



● MARINE

## Fresh Water Treatment Case Study M/V Harvest Leader

HydroFLOW® enabled replacement of the UV steriliser, maintaining treated drinking water quality while also protecting onboard systems from scale.

🔒 Client details have been anonymised at their request.

**0 CFU**

Detected



Consistent Water Quality

**UV**

System Replaced

**No**

Coliform Presence



### BEFORE & AFTER

**● BEFORE**

- ✗ UV steriliser used for bacteria control only
- ✗ No protection from scale build-up
- ✗ Risk of bacterial contamination

**● AFTER**

- ✓ HydroFLOW® replaced UV steriliser
- ✓ Calorifier protected from scale
- ✓ No bacteria detected in test samples



### OVERVIEW

The M/V Harvest Leader required a reliable freshwater treatment solution for onboard accommodation systems. Two HM45 units were installed prior to launch to treat both cold consumption water and hot water circulation. The system was designed to replace the existing UV steriliser, supporting safe drinking water quality while also protecting the calorifier and internal piping from scale build-up.



### CHALLENGE

The vessel required a solution to replace UV sterilisation and improve water system protection.

- Existing UV steriliser limited to bacteria control only
- No prevention of scale in calorifier
- Need to maintain safe drinking water quality
- System reliability required at sea



## SOLUTION

2x HM45 units were installed on the cold water supply and hot water return lines to treat water across the accommodation and calorifier system.

### UNIT INSTALLED

2x HM45

### INSTALLATION POINT

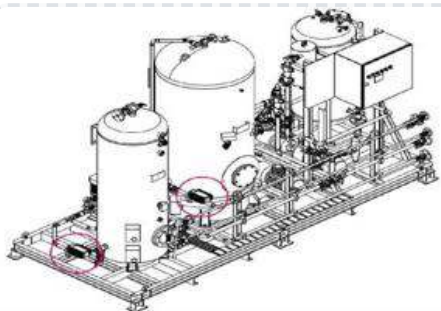
Cold outlet & hot return to calorifier

### INSTALL DATE

October 2014

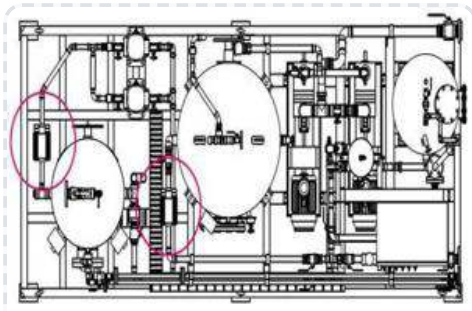
### LOCATION

M/V Harvest Leader vessel



#### INSTALLATION

Install points diagram



#### INSTALLATION

System install layout



## RESULTS

### No bacteria detected in tests

Water tests showed no bacteria detected across sampled points.

### Consistent Water Quality

Follow-up tests confirmed consistent non-hazardous drinking water quality.

### System Protection

Calorifier and pipework protected from scale formation.

### UV steriliser no longer required

HydroFLOW® enabled removal of the existing UV steriliser.

#### KEY TAKEAWAY

### Summary

HydroFLOW® replaced the UV sterilisation system on M/V Harvest Leader, supporting consistent drinking water quality and protecting the calorifier from scale. Laboratory tests confirmed no bacteria detected and stable water quality over time, demonstrating reliable performance in marine conditions.

**0 CFU**

DETECTED



CONSISTENT WATER QUALITY

**No**

COLIFORM PRESENCE



## ADDITIONAL PHOTO EVIDENCE

Sampling point: GALLEY, MOTOR MANI CABIN, ACCOM LOBBY, ECR  
 Date of sampling: Oct. 22, 2014  
 Date of sample received: Oct. 22, 2014  
 Date of analysis: Oct. 22, 2014 - Oct. 27, 2014

The above sample was tested at the laboratory of Intertek Kimisco Co., Ltd. Ulsan Testing Center, with the results of which are as follows:

Test Item	Specification	Test Result	Test Method
Total Colony Counts in 35 °C, CFU/mL	< 100	0	
Total Coliforms, /100 mL	Not detected	Not detected	
E.coli/Fecal Coliforms, /100 mL	Not detected	Not detected	
Odor	Not detected	Not detected	
Taste	Not detected	Not detected	
Total Solids, mg/L	≤ 500	0	
	≤ 8 - 8.5	7.0	

**RESULTS**  
 Lab test results (2014): No bacteria detected

Parameter	Method	Result	Limit
Sulphate (SO <sub>4</sub> ), mg/L	HI 63089	5	-
Iron (Fe), mg/l	APHA 3120 B	<0.01	-
Copper (Cu), mg/l	APHA 3120 B	<0.01	2
Silica (SiO <sub>2</sub> ), mg/l	APHA 3120 B	0.13	-
Manganese (Mn), mg/l	APHA 3120 B	<0.01	-
Aluminum (Al), mg/l	APHA 3120 B	<0.01	-
Total Coliforms (m-endo, 35C, 24hrs), cfu/100ml	APHA 9222 B	<1	-
E Coli (EC-MUG, 44.5C, 24hrs), cfu/100ml	APHA 9222 D & 9225	<1	<1

Remarks: The above results were tested as per sample submitted with reference to WHO Guidelines for Drinking Water Quality (2011), the results are physically, chemically satisfactory and bacteriologically satisfactory

Note: < Less than

**RESULTS**  
 Lab test results (2015): <1 coliform confirmed

### RELATED CASE STUDY

## Fresh Water Generator Case Study

MV Hoegh America

A HydroFLOW® unit was installed on the fresh water generator aboard the MV Hoegh America to combat scale on titanium plates. The unit successfully prevented scale formation, reducing both labor and chemical costs while maintaining optimal freshwater output.

#### Scale Prevention

Eliminated scale buildup on FWG titanium plate heat exchangers

#### Reduced Labor

Less manual cleaning required, freeing crew for other duties

#### Lower Chemical Cost

Reduced need for chemical descaling treatments aboard the vessel



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