

EXTENDED AERATION SEWAGE TREATMENT PLANT CHECK LIST

EQUIPMENT OPERATION	AERATION TANK	SETTLING TANK (CLARIFIER)	EFFLUENT	COMMENTS AND CORRECTIONS
1 All equipment operating properly.	Air bubbles rising. Chocolate color. Little or no foam. 20-60% solids. More than 1 ppm DO.	Surface clear to a depth of 18 or more inches.	Clear, sparkling. No solids. More than 1 ppm DO.	All good - continue same operation.
2 Same.	Few or no air bubbles rising. Black color. No DO.	Dark and murky.	Murky. Odor. High solids content.	Check for major air leaks or aerator break down. Clean diffusers and/or air lines, repair faulty equipment. When corrected, increase aeration until brown color and DO return. Then return to normal aeration.
3 Equipment not operating.	Same.	Same.	Same.	Check for power outage; tripped circuit breakers and relays. Reset circuit breaker switch; motor overloaded - push reset button. Check overload relays if reset does not start motor. Check V-belt drives/ coupling failure, if any.
4 All equipment operating.	Air bubbles rising. Light, muddy color, too much foam. 5-15% solids. Murky supernatant with poor separation of liquid and solids.	Murky, no visible sludge blanket. Floating sludge in some areas.	Murky, high solids.	Overaeration - blowers/aerators running too much. Reduce running time to the minimum necessary to maintain brown color. Common during start-up period. Use froth spray system if provided. Increase sludge return rate may help. Another possibility is the formation of poor settling bacteria. Do a microscopic study and then contact Hydrex for assistance!

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5 All equipment operating properly.	Air bubbles rising. Chocolate or gray color. 10-25% solids. 1-3 ppm DO.	Murky with large chunks of floating sludge.	Murky. High solids.	Probably due to inadequate sludge return. Check sludge return pump or sludge scraper break down. For manual scraper, scrape tank hoppers more often.
6 Same.	Air bubbles rising. Chocolate color. 20-50% solids. 1-3 ppm DO.	Clear at surface. Visible sludge blanket 12 inches or so below surface.	Not murky. Excessive solid particles. DO about 1 ppm.	May be due to excessive sludge return and/or skimming. Also check BOD and flow - plant may be overloaded.
7 All equipment operating properly except skimmer.	Same.	Much floating material.	Clear, no solids. DO more than 1 ppm.	May be due to clogged or improperly set skimmer - adjust or unclog.
8 All equipment operating properly except sludge return pump.	Same.	Same as Item 5.	Same as Item 5.	Probably due to clogged sludge return - check air supply lines if applicable.
9 All equipment operating properly except spray system.	Same as Item 1. Excessive foam.	Same as Item 1.	Same as Item 1.	Possible spray pump not operating - check power supply and push reset. Possible pump plugged - remove pump and clean intake. Possible clogged nozzles - clean.
10 All equipment operating properly.	Air bubbles rising. Light muddy color. Yellow foam, grease balls. No DO.	Murky. Brownish-yellow floating greasy sludge. Excessive grease.	Murky. Excessive solids.	Possible excessive amounts of grease entering the plant - check grease trap - remove grease before it enters the plant.

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11 All equipment operating properly.	Air bubbles rising. Chocolate color. Above 70% solids. >0.5 ppm DO.	Very little clear liquid at surface.	Large amount of brown sludge at the bottom.	Too many solids lost because of solids concentration in the aeration tank is too high. Remove sludge from clarifier to sludge digester.
12 Same.	Air bubbles rising. Chocolate color. 20~ 70% solids. >0.5 ppm DO.	Large chunks of light brown sludge floating on surface. Clear liquid at surface.	Large amount of light brown sludge at the bottom after 30 minutes setting.	Denitrification- nitrogen gas from within the sludge at the bottom of clarifier. This condition can be confirmed by leaving sample in sample jars for 2 hours. If sludge rises to the top of the jars, denitrification is occurring. Increase sludge wasting and increase the sludge return rate to reduce sludge retention time in clarifier. This problem often occurs in warmer months.
13 Same	Light brown or unusual odor. Sludge does not settle.	Murky, no visible sludge blanket.	Cloudy	System is upset by unusual load which may contain toxic, extreme pH or high organic substance. Contact your local regulatory agency for assistance.