



Android Phone or Tablet



View 6 cap readings at once



Logging & Alarms



Step by step calibration

redox

ion

pH

O<sub>2</sub>

cond



We would like to thank you for trusting TRUEscience with your measurements. This full user manual will take you through all of the advanced features available on the TRUEscience app, but remember you can also learn more about the system in other ways;

**Videos** - available at [www.truescience.co.uk/videos](http://www.truescience.co.uk/videos)

**QuickGuide** - the shorter user guide delivered with your TRUEscience cap, or available on our website

**Web chat** - touch the ? icon in the app to access in-app help including our live web chat service. You can also reach the same web chat through our website on the Support page.

**Our Blog** - here we post short articles to answer common queries or share our favourite tips and tricks for testing

**Phone or email** - our UK based team are on hand to help if you have any questions at all, from 0900 to 1730 GMT

Email: [info@truescience.co.uk](mailto:info@truescience.co.uk)

Phone: 01954 233 144

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# Specifications

## Cap Specifications;

Dimensions (L x W x D): 218 x 48 x 24 mm  
Weight: 91.5 g  
Operating temperature: 0 - 55 °C  
Battery: 1/2 AA size Lithium Thionyl Chloride, 3.6V, 1200 mA  
Battery life: 1 year in normal use

## Specifications;

Range: 0 - 14 pH, 0-1000 mV, 0-100% Oxygen,  
Resolution: 0.01 pH,  $\pm 0.1$  mV  
Accuracy:  $\pm 0.002$  pH,  $\pm 0.1$  mV,  $\pm 1\%$  Oxygen  
Calibration points: Up to 5 possible

## Temperature Specifications;

Range of ATC: 0 - 100 °C (automatic temperature compensation)  
Range: permitted testing temperatures vary with electrode - consult the electrode specifications  
Resolution: 0.1 °C  
Accuracy:  $\pm 0.5$  °C

## App Specifications;

Stored values: Up to 10,000 measurements per log.  
For stored Job readings, number dependent on Android device storage

## Tablet Requirements;

Android 5.0 or later operating system  
Bluetooth® 4.0 or later  
Wifi connection required for some features - data sharing, MSDS and Certificate of Analysis access

## Certifications;

CE Marked according to EN61236-1 : 2006 - Annex A 2008: 1999/5/EC Annex III  
The Bluetooth transceiver device meets the requirements for modular transmitter approval as detailed in  
FCC public notice DA00-1407

# Diagram of Parts

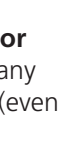
## Battery and Battery Covers

This small inner box includes 1x 1/2 AA battery for the cap and 3x battery covers in different colours to help identify your cap from others. Included with all caps.



## pH Electrode with S7 connector

Included with some caps or select any electrode to suit your sample type (even from other brands)



## SMARTcap

Receives data from the electrode and transmits it to the app.



## Temperature Probe

Measures the temperature of the sample to give temperature compensated pH readings. Fixed in the cap and cannot be removed or changed.



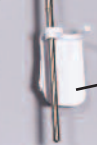
## Electrode Soaker Bottle

Filled with storage solution, for long term storage of pH electrodes to prevent them drying out. Included with all electrodes.



## Clip

Allows the cap to be clipped onto beakers or the storage stand. Included with every cap, fixed to the temperature probe.



## Storage Stand

For storing the cap and electrode when not in use. Included in some kits or available separately.



## pH Buffers

Essential for regular calibrations of the pH electrode. Included in the full kit and available separately.



## Tablet / Android Device

Included in full kit (exact device may vary but will always be compatible) Or use an existing device (must fulfil the requirements stated in Specifications section)



## Charging Stand

Holds your tablet upright for easy viewing and also used to charge the tablet. Comprised of stand base, mains cable and USB cable. Included in full kit or available separately.



## Quick Guide

A shortened user manual to get you up and running quickly.



# Android Hints and Tips

If you are new to Android systems, this section will help you learn some of the general rules for navigating around.

The hints given here apply to the Android system in general, not just the TRUEscience App. This list is not exhaustive, the individual manual for your Android device will have more in-depth information.

We recommend that new users take a few minutes to work through this section before you begin using the TRUEscience App, so you are confident in navigating your way around.

Remember if you need help at any point, the UK based TRUEscience team are on hand to help from 0900 to 1700 GMT

Telephone: 01954 233 144  
Email: [info@truescience.co.uk](mailto:info@truescience.co.uk)

You can also watch our online help videos at any time;  
[www.truescience.co.uk/videos](http://www.truescience.co.uk/videos)

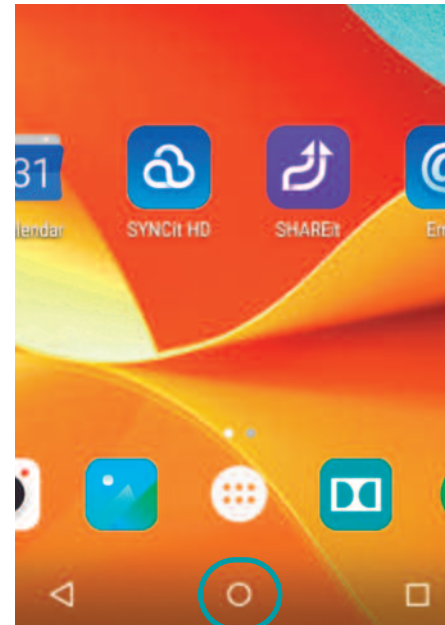


## The Home Screen

This is the screen which shows when your device first turns on.

It will look slightly different on each device, and you can customise the background picture and what shortcuts appear here.

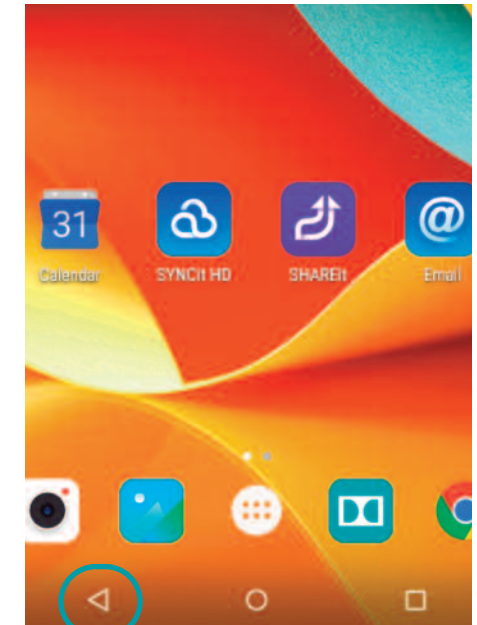
We recommend taking a few minutes to set up the home screen with shortcuts to Apps you will use regularly.



## Home Button

In any App at any point you can return to the Home Screen by touching the home button, circled in green above. Depending on the tablet make and model it may be a circle or a physical push button underneath the screen.

Try opening any App by touching a shortcut, then touch the home button to return to the home screen.



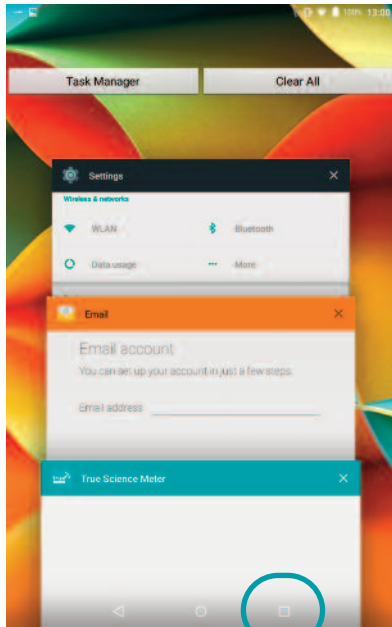
## Back Button

The back button will go back to the last screen you were on. This is useful if you accidentally go to the wrong screen. Depending on the tablet make and model it may be a triangle as circled above, or a curved arrow;



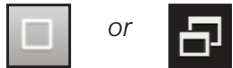
Try opening any App, and touch a few options within it, then use the back button to go back one step.

# Android Hints and Tips



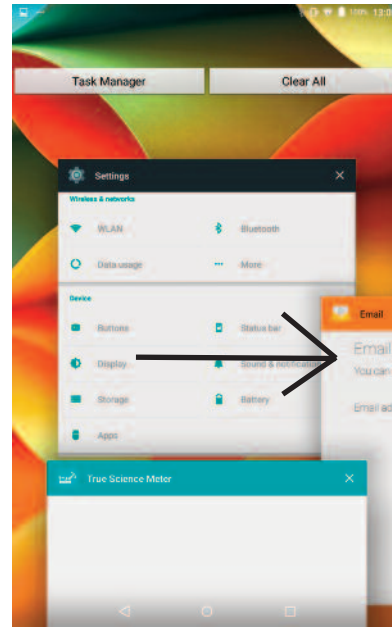
## Multi-App Button

The final icon at the bottom of the screen is a square or two squares layered on top of each other;



This launches the multi-window view, shown above, showing you all Apps which are currently open.

If you are in an App then go back to home, it is still open in the background, and can be seen in this list.



## Fully close an App

If you have used an App then gone back to the home screen it may still be open in the background. This can drain the battery.

Try viewing all open Apps (see previous box) and fully close any app by swiping it across to the left or right of the screen.

We recommend fully closing the TRUEscience app when you have finished working in order to conserve your tablet battery.



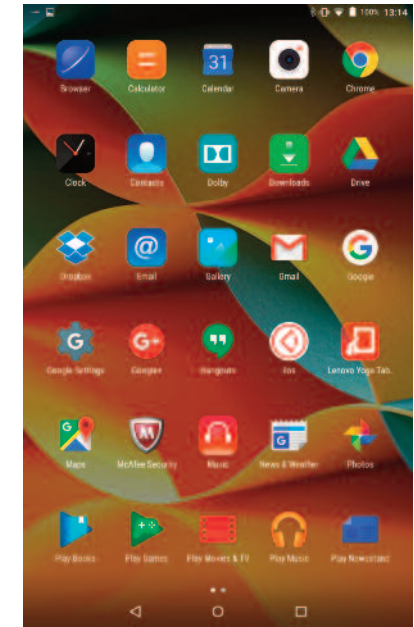
## Remove shortcuts from the Home Screen

Remove any shortcuts you don't need to keep the home screen tidy.

Touch and hold the shortcut icon and drag it up to the "remove" or bin icon which will appear at the top of the screen;



This doesn't delete the App altogether, you can get the shortcut back if you want to.



## View all installed Apps

At the bottom of the screen there should be an "all Apps" icon - this is usually lots of dots in a square shape;



Touch this to open the list of all installed apps. Touch and swipe left or right to go to the next page if you have more than one page of Apps.

# Android Hints and Tips



## Add a shortcut to the Home Screen

Putting shortcuts to your favourite Apps on your home screen makes it faster to open them.

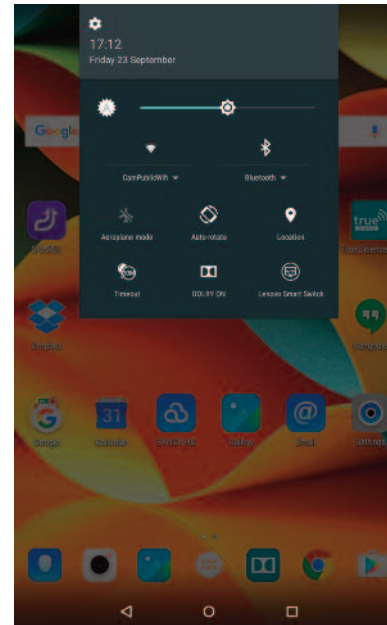
Try creating a new shortcut; touch the all Apps icon, then touch and hold any App. The Home screen will appear and you can let go to drop the shortcut, saving it to your home screen.



## Re-arrange shortcuts on the Home Screen

You can move shortcuts around on the home screen, for example to keep similar ones together or put them in the order you prefer.

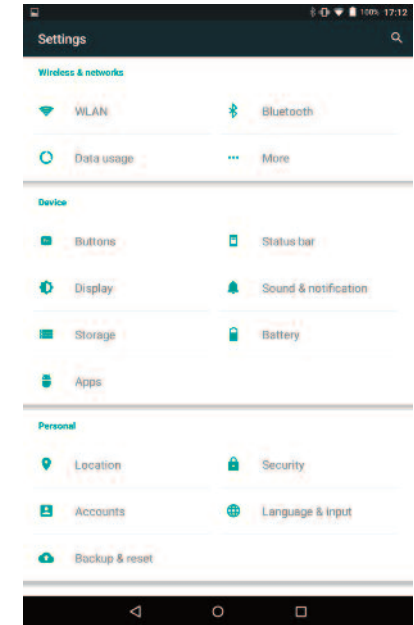
Try moving a shortcut on the home screen; touch and hold any shortcut, then drag it to a new position on the screen and let go to leave it there



## View Short Settings Menu

The short settings menu allows you to turn on and off connections such as WiFi, Bluetooth or GPS and change things like screen brightness or sound.

Try opening the short settings menu by dragging down from the top of the screen. You may get a half menu and have to repeat the action to open the full menu.



## View Full Settings Menu

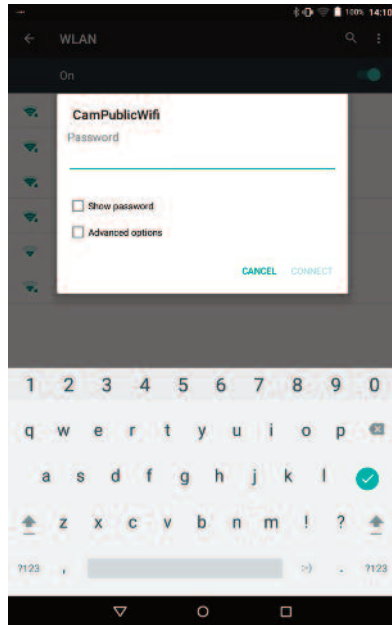
For more settings options, such as changing the screen lock code, viewing the storage status of the device, changing the background wallpaper and lots more, you need to access the full settings menu.

Try opening the short settings menu as before, then touch the cog icon to open the full settings menu.







# Android Hints and Tips

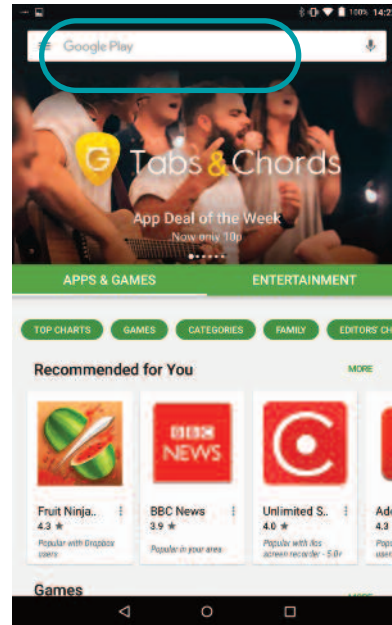


## Connect to WiFi Internet

To download new Apps and get full functionality in Apps you should connect to WiFi.


Try connecting to your available WiFi network, by going into the WiFi or WLAN part of the full settings menu. Ensure the WiFi setting is "On";  

Touch the network you wish to connect to, enter the password in the pop up box and touch "connect".



## Find new apps

The Play Store is used to find and download new Apps.

There is usually a shortcut to this on the home screen, or check the "view all installed Apps" view. The icon looks like this; 

Try opening the play store (you must be connected to the internet) and touch in the search box at the top (circled above).



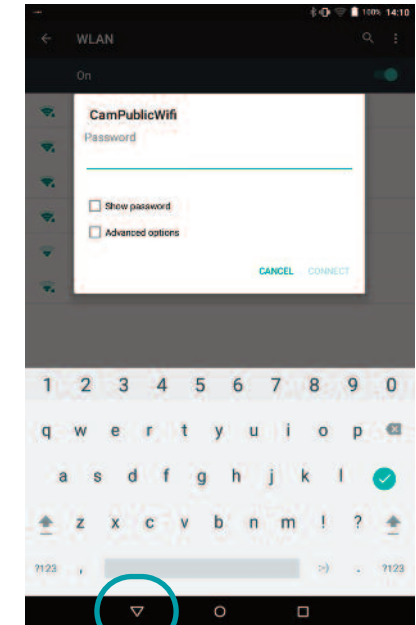
## Download new apps

The search box in the play store is used to look for new Apps.

Simply type in the name or a key word to search for it.

You may be shown a list of suggested Apps (touch the right one to view more detail) or be taken straight to the detailed view as shown above.

See more information about the app, and touch "install" to download it.



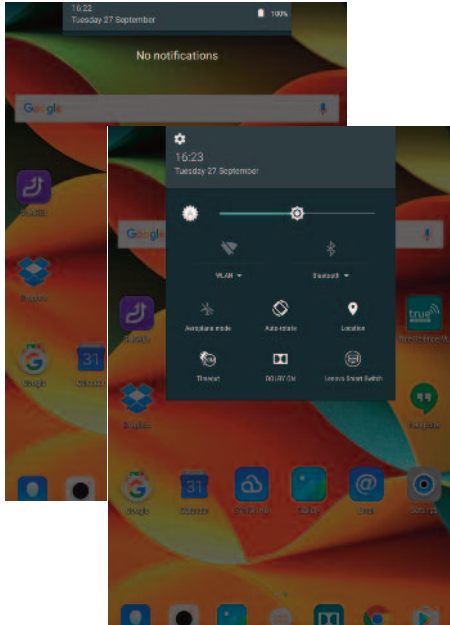
## Minimise the keyboard

The keyboard will automatically open when you touch into any field that you can type into.

You can minimise this again so that you can see more of the screen by touching the back button.

If you then touch the field you can type into again the keyboard will re-appear.

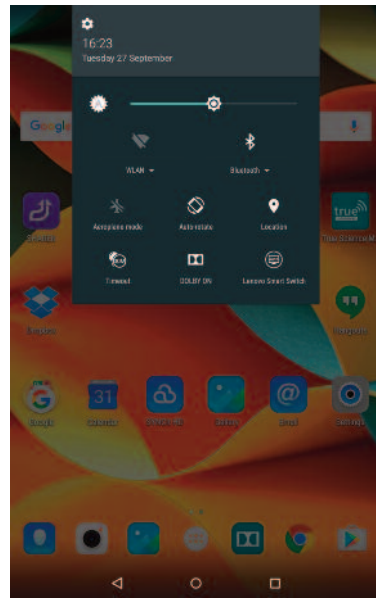
# Turn on Bluetooth



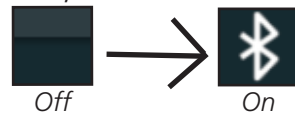
1. In order for your tablet to communicate with the pH cap, Bluetooth connectivity must be turned on.

On the home screen of your tablet, touch and drag downwards from the top of the screen to open the short settings menu.

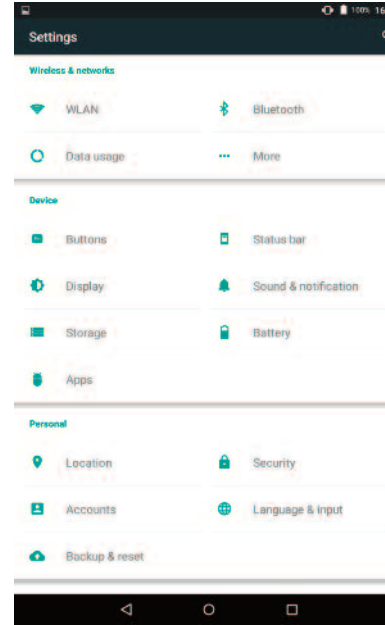
You may need to repeat the action if only a half menu shows at first (as shown above).



2. If the Bluetooth icon shows in this short settings menu, you can simply touch it to toggle it on or off;



If your Bluetooth is now on, stop here.  
If the Bluetooth icon is not in your short settings menu, touch the cog symbol to access the full settings menu (Go to 3).



3. The full settings menu is launched.

Touch the Bluetooth icon



to go into the Bluetooth menu (Go to 4).



4. The Bluetooth menu is launched.

Touch the slider switch in the top right hand corner to toggle it on or off.



Once Bluetooth is turned on, touch the home button to return to the home screen.

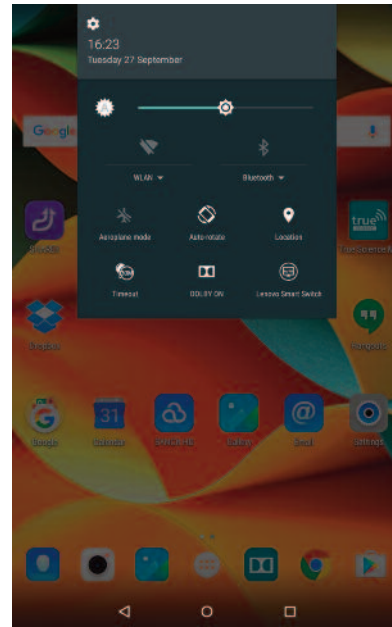
# Connect to WiFi




1. You can use the TRUEscience App without being connected to WiFi, but we recommend you do connect if possible to access all the features.

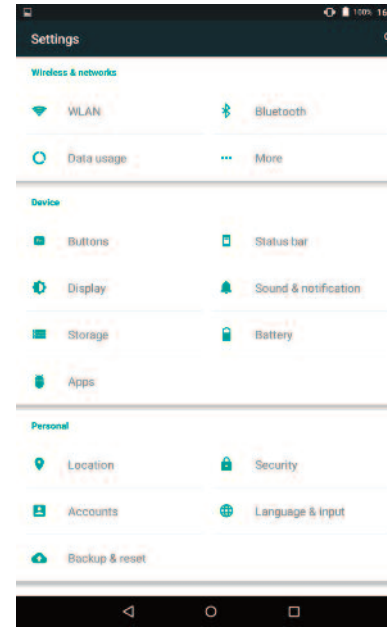
On the home screen of your tablet, touch and drag downwards from the top of the screen to open the short settings menu.

You may need to repeat the action if only a half menu shows at first (as shown above).



2. The first time you connect to WiFi you will need to choose a network and enter the password. In this case touch the cog icon to access the full settings menu (Go to 3) 

If you have already connected to a WiFi network which is still in range your device may remember the details. In this case just touch the WiFi icon on the top menu to toggle it on or off and you will automatically connect.



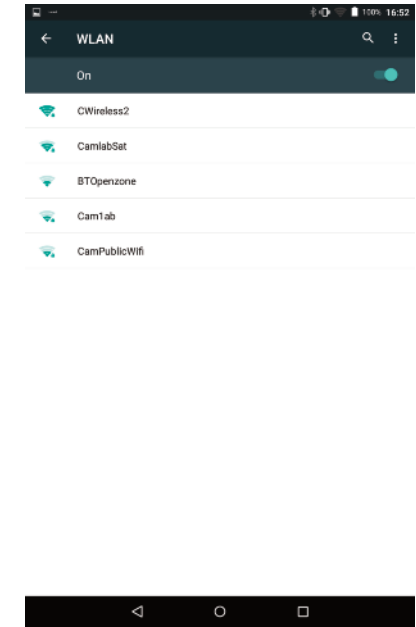
3. The full settings menu is launched.

Touch the WiFi icon;



to go into the WiFi menu (Go to 4)

The WiFi icon may be labelled with the word WiFi or WLAN.

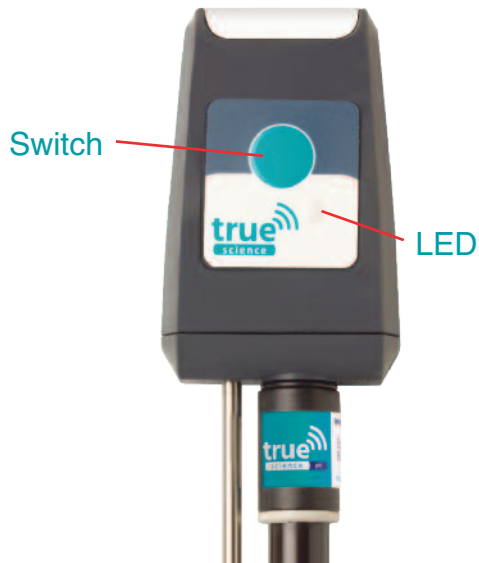


4. In the WiFi menu, touch the slider switch in the top right hand corner to toggle it on or off



When WiFi is turned on, wait for the list of available networks to show. Touch the network you wish to connect to, enter the password when prompted, and touch "Connect" to connect. Wait for the display to confirm you are connected.

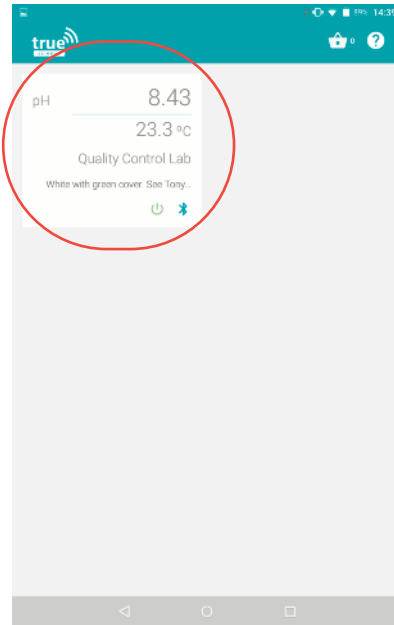
# Switching on & Multi-Cap View



1. To switch on the cap press and hold the teal coloured centre switch button for 3 seconds.

A blue LED will now flash indicating the unit is switched on. If the LED is flashing green then the unit is on and in logging mode.

The unit will switch itself off after 30 minutes of inactivity but to conserve battery life we recommend switching off by holding the switch again for 3 seconds



2. When the TRUEscience App is first opened, you will see the multi-cap screen.

Here we can see any caps this tablet has previously connected with.

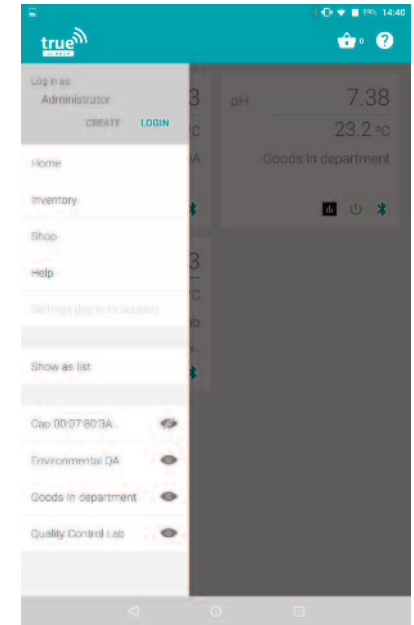
Touch the square tile for a cap to view more detail (Go to **"Meter View"** section)

Alternatively we can monitor multiple caps at once (Go to 2).



3. If multiple caps are turned on and in range, we can use the multi-cap view to see live readings from all of the caps at once. This means we can monitor up to 6 different points or experiments simultaneously. We can view up to 6 caps as a grid or as a list (Go to 6).

Each cap may also be logging at the same time, to keep a record (Go to **"Logging"** section).



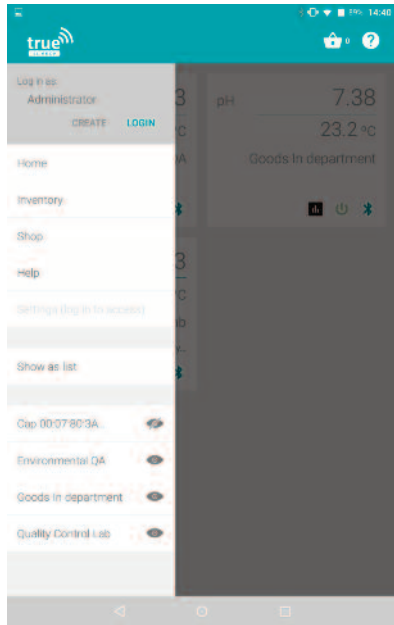
4. Touch anywhere on the left hand side of the screen and swipe towards the right to open the app settings menu, as shown above.

From this menu we can change the multi-cap view (Go to 5).

We can also hide caps we no longer wish to view (Go to 4).

Swipe the menu from right to left to minimise it again (Go to 6).

# Multi-Cap View

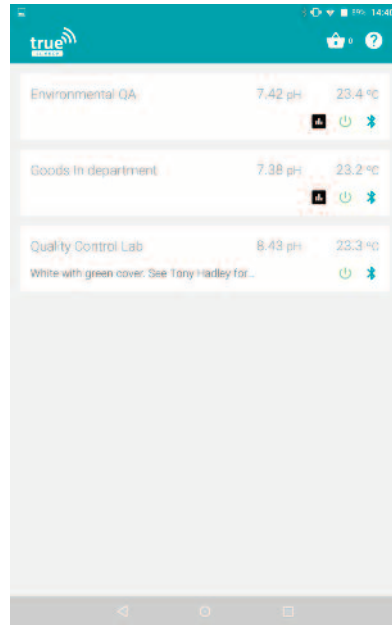


5. All of the caps this tablet has previously connected with are listed at the end of the app settings menu with an eye icon next to them;



Touch the eye icon to toggle the visibility on or off.

When the eye is crossed out, this cap will not be visible on the multi-cap view.



6. Touch the **"Show as List"** message to change the multi-cap view setting.

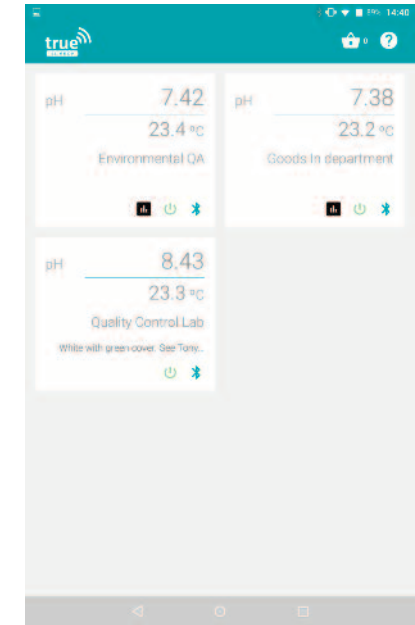
This toggles the view between a grid view (as shown in step 2) and a list (as shown above).



7. The cap names shown on this view are the ones assigned on this tablet.

i.e. if a cap has been given a custom name while working on another tablet, that name will not show on this tablet.

Touch the square tile for a cap to go into Meter view and re-name the cap with a custom name (Go to **"Meter"** section).



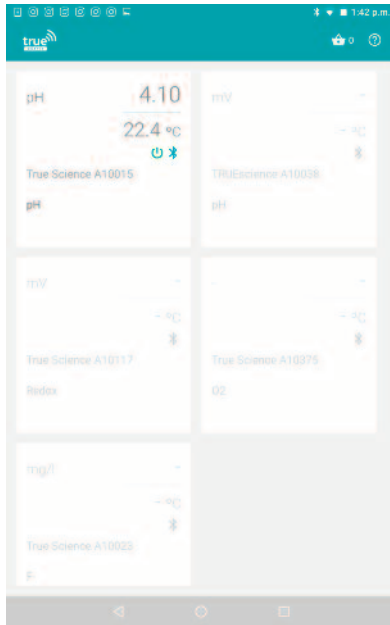
8. The shopping basket icon is displayed in the top right hand corner of this view;



Touch this to see what items are currently in your shopping basket and purchase new items (e.g. replacement bottles of buffer solution).

(Go to **"Shop and Basket"** section).

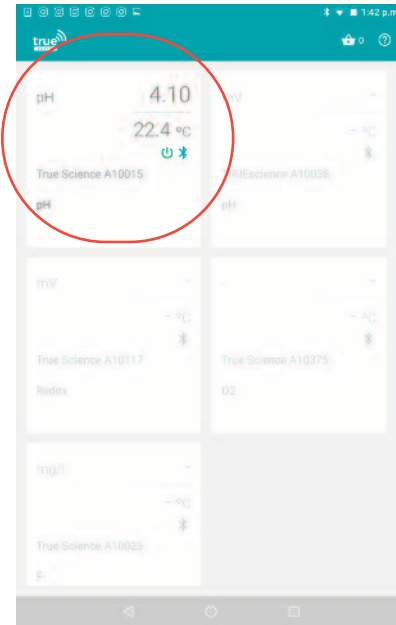
# Meter View



1. When the TRUEscience App is first opened the multi-cap screen will show.

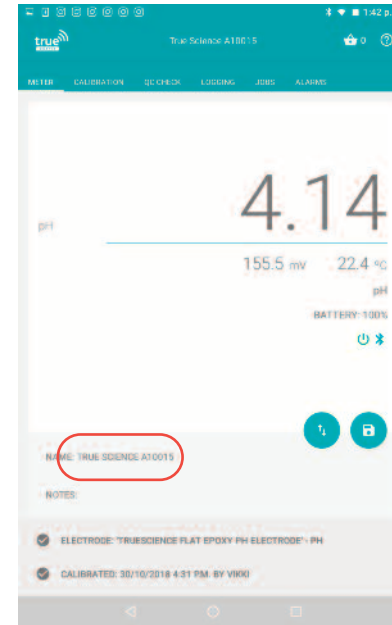
Here we can see all caps which this tablet has communicated with recently, along with the name this tablet knows each cap by.

Caps which are currently turned on and are in range show with a green power symbol;



2. For all caps which are turned on the pH and temperature readings on this view will show live and change, so you can monitor up to 6 caps at once.

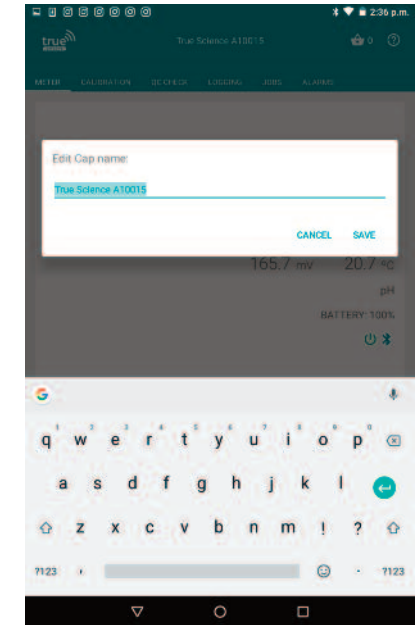
To view one cap in more detail touch anywhere on the white square it is shown in, circled in red above (Go to 3).



3. Here we can view the live pH, mV, DO, ion and temperature readings.

The switch button allows you to toggle the readings between raw mV and measured values. We can also see battery information, the electrode currently being used and the last calibration date and time, or if the electrode is uncalibrated.

To rename the cap on this tablet touch the default cap, circled in red above (Go to 4).



4. The Edit Cap name box is launched.

Type over the default name to give your cap an easily identified name - for example "Quality Control Lab" or "Cap 2"

Touch Save to save the changes (Go to 5) or touch Cancel to go back to 3

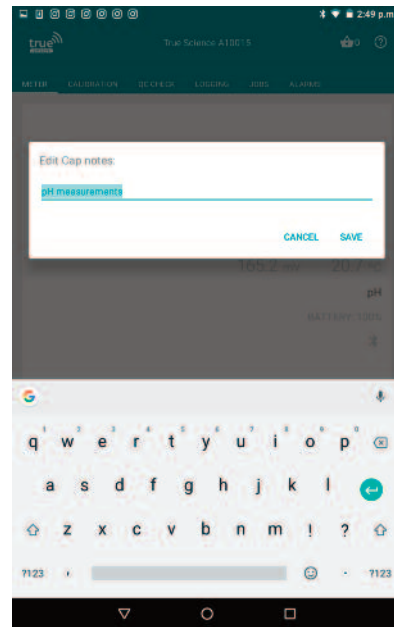
# Meter View



5. We return to the meter view and the new name shows on the screen. This name will show on this device only, it will not appear if you read the same cap on a new tablet or phone.

Touch the Notes: message at the bottom of the screen to add further notes. (Go to 6).

Alternatively if you don't need to record any additional notes you can skip this step. (Go to 7).



6. The Edit Cap notes box is launched.

Here we can type in any useful reminders we may need about this cap - for example "for final products only" or "grey cap with red battery cover".

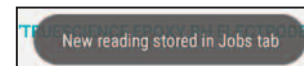
Touch Save to save the changes (Go to 7) or touch Cancel to go back to 5.



7. You can store the current reading by touching the Save button;



A grey confirmation message will appear for 3 seconds at the bottom of the screen;



This will save the reading in the Jobs tab, under whichever Job List is currently open (see the Jobs section of this manual for further details).



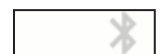
8. The Cap battery indicator is shown underneath the temperature reading;



If the Power indicator is visible and green, the Bluetooth icon is visible and blue, the cap is turned on and in range, readings are live.



If these are greyed out or not present, you may be viewing a cap which is out of range or turned off.



# Meter View



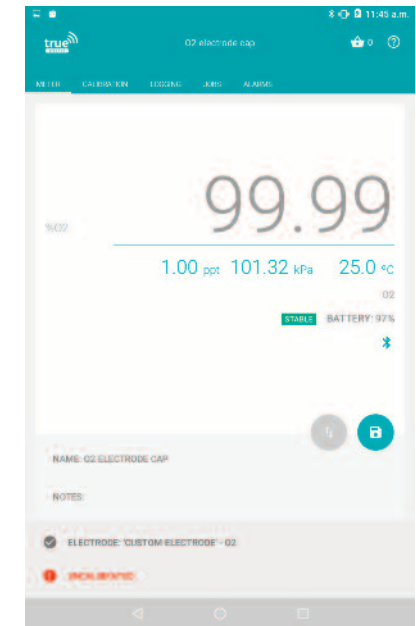
9. When you attach an ISE electrode to the cap the meter view will appear broadly similar to pH except that it shows the ION type above the battery level indicator and shows mV in the main screen until calibrated

10. Once calibrated the screen shows the units chosen and displays the reading in those units.

The switch button will allow you to swap between concentration and mV.



11. When a REDOX probe is attached to the cap the display shows mV and relative mV so that you can monitor the change in redox potential



12. When you have a DO probe attached to the cap the Dissolved Oxygen screen shows with readings as %Oxygen or %Air.

The first green number under the reading is the salinity setting. The pressure reading in kPa is for adjusting readings at different atmospheric pressure.

See **Dissolved Oxygen Calibration**



# pH Calibration

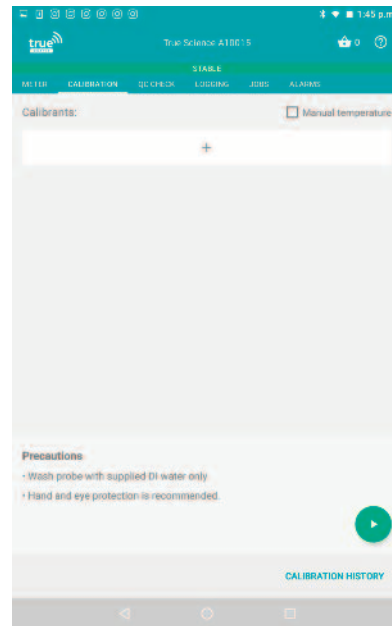


1. In the main Meter screen we can see that our electrode is currently uncalibrated by the on screen message;



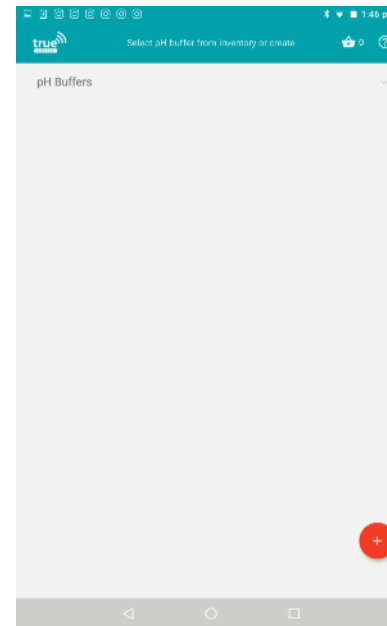
This means any readings taken could be inaccurate.

To perform a calibration, touch the **“uncalibrated”** message or touch the **“calibration”** tab. (Go to 2).



2. In the calibration screen we are prompted to choose the buffers we want to calibrate with.

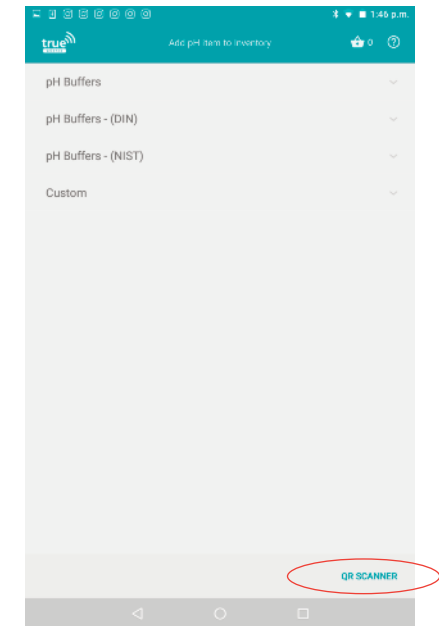
Touch the + icon under the message **“choose your buffers and standards”** to select the buffers you wish to calibrate with. (Go to 3).



3. We are taken to the inventory screen.

If you have already registered buffers these will be shown by touching the **“pH Buffers”** bar, you can then select buffers from your existing inventory. (Go to 9).

To



4. We are taken to the **“Add Product to Inventory”** screen.

If you have TRUEscience pH buffers with smart QR codes touch the **“QR Scanner”** message to launch the QR scanner (Go to 5).

If you have your own buffers, touch the different categories (pH buffers, DIN, NIST...) to find standard values (Go to 10) or Custom to add a custom buffer (Go to 12).

# pH Calibration



5. The QR scanner is launched.

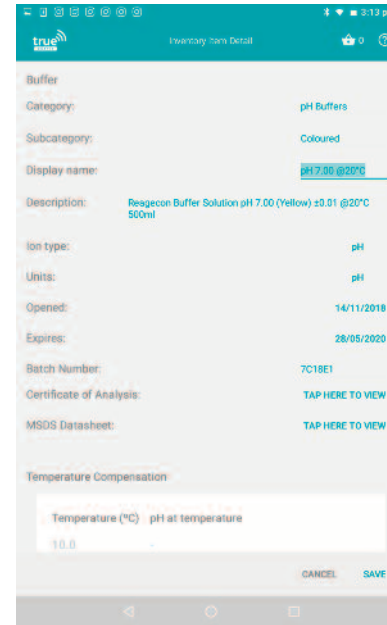
Bring the QR code on the bottle of the buffer into the view of the camera. (Go to 6).

If you have reached this screen by mistake, touch Cancel in the bottom right hand corner. (Go back to 4).



6. Hold the buffer bottle steady in front of the camera, angled so that the QR code appears flat to the camera. You may need to wait until the camera can focus.

The QR code will be scanned and registered automatically when the bottle is held at the correct angle for a few seconds. This will launch the inventory item detail screen. (Go to 7).



7. The Inventory Item detail screen is launched for a scanned buffer.

The expiry date is detected from the QR code. You can rename the buffer or view it's Certificate of Analysis or MSDS sheet by touching the relevant messages. Touch Save to save the buffer to your inventory (Go to 8).

Alternatively touch Cancel to return to step 4.



8. We are returned to the calibration screen, with our newly registered buffer added.

If expiry date and batch details were entered correctly, you will receive a reminder when it is about to expire.

Return to step 3 to add more buffers, go to step 15 to remove buffers, or go to step 17 to begin the calibration.

# pH Calibration

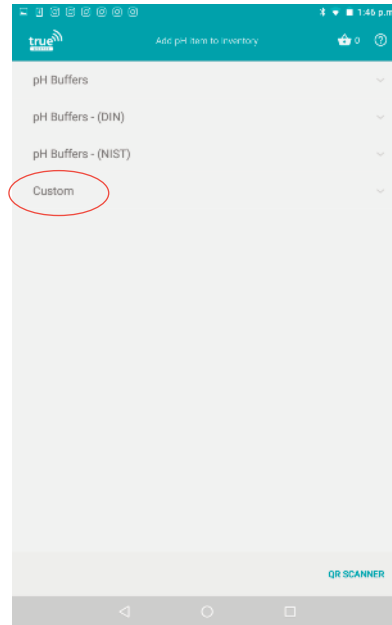


9. The drop down menu of buffers already in our inventory is shown.

Any buffers in our inventory which are expired will show with the expiry date in red.

Touch on an in date buffer to add it to your calibration. (Go to 8).

If the buffer you need is not already in the inventory, click the red +.



10. You can expand the list of standard buffers, DIN buffers or NIST buffers is shown.

Browse the list for the buffer value you wish to add to your inventory, and touch it to add. (Go to 11).

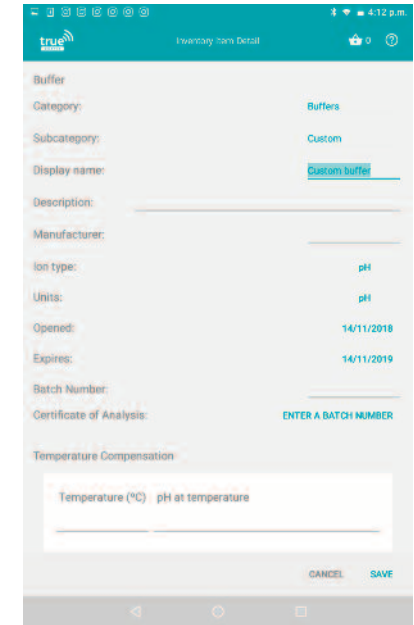
If your buffer is a non-standard value, touch **"Custom"** to add a custom value buffer (Go to 12).



12. The pop up box to create a custom item is launched.

Touch "Create" to proceed and create a custom value buffer. (Go to 13)

Alternatively touch "Cancel" to return to step 3.



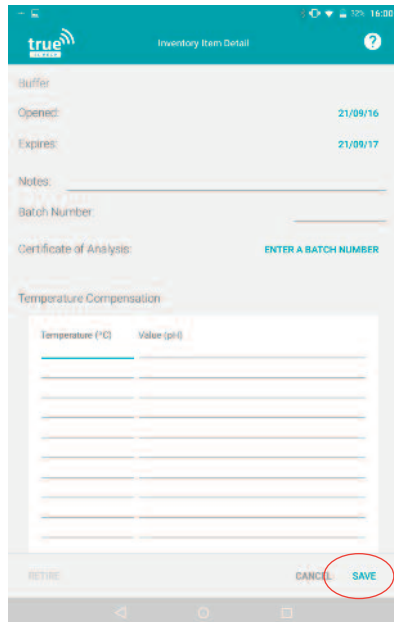
12. The pop up box to create a custom item is launched.

Touch "Create" to proceed and create a custom value buffer. (Go to 13)

Alternatively touch "Cancel" to return to step 3.

Or touch **"Cancel"** to return to step 10.

# pH Calibration



14. The temperature table for the custom buffer is shown.

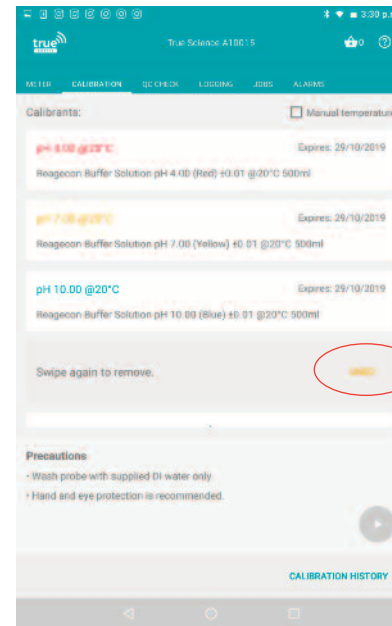
Where temperature compensation data is shown on the buffer label this should be entered here to help improve calibration accuracy. Touch on the temperature and value fields to enter the stated values. At least one row must be completed. When you are happy with the changes touch **“Save”** (Go to 8).



15. If there are buffers showing in your calibration list which you do not use in this calibration, they can be removed.

For example in the image above we have accidentally added pH 10 buffer twice.

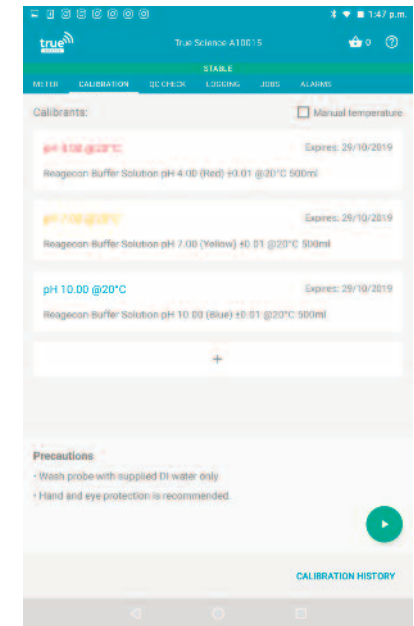
Touch on the coloured (or white) space before the buffer name and drag it to the right to remove it, as pictured above (Go to 16) .



16. The buffer is hidden on the list and a message **“Swipe again to remove”** is shown.

Either swipe again to remove the buffer from this calibration (Go to 8)

Or touch **“undo”** to restore this buffer to the calibration list (Go to 8)

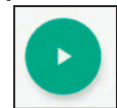


17. The buffers that you wish to calibrate with are listed and you are ready to begin.

Pour a small amount of each buffer into separate beakers and have your rinse water ready.

Touch the green Play icon to begin

(Go to 18).



# pH Calibration



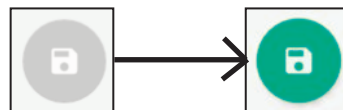
18. The calibration is launched.

Follow the instructions on screen; rinse the electrode in water and then place into the buffer highlighted on screen. Stir gently in the buffer then clip onto the beaker to allow the reading to stabilise.

Wait for the stable icon to turn green (Go to 19).

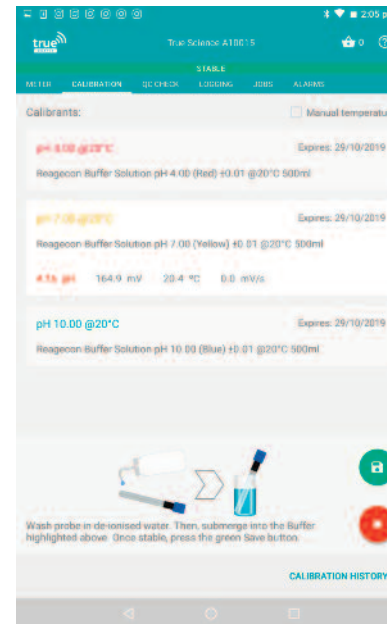


19. Once the reading has stabilised the stable icon in the bottom right hand corner will turn green;



Touch the green stable icon to save the reading and move on to the next buffer (Go to 20). Stop at any point by touching the red stop button.

(Go back to 17).



20. Once the stabilised reading has been saved the calibration prompt on screen moves to the next buffer.

Again rinse the electrode in water before stirring gently in the highlighted buffer.

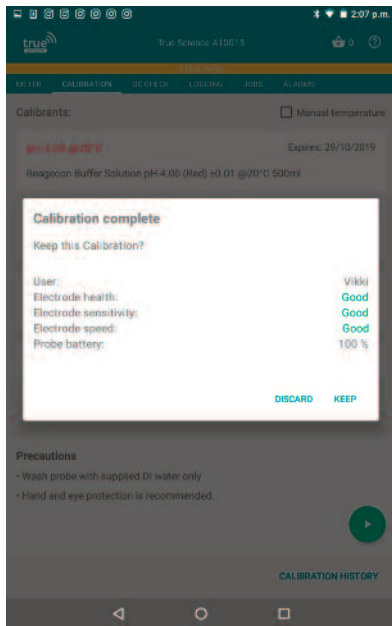
When the stable icon turns green, touch it to save the reading and move on. (Go to 21).

21. The final buffer is highlighted in white. Again rinse the electrode in water before stirring gently in the highlighted buffer.

When the stable icon turns green, touch it to save the reading. If you have additional buffers continue through each one by repeating steps 20-21.

The calibration will end (Go to 22).

# pH Calibration



22. After touching the green stable icon on the final buffer, the **“Completed Calibration”** box is launched.

You can see information here on your electrode’s health and response time.

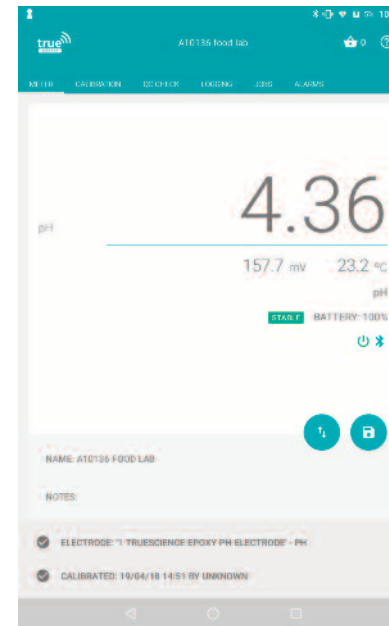
To save the calibration touch **“Save”** (Go to 23).

Or touch **“Discard”** to discard the result and restart (Go to 17).



23. The calibration is saved and we are returned to the calibration screen.

Touch **“Meter”** to return to the Meter view. (Go to 24).



24. In Meter view we can see the electrode is now calibrated, shown by the green tick and date message at the bottom of the screen;



Readings taken will now be accurate.

The calibration will remain valid for 1 day by default. The default time can be changed by the Administrator (see Administrator Settings section).

# ISE Calibration



1. Start by diluting a 1000 PPM standard to create at least two, ideally 3 standards.

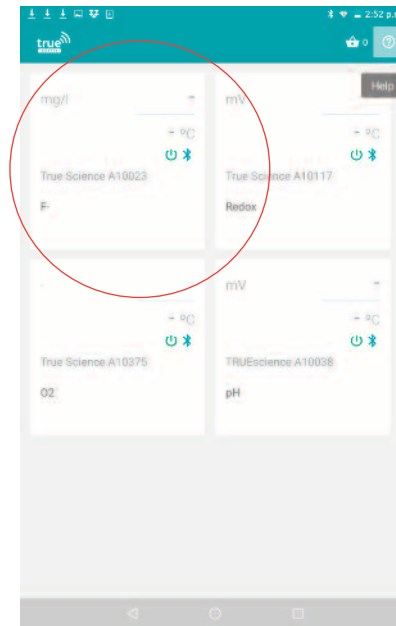
The standards should be in magnitudes of 10 (e.g. 0.01, 0.1, 1PPM).

Make sure your standards cover the range of your expected results.

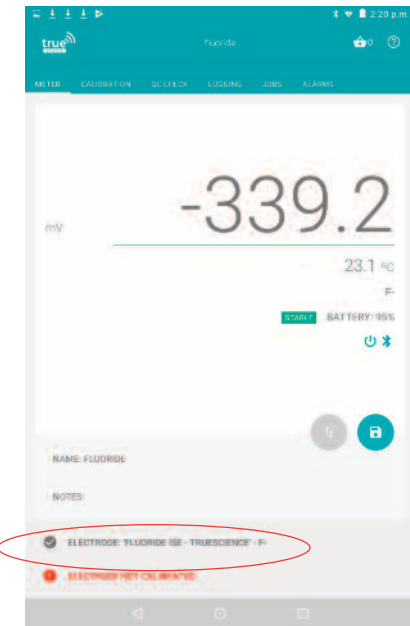


2. Measure 50 ml of each standard into individual, analytically clean beakers

Add 1ml of ISAB to each standard, and swirl beakers to incorporate ISAB in to standard.

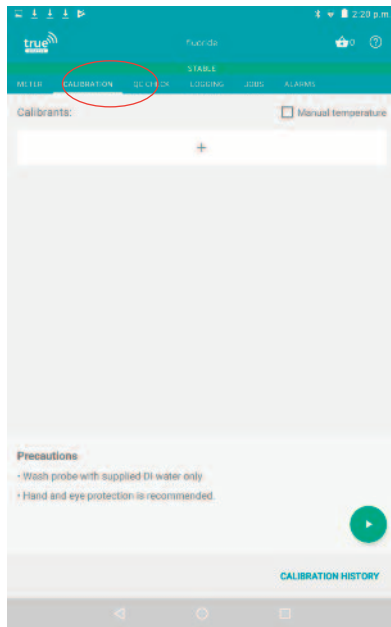


3. Open Truescience app and select the cap being used.



4. Ensure the correct ISE is registered to the cap.

# ISE Calibration



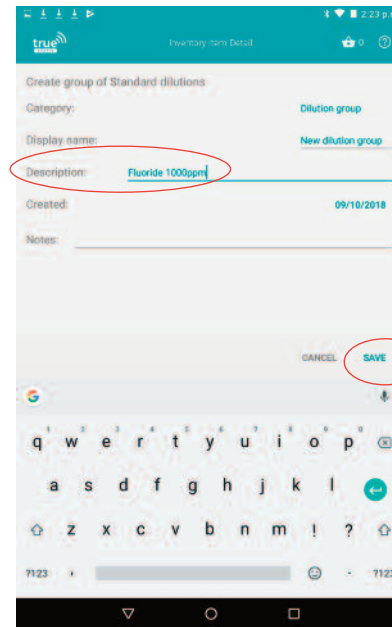
4. Select the Calibration tab.

Select the "+" icon to add a dilution group to your calibration.



5. Select "Create Group".

Then select the red + icon in the bottom right hand corner of the screen.



6. Name your dilutions group on the 'description' line.

Select "Save".

Use a name that helps you identify the groups you will be able to re-use the group.

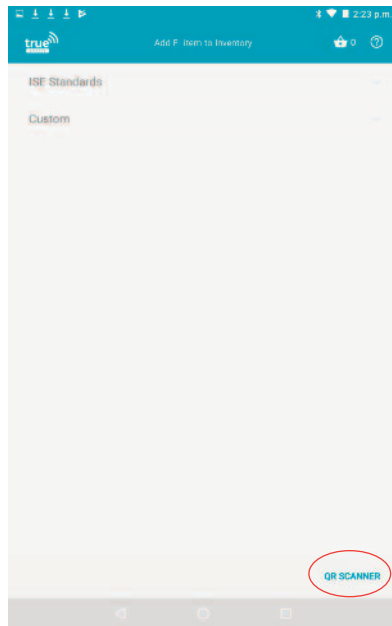


7. Select the red + icon to add your 1000ppm standard.



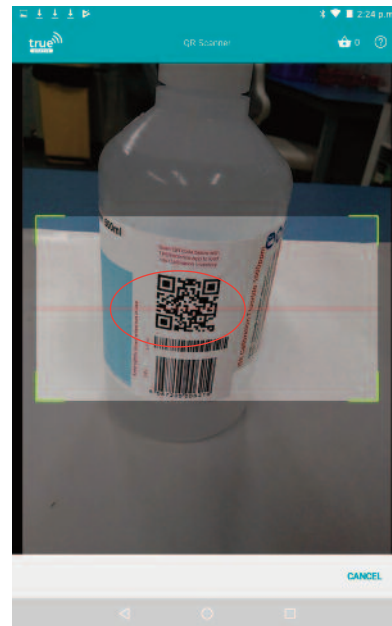


# ISE Calibration

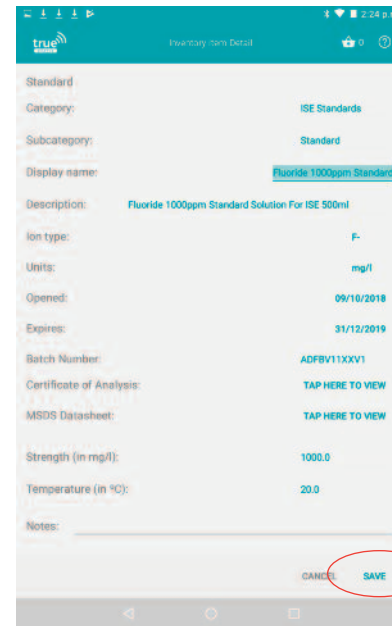


8. You can either select a previously added group from the drop down menu **“ISE Standards”** at the top of the screen.

Or select the **“QR Scanner”** icon at the bottom right hand side of the screen, to add a new standard to you inventory.

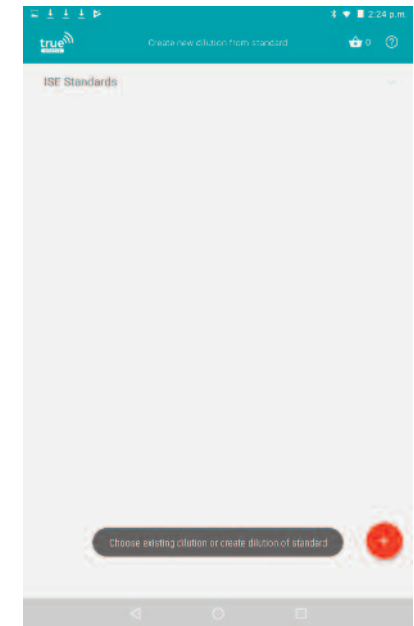


9. Scan the QR code on your standards bottle using the devices camera, it will automatically capture the code when the camera is held over the QR code image.



10. This will load the standard and all its associated details and batch information.

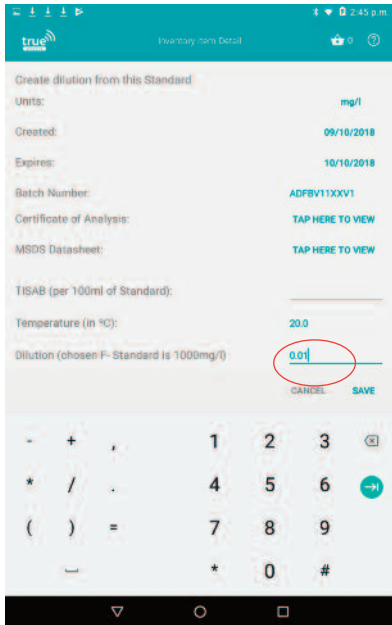
To continue, select **“Save”**.



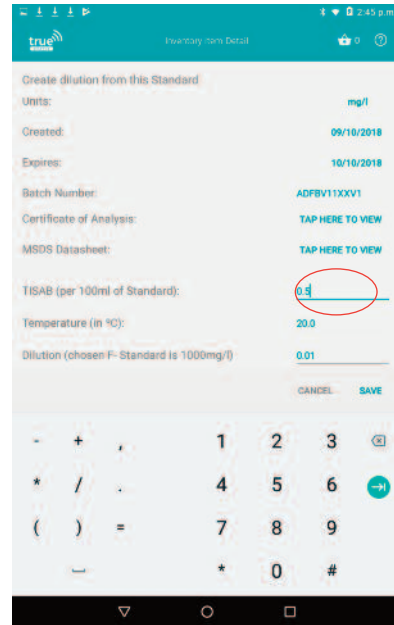
11. To add your first standard dilution, select the red + button.



# ISE Calibration



12. Add in the dilution concentration of your first dilution, starting with the weakest.



13. Add the amount of ISAB added per 100ml.

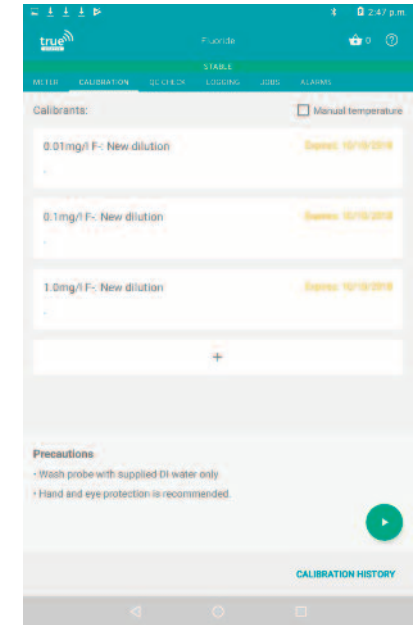
Select **“Save”** to save the details of your first dilution standard and to then continue on to add your next dilution standard.



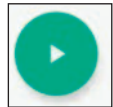
14. Click the white bar **“+”** tab under your first dilution to add the next one, following the same process from steps 12-13 adding each of your dilutions, **from weakest to strongest.**



One they are all added you are ready to calibrate your electrode.



15. Select the green play button at the bottom right hand corner of the screen to begin the calibration.



# ISE Calibration



17. Rinse the electrode with deionised water, then place it into the first concentration standard, and wait for the **“Save”** icon to turn from grey to green, indicating the reading has stabilised.

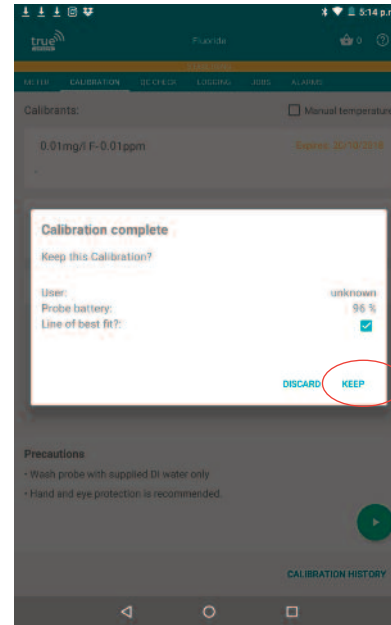


18. When the icon turns green, click it to save the reading.



After the green save icon has been clicked, the next dilution standard down the list will be highlighted, and steps 16-17 can be repeated.

Do this until all dilution standards have been measured.



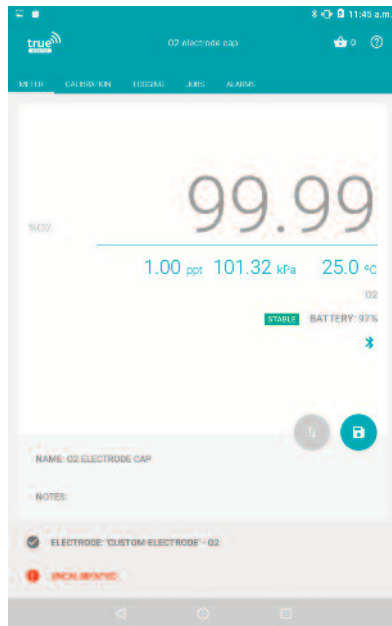
19. When all dilution standards have been measured, a completed box will automatically appear.

Click **“Keep”** if you are happy with the result.

Now the calibration is complete, the electrode can be used to measure your samples.

20. If you are not happy with the calibration, click discard and repeat the process.

# Dissolved Oxygen Calibration

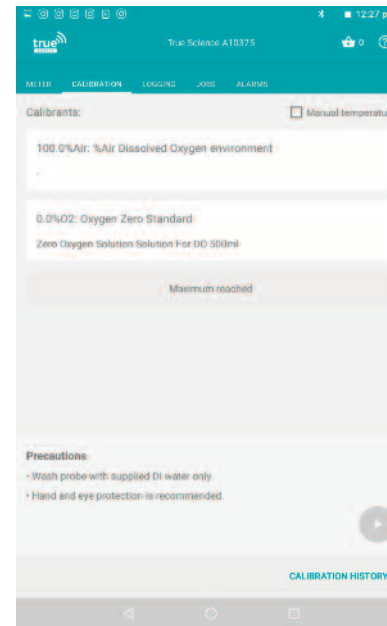


1. Touch the calibration message or the calibration tap in meter view to enter calibration mode.



2. You can do a simple single point calibration with Air as a standard. This is the usual calibration method and is pre loaded.

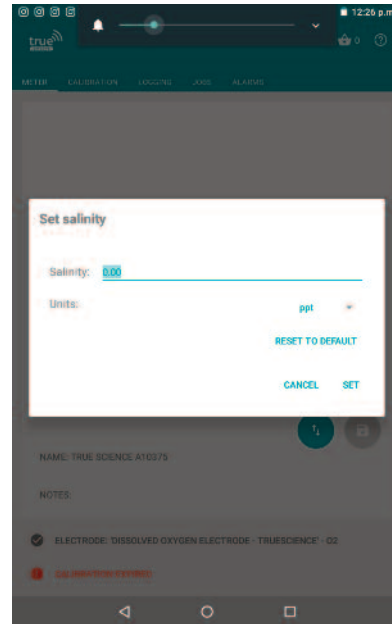
Alternatively you can add a second zero solution standard



3. Alternatively you can add a second zero solution standard from the inventory. (See **inventory** for details on how to add an item to the Inventory)

4. Similar to pH and ISE you start calibration by pressing the play button, wait for the calibration to stabilise and then press the save icon.

# Dissolved Oxygen Calibration

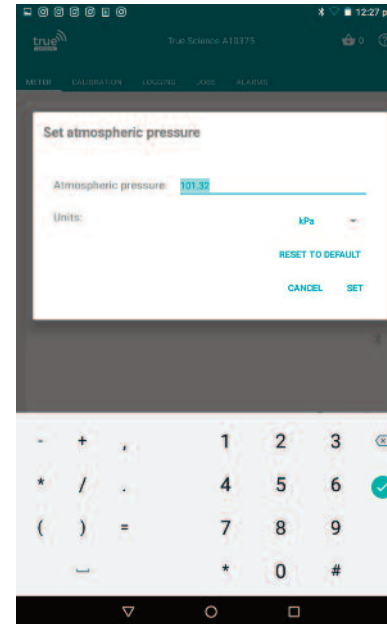


5. The main screen view also shows the current settings for Salinity and atmospheric pressure.

These can be adjusted if required by clicking on them

6. Salinity of your sample will affect DO readings. Click on the salinity ppt reading and this screen will pop up. Add your figure and units for salinity of your samples as required.

You can click 'reset to default' if you don't require this value to be set.



7. Atmospheric is set to 101.3kPa but you can adjust this if you are taking readings at a high altitude to adjust for lower air pressure.

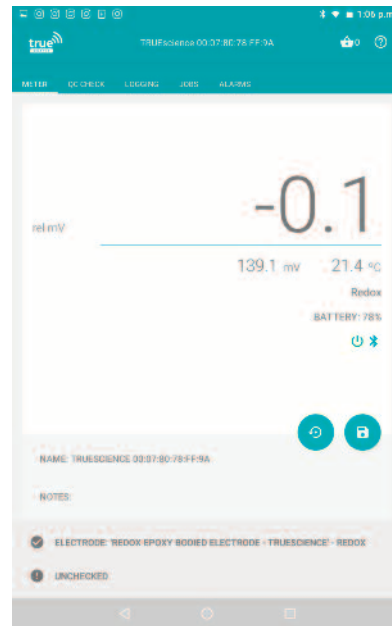
You can click 'reset to default' to return to set value.

# Redox ORP Calibration



1. Redox measurements do not generally require calibration as such although you can check the absolute mV with a standard if required.

When viewing the meter screen with a Redox electrode loaded on the cap the switch button is replaced by a Zero button.



2. Pressing the Zero button zero's the main display reading. You can now monitor the change in redox potential from this point.

A smaller mV reading appears below the main reading to show the raw mV reading for reference.



Click the reset button to revert to the original view.

3. You can also check the readings with a Redox calibration standard but results are very dependant on the system and conditions so it is usually only for a guide.

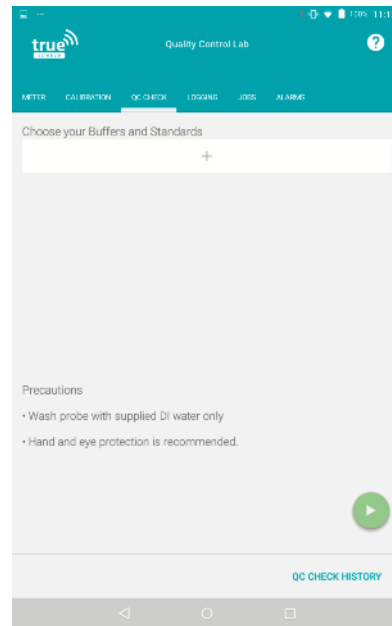
# QC Check



1. The QC Check function allows you to have an additional check on the electrode after calibration.

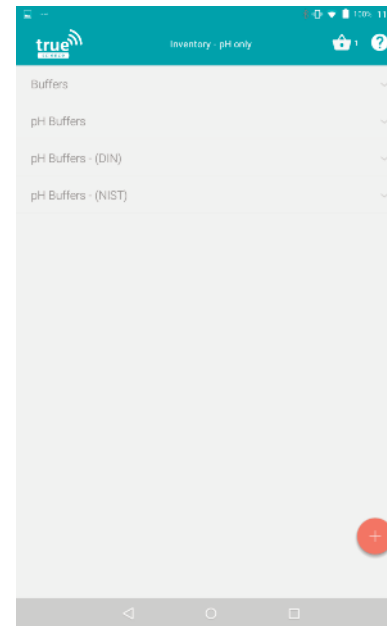
QC Check should be performed with another pH buffer value, not one you have already calibrated with. This way it acts as a test that the electrode response is correct. You can QC check with one buffer at a time only.

To begin, touch **"QC Check"** on the top menu bar (Go to 2).



2. The QC Check screen is launched.

To choose the buffer you wish to perform a QC check with touch the plus icon underneath the message **"Choose your Buffers and Standards"**



3. The Inventory screen is launched.

If the buffer you wish to perform the QC check with is already in your inventory, touch the categories (buffers, pH buffers) to find it and touch the chosen buffer to select it (Go to 14).

Alternatively to add a new pH buffer to your inventory, touch the red plus icon in the bottom right corner. (Go to 4)/



4. The Add Product to Inventory screen is launched.

Touch on each category (buffers, pH buffers DIN, NIST) to view the standard buffers in that category, for example we may choose pH Buffers DIN to add a standard DIN value buffer (Go to 5).

Alternatively to add a custom value buffer touch Custom (Go to 9).

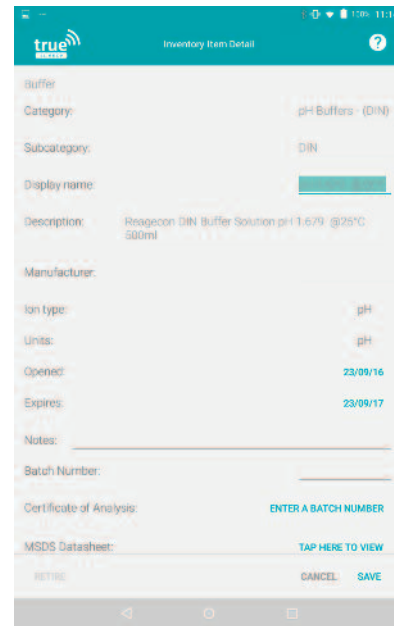
# QC Check



5. The list of pH buffers (DIN) is expanded.

Touch and drag up or down to scroll through the list and find the correct buffer.

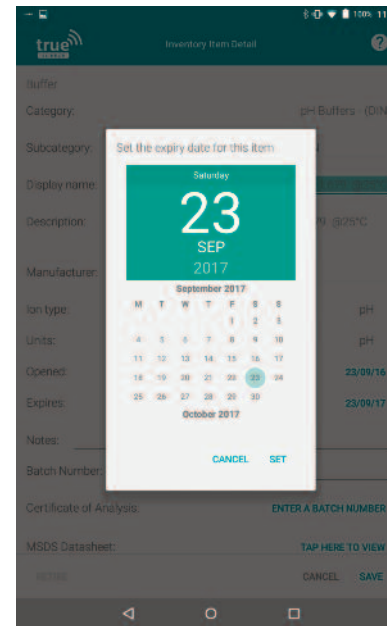
Touch the buffer you wish to add (Go to 6) or touch the category name (pH Buffers - DIN) again to minimise the list (Go back to 4).



6. The Inventory Item Detail screen is launched for the standard buffer selected.

Check that the expiry date shown is the correct one as shown on the bottle. Touch this field to open the calendar and change the date. (Go to 7).

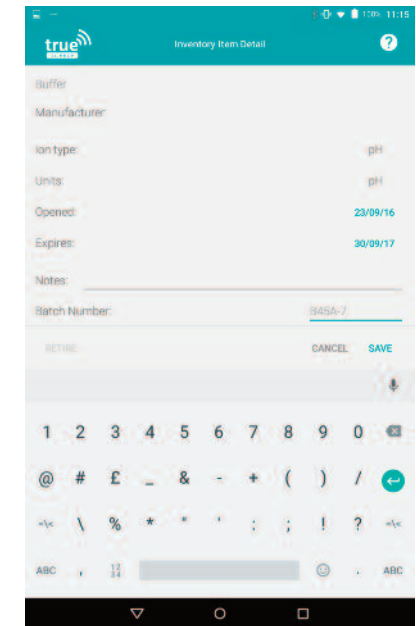
Alternatively if the expiry date is correct, skip this step (Go to 8).



7. The Set expiry date calendar is launched.

Touch and drag the calendar to scroll forwards and backwards by month. Alternatively touch the year to change to scrolling years. Return to months by touching the required expiry year.

Touch the expiry date required and touch **"Set"** to save. (Go to 8)

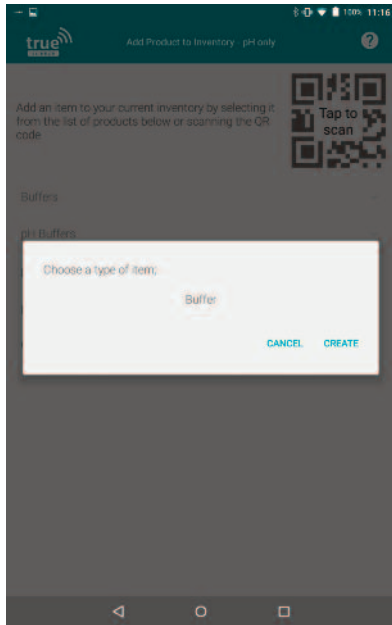


8. Enter the batch number for the buffer by touching the **"Batch Number"** field.

The keyboard is launched, use this to type in the batch number as stated on the buffer bottle then touch **"Save"** to save the changes. (Go to 14).



# QC Check



9. The pop up box to create a custom item is launched.

Touch on the word **"Buffer"** to select from a drop down menu whether you wish to add a buffer or standard.

Once you are happy with the selection touch **"Create"** to create your custom item (Go to 10).

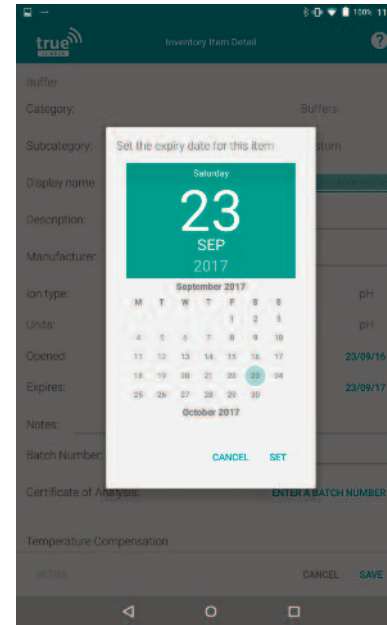
Alternatively touch **"Cancel"** to



10. The Inventory Item Detail screen is launched for a custom buffer.

Touch the default name **"My Custom Buffer"** to launch the keyboard and type over your own buffer name.

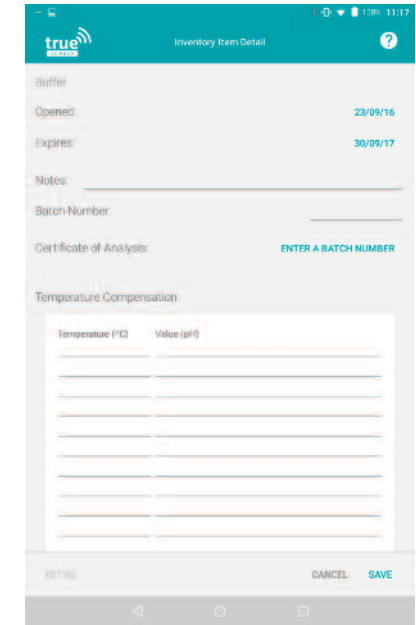
Touch the expiry date to launch the calendar and change it (Go to 11).



11. The Set expiry date calendar is launched.

Touch and drag the calendar to scroll forwards and backwards by month. Alternatively touch the year to change to scrolling years. Return to months by touching the required expiry year.

Touch the expiry date required and touch **"Set"** to save. (Go to 12).

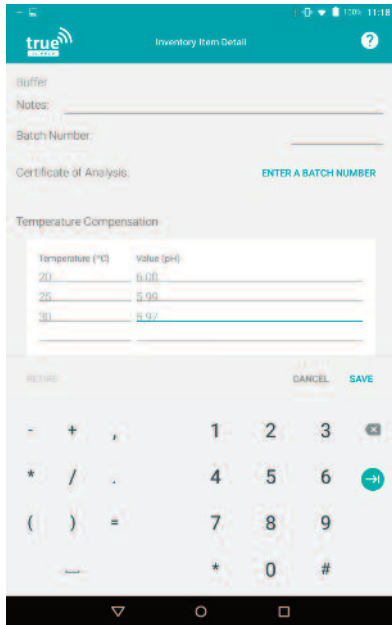


12. Touch and drag the screen to scroll down to the batch number field.

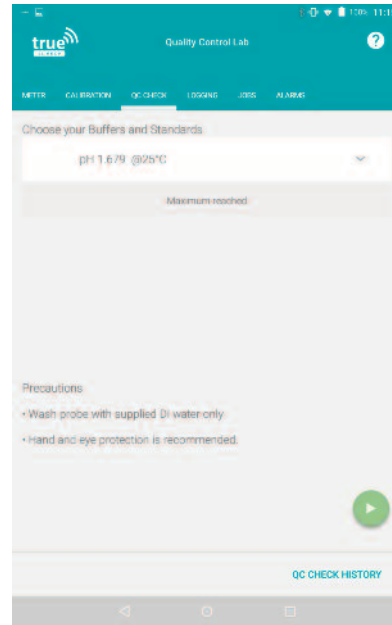
Touch **"Enter a Batch Number"** to open the keyboard and type in the batch number as shown on the bottle.

Touch and drag the screen to scroll further down to the temperature table (Go to 13).

# QC Check



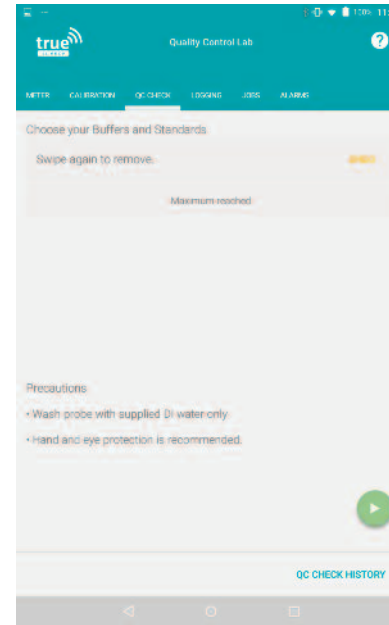
13. The temperature compensation table for a custom buffer must have at least one temperature and pH value entered. Entering more values will make the results more accurate. The values should be shown on the bottle label. Touch the empty lines to launch the keyboard and enter a temperature or pH value. Once you are happy with the data entered touch **"Save"** to save the changes (Go to 14).



14. We are returned to the QC Check screen with our selected buffer added to the current QC check.

If the buffer shown is not the one you wish to QC Check with, you can remove it. Touch on the white space next to the buffer name and drag to the right (Go to 15).

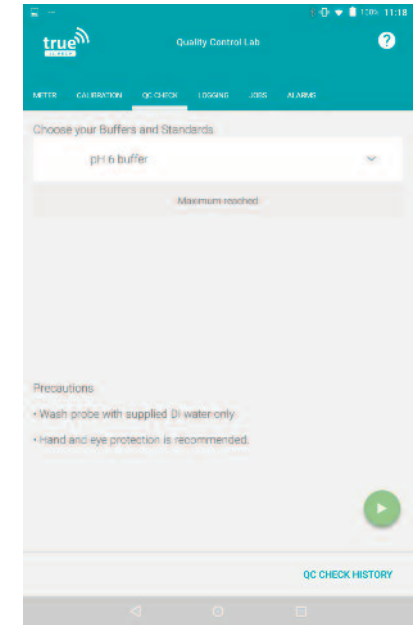
Alternatively if this is the correct buffer, go to 16.



15. The buffer has been hidden from the QC check screen, and the message **"Swipe again to remove"** is shown.

To remove the buffer from the QC check, touch the word **"Swipe"** and drag to the right (Go back to 2 and select the correct buffer).

Alternatively touch **"Undo"** to put the buffer back on to the current QC check (Go to 16).



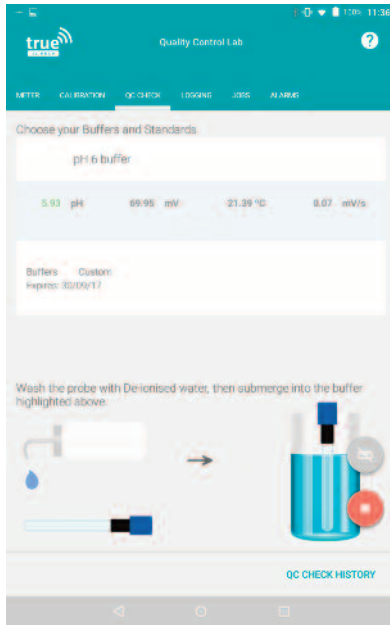
16. The QC check screen is showing the correct buffer and we are ready to begin.

Pour a small amount of your buffer into a beaker and have your rinse water ready.

Touch the green play icon to begin (Go to 17).



# QC Check



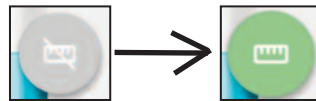
17. The QC check has begun.

Follow the instructions on screen - rinse the electrode with water before placing into the buffer. Stir gently then clip onto the side of the beaker to allow it to stabilise (Go to 18).

Alternatively you can stop the QC check if you are not ready to begin by pressing the red Stop icon (Go to 14).

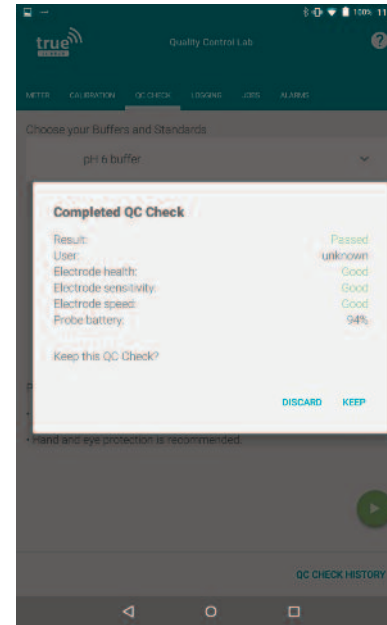


18. Wait for the reading to stabilise, indicated by the **“stable”** icon turning from grey to green;



This usually takes 30 seconds to 1 minute, depending on the electrode condition.

When the stable icon shows green, touch it to save the result (Go to 19).

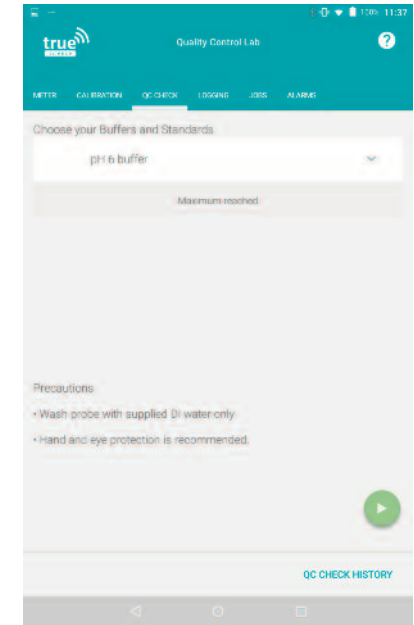


19. The Completed QC Check box is launched.

Here we can view the results of the check - if it was a pass or fail, the electrode health, sensitivity, speed and probe battery.

Touch **“Keep”** to save the QC check (Go to 20).

Alternatively touch **“Discard”** to discard the result without saving (Go to 14).

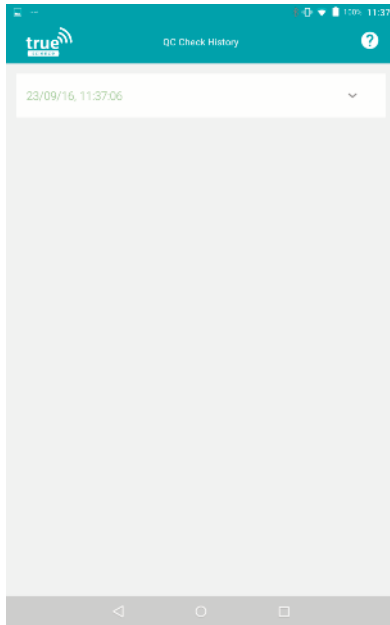


20. We are returned to the QC check screen.

Touch **“QC Check History”** to view the results of this and other QC checks performed (Go to 21).

Alternatively you can touch any other menu option along the top menu to continue to other modes.

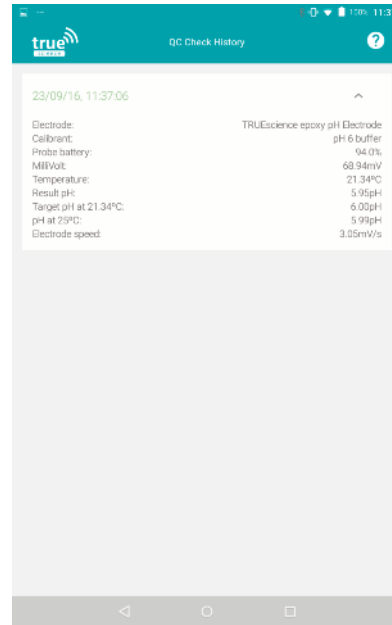
# QC Check



21. The QC Check History is shown.

At the moment only our first QC check shows, over time this list will include all historical QC checks in time order with the latest at the top and oldest at the bottom. Touch and drag the list to scroll up and down.

Touch on a reading to expand it (Go to 22).

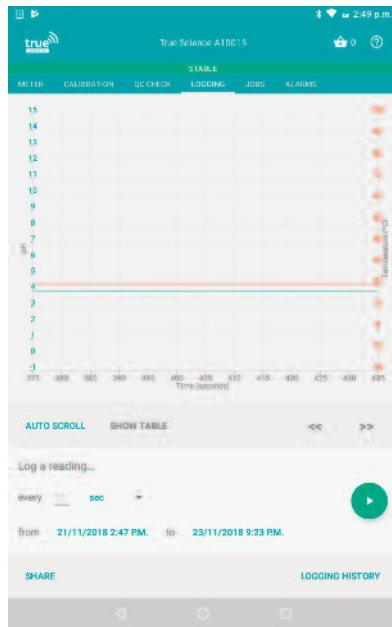


22. The selected QC check is expanded to view further detail.

We can see details of the QC check including the buffer used, the target and actual result and the electrode which was used.

Minimise the details again by touching the white bar with the QC check date and time.

# Logging



1. Each cap can be set to log results over time.

Logging can continue even when you are out of range of the cap - the log will be stored on the cap and download to the app when you next bring your tablet to the cap. One log can have up to 10,000 readings.

To set up a log, touch **“Logging”** in the top menu bar to launch the main logging screen.



2. First we must set the parameters of the log.

Touch in the number (15 by default) to type in the frequency you wish to log at.

This is the value only, the unit (seconds, minutes, hours etc) will be set later.

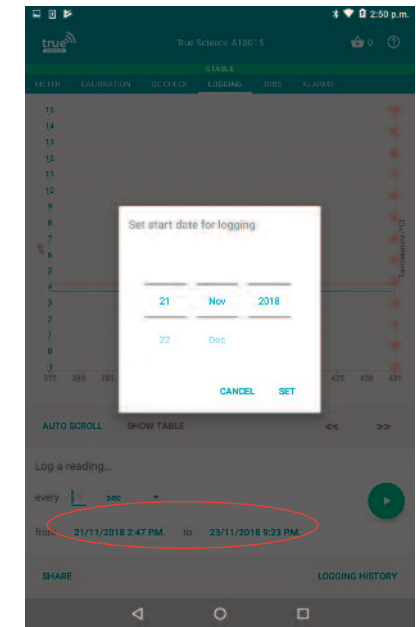
Type in the desired value (Go to 3).



3. Set the time unit required.

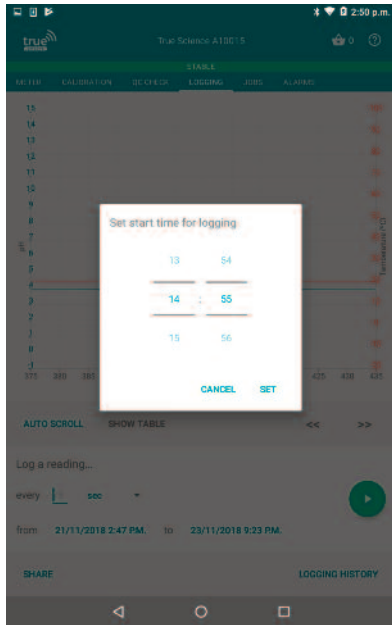
Touch on the word **“sec”** to view available options - we can choose from seconds, minutes, hours or days.

Touch the required unit to select it (Go to 4).



4. Set the start time and date required, if you wish to set a future start time. If you wish to start logging immediately from when you press go, skip this step and go to 5. Touch on the word **“now”** to launch the calendar and clock. Touch the required start date and time and then touch **“set”** to save the changes. Alternatively touch **“cancel”** to close this again and keep the time as **“now”**. (Go to 5).

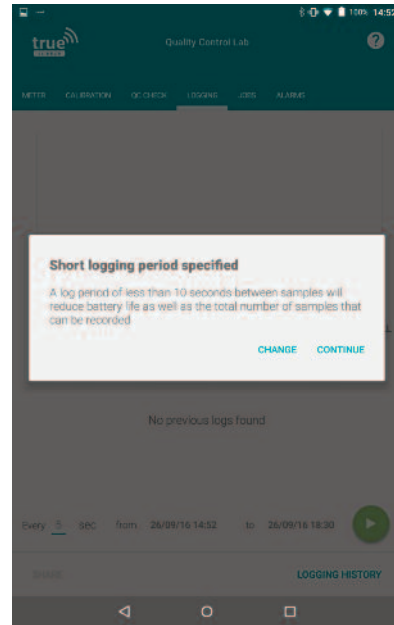
# Logging




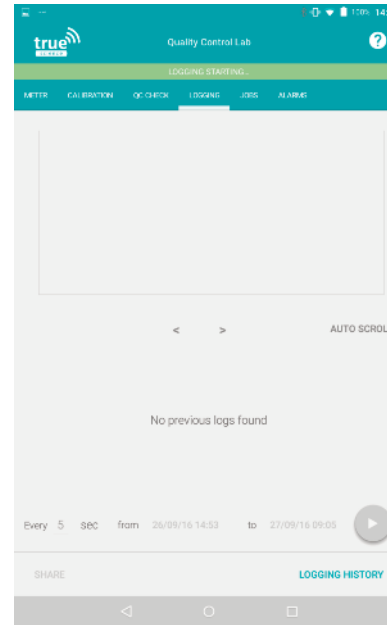
5. Set the end time and date required.

Touch the time and date shown after the word **“to”** to launch the calendar and clock and set the end date and time. Touch **“set”** to save the changes.

Alternatively you can accept the default end date and time and simply press to stop manually when you want to end the log. (Go to 6).



6. Once you are happy with the intervals, start date and time, end date and time, place your cap so that the electrode is in the solution you wish to log, then touch the green play icon to begin;  If you have set short intervals of under 10 seconds you may see the message as above, touch **“Continue”** to accept the shortened battery life, or touch **“Cancel”** to return to step 2 and reset the log parameters.



7. As the logging begins a green bar will show at the top of the screen reading **“logging starting...”**

After 30 seconds to 1 minute this will disappear and the logging will begin (Go to 8).



8. Logging has begun and the log graph is launched.

At this point you may take the tablet away if required - readings will sit on the cap until the tablet is next brought back.

# Logging

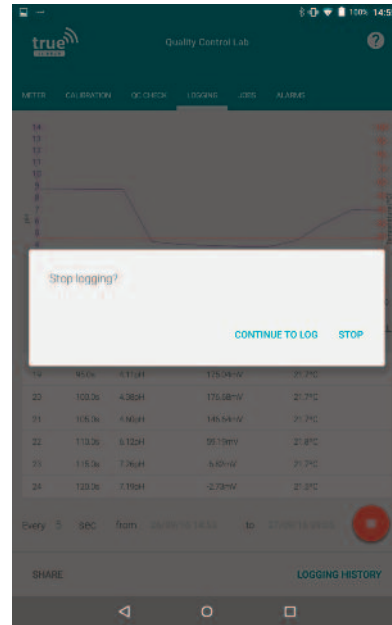


9. We can see the results of the log in both graph and table format on the logging screen. Results will continue to appear at the set interval while the cap is in range of the tablet.

If you wish to stop logging manually touch the red stop icon (Go to 10)



Alternatively wait for the set end time and the log will stop automatically (Go to 11)



10. A request to manually stop logging has been received, and the dialogue box is launched to check this is correct.

Touch **"Stop"** to stop the logging (Go to 11)

Alternatively touch **"Continue to Log"** to carry on until the pre defined end date and time. (Go back to 9).



11. Logging has been stopped, the green status bar at the top of the screen reads **"Logging Stopping..."**

After 30 seconds to 1 minute this will disappear and the logging will stop (Go to 12).



12. The logging has stopped, we can now review the data logged.

Use the graph zoom tools to zoom in and out of the graph. Touch and drag the graph to move up, down, left and right. Touch and drag the table of results to move up and down.

Touch **"Share"** to send the results (Go to 13). Or touch **"Logging History"** (Go to 15).

# Logging

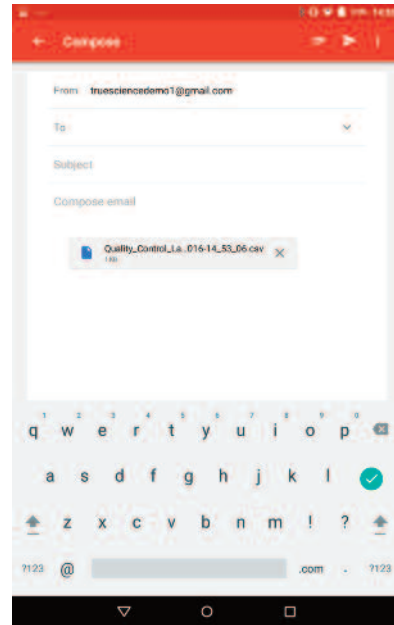


13. The sharing options list is launched.

Here we can see the options available to share our logging results. This will vary depending on the sharing Apps you have installed on your device.

Touch the desired sharing method to launch the App (Go to 14).

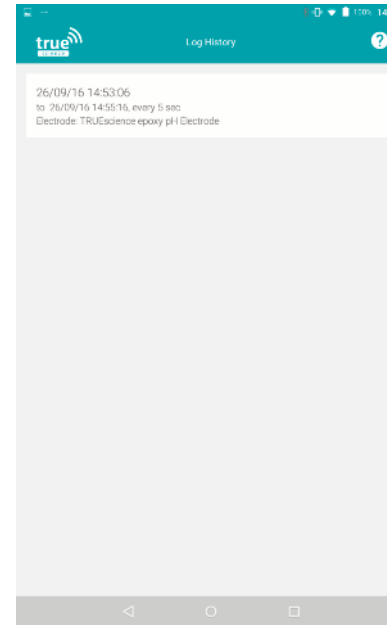
Or touch the back button to go back to the log (Go to 12).



14. The log is ready to share by email.

The log file is a .csv format, which can be interpreted by most spreadsheet packages and LIMS systems.

The log file includes; start date/time, end date/time, user, last calibration date/time, reading number, time/date stamp per reading, seconds from start per reading, pH, mV and temperature per reading.



15. The logging history screen is launched.

Here we can see a list of all previous saved logs.

Touch on a log to open it in the main review screen (Go to 12).

Alternatively touch the back button to return to the review screen on the current log (Go to 12).



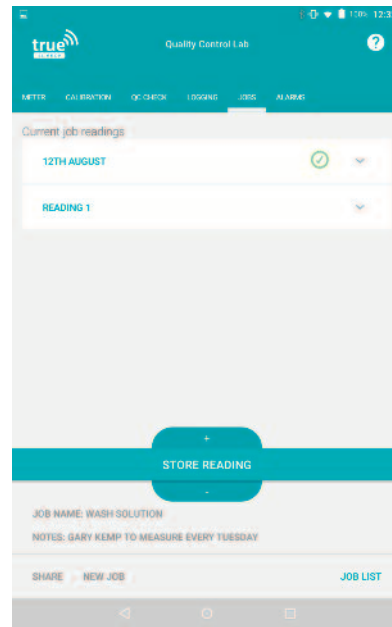
# Jobs



1. The Jobs tab allows you to keep a historical record for one task or reading area.

For example, if you need to record the pH of the wash solution used in your process every day you may create a job list called "Wash Solution" and record readings under it every day.

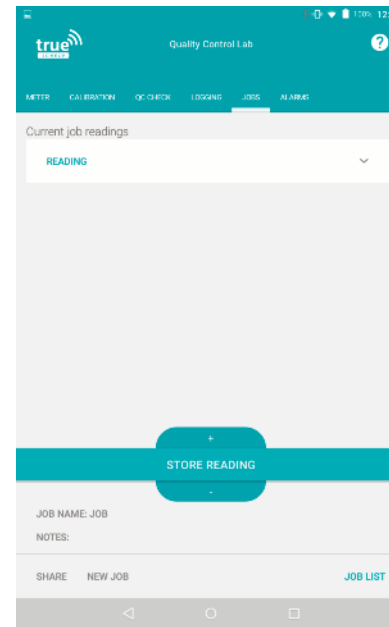
Touch **"Jobs"** to access the jobs tab (Go to 2).



2. In the Jobs tab we can see any readings already stored under the current job list, shown with a green tick mark.

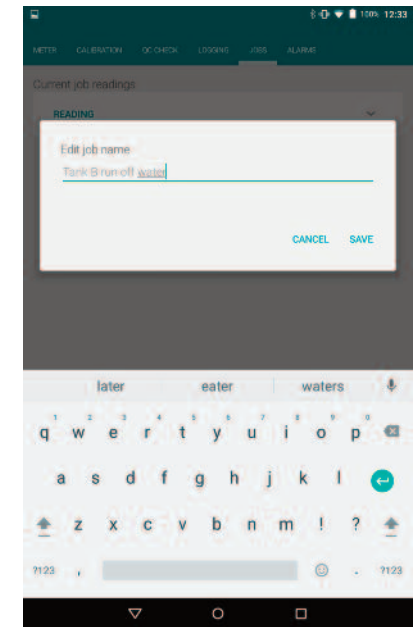
To create a new job list, touch **"New Job"** at the bottom of the screen (Go to 3).

If you want to use the current job list, and keep any already stored readings, you can simply name this list by touching the **"Job Name"** field at the bottom of the screen (Go to 4).



3. A new job list screen is launched.

Touch the **"Job Name"** field, circled above, to change the name of this job list (Go to 4).



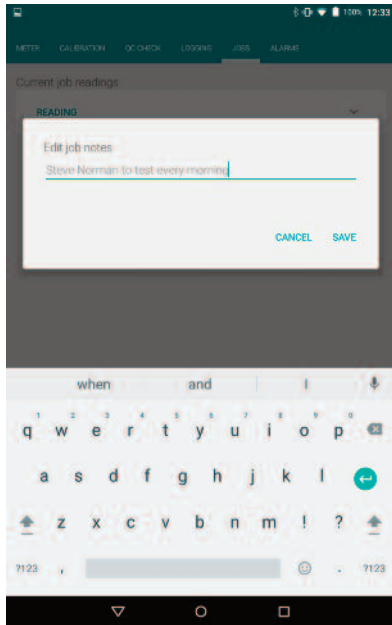
4. The keyboard is launched to rename the open job list.

Enter the required name and touch **"Save"** to save the changes.

You can also add notes about this job by touching **"Notes"** (Go to 5).

If you don't need to add notes, you can add a reading to the job list (Go to 6).

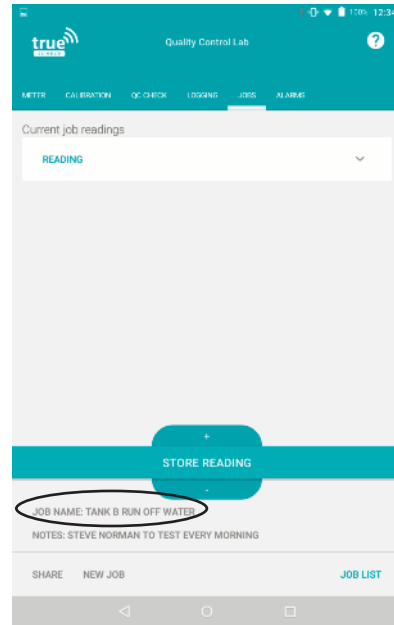
# Jobs



5. The job notes box is launched.

Enter any notes you want to record about this job - for example the frequency of tests, who is responsible for the tests, or any special instructions.

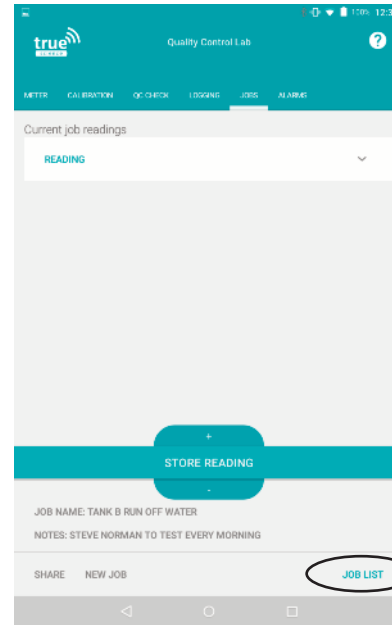
Touch **"Save"** when you are happy with the notes entered to save the changes.



6. When a reading is stored on a job list it cannot be deleted, to prevent data manipulation.

This means you must check you are on the correct list before you store a reading.

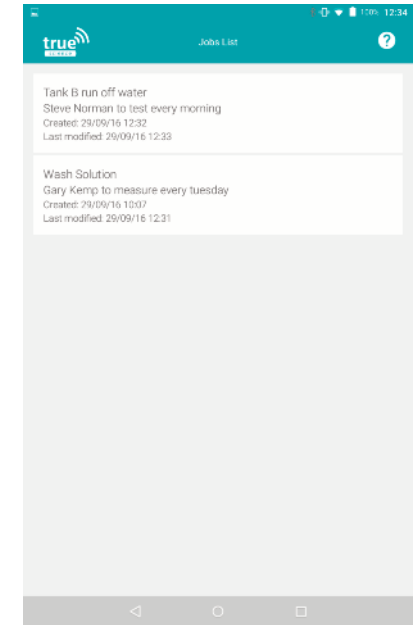
The job list name is shown at the bottom of the screen, circled above.



7. If you are on the wrong list, touch **"Job List"** in the bottom right hand corner, circled above, to view other available lists (Go to 8).

Alternatively create a new list (Go to 2).

When you are happy that the right list is shown on the jobs screen, you can store a reading now (Go to 9) or after a countdown timer (Go to 11).

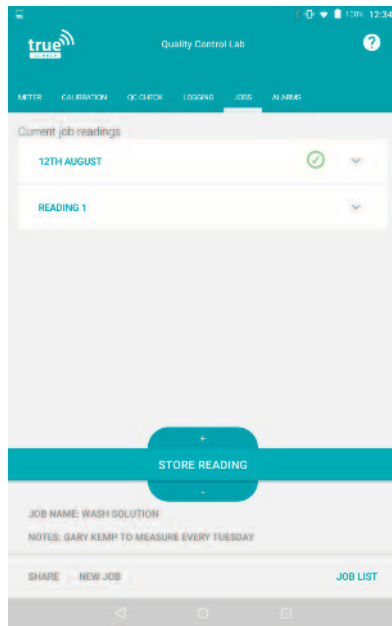


8. The Jobs List screen is launched - here we can see all of the job lists we have created.

Touch a list to open it and view historical readings on it, or add a new reading to it now (Go to 9) or after a countdown timer (Go to 11).

Alternatively if you want to create a new job list, touch the back button to go back to the main Jobs view (Go to 2).

# Jobs



9. To add a reading to the open job list now, make sure the electrode is in the sample you wish to read and has been stirred to let the reading stabilise.

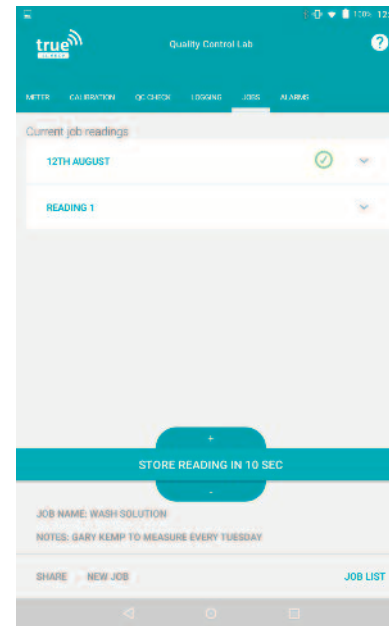
Either touch **“Store Reading”** in the Jobs view to store a reading immediately. (Go to 13).

Or you can also go to Meter view to see the reading before you store it (Go to 10).



10. If you have the required job list open, but want to view the reading before you store a result, touch **“Meter”** on the top menu bar to return to meter view. You can now view the live reading from the electrode as usual, and when you are happy the reading has stabilised touch the **“Store”** icon to store the result.

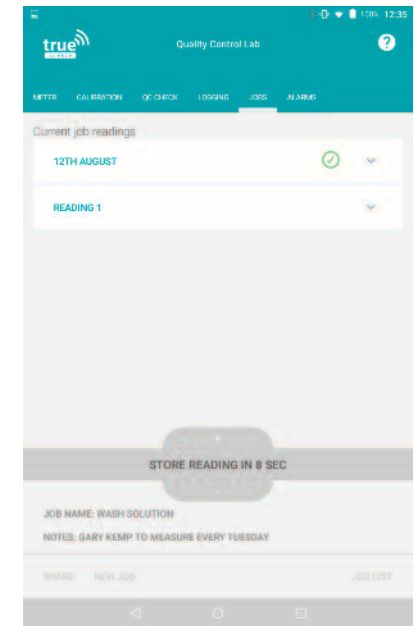
Touch **“Jobs”** to return to the jobs screen and view the stored result (Go to 13).



11. If you wish to store a reading, but the sample is difficult to access, you can set a timer.

Touch the + and - icons either side of the green band to increase or decrease the timer (settable in 1 second increments)

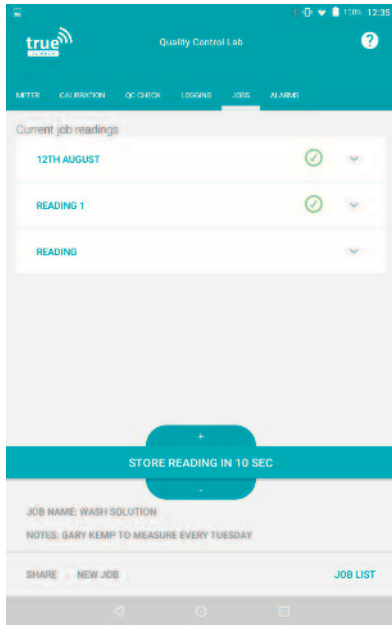
When the desired time is reached touch the central **“Store a reading in X sec”** to start the timer (Go to 13).



12. The countdown timer has begun - use this time to take the cap to the sample and place the electrode into the sample. You can leave the tablet behind at this stage, **providing it is still in range(?)**

Wait for the countdown to be reached, and the reading will automatically be stored (Go to 13).

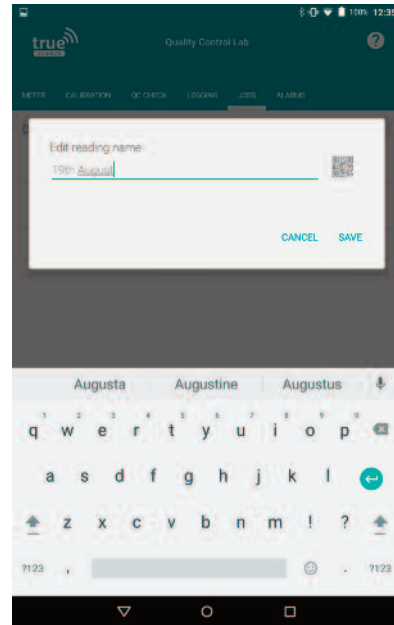
# Jobs



13. The reading has been stored on the current job list, as indicated by the green tick symbol next to the result.

It is recommended to give each reading a name for clarity (Go to 14).

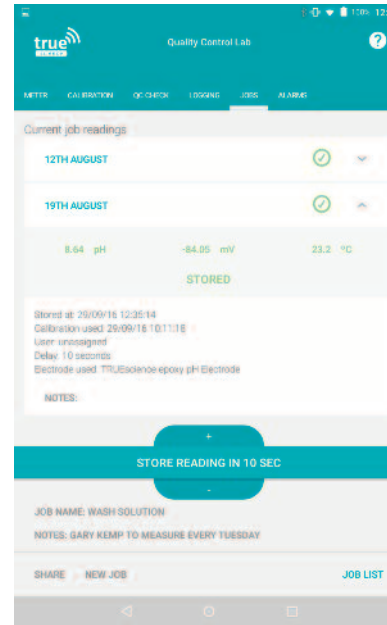
Touch the down arrow next to the result to view full result data and add GPS information, photos or notes to your result. (Go to 14).



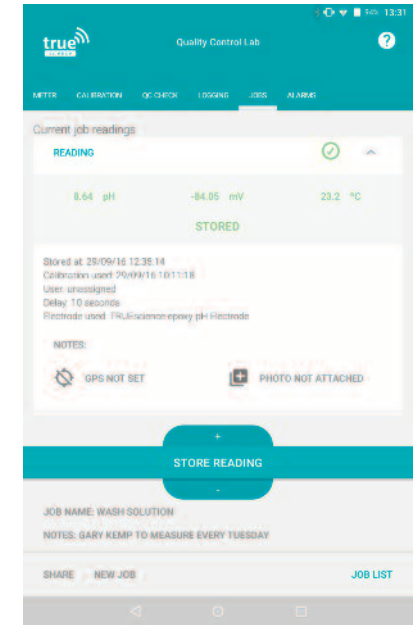
14. Touch a stored reading name ("**Reading 1/2/3...**" by default) to rename it.

The "**Edit reading name**" box is launched. Type in the required name and touch "**Save**" to save the changes.

You can view full reading information by touching the down arrow next to the green tick mark (Go to 15).



15. The full reading information is shown for the selected reading - you may need to scroll down to see it all. The time and date stamp, user, electrode and calibration information cannot be changed on a recorded job reading, and a recorded job reading cannot be deleted after it is stored, to prevent data manipulation. More information can be added to enhance the stored reading (Go to 16).



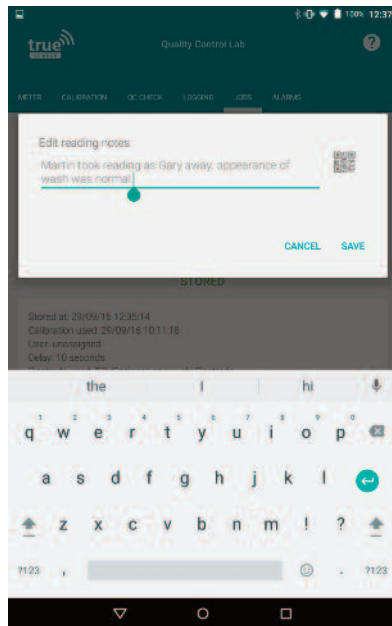
16. We can add more information to a stored reading if required.

To add written notes, touch the "**Notes**" message (Go to 17)

To add GPS information, touch the "**GPS not set**" message (Go to 18).

To add a photograph touch "**Photo not attached**" (Go to 20).

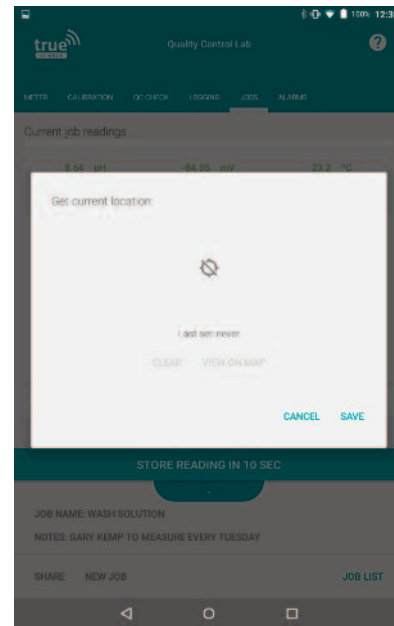
# Jobs



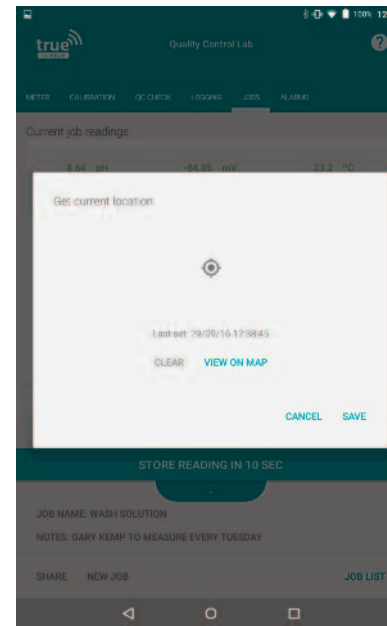
17. The reading notes box is launched. Enter any additional notes about the sample or reading that you want to capture (e.g. if the colour was different than usual, if the sample size was small or not stored properly)

Touch **“Save”** when you are happy with the notes added.

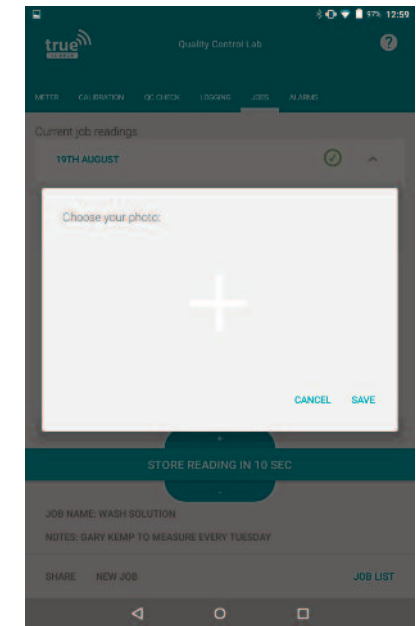
You can now add more information if required (Go to 16).



18. The GPS tracker is launched - here we can add our current GPS location to the reading. For example if you have measured pH in a stream this would allow you to later see exactly which location it was measured at. Touch the GPS symbol to record the current location. Location services must be turned on on your tablet (accessed via the tablet settings menu - see the “Android Hints and Tips” section)



19. The GPS symbol flashes with a black circle in the centre. Wait for the location to be found - this can take up to a minute. The tablet must have location services turned on, and your device may not be able to find a location if you are inside a large building. The text on screen will detail the date and time when GPS is set. Touch **“Save”** to save the reading. You can now add more information if required (Go to

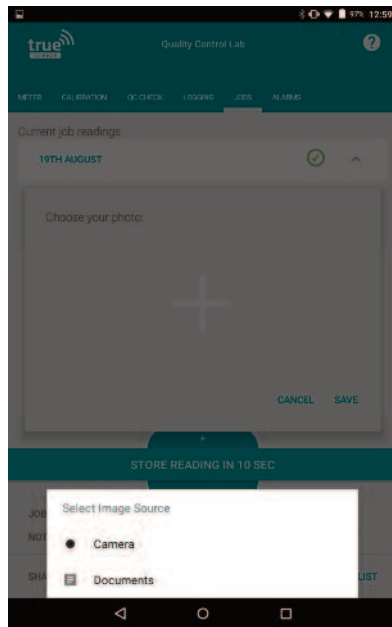


20. The box to add a photograph to a reading is launched.

Touch the white + symbol to add a photograph (Go to 21)

Alternatively touch cancel to go back (Go to 16)

# Jobs



21. The image source options are listed.

Touch the required source to add a photograph either from your existing documents (Go to 22) or by taking a new photograph now with the tablet's camera (Go to 23).



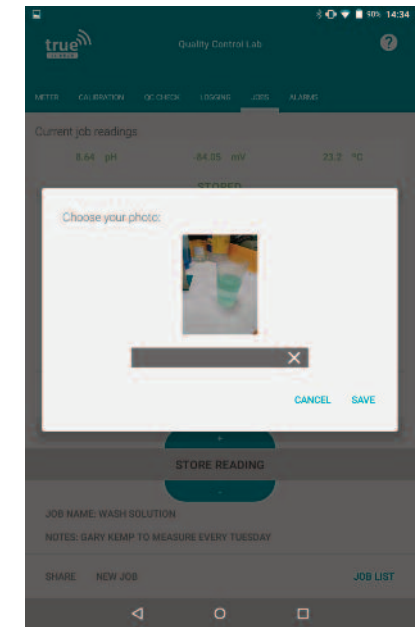
22. The documents saved on this device are opened.

Find the correct image you want to attach to this reading and touch to select it.



23. The camera is launched. Take a photo by touching the camera capture icon.

The still photograph will show on screen for your review - touch the tick to accept the photograph (Go to 24), or touch the cross to delete this and take a new photo. (Repeat this step).



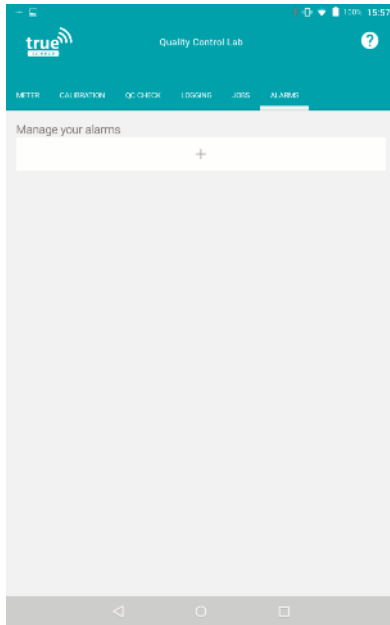
24. You will be returned to the photo adding box with the chosen image shown.

Touch **"Save"** to save the image to the reading and return to job list.

Alternatively touch the **"X"** to remove this image and choose another one (Go to 20).

Touch **"cancel"** to return to the job list without adding a photo.

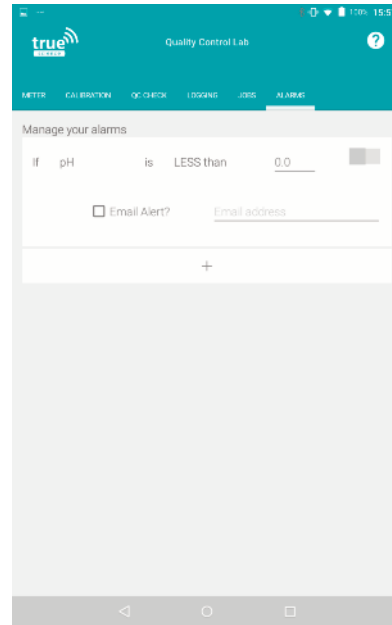
# Alarms



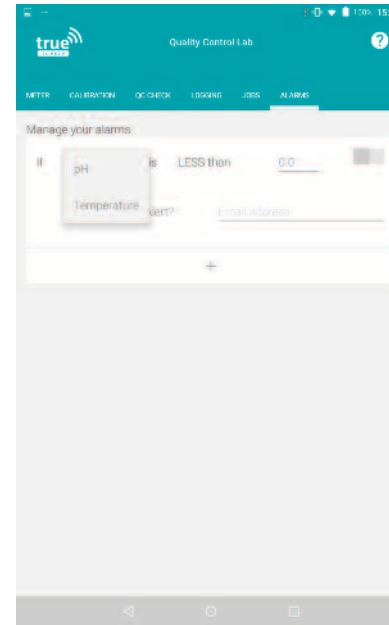
1. Alarms can be set to alert you visually and audibly if the read value is outside a set pH or temperature limit.

Touch "Alarms" on the top menu bar to go into the main alarm screen as shown above.

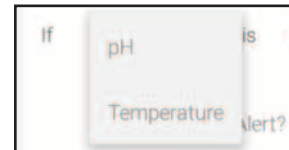
Set up a new alarm by touching the + symbol (Go to 2)



2. A new alarm box is launched. Touch on the word pH to set the alarm trigger parameter (Go to 3)

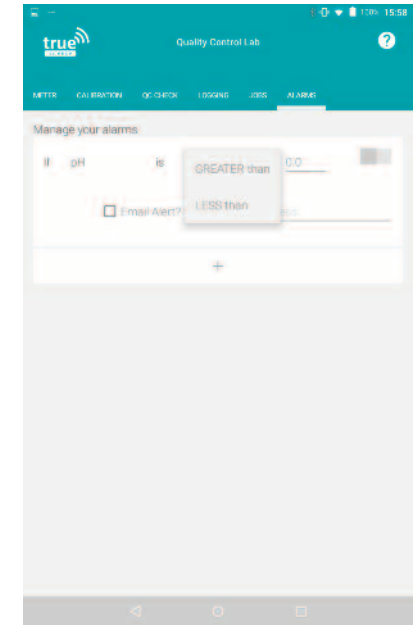


3. The alarm trigger parameters available are shown - we can choose to set an alarm by a temperature or a pH value;



Touch the required parameter to select it.

Touch the words "LESS than" to select the alarm condition (Go to 4)



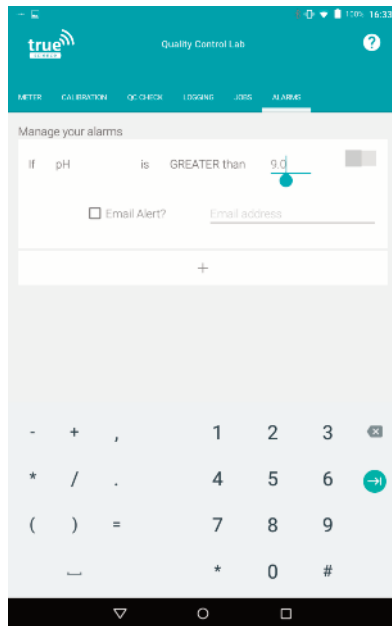
4. The available alarm conditions are listed - we can choose from "Less than" or "Greater than";



Touch the required condition to select it.

Touch the number value (0.0 by default) to enter the trigger value (Go to 5)

# Alarms

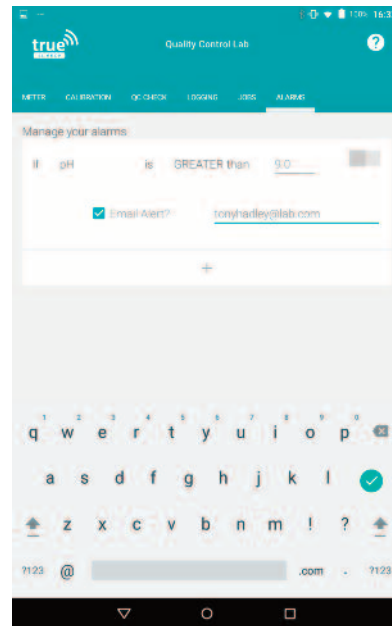


5. The keypad is launched to enter the alarm trigger value.

Type in the required value.

Either touch the grey toggle switch to set the alarm without an email alert (Go to 7).

Or touch the **"Email address"** field to enter an email address (Go to 6).

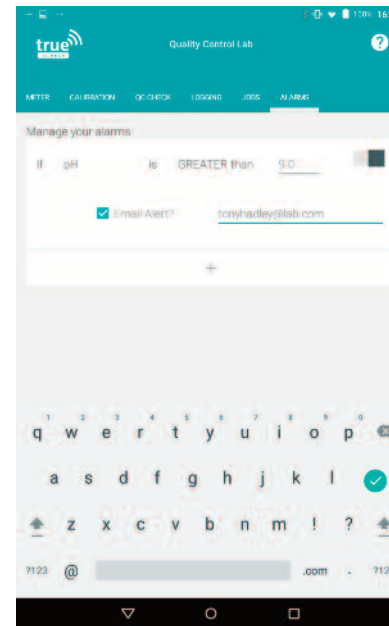


6. The keyboard is launched to type in an email address. If the alarm is triggered an email will be sent to this address to alert you.

Make sure that the box next to **"Email Alert?"** is ticked to turn email alerts on - touch it to toggle on or off.



When you are happy with the email address, Turn the alarm on (Go to 7).



7. When you are happy with the alarm parameters and email settings, touch the grey toggle switch to turn the alarm on;



When the switch is black, the alarm is active. Return to view live readings on the meter screen by touching **"meter"** on the top menu bar (Go to 8).



8. We have returned to the main meter view and can see the live reading from the electrode.

We can see that an alarm is active as the alarm clock symbol is shown under the battery indicator.





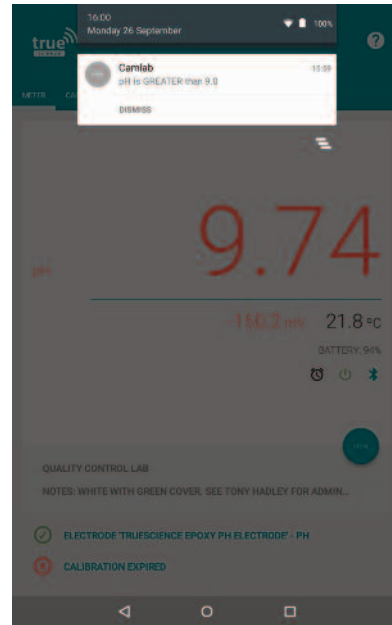
# Alarms



9. If the reading goes outside of the alarm parameter the alarm is triggered.

The readings in meter view turn red, the audible alarm will sound, and a notification will appear on your device.

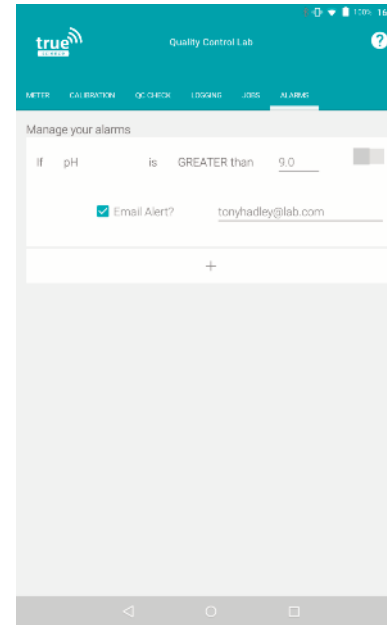
Drag down from the top of the screen to view the alarm notification (Go to 10)



10. We can see the alarm notification, which also tells us which alarm was triggered (in this case pH is greater than 9.0)

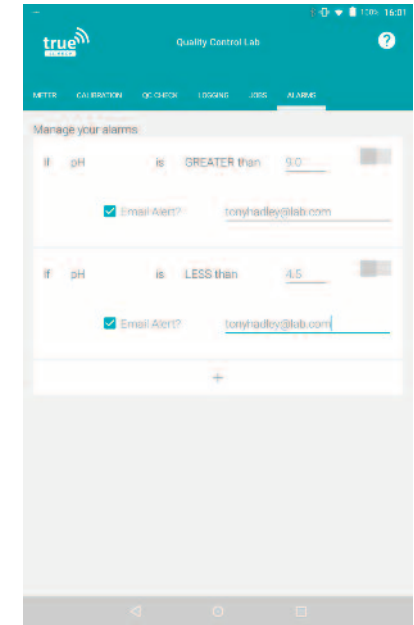
If the "Dismiss" option is not showing, you may need to drag down on the notification to open it fully.

When you can see the "Dismiss" message, touch this to stop the alarm (Go to 11)



11. We are returned to the alarm screen with the alarm now turned off, since we have just dismissed it.

To turn the alarm back on again, touch the toggle switch (Go to 7)



12. It is possible to build multiple alarms, each with different triggers, and have more than one alarm set at a time.

Touch the + icon at the end of the alarms list to add another.

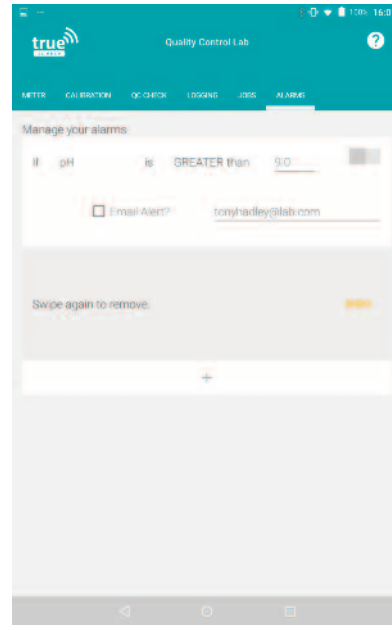
Up to X alarms can be set at once.

If you no longer need an alarm it can be deleted (Go to 13)

# Alarms



13. To delete an unwanted alarm, touch and hold on the left hand side of the white bar and drag it to the right. (Go to 14).

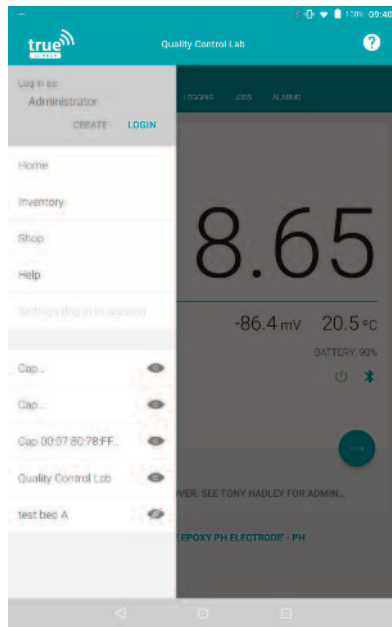


14. The unwanted alarm is hidden and the message **“Swipe again to remove”** is shown

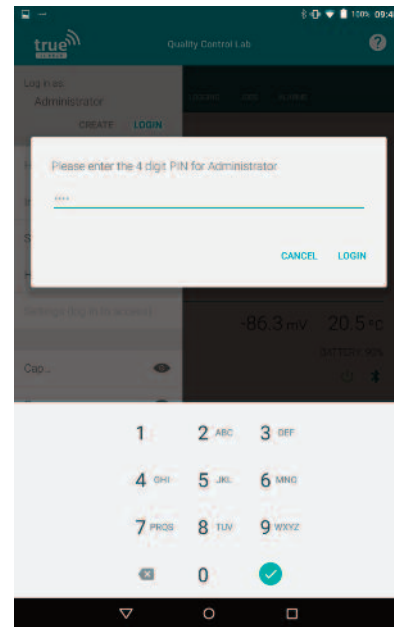
Either repeat the action, touching and holding the word **“Swipe”** and swiping it to the right to fully delete the alarm

Or touch **“Undo”** to restore the alarm (Go back to 12).

# User Accounts

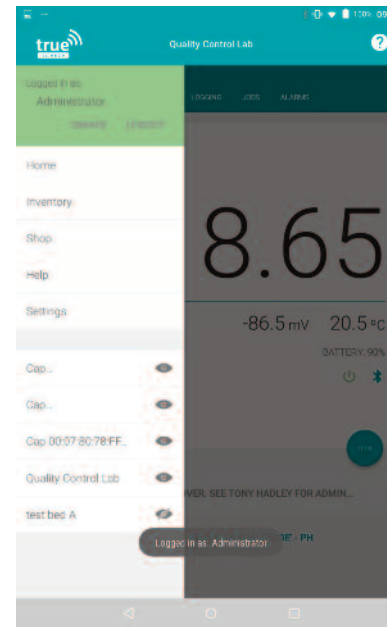


1. It is possible to use the TRUEscience app without logging in as a set user, and actions will be recorded with user "unknown"  
To access certain settings the administrator must log in. The administrator can also create new user accounts so actions can be recorded with a user name assigned to them. To access the app settings menu (shown above) from any screen in the app, swipe from the left

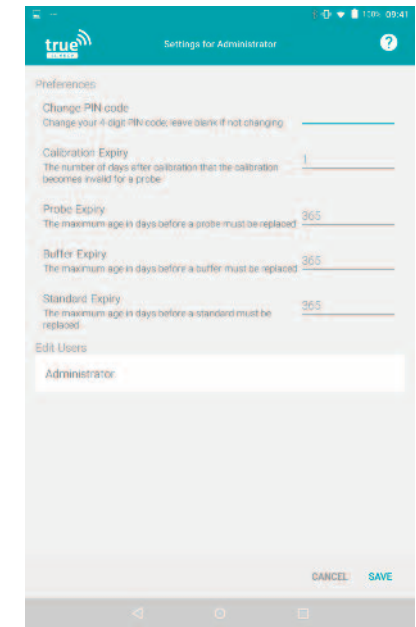


2. Log in as the administrator to access advanced settings and create new users.

Make sure the name under "Log in as" says "Administrator" (touch the word Administrator to choose it from a list if it does not) then touch "LOGIN" to launch the PIN code pad as shown above. Enter the Administrator PIN (1485 by default) and touch Login (Go to 3)



3. We are returned to the app settings menu. The top section is now green to show we are logged in, and the text tells us we are logged in as the administrator. The message "logged in as administrator" appears in a grey lozenge at the bottom of the screen for 3 seconds. Touch Settings to access the advanced app settings (Go to 4) Or touch "Create" to add a new user (Go to 6)



4. The Administrator Settings screen is launched. Here we can change how long a calibration is valid for, the default shelf life of electrodes and buffers, edit the administrator's PIN code and other users PIN codes.

Touch any field to launch the keyboard and edit it (Go to 5)

Alternatively touch back to return to the menu (Go to 3)

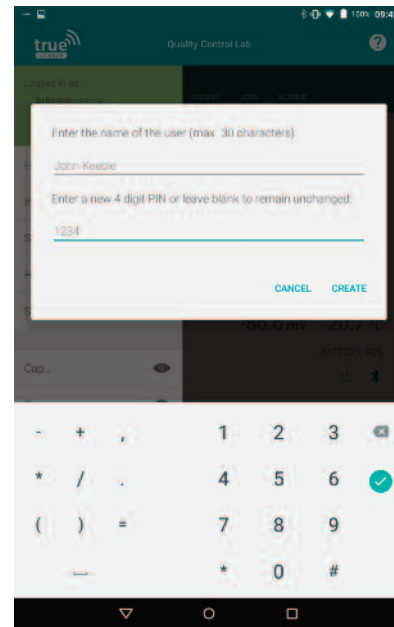
# User Accounts



5. The keyboard is launched to edit an App setting.

Erase the old value and enter your preferred value, then touch **“Save”** to save the changes.

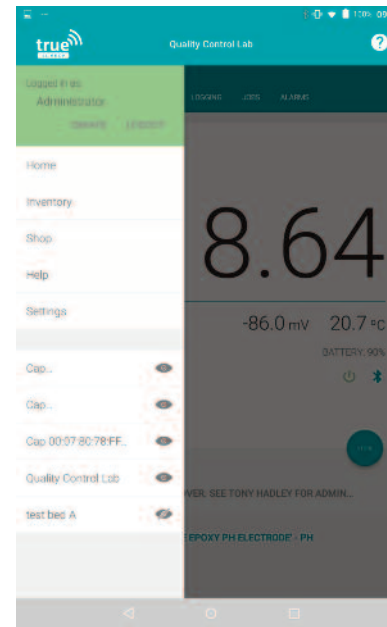
After touching save you will be returned to the App settings menu (Go to 3).



6. The create a new user box is launched.

Use the keyboard to type in the name and enter a PIN code for the new user. The user or administrator can change the PIN code later if they wish.

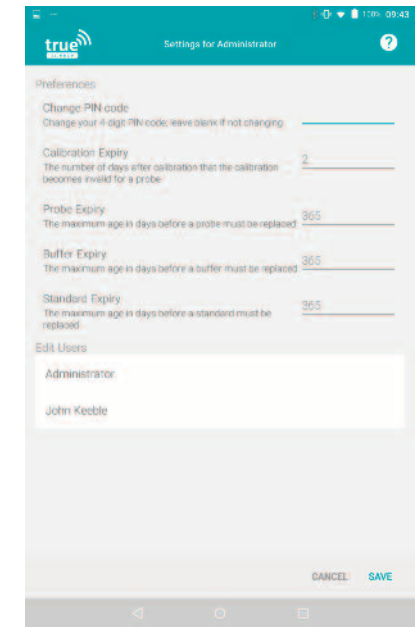
When you are happy with the details entered, touch **“Create”** to create the new user. (Go to 7).



7. The new user has been created, and we are returned to the App settings menu.

You can view all the current user accounts by touching **“Settings”** (Go to 8).

Alternatively you can now log out as administrator and let the new user log in, by touching **“Logout”** (Go to 10).

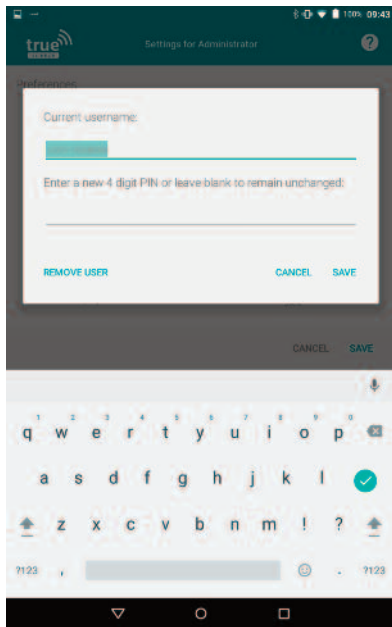


8. In the administrator settings, we can see all of the current user accounts.

Touch on a name to edit the name, change the PIN code or delete this account (Go to 9).

Alternatively you can return to the app settings menu by touching the back button (Go to 7).

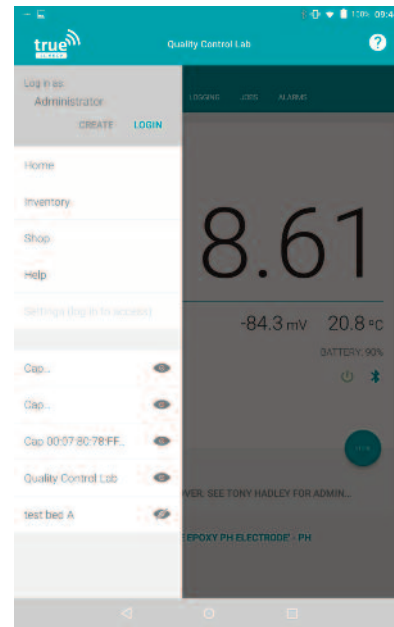
# User Accounts



9. The edit user screen is launched.

Touch the name field to edit the name, or touch the PIN code field to assign a new PIN code. When you are happy with the changes touch "Save" (Go to 7)

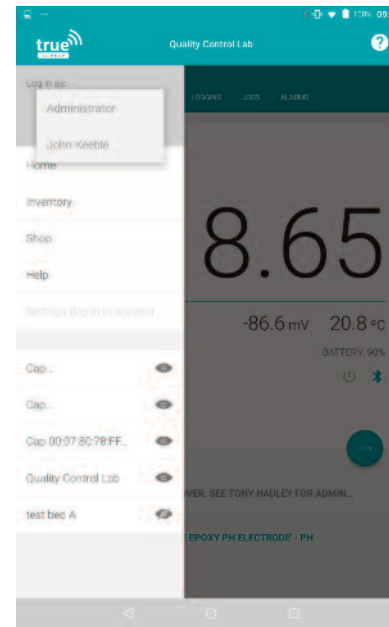
Alternatively to delete the user, touch "Remove User" (Go to 7)



10. We have logged out of the administrator account.

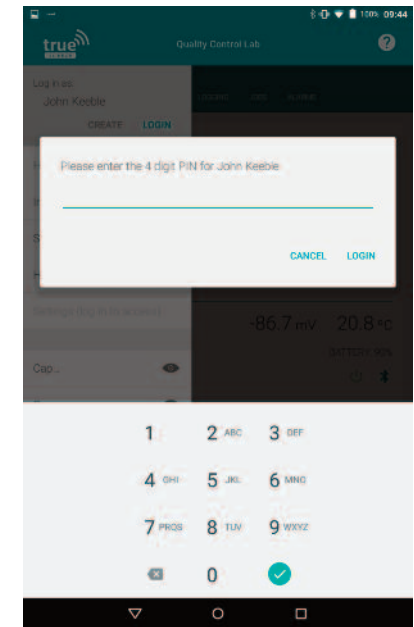
Swipe from the left hand side of the screen to the right to open the app settings menu again.

Touch the word "Administrator" to open the list of available accounts (Go to 11)



11. A list of the available users we can log in as is shown.

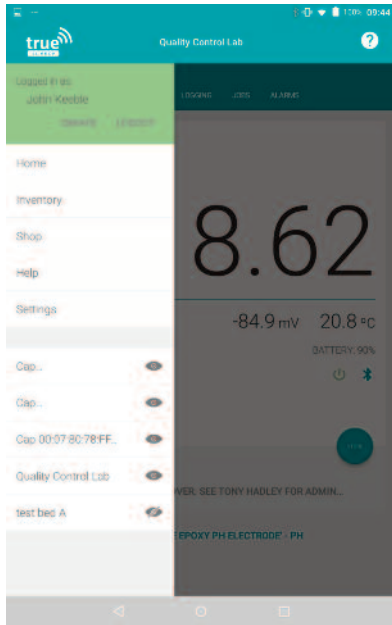
Touch a name to log in as this account (Go to 12)



12. The PIN code pad is launched.

Enter the PIN code and touch "Login" (Go to 13)

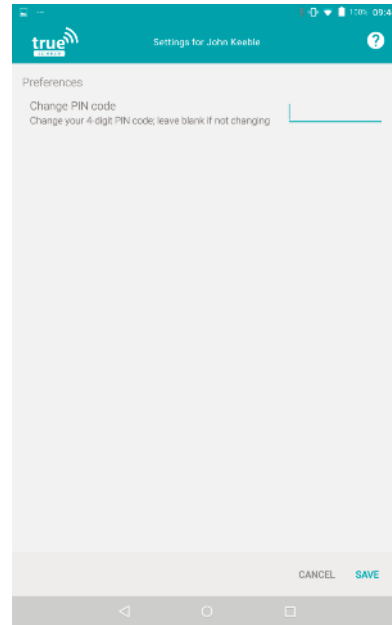
# User Accounts



13. We are now logged in as a non-administrator user.

The top section of the App settings menu is green and states the name of the user we are logged in as.

Touch **“Settings”** to access the user’s settings. (Go to 14).



14. The non-administrator settings screen is launched.

As this user is not an administrator, they can only change their own PIN code, they cannot edit App settings, create other users or edit other users.

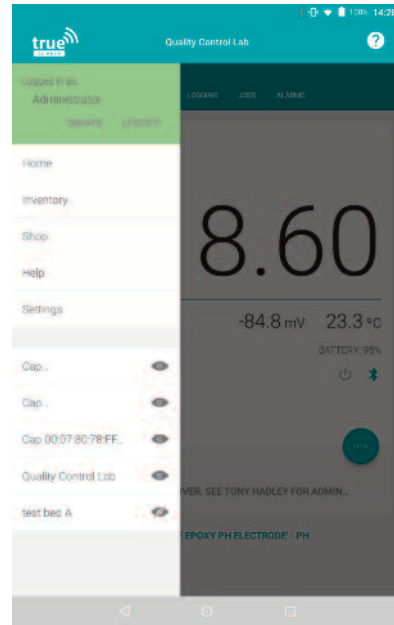
# Inventory



1. The Inventory manages all of the items in our measurement system, including the cap, electrodes and buffer solutions.

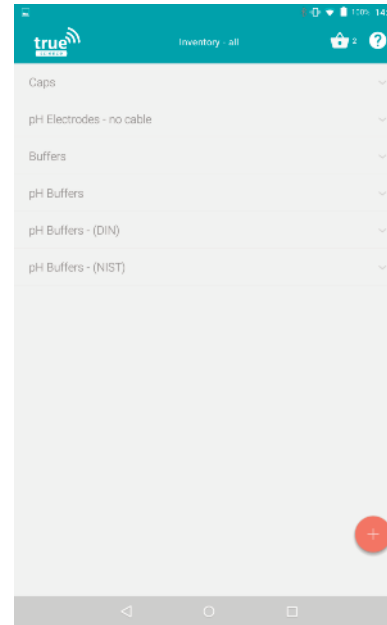
It allows you to re-order the same items you have used before, and will alert you when items have gone out of date.

To access the inventory view touch the left hand side of the screen and swipe right to open the app settings menu (Go to 2)



2. The app settings menu is launched.

Touch "Inventory" to go into the inventory screen. (Go to 3)



3. The Inventory screen is launched.

The items currently in our inventory are classified by type.

Touch on any of the categories to expand the view and see items in that category (Go to 4)

Alternatively touch the red plus icon to add a new item to your inventory (Go to 12).



4. The list of pH buffers currently in our inventory is expanded. Any items which are expired will show with the expiry date in red.

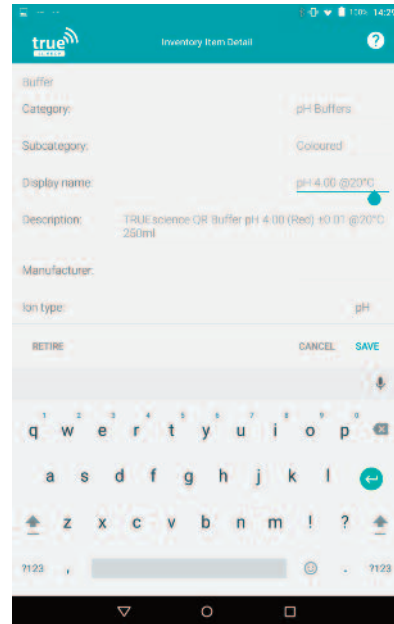
Touch edit to see and change details, or retire an expired item (Go to 5).

Alternatively touch purchase to add a replacement of this item to your basket (Go to "Shop and Basket" section)

# Inventory



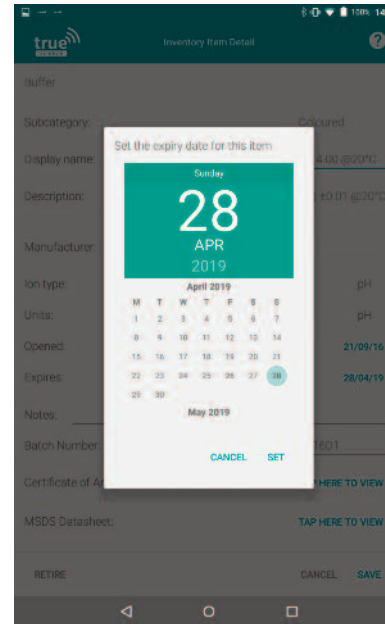
5. The Inventory Item Detail screen is launched. Touch the Display name field to change the name (Go to 6). Touch the opened and expires dates to change these dates (Go to 7) Touch **“Tap here to view”** to see the MSDS or Certificate of Analysis for chemical items (Go to 8). Touch **“Retire”** to retire an expired item from your inventory (Go to 11).



6. The keyboard is opened, type in the new name you want the item to have.

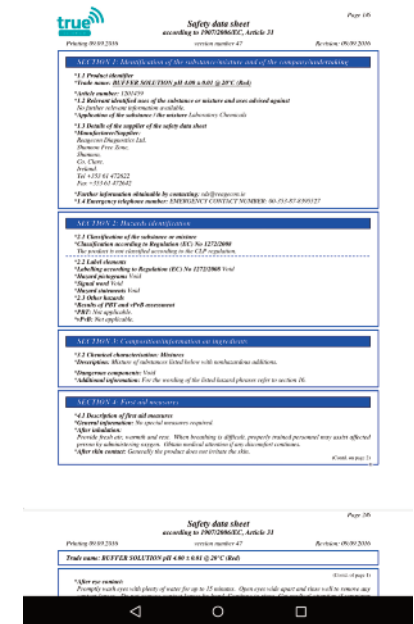
If this is the only change you wish to make, touch **“Save”** to save the changes (Go to 4).

Alternatively scroll further down to access open and expiry dates (Go to 7) or MSDS sheets (Go to 8).



7. After touching an **“Opened”** date or **“Expires”** date, the calendar is launched.

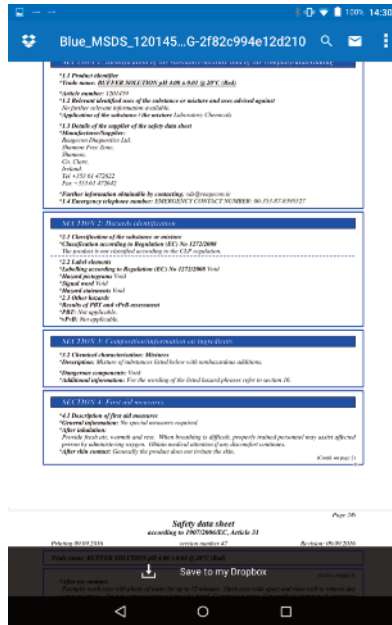
Touch the year in the top green box to quickly scroll through years. Touch the required year to select it, then scroll by month. Touch the required date to select it, then touch **“Set”** or **“Save”** to save the change. Alternatively touch **“Cancel”** to cancel without changing the date (Go to 5).



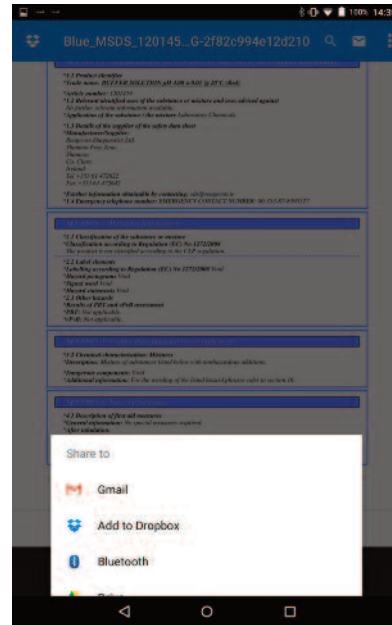
8. After touching **“Tap here to view”** next to the MSDS or Certificate of Analysis field, the file will be opened. You must be connected to the internet to view these files (Go to **“Connect to WiFi”** section) Touch and drag to move around the file, or pinch and zoom to zoom in and out. Tap anywhere on screen to view additional options (Go to 9) Touch the back button if you have finished (Go to 5).



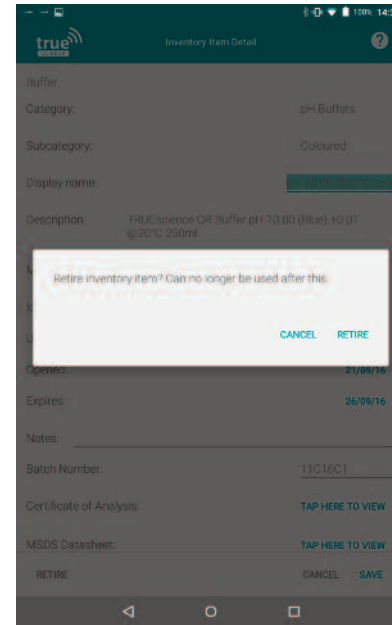
# Inventory



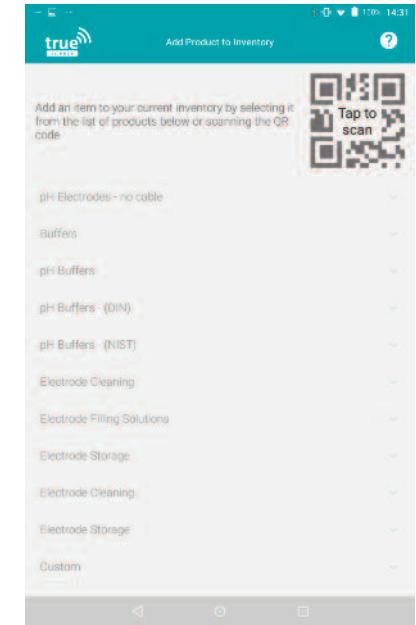
9. The additional options on the MSDS or Certificate of Analysis are shown. Touch the three dots in the top right hand corner, then touch the expanded “Share to” option to view all sharing options (Go to 10) Alternatively touch anywhere on screen to minimise the additional options again (Go to 8) Alternatively touch the back button if you have finished viewing the file (Go to 5)



10. The list of sharing options is shown. The exact options shown will vary depending on the apps you have installed on your device. Touch on any option to launch that app and share the file by this method. Alternatively touch the back button if you have finished viewing the file (Go to 5)



11. If an item has expired, been used up or is being replaced, we can retire the old item so it no longer appears in our inventory. Doing this regularly will ensure the inventory list is kept up to date, making it easier to browse and stopping unnecessary notifications. After touching “Retire” the dialogue box shown above appears, asking if we are sure. Touch “Retire” to retire the item or touch “Cancel” to return to step 5.



12. The Add Product to Inventory screen is launched. If the item you want to add is a TRUEscience item with a QR code, touch the “Tap to scan” message to launch the QR scanner (Go to 13) Alternatively touch on any category to expand it and add an item manually (Go to 15) Alternatively touch “Custom” to add a custom item (Go to 18)

# Inventory



13. The QR scanner is launched.

Hold the QR code for the item you wish to add in front of the tablet's camera.

Hold it steady and present the code to the camera face on, then wait 2-3 seconds for the scan to register (Go to 14)



14. The Inventory Item Detail screen is launched for the scanned item. The opening date will default to today, the expiry date will be set to the default period on electrodes, or be set to the actual value on buffers. Touch the display name field if you want to rename the item (Go to 6) or view MSDS sheets if required (Go to 8). When you are finished touch "Save" to save the item to your inventory.



15. The list of products in this category which we can add to our inventory is shown.

Scroll through the list to find the item you wish to add, and touch it to proceed (Go to 16)

Alternatively touch the category name to minimise this category again (Go to 12)

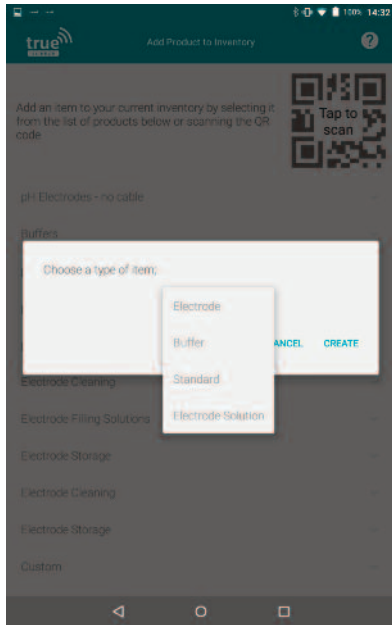


16. The Inventory Item detail screen is launched for the manually selected item.

The opening date will default to today, and the expiry date will default to +1 year. Touch these fields to edit them if required (Go to 7)

When you are finished touch "Save" to save the item to your inventory.

# Inventory



17. The box to add a new custom item is launched.

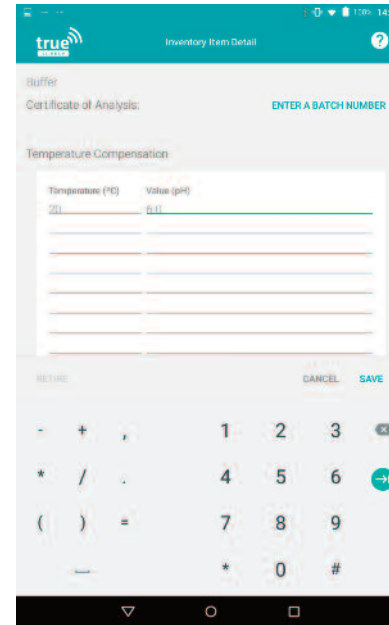
Touch the type of item word to expand a list of available item types.

Touch the required item type to select it, then touch "Create" to create the custom item. (Go to 18)



18. The Inventory Item Detail screen for a custom item is launched.

Touch the display name to edit the item name as required. Touch the open and expiry dates to set these as required. Touch the "Batch Number" field to enter a batch number if required. If the custom item is a buffer scroll down to the temperature compensation table (Go to 19) or touch "Save" to save a non-buffer item.



19. When adding a custom buffer, at least one row of the temperature compensation table must be filled out. If more rows are filled out, your calibrations using this buffer will be more accurate.

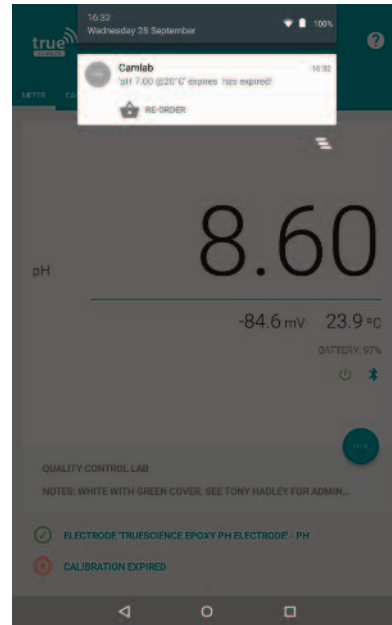
Touch the "temperature" or "Value (pH)" cells to enter values as shown on the buffer bottle label. Touch "Save" to save the buffer when you have finished.

# Notifications

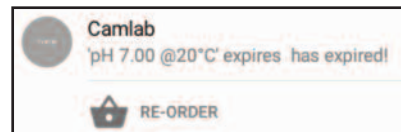


1. The TRUEscience app will alert you via notifications on your device when an item has expired, or when an alarm has been triggered.

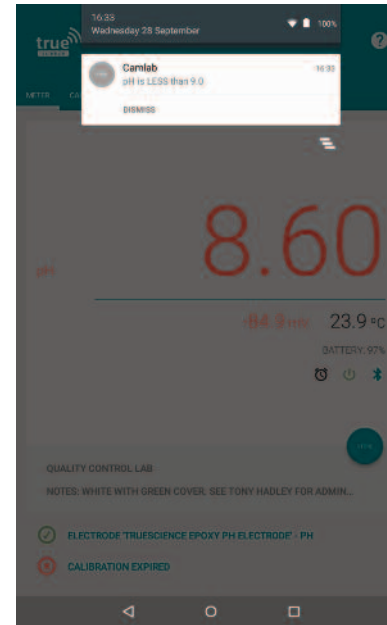
To view any current notifications, drag downwards from the top of the screen. (Go to 2 or 3)



2. An expired item notification is shown;



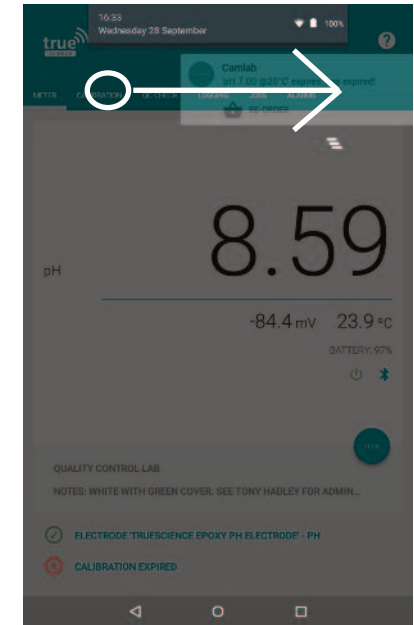
To re-order a replacement touch the shopping basket icon next to the word "Re-order" - this will launch the Basket and Shop screen with the item added to your basket (Go to the "Shop and Basket" section of this manual)



3. An alarm notification is shown;



To turn off the alarm, touch "Dismiss" - this will take you to the alarms screen (Go to the "Alarms" section of this manual)

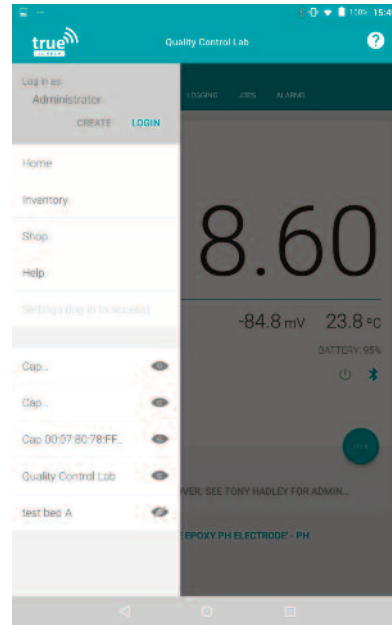
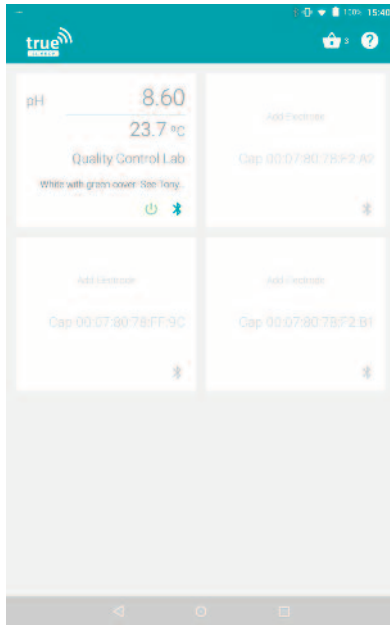


4. You can dismiss a notification without taking action by swiping it to the side.

This will not stop the alarm, or re-order the expired item.

The notification will appear again in around 1 minute if the trigger condition is still valid (e.g. if there is still an expired item in your inventory, or if the alarm conditions are still being met)

# Shop and Basket



1. Within the app you can order new parts or solutions and re-order parts or solutions you already have.

Access your basket screen by touching the basket icon shown in the top right hand corner of the multi-cap view or the inventory view (Go to 3)

2. If you are in another screen which does not show the basket icon, you can reach the shop and basket via the app settings menu.

Touch anywhere on the left hand side of the screen and swipe towards the right to expand the app settings menu as shown above.

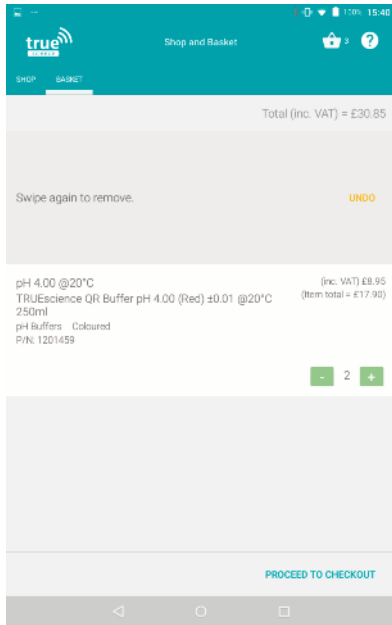
Touch "Shop" to proceed to your basket (Go to 3)

3. The Shop and Basket screen is launched. If you have already added items to your basket (by touching "purchase" next to that item in inventory view) they will show here. Items will remain in the basket until they are purchased or deleted. Use the green + and - buttons to adjust the quantity of each item. Touch proceed to checkout to buy the items (Go to X) or delete any items you no longer need (Go to 4)

4. If there is an item showing in your basket which you no longer require you can delete it.

Touch and hold on the item name near the left hand end, and swipe it over to the right as pictured above (Go to 5)

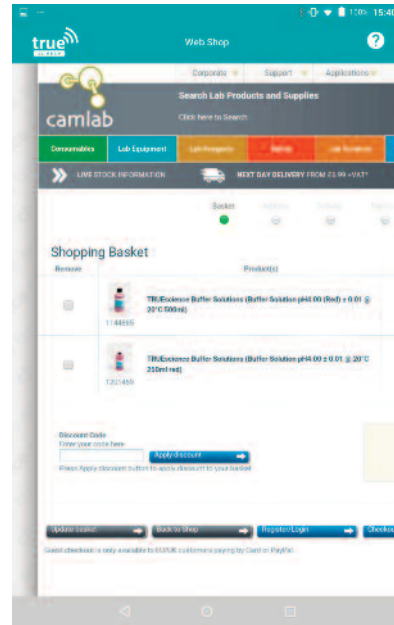
# Shop and Basket



5. The item has been hidden, and the message “Swipe again to remove” is shown.

Repeat the action, swiping from the word “swipe” to the right of the screen, to delete the item from your shopping basket.

Alternatively touch “Undo” to restore the item to the basket (Go to 3)



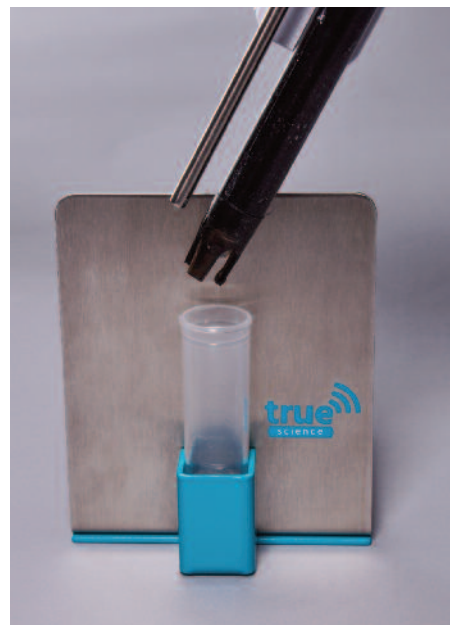
6. After touching proceed to checkout you will be redirected to one of our partner stores to complete your purchase.

You must be connected to the internet, and depending on the speed you may need to wait up to 1 minute for the page to load. When the page has loaded, follow the directions on screen to complete the purchase. Alternatively touch the back button to go back to basket view (Go to 3)

# Everyday Care

Properly caring for your equipment can help to extend the working life of the system and ensure your readings remain fast and accurate.

Taking a few minutes each day to make sure that the system is cleaned and stored properly will greatly lengthen the lifetime of your pH electrode.



## Store the electrode in storage solution

The storage stand is the simplest way to ensure the pH electrode is kept immersed in storage solution when not in use. Use the TRUEscience own storage solution (item 1145514) or the electrode manufacturer's recommended solution. NEVER store the electrode in water or dry - this will damage the electrode, possibly beyond repair.



## Rinse the electrode after use

After any sample or buffer, or before putting the electrode into storage solution, always rinse it clean with water. This prevents cross-contamination between different samples and removes any residue from the electrode before it dries onto the surface.

Rinse under the tap, in a beaker of rinse water (changed regularly) or with a wash bottle.



## Keep the cap dry

While the electrode and temperature probe can be placed in liquid samples, the top cap should be kept dry.

Take care when working and dry off small splashes with a dry towel.

**If the cap is dropped into water it may be damaged beyond repair - carefully remove it and leave to dry for 24 hours before attempting to use it again.**

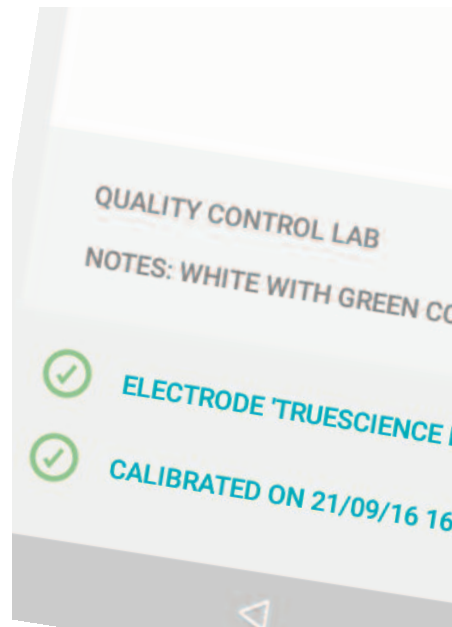
# Everyday Care



## Choose an electrode to suit your samples

Specialist electrodes may be needed for samples that contain proteins, are highly corrosive, are viscous, are solid or semi-solid, TRIS buffers or food products.

We can help you choose an electrode if you're unsure and remember you can use any electrode with a standard S7 connector - even from other manufacturers!



## Calibrate regularly

We recommend calibrating your pH electrode at least once a day, to keep it accurate.

Follow the instructions in the calibration section of this manual for full details on how to do this.



## Treat the electrode with care

The sensing tip of the electrode is highly delicate, and should be treated with care.

Dropping the electrode or letting it knock against surfaces or containers can crack the delicate sensing surface.

Rubbing the electrode to clean it will build up electrostatic charge that will stop it from working - *only* clean by stirring gently in cleaning solution.



## Remember that pH electrodes do expire!

Even with very good care, the delicate nature of pH electrodes means that they do have a finite life.

With the right electrode for the samples and careful maintenance, we expect them to last around 12 - 24 months.

All electrodes will need replacing eventually.



# Troubleshooting

Category	Issue	Suggested Solutions
Android System  <i>(See also the "Android Hints and Tips" section of this manual, or the manual for your tablet or device)</i>	Basic Controls	<p>Activate the screen by pressing the power button lightly.</p> <p>Either swipe up or enter the pin code or unlock pattern as prompted by the tablet.</p> <p>Central icon (usually a circle O but could be a house icon if Android 4.0) – this takes you to the home screen of the tablet from any other screen.</p> <p>Back icon (usually a triangle or arrow pointing left) – this goes back to the last place you were.</p> <p>Multi-screen icon (usually a square or could be 2 squares laid over each other on Android 4.0) – this shows all the current open apps. Swipe them to the side to fully close them, or touch on them to bring them to the front.</p>
	Identifying System Information	<p>Open the settings menu by swiping down from the top of the screen and touching the cog icon.</p> <p>Scroll through to find the "system" section of settings, within this there will be an option called "About Tablet" or "About" – here you can see the Android version, model and make of the tablet.</p> <p>NB Android version 5.0 or above is required to run the TRUEscience app.</p>
	Changing Tablet Settings	<p>Brightness, auto-rotate and screen sleep timer can all be accessed through the settings menu, by dragging down from the top of the screen and touching the cogs icon.</p> <p>A screen sleep time of 10 minutes is recommended for ease of use with the TRUEscience app.</p>

# Troubleshooting

Category	Issue	Suggested Solutions
Android System (continued)	Accessing Settings	<p>Swipe down from the top of the screen to open the settings and messages.</p> <p>This can include Android messages such as battery indications, apps due for updates, notifications from apps.</p> <p>You can access the tablet settings (e.g. screen brightness, unlocking method and security...) by touching the cog icon.</p> <p>There may also be connectivity settings (e.g. turning on and off data, WiFi or Bluetooth) in the drag down menu.</p> <p>Some tablets may have two menus accessible by dragging down from the top of the screen on the left or right hand side.</p> <p>Some tablets may require you to swipe down to access a short menu, then swipe down again to see the full menu.</p>
	Identifying System Information	<p>Open the settings menu by swiping down from the top of the screen and touching the cog icon.</p> <p>Scroll through to find the "system" section of settings, within this there will be an option called "About Tablet" or "About" – here you can see the Android version, model and make of the tablet.</p> <p>NB Android version 5.0 or above is required to run the TRUEScience app.</p>

# Troubleshooting

Category	Issue	Suggested Solutions
Android System <i>(continued)</i>	Connectivity	<p>Airplane mode may be turned on, or WiFi or Bluetooth may be turned off – drag down from the top of the screen to see which are turned on and off.</p> <p>Alternatively you can access this by going to settings (drag down from the top of the screen and touch the cog icon) then go into “wireless and network” options, you may need to touch “more” to see all settings. See which icons are turned on and off, touch them to toggle them on/off.</p> <p>If connection issues are ongoing, turning the WiFi or Bluetooth connections off and back on can reset these to resolve the issue.</p> <p>Clearing the cache of the app may help – go to Settings (drag down from the top of the screen and touch the cog icon) then in the “Apps” section find the TRUEscience app, touch on to open options and touch “clear cache”.</p> <p>NB if you select “Clear Data” this will remove all historical records of calibrations, the electrode you have set up, the cap you are connected to... you will then need to set up the whole app as if from the beginning.</p>
App help and awareness	App not able to install	<p>Must be Android 5.0 or above – check this in the system information, see “Identifying System Information” in the “Android System” section.</p> <p>You must have WiFi or data access to be able to download the app from the play store. If you do not have access to WiFi you may be able to install it from an SD card – you will need to go into Settings &gt; Personal &gt; Security</p> <p>Tick or turn on the option “allow installation of apps from sources other than the play store”</p>

# Troubleshooting

Category	Issue	Suggested Solutions
App help and awareness (continued)	App has crashed and will not reopen	<p>A hard force stop may resolve this. Go to settings (swipe down from the top of the screen and touch the cog icon) then Apps and find the TRUEscience app. Touch on it to access options, and select "Force Stop".</p> <p>Now return to the home screen of the tablet (the circle or house icon) and try to reopen the app.</p>
	Accessing additional settings	<p>Swipe from the left hand side of the screen towards the centre to open the additional settings.</p> <p>Here you can see all visible caps, log in as a specific user, access the inventory, shop and help.</p>
	Accessing the Admin settings	<p>Swipe from the left hand side of the screen towards the centre to open the additional settings. Touch the word "Login" to log in as the administrator and access advanced settings. See also the "User Accounts" section of this manual.</p>
	Admin and other users	<p>On initial setup the only user is the Admin, which has a default access pin of 1485. You can change this pin after the first login by touching "settings" on the additional settings menu and touching in the "change PIN code" option.</p> <p>Once the administrator is logged in they can create new users and set their permissions. In the additional settings menu on the left hand side touch "create" then enter the new user's name and PIN code to set it up.</p> <p>These secondary users cannot change calibration, buffer and probe expiry settings or change other people's PIN codes, they can only change their own PIN within settings.</p> <p>In the additional settings menu, touch "log out" to log out of the current user. Touch on the name to view a drop down list of all available users you may log in as, then touch login to enter the PIN for that user account.</p> <p>When you are logged in as a user it will be recorded against jobs, calibrations and logs to state who performed these tasks.</p> <p>See also the "User Accounts" section of this manual.</p>

# Troubleshooting

Category	Issue	Suggested Solutions
App help and awareness (continued)	Viewing multiple caps	<p>On the multi-probe screen within the app you can see all of the caps that your device has ever connected to.</p> <p>You can change the view between a list or a grid in the side menu bar – swipe from the left hand side of the screen towards the centre to open the additional settings. Touch “show as list” or “show as grid” to toggle between the two. Touch outside of the side bar menu to return to the multi-probe screen.</p>
Getting Further Help	Send a screen shot of the problem to TRUEscience support team	<p>Take a screen shot to show the support team exactly what you can see on your screen.</p> <p>The method may vary by tablet but is always a 2 button press at the same time, either;</p> <ul style="list-style-type: none"> <li>Power + volume down</li> <li>Power + volume up</li> <li>Power + home button</li> </ul>
	Accessing in app help	<p>Open the additional settings menu by swiping from the left hand side of the screen towards the centre. Touch Help to open the help screen.</p> <p>Here you can view information about pH theory, full user manuals and a link to online help videos (WiFi required to view these)</p> <p>You can also touch the “live chat” to speak to one of our support team via online web chat (WiFi required)</p>

# Troubleshooting

Category	Issue	Suggested Solutions
Getting Further Help (continued)	Accessing other help	<p>Copies of the full user manuals and Quickguides can be accessed through the in-app help – swipe from the left hand side of the screen while in the app towards the centre, then touch “help” and select “manuals”</p> <p>Alternatively access pdf copies of full user manuals through <a href="http://www.truescience.co.uk">www.truescience.co.uk</a></p> <p>Video help is available at <a href="http://www.truescience.co.uk/videos">www.truescience.co.uk/videos</a></p>
Google Play	Setting up the tablet	<p>You will usually be prompted to set up a Google Play account – this allows you to download apps from the Google Play app store.</p> <p>If you already have an @gmail.com email address you can log in with this, or create a new one for free.</p> <p>You may be asked to enter a recovery phone number – this is strongly recommended and will allow you to easily get back into your account if you are locked out or forget the password.</p> <p>It is strongly recommended to keep a record of the gmail address and password so that all persons who may need to access the tablet can do so.</p> <p>We have a video guide on this topic available at <a href="http://www.truescience.co.uk/videos">www.truescience.co.uk/videos</a></p>
Tablet Hardware	Battery going flat quickly	<p>Leaving apps open in the background may cause the battery to drain faster – close apps by touching the “multi-screen” icon and swiping each open app to the side to close it fully.</p>

# Jargon Buster

Confused? No need!

This quick Jargon Busting glossary will help make sense of some of the terms we use when talking about testing, the app or the Android system.

If there is anything you're still unsure of, just ask.

Our friendly UK based team are available 0900 to 1730 GMT;

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You can also reach us via the live web chat available through our website;  
[www.truescience.co.uk](http://www.truescience.co.uk)






Word	Definition
Buffer	A buffer (or pH buffer) is a solution which has a known and fixed pH value. This means we can use them to calibrate the electrode, because we are definitely sure what the reading should be.
Calibration	Calibration is required on most electrode systems to allow the mV signal being sent to the electronics in the meter to be compared to known standards. This then allows you to measure samples and display the corresponding pH or concentration.
Device	Your device is just another word for the Android Tablet or Smartphone. We usually refer to the tablet, since this is supplied in the full TRUEscience kit, but of course you can bring your own Android device which may be a Smartphone or a Tablet.
DI	De-Ionised - normally associated with water. Although DI water is good for rinsing electrodes to ensure no ions are present it should not be used as a storage solution.
Dilution	Used when making up standards from a stock solution. Typically you will do a 1:10 dilution of your stock solution followed by a 1:10 dilution of your first dilution.
Electrode	A measuring cell that generally produces a small mV signal when placed in solutions containing ions or oxygen
Ion	An ion is an atom which has gained or lost one or more of its valence electrons giving it a net positive or negative charge.
ISE	Ion Selective Electrode - an electrode which responds to the presence of specific ions in solution. a pH electrode is an electrode specific to Hydrogen but other types are typically used for things like chloride ions, nitrate ions etc
ISAB	Ionic Strength Adjustment Buffer - these buffers are used to increase the signal received from an ISE when measuring low concentrations. By adding the same amount of buffer to your standards and samples you can increase the overall signal and sensitivity of measurement




# Jargon Buster

Word	Definition
Standard	A solution usually containing a known concentration of a species of interest. These tend to be high concentration to ensure they are stable. When used to calibrate for ISE measurement they will be diluted to bracket the concentration of the samples being measured. It is important when making standards that you use a matrix as similar as possible to your sample.
mg/l	milligrams per litre - this is often used to express the concentration of a standard and quite literally refers to the number of milligrams of standard material there would be in a litre of solution.
PPM	parts per million - a common unit of measure for standards which expresses values as parts per million s opposed to mg/l




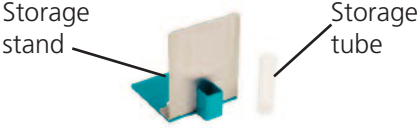




# Spares and Accessories

Item Code	Item Description	
1201564	Battery, 1/2 AA size for cap	
1201459 1144885 1144887	pH 4 Buffer Solution (RED) with smart QR code 250ml 500ml 1L	
1201458 1144955 1144960	pH 7 Buffer Solution (YELLOW) with smart QR code 250ml 500ml 1L	
1201460 1145008 1145011	pH 10 Buffer Solution (BLUE) with smart QR code 250ml 500ml 1L	
1145514 1145513	Electrode Storage solution 500ml 1L	

Item Code	Item Description	
1201711	TRUEscience Double Junction Epoxy electrode <i>(as supplied in the kit)</i>	
1201574	TRUEscience Double Junction Flat pH electrode	
1201575	TRUEscience Glass pH electrode	
1201710	Spare Battery Covers, pack of 3 (Grey, Teal and Red)	
1201813	Spare Battery Covers, pack of 3 (White, Teal and Red)	

# Spares and Accessories

Item Code	Item Description	
1201708	Android Tablet with Bluetooth <i>(may be 7" or 8" screen, different brands or colours, but always compatible)</i>	
1201562	Charging stand for tablet - includes mains power cable with UK plug, stand base and USB cable	
1201563	Adjustable stainless steel stand for tablet <i>(Please note this is a holding stand only and does not charge the tablet)</i>	
1201695	Storage Stand (includes 2x storage tubes)	 <p>Storage stand</p> <p>Storage tube</p>
1201696	Storage Tubes only - pack of 2	
1201698	Replacement holding clip - White	
1202265	Replacement holding clip - Grey	
1201709	Electrode soaker bottle / Storage bottle	



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