



# CASE STUDY

## PROJECT NAME

Harmony Road Elementary School

## DESIGN FLOW

4,500 Gallons Per Day

## PROCESS USED

Mixed treatment with ATU and ECOPOD Fixed Film Media

## DEGREE OF TREATMENT

Flow Equalization  
Primary Treatment  
Secondary Treatment  
Polishing  
Chemical Feed  
Dosing

## WASTE TYPE

Domestic

## LOCATION

Ontario, Canada

## ECOPOD System at Harmony School in Ontario Reduces Nitrogen Output

### SUMMARY

Harmony School is located in Ontario, Canada and is designed for a flow rate of 4,500 gallons per day, influent strength of 300 mg/L BOD, 300 mg/L TSS and 60-75 mg/L of total nitrogen. Due to the stringent nitrogen effluent requirements, this system was setup with primary treatment, first stage nitrification, second stage denitrification and a polishing stage to remove any excess carbon. After several months of operation, test data showed that the primary stage Whitewater units were nearly completely nitrifying the available ammonia in the influent. The first stage ECOPOD unit was equipped with alkalinity feed, and reduced that total nitrogen load by a minimum 53%. This 53% reduction is shown in our NSF 245 certification data. With a minimum 1x recirculation rate being pumped from the final pump tank back to the ECOPOD E450D unit, the effluent nitrogen will again be reduced to a calculated level of 20 mg/l. The E450D ECOPOD reactor was setup with a carbon source dose system into the dilution zone in order to feed the denitrification process, since the BOD is at such low levels coming from the Whitewater units. The final E100 ECOPOD unit serves to polish the final effluent, removing any carbon not utilized in the denitrification process prior to effluent discharge.

### RESULTS

After some fine-tuning of the recirculation rates and feed rates to accommodate the variety of influent flows at this site, the system currently has a consistent effluent output of less than 10mg/L total nitrogen.



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