

ANUE CASE STUDY 9018

Location: Mt. Juliet, TN

Site: Royal Oaks Lift Station

System Size: Model FFM-120-45-M1

- Compressor: Kaeser SM7.5, max. 32 cfm @125 psi
- Oxygen Generator: AirSep AS-D+, max. 45 LPM @65 psi
- Ozone Generator: OWS120, max. 120 g/hr

Overview:

High sulfide levels have been found to be present in the Nonaville Road Lift Station and WWTP. The City of Mt, Juliet decided to demonstrate the Anue System to save the ongoing cost of chemical addition that was not completely solving the problem. Anue Water Technologies (AWT) is herein proposing a demonstration of its FORSe 5 Odor & Corrosion system for treatment of the force main.

Force Main Specifications:

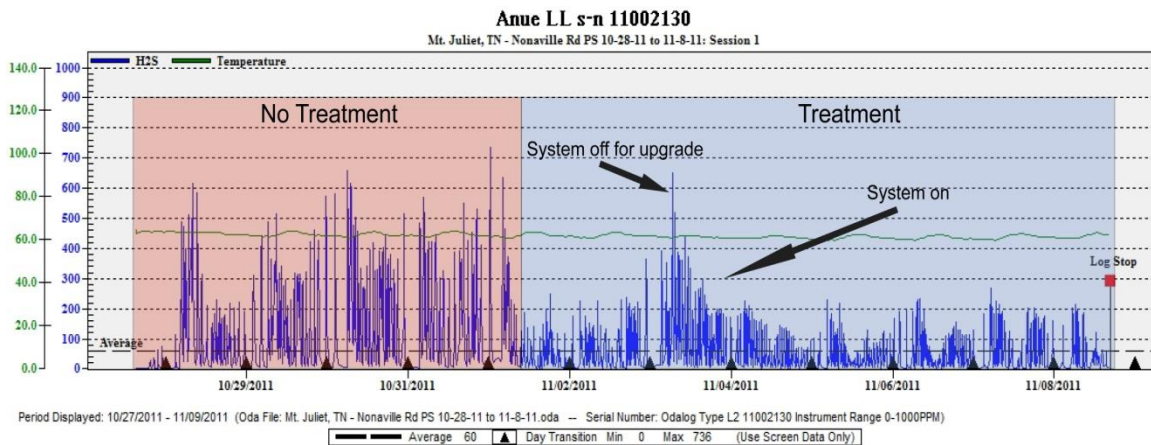
- Force Main (FM) Length: 7,900 ft
- FM Diameter: 10"
- Average FM Flow: 175,000 gallon per day
- Pressure: 90.9 psi (dynamic)

Treatment Goal:

- H₂S (vapor phase) weekly average \leq 50 ppm
- 1 mg/L \leq DO \leq 8 mg/L

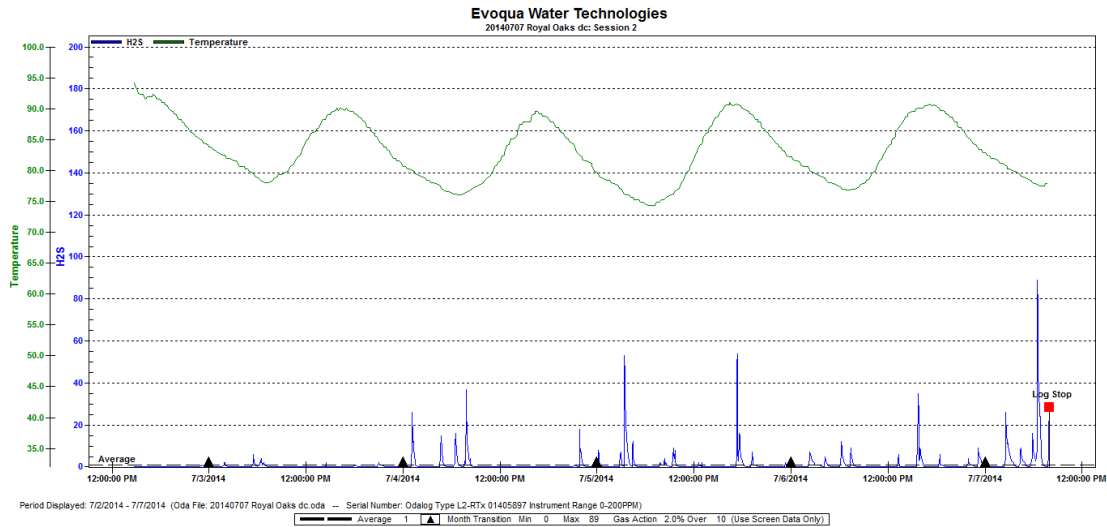
Demo:

- The H₂S average at the discharge point without a running demo unit is 80 - 120 ppm
- After install the demo unit (O₃ – 20 g/hr, O₂ – 60 LPM), the average drop to 20 - 30 ppm within the first 3 days



Actual System Performance: FFM-120-45-M1

- The system completed its installation in November 2013
- Below is a Odalog curve from 7/3/14 – 7/7/14
- The settings are follow
 - Resident Pump OFF: Dosing O2 only at 22 LPM
 - Resident Pump ON: Dosing O2+O3 at 40 LPM



- Above chart show a constant H2S average of 1 ppm from 07/03/2014 to 07/07/2014
- To ensure that the result is based on Anue's FORSe5 system, the City had an outside firm monitor the results at the discharge point.
- The average H2S level during this period was 1 ppm
- The Anue System has saved the city thousands of dollars per year in chemical expenses.

Conclusions:

- Anue system's performance meets H2S target goal of ≤ 50 ppm at the discharge location
- The direct injection method performs well with gravity line and low pressure profile force main
- Closing some of the ARV(s) improves system performance and further reduce the H2S level in the force main and at the discharge location
- The effect of the dosage requires less than 24 hours to see a result at 3A Lift Station Force Main and Plant Headwork
- The system performs with no fault after one year. Only routine maintenance(s) recommended by manufacturers are required to keep the system running.