

HACCP Checklist

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| Project Name: | A0144 Luddenham Rd Orchard Hills |
| Completed by: | Justin Taylor |
| Date of Assessment: | 11-Jun-24 |
| Revision: | Draft |
| Approved By and Date: | Draft only |

| HACCP Workshop Attendees | | | Revision 1 Attendees | Revision 2 Attendees |
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| | Potential Hazard | Preventative Measure | Likelihood | Consequenc e | Resid. Risk Likelihood + Consequence | Likelihood | Consequ ence | Resid. Risk Likelihood + Consequence | Uncertainty | Decision Tree | CCP/Q CP | Critical Levels | | Monitoring | Corrective Action | | Records | Action Checked | By | Date | Action Checked | By | Date | Closed Out | |
|--|--|---|------------|-----------------|--|------------|-----------------|--|-------------|---------------|-------------|-----------------|--------|---|--|--|---|---|---|------|----------------|----|------|------------|--|
| Process unit | Physical, chemical, biological, other | | 1 to 5 | 1 to 5 | Likelihood + Consequence | 1 to 5 | 1 to 5 | Likelihood + Consequence | | Y + N | | Target | Action | How | What | How | Where | | | | | | | | |
| | Physical Hazard: Confined space. | Tanks designed so that maintenance an calibration can be undertaken without the requirement to enter the tanks. Trained personnel only to enter confined space after completing appropriate confined space entry procedure. | 2 | 3 | 5 | 1 | 2 | 3 | ± 1 | Y | N | N | No | | | | | | | | | | | | |
| | Physical Hazard: Aerated liquid reduces ability to float in tank if person falls in | All lids and hatches secured by bolts or locks to prevent accidentally falling in. Plant room only accessible to authorised personnel. | 3 | 5 | 7 | 1 | 5 | 6 | ± 1 | Y | N | N | No | | | | | | | | | | | | |
| 4. UF Membrane Filtration (membrane tank, skid and filtrate tank) | Health Hazard: Membrane integrity is compromised leading to reduced disinfection | Turbidity constantly monitored to detemine membrane integrity. | 4 | 4 | 8 | 1 | 4 | 5 | ± 1 | Y | Y | | CCP1 | Alert level t > 0.15 NTU Critical Level t > 0.2 NTU | Operator alarm is alert level triggered. If critical level is exceeded, the MOS system recirculates for a period to see if the turbidity reduces. If turbidity does not come back within range, the MOS system generates an alarm and goes into standby state. | Continuous online monitoring of turbidity during filtration and recirculation by PLC and actuated valve when required. | MOS goes into standby if turbidity does not reduce during recirculation. Production resumed once cause is determined and contents in tank are within specification. | Identify cause remotely if possible. Otherwise attend site and investigate using hand held instruments and other tools as appropriate. | Service Records. Online datalogging. | | | | | | |
| | Health Hazard: Turbidity measurement does not reflect the current state of the water because there is no flow through the instrument | Flow switch installed in the instrument loop upstream of the trubidity meter | 4 | 4 | 8 | 1 | 4 | 5 | ± 1 | Y | Y | | CCP1 | No Flow | If no flow is detected, the MOS system recirculates for a period to see if the flow returns. If flow does not retuen, the MOS system generates an alarm and goes into standby state. | Continuous online monitoring of turbidity during filtration and recirculation by PLC and actuated valve when required. | MOS goes into standby if flow does not return during recirculation. Production resumed once cause is determined and contents in tank are within specification. | Identify cause remotely if possible. Otherwise attend site and investigate using hand held instruments and other tools as appropriate. | Service Records. Online datalogging. | | | | | | |
| | Health Hazard: Turbidity instrument faults | The turbidity instrument has a built in fault relay which is wired to the PLC | 4 | 4 | 8 | 1 | 4 | 5 | ± 1 | Y | Y | | CCP1 | Instrument fault | If fault is detected, the MOS system immediately goes into standby state the MOS system generates an alarm. | Continuous online monitoring of turbidity fault relay during filtration. | MOS goes into standby if fault does rectify during recirculation. Production resumed once cause is determined and contents in tank are within specification. | Identify cause remotely if possible. Otherwise attend site and investigate using hand held instruments and other tools as appropriate. | Service Records. Online datalogging. | | | | | | |
| | Chemical Hazard: CIP requires operators to use chemicals | CIP process is automated. Chemicals are dosed into the system automatically reducing which almost eliminates the requirement for the operator to handle chemicals. Chemicals can be neutralised within the system in a similar manner before they are sent back to the head of the works. Chemicals are common in water treatment plants and can readily be handled with appropriate PPE. | 3 | 3 | 6 | 1 | 3 | 4 | ± 1 | Y | Y | N | No | | | | | | | | | | | | |
| | Physical Hazard: Membrane installation requires manual handling | Membranes have a life expectancy of >5 years so the activity is rare. The plant room has been designed to leave space to make installation and replacement safe. Two people are used to replace or install membranes. | 3 | 3 | 6 | 1 | 3 | 4 | ± 1 | Y | Y | N | No | | | | | | | | | | | | |
| 5. Ozone System | Chemical and Health Hazard: Ozone exposure and inhalation of ozone if leakage occurred | Ozone generator equipped with failure / leak detection system that automatically shuts down ozone production of gas is detected. Plant room designed with ventilation system, so a small leak will not cause an issue before the detection system acts to shut down generation | 1 | 3 | 4 | 1 | 2 | 3 | ± 1 | Y | N | Y | Y | No | | | | | | | | | | | |
| | Health Hazard: Noise exposure from compressors high duty | If practical, enclose compressor in acoustic hood, PPE to be worn by operators if compressors are not enclosed. | 3 | 3 | 6 | 1 | 3 | 4 | ± 1 | Y | N | Y | Y | No | | | | | | | | | | | |
| 6. Biological activated Carbon (BAC) Filter | Physical Hazard: Presence of carbon fines during loading of the carbon vessel. | Operator training and use of dust mask. | 3 | 1 | 4 | 1 | 1 | 2 | ± 1 | Y | N | N | No | | | | | | | | | | | | |
| | Physical Hazard: Loading bags of carbon into GAC | Use vacuum or "slurpee" to remove used carbon. Assign two people to the task if necessary. Use a funnel to make filling the vessel easier. | 3 | 3 | 6 | 1 | 3 | 4 | ± 1 | Y | N | N | No | | | | | | | | | | | | |
| 7. UV disinfection | Health Hazard: Excessive suspended solids material interfering with the efficiency of the UV disinfection system | UV is downstream of UF process. See UF membrane filtration section for control measures to ensure membrane integrity etc. | 4 | 4 | 8 | 1 | 4 | 5 | ± 1 | Y | Y | N | No | | | | | | | | | | | | |
| | Health Hazard: Low UV dose leading to poor UV disinfection | UV dose contranly monitored by UV unit using flow rate, measured UVI and measured UVI. UV unit outputs dose to the PLC so it can be monitored and acted upon | 4 | 4 | 8 | 1 | 4 | 5 | ± 1 | Y | Y | | CCP2 | Alert level dose < 60mJ/cm2 Critical Level dose < 58mJ/cm2 | Operator alarm is alert level triggered. Plant diverts to off spec if critical level triggered. | Continuous online monitoring and diversion by PLC and actuated valve when required. | Plant automatically diverts to off-spec tank. Production resumed once cause is determined and contents in tank are within specification. | Identify cause remotely if possible. Otherwise attend site and investigate using hand held instruments and other tools as appropriate. | Service Records. Online datalogging. | | | | | | |
| | Health Hazard: UVI is too low meaning the unit is operating outside its validated range. | UV has inbuilt UVI instrument which is used withing the device, but also ouput to the PLC | 4 | 4 | 8 | 1 | 4 | 5 | ± 2 | Y | Y | | CCP2 | Alert level UVI < 45% Critical level UVI < 35% | Operator alarm is alert level triggered. Plant diverts to off spec if critical level triggered. | Continuous online monitoring and diversion by PLC and actuated valve when required. | Plant automatically diverts to off-spec tank. Production resumed once cause is determined and contents in tank are within specification. | Identify cause remotely if possible. Otherwise attend site and investigate using hand held instruments and other tools as appropriate. | Service Records. Online datalogging. | | | | | | |

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