



<b>Customer Name:</b>	U.S. Micro-Solutions, Inc.	<b>Sample Date:</b>	May 24, 2018
<b>Customer Address:</b>	302 Unity Plaza Latrobe, PA 15650	<b>Date Received:</b>	May 25, 2018
<b>Customer Phone:</b>	(724) 853-4047	<b>Date of Report:</b>	June 5, 2018
<b>PO Number:</b>		<b>Fax:</b>	(724) 853-4049
<b>Project Name/Number:</b>	NY Legionella Sample Report	<b>Attention:</b>	
		<b>Analysis Date:</b>	May 25, 2018
		<b>Sample Time:</b>	1200
		<b>Analysis Time (hrs):</b>	26.6

Customer sample numbers below are uniquely identified by prefixing Laboratory # 12345-19

**Water/Liquid Sample(s) for *Legionella* Culture - Analytical Method USMS-B007 (ISO 11731-2017)**

Sample Number	Media	Sample Description	Results of Microbial Analysis
1	BCYE/GPCV	Salon 1st Floor Sink DHW	
AS = <1 CFU/mL (Volume examined: 100 mL) Chlorine: 0			<b>Positive - 10 CFU/mL Legionella pneumophila Serogroup 1</b>
2	BCYE/GPCV	Room #108 Sink DHW	
AS = <1 CFU/mL (Volume examined: 100 mL) Chlorine: 0			Not Detected
3	BCYE/GPCV	Room #224 Sink DHW	
AS = <1 CFU/mL (Volume examined: 100 mL) Chlorine: 0			<b>Positive - 5 CFU/mL Legionella pneumophila Serogroup 2-14</b>
4	BCYE/GPCV	2nd Floor / Kitchen Sink DHW	
AS = <1 CFU/mL (Volume examined: 100 mL) Chlorine: 0			<b>Positive - 10 CFU/mL Legionella anisa</b>

# Sample Report

Notes:

CFU/mL = colony forming units per milliliter, AS = analytical sensitivity.  
 Results are reported as Positive or Not Detected.  
 Chlorine levels are reported as ppm (parts per million)

A negative culture for *Legionella* spp. from a sample does not necessarily rule out its presence.  
 Results relate only to the samples tested. Results are reported as calculated. For biological data, the first and/or second digit should be considered significant.

When providing duplicates of this report, the document should be provided in total and not in section in accordance with ALHA-LAP, LLC. Any unauthorized or improper disclosure, copying, distribution, use, or falsification of these results is prohibited. USMS shall have no liability to the Customer or the Customer's customer for opinions stated, recommendations made, actions taken, or conduct implemented based on the test results reported.

*Herbert Layman*  
 Technical Manager: \_\_\_\_\_  
 Herbert Layman, BS, SM, CIEC

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### Legionella Culture Results – Cooling Towers

#### New York STATE

(Excerpt from New York State *Protection Against Legionella 7/6/16* – this summary is for convenience and is not a substitute for the express terms of the regulation)

Legionella Test Results (CFU/mL <sup>1</sup> )	Response/Action
<20 (No detection)	Maintain treatment program and <i>Legionella</i> monitoring in accordance with the maintenance program and plan
≥20 but <1000	<ul style="list-style-type: none"> <li>• Review treatment program</li> <li>• Institute immediate <i>online disinfection</i><sup>2</sup> to help with control</li> <li>• Re-test the water in 3-7 days                             <ul style="list-style-type: none"> <li>○ Continue to re-test at the same time interval until one sample re-test result is &lt;20 CFU/mL. With receipt of result &lt;20 CFU/mL, resume <i>routine maintenance</i> program and plan.</li> <li>○ If re-test is ≥20 CFU/mL but &lt;100 CFU/mL, repeat <i>online disinfection</i><sup>2</sup> and re-test until &lt;20 CFU/mL is attained.</li> <li>○ If re-test is ≥100 CFU/mL but &lt;1000 CFU/mL, further investigate the water treatment program and immediately perform <i>online disinfection</i><sup>2</sup>. Re-test and repeat attempts at control strategy until &lt;20 CFU/mL is attained.</li> <li>○ If re-test is ≥1000 CFU/mL, undertake <i>control strategy</i> as noted below.</li> </ul> </li> </ul>
≥1000	<ul style="list-style-type: none"> <li>• Review the treatment program and provide appropriate notifications per section 4-1.6 of Subpart 4-1 of the New York State <i>Legionella</i> Regulations.</li> <li>• Institute immediate <i>online decontamination</i><sup>3</sup> to help with control.</li> <li>• Re-test the water in 3-7 days.                             <ul style="list-style-type: none"> <li>○ Continue to re-test at the same time interval until one sample re-test result is &lt;20 CFU/mL. With receipt of result &lt;20 CFU/mL, resume <i>routine maintenance</i> program and plan.</li> <li>○ If any re-test is ≥20 CFU/mL but &lt;100 CFU/mL, repeat <i>online disinfection</i><sup>2</sup> and re-test until &lt;20 CFU/mL is attained.</li> <li>○ If any re-test is ≥100 CFU/mL but &lt;1000 CFU/mL, further investigate the water treatment program and immediately perform <i>online disinfection</i><sup>2</sup>. Re-test and repeat attempts at control strategy until &lt;20 CFU/mL is attained.</li> <li>○ If any re-test is ≥1000 CFU/mL, carry out <i>system decontamination</i><sup>4</sup></li> </ul> </li> </ul>

<sup>1</sup> CFU/mL, colony forming unit per milliliter

<sup>2</sup> **Online disinfection:** dose the cooling tower water system with either a different biocide or a similar biocide at an increased concentration than currently used.

<sup>3</sup> **Online decontamination:** dose the recirculation water with a halogen-based compound (chlorine or bromine) equivalent to at least 5 milligrams per liter (mg/L) or parts per million (ppm) free residual halogen for at least one hour.

<sup>4</sup> **System decontamination:** maintain between 5 to 10 mg/L (ppm) free residual halogen for a minimum of one hour; drain and flush with disinfected water; clean wetted surface; refill and dose to 1-5 mg/L (ppm) of free residual halogen and circulate for 30 minutes. Refill, re-establish treatment, and re-test for verification of treatment. For chlorine treatment, the pH range should be 7.0 to 7.6; for bromine treatment, the pH range should be 7.0 to 8.7. At higher pH values, the treatment times may need to be extended.

NOTE: Stabilized halogen products should not be used for online decontamination or system decontamination as defined in footnotes 3 & 4.

## Legionella Culture Results – Covered Facilities New York STATE

(Excerpt from New York State *Protection Against Legionella* 7/6/16 – this summary is for convenience and is not a substitute for the express terms of the regulation)

Percentage of Positive <i>Legionella</i> Test Sites	Response
<30%	Maintain environmental assessment and <i>Legionella</i> monitoring in accordance with the sampling and management plan.
≥30%	<ul style="list-style-type: none"> <li>• Immediately institute short-term control measures<sup>2</sup> in accordance with the direction of a qualified professional<sup>3</sup>, and notify the department.</li> <li>• The water system shall be re-sampled no sooner than 7 days and no later than 4 weeks after disinfection to determine the efficacy of the treatment.                             <ul style="list-style-type: none"> <li>○ Retreat and re-test. If re-test is ≥30% positive, repeat short-term control measures<sup>2</sup>.</li> <li>○ With receipt of results &lt;30% positive<sup>4</sup>, resume monitoring in accordance with the sampling and management plan.</li> </ul> </li> <li>• For persistent results, as determined by the department, showing ≥30% positive sites, long-term control measures<sup>5</sup> shall be implemented in accordance with the direction of a qualified professional<sup>3</sup> and the department.</li> </ul>

<sup>1</sup> In the event that one or more cases of legionellosis are, or may be, associated with the facility, the sampling interpretation shall be in accordance with the direction of a qualified professional and the department.

<sup>2</sup> Short-term control measures are temporary interventions that may include, but are not limited to, heating and flushing the water system, hyperchlorination, or the temporary installation of treatment such as copper silver ionization (CSI).

<sup>3</sup> Control measures shall be conducted in accordance with the direction of a qualified professional. A qualified professional is a New York State licensed professional engineer; certified industrial hygienist, certified water technologist; environmental consultant or water treatment professional with training and experience performing assessments and sampling in accordance with current standard industry protocols.

<sup>4</sup> Positive samples should be minimized.

<sup>5</sup> Long-term control measures may include supplemental disinfection treatments.

### Legionella Culture Results – Cooling Towers New York CITY

(Excerpt from Notice of Adoption of Chapter 8 (Cooling Towers) of Title 24 for the Rules of the City of New York - 2016 - this summary is for convenience and is not a substitute for the express terms of the regulation)

Level	Legionella Culture Result <sup>1</sup>	Process Triggered by Legionella Culture Results
1	<10 CFU/ml	Maintain water chemistry and biocide levels.
2	≥ 10 CFU/ml to <100 CFU/ml	Initiate immediate disinfection by increasing biocide concentration or using a different biocide within 24 hours: review treatment program; and retest water within 3-7 days. Subsequent test results must be interpreted in accordance with this Table until level 1 is reached.
3	≥ 100 CFU/ml to <1000 CFU/ml	Initiate immediate disinfection by increasing biocide concentration or using a different biocide (within 24 hours), reviewing treatment program, performing visual inspection to evaluate need to perform cleaning and further disinfection. Retest water within 3-7 days. Subsequent test results must be interpreted in accordance with this Table until level 1 is reached.
4	≥ 1000 CFU/ml	Initiate immediate disinfection by increasing biocides within 24 hours. Within 48 hours perform full remediation of the tower by hyperhalogenating <sup>2</sup> , draining, cleaning, and flushing. Review treatment program, retest water within 3-7 days. Subsequent test results must be interpreted in accordance with this Table until level 1 is reached. For Legionella results at this level, notify Department within 24 hours of receiving test result. <sup>3</sup>
<p><sup>1</sup> Performed by a CDC ELITE Laboratory, or NYSDOH Wadsworth Laboratory, or another laboratory approved by the Department. Combine all species of <i>Legionella</i> detected.</p> <p><sup>2</sup> At a minimum, dose the cooling water system with 5 to 10 ppm Free Halogen Residual for at least 1 hour; pH 7.0 to 7.6.</p> <p><sup>3</sup> In a manner as specified on the Department’s website.</p>		

\*End of Report\*