Tennessee Denitrification Experiment

Objectives:
1. Determine if additional retention time will improve nitrate removal.
2. Determine if additional BOD will improve nitrate removal.

Experimental Procedure:
1. Collect enough mixed liquor from outlet end of anoxic zone (or, at the end of an air-OFF cycle) to fill two settleometers.
2. Collect approximately 1 liter of influent.
3. Fill one settleometer with mixed liquor (Anoxic).
4. Fill the other settleometer three-quarters full with mixed liquor, top off with influent and gently mix (Anoxic + Influent).
5. Collect samples from both settleometers, filter and test for nitrate.
6. Every 15 minutes for an hour, pipette a clear water sample from the top of each settleometer and test for nitrate.
7. After collecting samples, gently mix the contents of both settleometers and allow to settle for another 15 minutes.
8. Continue the experiment, but collect samples every half hour.
9. Record the nitrate concentrations in the chart below.

Day & Date: _____

	Time	**Anoxic**	**Anoxic + Influent**
START	: AM / PM		
15 min	: AM / PM		
30 min	: AM / PM		
45 min	: AM / PM		
60 min	: AM / PM		
90 min	: AM / PM		
120 min	: AM / PM		

Results:

1. If the nitrate concentration in the Anoxic sample drops to a desired concentration, more time under anoxic conditions are required.

2. If the nitrate concentration in the Anoxic sample doesn't drop much (in comparison to the drop that occurs in the Anoxic + Influent sample), nitrate removal is being inhibited because of a lack of BOD.