



## CANADIAN TOWN ELIMINATES H<sub>2</sub>S ODORS FROM WASTEWATER TREATMENT PLANT WITH EVOQUA'S ZABOCS® ODOR CONTROL SYSTEM TECHNOLOGY

### Client:

*A town in the Canadian Rockies*

This town prides itself on its main natural feature: Sheep River, a mountain-fed stream that runs through the middle of town. The river and its valley provide wildlife habitat, scenic trails and drinking water for the town's residents. In 2014, when an expansion of the 10 MLD wastewater treatment plant resulted in an increase in H<sub>2</sub>S odors near one of its popular riverwalk trails, the town's municipal district took quick action to remediate it.



### Challenge:

*Year-round odor removal in a cold climate*

In expanding odor control for the plant, the town and its water management contractor faced a challenge common to many facilities: lack of space. The town also faced a barrier typical with facilities in northern latitudes: the deep freeze of Canadian winters. The town's preferred odor removal technology, biofiltration, requires running water for operation and must be climate controlled in order to operate year-round in a place where winter temperatures can reach -18°C (0°F). Due to these climate and footprint concerns, a proposed system based on an in-ground tank was rejected, and the town looked for alternatives.

### Solution:

*Small, efficient ZABOCS® system footprint makes room for weather protection*

- ZABOCS System Model 8025-SP
- Air flow rate: 3065 cfm
- Biological stage Empty Bed Retention Time (EBRT): 15 sec
- Carbon polishing stage EBRT: 3 sec
- Average H<sub>2</sub>S loading: 20 ppm H<sub>2</sub>S
- H<sub>2</sub>S removal: 99.9%
- Average Odor Unit (O/U) loading: 15,000 O/U
- O/U removal: 99%
- Ambient temperature range: -40°C (-40°F) - +40°C (+100°F)
- Dimensions: L 31'; W 8'; H 10'
- Media type: Stage 1: Evoqua's biological media  
Stage 2: Virgin Activated Carbon

To meet space and year-round operating requirements, the town chose the ZABOCS zero acclimation Biological odor control system from Evoqua Water Technologies. The ZABOCS multi-media system combines gas absorption, adsorption and biological treatment to capture and eliminate organic and inorganic odors from wastewater process air streams. Its unique combination of biological and carbon media enables the ZABOCS system to treat three times the air volume compared to similar sized conventional biofilter systems. A primary biological stage removes most of the H<sub>2</sub>S odors, and a secondary polishing stage uses carbon to boost efficiency and provide extra capacity to handle spikes in H<sub>2</sub>S volume. In addition, the second stage provides odor removal instantly at start-up while the biofiltration stage is acclimating.

The system was delivered as a single package and installed at the town's treatment plant. Its compact size fits the plant's footprint requirements and allows for the unit to be housed in a weatherproof enclosure, assuring continuous operation all year.

Evoqua provided engineering support and ongoing service.



### Results:

#### *A breath of fresh air*

Using the ZABOCS® system, the town was able to remove 99.9% of H<sub>2</sub>S odors and over 99% of the odor units on the foul air stream, providing a pristine recreational and esthetic environment for the users of nearby homes, parks and hiking trails.

Evoqua's advanced ZABOCS system technology helped the town eliminate treatment plant odor problems in a compact footprint with a solution that eliminated acclimation time and could operate in extreme cold.

The ZABOCS system meets the local odor removal requirements and has extra filtration capacity to support future growth, assuring a pristine recreational environment for residents to enjoy for generations to come.

### Features and Benefits:

- Full removal of H<sub>2</sub>S and other odors
- Small footprint
- Year-round operation with weather enclosure
- Immediate odor control from initial startup due to 2-stage design
- Models to treat air flow from 100 to 5000 cfm
- Factory assembled for "plug-and-play" installation
- Reliable, low maintenance operation



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