Mechanical Wastewater Treatment Plant - Update

The Village of Arcanum's aging Wastewater Treatment system can no longer keep up with effluent water quality requirements set forth by the State and Federal EPA. This is a common issue based on the type and age of the current wastewater treatment system with other municipalities throughout the area. The Village has entered into an agreement with the EPA to resolve this issue to keep from being fined.

The new mechanical wastewater treatment plant began construction August 2017 and is expected to be completed by August 2019.

The new treatment plant will incorporate screens to remove all the trash and unwanted items from the sanitary wastewater that is detrimental to the biological treatment process.

The new primary treatment process is known as a Biological Nutrient Reduction (BNR) process. The new process works in stages:

- The first stage of the process will remove Phosphorus from the wastewater. Phosphorus is used in the manufacturing of soap products to help create bubbles. If phosphorus is discharged into a stream or body of water it will biologically remove oxygen from the water and will eventually kill aquatic life such as fish and other oxygen dependent life forms within the body of water.

- The second part of the process will remove ammonia from the wastewater which is introduced through urine.

- The last stage of the process will reduce the amount of solids in the wastewater.

After several hours in the primary treatment, the wastewater flows to a clarifier which removes the solids from the water by a method of sedimentation. The solid or sludge settles to the bottom and is removed using a pump.

The clear water, which is at the top, flows out of the clarifiers and through a process of disinfection using ultraviolet light to kill any bacteria that might slip through the clarifiers. The water then flows through a large tank which is supplied with copious amounts of tiny air bubbles to insure that the water has plenty of dissolved air so when the water is discharged in to the receiving stream fish and other aquatic life have plenty of air to live on.

Finally the effluent water is sampled and tested to insure proper treatment. It is discharged in to "Waters of the State" after being measured to know the amount of water being treated.

A by-product of this process is a thick sludge. Sludge that is produced by wastewater treatment plants is many times used as fertilizer in farming. As long as the sludge is deemed safe from heavy metals and other contaminants, sludge is widely used as natural fertilizer in agriculture so farmers can lessen the need for chemical fertilizers.

Mote & Associates, Inc. of Greenville has assisted the Village in the design and construction of the new wastewater treatment plant. They have also provided assistance in securing grant and low-interest loan monies to make this project affordable for the Village residents. Building Crafts, Inc. of Wilder, Kentucky is doing and excellent job of constructing the new facility.