

2009 24th Annual CONFERENCE ON THE ENVIRONMENT

November 12, 2009

Earle Brown Heritage Center, Brooklyn Center, Minnesota

SPEAKER BIOGRAPHY SHEET

The following information will be used by session moderators in introducing presentations for the conference. The conference is sponsored by the Minnesota Section, Central States Water Environment Association, a member association of the International Water Environment Federation, and the Air & Waste Management Association – Upper Midwest Section.

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Organization: University of Minnesota_____

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Professional Title: Ph.D. Student_____

Brief Professional History/Awards/Publications: NSF IGERT Fellow; Walter L. and Reta Mae Moore Graduate Fellowship in Water Resources; Residuals and Biosolids 2009 Conference Proceedings, McNamara P & Lawler D.F., "A Comprehensive Study to Reduce Polymer Usage at Austin's Biosolids Management Plant."; WEFTEC 2009 Conference Proceedings, P.J. McNamara, M.T. Wogen, C.A. Wilson, J.T. Novak, S.N. Murthy, P.J. Novak, "Optimizing Removal of Estrogenic Compounds in Biosolids: A Comparison of Anaerobic, Post-Aerobic, and Cambi Digestion Processes"

Education Background: B.S. Civil Engineering (2006) Marquette University; M.S. Environmental and Water Resources Engineering (2008) University of Texas at Austin

Title of Presentation: The effect of enhanced anaerobic digestion on the removal of estrogenic compounds

Brief Presentation Description: _Removal of estrogenicity in biosolids through three digestion processes were studied: i) conventional mesophilic anaerobic digestion (MAD), ii) MAD followed by post-aerobic digestion, iii) thermal-hydrolysis pretreatment coupled to MAD (TH-MAD), aka the Cambi process._____

Project Status (if applicable): _____

Additional Information: _____

___ will you agree to bring a CD, or a USB memory stick? Yes No ___

___ I will bring a USB memory stick_____

Presentation Aids (please check those applicable):

___ Overhead projector ___ Slide projector ___ LCD projector ___ Other

Impact of Advanced Anaerobic Digestion on the Removal of Estrogenicity from Biosolids

SPEAKER

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Land application of biosolids is an essential practice for maintaining sustainability in our wastewater treatment process, but the presence of estrogenic compounds found in biosolids threatens this practice. Thus it is essential to optimize the digestion process to minimize estrogenic compounds in biosolids prior to land application. This work investigated three digestion processes: mesophilic anaerobic digestion (MAD), MAD followed by aerobic digestion, and thermal hydrolysis pretreatment coupled to MAD (THP-MAD, also known as the Cambi digestion process). While THP-MAD offers several known benefits to municipalities such as improved sludge dewaterability, reduced digester volumes, and the production of Class A biosolids, little is known about the effects on estrogens in biosolids. Individual estrogenic compounds were analyzed as well as total estrogenicity to evaluate the effectiveness of each treatment system.