



SINGULAIR GREEN® BIO-KINETIC® WASTEWATER TREATMENT SYSTEM TROUBLESHOOTING

During service inspections you may periodically encounter a situation which, if not identified and corrected, will result in interruption of service for the Singulair Green system. This troubleshooting guide is designed to enable you to isolate the cause of system problems that may be encountered from time to time. Whenever a potential problem is encountered, you should take immediate steps to eliminate the cause. Please note that all areas of installation, including those normally the responsibility of the contractor, excavator, electrician and owner, are covered. You will find that many problems can be traced to causes other than the system or its components. Your help and suggestions in solving these for the owner will save unnecessary expense and will insure maximum system performance.

PLEASE NOTE:

This troubleshooting guide provides efficient and correct solutions to most wastewater treatment problems when used in conjunction with established inspection procedures performed by a factory-trained service technician.

Before responding to a customer service call, check to see that:

- ✓ A member of your service staff, factory-trained and certified by Norweco, is dispatched to answer the call.
- ✓ Installation and service records for the particular system are up-to-date and have been reviewed.
- ✓ The service technician responding to the call has a copy of the Singulair Green Service Manual.
- ✓ The service vehicle has loaner aerators, exchange aerators, Bio-Kinetic Service Cart, exchange Bio-Kinetic systems and a fully stocked Tool Kaddy with replacement parts.
- ✓ Clear and concise directions to the installation, including tank and control center location, are given to the service technician.

OPERATIONAL TROUBLESHOOTING

MUD OR SILT IN SINGULAIR GREEN SYSTEM OR BIO-KINETIC SYSTEM*

Influent sewer line separated at a joint or fitting	Have contractor excavate and repair
Sewer line crushed	Have contractor excavate and replace
Defective seal around tank inlet or outlet	Excavate and reseal
Singulair Green tank structurally damaged	Excavate and patch or replace tank
Riser joint improperly sealed	Excavate and seal with o-ring gasket

*Have Singulair Green system pumped to remove mud after repairs have been completed. Multiple pumpings may be required to remove all mud from the Singulair Green system. See: Singulair Green Tank Pumping instructions.

TROUBLESHOOTING (Cont.)

SEPTIC ODOR IN SINGULAIR GREEN SYSTEM

Aerator turned off	Place control center selector switch in "on" position
Insufficient air delivery by aerator	Service aerator
Aspirator shaft plugged with deposits	Remove from aerator and flush with shaft cleaning hose
Aspirator orifices plugged with deposits	Remove deposits
Water softener backwash discharging into system	Have owner remove backwash line from system
Service Pro control center alarm activated	See "Control Center Warning Light Flashing/Audible Alarm Sounding"
Improperly sealed pretreatment chamber access cover	Seal pretreatment access cover
Perimeter vent restricts fresh air entry	Clean perimeter vent
Incomplete treatment due to hydraulic overloading	See "Hydraulic Overloading"
Periodic septic odor for no reason	Have sanitary sewer vent checked

HYDRAULIC OVERLOADING OF SINGULAIR GREEN SYSTEM

Ground water entering system through riser joint	Excavate and seal with o-ring gasket
Ground water entering system through crack in side wall	Excavate and patch or replace tank
Ground water entering system through defective seal at inlet or outlet line	Excavate and reseal piping as needed
Roofing down spouts, footer drains, sump pump piping or garage and basement floor drains tied into Singulair Green system influent line	Have contractor relocate improper connection downstream of Singulair Green system

ORGANIC OVERLOADING OF SINGULAIR GREEN SYSTEM

Aeration chamber settled solids test reads in excess of 75%	Evaluate pretreatment chamber - See Singulair Green Tank Pumping instructions
Aeration chamber solids appear black	Evaluate pretreatment chamber - See Singulair Green Tank Pumping instructions

FLOATING SOLIDS IN CLARIFICATION CHAMBER OR PLANT EFFLUENT

Excessive sludge on clarifier sidewalls	Scrape hopper side walls
Restriction of Bio-Static or sludge return port	Remove obstruction
Pretreatment chamber discharging excessive solids	Evaluate pretreatment chamber - See Singulair Green Tank Pumping instructions
Hydraulic overloading of system	See "Hydraulic Overloading"

CONTROL CENTER WARNING LIGHT FLASHING/AUDIBLE ALARM SOUNDING

Liquid in tank at level of foam restrictor	See "Singulair Green System Flooded"
Aerator drawing excessive current	See "Aerator Drawing Excessive Current"
Dead short in power line to aerator	Have owner call his electrician

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SINGULAIR GREEN® BIO-KINETIC® WASTEWATER TREATMENT SYSTEM

AERATOR TROUBLESHOOTING

AERATOR WILL NOT OPERATE

Electrical service to aerator interrupted	See "No Electrical Power from Control Center to Aerator"
Voltage supplied is insufficient to start aerator*	Report condition to power company
Defective bearing, windings or insulation in motor	Return entire aerator to factory
Debris wound on aspirator shaft	Remove debris with knife
Aspirator shaft bent	Return entire aerator to factory
Foam restrictor or entire aerator under water	See "Singulair Green System Flooded"

*If you suspect low voltage, check the voltage at the watertight electrical connector, not at the Service Pro control center. If voltage above 103 or more is measured, check the other possibilities listed in this section.

AERATOR DRAWING EXCESSIVE CURRENT

Foam restrictor partially under water	See "Singulair Green System Flooded"
Debris on aspirator shaft	Remove debris with knife
Motor failure	Return aerator to factory
Insufficient voltage (less than 103 volts)	Report condition to power company
Excessive voltage (greater than 126 volts)	Report condition to power company

AERATOR MAKING EXCESSIVE NOISE

Rubber shock absorbers on brackets worn	Replace shock absorbers
Bearing failure in aerator motor	Return aerator to factory
Noise is generated by excessive vibration	See "Aerator Operates With Excessive Vibration"

AERATOR OPERATES WITH EXCESSIVE VIBRATION

Debris on aspirator shaft	Remove debris with knife
Aspirator shaft bent	Return entire aerator to factory
Aerator mounting brackets bent	Straighten brackets
Top aerator brackets not seated evenly	Adjust mounting brackets
Aspirator shaft installed too tightly on intermediate shaft	Reinstall aspirator shaft with set screws finger tight only. If condition persists return entire aerator to factory.
Aspirator shaft installed with improper alignment to intermediate shaft	Reinstall aspirator shaft to factory alignment marks

AERATOR OPERATES BRIEFLY BEFORE OVER CURRENT ALARM ACTIVATES

Aerator is drawing excessive current	See "Aerator Drawing Excessive Current"
Aerator is partially under water	See "Singulair Green System Flooded"
Aspirator shaft bent	Return entire aerator to factory
Moisture has entered aerator motor	Return entire aerator to factory

AERATOR TROUBLESHOOTING (Cont.)

ELECTRICAL TROUBLESHOOTING

CAUTION: Before initiating any electrical component inspection or repair, turn off all power to the Singulair Green system by switching off the dedicated circuit breaker in the main electrical service panel and then testing with the electrical multi-meter. Repairs should always be made by a qualified electrician using proper procedures and safe tools. Make sure all circuits are properly grounded. Do not stand in damp locations when making electrical system tests. Always use tools with insulated handles for electrical repairs.

NO ELECTRICAL POWER FROM ELECTRICAL SERVICE PANEL TO CONTROL CENTER

Circuit breaker in electrical service panel has tripped	Turn breaker to "off" position, then turn "on"
Fuse in electrical service panel has blown	Have owner replace fuse
Circuit breaker in electrical service panel turned "off"	Turn breaker "on"
Loose connection in electrical service panel	Tighten all connections: First, shut off breaker in main electrical service panel
Defective circuit breaker in electrical service panel	Have owner replace circuit breaker
Corrosion on contacts prevents flow of current	Clean or replace contacts
Incomplete circuit - neutral not properly wired	Have owner wire directly to neutral bar
Power cable from service panel to Service Pro control center severed	Have owner locate break and repair

NO ELECTRICAL POWER FROM CONTROL CENTER TO AERATOR

No voltage detected at watertight electrical connector	Place selector switch in "on" position and press reset button. If no voltage can be read, replace control center insert.
Over current condition has tripped circuit protection	Push reset button
Under current condition has tripped circuit protection	Push reset button
Service Pro selector switch turned "off"	Turn switch to "on" position
Service Pro selector switch defective	Replace control center insert
Corrosion on connections prevents flow of current	Repair or replace connection
Power cable from Service Pro control center to aerator damaged	Locate damage and repair
Loose wiring connection	Check all connections

AERATOR WILL NOT START

Over current alarm in Service Pro control center activated	Push reset button
Loss of power to Service Pro control center	See both "No Electrical Power" sections
Insufficient voltage present at aerator	Report condition to power company
Watertight electrical connector not properly engaged	Remove watertight electrical connector and plug in tightly
Watertight electrical connector not properly wired	Rewire watertight electrical connector
Defective motor	Return entire aerator to factory

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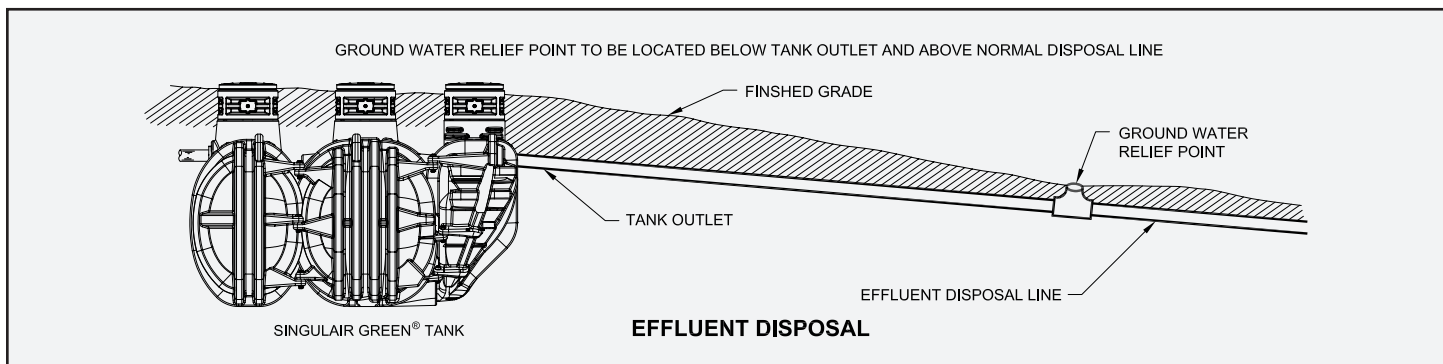
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SINGULAIR GREEN® BIO-KINETIC® WASTEWATER TREATMENT SYSTEM

BIO-KINETIC® SYSTEM TROUBLESHOOTING

Although the system effluent may be discharged and/or disposed of in several acceptable fashions, there should be a ground water relief point installed in the effluent line. It should be at a point no higher than the outlet invert of the Singulair Green tank. It will prevent flooding in cases where the disposal line is submerged or saturated with ground water. Locate the ground water relief point and be sure that it is free from obstructions.



SINGULAIR GREEN SYSTEM FLOODED

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| Bio-Kinetic system plugged | See "Bio-Kinetic System Plugged" |
| Tank outlet plugged | Clean debris from tank outlet |
| Groundwater relief point restricted | Remove obstruction |
| Disposal field plugged | Notify owner immediately |
| Effluent pump failure | Repair or replace effluent pump |
| Surface water drains toward Singulair Green tank | Have contractor regrade and/or install risers |
| Outlet line installed with insufficient fall | Have contractor correct |
| Outlet line crushed or filled with debris | Have contractor clean or replace |
| Effluent disposal lines installed with insufficient fall or have settled | Have contractor correct or replace |

BIO-KINETIC SYSTEM PLUGGED

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| Mud has fouled filter media | See "Mud or Silt in Singulair Green System" |
| Organic overloading | See "Organic Overloading" |
| Hydraulic overloading | See "Hydraulic Overloading" |
| Water softener backwash discharging into system | Have owner remove backwash line from system |
| Solids flowing in from pretreatment chamber | Evaluate pretreatment chamber - See Singulair Green Tank Pumping instructions |
| Incomplete treatment due to aerator shut-off | Place control center selector switch in "on" position |
| Internal components flooded | Remove and service Bio-Kinetic system |
| Grease or inorganic matter on filter media or in clarification chamber | Evaluate pretreatment chamber - See Singulair Green Tank Pumping instructions |

BIO-KINETIC® SYSTEM TROUBLESHOOTING (Cont.)

BIO-KINETIC SYSTEM PLUGGED (Cont.)

Compartmented contact chamber plates plugged	Clean chamber plates
Outlet weir obstructed	Inspect and clean outlet weir

CAUTION: Never allow chemical wastes, grease or mud to enter the Singulair Green system. These materials alter the desirable characteristics of activated sludge and will cause severe problems in the performance of the system.

NO RESIDUAL CHLORINE IN FINAL EFFLUENT

Chlorine feed tube not dispensing chlorine - empty	Refill feed tube with Blue Crystal disinfecting tablets
Chlorine feed tube not dispensing chlorine - tablets jammed	Gently tap tablets down in feed tube to be sure they make contact with the inside bottom of tube
Chlorine feed tube not dispensing chlorine - not fully engaged	Check feed tube to be sure bottom of tube is flush in flow deck
Chlorine feed tube not dispensing chlorine - feed tube plugged	Remove obstruction and reinstall feed tube

CAUTION: Extreme care must be used when handling chemicals. Refer to the Blue Crystal handling instructions before attempting any service. Proper procedures and personal protective equipment must be utilized to avoid serious injury.

FINAL EFFLUENT APPEARS CLOUDY OR TURBID

Aerator not operating	See Aerator Troubleshooting
Hydraulic overloading	See "Hydraulic Overloading"
Organic overloading	See "Organic Overloading"
Chlorinator not working	See "No Residual Chlorine in Final Effluent"
Bio-Kinetic system is damaged	Replace system. See Clarification Chamber and Bio-Kinetic Service instructions
Bio-Kinetic system is plugged	See Clarification Chamber and Bio-Kinetic Service instructions
Saturated disposal field	Report to owner immediately

DECHLORINATION INSTALLED WITH RESIDUAL CHLORINE STILL PRESENT IN FINAL EFFLUENT

Dechlorination feed tube not dispensing chemical-empty	Refill feed tube with Bio-Neutralizer dechlorination tablets
Dechlorination feed tube not dispensing chemical-tablets jammed	Gently tap tablets down in feed tube to be sure they make contact with the inside bottom of tube
Dechlorination feed tube not dispensing chemical-not fully engaged	Check feed tube to be sure bottom of tube is flush in flow deck
Dechlorination feed tube not dispensing chemical-feed tube plugged	Remove obstruction and reinstall feed tube

CAUTION: Extreme care must be used when handling any chemicals. Refer to the Bio-Neutralizer handling instructions before attempting any service. Proper procedures and personal protective equipment must be utilized to avoid serious injury.

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