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**PREFACE**

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**Date of Assessment: 11<sup>th</sup> December 2013**

**Date of Review: December 2015**

## INTRODUCTION

This report relates to a water source Risk Assessment Review of the Risk Assessment carried out by Mr Chris Wilson of Freeston Water Treatment Ltd on the 13<sup>th</sup> December 2007 on behalf of Marina Developments Ltd.

The First Risk Assessment Review survey was carried out by Mr Chris Wilson of Freeston Water Treatment Limited on the 6<sup>th</sup> October 2011.

This Second Risk Assessment Review survey was carried out by Mr Chris Wilson of Freeston Water Treatment Limited on the 11<sup>th</sup> December 2013 at Woolverstone Marina, Woolverstone, Ipswich, Suffolk IP9 1AS.

During the course of the Survey water sources within the buildings were assessed for risk. These sources were chosen as being fully representative of the overall domestic water systems and outlets within these buildings.

**At the time of the 2007 Risk Assessment, access could not be gained to the Old Office Building but this was accessed at the time of this 2011 Review Survey.**

**At the time of this 2013 Review, access could not be gained to the Old Office Building as the keys had been lost and I was informed that it has not been used since 2011.**

The Review of Recommendations highlighted in the previous Risk Assessment were undertaken in order to comply with the Health and Safety Executive requirements on the control and prevention of Legionellosis. This Review has been carried out in accordance with ACoP L8 'The control of Legionella bacteria in water systems' (APPROVED CODE OF PRACTICE & GUIDANCE) and BS 8580 (RISK ASSESSMENTS FOR LEGIONELLA CONTROL-CODE OF PRACTICE).

The Review has been limited to the terms of reference agreed between Marina Developments Limited and Freeston Water Treatment Ltd. Observations relating to system conditions and other factors applicable to the requirements of L8 have been recorded during the Survey and specific references are made to compliance with the ACoP in the Observations section of the report.

A recommendations section concludes the report. ACoP L8 places responsibility on employers and others to prepare a scheme for preventing or controlling the risk from Legionellosis. Adoption of a monitoring scheme in conjunction with a regime of preventative maintenance and associated record keeping will meet these requirements.

## BACKGROUND TO LEGIONELLA

Legionella is the bacterium that causes Legionnaires disease. Of this bacterium, Legionella pneumophila is the species most commonly associated with disease outbreaks. Legionnaire's disease is identified as a pneumonia type of infection of the lower respiratory tract. The infection is most commonly acquired by the inhalation of airborne droplets or particles containing viable Legionella. Exposure to Legionella can also cause a short feverish illness without pneumonia, known as Pontiac Fever.

Research and investigations indicate that the occurrence of Legionella contamination is greatest in water cooling towers, evaporative condensers, hot and cold water services, water spray humidifiers, air washers, spa baths and pools where water is agitated and re-circulated. The contamination from a cooling water tower will cover a far larger area than any other likely source.

Sediment, scale, and organic materials present in water systems can provide nutrients and give protection for Legionella. Legionella has been shown to colonise certain types of water fittings, pipework and materials used in the construction of water systems. The presence of these materials may provide nutrients for Legionella and make eradication difficult. Other organisms in water systems such as bacteria, amoeba and algae can provide a suitable habitat and nutrients in which Legionella can survive and multiply.

The formation of biofilms within water systems is undesirable and may also provide harbourage and favourable conditions for Legionella growth. The presence of Legionella in biofilms and in enclosures within protozoa may protect the organisms from any remedial measure employed to eradicate the bacterium.

Legionella is most likely to proliferate in water systems that have a temperature between 20°C and 50°C. Human blood temperature of approximately 37°C is the most ideal temperature for proliferation. Stagnant water within the above temperature range appears to provide the ideal conditions for proliferation of Legionella.

Legionella will survive at temperatures below 20°C but is considered to be in a dormant state with no growth activity. The bacterium does not survive temperatures maintained consistently at 60°C or above.

For water samples collected and returned to the laboratory, Legionella pneumophila is recovered by propagation of the organism on a specially supplemented nutrient growth medium. Such samples are normally then incubated at around 37°C. It may take up to 7 days for colonies of Legionella to appear. Legionella can be recognised by visual examination of the colonies followed by a number of laboratory techniques to identify species and serogroup.

## ASSESSMENT OF RISK

### Rationale

Legionnaire's disease is most commonly caused by the inhalation of water droplets contaminated with the Legionella bacteria. It is therefore important that systems susceptible to colonisation by Legionella and which incorporate a potential means for creating and disseminating water droplets should be identified and the risk they present assessed. ACoP L8 requires this identification and assessment.

The assessment must be completed for routine system operation and also for circumstances such as breakdown, abnormal operation, commissioning or other unusual circumstances.

Once the assessment has been completed, a strategy can be prepared for preventing or controlling the risk. The strategy will be based on a sound knowledge of the varying levels of attention required by the differing risk sources within the building.

The assessment takes account of:

- A) The potential for formation of droplets.
- B) The condition of the water.
- C) Water temperature.
- D) The water turnover rate.
- E) The susceptibility of persons exposed to droplets.
- F) The population density exposed to droplets.

Water droplets are normally created in various ways such as by spraying, bubbling and following impact onto hard surfaces. Large drops may be reduced to irrespirable size by further impact or evaporation. Smaller particles can remain airborne for long periods and will be carried on air currents.

In undertaking the Risk Assessment and drawing up precautions, particular attention must be paid to situations where:

- 1) The population exposed contains a relatively high number of people susceptible to Legionella, for example in Hospitals and Nursing Homes.
- 2) The density of population is high and therefore the number of people at potential risk is high.

The Risk Assessment should be reviewed whenever there is reason to believe that the original assessment may no longer be valid and ideally an annual review of all sources should be undertaken. The original assessment may be compromised if:

- 1) Changes are made to plant or water systems or its use.
- 2) Changes are made to building use in which the water system is installed.
- 3) New information about risks or control measures becomes available.
- 4) Results of checks indicate that control measures are no longer effective.

Once a risk has been identified and assessed, a scheme should be prepared for preventing or controlling it. The risk is heightened when conditions are not monitored and control of the system is lost, thereby allowing Legionella to proliferate. The scheme should be implemented together with a planned preventative maintenance schedule in line with that contained within the general recommendations section of this report. This will meet the requirements of the ACoP.



## REVIEW OF RISK ASSESSMENT AND OBSERVATIONS

The Review was commissioned in order to identify and assess the risk of Legionellosis from the water sources on the premises using the previous Risk Assessment. General and specific observations on the systems made during the course of the Survey are also recorded and the more general requirements of L8 are also commented on where applicable.

The specific observations made in this Review, together with the most recent Risk Assessment should be read in conjunction with the practices and procedures detailed in the recommendations section and also with ACoP L8.

Compliance with ACoP L8 may be classified into two distinct categories:

- a) Management Procedures - The management procedures which have been implemented to ensure that all control measures, record keeping and monitoring are adequate and effective.
- b) Systems Conditions - The physical conditions of the water systems in the building must be considered when assessing the risk from Legionellosis.

This report therefore addresses the above categories. A general overview of existing Management Procedures is included and followed by comprehensive observations of the Systems Conditions as seen during the course of the Survey.

## **General Management Compliance**

### ACoP L8 para 23 - Identify Sources of Risk

#### Observations

The Survey was commissioned in order to identify and assess sources of risk from the water storage and distribution systems in the premises and this Review highlights the remedial works and recommendations from that Report.

#### Further Action

**Following receipt of the Review, all recommendations and remedial work should be carried out at the earliest opportunity.**

## **General Management Compliance**

ACoP L8 para's 39, 53 and 66 - Prepare a Scheme for Preventing or Controlling the Risk - Implement and Manage Precautions - Maintain Records

### **Observations**

A regime of repair and breakdown maintenance should be operational on the site for all of the water services and systems. Direct labour and contract staff should undertake the work. Procedures and records for the various maintenance activities must be documented and the particular procedures relative to the control of Legionellosis are documented within an operational logbook.

### **Further Action Required**

A written scheme for preventing or controlling the risks from Legionellosis identified in the Risk Assessment must be drawn up to maintain and provide a monitoring function for the relevant equipment and water systems.

A written scheme contained within the logbook must be implemented and monitored in order to meet the requirements of ACoP L8.

A logbook system will meet the requirement for maintaining records of precautions implemented. The logbook documentation should include:

- Definition of Management responsibilities.
- Description of systems and inclusion of available system schematic drawings and plans.
- A record of Risk Assessment.
- Details of system operation relevant to controlling the risk.
- The precautions to be implemented.
- System inspection and check procedures.
- All details of precautions carried out including checks, inspections, cleaning and disinfection.

The logbook documentation and operation should be audited on a periodic basis in order to ensure that the system conditions and precautionary procedures are being carried out satisfactorily.

The logbook should contain simple schematic diagrams of the domestic hot and cold water systems indicating the areas of storage and areas of distribution. This information may already be available in the building record drawing systems but for ease of reference simple line diagrams should be considered for the logbook.

The precise procedures relating to the precautionary measures i.e. cleaning of water tank systems and calorifiers, together with start up and shut down procedures for calorifiers should be maintained within the log book system and updated as required. The details of persons who are trained and competent to undertake the works should also be recorded in the log with details of the training undertaken. This also applies to specialist contractors who may undertake part of these duties.

The operating logbook document should state the details of the persons appointed as being responsible for the operational policy and management of precautions regarding control of Legionellosis on the site. The responsibilities should be clearly set out and lines of communication defined. Any specialist water treatment company providing a service on site and persons responsible for any auditing of the system operation and documentation should also be defined within the structure.

The present precautionary measures and maintenance activities should continue and the measures should be reviewed on an ongoing basis dependant on feedback on systems conditions and updated knowledge on the control of Legionella bacteria.

Consideration should be given to the inclusion of periodic water quality tests in order to monitor and record changes in local water conditions i.e. cold water from storage tanks, calorifiers and associated outlets.

**This Review relates to observations made and information supplied from the existing Risk Assessment together with information supplied by others.**

**The following observations and recommendation were made in the 2011 Risk Assessment Review.**

Ensure all water softeners are disinfected and maintained in line with the manufactures recommendations.

**I was informed that this is being carried out but is not being recorded within the logbook.**

Ensure all water filters are replaced / maintained in line with the manufacturer's recommendations.

**I was informed that this is being carried out but is not being recorded within the logbook.**

Investigate further to find out what the other outlet pipe from the domestic cold water storage tank supplies to ensure that it is not a dead leg.

**This has not been carried out.**

Fit scald warning sign near very hot outlets.

**This has not been carried out in all areas.**

Flush any pontoon hoses as often as necessary to keep the cold water temperature to below the maximum temperature of 20°C as outlined in L8.

**This has not been carried out.**

Clean and disinfect all showerheads quarterly and record when carried out.

**This has not been carried out.**

Ensure all domestic pipe work is adequately insulated to prevent heat gain / loss.

**This has not been carried out.**

TMV to be serviced and maintained as per the manufacturer's recommendations.

**This has not been carried out.**

I would recommend Bacteriological and Legionella water samples be taken if temperatures fall outside the required limits.

**This has not been carried out.**

Remove all dead leg pipe work or put on a weekly flushing regime without creating an aerosol, record when carried out.

**This has not been carried out in all areas.**

Continue weekly flushing of all low use infrequently used facilities showers, wash down hose reels etc. and record when carried out. Especially in winter months when facilities are not used.

**This has not been carried out.**

Re-route the returning vent pipe within the domestic cold water storage tank to a foul drain via an air gap and cover the hole in the lid with a WRAS approved material.

**This has not been carried out.**

Clean and disinfect the domestic cold water storage tank.

**This was carried out on 21-3-2013.**

Take water temperatures from the domestic cold water storage tank within the Marina office roof space on a six monthly basis and record within the logbook.

**This has not been carried out.**

Inspect the domestic cold water storage tank internally annually and clean and disinfect if required.

**This has been carried out.**

Continue temperature monitoring of the domestic cold water system (including all sentinel outlets) and record within the logbook.

**This is being carried out.**



Repair the right side calorifier within the Marina office plant room. Flush the flow, return and mains pipes weekly until repaired and bring back to 70°C for one hour before bringing back into service.

**This has been carried out.**

If access allows, visually inspect the calorifiers internally for scale and sludge on an annual basis.

**This has not been carried out.**

Continue temperature monitoring of the domestic hot water system (including **all** calorifiers and sentinel outlets) and record within logbook.

**This is being carried out.**

Replace the faulty temperature gauge on the calorifier within the Marina office plant room.

**This has been carried out.**

Fit temperature gauges to the flow (and return where fitted) pipe work on hot water calorifiers for monthly temperature monitoring.

**This has been carried out.**

Purge all calorifiers to drain annually and record when carried out.

**This has not been carried out.**

Ensure all calorifiers are adjusted to store hot water at a minimum of **60°C** and return is a minimum of **50°C** or more at all times.

**This has been carried out.**

**SITE SURVEY**

System Reference	Woolverstone Marina
Location	MDL Buildings
Method	Visual Assessment and Temperature Profiling

**COLD WATER STORAGE**

Domestic cold water storage within Woolverstone Marina consists of one storage tank located within the roof space of the restaurant building. The tank is of plastic construction and is fitted with fibre jacket type insulation to the body and lid. The lid now has a screened vent and a screen on the overflow pipe. There is a returning vent pipe penetrating the lid and I would recommend that this is re-routed to a foul drain via an air gap and the hole be covered with a WRAS (Water Regulations Advisory Scheme) approved material.

There is a good cross flow of water through this vessel as a sparge pipe has been fitted to an outlet pipe. The inside of the tank was found to have a slight sediment build up on the base and a light amount of biofilm on the sides.

Sediment and biofilm act as a nutrient to bacteria and can therefore aid its proliferation.

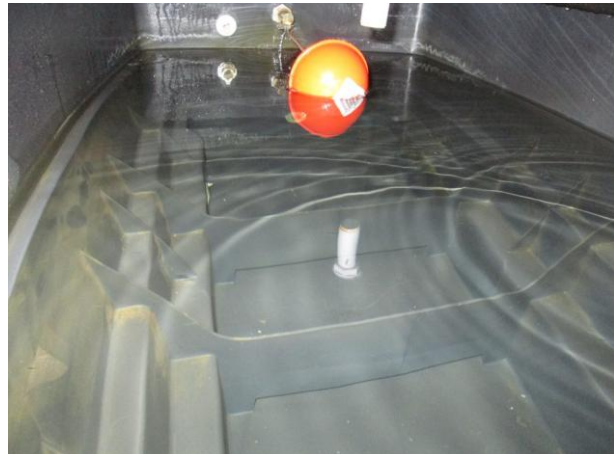
ACoP L8 recommends storage tanks to be inspected annually and cleaned and disinfected if required. This vessel was last cleaned and disinfected in March 2013 and this does not currently need repeating.

The temperature of the water within the storage tank at the time of the Survey was:

Restaurant Tank      7.0°C      Satisfactory

**Restaurant Roof Space**

Internal view of the domestic cold water storage tank.



## HOT WATER STORAGE

Hot water storage within Woolverstone Marina is by two directly heated, gas fired Andrews water heaters in the Marina office building plant room and a single electric immersion heated, copper hot water storage cylinder in a cupboard in the Restaurant.

The Marina office building calorifiers supply all of the hot water within that building and the restaurant immersion calorifier supplies all the hot water in the restaurant.

Both of the Andrews heaters had temperature gauges on the flow and return pipe work.

Both of the heaters have insulation under the factory fitted metal casing and the pipe work was generally well insulated.

Both calorifiers had 100mm dead leg stubs protruding from the body and I would recommend that they are removed.

The calorifiers have drain valves fitted; these should be purged to drain on an annual basis and recorded. It is not thought that this is being carried out.

If access allows, the calorifiers should be inspected internally for sludge and scale on an annual basis, it is not thought that this is being carried out.

The hot water storage calorifier in the restaurant is heated by an immersion heater and is a copper cylinder with factory fitted foam insulation.

There are temperature gauges fitted on the flow and return pipe work on this calorifier.

The calorifier has a drain valve fitted; this should be purged to drain on at least an annual basis and recorded. It is not thought that this is being carried out.

If access allows, this should be inspected internally for sludge and scale on an annual basis, it is not thought that this is being carried out.

**The temperature of the stored water within the hot water calorifiers at the time of the Survey was:**

#### **Marina Office Building**

**Left Hand Calorifier- Storage      65.0°C      Satisfactory**

**Left Hand Calorifier- Return      56.4°C      Satisfactory**

#### **Marina Office Building**

**Right Hand Calorifier- Storage      64.0°C      Satisfactory**

**Right Hand Calorifier- Return      56.4°C      Satisfactory**

#### **Restaurant**

**Hot Water Cylinder- Storage      63.6°C      Satisfactory**

**Hot Water Cylinder- Return      51.0°C      Satisfactory**

**ACoP L8 recommends hot water should be stored at a minimum of 60°C at all times and the return temperature should be maintained at 50°C or more at all times.**

## DOMESTIC WATER DISTRIBUTION

Domestic water services should operate at temperatures that prevent the proliferation of Legionella. L8 specifies that hot water should be stored at no less than 60°C and distributed at no less than 50°C, obtainable at user outlets within one minute of opening. Cold water should be stored and distributed at no more than 20°C.

Domestic hot water within Woolverstone Marina distributes from the calorifiers in the Marina office building plant room and the calorifier in the Restaurant. All other hot water is by electric point of use water heaters and electric local water heaters.

Domestic cold water down storage within Woolverstone Marina distributes from the cold water storage tank located within the roof space of the restaurant and I was informed that this supplies the calorifier only but there are two outlet pipes on the tank and I would recommend that this is investigated further

Cold water services within Woolverstone Marina distributes from the mains water supply and I was informed that it serves all the cold water outlets on site including the old office building.

In all areas of distribution and use, inspection, test and measurement was undertaken at representative positions in order to evaluate conditions and areas of potential risk.

At the time of the Survey (within one minute) these hot water outlets within the buildings were recorded as follows:-

<b>Woolverstone Marina</b>	
Caravan Park Portaloo Gents Toilet Hand Basin	50.6°C Satisfactory
Caravan Park Portaloo Ladies Toilet Hand Basin	<b>30.8°C Not Satisfactory</b>
Restaurant Gents Toilet Hand Basin	63.6°C Satisfactory
Restaurant Ladies Toilet Hand Basin	63.5°C Satisfactory
Restaurant Kitchen Area Kitchen Sink	60.2°C Satisfactory
Marina Office Building Kitchen Sink	63.9°C Satisfactory
Marina Office Building Ladies Toilet Hand Basin	61.8°C Inlet to TMV Satisfactory 41.0°C TMV Outlet Satisfactory
Marina Office Building Gents Toilet Hand Basin	61.9°C Inlet to TMV Satisfactory 40.9°C TMV Outlet Satisfactory
Old Office Building Toilet Hand Basin	<b>No Access</b>

**ACoP L8 recommends that the hot water should achieve 50°C, obtainable at user outlets within one minute of opening. TMV's (Thermostatic Mixing Valves) are fitted to ensure that the water temperature at hot water outlets does not exceed 43°C and scald users (and ideally should not be less than 39°C). The hot water supplying the TMV's should be 50°C at the TMV inlet as recommended in L8.**



At the time of the Survey (within two minutes) the cold water outlets within the building were as follows:

<b>Woolverstone Marina</b>	
Caravan Park Portaloo Gents Toilet Hand Basin	7.8°C Satisfactory
Caravan Park Portaloo Ladies Toilet Hand Basin	7.8°C Satisfactory
Restaurant Gents Toilet Hand Basin	7.7°C Satisfactory
Restaurant Ladies Toilet Hand Basin	8.2°C Satisfactory
Restaurant Kitchen Area Kitchen Sink	8.8°C Satisfactory
Marina Office Building Kitchen Sink	11.5°C Satisfactory
Marina Office Building Ladies Toilet Hand Basin	9.3°C Satisfactory
Marina Office Building Gents Toilet Hand Basin	9.2°C Satisfactory
Old Office Building Toilet Hand Basin	<b>No Access</b>

**ACoP L8 recommends cold water should be stored and distributed at no more than 20°C.**

**GENERAL**

- I was informed that the showers within the toilet blocks are not used as frequently in the winter months as they are in the summer months. All infrequently used outlets e.g. wash basins, showers; disabled toilets, Old Office building, pontoon hoses, outside taps etc create dead legs and should therefore be flushed on a weekly basis and recorded in a systems water logbook when carried out.
- The pontoon hose reels are supplied by a blue UPVC type plastic water hose that is run along the side of the pontoons. This is un-insulated and I would expect the water temperature in the summer to exceed the recommend maximum of 20.0°C, as outlined in L8. I would recommend that temperature monitoring and flushing of the hose is carried out as regularly as needed to keep the water temperature to below 20.0°C.
- All showerheads should be cleaned/descaled and disinfected on a quarterly basis and recorded in a water system logbook. I would recommend showerheads be removed when flushing to prevent the creation of aerosols.
- I would recommend that Legionella and Bacteriological water samples should be taken if temperatures fall outside the required limits.
- I would recommend that any buildings on Woolverstone Marina that are currently occupied should be risk assessed for Legionella if they become unoccupied for a prolonged length of time. They should have their water outlets flushed weekly and recorded in the logbook.

- Dead leg pipe work is an ideal area for the proliferation of bacteria including Legionella. Dead legs should be removed or put on a weekly flushing regime (without creating an aerosol) and recorded in the logbook when carried out. At the time of the 2013 Review survey dead legs were found in the following areas:-
  - DL1 - Restaurant - There is a dead leg on the pipework behind the freezer within the Bar store area.
  - DL2 - Marina Office - The cold water supply in the Marina office building has been converted from cold water storage tanks to mains fed only. At the time of the 2007 survey I was unable to survey the tanks that have been left in the roof space (due to many large items that have been stored in there) but could see that some of the pipe work was still in place. The 2011 and 2013 Surveys found this remains unchanged.
- There are water softeners, an ice maker, an oven with a steam facility and coffee machines on site. They should all be checked to ensure they have check valves installed to prevent backflow contamination of the mains water system. All filters should be changed / replaced regularly and all appliances connected to a water supply should be maintained as per manufacturer's recommendations **and recorded within the logbook when carried out.**
- At the time of the 2007 Survey the incoming mains water pipe to the top workshop was un-insulated. It was recommended that appropriate insulation be fitted to prevent heat loss/gain. The 2011 and 2013 Surveys found this remains unchanged.
- Monthly temperature monitoring of the calorifier flow and return pipework is being carried out and recorded.

- Monthly temperature monitoring of the hot and cold outlets is being carried out. The water temperatures of **every** sentinel (the nearest and furthest from the supply) outlet must be taken monthly and recorded. Other representative basis should have temperatures taken on a monthly rotational basis so that over a period of 12 months all outlets will have been covered.
- Water temperatures from the domestic cold water storage tank should be taken (remote from the inlet valve) on a six monthly basis and be recorded within the logbook. This is not being carried out.
- It must be ensured that all personnel involved with Legionella management are competent and adequately trained. I would also recommend that refresher training is given annually.
- A Written Scheme should be prepared to ensure that all necessary controls are maintained, monitored and remain effective.

BS8580 states – ‘Note - The Risk Assessment does not involve the preparation of the written scheme but rather provides information that is critical to the preparation’.

## RECORDS

A logbook is being used on this site but not all practices are being recorded, e.g. changing/cleaning of inline filters etc.

### **Details of the following should be included:**

- Maintenance carried out on water systems.
- Cleaning and disinfection of the domestic cold water storage tank.
- Inspection of the domestic cold water storage tank.
- Monthly temperature monitoring.
- Flushing of infrequently used outlets (weekly).
- Annual inspections of calorifiers.
- Purging of calorifiers.
- Changing/cleaning of inline filters.
- Faults and defects to be recorded.
- Audit sheet for inspections of the logbook and dated when completed.

**All of the above should be included in the water systems logbook and signed for when completed.**

**ADDITIONAL PHOTOGRAPHS**

**DL1**

**Restaurant Bar Store Area**

Dead leg pipe behind the freezer.



## **SUMMARY OF RECOMMENDATIONS**

For ease of reference the actions and recommendations made throughout this report are summarised in this section. They should read in conjunction with the preceding observations section.

### **LEGIONELLA RISK CATEGORY KEY**

1 = Insignificant risk.

2 = Controlled risk.

3 = Risk is controlled, but deteriorating conditions could increase risk.

4 = Potential hazards identified, but uncertain about risk.

5 = Risk Uncontrolled

Site Reference/ Address	Remedial/Recommendations	Priority	Date Actioned	Signature
<u>Hot Water Storage</u> <u>Woolverstone</u> <u>Marina</u>	If access allows, visually inspect the calorifiers internally for scale and sludge on an annual basis.	4		
	Purge all calorifiers to drain annually and record when carried out.	4		
<u>Cold Water Storage</u> <u>Woolverstone</u> <u>Marina</u>	Inspect the domestic cold water storage tank internally annually and clean and disinfect if required.	4		
	Take water temperatures from the domestic cold water storage tank within the Restaurant roof space on a six monthly basis and record within the logbook.	4		
	Re-route the returning vent pipe within the domestic cold water storage tank to a foul drain via an air gap and cover the hole in the lid with a WRAS approved material.	4		



Site Reference/ Address	Remedial/Recommendations	Priority	Date Actioned	Signature
<u>Distribution</u> <u>Woolverstone</u> <u>Marina</u>	Commence weekly flushing of all low use infrequently used outlets, wash basins, showers; disabled toilets, Old Office building, pontoon hoses, outside taps etc and record when carried out. Especially in winter months when facilities are not used.	5		
	Remove all dead leg pipe work or put on a weekly flushing regime without creating an aerosol, record when carried out.	5		
	I would recommend Bacteriological and Legionella water samples be taken if temperatures fall outside the required limits	5		
	TMV to be serviced and maintained as per the manufacturer's recommendations.	5		
	Ensure all domestic pipe work is adequately insulated to prevent heat gain / loss.	5		
	Clean and disinfect all showerheads quarterly or as necessary and record when carried out.	3		
	Flush any pontoon hoses as often as necessary to keep the cold water temperature to below the maximum temperature of 20°C as outlined in L8.	5		

Site Reference/ Address	Remedial/Recommendations	Priority	Date Actioned	Signature
	<p>A Written Scheme should be prepared to ensure that all necessary controls are maintained, monitored and remain effective.</p> <p>BS8580 states – ‘Note- The Risk Assessment does not involve the preparation of the written scheme but rather provides information that is critical to the preparation’.</p>	<b>5</b>		
	I would recommend that <b>all</b> legionella management be recorded within the water services logbook.	<b>4</b>		
	It must be ensured that all personnel involved with Legionella management are competent and adequately trained. I would also recommend that refresher training is given annually.	<b>5</b>		
	Fit scald warning sign near very hot outlets.	<b>3</b>		
	Investigate further to find out what the other outlet pipe from the domestic cold water storage tank supplies to ensure that it is not a dead leg.	<b>5</b>		