

## Case Study

USOHPW-1027.001

# 10+ Years of TTHM Removal Success for an Ohio Village

No more worries about EPA compliance with long-term GridBee® THM solution.

**Topics:** clearwell, certified tests, chlorine, trihalomethane reduction, stratification



One of two identical partially buried concrete clearwell tanks

### Location & Contact Information:

Further information may be available upon request. Please contact Ixom Watercare by phone at +1 866-437-8076 or by e-mail, [watercare@ixom.com](mailto:watercare@ixom.com)

**System Overview:** This is a two (2) clearwell system with water flow in series through Clearwell #1, Clearwell #2, then into distribution.

**Clearwell Build Information:** Two (2) identical partially buried concrete tanks with low headspace and tight baffle walls.

Tank Size: 300,000 gallons (1136 kl)

Height: 16.75 ft. (5.1 m)

Diameter: 58 ft. (17.7 m)

Baffles: Tanks are divided into four (4) sections.

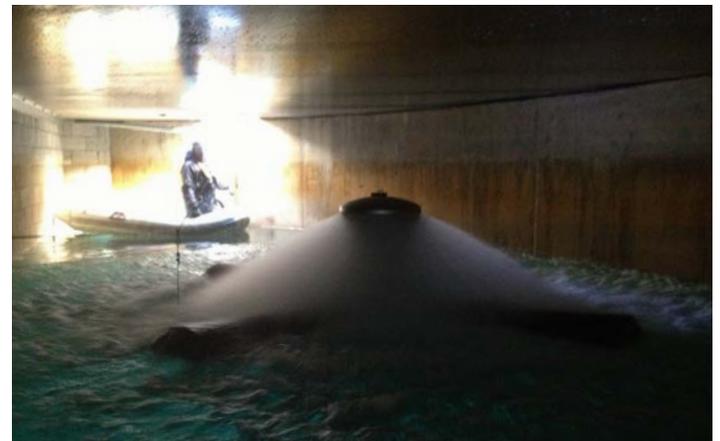
**Disinfectant Type:** Chlorine

**Pre-Deployment Conditions:** The community conducted a distribution system evaluation for total trihalomethanes (TTHMs). Concentrations at several locations exceeded the maximum contaminant level of 80 ppb ( $\mu\text{g/L}$ ) as required by EPA Stage 2 DBPR.

**Project Objectives:** To lower TTHMs to maintain continuous EPA compliance.

### Solution:

- Clearwell #1: One (1) GridBee® GS-12 Submersible Tank Mixer (March 2013)
- Clearwell #2: Two (2) first-generation "cone nozzle" GridBee® SN Series Floating THM Removal Systems (March 2013)



First-generation GridBee® SN Series Spray Aeration

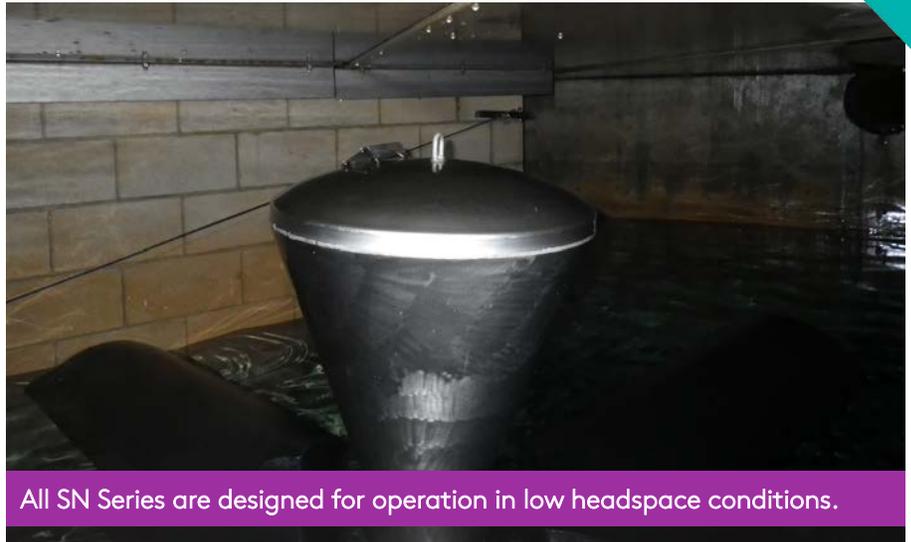
# Case Study (cont'd)

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**Results:** The Customer conducted certified lab tests during the peak THM season. Results show consistent **THM reduction of 60% or more.** (See certified lab test data below). They are pleased with the ongoing THM reduction results and are happy with the service & support they receive from Ixom Watercare.

**Update (Feb. 2023):** The Customer remains happy with the long-term performance of the equipment and continues to realize consistent THM removal and compliance.

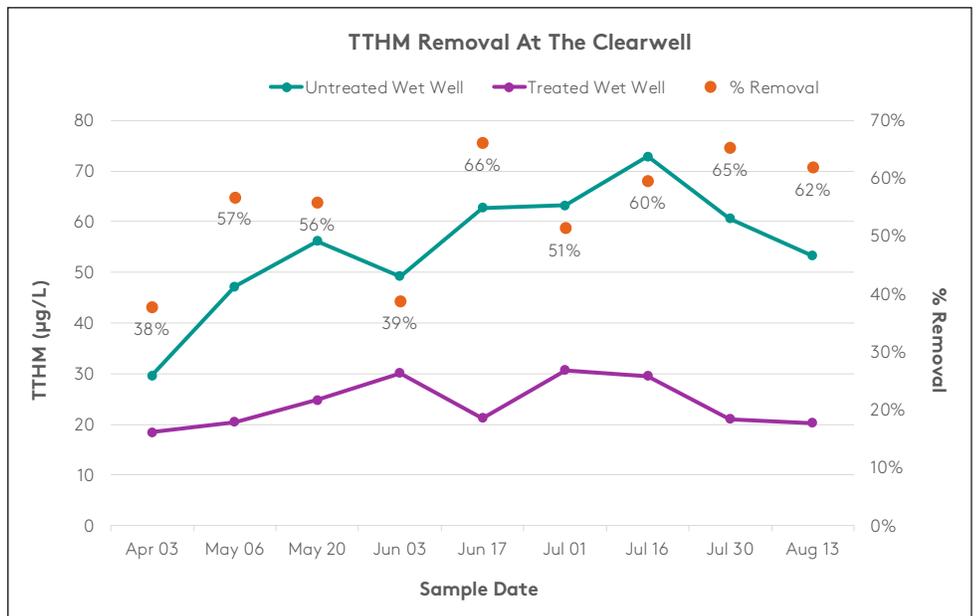


All SN Series are designed for operation in low headspace conditions.

**UP TO**  
**66%**  
**TTHM REMOVED**

## SN Series THM Removal System Design Criteria

This system was designed for a water treatment plant flow rate of ~1440 GPM (5.5 kl/minute) or 2.1 MGD (7949 kl/day). The certified results below were obtained during lower flow rate periods in the first six (6) months of equipment deployment.



| SAMPLE DATE | WATER TEMP °C | WTP PRODUCTION (MG) | WTP PRODUCTION RATE (GPM) | UNTREATED WET WELL | TREATED WET WELL | DS202 (Dist. Sample) | % REMOVAL IN CLEARWELL #2 | REGROWTH IN SYSTEM | "COULD'VE BEEN" TTHM VALUE |
|-------------|---------------|---------------------|---------------------------|--------------------|------------------|----------------------|---------------------------|--------------------|----------------------------|
| 4/03/2013   | 7             | 0.411               | 600                       | 29.6               | 18.4             | 31.8                 | 38%                       | 13.4               | 43                         |
| 5/06/2013   | 15            | 0.554               | 600                       | 47.2               | 20.4             | 43.4                 | 57%                       | 23                 | 70                         |
| 5/20/2013   | 18            | 0.657               | 700                       | 56.2               | 24.8             | 64.7                 | 56%                       | 39.9               | 96                         |
| 6/03/2013   | 20            | 0.412               | 700                       | 49.2               | 30.1             | 58.8                 | 39%                       | 28.7               | 78                         |
| 6/17/2013   | 22            | 0.520               | 700                       | 62.7               | 21.2             | 62.3                 | 66%                       | 41.1               | 104                        |
| 7/01/2013   | 24            | 0.535               | 700                       | 63.2               | 30.7             | 64.7                 | 51%                       | 34                 | 97                         |
| 7/16/2013   | 26            | 0.531               | 700                       | 72.9               | 29.5             | 72.5                 | 60%                       | 43                 | 116                        |
| 7/30/2013   | 24            | 0.450               | 700                       | 60.6               | 21               | 60.3                 | 65%                       | 39.3               | 100                        |
| 8/13/2013   | 23            | 0.435               | 700                       | 53.3               | 20.3             | 52.1                 | 62%                       | 31.8               | 85                         |