



Project and Operations Overview

For Northeast Gas Association
October 10th, 2024



Agenda

Confidential & Proprietary



Company and AMI Project Overview



Advanced Meter Analytics



Emergency Operations Support

Ventura Thomas Fires & Montecito Mudslides



Future Technology / New Initiatives



Questions

COMPANY AND PROJECT OVERVIEW

SoCalGas

The Largest Natural Gas Distribution Utility in the U.S.



1 Trillion cubic feet (Tcf) of natural gas delivered annually

5% of US gas deliveries

Serving customers for **150 Years**

5.9 million meters



More than **101,000 miles** of distribution pipelines

Over **4,000 Miles** of natural gas transmission lines

Advanced Meter Project Scope

Approved Project from the California Public Utilities Commission
April 2010

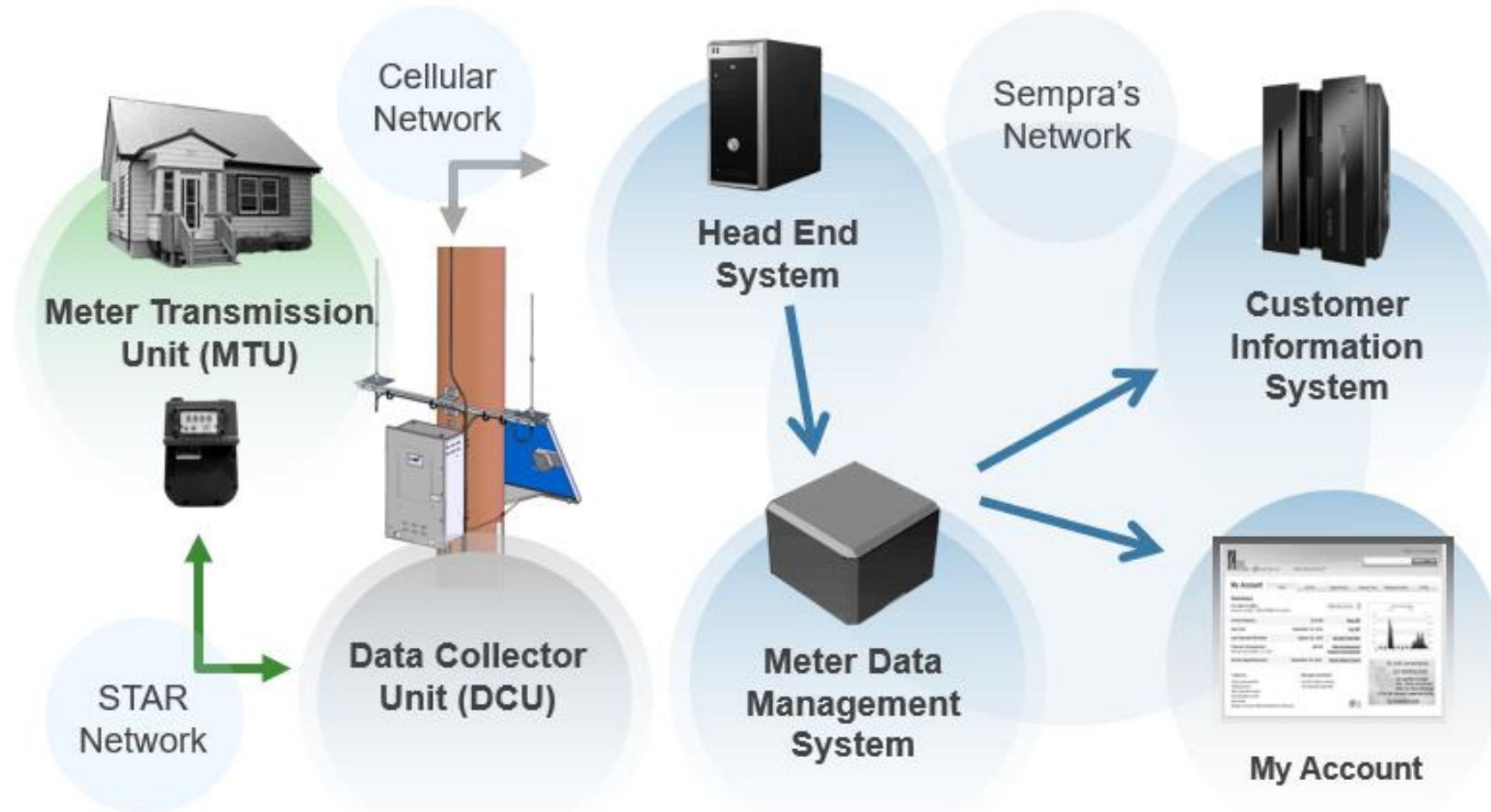
~6.2 million
Meter Transmission Unit (MTU)
Installs
95% residential
5% commercial

~4,700
Data Collection Unit (DCU)
Installs throughout
service territory
1,500 MTU : 1 DCU

2018

The year we completed all initial MTU installs

Advanced Meter Operational Data Flow & Systems Path



Advanced Meter Operations

DCU Construction

Wood



Concrete



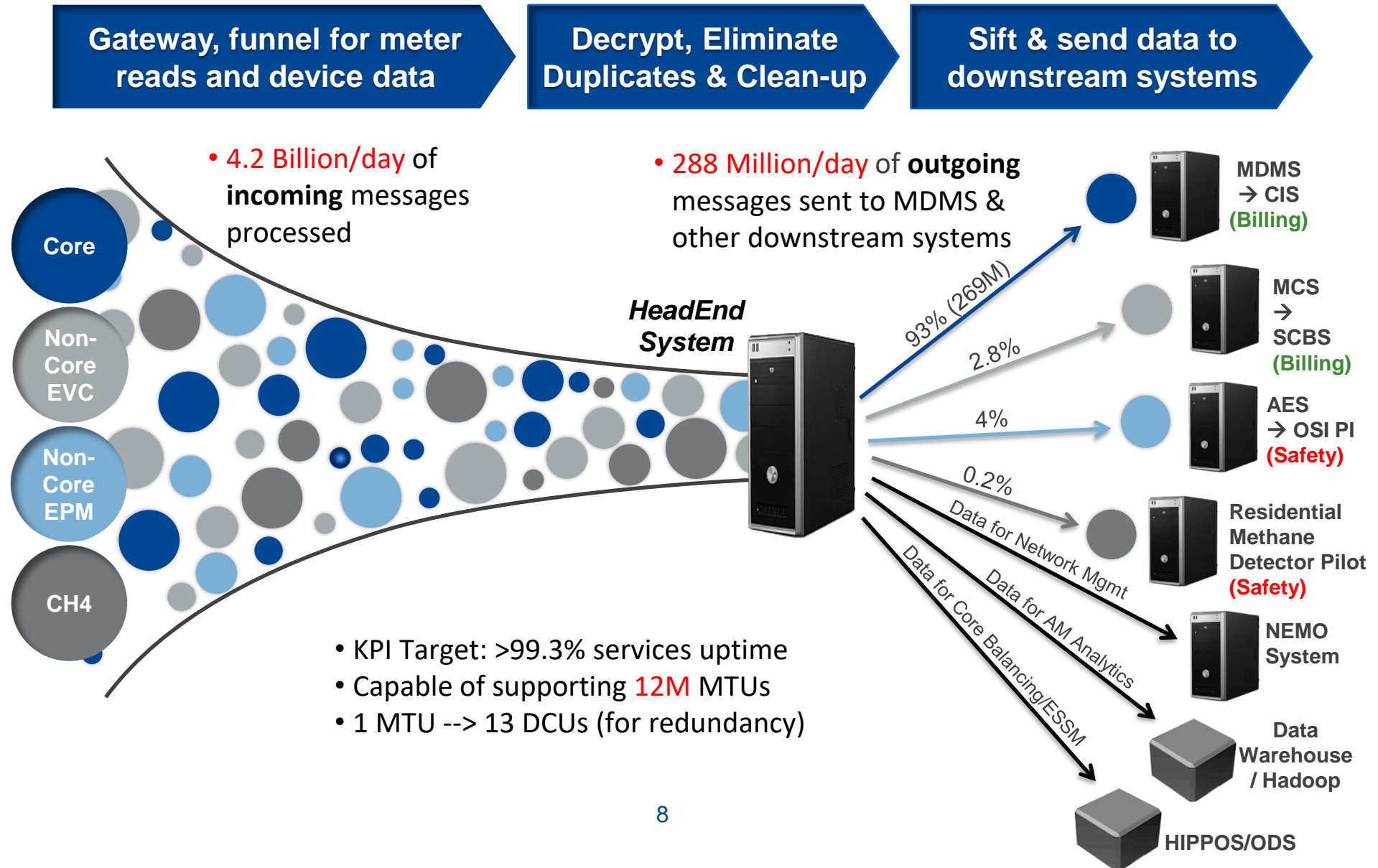
Steel



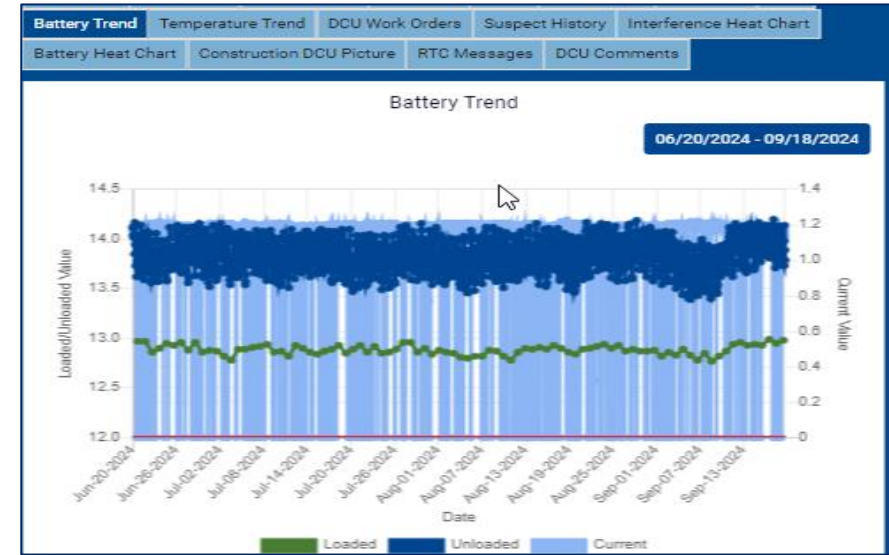
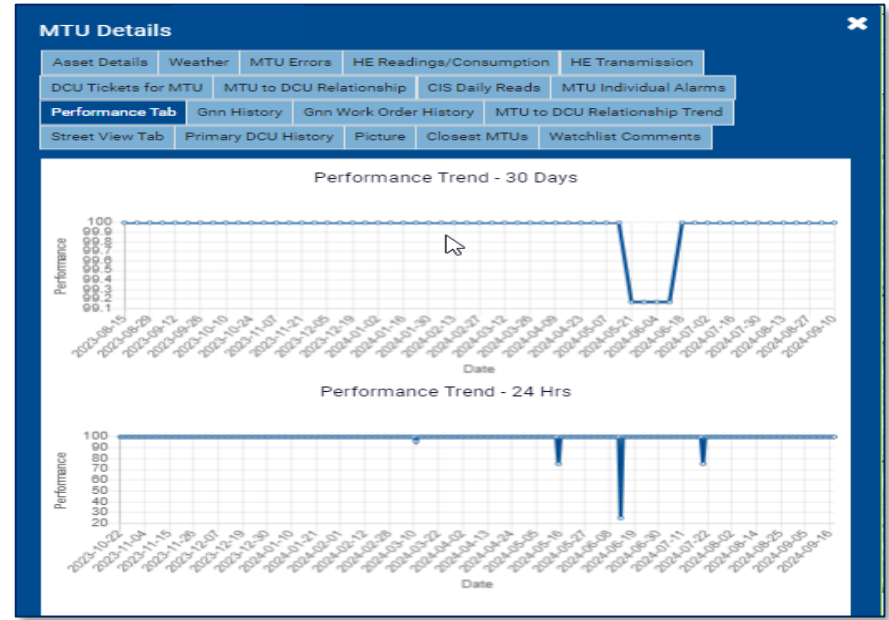
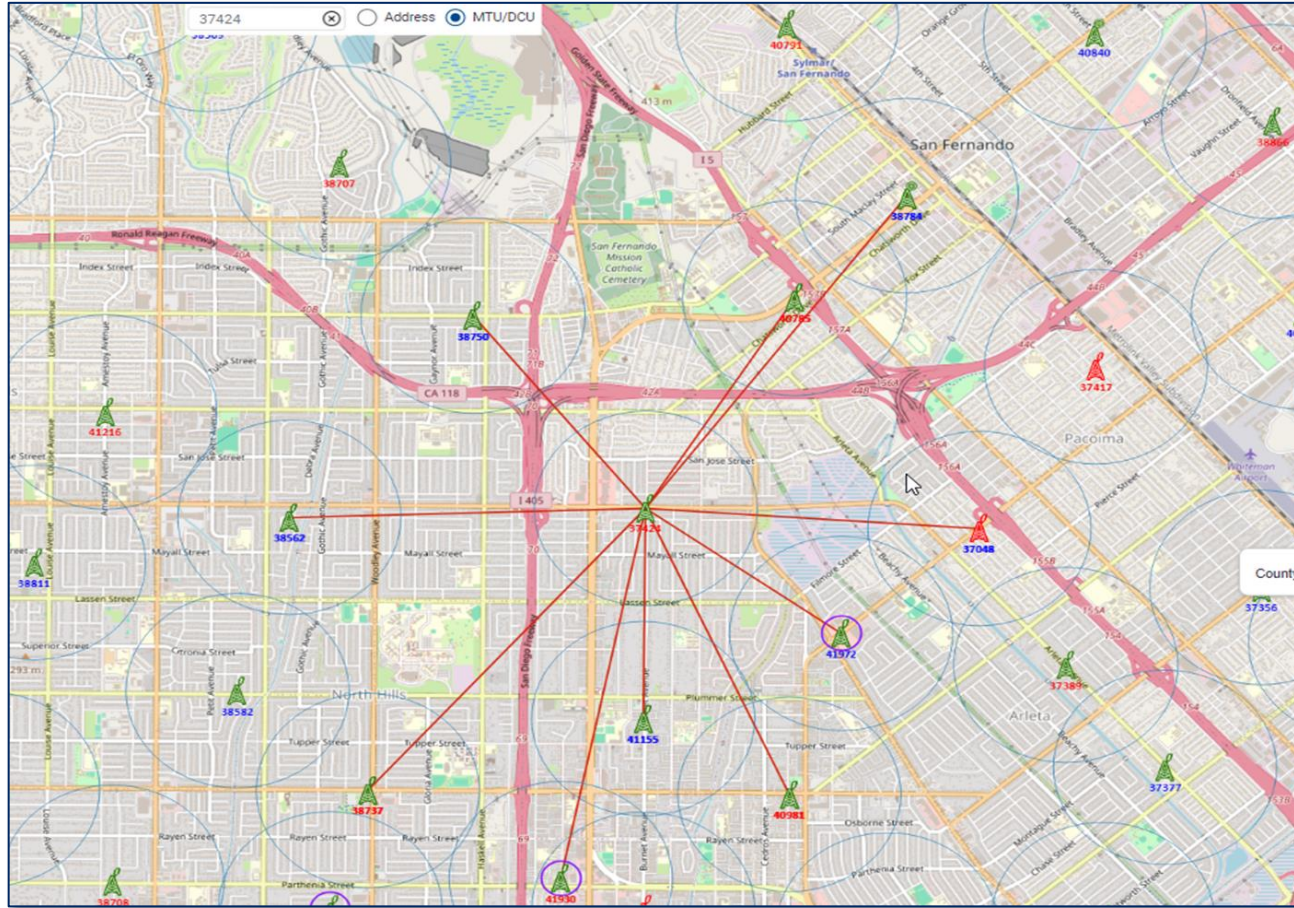
Attachment



HeadEnd Overview



NEMO (Network Exception Management & Operations)



ADVANCED METER CONSUMPTION ANALYTICS

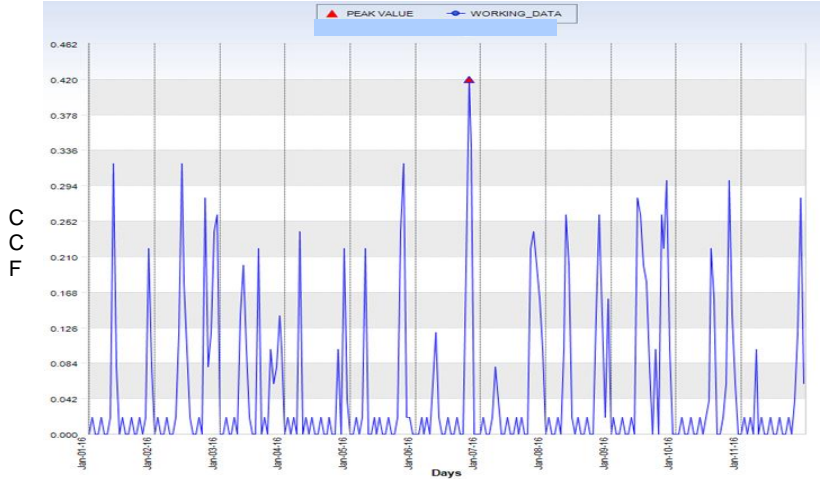
Consumption Pattern Analysis Foundation

Excessive Consumption

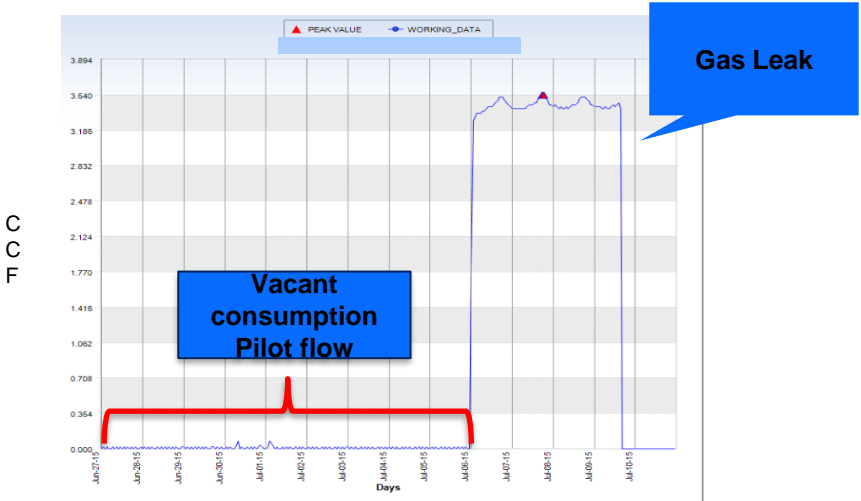
- **Consumption Pattern Analytics** in support of SoCalGas' Safety Programs is based on identification of **Excessive Consumption** anomalies, e.g., consumption not returning to zero while appliances at rest for at least one hour during a twenty-four-hour period.
- **Excessive Consumption** anomalies are reviewed and analyzed relative to meter size while keeping in mind consumption history and known appliances (i.e., pool heater, heating appliances, BBQ, etc.)
- Anomalies may be **caused by multiple reasons:**
 - Heating appliances in use during heating season
 - Customer moving in or out
 - New appliances in use
 - Faulty, inoperative appliances
 - Newly advanced meter where hourly consumption patterns are not available
 - Faulty Piping
 - Emergency Events

Consumption Patterns

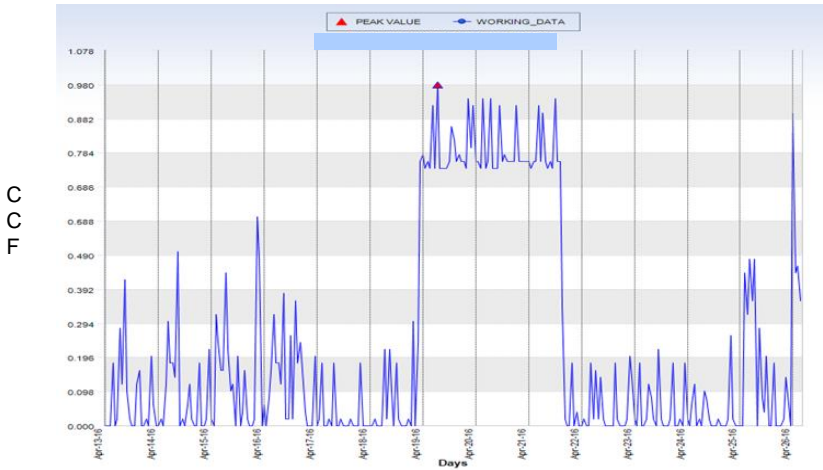
Normal Occupied Consumption



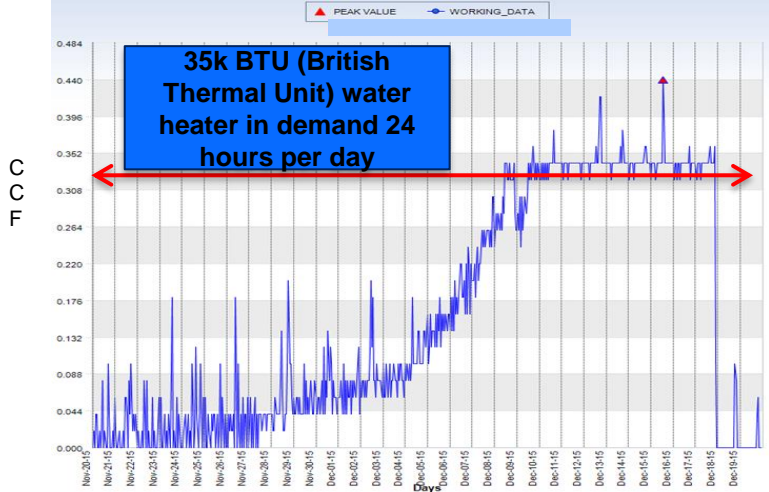
Potential Gas Leak



Appliance(BBQ) Unintentionally Left On



Hot Water Leak



Case Review

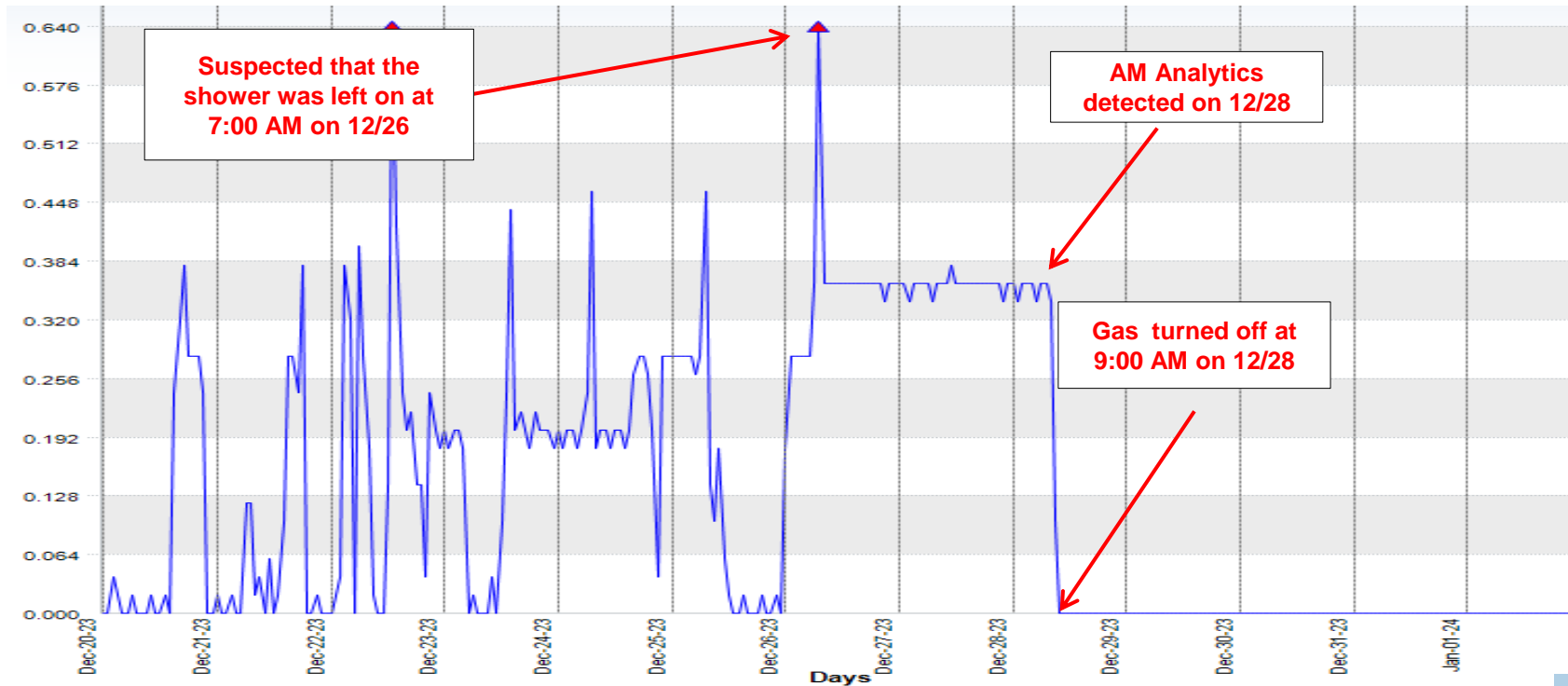
Use Case: Vacant | Gas: 34 CFH

12/28/23

- Analytics: A vacant facility was detected as having high continuous consumption of 34 CFH (cubic feet per hour). An AMD order was generated through dispatch by the AMD process.
- Field action: The field technician determined that the cause of excessive registration was a shower being left on by squatters in a vacant home. Gas was turned off to the home and an Iron Maiden lock was installed.

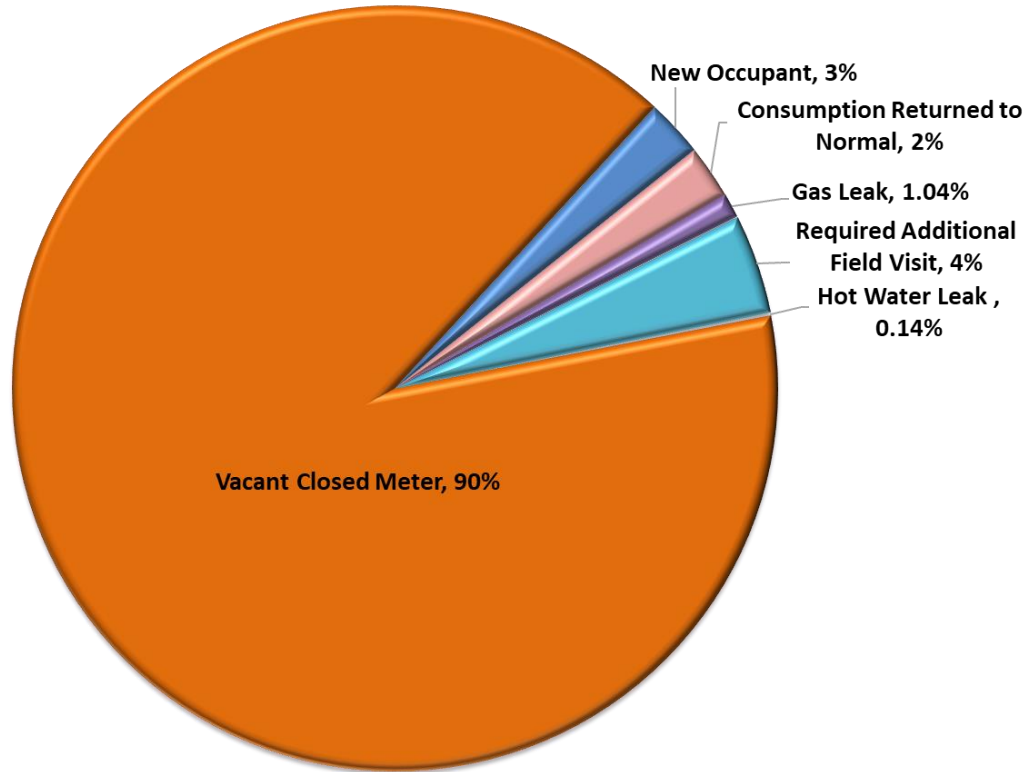
12/29/23

- Analytics Resolution:** During the follow up process it was confirmed that the gas usage stopped when the gas was turned off to the home.



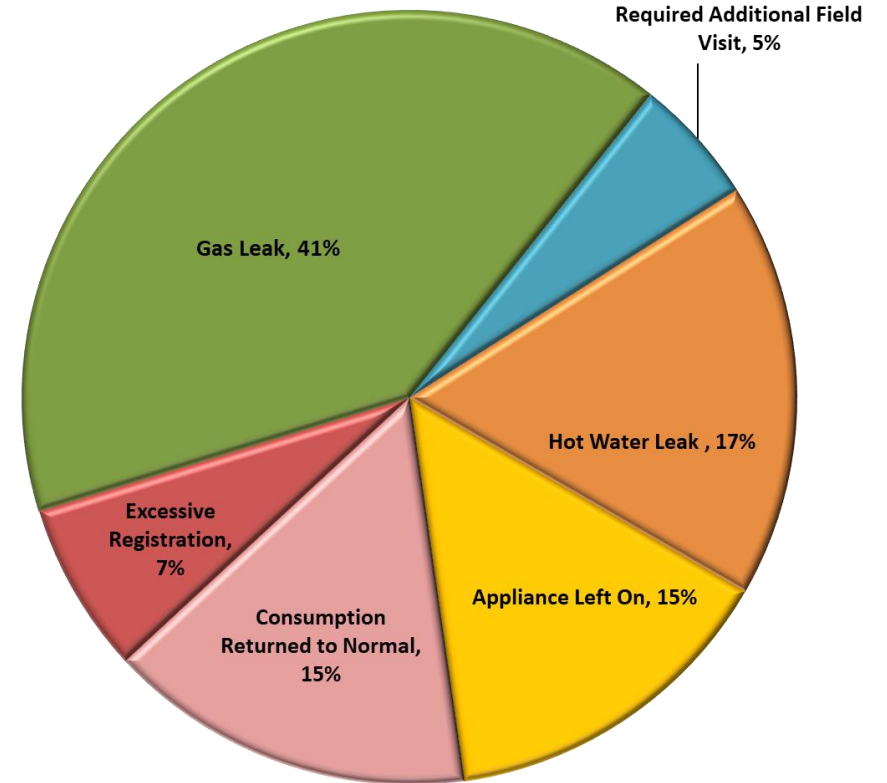
Consumption Analytics: 2024 YTD Field Results

Vacant



Total: 1,449

Occupied



Total: 8,010

EMERGENCY OPERATIONS SUPPORT

Emergency Support

- In **emergency situations** such as fires, mudslides or earthquakes, **focus is placed on a local geography**
- Algorithms **analyze consumption anomalies** consistent with a possible gas leak or appliances unintentionally left on **for an extended period of time**, during and after an emergency
- MTU alarms and non-communicating MTUs are analyzed to identify where the meter/MTU may have been damaged
- These facilities are visited by SoCalGas Field personnel

Case Study - Emergency Support

Ventura-Thomas Fires

Date: December 6th, 2017

Meters in Geographic Area: ~152,000

Advanced Meter Analytics identified four facilities with gas consumption at meter capacity.

The **unusual consumption** began in the same timeframe in a geographical location that was **close to the area of the Thomas fires**.

Advanced Meter Analytics Findings (during the course of the fire):

12 high priority orders were fielded in the area of Ventura County affected by the Thomas Fire

- All facilities had meters not adjacent to the impacted residence
- Gas leaks were found at 11 of the 12 facilities. 11 of the 12 facilities were destroyed by the fire.
- The gas leaks started between 1am-5am at 10 out of the 11 facilities
- SoCalGas personnel addressed all leaks



Case Study - Emergency Support

Montecito Mudslides

Date: On January 10th 2018

Meters in Geographic area: ~22,000

Advanced Meter Analytics was asked to **support Emergency Services in the Montecito** area as a result of the mudslides. Montecito was impacted by the fires the prior month.

AM Analytics Findings:

- 12 facilities were identified as having consumption near or close to meter capacity
- 2 facilities were not accessible to SoCalGas personnel and were referred to emergency personnel
- 10 facilities were visited and resolved within 20 hours of having been identified by AM Analytics



FUTURE TECHNOLOGY & NEW INITIATIVES

How Residential Methane Works

- » SCG is piloting residential methane detection technology utilizing our Advanced Meter Network
 - » Current use cases are under house, basement, garage, closet cabinet etc. (locations where airflow could be constrained)
 - » Methane Sensor set to trigger high methane alarm @ 10% LEL
- » Software
 - » 24/7 Monitoring
 - » AclaraONE headend communicates to SCG CIS
 - » Upon notification CIS auto-generates an A1 work order for SCG field technicians to respond
 - » Both hardware and software are monitored by our Advanced Meter team



RMD AclaraONE View

The screenshot displays the RMD AclaraONE software interface. On the left is a 'Filters' sidebar with the following sections:

- Event Date:** 09/10/2024
- Report Group:** All Accounts Group
- Event Group:** Base Overview
- Pole Sensor:** Clear
 - Critical Events (0) view details »
 - Severe Events (0) view details »
 - Warning Events (0) view details »
 - Notice Events (0) view details »
 - All Devices (258)
- Residential Methane Detector Sensor:** Clear
 - Critical Events (0) view details »
 - Severe Events (0) view details »
 - Warning Events (0) view details »
 - Notice Events (0) view details »
 - All Devices (256)

The main map area shows a street view of Los Angeles with numerous green sensor markers clustered in the central and southern parts of the city. The map includes labels for various neighborhoods like East Hollywood, Chinatown, and Skid Row, as well as major highways (10, 60, 110, 710) and landmarks like the Los Angeles Memorial Coliseum. A search bar at the top right contains 'Device Id' and a search icon. A 'Streets' dropdown menu is also visible.

AclaraONE software monitored by AM Network Operations



Ultrasonic Meter

- » Market is shifting from mechanical metering to ultrasonic meters, only two legacy meter manufacturers left
- » Ultrasonic meters measure the speed of gas movement by measuring the speed at which sound travels in the gaseous medium within the meter
- » SoCalGas Ultrasonic meter installation will enable safety data collection as well as remote & autonomous valve control through a Network Interface Card embedded in the meter and communicating on our existing AM STAR network

