TOXICITY TEST RESULTS

CITY OF RED WING
WASTEWATER TREATMENT PLANT

Report Date: June 14, 2010

Project No. 10-101

Prepared for:

City of Red Wing
229 N Tyler Rd
Red Wing, MN 55066

6265 Applewood Rd • Woodbury, Minnesota 55125
Phone 651 501-2075 • Fax 651 501-2076

PROJECT: **WHOLE EFFLUENT TOXICITY TESTING**
RED WING WWTP

PROJECT NUMBER: 10-101

TOXICITY TEST RESULTS

INTRODUCTION:

This report presents the results of toxicity testing on water samples received by Environmental Toxicity Control (ETC) on June 9 and 11, 2010. The samples were effluent and its receiving water (Mississippi River) from the City of Red Wing Wastewater Treatment Plant, and were collected by city employees on June 8, 9, 10, and 11, 2010. Acute toxicity testing was conducted on the effluent in accordance with Red Wing's NPDES Permit # MN-0024571. The scope of our services was limited to conducting a 96-hour static renewal acute toxicity test on the fathead minnow, *Pimephales promelas*, and a 48-hour static renewal acute toxicity test on two invertebrate species, *Ceriodaphnia dubia* and *Daphnia magna*, in the laboratory.

SUMMARY:

Our analysis determined that the effluent discharged by the City of Red Wing Wastewater Treatment Plant was not acutely toxic in a 96-hour test to the minnow species tested and was not acutely toxic in a 48-hour test to the two invertebrate species tested.

TEST METHODS:

Tests were conducted in accordance with the procedures outlined in Methods for Measuring the Acute Toxicity of Effluents and Receiving Water to Freshwater and Marine Organisms, Fifth Edition, EPA-821-R-02-012, and followed protocol dictated by the Minnesota Pollution Control Agency.

Testing on all three species was started on 6/9/10, approximately 24 hours after the first sample's collection.

RESULTS:

Toxicity test results are summarized in Table 1 and test conditions are summarized in Table 2.

No mortality was observed in any of the test treatments for the three species tested.

QUALITY ASSURANCE AND QUALITY CONTROL:

Satisfactory laboratory performance on an ongoing basis is demonstrated by conducting at least one acceptable toxicity test per month with a reference toxicant. Control charts for a reference toxicant and successive endpoints (LC50) are plotted to determine if results are within prescribed limits. Results from our most recent reference tests are shown in the following table:

Reference Toxicity Test		
Species	LC_{50}	Test Date
Pimephales promelas	8.25 g/l NaCl	5/10/10
Ceriodaphnia dubia	2.00 g/l NaCl	5/10/10
Daphnia magna	4.01 g/l NaCl	5/10/10

Our results are within range of EPA expected results for the type of tests conducted.

Test methods and procedures are documented in ETC's Standard Operating Procedures (SOPs). Test and analysis protocols are reviewed by ETC's Quality Assurance/Quality Control Officer. Procedures are documented and followed as written. Any deviation from a QA/QC procedure is documented and kept in the project file. During this project, no deviation in method was warranted.

ENVIRONMENTAL TOXICITY CONTROL

Walter Koenst
Bioassay Manager