



Problem	Possible Cause	Corrective Action
Objectionable odours from filter	Excessive organic load causing anaerobic decomposition in filter	<ol style="list-style-type: none"> 1. Calculate loading. Reduce loading by putting more bio-filters in service 2. Increase COD removal in primary settling tanks by using all tanks available and minimising storage of primary sludge in tanks. 3. Encourage aerobic conditions in treatment units ahead of the bio-filter by adding chemical oxidants such as chlorine, potassium permanganate, or hydrogen peroxide, or by pre-aerating, recycling plant effluent, or increasing air to aerated grit chambers 4. Enforce industrial waste ordinance, if industry is source of excess load. 5. Scrub bio-filter off-gases. 6. Expand the plant.
	Insufficient ventilation	<ol style="list-style-type: none"> 1. Increase hydraulic loading to wash out excess biological growth 2. Remove debris from filter effluent channels and under drains. Remove debris from top of filter media. Unclog vent pipes. 3. Reduce hydraulic loading if underdrains are flooded. 4. Install fans to induce draught through filter. 5. Check for filter plugging caused by breakdown of media.
Ponding on filter media	Excessive biological growth	<ol style="list-style-type: none"> 1. Reduce organic loading. 2. Increase hydraulic loading to increase sloughing 3. Flush filter surface with high-pressure stream of water 4. Chlorinate influent for several hours. Maintain 1 to 2 mg .-1 residual chlorine 5. Flood filter for 24 hours 6. Shutdown filter until media dries out.
	Poor media	Replace media
	Poor housekeeping	Keep area surrounding the filter mowed. Remove weeds and shrubs
Rotating distributor slows down or stops	Insufficient flow to turn distributor	Increase hydraulic loading.
	Clogged arms or orifices	<ol style="list-style-type: none"> 1. Flush out arms by opening end plates. Flush out orifices. 2. Remove solids from influent wastewater.
	Clogged distributor vent pipe	Remove material from vent pipe by rodding or flushing. Remove solids from influent wastewater.
	Bad main bearing	Replace bearing.
	Distributor arms not level	Adjust guy wires at tie rods.
	Distributor rods hitting media	Level media or remove some media
Dirt in main bearing oil	Excessive organic load causing anaerobic decomposition in filter	<ol style="list-style-type: none"> 1. Calculate loading. Reduce loading by putting more bio-filters in service. 2. Increase COD removal in primary settling tanks by using all tanks available and minimising storage of primary sludge in tanks. 3. Encourage aerobic conditions in treatment units ahead of the bio-filter by adding chemical oxidants such as chlorine, potassium permanganate, or hydrogen peroxide, or by pre-aerating, recycling plant effluent, or increasing air to aerated grit chambers. 4. Enforce industrial waste ordinance, if industry is source of excess load. 5. Scrub bio-filter off-gases. 6. Expand the plant.
	Insufficient ventilation	<ol style="list-style-type: none"> 1. Increase hydraulic loading to wash out excess biological growth 2. Remove debris from filter effluent channels and under drains. Remove debris from top of filter media. Unclog vent pipes. 3. Reduce hydraulic loading if underdrains are flooded 4. Install fans to induce draught through filter. 5. Check for filter plugging caused by breakdown of media.

Ponding on filter media	Excessive biological growth	<ol style="list-style-type: none"> 1. Reduce organic loading 2. Increase hydraulic loading to increase sloughing 3. Flush filter surface with high-pressure stream of water 4. Chlorinate influent for several hours. Maintain 1 to 2 mg .-1 residual chlorine 5. Flood filter for 24 hours 6. Shutdown filter until media dries out
	Poor media	Replace media.
	Poor housekeeping	Keep area surrounding the filter mowed. Remove weeds and shrubs
Rotating distributor slows down or stops	Insufficient flow to turn distributor	Increase hydraulic loading
	Clogged arms or orifices	<ol style="list-style-type: none"> 1. Flush out arms by opening end plates. Flush out orifices. 2. Remove solids from influent wastewater.
	Clogged distributor vent pipe	Remove material from vent pipe by rodding or flushing. Remove solids from influent wastewater.
	Bad main bearing	Replace bearing
	Distributor arms not level	Adjust guy wires at tie rods
	Distributor rods hitting media	Level media or remove some media
Dirt in main bearing oil	Worn bearing dust seal	Replace seal
	Worn turntable seal or seal plate	Replace seal. Inspect seal plate and replace if worn.
	Condensate not drained regularly or oil level too low	Check oil level, drain condensate, and refill if needed
Water leaking from distributor base	Worn turntable seal	Replace seal
	Leaking expansion joint between distributor and influent piping	Repair or replace expansion joint
Insufficient flow from Recirculation pumps	Excessive head	<ol style="list-style-type: none"> 1. Open closed or throttled valves. 2. Unplug distributor arms, headers and laterals. Unplug distributor nozzles and orifices. 3. Unplug distributor vent lines
	Pump malfunction	<ol style="list-style-type: none"> 1. Adjust or replace packing or mechanical seals. Adjust impeller to casing clearance. 2. Replace wear rings if worn excessively. Replace or resurface worn shaft sleeves. 3. Check impeller for wear and entangled solids. Remove debris. 4. Check pump casing for air lock. Release trapped air. 5. Lubricate bearings. Replace worn bearings.
	Pump drive motor failure	<ol style="list-style-type: none"> 1. Lubricate bearings. Replace worn bearings 2. Keep motor as clean and dry as possible 3. Pump and motor misaligned, check vibration and alignment. Redesign as needed 4. Pump and motor misaligned, check vibration and alignment. Redesign as needed 5. Check the drive motor for

