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PREFACE

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Date of Assessment: 11th 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 Peter Smith of Freeston Water Treatment Ltd on the 21st May 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 6th October 2011.

This Second Risk Assessment Review survey was carried out by Mr Chris Wilson of Freeston Water Treatment Limited on the 11th December 2013 at Chatham Maritime Marina, The Lock Building, Leviathan Way, Chatham Maritime, Chatham Medway ME4 4LP.

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.

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 manufacturers' recommendations.

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

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 is being 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.

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.

I was informed that this is only being carried out on the outside taps and pontoon hoses as all other outlets are used weekly.

Consider removing the Marina office domestic cold water storage tank and converting the system to mains cold water.

This remains unchanged.

Fit a WRAS approved screened lid vent to the Marina office domestic cold water storage tank.

This appears to have been a mistake. It is in fact an insect screen that needed to be fitted to the Marina Office overflow pipe. This has been carried out.

Clean and disinfect the domestic cold water storage tanks.

This was carried out in March 2013.

Take water temperatures from the domestic cold water storage tanks on a six monthly basis and record within the logbook.

This is being carried out.

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

This is being carried out.

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

his is currently only being carried out in the family room of the Facilities Block.

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 currently only being carried out in the family room of the Facilities Block.

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

This has not been carried out.

Ensure 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	Chatham Maritime Marina
Location	MDL Buildings
Method	Visual Assessment and Temperature Profiling

COLD WATER STORAGE

There are two domestic cold water storage tanks on this site one located within the roof space of the Marina office and one located within the plant room of the facilities block. Upon inspection of the Marina office domestic cold water storage tank this was found to be a round plastic tank insulated with a poly fibre jacket. The storage tank is fitted with a good lid which has a screened lid vent fitted to it and the overflow pipework is now fitted with an insect screen.

There is good crossflow of water through this vessel as a sparge pipe has been fitted to the outlet pipe. There is a light build up of sediment on the base and a slight 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 currently not need repeating.

This storage tank only serves one wash basin and a toilet; I would consider removing this storage tank and plumbing the wash basin and toilet into the existing water mains to remove the stored water.

The cold water storage temperature of this tank was:

10.2°C Satisfactory

The Facilities Block domestic cold water storage tank is of a double skinned GRP construction with integral insulation. The tank has a good fitting lid which is fitted with a screened vent; the overflow pipe work is also fitted with an insect screen.

The inlet and outlet are fully opposed therefore there is a good cross flow of water through this tank.

There is a slight build up of sediment on the base and a medium 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 I would recommend that this is carried out again within the near future.

The cold water storage temperature of this tank was:

10.4°C Satisfactory

Marina Office Roof Space

Internal view of the domestic cold water storage tank.



Facilities Block Plant Room

Internal view of the domestic cold water storage tank.



HOT WATER STORAGE

Hot water storage within Chatham Maritime Marina consists of two indirectly heated vertical calorifiers located in the Facilities Block plant room and are heated by the LTHW system only. The insulation for both calorifiers is factory fitted and is located beneath the outer metal casing. Both calorifiers are linked in parallel and are supplied from the soft cold water storage tank located directly behind them via a two pump booster set and pressure reducer. There is a return system fitted with one circulating/return pump fitted that appeared to be working correctly.

Temperature gauges are fitted to the common flow and return pipes to allow monthly monitoring of water temperatures to be carried out.

I would recommend that gauges be fitted to the flow pipe of each individual calorifier as although collectively the common flow temperature could be 60°C you can often have a calorifier which is under temperature being compensated by a hotter calorifier. This is why it's important to know the individual temperatures of each calorifier.

The calorifiers have drain valves fitted; these 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, 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 calorifiers serve all hot water outlets within the ladies and gents toilets/shower rooms, laundry, disabled toilet / shower room and family shower rooms. The distribution pipe work from both calorifiers within the plant room was well insulated. Both calorifiers are fitted with inspection doors.

The temperature of the stored water within the calorifier at the time of the Survey was:

No.1 Calorifier Storage	64.4°C	Satisfactory
No.1 Calorifier Return	55.7°C	Satisfactory
No.2 Calorifier Storage	60.9°C	Satisfactory
No.2 Calorifier Return	55.7°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.

There is also a local water heater sited in a store cupboard within the Marina office that serves the kitchen and toilet area. The header tank on this water heater should be cleaned and disinfected annually if required. This is not being carried out.

The water storage temperature of the water heater was:

57.3°C Satisfactory

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 storage within Chatham Maritime Marina distributes from two hot water calorifiers located in the plant room. The calorifiers serve all hot water outlets within the facilities block these are the ladies and gents toilets/shower rooms, laundry, disabled toilet / shower room and family shower rooms.

Domestic hot water within Chatham Maritime Marina also distributes from the local water heater in the Marina Office, this serves the kitchen and toilet area.

Mains cold water within Chatham Maritime Marina facilities block serves the water softener, cold water storage tank via the softener the wash basins and toilets within the facilities block.

Mains cold water within Chatham Maritime Marina office serves the cold water storage tank, water heater, kitchen sink and outside taps and hose reels.

Domestic cold water down storage within the office block serves the toilet wash basin and toilet only.

Boosted soft cold water services within the facilities block serves the hot water calorifiers, all showers and laundry.

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:-

Chatham Maritime Marina Office Area	
Kitchen Sink	57.3°C Satisfactory
Chatham Maritime Marina Facilities Block	
Ladies Changing / Shower Room Wash Basin	63.2°C Satisfactory
Gents Changing / Shower Room Wash Basin	63.4°C Satisfactory
Laundry Butler Sink	61.9°C Satisfactory
Individual Shower Room No.1	60.8°C Satisfactory

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 often 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 ACoP L8.

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

Chatham Maritime Marina Office Area	
Kitchen Sink	9.1°C Satisfactory
Chatham Maritime Marina Facilities Block	
Ladies Changing / Shower Room Wash Basin	9.4°C Satisfactory
Gents Changing / Shower Room Wash Basin	9.3°C Satisfactory
Laundry Butler Sink	10.0°C Satisfactory
Individual Shower Room No.1	9.4°C Satisfactory

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 Marina facilities block are not used as frequently in the winter months as they are in the summer months. All infrequently used outlets, wash basins, showers; outside taps etc. create deadlegs and should therefore be flushed on a weekly basis and recorded in a systems water logbook when carried out.
- There are mains supplied hose reels around the pontoons in the Marina. Again the hose reels are not used as frequently in the winter months so again should be flushed on a weekly basis if not used.
- 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.
- Dead leg pipe work are ideal areas 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 - Marina Office Roof Space – There is a dead leg pipe approximately 350mm long on the mains water supply to the office domestic cold water storage tank.

At the time of the 2011 Survey it was noticed that there is a bypass valve on the mains supply pipe to the water softener within the Facilities Block plant room. The valve is closed and creating dead legs either side of it. I was informed by the site engineer that he would drain the pipe (ensuring no aerosols are created) and would then put the dead legs on a weekly flushing regime. I was informed on the 2013 survey that this pipe is flushed daily. This should be recorded within the logbook when carried out.

- Thermostatic mixing valves are fitted within the Marina Facilities Block on the showers, these valves should be serviced and maintained. Hot water to the TMV's should achieve **50.0°C** or more within one minute. The temperature from the TMV should not exceed a maximum of **43.0°C**.
- Showerheads should be cleaned/descaled and disinfected on a quarterly basis or as needed and recorded in a water system logbook. This is being carried out.
- There is a water softener fitted on the system within the facilities block plant room. Water softeners are ideal areas for proliferation of bacteria. This should be serviced and maintained to the manufacturer's recommendations. I was informed that this is carried out annually by an outside contractor. This should be recorded within the logbook when carried out.
- There is an inline water filter on the mains cold water supply to the electric water boiler within the Marina office kitchen. I would recommend this be replaced / maintained to the manufacturer's recommendations. It is unknown if this is being carried out. This should be recorded within the logbook when carried out.
- 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 not being carried out in **all** relevant areas and **should commence as soon as is practicable**. The water temperatures of **every** sentinel (the nearest and furthest from the supply) outlet must be taken monthly and recorded. Other outlets should have temperatures taken on a monthly rotational basis so that over a period of 12 months a representative amount of 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 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

Marina Office Roof Space

Dead leg pipe on the mains cold water pipe to the inlet of the domestic cold water storage tank.



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>Chatham Maritime</u> <u>Marina</u>	Commence temperature monitoring of the domestic hot water system (including all sentinel outlets) as soon as is practicable . Record within logbook when carried out.	5		
	Purge all calorifiers to drain annually and record when carried out.	4		
	If access allows, visually inspect the calorifiers internally for scale and sludge on an annual basis.	4		
	Fit temperature gauges to the flow pipes on each individual calorifier.	3		
<u>Cold Water Storage</u> <u>Chatham Maritime</u> <u>Marina</u>	Commence temperature monitoring of the domestic cold water system (including all sentinel outlets) as soon as is practicable . Record within logbook when carried out.	3		
	Clean and disinfect the Facilities Block domestic cold water storage tank within the near future.	3		
	Consider removing the Marina office domestic cold water storage tank and converting the system to mains cold water.	3		

Site Reference/ Address	Remedial/Recommendations	Priority	Date Actioned	Signature
<u>Distribution</u> <u>Chatham Maritime</u> <u>Marina</u>	Commence 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.	3		
	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.	3		
	TMV's to be serviced and maintained as per the manufacturer's recommendations.	2		
	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		
	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'.	5		
	I would recommend that <u>all</u> legionella management be recorded within the water services logbook.	4		

Site Reference/ Address	Remedial/Recommendations	Priority	Date Actioned	Signature
	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.	5		