

## CITY OF HICKORY NORTHEAST WWTF

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The Northeast Wastewater Treatment Facility is located at 310 Cloninger Mill Road, Hickory, NC. It is an advanced secondary treatment process that utilizes Carrousel Oxidation Ditch technology that's capable of removing BOD, nitrogen and phosphorous. The plant is designed to treat 6.0 MGD (million gallons per day) of municipal and industrial wastewater flows from served locations in Northern Hickory and Southern Alexander County. The facility is staffed with State Certified Operators 24 hours a day, 7 days per week.





## **PROCESS**

- **Preliminary Treatment**

All plant influent flows through dual bar screens where large and stringy solids are mechanically raked from the screens to help minimize clogging of plant pumps, valves and piping. Following screening, the flow is directed to the influent Parshall flume. The flume flow metering system provides monitoring and recording of influent flow data. From there, the influent is pumped to the headwork's building where the vortex grit removal and grit washing system are. The grit is removed from the wastewater to help reduce wear on downstream plant units. The screenings and grit are washed to minimize odors before being discharged on conveyor systems and then disposed of.



- **Secondary Treatment**

The flow from the grit removal process then flows to the Carrousel A2C Oxidation Ditch. The system is a staged, activated sludge process which uses BOD of the wastewater to accomplish nitrogen removal and to promote biological phosphorus removal. The Carrousel A2C consists of the following basins (thus the name A2C):

- Anaerobic Basin
- Anoxic Basin
- Carrousel System (Aeration or Nitrification Basin)





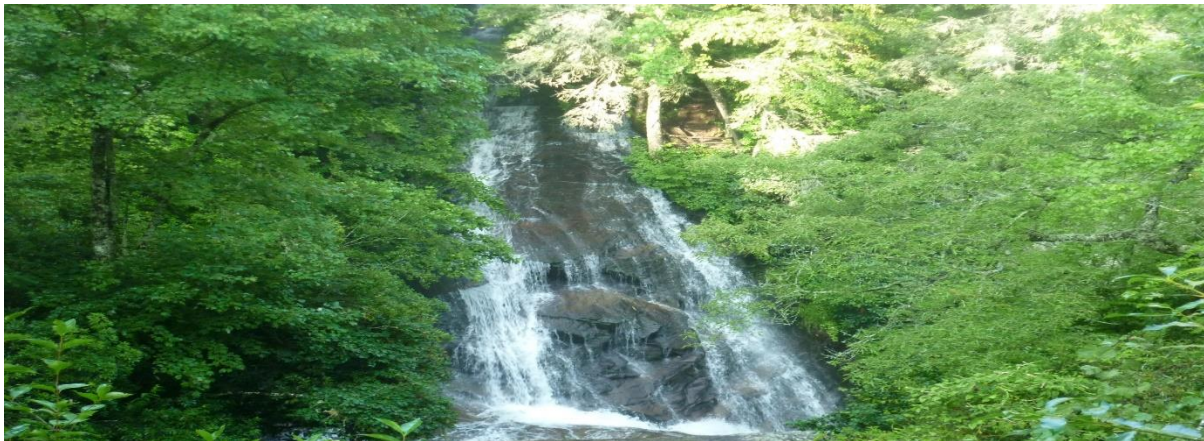
- **Secondary Treatment Final Chambers**

After biological nutrient removal in the oxidation ditches, the wastewater enters the secondary clarifiers. Floating particles are skimmed from the surface and removed from the treatment process. Solids in the water are allowed to settle and are either removed from the system or recycled back to the first zone of the oxidation ditches. All solids removed from the process are dewatered and thickened before being hauled off to the Regional Compost Facility.



- **Final Treatment**

The chlorine contact chamber treats the biologically treated effluent from the secondary clarifiers. Chlorine is added to remove any pathogenic organisms that may be present. Sulfur dioxide is used to remove residual chlorine before the fully treated wastewater is aerated a final time. The entire treatment process is designed to minimize impact on the surrounding areas, and prevent contamination of our lakes, streams and rivers.



### **FURTHER INFORMATION**

Thank you for stopping by our website. If we can be of further assistance or to schedule a tour, please feel free to contact us at (828) 322-5075.