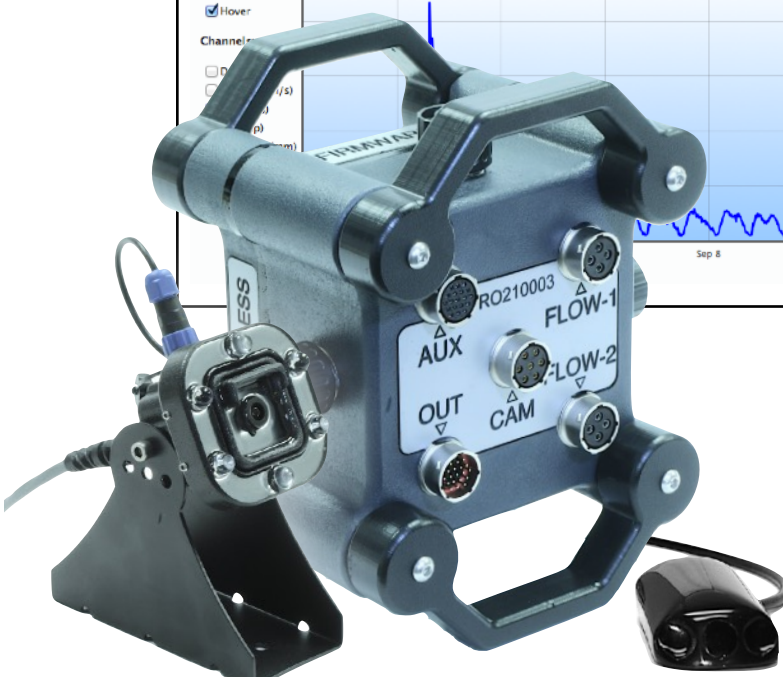
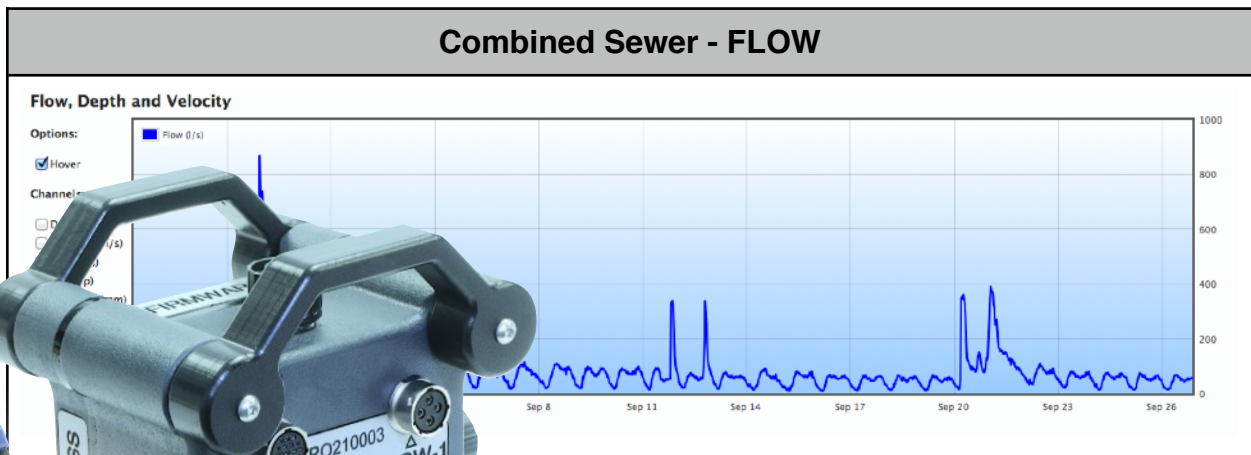
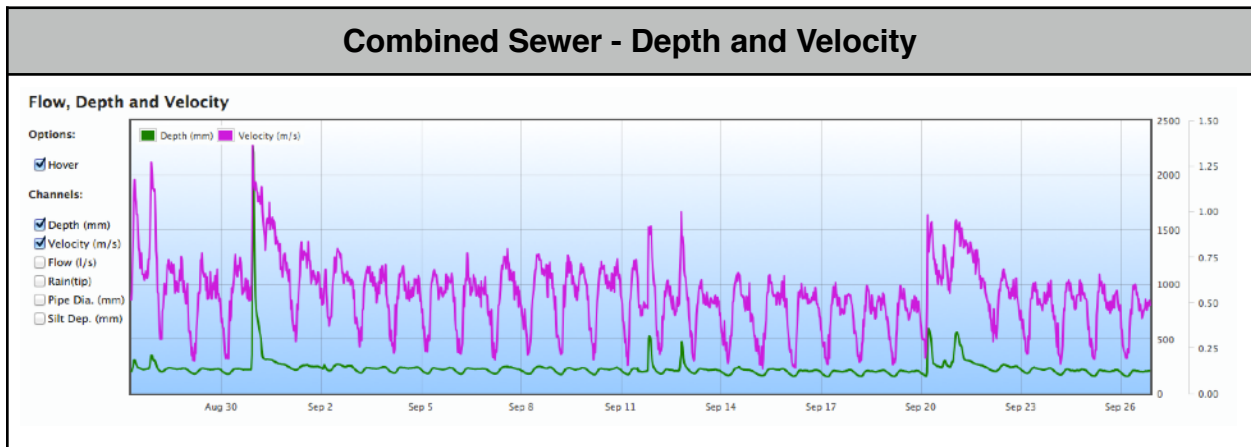


BLUESIREN®

Technology Company

Flow and Alarm Data Examples



INTRODUCTION

With over 20-years of combined technology experience our team has designed a series of flow monitoring products to meet every budget. Blue Siren monitoring systems will operate and upload data for years with very minimal operational concerns. Achieving this through a combination of low power microprocessor technology and efficient power saving firmware algorithms.

With thousands of installations worldwide, Blue Siren technology has proven itself under standard and irregular flow conditions. The purpose of this document is to provide examples of installation and data collection using Blue Siren's flow monitoring technology.



Table of Contents

Example 1. - Standard - Sewer Flow

- Graph 1. Depth & Velocity
- Graph 2. Flow Rate
- Graph 3. Depth vs Velocity Scatter Plot
- Graph 4. Dual Depth Comparison
- Graph 5. Dual Depth Calibration Scatter Plot
- Graph 6. Dual Velocity Comparison
- Graph 7. Dual Velocity Calibration Scatter Plot

Example 2. - Backwater Condition - Sanitary Sewer

- Graph 8. Backwater Depth & Velocity
- Graph 9. Backwater Depth & Flow
- Graph 10. Backwater Stage Discharge Scatter Plot

Example 3. - Storm Surge Detection - Storm Sewer

- Graph 11. Storm Sewer Depth & Velocity (> 3 m/s)
- Graph 12. Super Critical Velocity (> 3 m/s)
- Graph 13. Surcharged Pipe Depth
- Graph 14. Storm Sewer Depth vs Discharge ScatterPlot
- Graph 15. Venturi effect at 3 m/s - Dual Depth - Fast Flowing Pipe

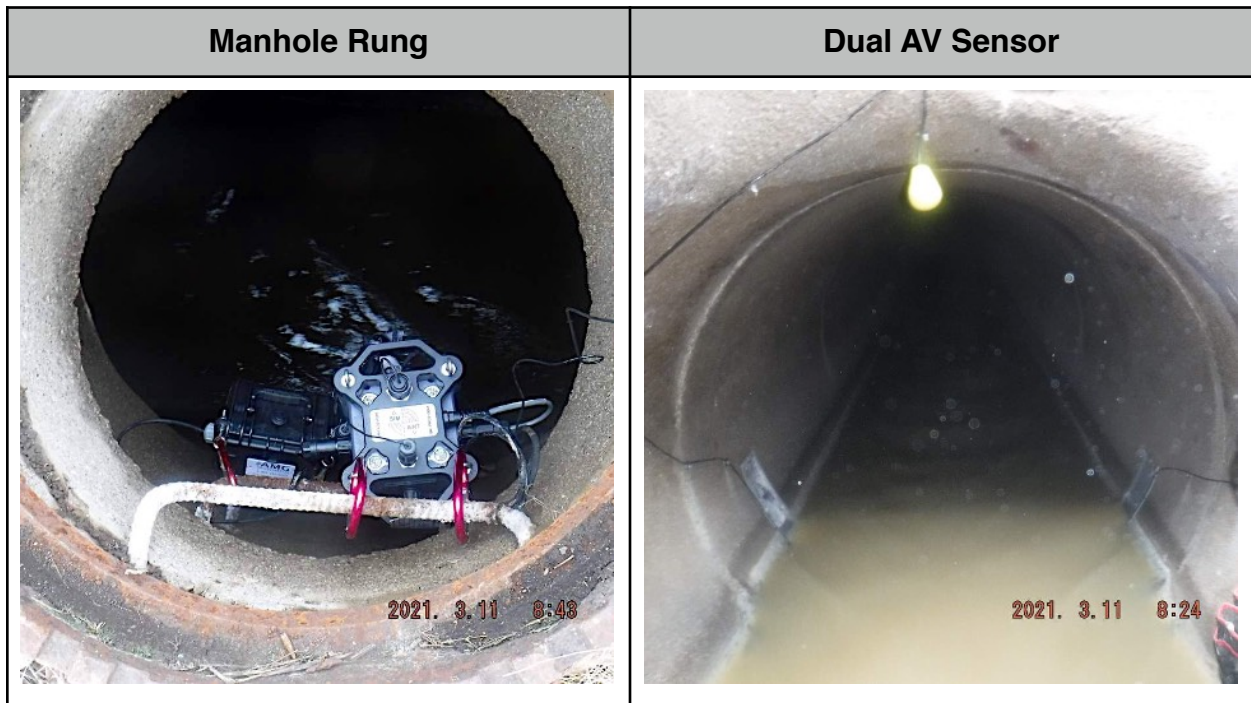
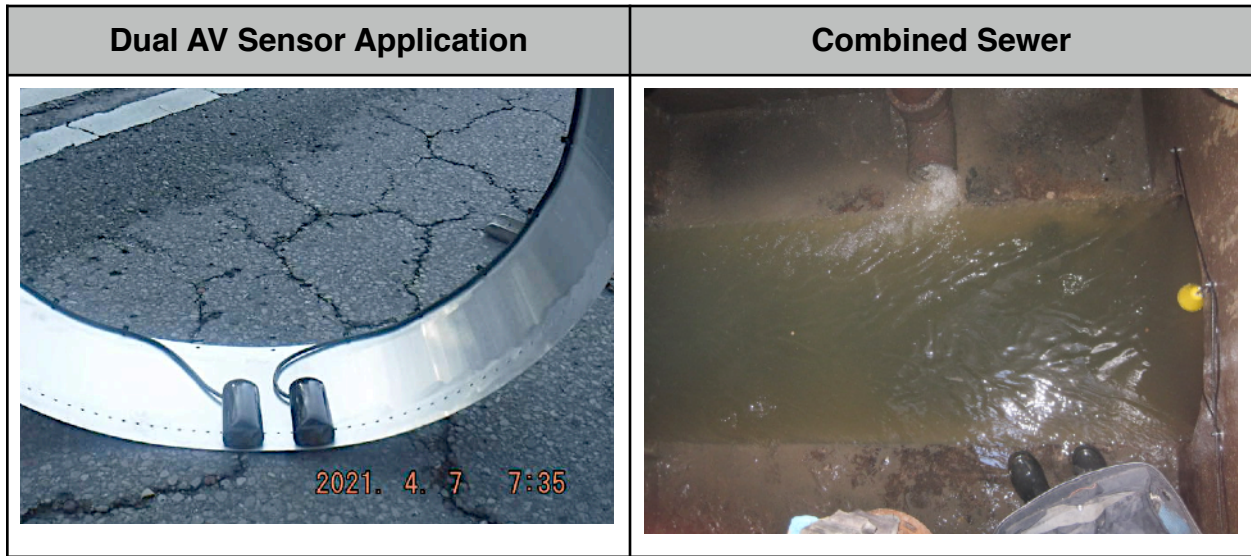
Example 4. - Combined Sewer Overflow Monitoring

- Graph 16. Infrared Camera (Standard Flow)
- Graph 17. Infrared Camera (River Inflow)
- Graph 18. Infrared Camera (Pipe Leak)
- Graph 19. Infrared Camera (Rodent Detection)

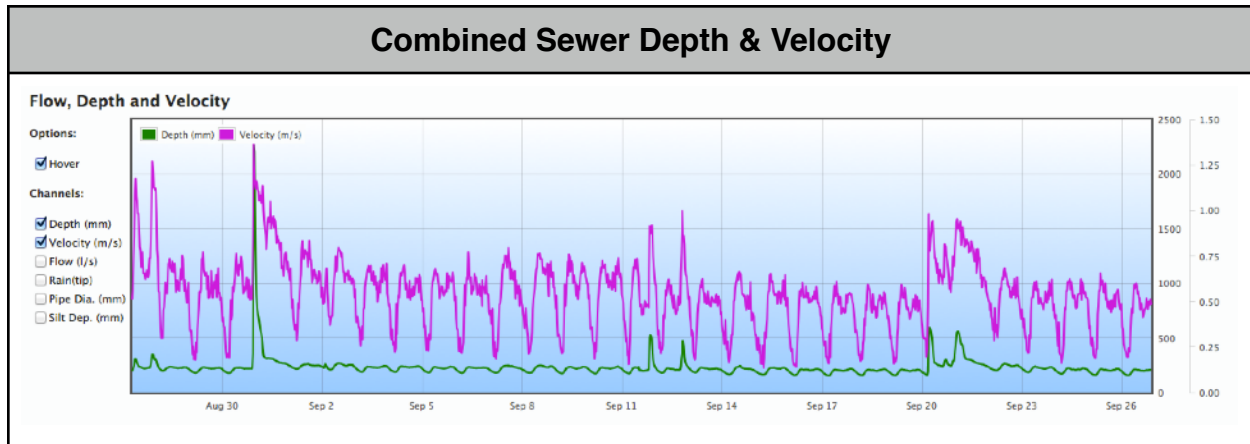
Example 5. - Sewer Overflow Alarming

- Graph 20. Warning Alarm
- Graph 21. Critical Alarm

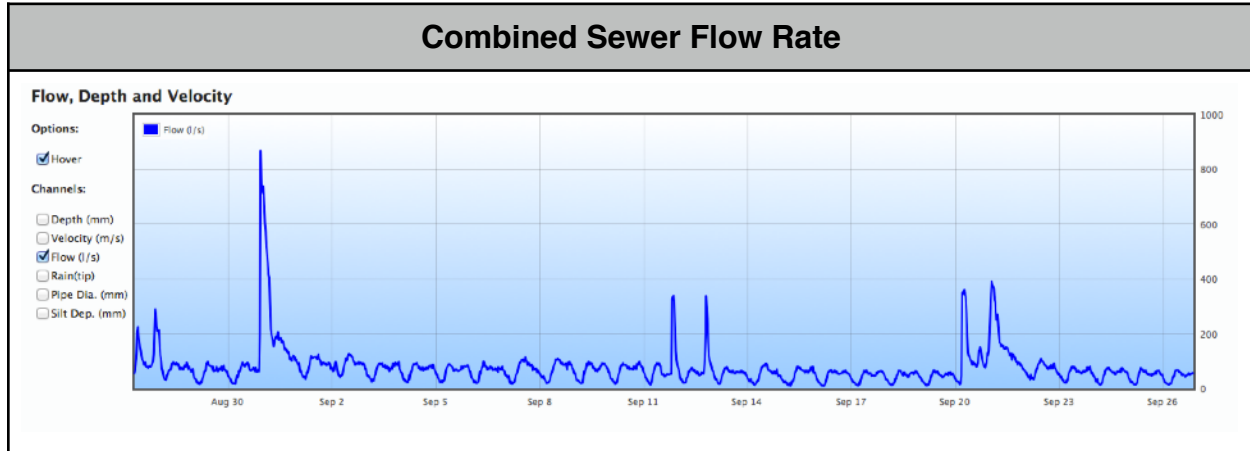
EXAMPLE 1. STANDARD SEWER FLOW



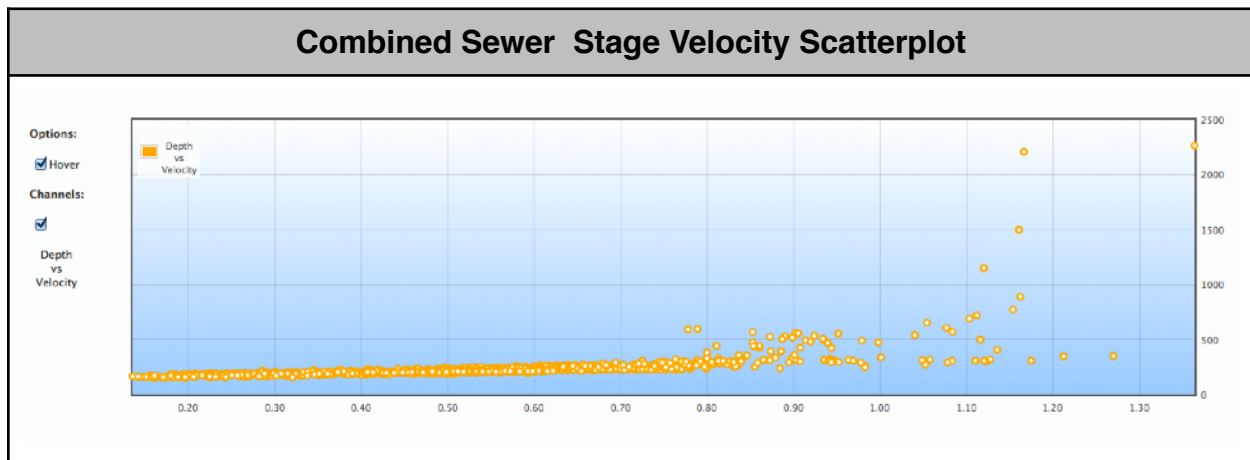
GRAPH 1. DEPTH & VELOCITY



GRAPH 2. FLOW RATE

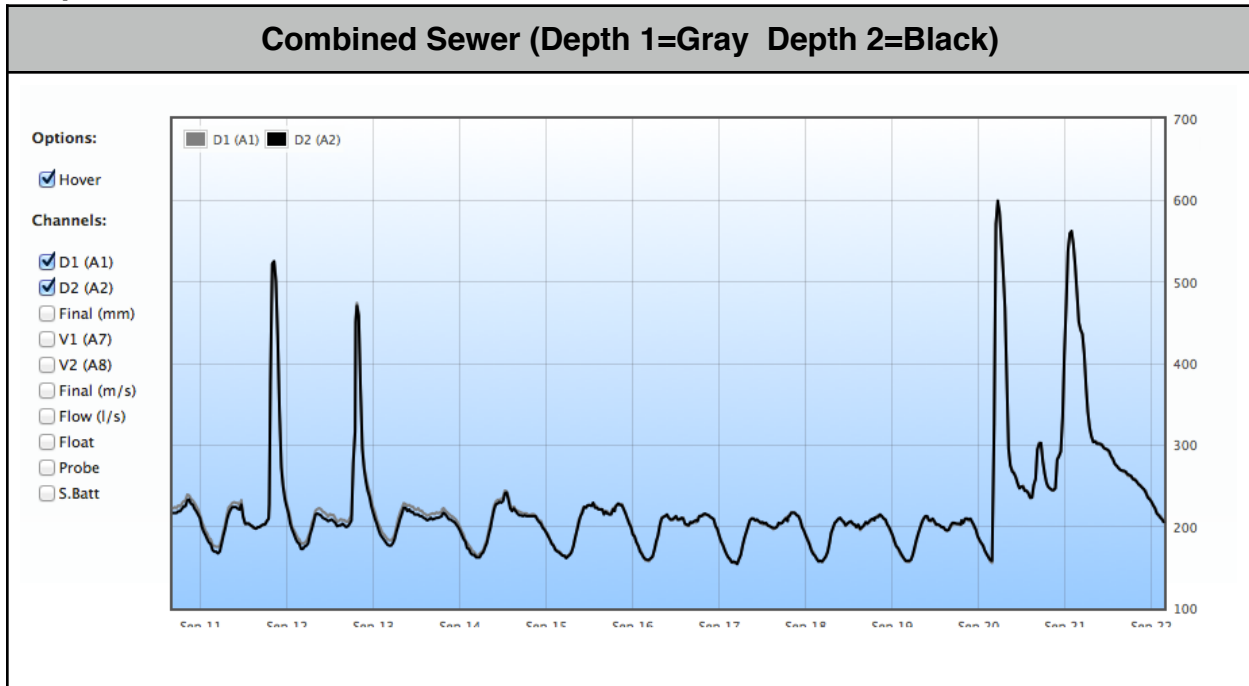


GRAPH 3. DEPTH VS VELOCITY SCATTER PLOT

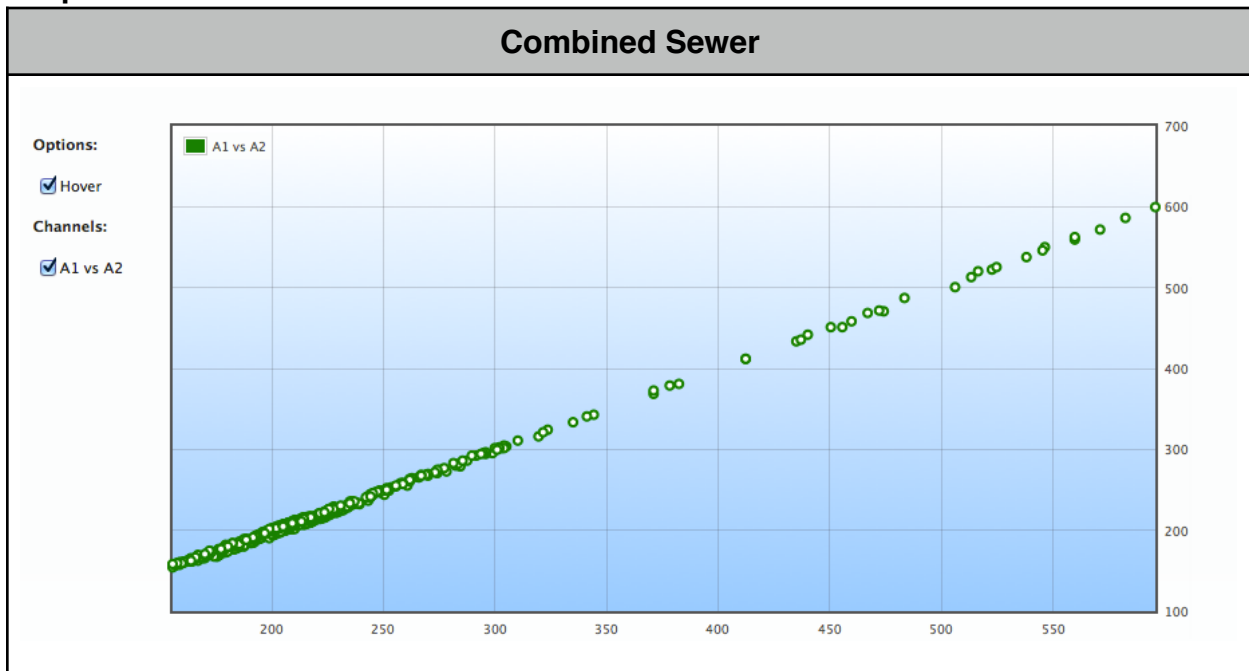


Blue Siren has the ability to monitor with dual flow sensor technology. Represented in the following graphs are examples of the reliability and data accuracy that multiple sensors provide.

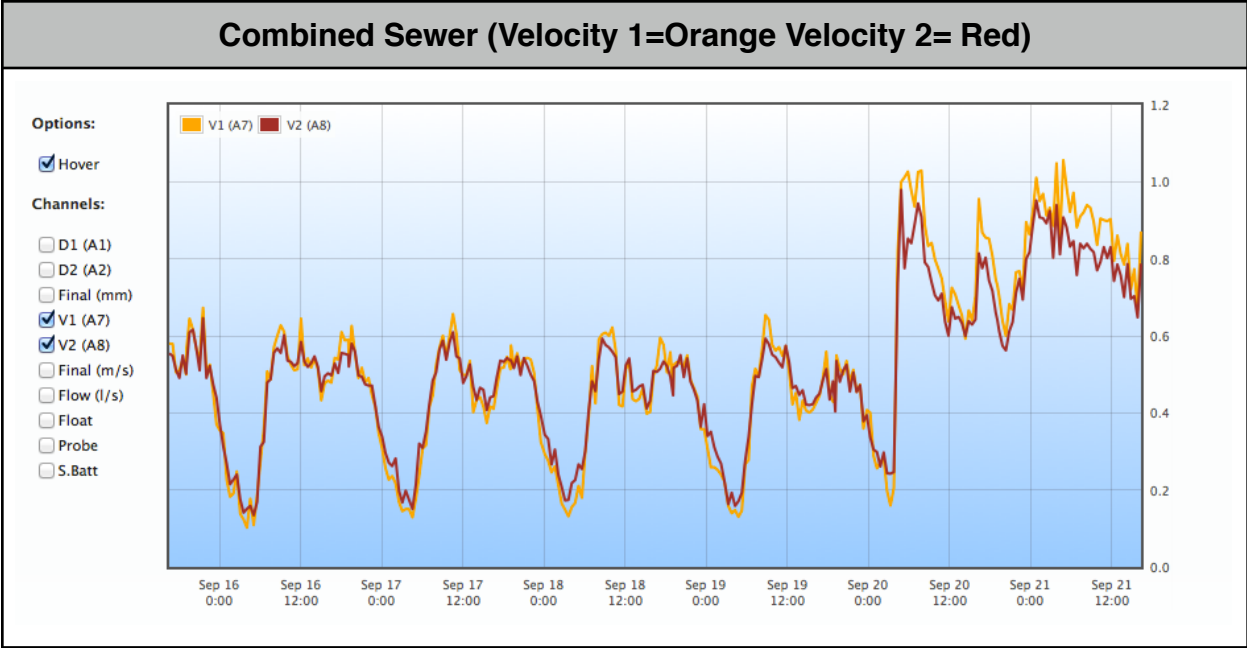
Graph 4. DUAL DEPTH COMPARISON



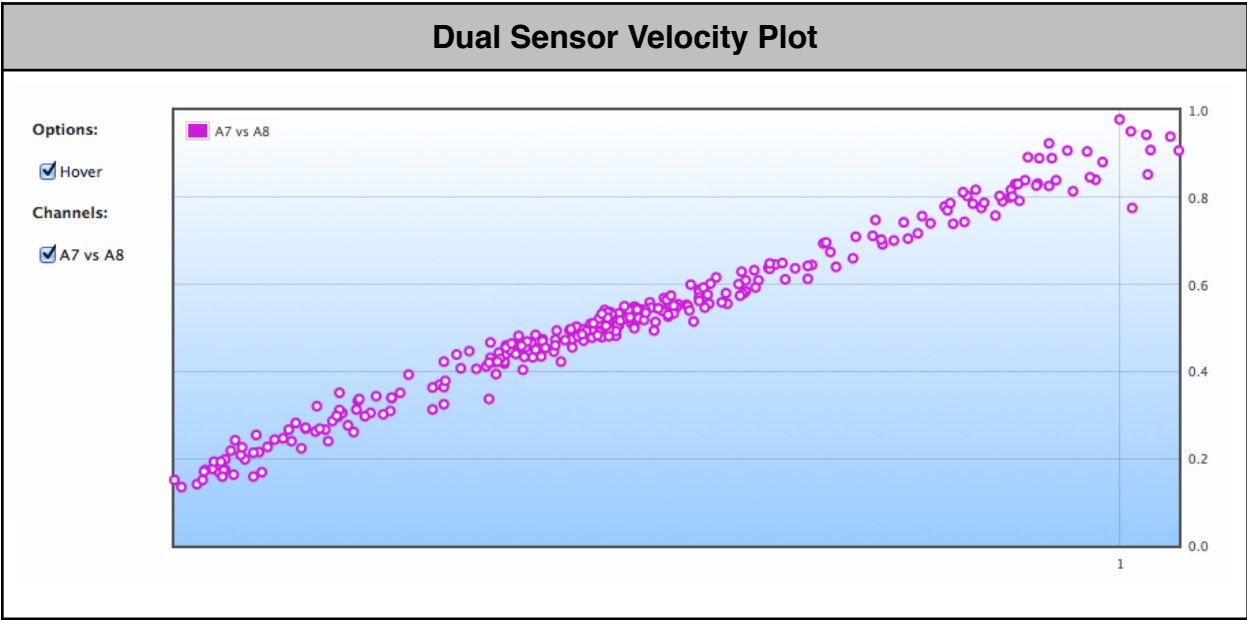
Graph 5. DUAL DEPTH CALIBRATION SCATTER PLOT





Graph 6. DUAL VELOCITY COMPARISON





Graph 7. DUAL VELOCITY CALIBRATION SCATTER PLOT



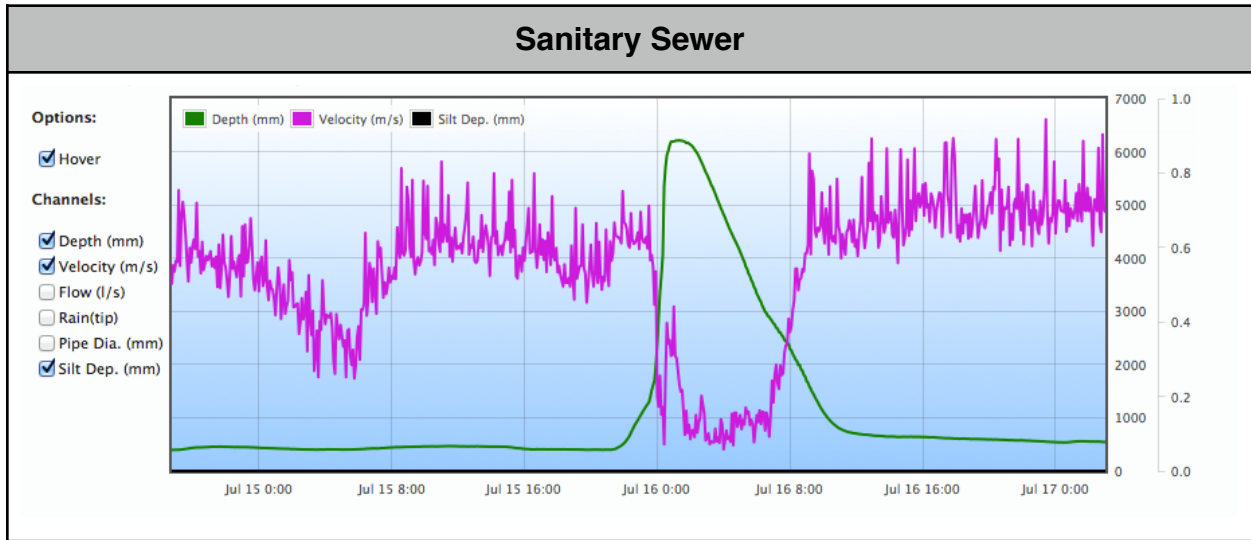
EXAMPLE 2. BACKWATER CONDITION - SANITARY SEWER

Dual Sensor Monitor	Inflow/Infiltration
	

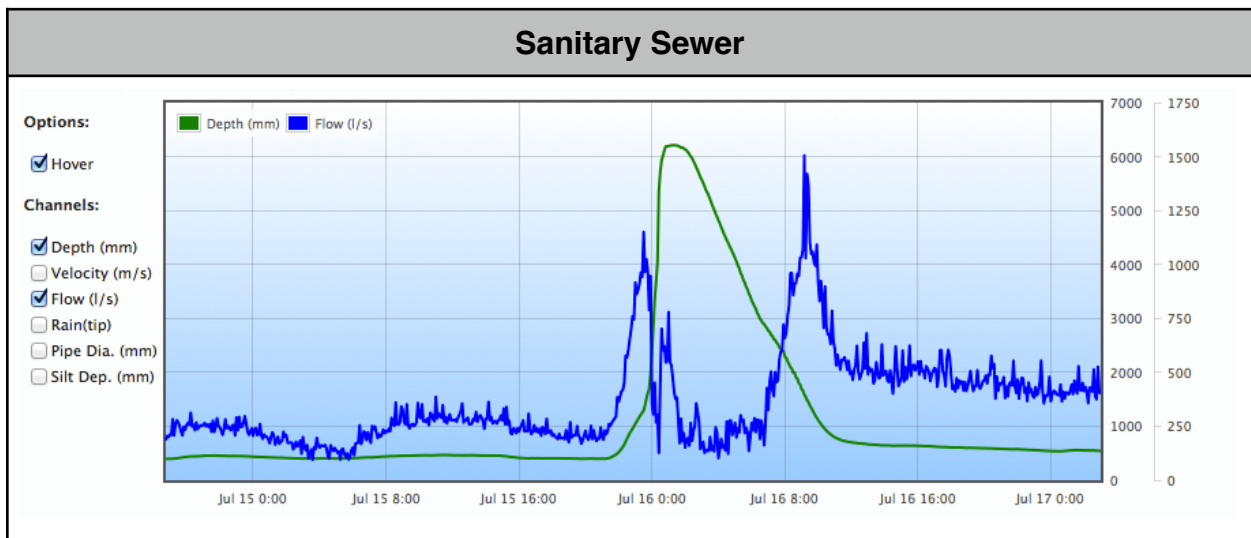
INSTALLATION

Sanitary Sewer (I&I)	Sanitary Sewer
	

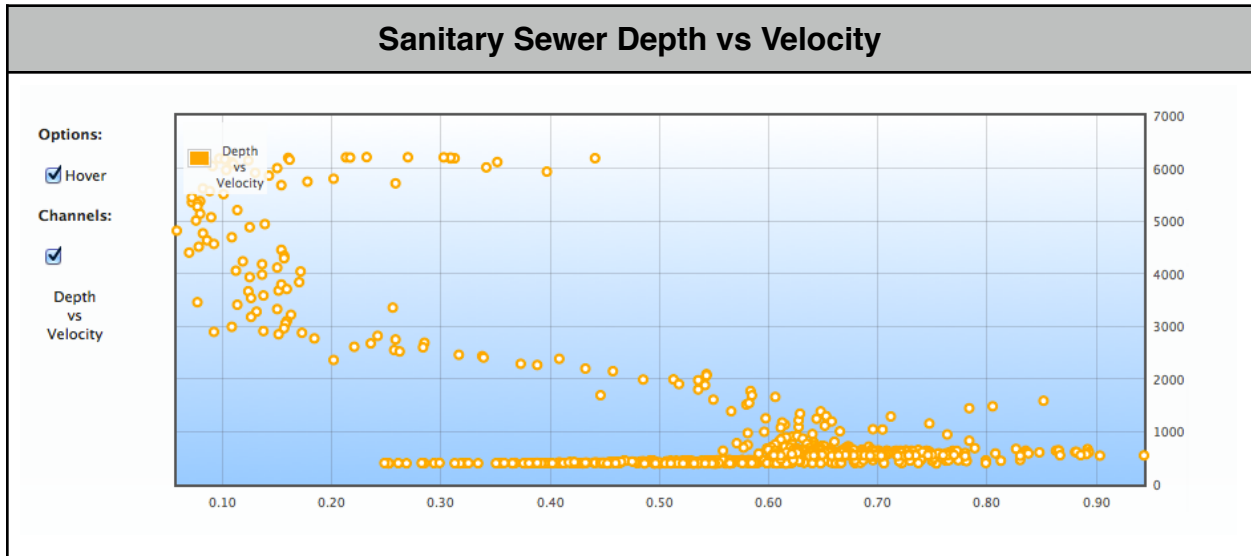
Graph 8. BACKWATER DEPTH & VELOCITY





Graph 9. BACKWATER DEPTH & FLOW





Graph 10. BACKWATER STAGE DISCHARGE SCATTER PLOT



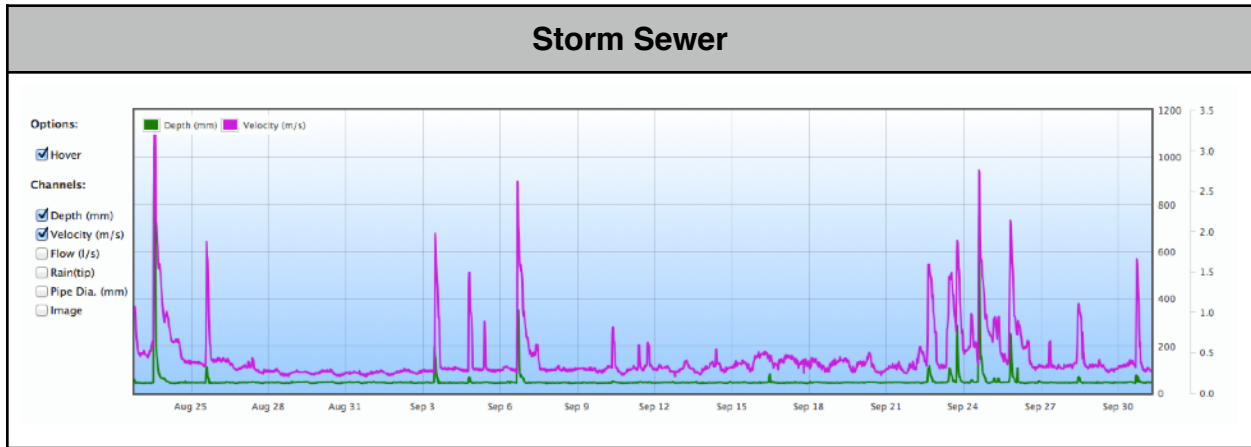
EXAMPLE 3. STORM SURGE DETECTION - STORM SEWER

Modular Platform	Storm Sewer
	

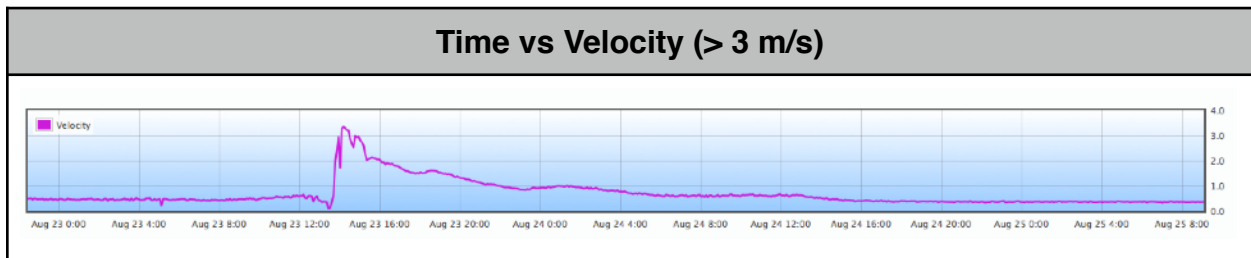
INSTALATION

Velocity > 3 m/s	Upstream Weir
	

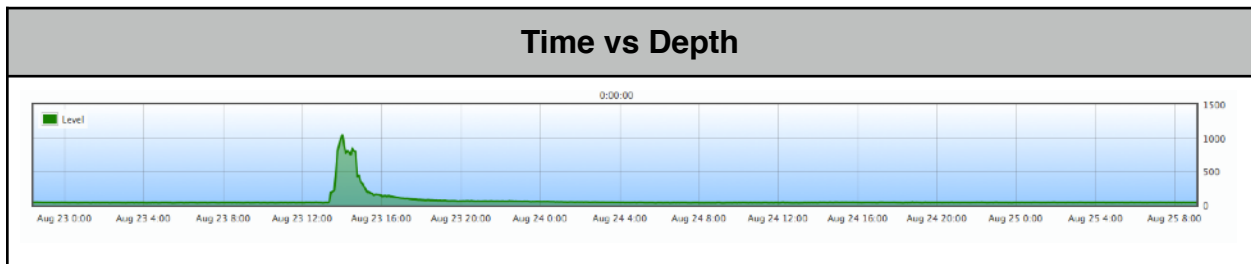
Graph 11. STORM SEWER DEPTH & VELOCITY (> 3 m/s)



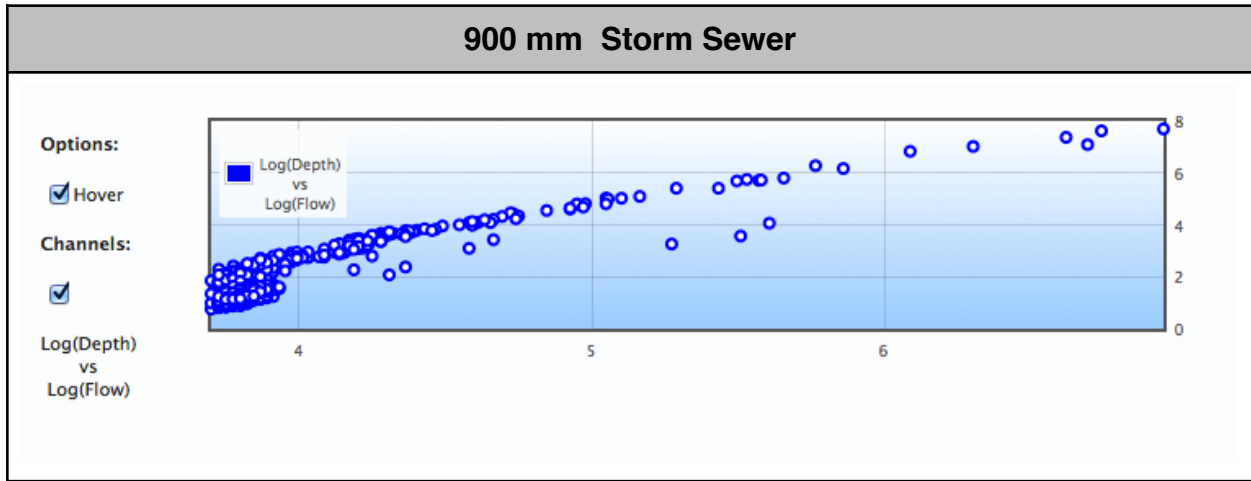
Graph 12. SUPER CRITICAL VELOCITY (> 3 m/s)



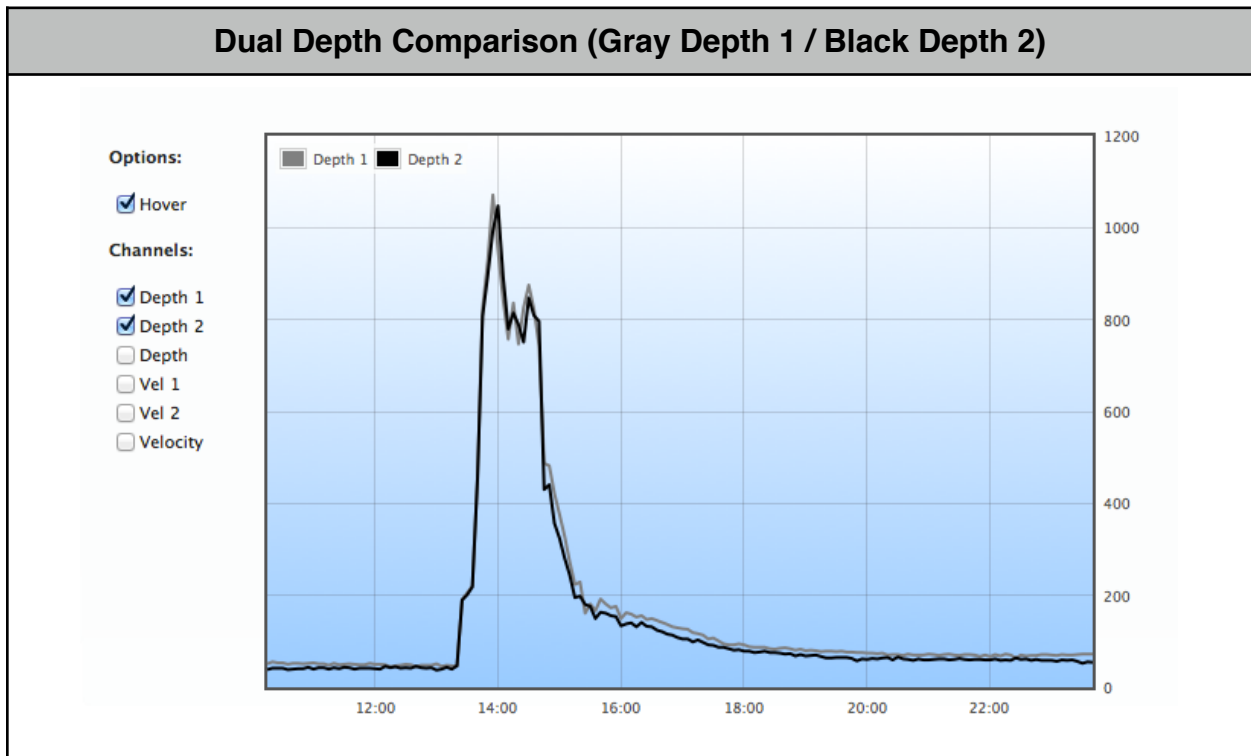
Graph 13. SURCHARGE PIPE DEPTH



Graph 14. STORM SEWER DEPTH VS DISCHARGE SCATTER PLOT







Graph 15. VENTURI EFFECT AT 3 m/s - DUAL DEPTH - FAST FLOWING PIPE



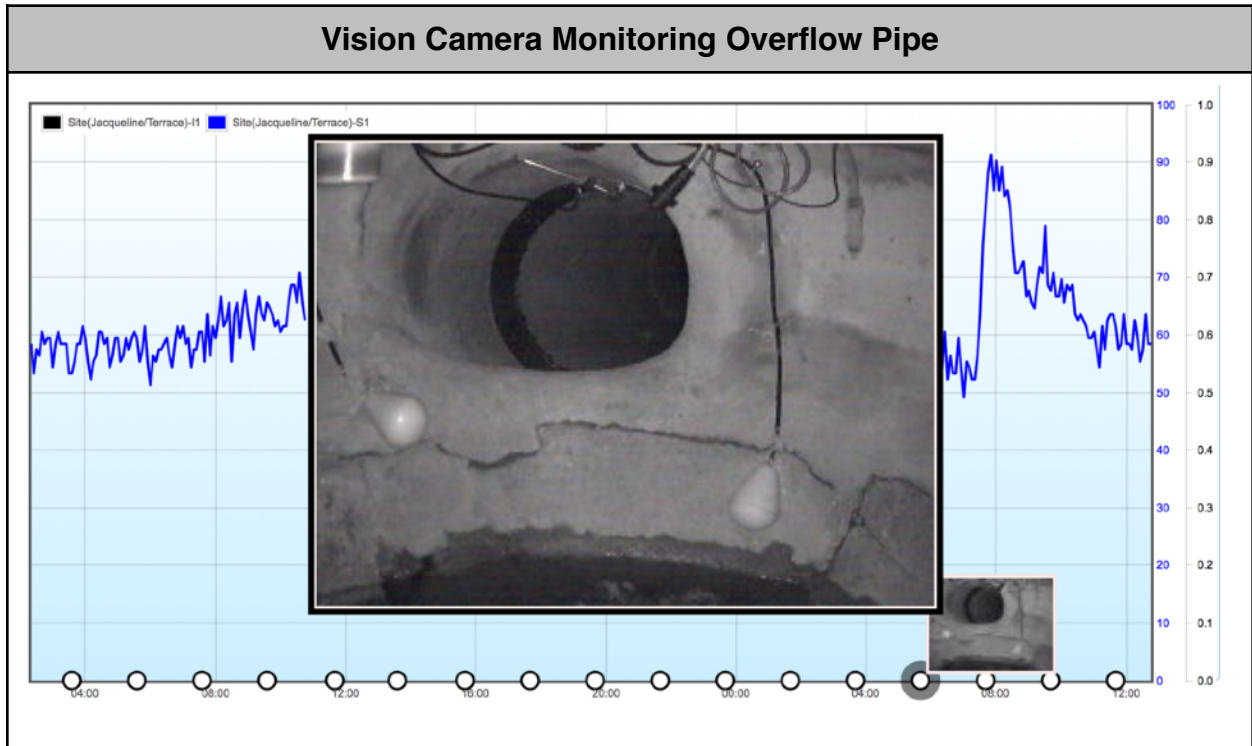
EXAMPLE 4. MONITOR with VISION®

MONITOR WITH VISION® - See more using the Blue Siren Vision Camera. Take snapshot images that automatically upload to your website and correlate with the data. This product eliminates false alarms by automatically sending a snap-shot images by email when an alarm is triggered.

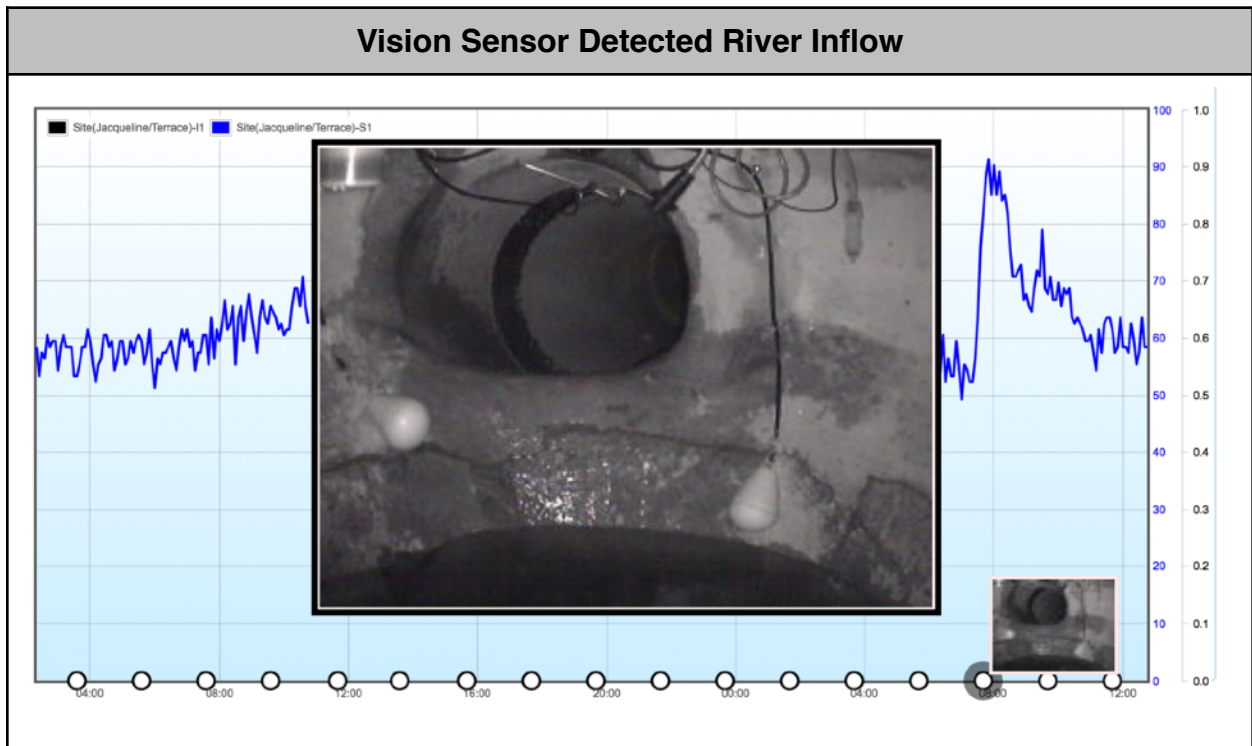
SENSOR CONFIGURATION

Flow Sensor 1 (Wet Pipe)	Flow Sensor 2 (Dry Pipe)
 A close-up view of a flow sensor installed in a pipe. The sensor is a small, dark, cylindrical device mounted on a metal ring. The pipe interior is wet and shows some debris.	 A close-up view of a flow sensor installed in a pipe. The sensor is a small, dark, cylindrical device mounted on a metal ring. The pipe interior is dry and clean.
Vision Sensor	Alarm Switches (Critical and Warning)
 A close-up view of the Vision Sensor, a rugged, black, rectangular device with a lens and various ports. It is mounted on a black metal bracket. The sensor is labeled "DW10 Rev.1".	 A view of the alarm switches installed in a pipe. Two yellow floats are attached to a black cable and are positioned in the pipe. The pipe interior is wet and shows some debris.

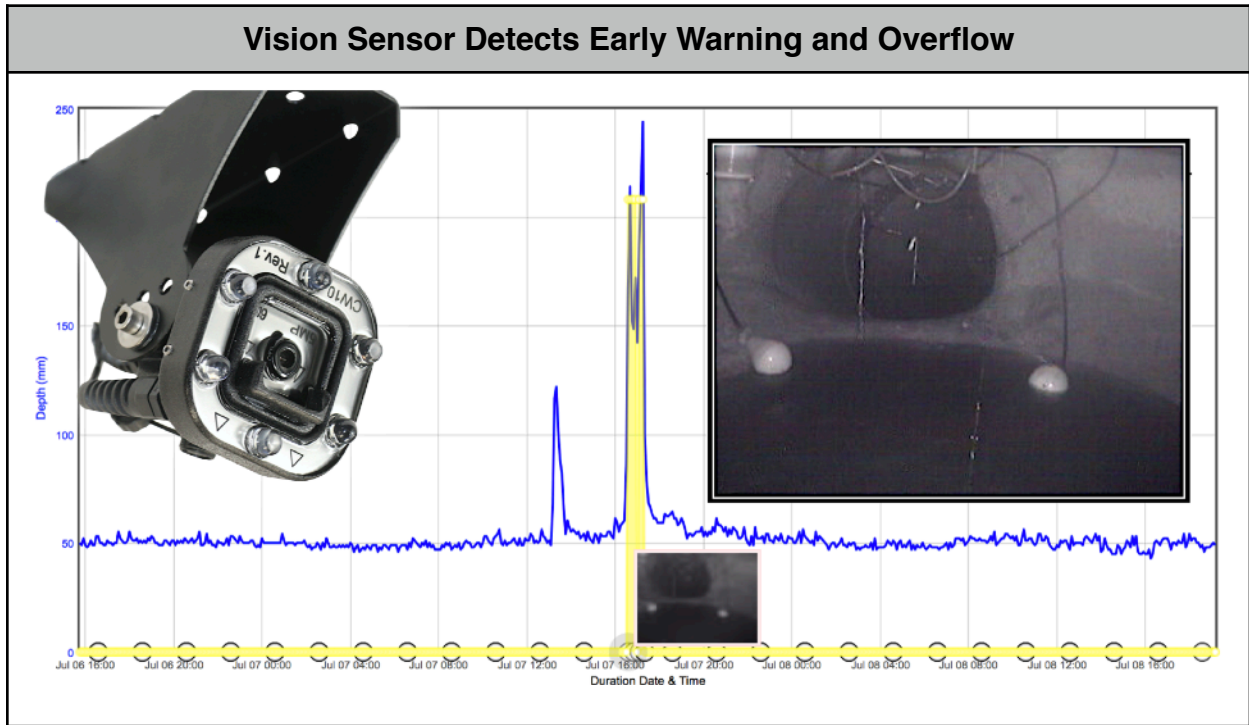
Graph 16. VISION CAMERA (STANDARD FLOW)



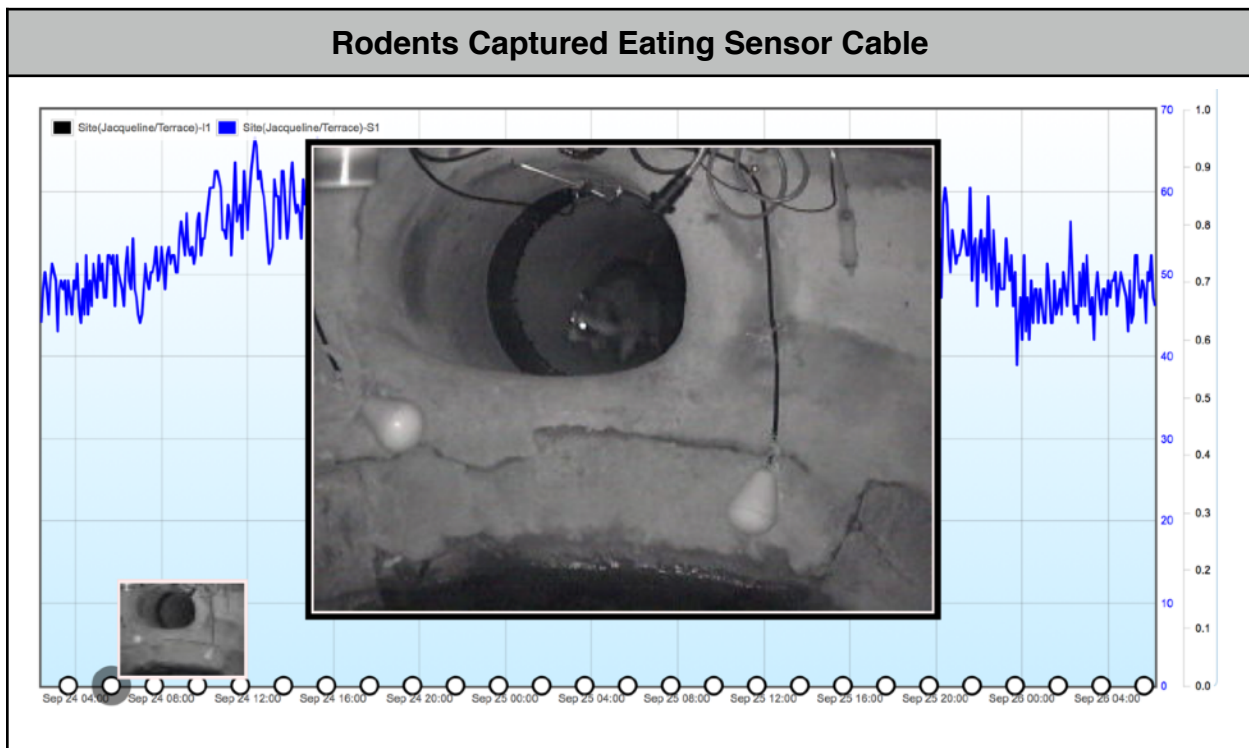
Graph 17. VISION CAMERA (RIVER INFLOW)



Graph 18. VISION CAMERA (OVERFLOW)







Graph 19. VISION CAMERA (RODENT DETECTION)



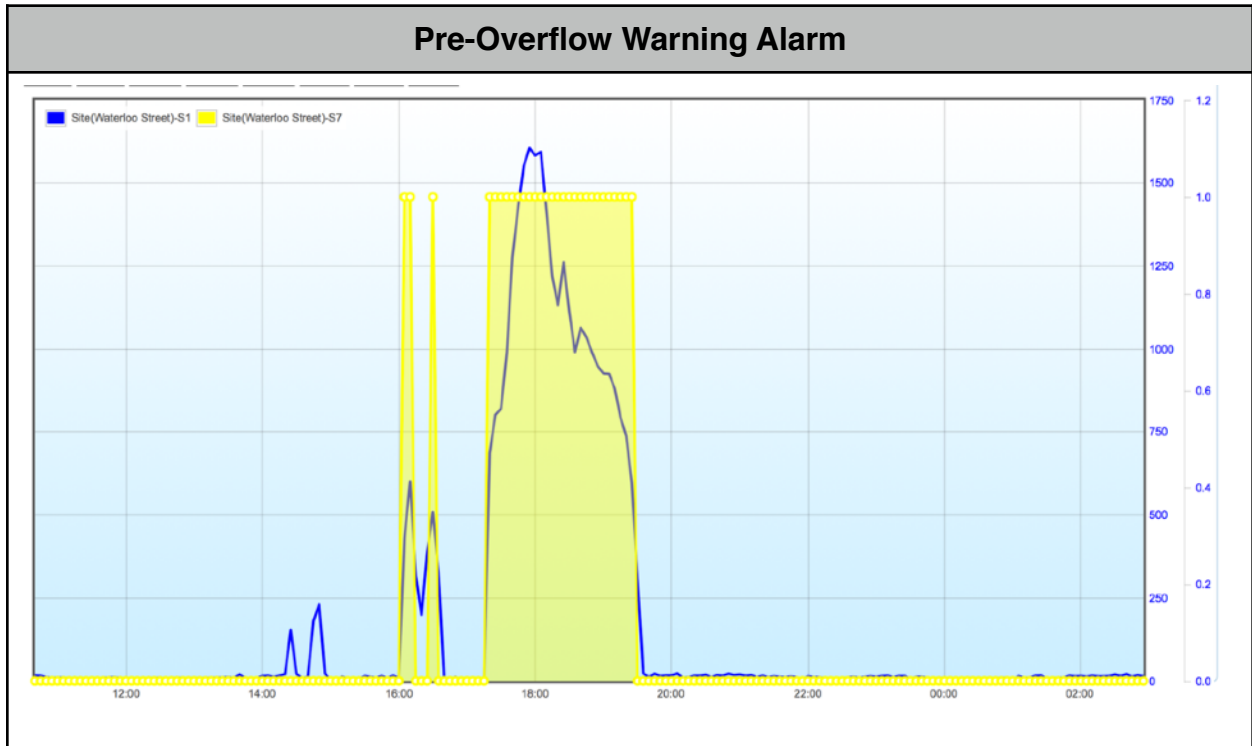
EXAMPLE 5. SEWER OVERFLOW ALARMING

SENSOR CONFIGURATION

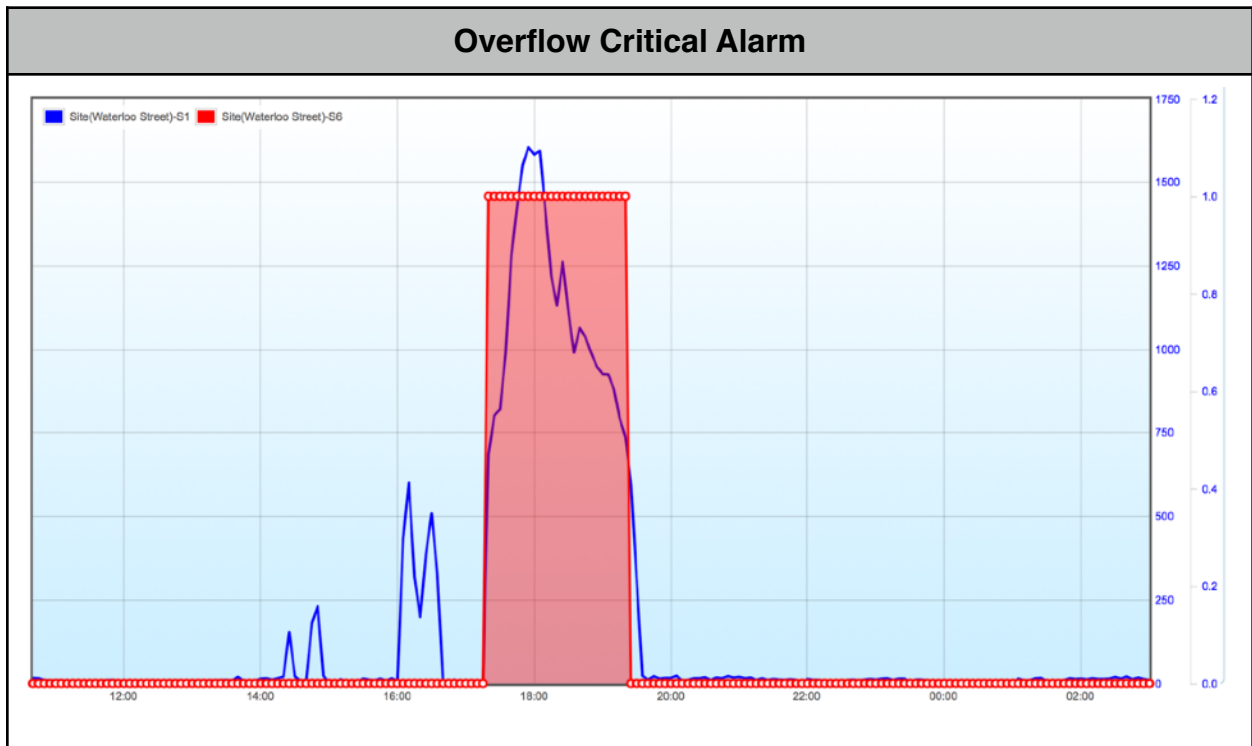
Overflow Pipe Alarm Switches	Overflow Pipe Sensor
	

Non-Contact Flow Kit	Alarm Switch (Low, Warning, Critical)
	

Graph 20. WARNING ALARM



Graph 21. CRITICAL ALARM



BLUE SIREN™

TECHNOLOGY MANUFACTURING COMPANY



Blue Siren Inc.

#103 3030 Venture Lane

Melbourne Florida, 32934, USA

Phone: 321 242-0300

Web: www.blue-siren.com