OPERATION PROCEDURES

START/STOP TRUCKFILL – NORMAL OPERATION

Location: START / STOP Switch located on truckfill arm or on wall inside the treatment room.

- Press the START button to start fill
- Press the STOP button to stop fill
- Check that water drains out of arm and into the intake casing

Troubleshooting

- If there is no flow
  - Check that there is power to the plant
  - Check that all controls are in the AUTO position
  - Check that all manual valves are set in the correct positions
- If there is no or insufficient chlorine
  - See section on chlorine pumps
- If the truckfill arm does not drain
  - Check the operation of SV1, located on the wall by the water storage tanks

START/STOP TRUCKFILL – FIRE FILL

Location: START / STOP Switch located on truckfill arm or on wall inside the treatment room.

- Press the START button to start fill
- Press the STOP button to stop fill
- Check that water drains out of arm and into the intake casing

Troubleshooting

- If the there is no flow
  - Check that there is power to the plant
  - Check that all controls are in the AUTO position
  - Check that all manual valves are set in the correct positions
- If there is no or insufficient chlorine
  - See section on chlorine pumps
- If the truckfill arm does not drain
  - Check the operation of SV1, located on the wall by the water storage tanks

RAW WATER PUMPS

Location: VFD's and Control Panel in generator room, START/STOP stations

- The raw water pumps are started by the START/STOP stations

Troubleshooting

- If the pumps do not start
  - Check that there is power to the plant

Check that all controls are in the AUTO position
Check that the VFD's or Control Panel do not show any errors
Check that all manual valves are set in the correct positions
Switch to other pump
If flow is too low
Switch to other pump
BASKET STRAINER
Location: Treatment Room after raw water intakes
To change or empty the strainer
Turn off the raw pumps
Close valves immediately upstream of the strainer IV1.
Depressurize the system by opening sample tap, SP1
Close sample tap, SP1
Unscrew top of strainer
Clean strainer
Open valves that were closed, IV1.
CARTRIDGE FILTRATION
Location: Treatment room
Filters should be changed when the pressure differential across them reaches 15-20 psi
To change the filters
Always Isolate And Remove Pressure From Housing Before Servicing.
Turn off the raw pumps
Close valves before and after the filter vessel
Open the drain valve
Undo the housings bolts
Rotate the cover off the vessel
Pull out filters by the stainless steel Cartridge Handle
Undo the Handle from the used filter and put it onto the new filter. Tighten securely to seal the handle to the filter
Install Cartridge/Handle assembly(s) onto Stand-pipe(s). Position Cartridge/Handle assembly downward until Cartridge's Bottom End Cap contacts the housing's Tube Sheet. The Cartridge's Bottom End Cap will seal with the Stand-pipe Coupling to prevent by-passing. A slight rotating action will assist in the positioning of the Cartridge while engaging the Stand-pipe Coupling. Confirm all Cartridge/Handle assemblies are properly positioned.
Inspect Housing O-ring and make sure that it is free from cracks and debris.
Clean Housing and Lid O-ring mating surfaces.
Place Housing O-ring into channel of Housing.
Return Lid to proper closure position and lower onto Housing O-ring. Make sure O-ring stays in the channel of the Housing.
Return all Swing Bolts, Eye Nuts, & Washers to their closure position.
Tighten all Eye Nuts by hand in a star pattern several times until all Eye Nuts are uniformly tight.
Start the flow of water by first opening the inlet valve and allow the housing to completely fill, then, open the outlet valve.

For PARALLEL operation of the 1 micron cartridge filters. (i.e. NORMAL operation)
Open valves IV10 and IV11
Close valve IV12
For SERIES operation of the 1 micron cartridge filters
Close valves IV10 and IV11
Open valve IV12
Remember to reset these valves to the parallel settings for normal operation.
CALCIUM HYPOCHLORITE MIXER
Location: Chlorine Room
To make solution
Add 2 calcium hypochlorite tablets to the top tank
Use water fill line to fill top tank with 50L of water
Turn on mixer with the START/STOP switch on the wall
Leave mixer on until the tablets are dissolved and the solution is well mixed
Turn off the mixer
Open valve GBL1 to transfer the solution to the bottom tank
Close valve GBL1
Troubleshooting
No water to fill
Check there is water in the domestic water tank
Check the domestic water pump under the sink
Check that the valve is open
Mixer doesn't work
Check for power on the wall socket
Replace mixer if needed
CALCIUM HYPOCHLORITE DOSING PUMPS
Location: Chlorine Room, Control Panel in generator room
Three dosing pumps deliver chlorine to the truck fill line, namely pump CMP1 before filtration, pump CMP3 after filtration, while pump CMP2 operates only when the fire flow mode is activated.
Assuming that a solution of 1.2 % strength is prepared (two calcium hypochlorite tablets added to 50 L of mixing tank water), the chlorine feed tank will contain 0.012 x 0.68 (0.68 is solid calcium hypochlorite yield) = 0.00816 kg/L (8.16 g/L) of free chlorine. At a residual chlorine target of 1 mg/L (1 ppm) at the nominal flow of 1,350 L/min, total demand is theoretically 0.001 x 1,350 = 1.35 g/min. However, actual demand will be somewhat higher dependent of the amount of organics in the raw water. Set tentatively on the HMI screen CMP1 to 0.5 ppm and CMP3 to 1 ppm. Set CMP2 to 1 ppm.
Chlorine content should be verified regularly by sampling at the truckfill arm outlet (note that it will decay with time if staying in the solution tank for some extended time).
To dose chlorine
Chlorine is automatically dosed when the water pumps are started

To adjust chlorine dosing quantity
Change the chlorine output levels on the HMI on the Control Panel
The chlorine pumps do not need direct adjustment
Set CMP1 to 0.5 ppm
Set CMP3 to 1.0 ppm
Set CMP2 to 1.0 ppm, this does not need to be changed
Fill the truck and take a sample
Check the chlorine concentration in the sample
Adjust CMP3 as needed to achieve the desired chlorine concentration.
If CMP3 and CMP1 cannot be adjusted to achieve the desired chlorine levels, then the chlorine solution needs to be changed.
Troubleshooting
Chlorine too high/low
Adjust dosing levels on the Control Panel
Check the solution strength in the chlorine tank. The tank may need to be diluted or drained and a new batch of chlorine solution made.
No Chlorine
Check that there is power to the pumps
Check that all controls are in the AUTO position
Check that the valves are in the correct positions
Check that there are no leaks in the chemical feed lines
DOMESTIC WATER SUPPLY
Location: storage tank is across from sink, pump and hot water heater are under sink
Open the taps as needed for water
Troubleshooting
There is no water in the tank
Check the solenoid valve supplying the storage tank (SV2)
Water usage may be too high
The tank is overflowing
The solenoid valve supplying the storage tank (SV2) may be stuck open.
Manually override and close the solenoid
There may be debris in the solenoid and the solenoid needs to be disassembled and cleaned
There is no water pressure
Check the water booster pump operation. All controls for the pump are internal to the pump
Check for leaks in the system
There is no hot water
Check that there is power to the water heater
Check that the valves are in the correct positions
WASTE WATER SYSTEM
Location: Sump pump and tank is under the floor next Filter #4. The waste water Storage tank is on the wall across from the sink.
Sump pump operates automatically

The waste water tank needs to be emptied when 80% full
Troubleshooting
The sump pump is not emptying into the waste tank
Check that there is power to the sump pump
Check that the float switch on the sump pump is operational
Check that there are no obstructions in the sump pump outlet line
FURNACE
Location: In the space across from Filters 2 & 3
The furnace is controlled by the thermostat on the wall
Troubleshooting
There is no heat
Check that the thermostat is working properly
Check that there is sufficient fuel in the day tank and the day tank is operational
Check that the furnace is starting
Check the damper on the heat vents are open
BACKUP POWER GENERATOR SET
Location: Generator Room
The generator operation is automatically controlled by the Automatic Transfer Switches
All switches should be in AUTO mode in regular operation
To manually test the genset without switching power source to the building.
on BOTH Automatic Transfer Switch, turn the “Engine – Generator Control” switch to “Engine Start”
To manually switch to Hydro / Utility power
On ATS1 “Load Switch”
Change the “Transfer Mode” switch to MANUAL
Change the “Manual Control” switch to EMERGENCY
To manually switch to Generator Power
On ATS1 “Load Switch”
Change the “Transfer Mode” switch to MANUAL
Change the “Manual Control” switch to EMERGENCY
Change “Engine – Generator Control” switch to ENGINE START
On ATS2 “Power Switch”
Change the “Transfer Mode” switch to MANUAL
Change the “Manual Control” switch to EMERGENCY
Change “Engine – Generator Control” switch to ENGINE START
Troubleshooting
Generator doesn’t start
Check that there is sufficient fuel
Check the battery is charged, the battery charger is on the wall

GENSET VENTILATION
Location: Generator Room
The ventilation dampers are automatically controlled by the thermostat on the wall
The temperature that they open at can be adjusted using the dial on the thermostat
Troubleshooting
The dampers do not open or close as expected
Check that there is power to the damper control panel
Check that the damper actuators are moving
DAYTANK AND DIESEL FUEL SUPPLY
Location: Daytank is in generator room, main diesel storage is outside
No adjustments to the day tank are needed
To fill the diesel tank outside
Open the lid on the Spill container
Fill tank
Pull drain on the spill container to empty any spilled diesel fuel into the tank
Close lid on Spill container
Troubleshooting
There is no fuel in the day tank
Check the fuel lines for leaks
Check for power to the day tank