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Estradiol and Ethynylestradiol From Wastewater Treatment in Local River Systems

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Oral Presentation O3.2

ESTRADIOL AND ETHYNYLESTRADIOL FROM WASTEWATER TREATMENT IN LOCAL RIVER SYSTEMS

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Estrogenic compounds, such as estradiol and ethynylestradiol, can exhibit ecotoxic effects in aquatic species, including feminization of males and sterilization of females. This project was conducted with the intent of quantitatively measuring the concentration of estradiol and ethynylestradiol, hormones found in oral contraceptives and other medication, upstream and downstream of local wastewater treatment facilities. The long-term goals of this research include determination of transport, concentration, partitioning, and bioaccumulation of these hormones in the aquatic environment. Analysis included solid-phase extraction, derivitization with MSTFA, and analysis with gas chromatography-mass spectrometry. Quantification was performed through addition of an internal standard containing ^{13}C enriched estradiol and ethynylestradiol.