

Document Owner: Manager Customer Planning

Portable Instrument Chlorine Testing FAC/TAC

Scope/Purpose: Portable chlorine testing meters are used for both calibration of on line meters and also testing for chlorine (total and free available) within the reticulation. This may be undertaken for direct compliance monitoring, new pipework installations, system repair and maintenance, as a result of an alarm call out and in emergency situations. The purpose of this Work Procedure is to ensure that the FAC and TAC measurements taken by staff using the portable instruments are accurate and reliable. Accurate readings are important as the concentration of FAC in our networks is a critical factor in ensuring that bacterial and viral hazards are managed.

Health & Safety and Operational Information

Hazard Indicators



Personal Protection



Health and Safety Information

- Health and Safety documentation.

Operation's & Maintenance Documentation

- Required Operation and Maintenance Manual/s for testing equipment being used.
- Corridor Access Requests (CAR) and WIP Permits (site specific or generic/global)
- Service plans (B4uDig)
- Design drawings
- Site plans
- Notification Calling Cards

Customer Information (Confidential)

- Vulnerable customers (DHB supplied list)
- Priority customers (WWL)

Priority Customer Categories

- Schools and Childcare
- Commercial premises
- Hospitals
- Retirement Homes/Villages
- Correction Facilities
- Military Installations
- Oil and Gas Refinery

Emergency Procedure / Escalation

- Make "Site Safe" and isolate risks to people or property with resources at hand

Escalate if extra resources required or problems occur!

- Escalate to Team Leader and inform of the issues faced and/or expected resources required if necessary.

Additional Documentation

- Fulton Hogan Work Instruction for Disinfection of Water Systems (especially with respect to Cross Contamination)

Required Skills, Competencies (Qualifications and/or Certifications)

Competent persons only, trained in sampling

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Required Equipment

Equipment and Information	Details
Fully Equipped Vehicle	Ensure vehicle, plant, equipment and materials appropriate to the day's work schedule is available
Specialist Equipment	Specialised equipment needed – Portable chlorine meter (spare batteries) and reagents (in date). Store carefully – protect instruments and reagents from extreme heat or cold

Prepare to do the work

Action	Action Details
Pre Start Process	Complete the Daily Pre Start for Planned Maintenance
Compliance	Traffic Management Plan - Where required. TMP to be in place prior to work starting. TMP to be accessible on site.

Perform the work

Action	Trade	Action Details
Compliance	Serviceperson – trained in sampling	Implement TMP if required.
Prepare meter	Serviceperson – trained in sampling	Verify instrument with secondary standards if available Ensure appropriate instrument range is selected (<2mg/l = 'low' range). If using for the first time that day, fill test cell with water and clean with brush. Discard tubes that have become scratched.
Sample collection	Serviceperson – trained in sampling	Rinse cell three times with water to be sampled ensuring cell empties each time Reticulation samples: Run sample tap for 2-3mins (important water tested is representative of what is in mains). Treatment plant samples: Ensure the line between the test valve and the main line has been well flushed. If in line analyser has just been cleaned or has fresh grit added allow 2-3 hours to settle prior to calibration using portable instrument and recheck calibration within the next 48 hours.
Sample analysis Record	Serviceperson – trained in sampling	Analyse immediately after collection. Exposure to sunlight and agitation will accelerate reduction in chlorine. Use instrument specific instructions. Record FAC result/s. If in doubt regarding the result repeat test again
Corrective actions	Serviceperson – trained in sampling	High/Low FAC in the reticulation – Confirm result and check at adjacent sites to define problem High/Low FAC at treatment plant –notify treatment plant operator to follow critical control point procedure(s). Note that interferences – high acidity/alkalinity/ bromine/ manganese.