VERICOM NETWORKS LTD

PETROL STATION WET STOCK AND QUALITY MANAGEMENT SYSTEM

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EXECUTIVE SUMMARY

As Vericom Networks, we offer a solution that provides real-time and continuous monitoring of wet stock at refill stations.

The solution as well provides visibility of water levels and temperatures in fuel storage tanks.

Our solution works to ensure that fuel distribution is tracked and recorded accurately and in real time.

This information can then be used by petroleum Brands in making critical decisions that will ensure timely delivery of quality service to their customers.

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PROBLEM STATEMENT

- **Dumping** -Resellers appointed by petroleum Brands purchase unauthorised fuel from uncertified sources, stock and sell this fuel in petroleum Brands branded stations. This exposes the brand as the quality of fuel is not approved by petroleum Brands and contravenes standards set by energy regulatory commission.

- **Unaccountability** - It is very difficult to keep transporters accountable where there is no tamper proof, non-human reliant monitoring solution for all the deliveries done in every petrol station. Drivers more often than not deliver less fuel than what was collected from the depot. They collaborate with the reseller agents and deliver less but the records are altered.

- **Stocking** - The supply chain management teams in most fuel distributors, petroleum Brands included rely on human intervention to get the stock levels at their branded station tanks. This is a system prone to manipulation and is more often than not exploited and false information given to head office. It is therefore very difficult for the said team to effectively audit the reseller and know their performance.

- **Adulteration –** Many distributors and compromising the quality of petrol and diesel sold to consumers when they add kerosene. This affects the quality and therefore affecting engines of vehicles and machinery using the fuel. This has also costed many leading petroleum brands bad reputation and loss of business.

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THE SOLUTION

- Vericom Networks has partnered with FluidIntel to provide an advance fuel management system named AdaptFMS. This is geared towards providing petroleum Brands the best platform to solve the above problems and streamline the delivery process while providing granular analytics to aid the key stakeholders in decision making.

- Our solution utilises various hardware components which are installed to collect the required data which are then sent to a back-end platform that is hosted either at the cloud or at the customer secure server rooms. The information is then displayed on an easy to use dashboards accessible through a user friendly web interface (AdaptIQ).

- We offer tamper proof hardware which ensures the information collected is accurate and reliable. The software is highly robust and can be integrated to an existing ERP system to ensure all the information is available from the same platform within the company. This will ensure layered access of information by various users within the organisation.

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Solution Features

AdaptFMS addresses the highlighted challenges by providing a confirmation and correlation facet that will provide statistics on:

- Fuel Density at anytime (Real-time)
- How much fuel was received at the retail petrol stations
- The driver who delivered the fuel
- Time fuel was delivered
- Temperature of fuel in the tank at all time and this is transmitted real-time
- Water level in the tank if there is any at all.
- Available stock available at any time in each of the tank hence helping the distribution team in planning

The web based platform AdaptIQ through its inbuilt algorithms is able to provide analytics that the business can use to ensure that:

- No fuel is being lost within the supply chain
- Fuel is not adultered (added kerosene) between the depot and the refill station by transporters.
- The franchised retail stations are always stocked
- Only their fuel is being sold at the franchise petrol stations
- Safety of the petrol station by always knowing the temperature
- Ensuring in case there is water in the tank it is dealt with before it affects the quality

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Wet stock quality

The Kenyan fuel industry has faced major scrutiny for the sale of low quality fuel infused with kerosene to maximise on profits. This has greatly impacted the reputations of the major fuel distributors as well as lowered the trust their customers have in the service offered. AdaptFMS has been designed to tackle some of these issues by addressing quality assurance challenges faced. The solution incorporates world class sensors that are able to monitor various characteristics of the fuel stored and provide analytics which can then be used by the quality assurance team to determine the quality of fuel. The sensors are able to monitor various aspects of the fuel such as:

- Density value of the fuel
- Water volumes present in the fuel
- Temperature of the fuel
- Vapour density within the storage unity

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HARDWARE COMPONENTS

- **Fuel gauge** – this is a deep digital smart dip stick installed in each tank to measure fuel level, water level and temperature of the fuel in the tank. This continuously takes these values and updates on a server gateway which in turn updates the console and sends the same information to HQ via the modem connected to it.
- **Colibri Console** – This is a display unit at each petrol station which continuously displays the information received from the digital gauge installed in the tank. This displays level in the tank, water level and temperature of the fuel in the tank.
- **Flow meter** - this is mounted on the ingress of every tank at the petro station. This is to measure all the fuel that is poured into the tank from the tanker. This will measure the fuel in litres and sends that information to the server gateway which will in turn send the information to the server via the modem connected.
- **Server gateway** – this is the point where all the site devices connect and upload data. This device gets the information interprets it and sends it accordingly. It sends information to the console for display and send the same information and more to the server for remote users to access the information.
- **RFID card reader** – all the delivering drivers will be given an Rfid card with their bio data so that whenever they deliver fuel at any station, they swipe the card and the system will register them as the delivery driver. This will be used to note the most effective and punctual drivers. For example, if a driver delivers late always and in less quantity, then petroleum Brands can request the transporter to replace the driver.

Inventory monitoring

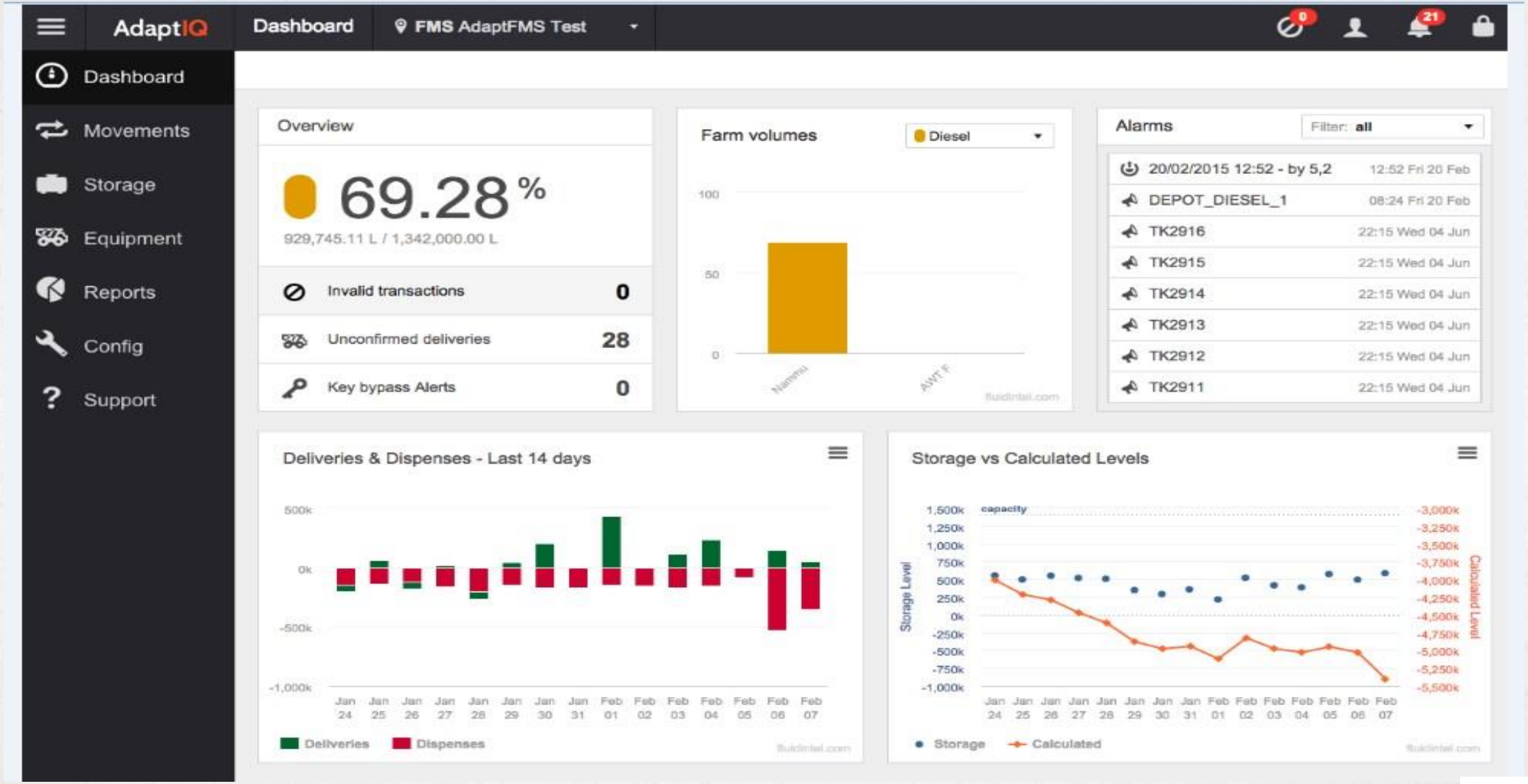
AdaptFMS can provide both real-time snapshots of current inventory levels as well as transaction histories showing consumption levels. The AdaptIQ web application provides all tank volume data via a secure web browser interface. This includes live readings of all tanks plus historical stock level trends and alarms via email at settable re-order points and other customisable events.

Accounting

- Delivery Reports
- Stock Trend
- Stock On Hand (with past and average usage)
- Historical Tank Volumes
- Product Consumption Reports
- Single Product by Group and Category
- Driver efficiency report

REPORT SAMPLES

Main Dashboard



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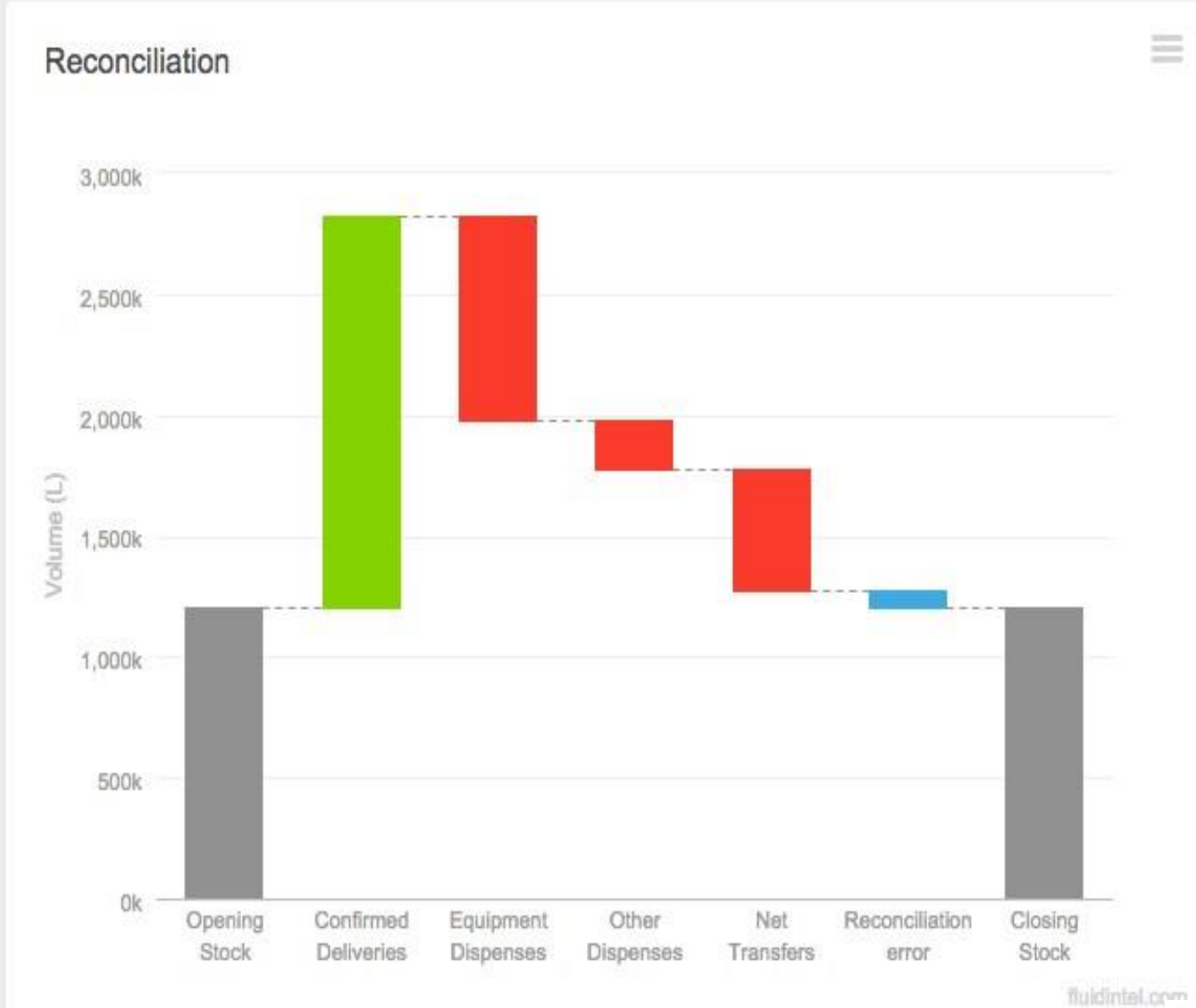
Reconciliation Screen

Overview

Opening Stock	1193646.39 L
Deliveries	
Confirmed	▲ 1617937.60 L
Unconfirmed	0.00 L
Rec. adjustments	70983.10 L
Dispenses	
Equipment	▼ 844441.33 L
Other	▼ 200251.46 L
Net transfers	▼ 500039.40 L
Closing Stock	1195402.83 L
Reconciliation Error	-71448.97 L
Error as outflow %	-4.63%



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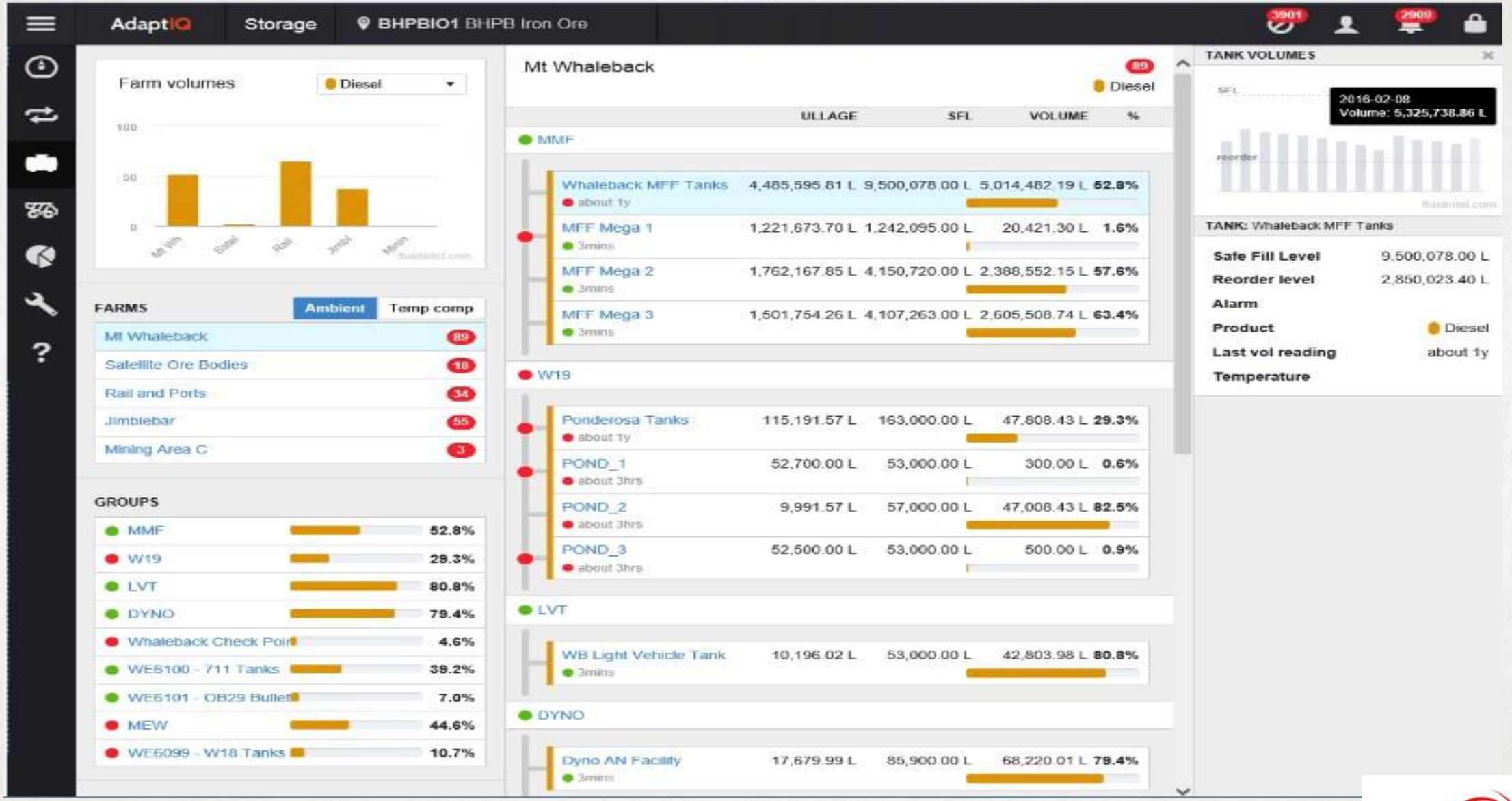
Multiple Tanks Status



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