Activated System Equilibrium 178990

Form

Use 2 - 5 gallon carboys, to run parallel tests

1. First Day

Add 4½ gallon of mill effluent. Check T.S.S. + T.V.S.

Add ½ gal (10%) of activated sludge from city waste treatment plant.

Aerate 24 hr. by bubbling air through requires slight trace of oxygen at all times

At the end of 24 hrs., with air still on remove a portion of the stock solution and measure total suspended solids and total volatile solids, by ashing.

Then shut the air off and allow to settle. Test a part of the supernate, by siphoning for T.S.S. and T.V.S.

2. From second day on:

Make volume back up to 5 gallon with mill effluent. No activated sludge need be added. The sludge in the carboy is to be left in the bottle from the day before. Check T.S.S. + T.V.S. of the mill effluent (each day) which is added each day. The T.S.S. + T.V.S. should be checked while aerating and after settling

~~Compute~~

From the above data, the total wt. in grams of T.V.S. suspended in the jug can be determined: volume × conc.

Form

One of three things will take place:

1. The volatile suspended solids will remain unchanged. If this happens, equilibrium has been reached, which is desirable.
2. The volatile suspended solids will increase. Again, nothing need be changed, and this is desirable. This system will come to an equilibrium.
3. The volatile suspended solids will decrease. This means the activated sludge is not getting enough food. To correct this, the system can be fed twice per day. That is, the aeration can be changed twice per day. An alternate is to decrease the size or volume used.