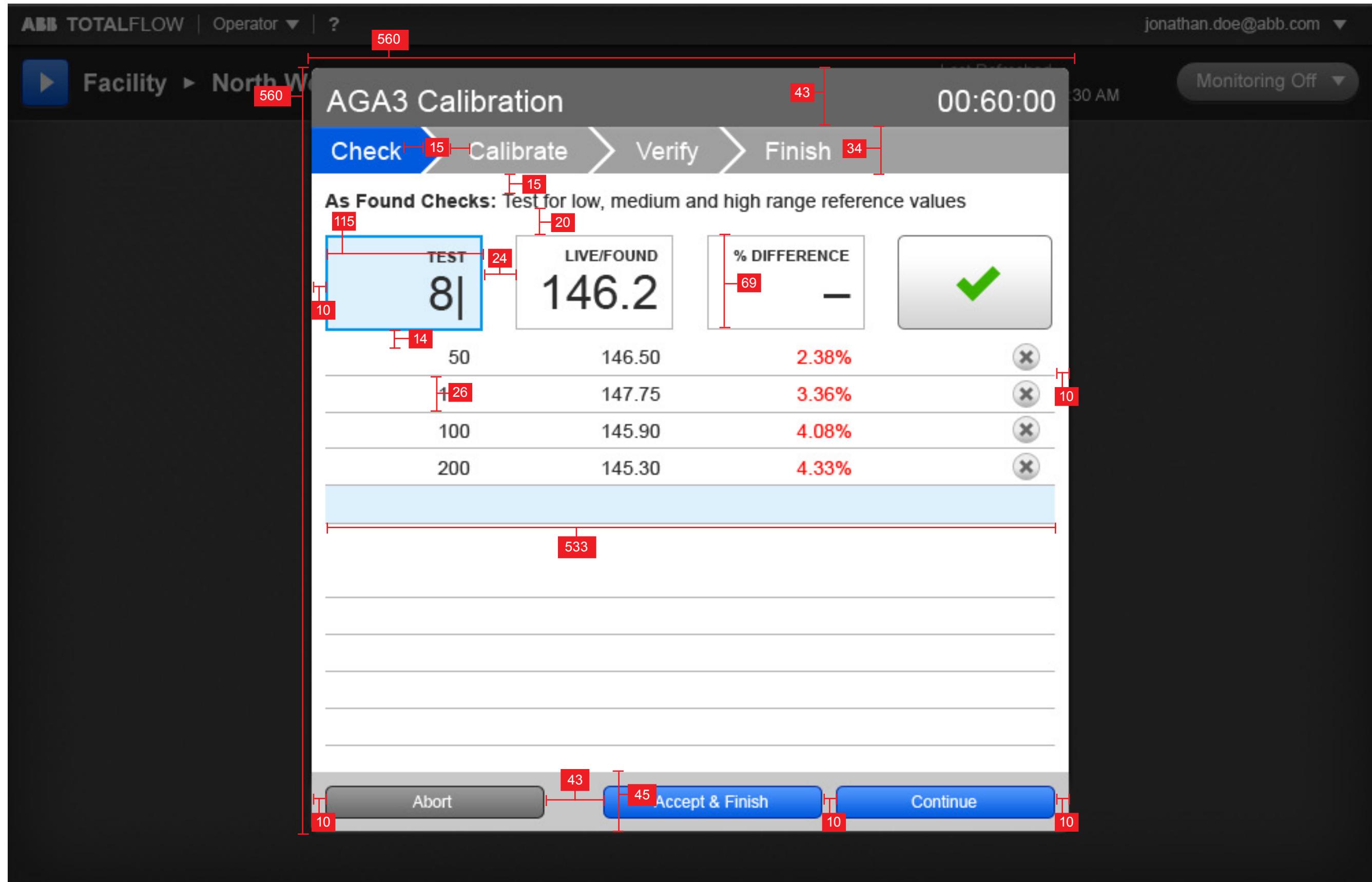
The steps of the wizard are displayed as bread-crums in the overlay body.

At any time, the operator can quit the wizard by aborting the action.

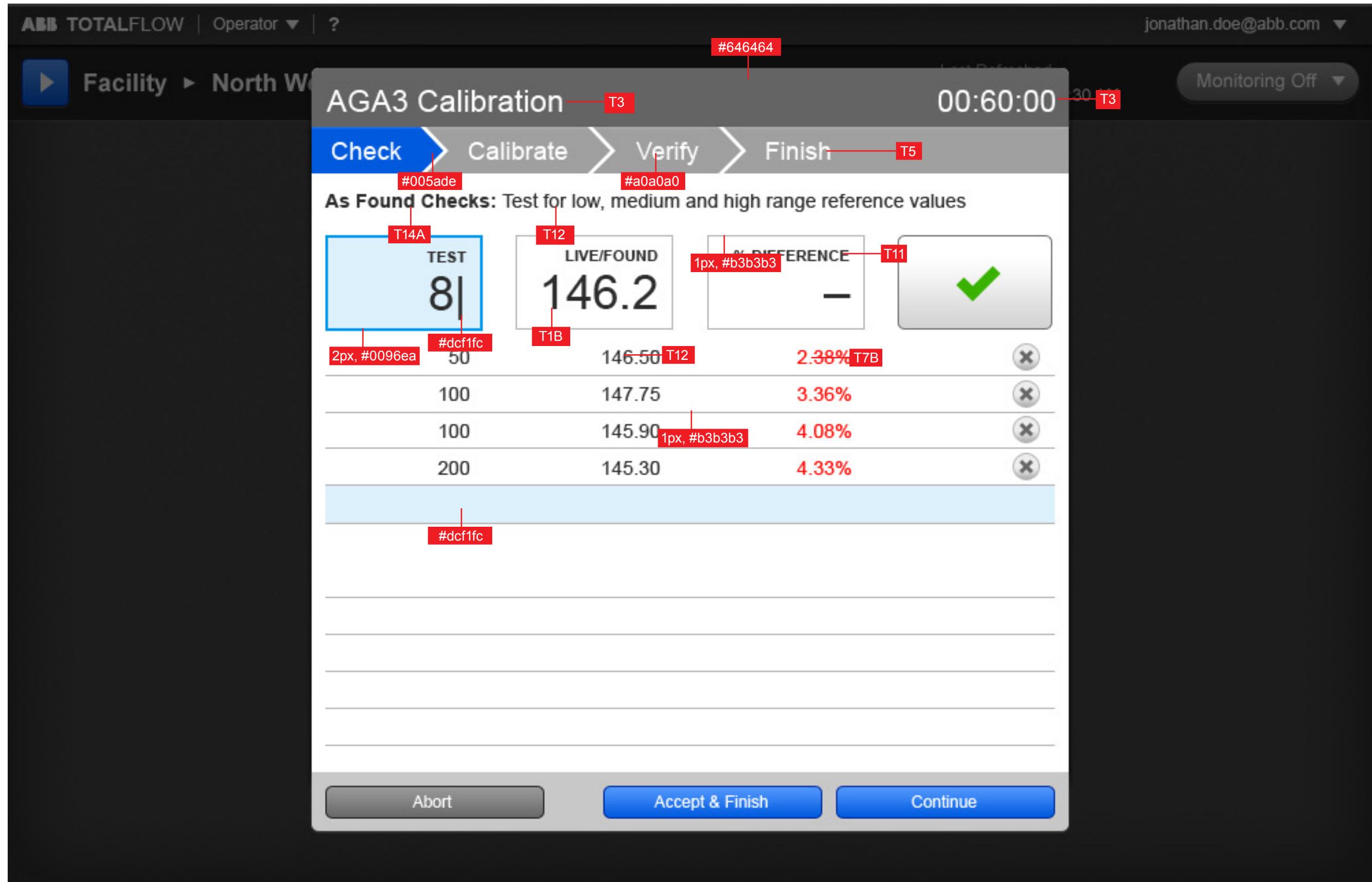
Scalability

The wizard steps can be scaled as described in the Global Elements section.

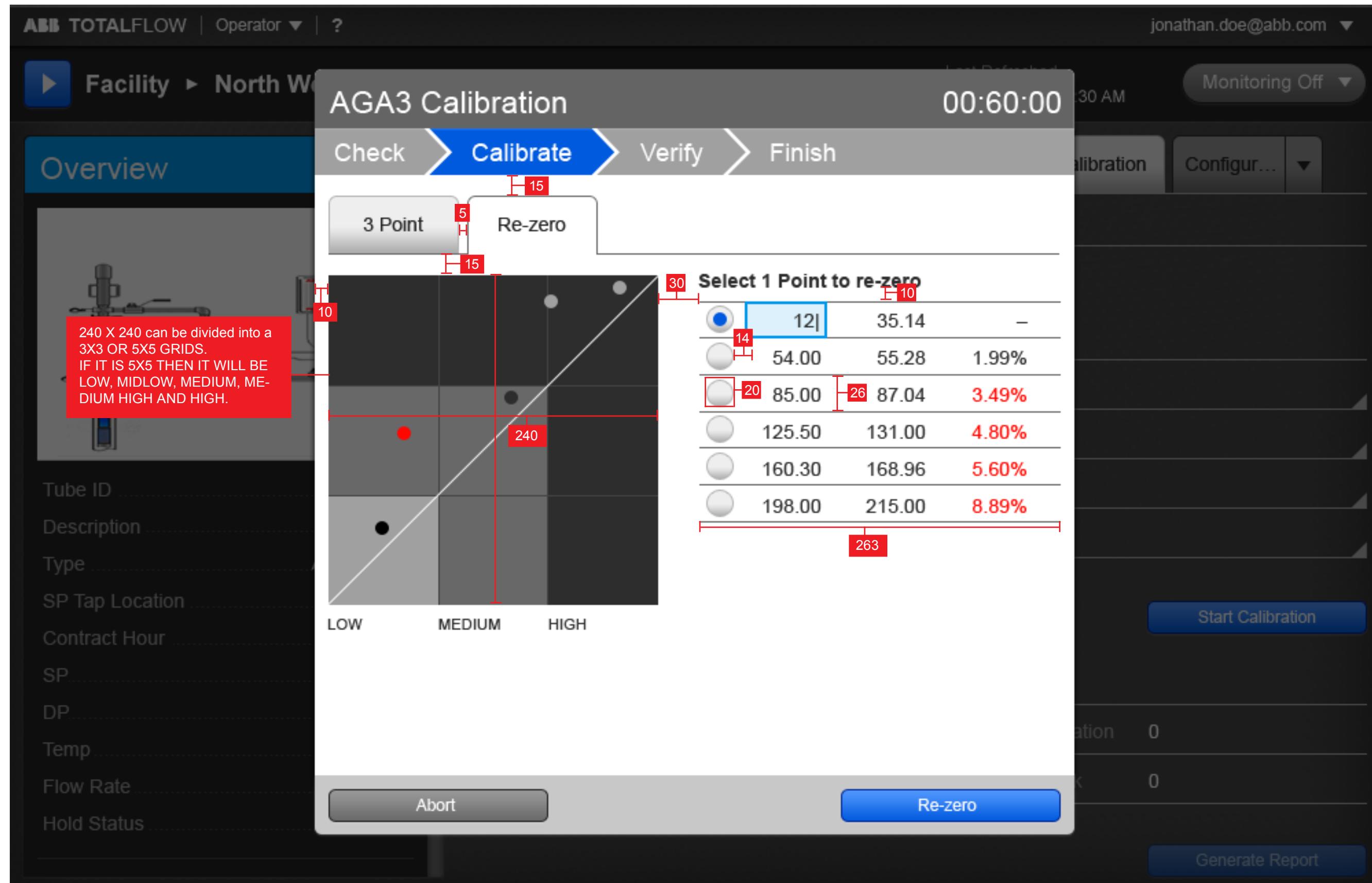
REDLINES: CALIBRATION WIZARD OVERLAY 1



TYPE & COLOR: CALIBRATION WIZARD OVERLAY 1



REDLINES: CALIBRATION WIZARD OVERLAY 2



STATION CONFIGURATION SCREEN

The screenshot shows the ABB TOTALFLOW Configuration screen. At the top left is the ABB logo and 'TOTALFLOW' text. To its right are 'Configuration ▾' and a question mark icon. On the far right is the user's email, 'jonathan.doe@abb.com ▾'. Below the header, a blue navigation bar on the left contains a play button icon and the word 'Facility'. The main area is divided into three columns:

- Apps** (left column): Contains a list of applications: Total Flow/TCP, AGA7 - 1, Valve Control - 1, PID Control - 1, Plunger - 1, Valve Control - 2, AGA3, AGA1, and PID Control - 2.
- Trend Points** (middle column): Contains a list of trend points: 00Production, 01W01PR, 01W02TP, 01W03FR, 01W04PR, 01W05PR, 01W06FR, 01W07PR, 01W08TP, 01W09PR, and 01W10PR.
- Data Points** (right column): Contains a list of data points with descriptions and units:

Description	Unit
Flare Temp 1	°C
Flare Temp 2	°C
Flare Temp 3	°C
Flare Temp 4	°C
Flare Temp 5	°F
Flare Temp 6	°F
Flare Temp 7	°C
03W02TP	MCF
04W01TP	MCF

INTERACTION NOTES

NGHLA can be configured to attach applications, trends and data points to the facility or a well. From the global navigation, the user can change the site to Configuration mode.

Using the primary navigation, a modified facility site menu (as in the next page), the user can select a well.

REDLINES: STATION CONFIGURATION SCREEN (WITH MENU OPEN)

ABB TOTALFLOW | Configuration ▾ | ? jonathan.doe@abb.com ▾

Facility

Wells

North Sub-Facility

- North Well 1
- North Well 2
- North Well 3
- North Well 4

East Sub-Facility

- East Well 1
- East Well 2

South Sub-Facility

- South Well 1
- South Well 2

Apps

- Total Flow/TCP
- AGA7 - 1
- Valve Control - 1
- PID Control - 1
- Plunger - 1

Trend Points

- 00Production
- 01W01PR
- 01W02TP
- 01W03FR
- 01W04PR

Data Points

Description	Unit
Flare Temp 1	°C
Flare Temp 2	°C
Flare Temp 3	°C
Flare Temp 4	°C

The screenshot shows a station configuration interface with several redline annotations indicating specific data points or areas of interest:

- Wells:** Redlines connect the four wells in the North Sub-Facility to a single red triangle icon containing the number 306.
- East Sub-Facility:** Redlines connect the two wells to a red triangle icon containing the number 306.
- South Sub-Facility:** Redlines connect the two wells to a red triangle icon containing the number 30.
- Apps:** Redlines connect the five listed applications to a red triangle icon containing the number 308.
- Trend Points:** Redlines connect the five listed trend points to a red triangle icon containing the number 10.
- Data Points:** Redlines connect the four listed flare temperature data points to a red triangle icon containing the number 10.

TYPE & COLOR: STATION CONFIGURATION SCREEN (WITH MENU OPEN)

ABB TOTALFLOW | Configuration ▾ | ? jonathan.doe@abb.com ▾

Facility

Wells

North Sub-Facility

- North Well 1
- North Well 2
- North Well 3
- North Well 4

East Sub-Facility

- East Well 1
- East Well 2

South Sub-Facility

- South Well 1
- South Well 2

Apps T3

Total Flow/TCP

AGA7 - 1 T7

Valve Control - 1

PID Control - 1

Plunger - 1

Trend Points T10

#646464

00Production

01W01PR

01W02TP

01W03FR

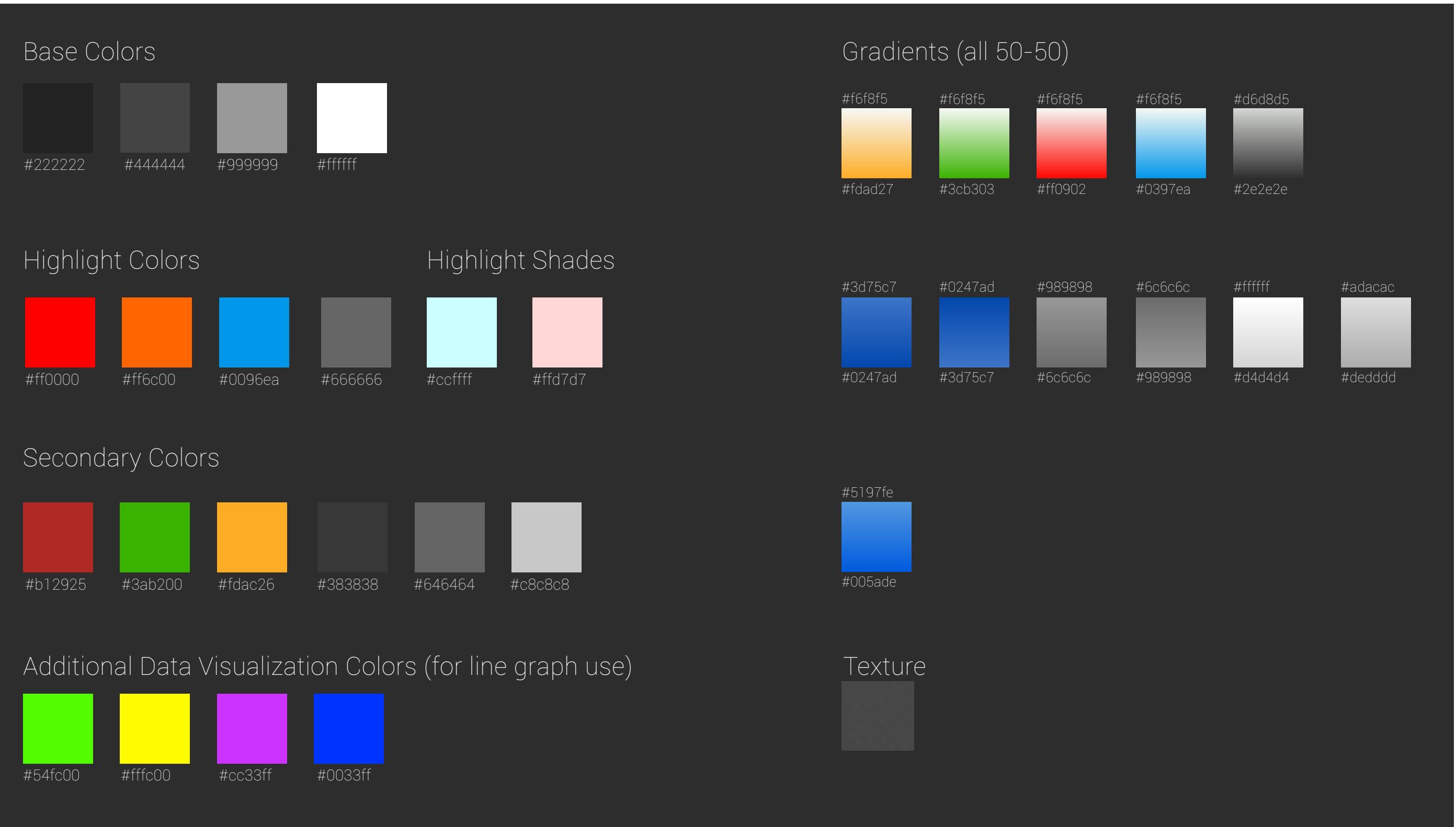
01W04PR

Data Points Edit all

Description	Unit
Flare Temp 1	°C
Flare Temp 2	°C
Flare Temp 3	°C
Flare Temp 4	°C

4. GLOBAL ELEMENTS

COLORS, GRADIENTS AND TEXTURE PALETTE



Font :

Arial

Font Family :

Bold

Regular

Font Size :

12-34 px

Large - Arial 34 Normal

Header - Arial 22 Normal

Sub Header - Arial 18 Normal

Body Text - Arial 14 Normal

Small Text - Arial 12 Normal

TYPOGRAPHY (CONTD.)

Type on dark background

T1	-	Arial 34, Normal, #999999
T1a	-	Arial 34, Normal, #ff6c00
T1b	-	Arial 34, Normal, #000000
T2	-	Arial 34, Normal, #0298ea
T2a	-	Arial 30, Normal, #0298ea
T3	-	Arial 22, Normal, #ffffff
T4	-	Arial 18, Bold, #ffffff
T5	-	Arial 18, Normal, #ffffff
T6	-	Arial, 18, Normal, #ff6c00
T6a	-	Arial, 16, Normal, #ffffff
T7	-	Arial 14, Normal, #ffffff
T7b	-	Arial 14, Normal, #ff0000
T8	-	Arial 14, Normal, #999999
T9	-	Arial 12, Normal, #ffffff
T10	-	Arial 12, Normal, #999999
T14	-	Arial 14, Bold, #ffffff

Type on white background

T11	-	Arial 12, Normal, #222222
T12	-	Arial 14, Normal, #222222
T13	-	Arial 22, Normal, #222222
T14a	-	Arial 14, Bold, #222222
T15	-	Arial 18, Normal, #222222

BACKGROUND AND SCROLL BAR



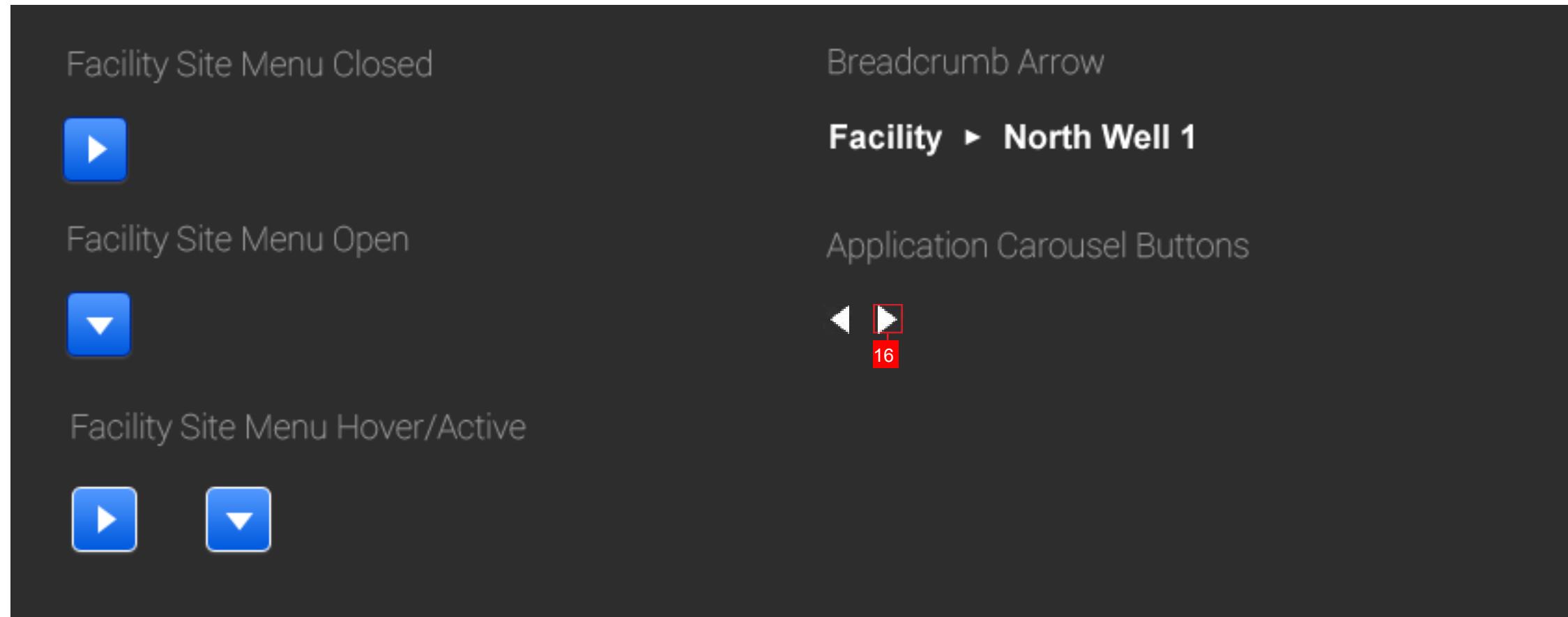
PRIMARY, SECONDARY, TOGGLE BUTTONS AND LINK



RULES

- **Links** not part of a list have an underline state for the hover.

IMAGE BUTTONS



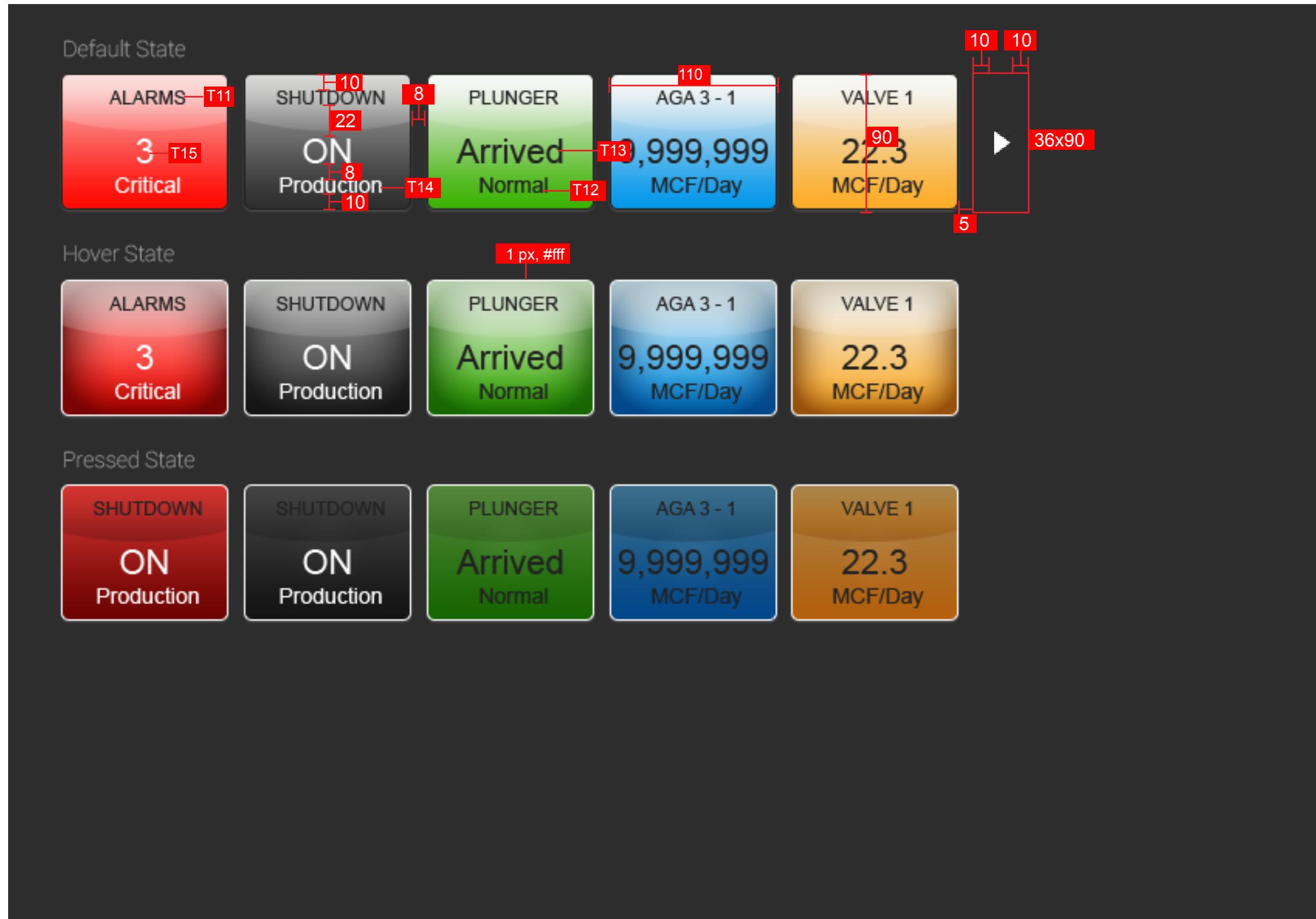
Delete button



Check button

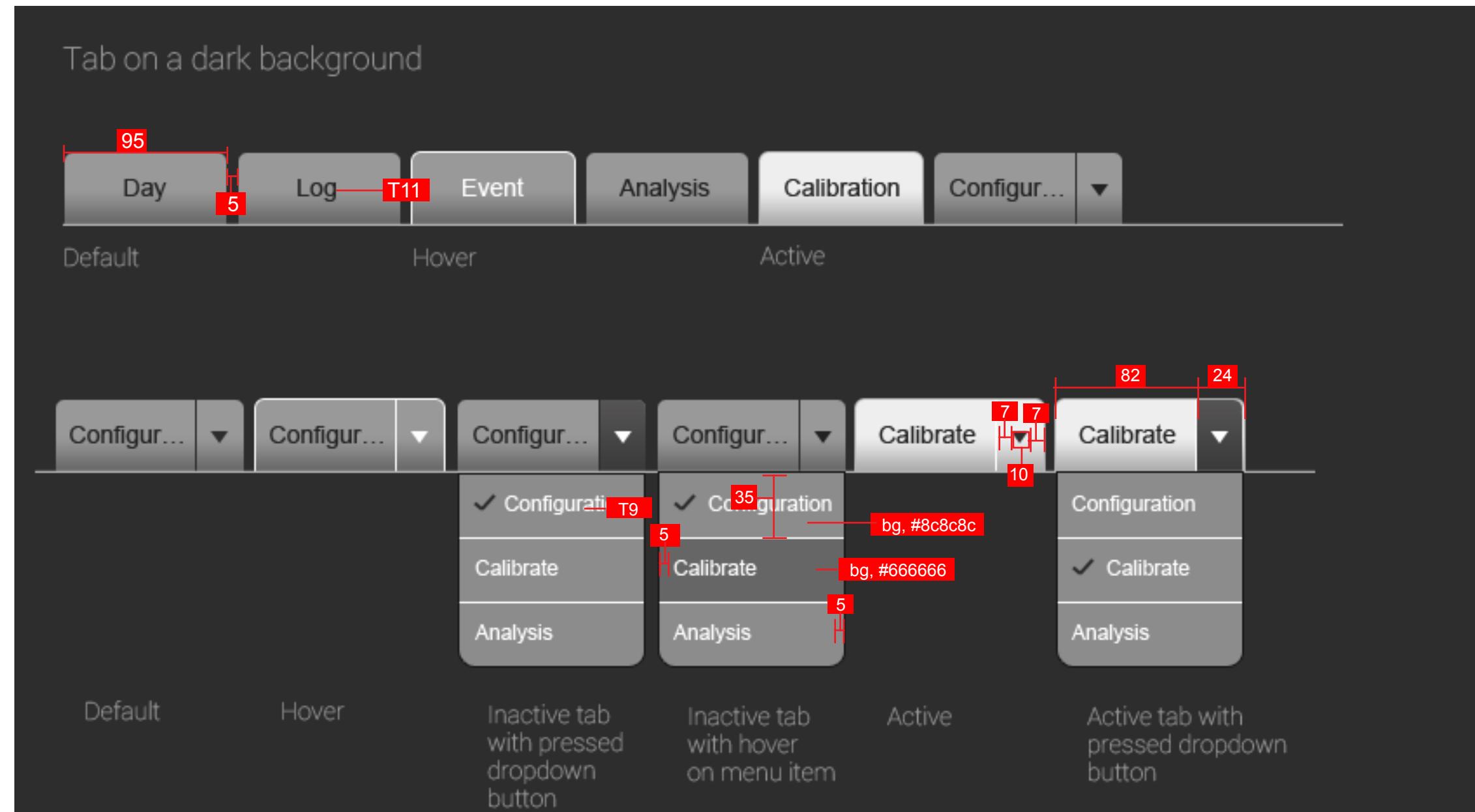


APPLICATION TILE BUTTONS



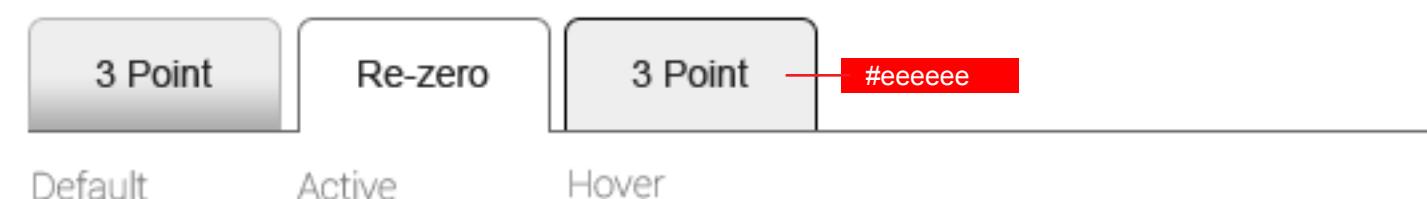
RULES

- The hit area of the carousel button is 36px X 90px.
- The states of the application tile carousel are detailed out in the Layout and Specification Section under Application Tile Carousel page.

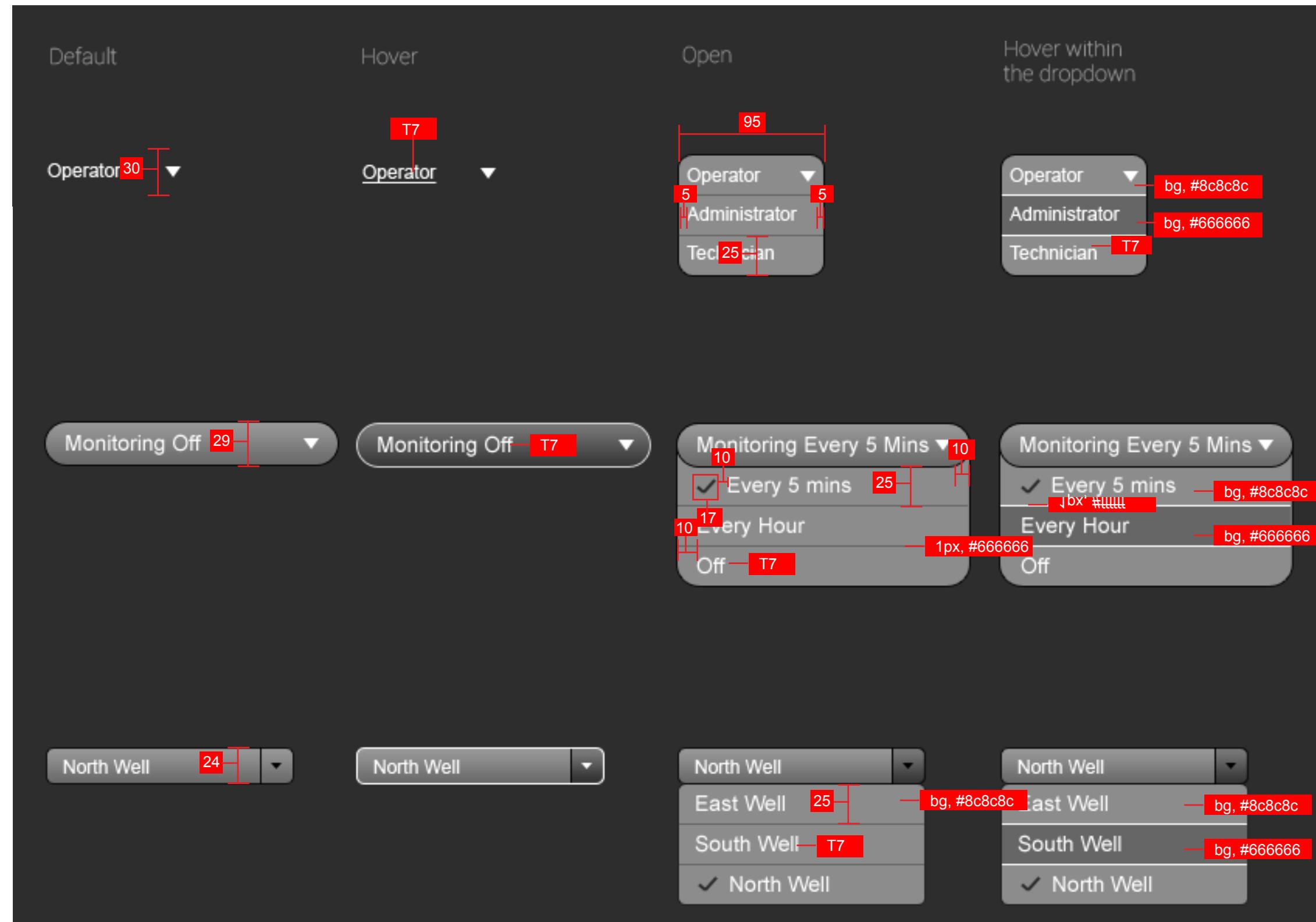
TABS**RULES**

- The text truncation rules for tabs are detailed out in the Text Truncation Rules page .
- The tabs which do not have screen space are all grouped under a single tab using a combo box. (e.g. Configuration tab)
- The name of the combo box tab is the currently selected menu item.
- The current selection has a tick mark preceding the menu item.

Tab on white overlay background



COMBO BOX



RULES

Global Navigation Combo Box

Box: It is only used in global navigation.

For all Combo Boxes:

- The width of the combo box takes up the longest menu item width as it would appear in the combo box.
- The currently selected item in the drop down is highlighted with a check mark.
- If there is a common label for all the menu items in the dropdown, it does not need to be repeated, but can simply show in the combo box. (See the Monitoring Combo box for example).

COMBO BOX (CONTD.)

Combo box on a white background



RULES

- The rules remain the same as for the dark background combo box.

COMBO BOX (MULTISELECTION)



Multiselect Combo on a white background



RULES

Multi-select combo box is used when:

More than one selection is to be made in a drop down.

- All items in the drop down have a checkbox alongside.
- When items are selected, the combo box displays the number of items selected.
- There is no hover state for the menu items.
- Clicking on any menu item, selects it.
- Clicking elsewhere on the screen, closes the multi select combo box.

LISTS: SINGLE COLUMN



RULES

Group List is used when:

- A control has more than one value. In such a case, the row is divided into 2 or more line items. The control label and the values are both left aligned. However, the values run across more than one rows.

Single Column List with Double Headers is used when:

- The values for the controls have a common header e.g. Units.

LISTS: DOUBLE COLUMN



RULES

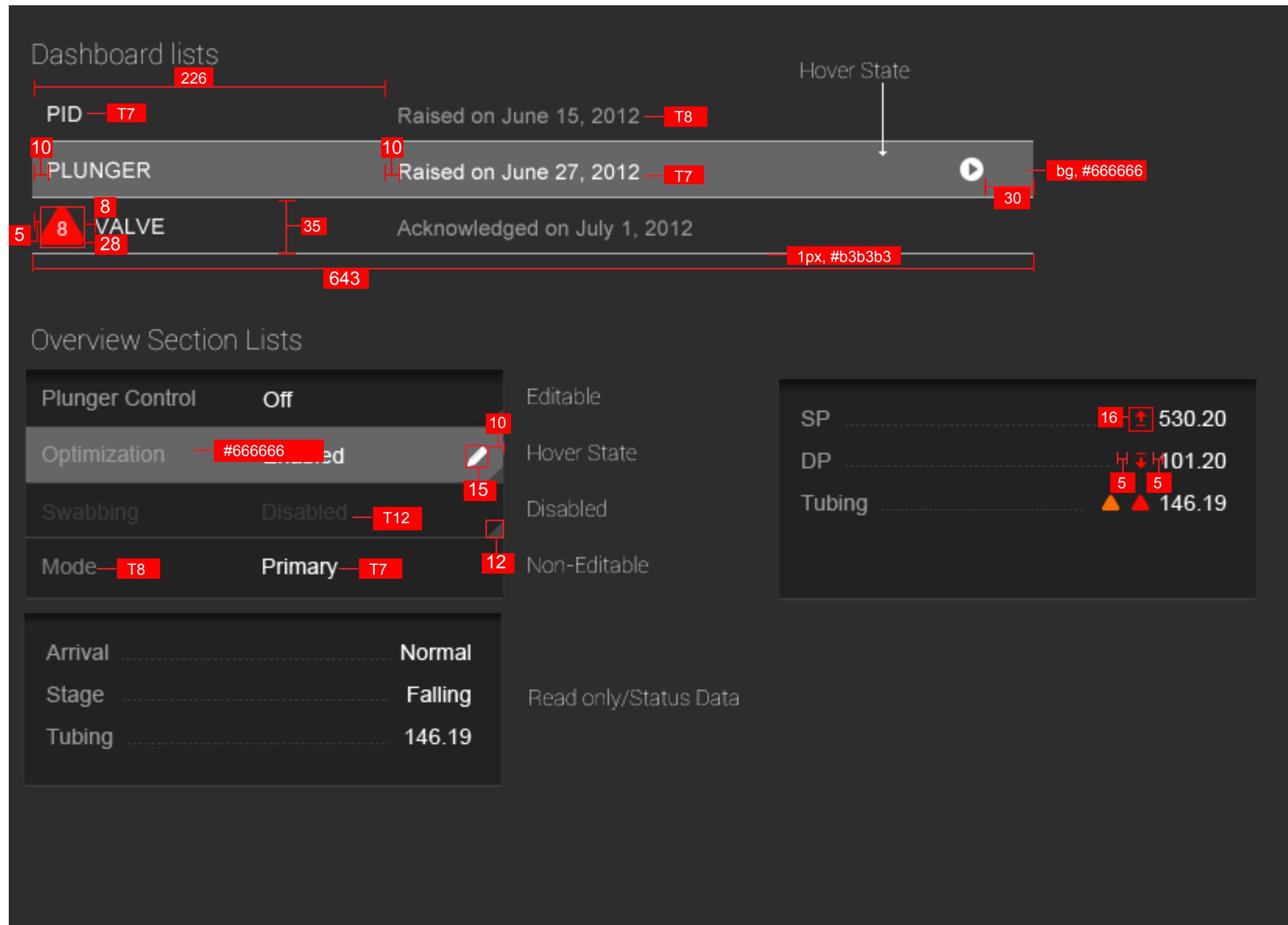
Double Column List is used when:

- The Overview or Specific Control Sections in the Application screen run over double columns (as described in the 3.6 Application Screen pages). An instance is used in the Calibration Flow.

Double Column List with Single Header is used when:

- The string length is short for the label and value of the controls
- Vertical scrolling has to be avoided.

LISTS: DASHBOARD AND OVERVIEW SECTION VARIATIONS



RULES

- The Overflow and Underflow icons beside values in the Overview Section List, depict that the value is either higher or lower than a specified nominal value of the control.

TABLES

Table on a grey background

	Header 1 (Unit 1)	Header 2 (Unit 2)	Header 3 (Unit 3)
Row 1	50	146.50	2.38%
Row 2	100	147.75	3.36%
Row 3	100	145.90	4.08%
Row 4	100	145.30	100.33%

Table on a black background

	Header 1 (Unit 1)	Header 2 (Unit 2)	Header 3 (Unit 3)
Row 1	50	146.50	146.50
Row 2	100	147.75	147.75
Row 3	100	145.90	145.90
Row 4	200	145.30	145.30

RULES

- The default column width is 100 px. However, the column width can be variable.
- The headers are optional.
- The cell content is center aligned in the row and right aligned in the column.

TABLES (CONTD.)

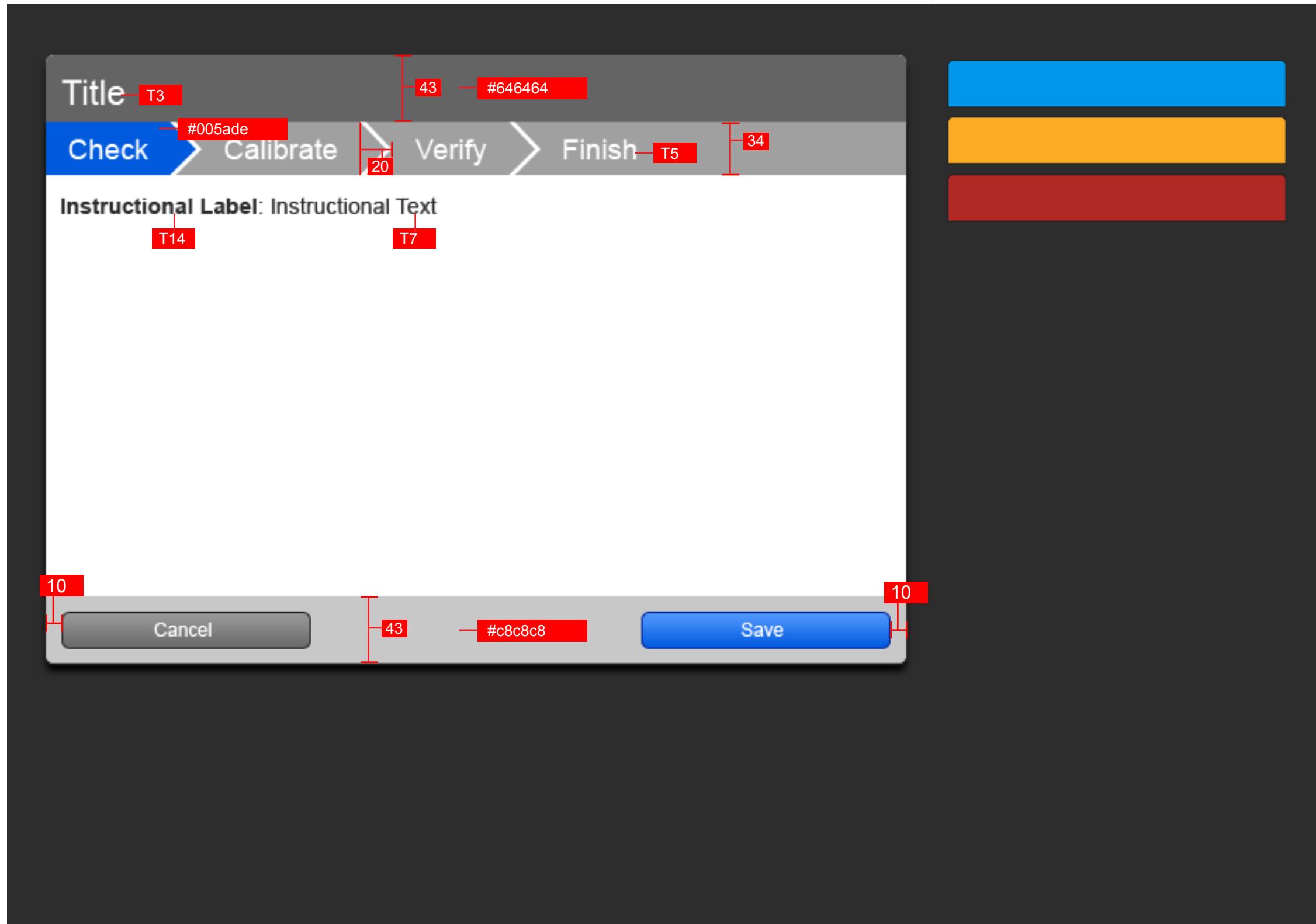
Table with white background

	Header 1 (Unit 1)	Header 2 (Unit 2)	Header 3 (Unit 3)
Row 1	50	146.50	146.50
Row 2	100	147.75	147.75
Row 3	100	145.90	145.90
Row 4	200	145.30	145.30

RULES

- The rules remain the same as for the dark background combo box.

OVERLAY AND WIZARD ELEMENTS



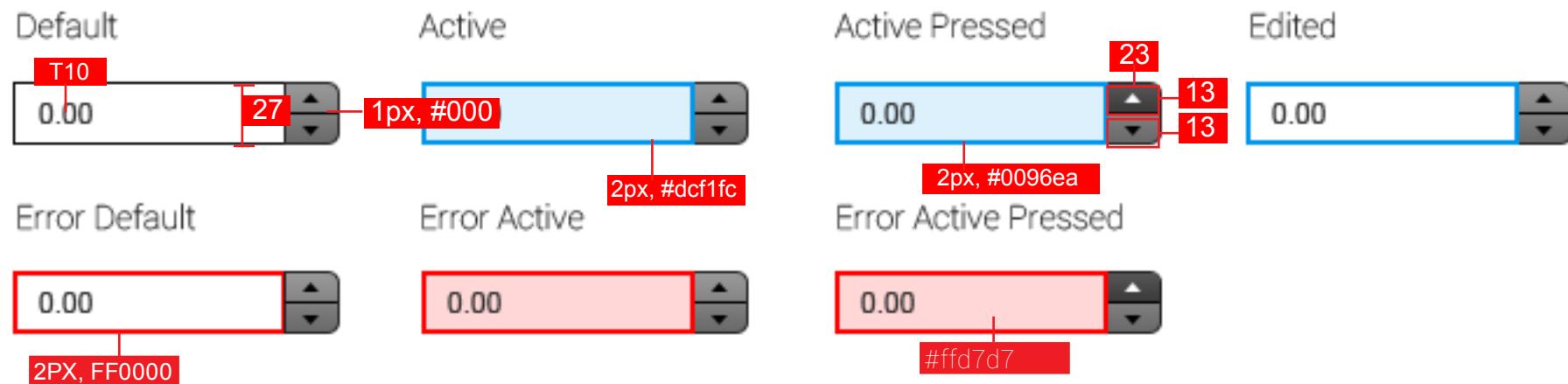
RULES

- Buttons are center aligned in the footer row.
- Between two buttons in the footer the distance is 10px
- There can be a maximum of 3 buttons in the footer
- The breadcrumbs/steps are used in wizards
- A maximum of 5 steps can be used in the wizard breadcrumb.
- The header could have alternate colors.

FORM ELEMENTS

RULES

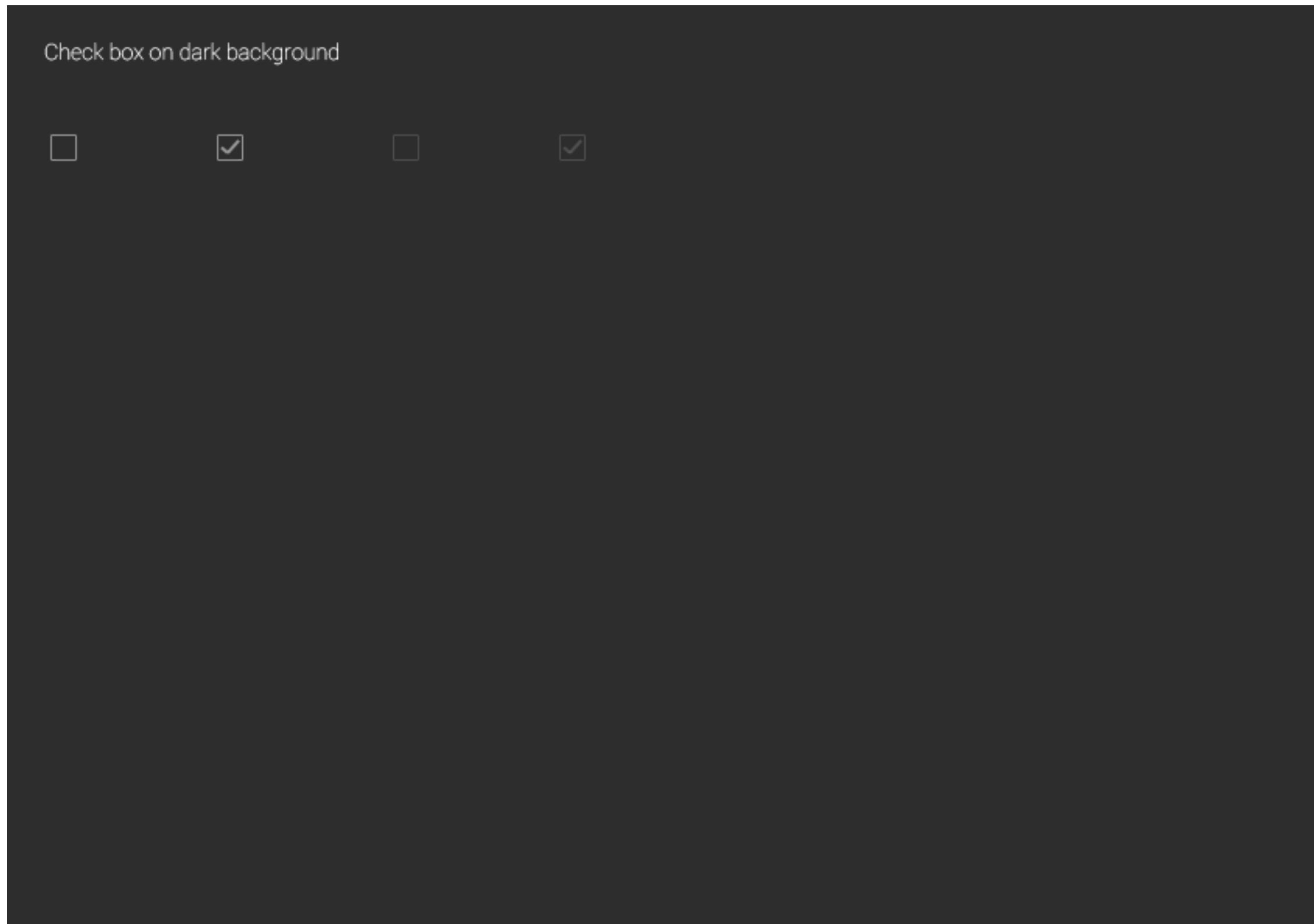
- These elements are used in the overlay where values are edited.



Enabled
Unselected Enabled
Selected Disabled
Unselected Disabled
Selected



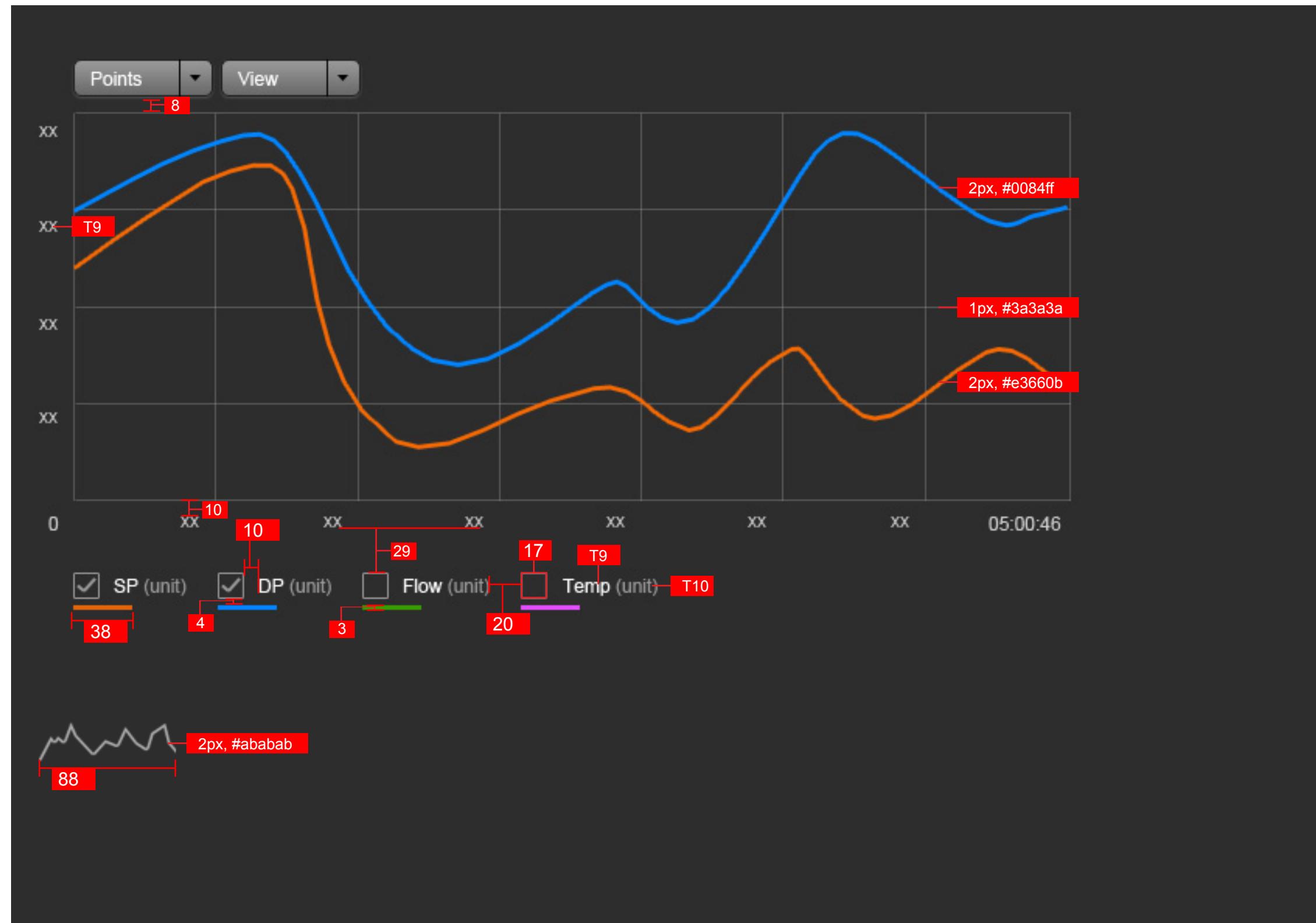
FORM ELEMENTS (CONTD.)



RULES

- The rules remain the same as for the white background form element.

DATA VISUALIZATION : LINE GRAPH AND SPARKLINE



RULES

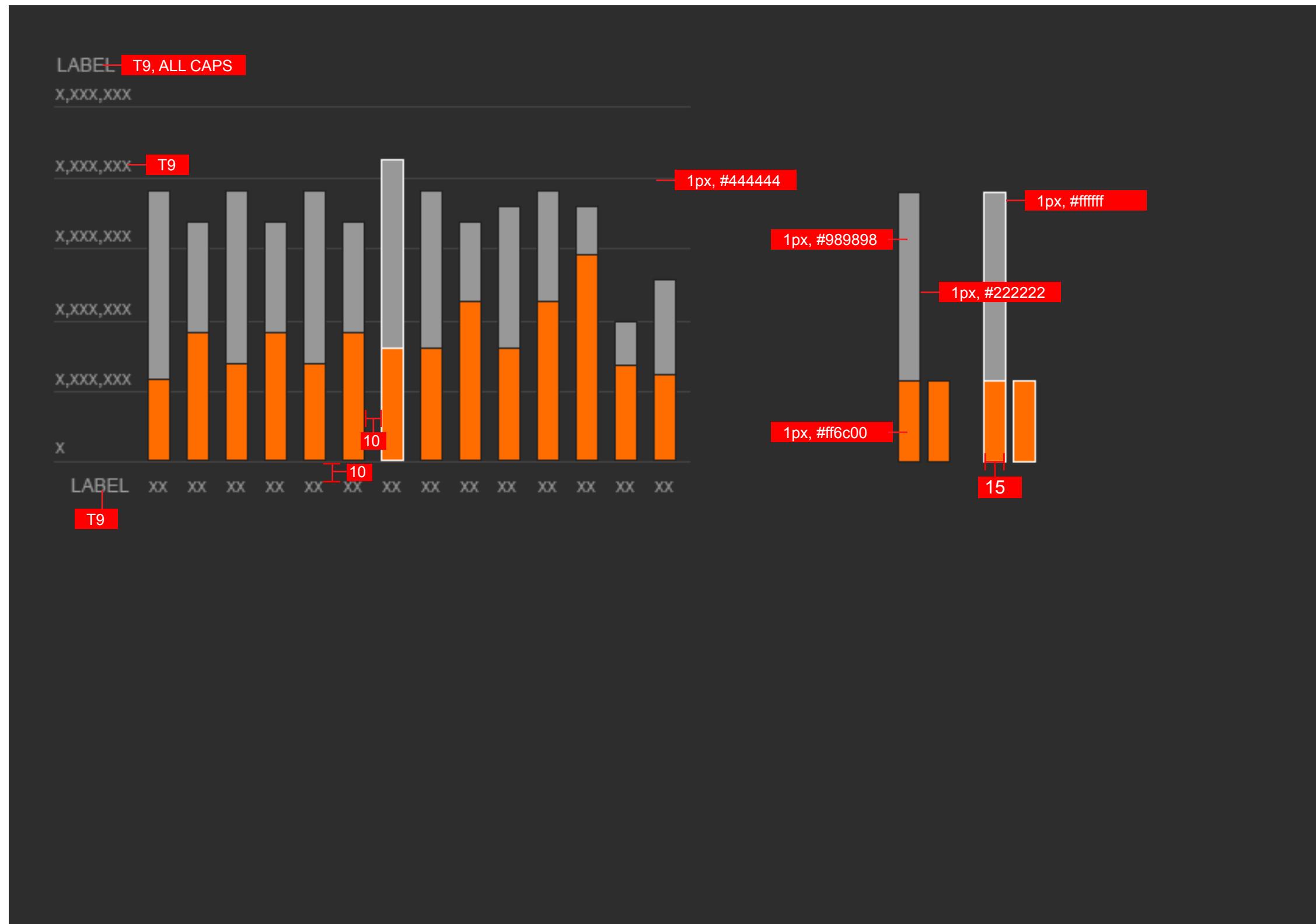
Line graph:

- The grid can accommodate different scales and values on both axes.
- The grid is flexible. It can be scaled (or contracted) to add (or reduce) values from both the axes.
- If more than one line graph is represented, they should have values plotted on the same Y-axis.
- It is recommended to not display more than 4 line graphs on the grid.
- The colors recommended for the line graph are in the color palette.
- The preferred X-axis is time.

Sparkline:

- Certain values are represented over time to show the trend, using a sparkline.
- The sparkline can have between 5 and 20 points (no less and no more). The sparkline shown here is for the 14 day trend of production.

DATA VISUALIZATION : BAR GRAPH

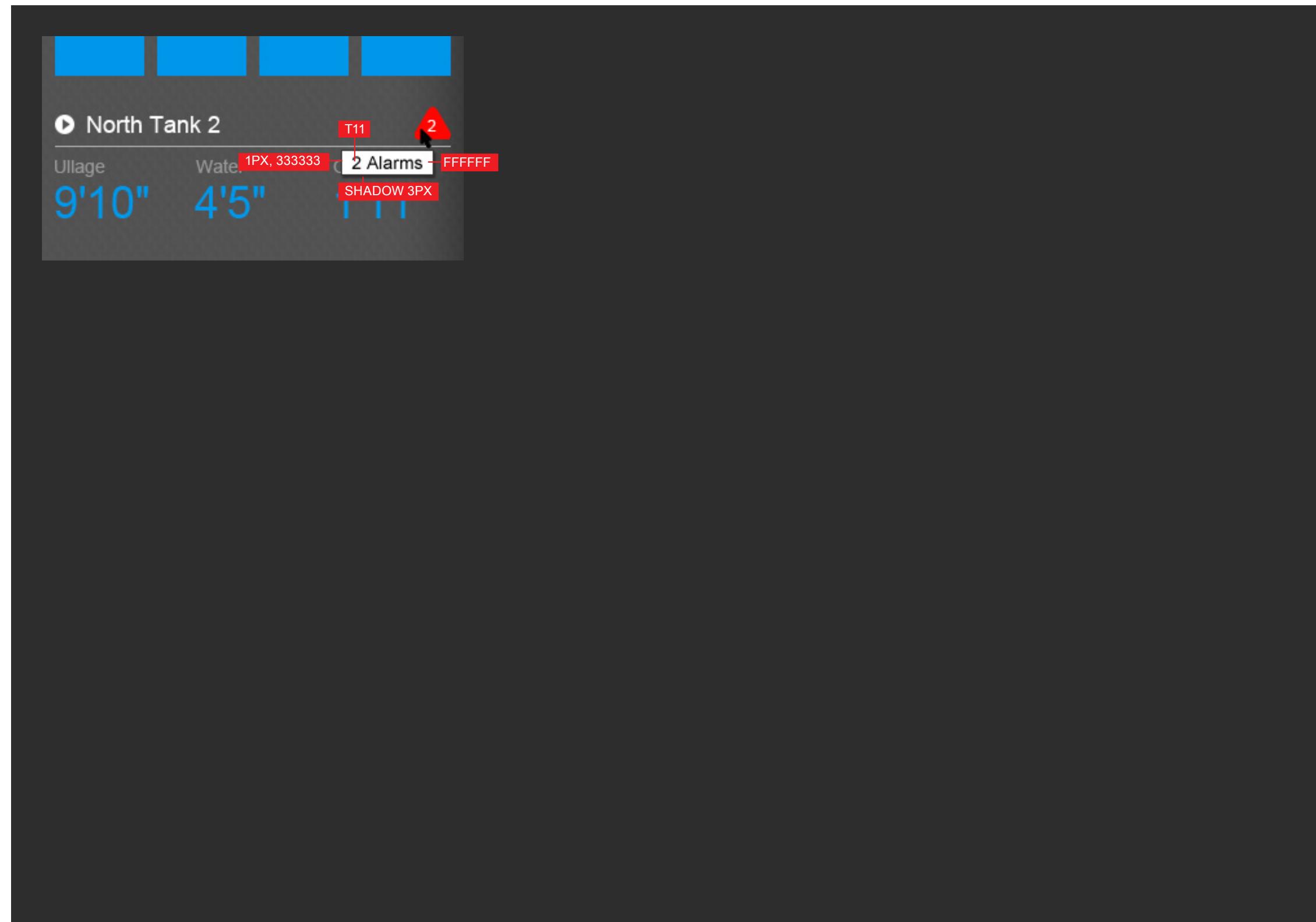


RULES

- The grid can accommodate different scales and values on both axes.
- It is recommended to have the X-axis as time.
- If more than one bar graph is represented, they should have values plotted on the same Y-axis.
- It is recommended to have a maximum of 2 bar graphs where one value depicts overall and the other a part of it (when the bar graphs are overlaid, they depict how much one is contributing to the whole).

ICONS

Alert	
High Alert	
Edit	
Help	
Arrow round	
Flag	
Overflow	
Underflow	
List item high alert	
List item low alert	
Tick mark	

TOOL TIP**RULES**

- Tooltips can be used anywhere additional information is desired, exam e.g.:
 - icons
 - truncated text.

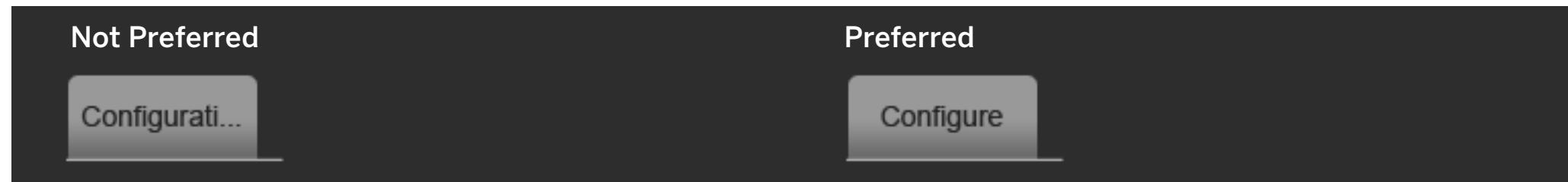
COPY WRITING

General Rules

1. Humanize the data
2. Respect the pixel widths of each component. Try to write copy that does not truncate.
3. Only use acronyms when they are well-known across the user base.

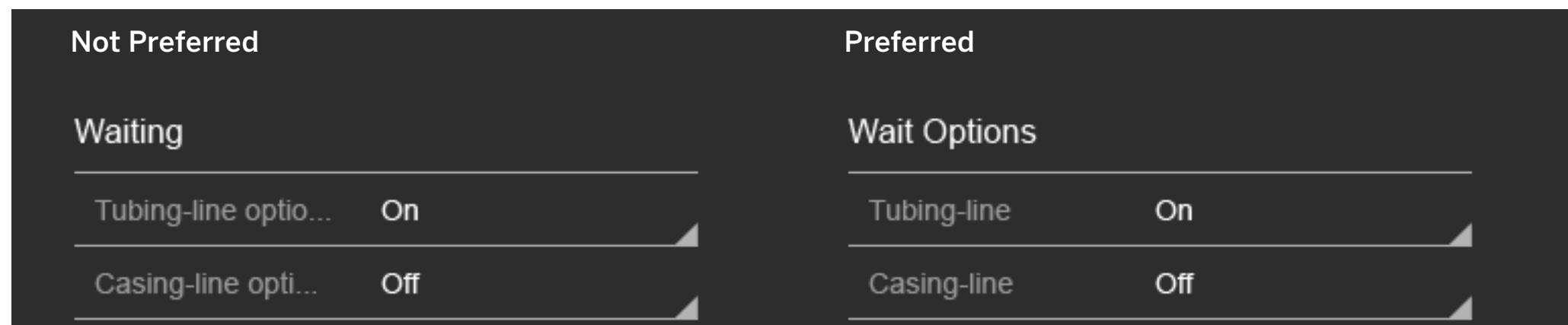
Tabs

1. Use as few characters as possible to define the tab.
2. Use verbs to define the tab, e.g. Configure instead of Configuration. It requires lesser characters and is more direct.



List Labels

1. Use as few characters as possible to define the label.
2. Avoid redundancy in using words like “options”. Instead put them in the section label.

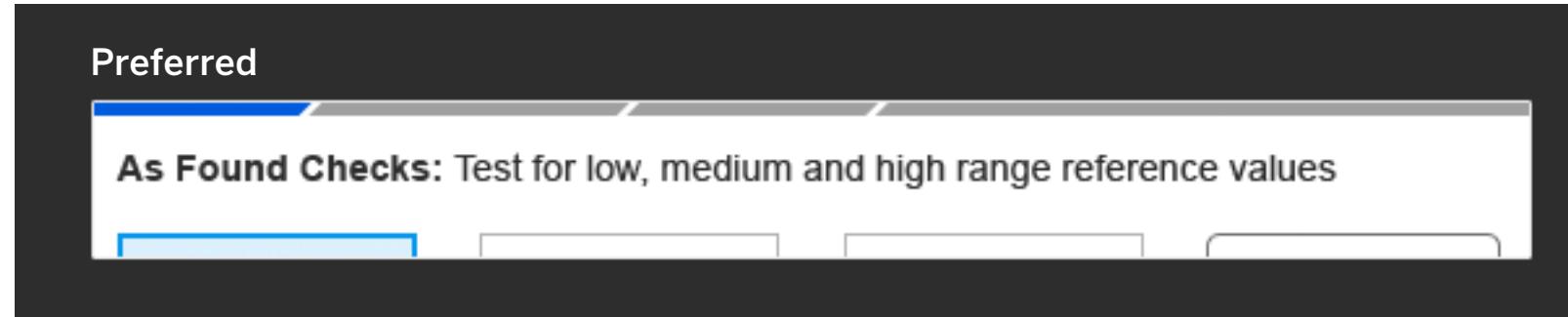


COPY WRITING (CONTD.)

Instructions, Messaging and Errors

Provide meaningful instructions wherever possible:

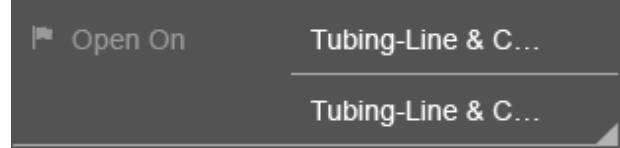
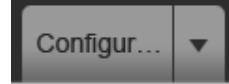
1. Describe objectively. Break copy down into a list or different sentences where possible.
2. Tell the user clearly what he should do. Wherever there are next steps, lead him to them by providing hyperlinks.



TEXT TRUNCATION RULES

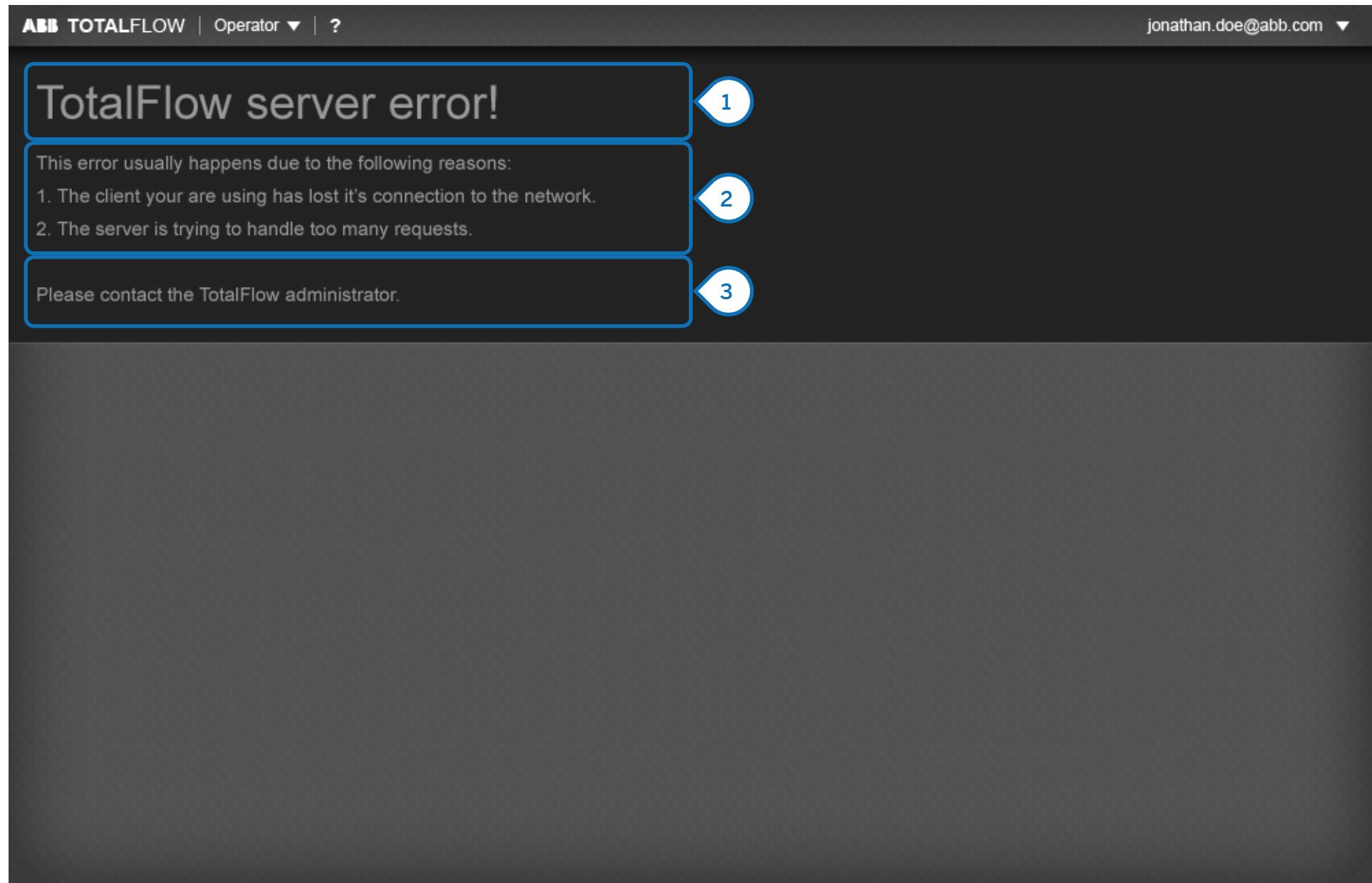
General Rules

1. Attempt to have names which can be fit in the space allocated
2. If longer names need to be used, truncate them as per the following rules:

Component	Section No.	When to truncate	How to truncate
List Item 	4.9	When the value goes beyond 18px padding on the right	Truncate the end of the string/numeric value with an ellipses.
Tab 	4.7	When the value goes beyond 5px padding on the right	Truncate the end of the string to fit in the width
Application Tile 	4.6	When the application name in row 1 goes beyond tile width	Wrap the text to two lines. If longer than two lines, truncate.
Table 	4.10	When the value is more than 100 px wide	Represent higher numeric values like 1000s with K, 1000000s with M and approximation with decimal points. If a large chunk of values in a column are getting truncated or abbreviated then expand the column width.

5. ERRORS AND MESSAGING

APPLICATION WIDE ERROR



INTERACTION NOTES

This error/messaging is a separate page that a user is redirected to.

When to display

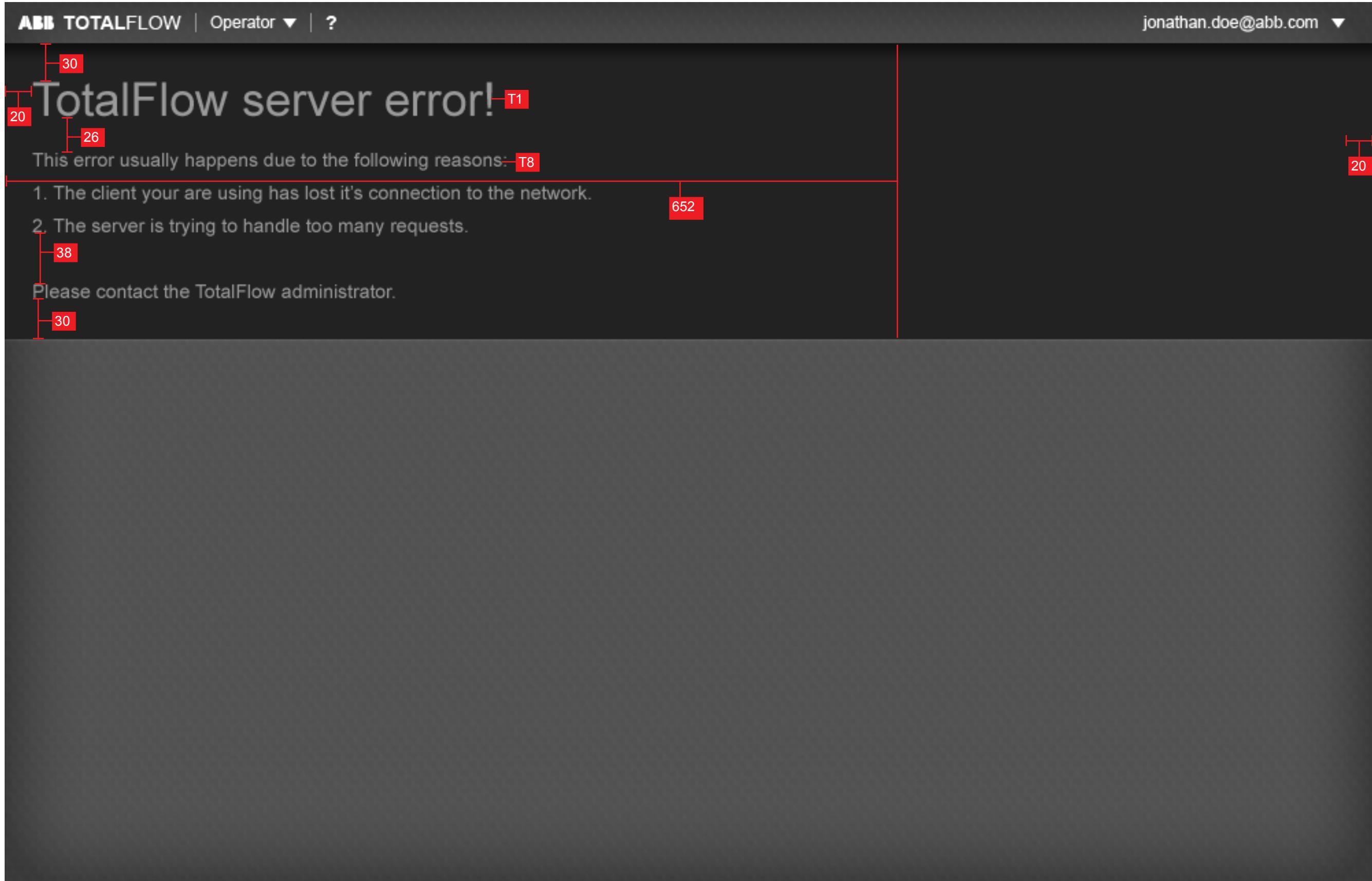
This should be used when an error or message prevents the user from doing anything on the website.

1 Heading: Describes the error in not more than 10 words.

2 Details: Detail description of the error. Try to take it objective by breaking possible causes into a list.

3 Suggestion: Suggest what a user can do incase he faces this error.

APPLICATION WIDE ERROR



WIDGET SPECIFIC ERROR

The screenshot shows a facility dashboard with various widgets. At the top, there are eight status cards: ALARMS (3 Critical), SHUTDOWN (ON Production), PLUNGER (Arrived Normal), AGA 3 - 1 (9,999,999 MCF/Day), VALVE 1 (22.3 MCF/Day), VALVE 2 (11.7 MCF/Day), PID 1 (34.0 MCF/Day), and PID 2 (87.6 Inches H2O). Below these are two main sections: 'Production' and 'Plunger'.

Production: This section contains a graph that is currently not displaying correctly, indicated by a message: "There is a problem in displaying this graph." A blue callout bubble with the number "1" points to this message. Below the graph, it shows production figures for Yesterday (4,263,136 MMCF) and Today (3,956,875 MMCF). It also shows a Plunger status: "Plunger Enabled Wait to Open".

Plunger: This section displays a message: "No plunger is attached to this application yet." A blue callout bubble with the number "2" points to this message.

At the bottom of the dashboard, there are tabs for Alarms, Events, and Data Points. Under Alarms, there are three entries: PID (Raised on June 15, 2012), PLUNGER (8 instances, Raised on June 27, 2012), and VALVE (Acknowledged on July 1, 2012). To the right, there is a "Quick Tasks" panel with buttons for Shutdown (Reset), Calibrate (Choose), and Optimized (Choose).

INTERACTION NOTES

This error/messaging is contextual to a particular section.

When to display

This should be used when an error or message helps inform the user that a particular section of the UI is unable to give correct/any information.

1 Heading: Describes the error in not more than 10 words

2 Suggestion/Link: Suggest what a user can do incase he faces this error. Provide links incase a user can go somewhere or do something to resolve it.

WIDGET SPECIFIC ERROR

ABB TOTALFLOW | Operator ▾ | ? jonathan.doe@abb.com ▾

Facility Last Refreshed
12/28/12 at 10:00:30 AM Monitoring Off ▾

ALARMS 3 Critical	SHUTDOWN ON Production	PLUNGER Arrived Normal	AGA 3 - 1 9,999,999 MCF/Day	VALVE 1 22.3 MCF/Day	VALVE 2 11.7 MCF/Day	PID 1 34.0 MCF/Day	PID 2 87.6 Inches H2O
--------------------------------	-------------------------------------	-------------------------------------	--	-----------------------------------	-----------------------------------	---------------------------------	------------------------------------

Production

There is a problem in displaying this graph. T7

Try again T14

Yesterday
4,263,136 MMCF

Today
3,956,875

Plunger
Enabled Wait to Open

Alarms Events Data Points

PID Raised on June 15, 2012

8 PLUNGER Raised on June 27, 2012

VALVE Acknowledged on July 1, 2012

Quick Tasks

Shutdown Reset

Calibrate Choose

Optimized Choose

SCREEN WIDE TRANSIENT ERROR



INTERACTION NOTES

This error/messaging is contextual to a particular page, however, it should not interrupt a user's activities on the screen.

When to display

This should be used when an error or message informs the user that something is not working properly or to show progress on an action user took.

1 Heading: Describes the error in not more than 10 words

SCREEN WIDE TRANSIENT ERROR

ABB TOTALFLOW | Operator ▾ | ? 1PX, 222222 FDAD27 Trying to monitor.. (26 s T12) 25 jonathan.doe@abb.com ▾

Facility 235 Last Refreshed 12/28/12 at 10:00:30 AM Monitoring Off ▾

ALARMS 3 Critical **SHUTDOWN** ON Production **PLUNGER** Arrived Normal **AGA 3 - 1** 9,999,999 MCF/Day **VALVE 1** 22.3 MCF/Day **VALVE 2** 11.7 MCF/Day **PID 1** 34.0 MCF/Day **PID 2** 87.6 Inches H2O

Production

MMCF
5,000,000

Date	Production (MMCF)
SEP 01	~1,700,000
SEP 02	~2,800,000
SEP 03	~2,100,000
SEP 04	~2,800,000
SEP 05	~2,100,000
SEP 06	~2,800,000
SEP 07	~2,400,000
SEP 08	~2,400,000
SEP 09	~3,500,000
SEP 10	~2,400,000
SEP 11	~3,500,000
SEP 12	~4,500,000
SEP 13	~4,000,000
SEP 14	~3,500,000

Yesterday
4,263,136 MMCF

Today
3,956,875

Plunger

TUBING 1,257,321

CASING 197.41

LINE 144.32

FLOW RATE 127.67

Alarms **Events** **Data Points**

PID Raised on June 15, 2012

PLUNGER 8 Raised on June 27, 2012

VALVE Acknowledged on July 1, 2012

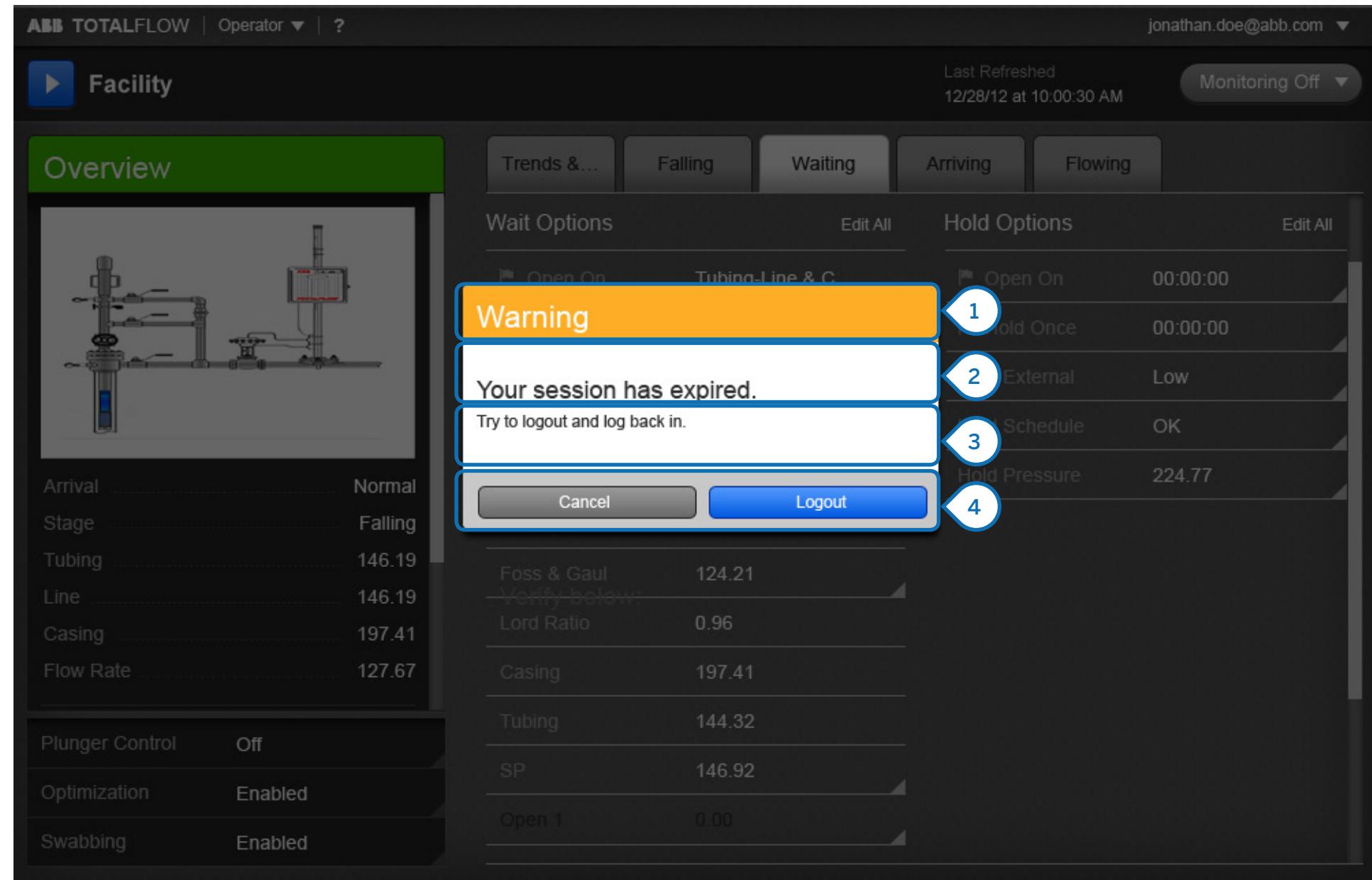
Quick Tasks

Shutdown **Reset**

Calibrate **Choose**

Optimized **Choose**

SCREEN WIDE ERROR/WARNING/INFO OVERLAY



INTERACTION NOTES

This error/messaging is contextual to a particular page. This interrupts the user's activities on the screen, he must dismiss or take action to continue.

When to display

This should be used when there is an error or a warning that a user needs to do something or to show confirmation/message for an action user took.

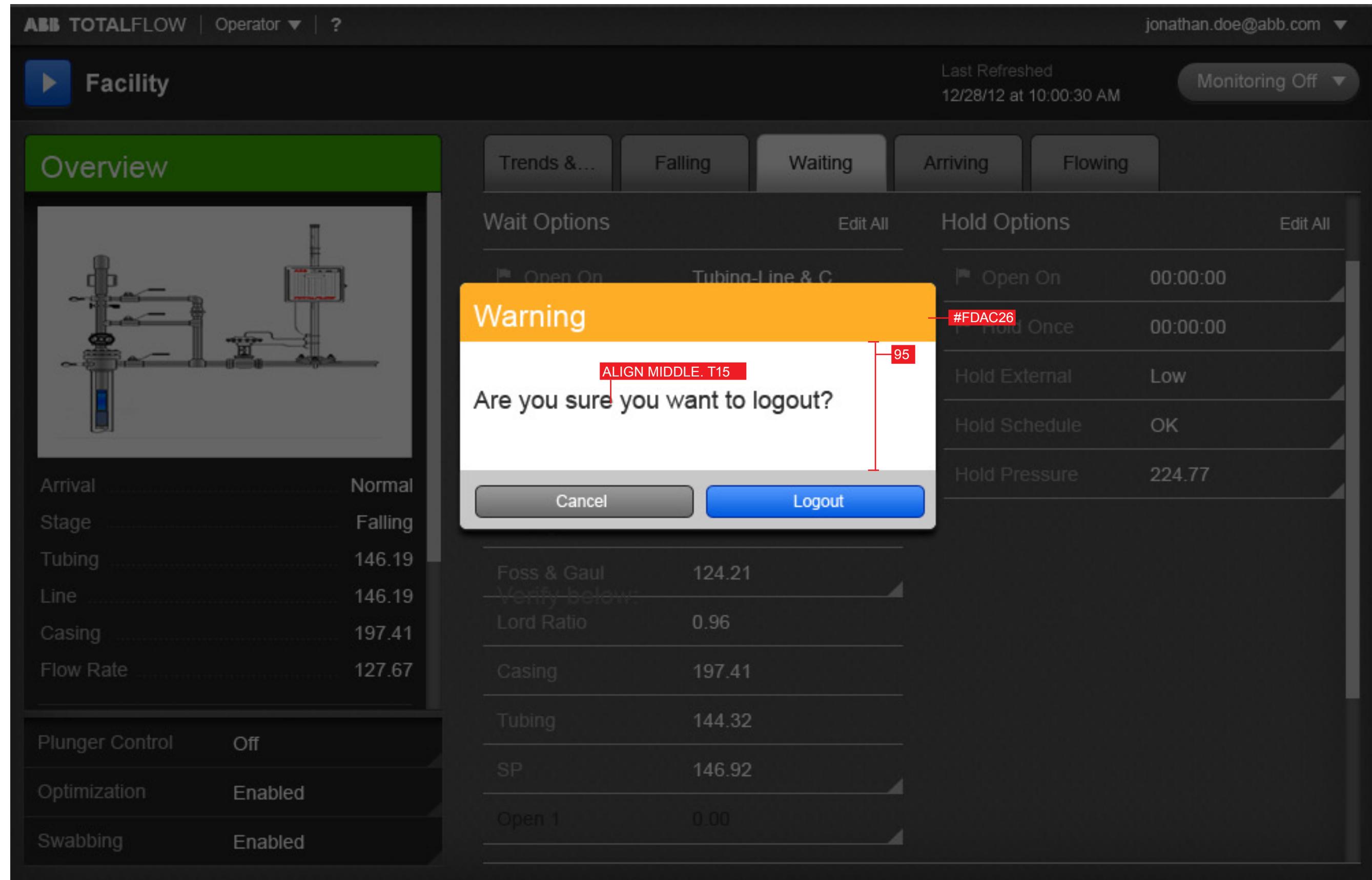
1 Heading: Error or Warning or Information

2 Sub-Heading: Describes the error in not more than 10 words

3 Details: Detail description of the error in not more than 5 lines. Try to make these objective by breaking possible causes into a list.

4 Buttons: The user select the appropriate action.

SCREEN WIDE WARNING OVERLAY



SCREEN WIDE INFO OVERLAY

ABB TOTALFLOW | Operator ▾ | ? jonathan.doe@abb.com ▾

Facility

Last Refreshed
12/28/12 at 10:00:30 AM

Monitoring Off ▾

Overview

Trends &... Falling Waiting Arriving Flowing

Wait Options Edit All Hold Options Edit All

Open On Tubing-Line & C

#0096EA

The changes were successfully saved.

OK

Hold External Low

Hold Schedule OK

Hold Pressure 224.77

Arrival Normal

Stage Falling

Tubing 146.19

Line 146.19

Casing 197.41

Flow Rate 127.67

Plunger Control Off

Optimization Enabled

Swabbing Enabled

Foss & Gaul 124.21

Verify below:

Lord Ratio 0.96

Casing 197.41

Tubing 144.32

SP 146.92

Open 1 0.00

This screenshot shows the ABB TOTALFLOW software interface. At the top, there's a navigation bar with 'ABB TOTALFLOW', 'Operator', and a help icon. To the right is an email address 'jonathan.doe@abb.com'. Below the navigation is a facility map with a play button icon and the word 'Facility'. To the right of the map is a timestamp 'Last Refreshed 12/28/12 at 10:00:30 AM' and a 'Monitoring Off' dropdown. The main area has tabs for 'Overview', 'Trends &...', 'Falling', 'Waiting', 'Arriving', and 'Flowing'. In the 'Waiting' tab, there are sections for 'Wait Options' and 'Hold Options'. A prominent blue info overlay box is centered, containing the message 'The changes were successfully saved.' with an 'OK' button. The background shows various operational parameters like tubing and line pressures, and control settings like plunger control and optimization status.

SCREEN WIDE ERROR OVERLAY

ABB TOTALFLOW | Operator ▾ | ? jonathan.doe@abb.com ▾

Facility

Last Refreshed
12/28/12 at 10:00:30 AM Monitoring Off ▾

Overview

Trends &... Falling Waiting Arriving Flowing

Wait Options Edit All Hold Options Edit All

Open On Tubing-Line & C

Error

Your session has expired.
Try to logout and log back in. T11

Cancel Logout

Hold External Low

Hold Schedule OK

Hold Pressure 224.77

Arrival Normal

Stage Falling

Tubing 146.19

Line 146.19

Casing 197.41

Flow Rate 127.67

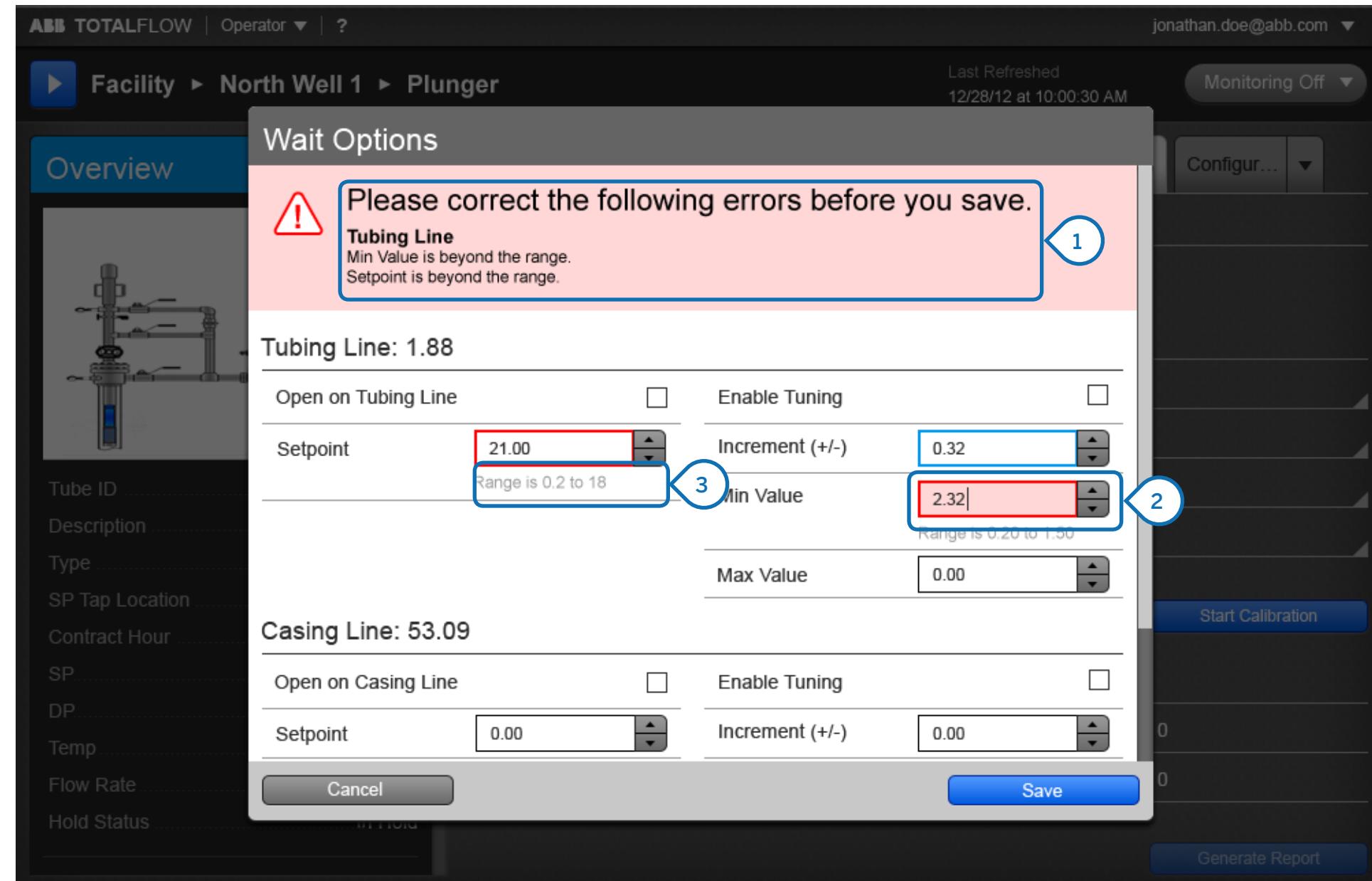
Plunger Control Off

Optimization Enabled

Swabbing Enabled

The screenshot shows the ABB TOTALFLOW software interface. At the top, there's a navigation bar with 'ABB TOTALFLOW', 'Operator' dropdown, and a user email 'jonathan.doe@abb.com'. Below the navigation is a facility map and a toolbar with tabs: 'Trends &...', 'Falling', 'Waiting', 'Arriving', and 'Flowing'. The 'Waiting' tab is selected. To the right of the toolbar are 'Wait Options' and 'Hold Options' sections with edit buttons. A prominent red error overlay covers the center of the screen. The error message reads: 'Your session has expired. Try to logout and log back in.' with a red button labeled 'T11'. Below the error message are two buttons: 'Cancel' and 'Logout' (highlighted in blue). The background shows a tubing network diagram and a table of operational parameters like Arrival, Stage, Tubing, Line, Casing, and Flow Rate, along with system controls for Plunger Control, Optimization, and Swabbing.

EDIT OVERLAY ERROR



INTERACTION NOTES

This error/messaging is to accommodate any validation errors while making changes in an overlay.

1 Summary: Summarize all the errors, section-wise, on the top band. This band scrolls out of the screen when the user scrolls down.

2 Form Fields: These are highlighted with a red stroke wherever there is an error.

3 Details: There are provided below the form field, left aligned with the form field.

EDIT OVERLAY ERROR

ABB TOTALFLOW | Operator ▾ | ? jonathan.doe@abb.com ▾

Facility ▶ North Well 1 ▶ Plunger Last Refreshed 12/28/12 at 10:00:30 AM Monitoring Off ▾

Wait Options

Please correct the following errors before you save.

Tubing Line: 1.88

Open on Tubing Line

Setpoint ⁵⁵ 2PX, FF0000 Range is 0.2 to 18

Enable Tuning

Increment (+/-) ^{2PX, 0096EA} 0.32

Min Value ^{T10} 2.32 Range is 0.20 to 1.50

Max Value 0.00

Casing Line: 53.09

Open on Casing Line

Setpoint 0.00

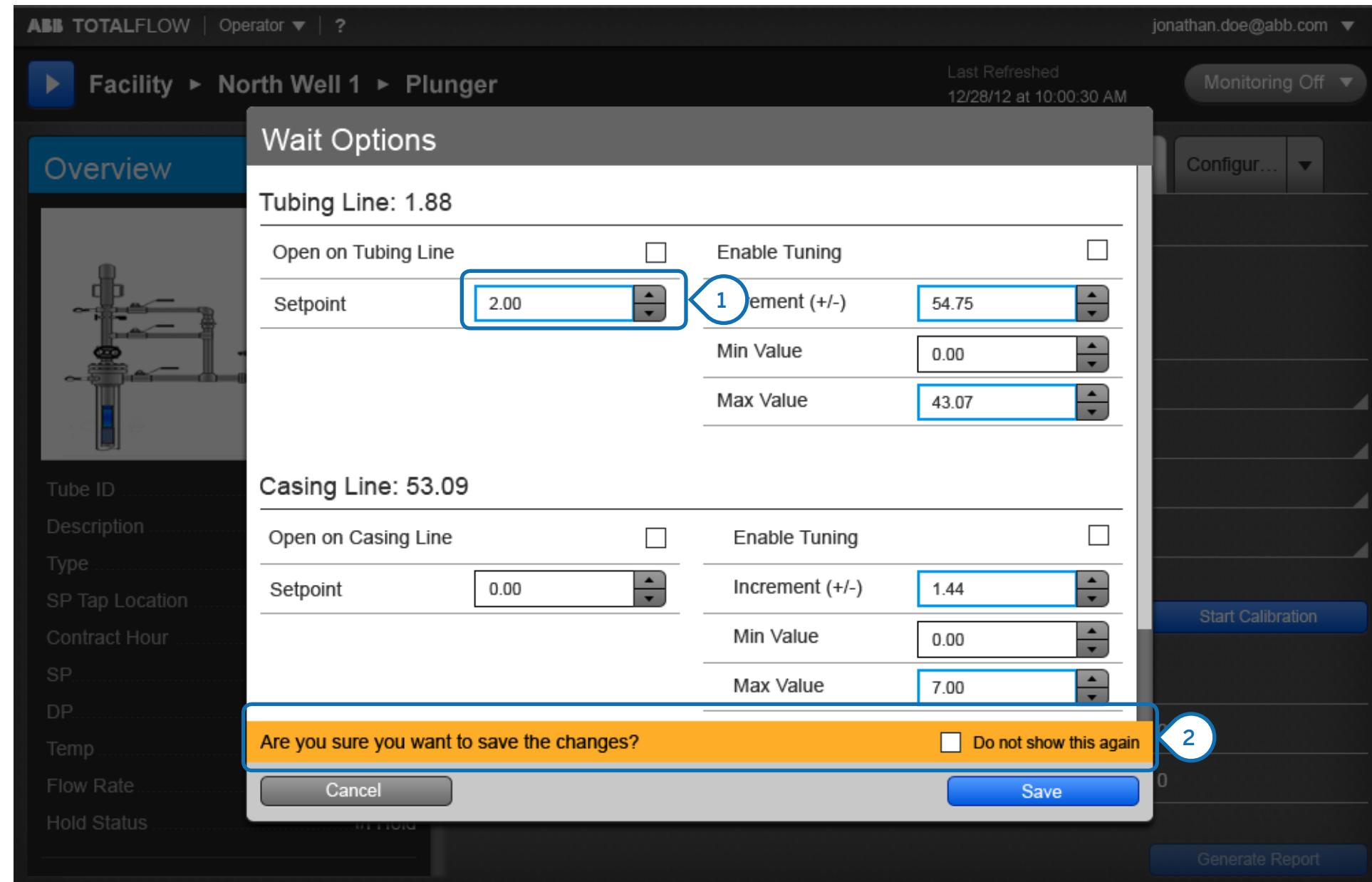
Enable Tuning

Increment (+/-) 0.00

Tube ID
Description
Type
SP Tap Location
Contract Hour
SP
DP
Temp
Flow Rate
Hold Status

FFD7D7

EDIT OVERLAY CONFIRMATION MESSAGING



INTERACTION NOTES

This messaging system allows the user to determine which fields in the overlays were edited.

1 Form fields: These are highlighted with a blue stroke wherever there was an edit.

2 Confirmation: On pressing save, the user can be shown a confirmation message (non-scrollable) at the bottom chrome, to confirm if he wants to save the changes.

EDIT OVERLAY CONFIRMATION MESSAGING

thanks

