**The Arkansas Nitrogen Removal Program**

The Arkansas Department of Environmental Quality manages the NPDES surface water discharge program. Arkansas has total nitrogen limits on six major municipal dischargers (over 1 million gallons per day) with a limit of 10 mg/l total nitrogen. The 10 mg/l total nitrogen limit was implemented from a TMDL developed in north western Arkansas to protect the Illinois River a tributary that flows into Oklahoma and then into the Arkansas River.

Of the six major municipal dischargers only one, Green Forest uses a supplemental carbon source to achieve the 10 mg/l total nitrogen permit limit. In the case of Green Forest 200 gallons per day of glycerin is used. The need for a supplemental carbon source at Green Forest is because the wastewater treatment facility receives a high strength nitrogen waste from a poultry processing plant that discharges into their sewer system.

Arkansas also has eleven poultry processing plants that have individual permits with surface water discharges. The poultry processing plant permits range from a low of 10 mg/l total nitrogen in rivers where a nitrogen TMDL exists up to 103 mg/l total nitrogen monthly average (the federal US EPA technology based limit) in all other rivers. Several of the lower 10 mg/l total nitrogen limit poultry processing plants use supplemental carbon on an intermittent bases to achieve the nitrogen permit limit. Glycerin is typically used at the poultry plants as the supplemental carbon source.

The Arkansas Department of Environmental Quality also has listed two creeks the Bear and Sagar Creeks as nitrate nitrogen impaired. They represent 62 miles of waterways where TMDLs will be developed with future nitrogen limits.

The largest potential for nitrogen limits in Arkansas is form the Gulf of Mexico/Mississippi River hypoxia study. The Arkansas Department of Environmental Quality is actively involved in the larger basin study with the US EPA. The drainage basin for the Mississippi River in Arkansas will affect the majority of large wastewater treatment plants in the state. The likely schedule for actual wastewater nitrogen limits for dischargers and completed wastewater improvements with nitrogen limits is greater than five years.