EM137 Maintain fresh water distribution systems and equipment used in food and drink operations		
SQA Unit Code	**HD60 04**	
Level 3	**SCQF Level 6**	**Credit value 51**

Unit Summary
This standard identifies the competences you need to carry out corrective maintenance activities on water distribution systems and equipment used in food and drink operations, in accordance with approved procedures. You will be required to maintain a range of fresh water systems, including mains cold water (potable (drinkable)), hot water supplies, cold down service and non-mains supplies (river, well). This will involve dismantling, removing and replacing faulty or damaged components, including pumps, valves, couplings, traps, motors, pipework, cylinders, tanks, heaters filters, gaskets/seals, faucets and other ancillary equipment. You will be expected to apply a range of dismantling and assembly methods and techniques, including marking/labelling of components to aid the reassembly, dismantling components requiring pressure techniques, torque loading and setting, and aligning and adjusting components. Food and drink operations is a term used in this standard to cover the following sub sectors of Meat, Drinks, Confectionery, Fresh Produce, Bakery, Seafood and Dairy.

You will be expected to work with minimal supervision, taking personal responsibility for your own actions, and for the quality and accuracy of the work that you carry out.

In order to be assessed as competent you must demonstrate to your assessor that you can consistently perform to the requirements set out below. Your performance evidence must include at least one observation by your assessor.

You must be able to:	You need to show: Evidence must be work-based, simulation alone is only allowed where shown in ***bold italics***
1. Maintain fresh water distribution systems and equipment used in food and drink operations This means you: Work safely at all times, complying with health and safety and other relevant food and drink regulations, directives and guidelines Follow the relevant maintenance schedules to carry out the required work	Evidence of maintaining fresh water distribution systems and equipment used in food and drink operations as part of your role in accordance with workplace procedures and within the limits of your own responsibilities.

Carry out the maintenance activities within the limits of your personal authority Carry out the maintenance activities in the specified sequence and in an agreed timescale Report any instances where the maintenance activities cannot be fully met or where there are identified defects outside the planned schedule Complete relevant maintenance records accurately and pass them on to the appropriate person Dispose of waste materials in accordance with safe working practices and approved procedures	

You need to know and understand:

Evidence of knowledge and understanding should be collected during observation of performance in the workplace. Where it cannot be collected by observing performance, other assessment methods should be used.

1. the health and safety requirements of the area in which the maintenance activity is to take place and the responsibility these requirements place on you not to compromise food safety
2. the isolation and lock-off procedures or permit-to-work procedure that applies, including the critical control points
3. the specific food and drink related health and safety precautions to be applied during the maintenance procedure, and their effects on others (to include The Water Regulations Advisory Scheme (WRAS), The Prevention and Control of Legionellosis, and Safe Working in Confined Spaces 1997)
4. the requirements of the British Retail Consortium (BRC) guidelines and standards in relationship to the maintenance activities
5. the specific requirements of your customer/client specifications in relationship to the maintenance activities
6. your responsibilities in relationship to Hazard Analysis and Critical Control Points (HACCP, TACCP, VACCP) during the maintenance activities
7. hazards associated with carrying out maintenance activities on water distribution equipment and systems, and how to minimise these and reduce any risks
8. the importance of wearing protective clothing and other appropriate safety equipment (PPE) during the maintenance process
9. how to obtain and interpret drawings, specifications, manufacturers' manuals and other documents needed in the maintenance process
10. the procedure for obtaining replacement parts, materials and other consumables necessary for the maintenance
11. company policy on repair/replacement of components during maintenance process

12. the sequence to be adopted for the dismantling/reassembly of various types of assemblies
13. the methods and techniques used to dismantle/assemble mechanical equipment (release of pressures/force, proofmarking, extraction, pressing, alignment)
14. methods of checking components are fit for purpose, and how to identify defects and wear characteristics
15. how to make adjustments to components/assemblies to ensure they function correctly
16. the basic principles of how the equipment functions, its operation sequence, the working purpose of individual units/components and how they interact
17. the principles of the equipment's design features for safe operation in a food or drink environment including minimising the chance of contaminates or foreign bodies in the final product
18. the types and applications of the different types of pipework systems (including copper, plastic, iron)
19. the applications of the different types of couplings and their fittings (tees, bends, branches)
20. the equipment and tools used to bend, form and thread pipework
21. the types of contaminants in water systems, and the problems they can cause
22. the different methods used to treat water supplies to meet user needs
23. the applications of the different pipework and equipment cleaning procedures (including rod, water jet, steam, chemicals, solvents)
24. methods of checking removed components are fit for purpose, and the need to replace `lifed' items (including seals, gaskets, washers)
25. how to make adjustments to components to ensure they function correctly
26. how to check tools and equipment are free from damage or defects, and are in a safe and usable condition
27. the processes in place to segregate the tools and equipment used into high or low risk areas
28. the checks required to ensure that all tools, materials and components are all accountable before operating the equipment
29. the cleaning requirements/policies in place before returning the equipment into full operational production
30. the generation of maintenance documentation and/or reports following the maintenance activity
31. the equipment operating and control procedures to be applied during the maintenance activity
32. how to use lifting and handling equipment correctly and safely in the maintenance activity
33. the problems associated with the maintenance activity, and how they can be overcome
34. the organisational procedure to be adopted for the safe disposal of waste of all types of materials, including any spoilt food or drink products
35. the extent of your own authority and to whom you should report if you have problems you cannot resolve

Evidence of performance may employ examples of the following assessment:

- observation
- written and oral questioning;
- evidence from company systems (e.g. Food Safety Management System)

- reviewing the outcomes of work
- checking any records of documents completed
- checking accounts of work that the candidate or others have written