

# UtilAlert – Excavation Encroachment Notification

GPS & Motion Sensor-Based Dig-in Prevention  
For Agriculture & Construction Equipment

## Mark Congdon

Vice President – Technical Product Development  
mark.congdon@hydromaxusa.com  
425.606.0644

# HYDROMAX USA

Advanced Water, Wastewater and Gas Data Collection

# Changing Industry



## Safety

Recent incidents have highlighted the need for advanced integrity programs



## Security

The frequency and sophistication of cyber-attacks continues to intensify



## Sustainability

Industry leaders are focused on cleaner, more sustainable operations



## Efficiency

A dwindling pool of skilled workers must tackle a growing number of tasks

# Improved Safety and Reduced Emissions

## PIPES Act of 2020 Overview

The **Protecting Our Infrastructure of Pipelines and Enhancing Safety (PIPES) Act of 2020** was signed on December 27, 2020. This bipartisan law strengthens PHMSA's safety authority and includes many provisions that will help PHMSA fulfill its mission of protecting people and the environment by advancing the safe transportation of energy and other hazardous materials.

The **rulemakings chart** is responsive to Section 106 of the PIPES Act 2020 which states that, "the Secretary of Transportation shall publish an update on a publicly available web site of the Department of Transportation regarding the status of a final rule for each outstanding regulation..."

Section 106 (a) defines a mandate as:

- (1) a final rule required to be issued under the Pipeline Safety, Regulatory Certainty, and Job Creation Act of 2011 (Public Law 112-90; 125 Stat. 1904) that has not been published in the Federal Register;
- (2) a final rule required to be issued under the PIPES Act of 2016 (Public Law 114-183; 130 Stat. 514) that has not been published in the Federal Register; and
- (3) any other final rule regarding gas or hazardous liquid pipeline facilities required to be issued under this Act or an Act enacted prior to the date of enactment of this Act that has not been published in the Federal Register.

The links included on this page can provide more details related to the content of the PIPES Act.



# Improved Safety and Reduced Emissions

- ✓ Emission Reduction Mandates
  - ✓ 60% of fugitive emissions from dig-ins
  - ✓ 30% of 3<sup>rd</sup> party digs have no 811 ticket
- ✓ ESG
  - ✓ Environmental, Social, Governance
- ✓ Tracking and Traceability
  - ✓ Not new
  - ✓ Where is it
  - ✓ What is it



# Improved Safety and Reduced Emissions Excavation Damages

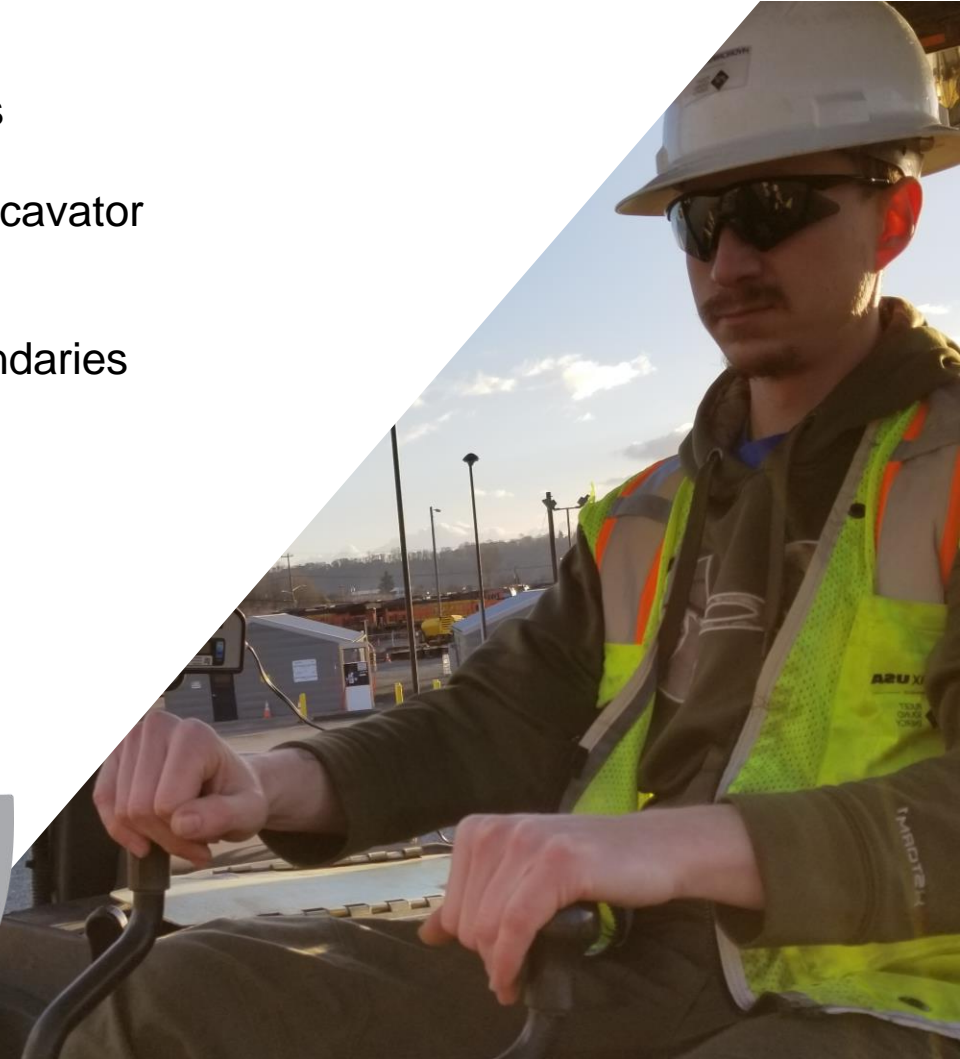


# WHAT IS UTILALERT?

*Transforming Safe Pipeline Excavation Operations*

- ✓ Discern digging activity from other activities through on-board sensors
- ✓ Capture the GPS location of the excavator in real-time
- ✓ Compare the location to utility boundaries using GIS databases

**HYDROMAX USA**  
Advanced Water, Wastewater and Gas Data Collection

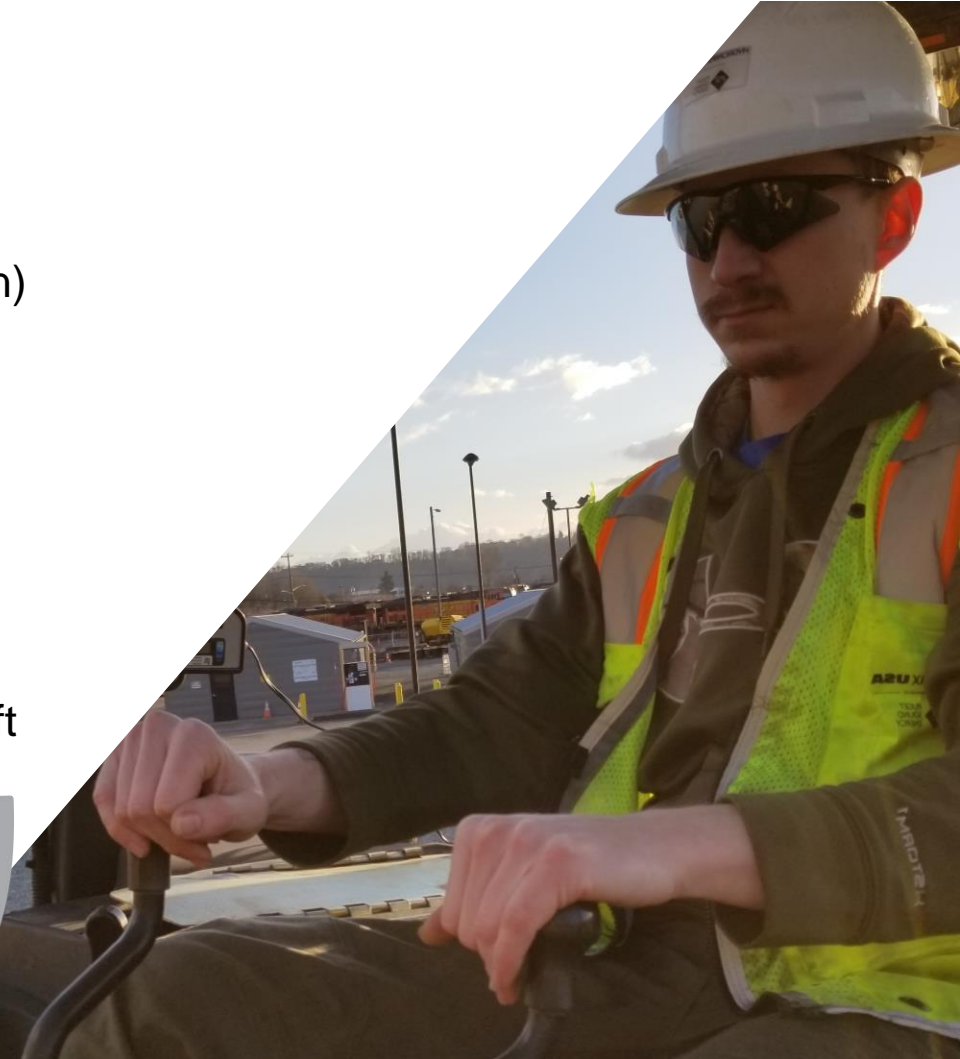


# WHAT IS UTILALERT?

*Transforming Safe Pipeline Excavation Operations*

- ✓ Alert the excavator operator and management when digging in an area that is in proximity to a high consequence utility, or does not have a dig ticket (requires local 811 center and utility participation)
- ✓ Transmit the information through the cellular network to a dashboard and stores it in a database
- ✓ Track last known position of excavator for more productive equipment management and theft recovery

**HYDROMAX USA**  
Advanced Water, Wastewater and Gas Data Collection



# DIGGING DEEPER

*Alerts & Geo-Fencing*

Key to damage prevention is UtilAlert's **onboard multi-axis Inertial Measurement Unit (IMU) and patent-pending software that enables real-time alerts and geo-fencing.** The operator notification system includes a loud buzzer, flashing lights and a message screen.

Management alerts are flexible and customer defined through an online interface. Alert systems can be through email or text messaging as selected.





# DIGGING DEEPER

*Alerts & Geo-Fencing*

The GPS also provides geo-fencing of fleet storage yards and **real time access to last known position** on mobile and desktop applications- improving fleet management and recovery of missing equipment.



# BENEFITS & ABILITY

## *Key Benefits*

- ✓ Improved transparency on excavation activities in the field
- ✓ Reduced risk when digging near underground pipelines
- ✓ Enhanced situational awareness through real-time data streams of excavation locations and movements
- ✓ Historical data archiving for big data analysis and trend identification



# BENEFITS & ABILITY

## *Key Benefits*

- ✓ Potential insurance benefits from continual safe construction job site
- ✓ Tracks digging activities outside of authorized boundaries
- ✓ Improves fleet management capabilities overall
- ✓ Improves employee compliance with good safety practice with timely supervisor reinforcement



# BENEFITS & ABILITY

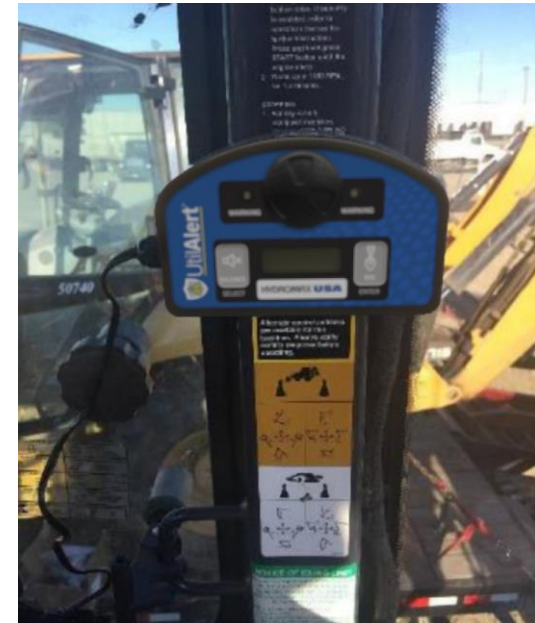
## *Key Benefits*

- ✓ Communicate with the infrastructure locator database
- ✓ Locate the excavator and other equipment in motion in relation to underground infrastructure
- ✓ Determine the current equipment activity being performed



# Improved Awareness Through Technology

- Identify excavator digging activity
- Identify excavator activity within proximity to mapped distribution and transmission lines using user-defined geofences
- Configurable text and email alerts for notifications
- Remote monitoring with dashboards

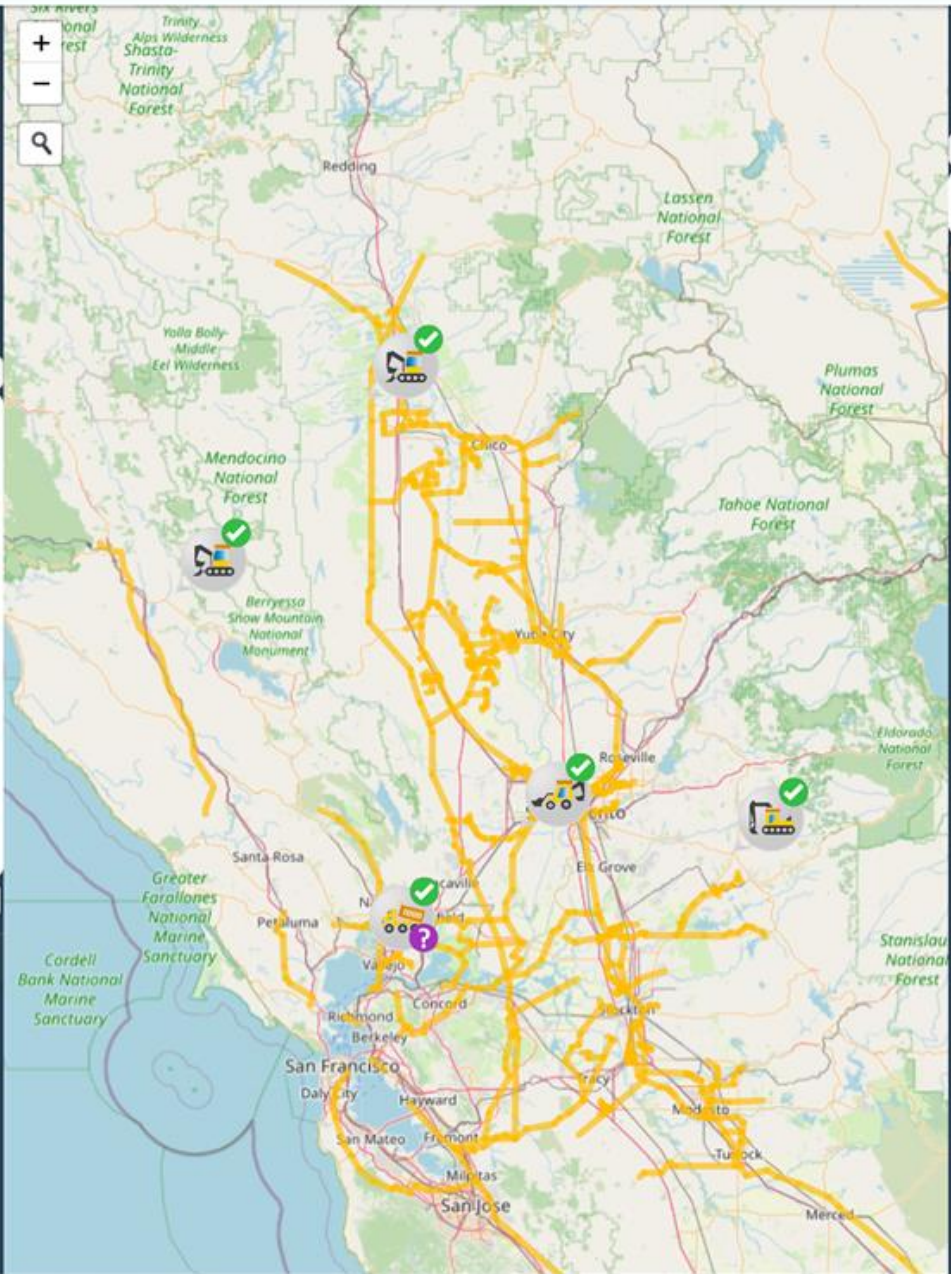




- Western Light & Gas
- Contractors
- Home Region
- Regions
- Devices

Machine	Info	Status	Alert	Mute
UA 4 Operator				Action
Demo 5 Stewart, A...				Action
Demo 3 Operator				Action
UA 6Z Viniard, Jeff				Action
Demo Hit... K, Saliya				Action
Demo 14 Operator				Action
Demo Cat Stewart, A...				Action

Previous 1 Next



Devices Alert

Machine	Info	Status	Alert
Demo 5 Stewart, A...			

Previous 1 Next

Device History

Device Name: Demo 5

From Date: 06/22/2021

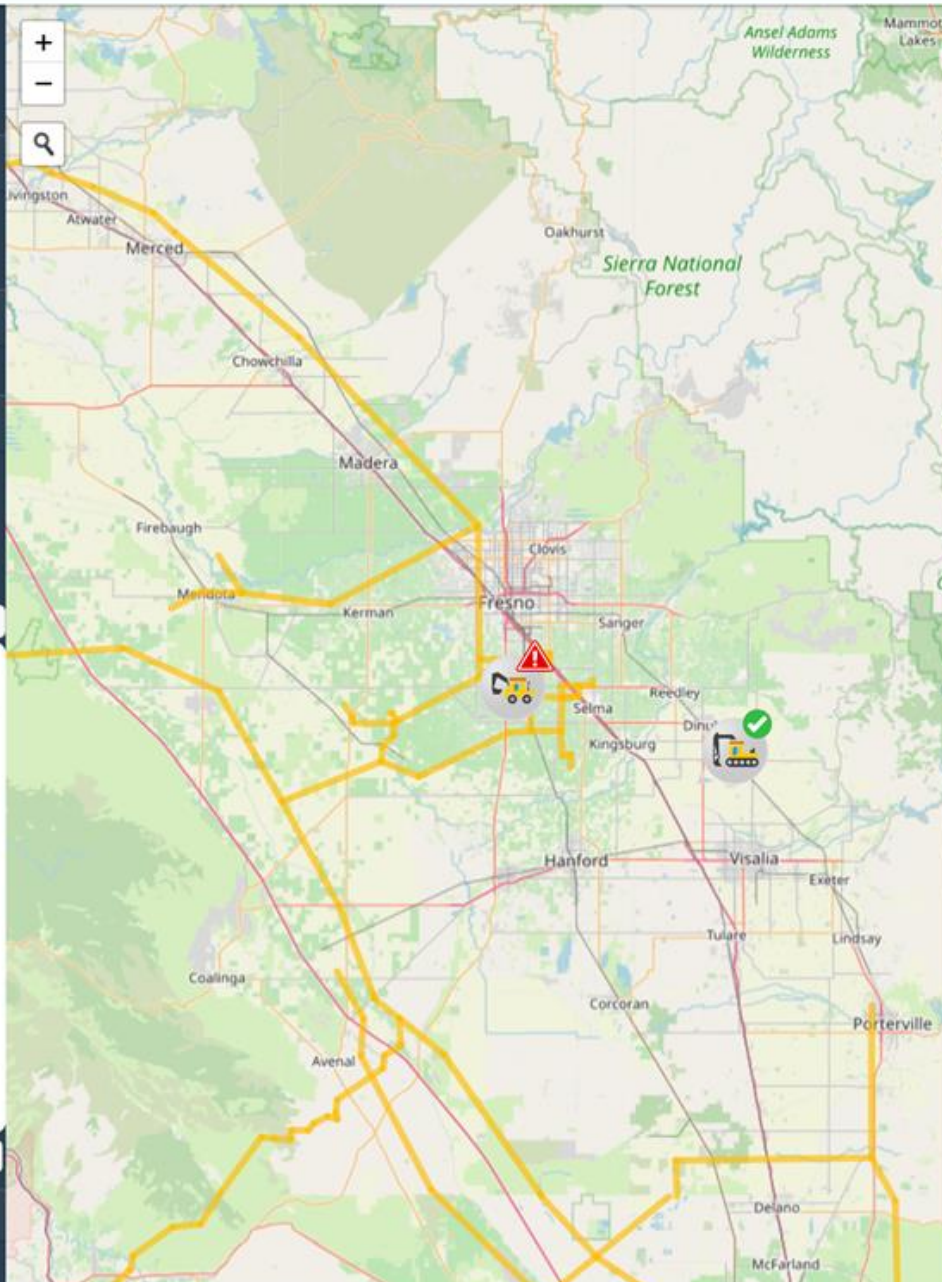
To Date: 06/22/2021

Search Location Search

Manage



- Western Light & Gas
- Contractors
  - Pro Services
  - Scott Construction
- Home Region
  - South
- Regions
  - Central
  - North
- Devices



Machine	Info	Status	Alert	Mute
UA 4 Operator				Action
Demo 5 Stewart, A...				Action
Demo 3 Operator				Action
UA 6Z Viniard, Jeff				Action
Demo Hit... K, Saliya				Action
Demo 14 Operator				Action
Demo Cat Stewart, A...				Action

Previous 1 Next

Manage

Devices Alert

Machine	Info	Status	Alert
Demo 5 Stewart, A...			

Previous 1 Next

Device History

Device Name: Demo 5

From Date: 03/31/2021

To Date: 06/22/2021

Search Location Search

Dark footer area

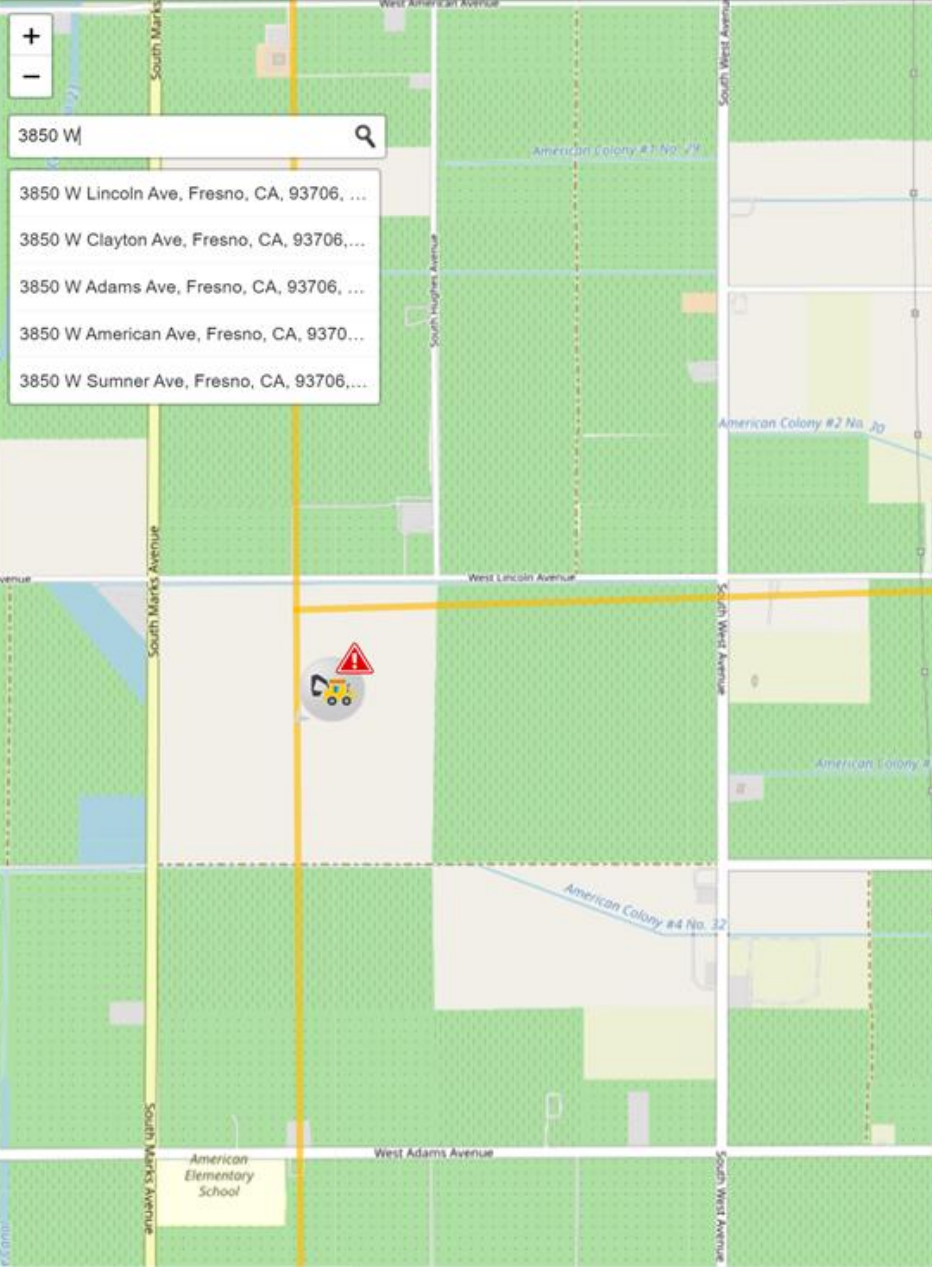


- Western Light & Gas
- Contractors
- Home Region
- Regions
- Devices

Machine	Info	Status	Alert	Mute
UA 4 Operator				Action
Demo 5 Stewart, A...				Action
Demo 3 Operator				Action
UA 6Z Viniard, Jeff				Action
Demo Hit... K, Saliya				Action
Demo 14 Operator				Action
Demo Cat Stewart, A...				Action

Previous 1 Next

Manage



Devices Alert

Machine	Info	Status	Alert
	Demo 5 Stewart, A...		

Previous 1 Next

Device History

Device Name:

From Date:

To Date:





Western Light & Gas +

Contractors +

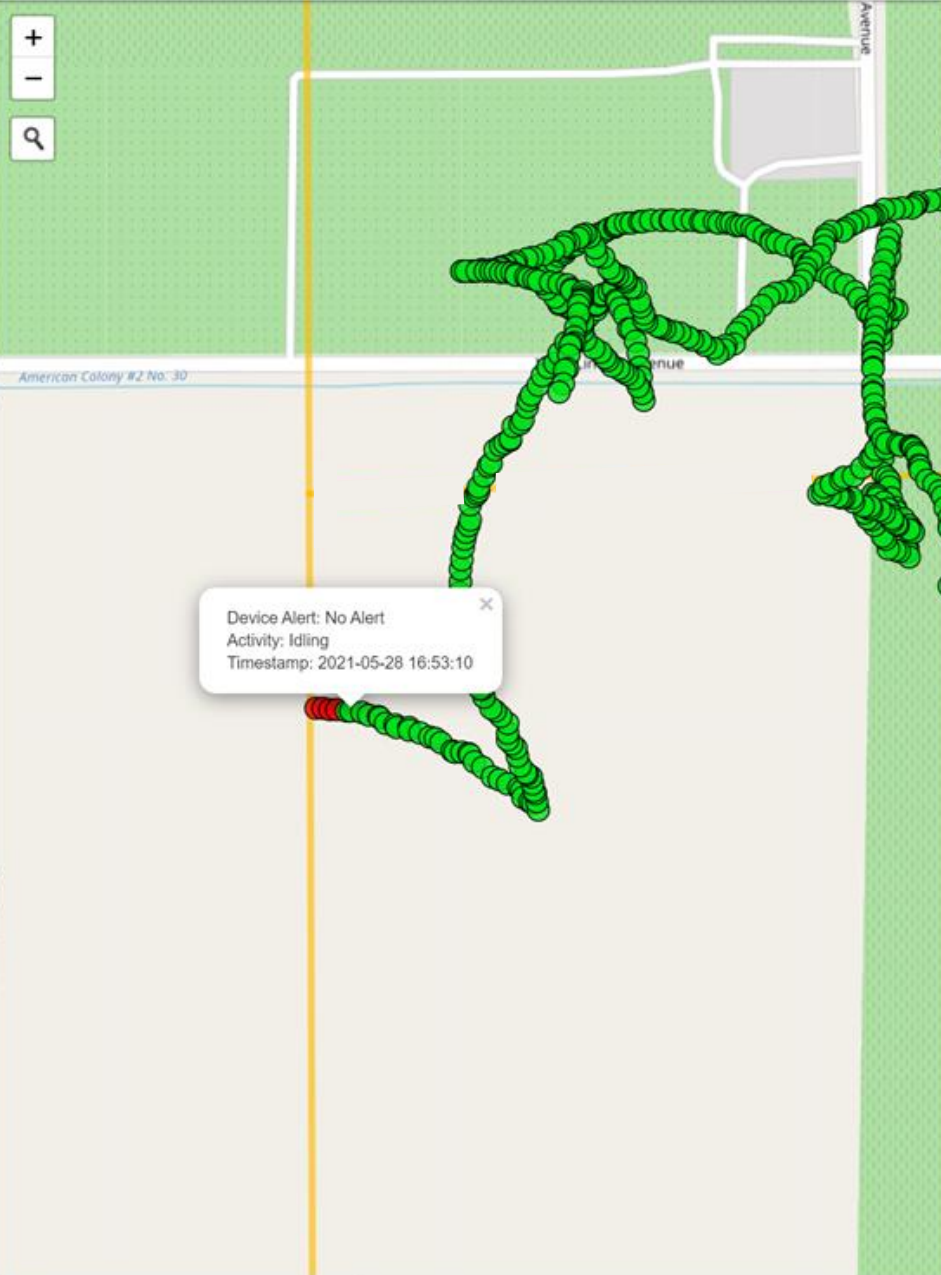
Home Region +

Regions +

Devices -

Machine	Info	Status	Alert	Mute
UA 4 Operator				Action
Demo 5 Stewart, A...				Action
Demo 3 Operator				Action
UA 6Z Viniard, Jeff				Action
Demo Hit... K, Saliya				Action
Demo 14 Operator				Action
Demo Cat Stewart, A...				Action

Previous 1 Next



Devices Alert -

Machine	Info	Status	Alert
Demo 5 Stewart, A...			

Previous 1 Next

Device History -

Device Name: Demo 5

From Date: 06/22/2021

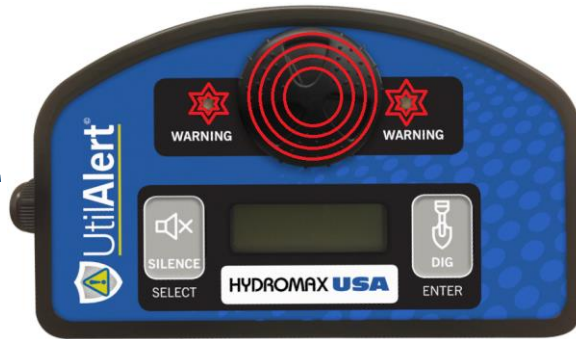
To Date: 06/22/2021

Search Location Search

Manage

# Configurable Alerts

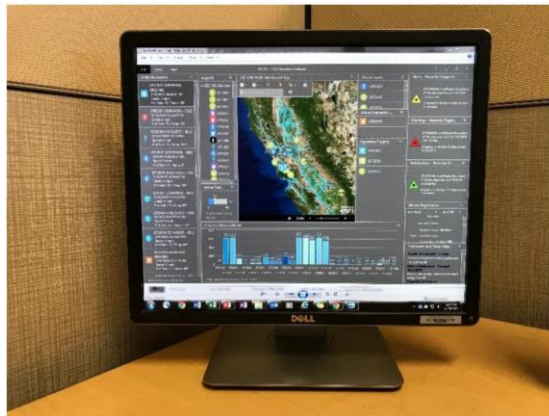
Lights &  
Sound



Email &  
Text



## Desktop & Mobile Dashboards



# Who gets one?

## Utility Deployment Strategy

- 1<sup>st</sup> Party Operators
  - Mandate Installations
  - Transportation Services
- 2<sup>nd</sup> Party Contractors
  - Mandate Installations
  - Contractor Safety
- 3<sup>rd</sup> Party Contractors
  - Habitual Offenders
  - High Risk Industries
  - Damage Prevention/DiRT
  - Negotiated Claims



# HYDROMAX USA

Advanced Water, Wastewater and Gas Data Collection

[WWW.HYDROMAXUSA.COM](http://WWW.HYDROMAXUSA.COM)

## **Mark Congdon**

Vice President – Technical Product Development

[mark.congdon@hydromaxusa.com](mailto:mark.congdon@hydromaxusa.com)

425.606.0644

# THANK YOU