

1106-35-1737

**Suzannah G Miller\*** (suzannah.miller@my.minotstateu.edu) and **Narayan Thapa** (narayan.thapa@minotstateu.edu). *Comparison of Numerical Procedures in Water Pollutant Transport Modeling.*

Water quality, as indicated by the level of water pollution, can be described through mathematical models of the transport of the pollutant of interest. The concentration of the pollutant at a given location in a water body depends on the natural movement and biochemistry of the water body. A fundamental differential equation of transport can be developed that accounts for advection, dispersion, and external contributions of the pollutant, as well as the nonconservative nature of some pollutants. The integration of the differential equation gives the concentration of the pollutant at any point in the volume of water being considered. This research will examine the development of a model of pollutant transport and look for analytical and numerical solutions. In particular, the solutions from the finite difference method and finite element method will be compared. (Received September 15, 2014)