Technical Note

Hydrogen Sulfide Reduction

Reducing Hydrogen Sulfide Using the MIEX® Process

V0510

Introduction

The MIEX® ion exchange process is commonly used for the removal of dissolved organic carbon (DOC) from water sources to reduce disinfection by-product (DBP) levels. However, the MIEX® Process can also be applied for the co-removal of other anionic contaminants such as hydrogen sulfide, arsenate, and bromide. This technical note will focus specifically on the removal of hydrogen sulfide and DOC at three MIEX® Plants.

Study 1 – St. Cloud, Florida, 9 MGD

In March 2008, the City of St. Cloud, Florida started up a new 9 MGD water treatment plant that included the MIEX® Process followed by deep bubble aeration and CO_2 stabilization for sulfide removal. However, due to the MIEX® Process achieving almost complete sulfide removal (Figure 1), the City did not need to put the blowers into service. This has resulted in considerable energy and CO_2 cost savings for the City of St. Cloud.

Study 2 – Wedgefield, Florida, 1.4 MGD

A pilot study was performed at Wedgefield, FL in November/December 2005 to investigate the ability of the MIEX® Process to remove DOC and sulfide. A summary of the sulfide removal results is as follows.

Table 1: Wedgefield Trial Sulfide Removal Results

Regeneration Rate	Raw Water	MIEX® Treated	Average % Reduction
1000 BV	2,704 (ug/L)	62 (ug/L)	97.7%

A full-scale MIEX® System was subsequently installed for the dual purpose of DOC removal for DBP reduction and sulfide removal.

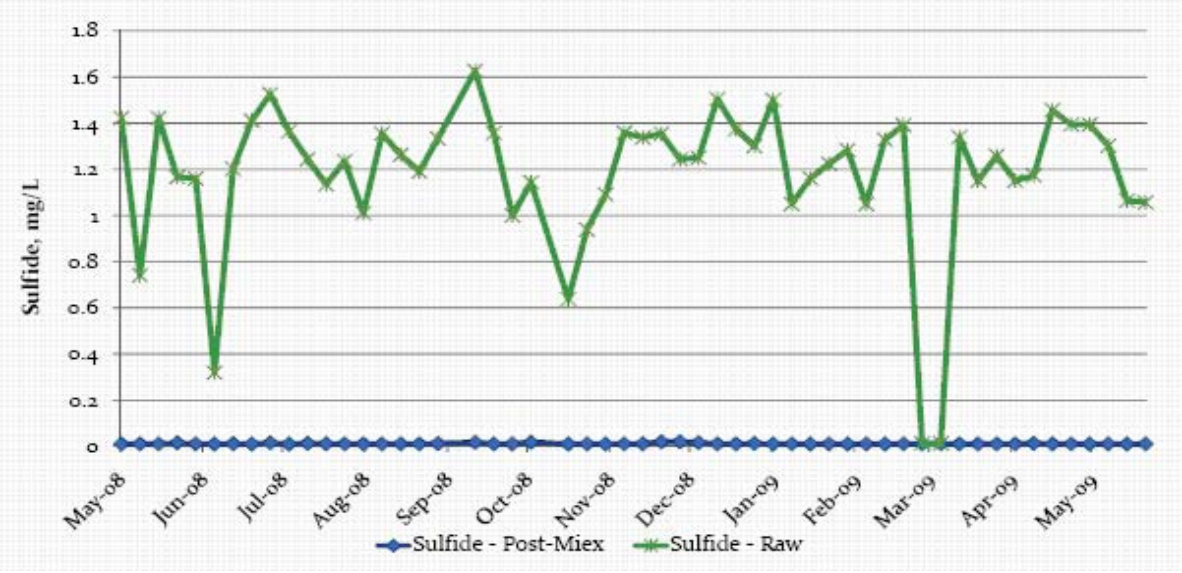
Study 3 – Yankeetown, Florida, 300 gpm

The Town of Yankeetown's water treatment plant consists of an air stripper for sulfide and iron removal followed by a MIEX® System for DOC removal for DBP reduction. After start-up of the MIEX® system, the Town was able to turn off the blower for the air stripper because the necessary sulfide removal was achieved with MIEX® Treatment alone. This has resulted in reduced energy costs for plant operation.

Conclusion

The MIEX® Process has shown that hydrogen sulfide can be reduced by over 97% at full-scale installations from 300 gpm to 9 MGD. To learn more or inquire about a specific sulfide removal application, contact Orica Watercare at **1-877-414-MIEX** or visit **www.miexresin.com**.

Figure 1: Sulfide Reductions at St. Cloud, FL presented at ACE09 by Todd Swingle, Public Services Administrator at the City of St. Cloud



MIEX®

ORICA WATERCARE