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Water Hygiene Risk Assessment in Accordance with L8

Site Location:- xxxxxxxxxxxxxxxxxxx

Risk Assessment conducted on behalf of:- xxxxxxxxxxxx

Carried out by: M Gannon
Review Date: 05.03.16

Legionella Risk Assessment

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1.0 Introduction

1.1.0 General

This document constitutes a Risk Assessment and accompanying control measures to minimise the risk of Legionellosis arising from the use of water services systems at the premises of :-

XXXXXXXXXXXX

1.2.0 Legislation

Legionnaires ' disease is a form of pneumonia that primarily affects those members of the population who are at risk due to age, illness, immunosuppression, smoking, etc. and can be fatal. *Legionella* can also cause less serious illnesses, which are not fatal or permanently debilitating, but which can affect all people.

Legionella pneumophila is the bacterium responsible for Legionnaires' disease and is often present in natural sources of water. When the bacteria enter manmade water systems and are provided with ideal growth conditions, e.g. temperature and nutrients, they proliferate rapidly. When these bacteria are released as an aerosol, e.g. showers, spa baths, cooling towers, taps and other water fittings, they can be inhaled and cause the disease in susceptible individuals.

The current legislation and guidance is:-

- The Health and Safety at Work Act - 1974
- Management of Health and Safety at Work Regulations - 1999
- COSHH Regulations - 1999
- The Approved Code of Practice and Guidance L8, "Legionnaires' Disease - The Control of Legionella Bacteria in Water Systems" (ACoP L8)

1.3.0 Definition of Risk

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 should be assessed.

To form an assessment of potential risk, a number of factors have to be taken into consideration, such as:-

a) Potential droplet formation.
b) Water Temperature.
c) Presence of *Legionella* bacteria.

The ACoP L8 identifies a number of different plant and systems that may create a risk from Legionellosis:-

a) Water systems incorporating a cooling tower.
b) Water systems incorporating an evaporative condenser.
c) Hot and cold water services.
d) Other plant and systems containing water which is likely to exceed 20°C and which may release a spray or aerosol during operation or when being maintained.

This list is not exhaustive, but evidence to date indicates that the risk from plant and systems not mentioned above is very low.

1.4.0 Risk Assessment

Once the system has been defined as being a potential risk, this is then assessed as to the degree of risk presented by the system. The risk is affected by a number of different factors, which also have varying significance depending on the type of system under consideration. Some factors can be identified as follows:-

a) Water temperatures between 20°C and 45°C.
b) Water stagnation
c) Materials in the system that could support the growth of bacteria or provide nutrients for bacteria proliferation.
d) Build-up of sediment, scale or corrosion debris which may harbour bacteria or support a bacterial ecosystem.
e) Feasibility of a water treatment programme.
f) Correct and safe system operation and maintenance.
g) Susceptible population.

1.5.0 Review of Risk Assessment

Clause 38 of the Approved Code of Practice and Guidance L8, "Legionnaires' Disease - The Control of *Legionella* Bacteria in Water Systems" states:-

The assessment should be reviewed regularly (at least every two years) and whenever there is reason to suspect that it is no longer valid. An indication of when to review the assessment and what needs to be reviewed should be recorded. (Refer to Appendix B of this Water Services Manual). This may result from, for example:-

a) Changes to the water system or its use.
b) Changes to the use of the building in which the water system is installed.
c) The availability of new information about risks or control measures.
d) The results of checks indicating that control measures are no longer effective.
e) A case of Legionnaires' Disease / Legionellosis is associated with the system.

1.6.0 Previous Risk Assessment information

Is there a current L8 Risk Assessment in place? No

If no,

Is this a first time Assessment? Yes

1.7.0 Responsible Persons

ACoP L8 requires the appointment of a responsible person, having sufficient authority for complete control of the system or systems in question.

Lines of communication should be clearly established so all agencies understand the flow of information, decisions and communication.

2.0 Summary

2.1.0 Executive Summary of Findings & Recommendations as (see also section 7).

Priority Rating for Recommendations

Each recommendation made in the assessment is assigned a priority rating, dependent upon the level of risk and / or the seriousness of the contravention of health and safety legislation / guidance it represents. Where an imminent risk to health and safety is found during an assessment, this will have been communicated to the Responsible Person as soon as practicable.

Priority 1
Risk to health and safety is “substantial or worse” and / or represents a serious contravention of health, safety and welfare legislation. Implementation recommended as soon as is practicable (guidance – within one month).

Priority 2
Risk to health and safety is “moderate” and / or represents a contravention of health, safety and welfare legislation. Implementation recommended as soon as is practicable (guidance - within 2 months).

Priority 3
Risk to health and safety is “tolerable or better” and / or represents a contravention of good practice / guidance on health, safety and welfare legislation. Although existing health, safety and welfare legislation is not being contravened directly, failure to implement could be used against the Responsible Person should an accident / incident occur. Implementation recommended as soon as is practicable. (guidance - within 6 months).

All of the recommendations should be implemented only by persons / contractors / consultants **competent** to do so

Site:-

66 Boundary Road, St Albans, AL1 4DH

Comments:-

Further to our visit, the following were noted:-

Priority 1 Findings
(Required to be closed within 1 month from the date of this report)

1@ Site management responsibilities, (as we are unsure of the command structure) we recommend this be completed by the client, unless information can be provided.

2@ Monitoring - We have seen no evidence of Legionella monitoring/control. This needs to be carried out in accordance with L8 & section 9.0 of this document, by someone who has been trained. Evidence of their training, along with the monitoring records should be placed in an on-site L8 Log Book.

3@The temperatures at the outlets were above 60°C. This brings a fear of scalding. Please fit "careful – hot water" signs at these outlets, or turn down the temperature at the Hot Water Cylinder a touch. Bearing in mind that hot water still needs to be stored at 60°C and that outlets must reach between 50°C and 60°C within the given time frame

4@ Please ensure that all outlets are descaled, including the shower

Priority 2 Findings
(Recommended timescale for completion is within 2 months)

None

Priority 3 Findings
(Recommended timescale for completion is within 6 months)

None

Therefore we would currently consider this site a Moderate-Low risk due to the above. Once all of the above observations have been addressed, the site shall be a Low risk.

3. MANAGEMENT STRUCTURE & COMMUNICATIONS

3.1.0 SITE MANAGEMENT RESPONSIBILITIES

Company : **Address :** **Telephone:**	
Statutory Duty Holder "The employer or Managing Director is the person for whom the statutory duty falls. Suitable persons should be appointed in writing to take managerial responsibility for overseeing the assessment and implementation of precautions".	**Name:** **Title:**
Statutory Duty Holder's deputy	**Name:** **Title:**
Managerial Duty "The person for who the managerial responsibility falls. Should be a Manager, Director or someone who has the authority to ensure that measures are carried out effectively".	**Name:** **Title:**
Supervisory Duty "The correct and safe operation of water systems on site. Staff who have a role to play in implementing precautions must be trained in their duties and be competent. Their responsibilities must be defined in writing and clearly set out".	**Name:** **Title:**

4.0 Description of the Water Services Installations

4.1.0 General Description of the Site Water Services Installations

Building Description;-

This is a 2 Storey, brick built terraced house for 2 residents (vulnerable adults).

4.1.1 Incoming Mains Cold Water and Distribution

The stop tap and water meter are located in the pathway outside the property. The mains cold water feeds the Hot Water Cylinder (HWC 1) and all of the cold water outlets on site (Bathroom, kitchen and the outside tap)

4.1.2 Tank Cold Water Storage and Distribution

There is currently no stored cold water located on site.

4.1.3 Domestic Hot Water Storage and Distribution

There is a 200 Litre Hot Water Cylinder (HWC 1) located in the Loft area. This feeds all of the hot water outlets on site.

4.1.4 Showers

There is a shower in the upstairs bathroom. Please ensure that this is cleaned and disinfected on a quarterly basis and that records are kept of this action.

4.1.5. Other Systems, e.g. Humidification, Fire Control Systems

There is a Low Pressure Hot Water System (LPHW) on site. Please ensure, as good practice, minimise the creation of aerosols during any maintenance works.

4.1.6. Dead Legs & Little Used Outlets

No dead legs or little used outlets were found during the time of our visit.

Although during the survey no dead legs were discovered, should any be found in the future, please ensure that these are capped back to source.

5.0.0 Asset Register

Asset / Ref.	Type	Location	Notes
HWC 1	Hot Water Cylinder	Loft	
SH	Shower	Upstairs bathroom	

6.0.0 Standard Form for Risk Assessment of the Control of *Legionella* Bacteria in Water Services

Premises to be assessed	xxxxxxxxxxxxxxxxx
Services to be assessed	All building services as defined in the Asset Summary
Name of assessor	Matthew Gannon
Company Carrying Out Risk Assessment	Green Water Services
Date of Assessment	05.03.2014

Introduction

The assessor is to consider all factors which could contribute to the risk of legionellosis from the domestic water services at these premises, including:-

- Condition of water storage and distribution services.
- System water temperatures.
- System water quality.
- Potential for exposure to aerosol droplets.
- Suitability of written scheme for maintenance and monitoring, including record keeping.

Assessments shall be undertaken in accordance with the details set out in the HSC Approved Code of Practice 'The Control of *Legionella* Bacteria in Water Systems', as issued January 2001.

The standard assessment form does not apply to premises where cooling towers and evaporative condensers are installed.

Risk being assessed

To assess the risk of exposure to Legionella Bacteria from work activities related to water systems on these premises.

What is the Hazard?

Inhalation of water droplets containing Legionella bacteria.

Who is at risk?

Members of the public		Staff	X
People at a higher risk of contracting the disease	X	Contractors	X

Review existing control measures, assess risk and identify further actions required.

6.1.1 Cold Water Storage Tank Survey

6.1.2 Hot Water Storage Vessels

Calorifier / Hot Water Cylinder	**HWC 1**
Location	Loft
Supplied by	Mains
Type (Gas fired, Plate, L.P.H.W)	LPHW
Material	Steel
Capacity	200 Litres
Insulated (Good/Poor) Type Thickness	Yes - Good
Inspection hatch	No
Cold water Feed	
Material	Poly
Size	22mm
Valve	Yes
Hot Water feed	
Material	Poly
Size	22mm
Valve	Yes
Adequate Blow Facility	Yes
Colour	Clear
Safety Valve Pressure (BAR) or Thermal (^{0}C)	Yes - Both
Gauges Availability and Reading	
Temp Gauge	-
Reading Deg's C	-
Pressure Gauge	-
Reading BAR	-
Thermostat	Yes
Temp setting Deg's C	55
Position (Top, Middle or Bottom)	Bottom

Calorifier / Hot Water Cylinder	**HWC 1**
Recirculation Pump (system circulated)	No
Return Pipe	
Size (mm)	-
Material	-
Valved	-
Destratification pump	No
Start Time	-
Finish Time	-
Type	-
Picture Taken	Yes
Number	-
Temp Deg's C	
Flow	62
Return	
Top	63
Middle	
Bottom	
Labels	
Calorifier Labelled	No
Pipe work Labelled	No
Operation	
Distance to adequate Drain (m)	15m
Power Supply (Volts/Distance)	15m
Periods of Work Availability	Daytime
Recommendations	

6.1.3 Water Sample Temperature Measurements

Objective: To check that water temperatures at various kinds of outlet are at temperatures that minimise the risk of proliferation of *Legionella* bacteria.

Water temperatures in the range of 20°C to 45°C favour the growth of *Legionella* bacteria. It is uncommon to find proliferation below 20°C and it does not survive above 60°C. Organisms may, however, remain dormant in cool water, multiplying only when the temperature reaches a suitable level.

The ACoP L8 recommends that cold water storage or distribution be at 20°C or below after two minutes of running, and that for hot water distribution at least 50°C is attainable at outlets after one minute of running.

Results: See following water services temperature survey.

Water Services Temperature Survey

Site:- 66 Boundary Road, St Albans, AL1 4DH

Site Location	Description of Outlet	TMV	Sentinel point	Wash Hand Basins / Sinks			No of Showers	No of WC's
				Qty	Hot °C	Cold °C		
Ground Floor	Kitchen		Y	1	61	10		
	Outside Tap			1	n/a	9		
First Floor	Bathroom		Y	1	60	11	1	1

Date Temperature survey carried out: 05.03.2014 Carried out by: *M Gannon*	Temperature range for monitoring is Cold below 20 °C Hot above 50 °C but below 60 °C Hot Temperature achieved within 1 minute. Cold Temperature achieved within 2 minute. Please note where a TMV is present this should be monitored monthly. Please note Sentinel points should be monitored monthly.

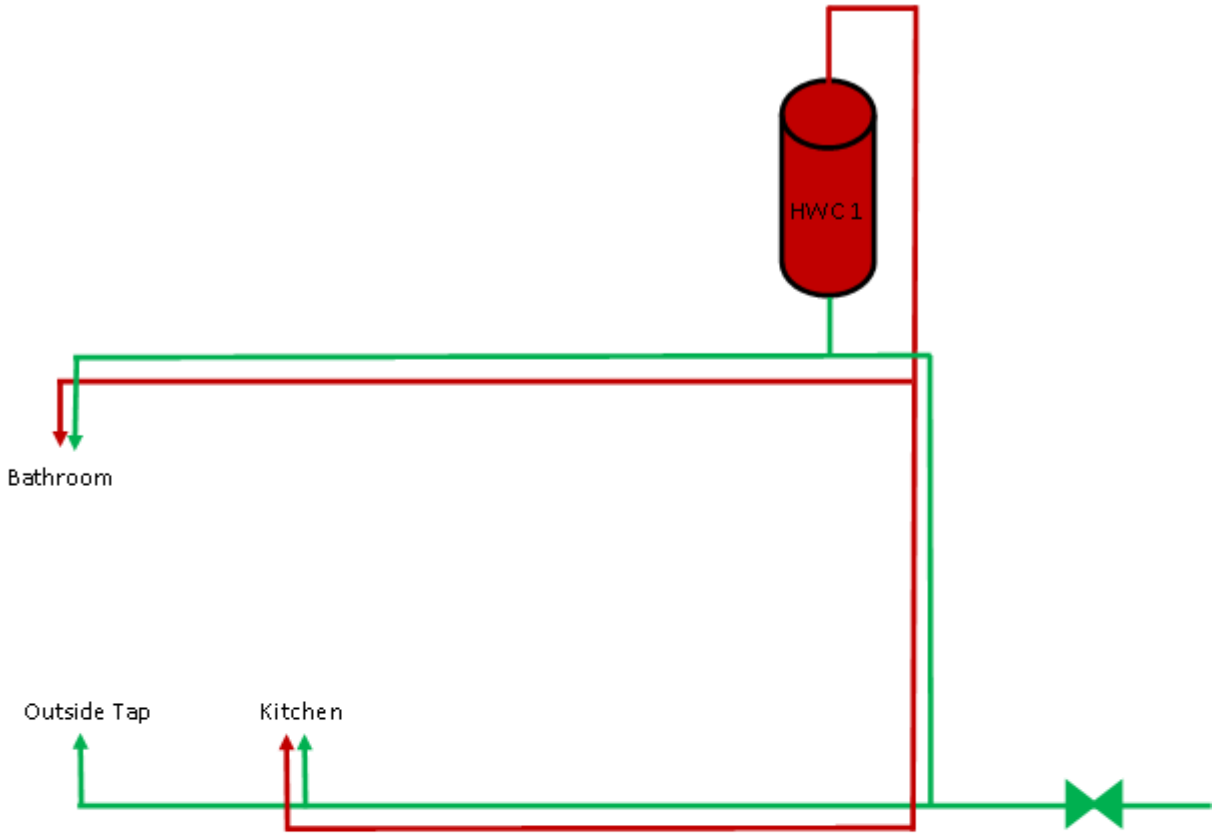
6.1.4 Survey Details of Risk Assessment – Photographs

Incoming Cold Water Mains

HWC 1

Scaled Shower Head

6.1.5 Risk System Schematics



KEY TO DRAWINGS

- HOT WATER RETURN PUMP
- SERVICING VALVE
- THERMOSTATIC MIXING VALVE
- MAINS COLD WATER SERVICE
- DOMESTIC HOT WATER SERVICE
- DOMESTIC COLD WATER SERVICE

7.0.0 Evaluation of Risk

Asset Ref.	Risk Factor	Action
HWC 1	Low	SEE RECOMMENDATIONS
SH	Medium	SEE RECOMMENDATIONS

7.1.1 Evaluation of Risk

Cold Water Services

The stored water temperatures recorded within all of the domestic tanks should be stored below 20°C which is within the ACoP L8 guidelines for stored water tanks.

The cold water storage tanks should comply in general with the requirements of the Approved Code of Practice and Guidance L8, "Legionnaires' Disease - The Control of *Legionella* Bacteria in Water Systems", ACoP L8.

General Observations on site findings:-

The building is fed by mains cold water, so there is no stored cold water on site. All outlets are achieving below 20°C within the required time frame.

7.1.2 Evaluation of Risk

Hot Water Services

The Recommendations Section describes the remedial works required for each calorifier in detail. The works identified during our assessment to ensure full compliance with the guidelines include the following:

Hot Water should be stored at above 50°C to prevent bacteria proliferation but not to exceed 60°C for fear of scolding.

General Observations on site findings:-

Hot Water is being stored at 60°C. The temperatures at the outlets were above 60°C. This brings a fear of scalding. Please fit "careful – hot water" signs at these outlets, or turn down the temperature at the Hot Water Cylinder a touch. Bearing in mind that hot water still needs to be stored at 60°C and that outlets must reach between 50°C and 60°C within the given time frame.

7.1.3 Evaluation of Risk

Water Outlets

Samples of the hot water temperatures were monitored throughout the site (the temperatures have been recorded in the Water Outlets Section). ACoP L8 states that hot water should be supplied to outlets at a temperature of at least 50°C attainable within one minute of running.

Samples of cold water temperatures were measured; all areas are supplied with cold water direct from the mains supply. ACoP L8 states that cold water temperatures should be below 20°C.

TMV's

The NHS Estates Health Guidance Note, refers to maximum hot water and surface temperatures for safe use. These are recommended for all healthcare premises and those premises registered under the Registered Homes Act 1984 (Ref 3) but are applicable for other types of occupied building.

A 44ºC For an unassisted bath fill

B 46ºC For an assisted bath fill (**)

C 41ºC For shower applications

D 41ºC For washbasin applications

E 38ºC For bidet applications

** This high fill temperature should only be considered in exceptional circumstances where there are difficulties in achieving an adequate bathing temperature. The building manager should also have in place specific policies that prevent the possibility of persons judged to be at risk gaining access to the bath unaccompanied.

General Observations on site findings:-

No TMVs were found on site.

7.1.4 Evaluation of Risk

Record Keeping

Domestic water system monitoring will be carried out by:-

Unknown

General Observations on site findings:-

We found no evidence of monitoring during our visit. Monitoring should be carried out as per L8 and Section 9.0.0 of this document. This should be by a trained individual and copies of their training, along with the monitoring should be kept in an on-site L8 Log Book.

8.0.0 Legionella Risk Assessment Score

Temperature Regime

ACoP Ref	Domestic Systems Assessment	Yes	No	Comments	Risk Score Evaluation
	Is the HWS being stored at 60°C?	X			1
153	Is the HWS vessel large enough to deal with the demand?	X			1
154	Are operational procedures in place to address when a HWS vessel is in standby or out of use?		X		2
158	Are operational procedures in place to heat the total contents of the HWS vessel to 60°C daily?	X			1
	Are records held to confirm that the total content of the HWS is heated to 60°C daily?		X		3
161	Is an inspection or sampling of water from the base of the HWS vessel taken annually to verify if debris is present?		X		2
162	Have hot taps that are no longer in use been removed, together with deadlegs?	X			1
164	Do any infrequently used showers or taps exist?		X		1
	If infrequently used showers or taps exist can these be removed, together with deadlegs?			Not Applicable	1
	Where outlets are not regularly used are procedures in place for weekly flushing of these devices?			Not Applicable	1
	Are records being maintained for the flushing procedure?			Not Applicable	1

Temperature Regime (continued)

ACoP Ref	Domestic Systems Assessment	Yes	No	Comments	Risk Score Evaluation
	Can distributed water reach a temperature of 50°C after one minute at all outlets?	X			1
	Are records of both HWS storage and outlet temperatures being maintained?		X		3
162	Are stand-by pumps incorporated into the HWS recirculation loop?		X		1
162	If stand-by pumps are installed are procedures in place to incorporate the stand-by unit into routine use?			Not Applicable	1
	Are water softeners or filters installed in the water system?		X		1
	If softeners or filters are installed in the systems are procedures in place to clean them regularly?			Not Applicable	1
169	Is the HWS pipework thermal insulation complete and in good condition?	X			1
	Is the water temperature at CWS outlet below 20°C after running the water for two minutes?	X			1
	Are records of both CWS outlet temperatures being maintained?		X		3
	Are HWS outlets and showers clean and free from scale?		X	Shower	3
	Is the thermal insulation of the CWS pipework complete and in good condition?	X			1

Total **32**

Low Risk Scores 1-22, systems are in complete compliance with L8

Medium Risk Scores 23-44, some minor actions required to satisfy L8

High Risk Scores 45 and above, areas of high concern and immediate action required to rectify.

Water Storage

ACoP Ref	Domestic Systems Assessment	Yes	No	Comments	Risk Score Evaluation
182	Inspection of water storage:- a) Is the water surface clean and shiny?			No stored water on site	1

Total **1**

Low Risk Scores 1, systems are in complete compliance with L8

Medium Risk Scores 2, some minor actions required to satisfy L8

High Risk Scores 3 and above, areas of high concern and immediate action required to rectify.

Procedures

ACoP Ref	Domestic Systems Assessment	Yes	No	Comments	Risk Score Evaluation
	Are procedures in place setting out when microbiological monitoring is required?		X		3
	Are procedures in place setting out what to do if temperature control measures are not consistently achieved?		X		3
	Are procedures in place setting out when cleaning and disinfecting is to be carried out?		X		3
	Are procedures in place setting out actions to be taken in the event of an adverse microbiological sample result and an outbreak of Legionnaires' Disease?		X		3

Total **12**

Low Risk Scores 1-4, systems are in complete compliance with L8

Medium Risk Scores 5-8, some minor actions required to satisfy L8

High Risk Scores 9 and above, areas of high concern and immediate action required to rectify.

Other Associated Risks

ACoP Ref	Domestic Systems Assessment	Yes	No	Comments	Risk Score Evaluation
	Do other water risks exist? a) Spas and whirlpools b) Atomising humidifiers c) Spray type air washers d) Others		X		1

Total **1**

Low Risk Scores 1, systems are in complete compliance with L8

Medium Risk Scores 2, some minor actions required to satisfy L8

High Risk Scores 3 and above, areas of high concern and immediate action required to rectify.

Records

ACoP Ref	Domestic Systems Assessment	Yes	No	Comments	Risk Score Evaluation
181	Is a simple description of the water service available in the Water Services manual?		X		3
181	Is a plan(s) / schematic drawing of the water services available? If so are these up-to-date?		X		3
	Are complete and up-to-date details available describing and giving details of the responsible person?		X		3

Total **9**

Low Risk Scores 1-3, systems are in complete compliance with L8

Medium Risk Scores 4-6, some minor actions required to satisfy L8

High Risk Scores 7 and above, areas of high concern and immediate action required to rectify.

9.0.0 Typical Monitoring Programme as Recommended By L8

Water Outlets

Where possible ensure that the supplying pipework to the areas that are operating above 20°C after 2 minutes of running is fully insulated, if the pipework is fully insulated or by insulating the pipework does not reduce the temperatures continue to flush weekly, additionally consideration should be given to remove the outlets.

Heating Systems

Whilst it is not necessary to implement continuous measures with respect to the control of Legionellosis during maintenance, testing and commissioning, this system may be the source of respirable aerosols and suitable precautionary measures should be taken.

Record Keeping

Implement a Control and Monitoring system including a Log Book to record all actions. To Include the following;-

Service	Task	Frequency	Specific to site (Yes/No)
Hot Water Services	Arrange for samples to be taken from hot water calorifiers, in order to note condition of drain water	Annually	No
	Check temperatures in flow & return at calorifiers	Monthly	No
	Check temperature up to one minute to see if it has reached 50°C in the sentinel taps	Monthly	Yes
	Visual check on internal surfaces of calorifiers for scale and sludge. Check representative taps for the temperature as above on a rotational basis.	Annually	No
Cold Water Services	Check tank water temperature remote from ball valve and mains temperature at ball valve.	Six Monthly	No
	Check that temperature is below 20°C after running water for up to two minutes in the sentinel taps.	Monthly	No
	Visually inspect cold water storage tanks and carry out remedial work where necessary. Check representative taps for temperature as above on a rotational basis.	Annually	No
Shower heads	Dismantle, clean & descale shower heads and hoses	Quarterly or as necessary	Yes
Little-used outlets	Flush through and purge to drain, or purge to drain immediately before use, without release of aerosols	Weekly	No

Disclaimer:-
This Risk Assessment has been prepared using the best information provided by the client during the assessment. Whilst every effort has been made to ensure this is accurate, Green Water Services accept no responsibility for any inaccuracies or unforeseen omissions in this data relating to any parts of the water system that we were not made aware of during the assessment

This L8 Risk Assessment has been reviewed,

By *Matthew Gannon* on *31st March 2014*