

TEST REPORT

Report No: QMTL/R-115151/2020

CLIENT : CRYSTALLINE ENVIRONMENTAL SERVICES Abu Dhabi PO Box : 131463 United Arab Emirates ATTN : MR. JASMAN PINTO	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Sample ID</td> <td>QMTL/S-115151</td> </tr> <tr> <td>Date Received</td> <td>08 Aug 2020</td> </tr> <tr> <td>Date(s) Tested</td> <td>08 Aug 2020 - 10 Aug 2020</td> </tr> <tr> <td>Date Reported</td> <td>12 Aug 2020</td> </tr> </table>	Sample ID	QMTL/S-115151	Date Received	08 Aug 2020	Date(s) Tested	08 Aug 2020 - 10 Aug 2020	Date Reported	12 Aug 2020
Sample ID	QMTL/S-115151								
Date Received	08 Aug 2020								
Date(s) Tested	08 Aug 2020 - 10 Aug 2020								
Date Reported	12 Aug 2020								
Sample Description	ETS Chilled Water								
Sample Type	Water	Sampling Method	QMTL-WI-15						
Client Name/Project	NP	Sampled By	QMTL Representative						
Location	NYUAD	Sampling Date/Time	08.08.2020 / 09:30 AM						
Sample Container	1x500ml PB	Sampling Point	Valve						
Sample Receipt Temp	4°C	Sample Onsite Temp	17.4°C						
Sample Appearance	Clear	On-site Treatment	NA						
Reference	NP								

TEST RESULTS

PARAMETERS	TEST METHODS	UNITS	GUIDELINES	RESULTS
MICROBIOLOGICAL ANALYSIS				
E.coli	APHA 9222 H & I (23rd Edition)	CFU/100 ml	-	Zero
Fecal Coliforms	APHA 9222 D (23rd Edition)	CFU/100 ml	-	Zero
Pseudomonas aeruginosa	APHA 9213 E (23rd Edition)	CFU/100 ml	-	Zero
Total Bacterial Count	APHA 9215 B (23rd Edition)	CFU/ml	10,000	96
Total Coliforms	APHA 9222 B (23rd Edition)	CFU/100 ml	-	Zero

Remarks	The sample meets DM Water Systems quality (2010) specifications for Cooling Water Systems with respect to the above tests only.
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Keywords	CFU: Colony Forming Unit, APHA: American Public Health Association, DM: Dubai Municipality, NP: Not Provided, NA: Not Applicable, WI: Work Instruction
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Test method deviation	None
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Test performed by Emp#	14 & 74
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Report prepared by Emp#	72
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The above test results are only applicable to the sample(s) referred above.

Reported By



ANILA GEORGE
LABORATORY MANAGER

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END OF REPORT

TEST REPORT

Report No: QMTL/R-115152/2020

CLIENT : CRYSTALLINE ENVIRONMENTAL SERVICES Abu Dhabi PO Box : 131463 United Arab Emirates		Sample ID	QMTL/S-115152
ATTN : MR. JASMAN PINTO		Date Received	08 Aug 2020
		Date(s) Tested	08 Aug 2020 - 10 Aug 2020
		Date Reported	12 Aug 2020
Sample Description	MTER Chilled Water		
Sample Type	Water	Sampling Method	QMTL-WI-15
Client Name/Project	NP	Sampled By	QMTL Representative
Location	NYUAD	Sampling Date/Time	08.08.2020 / 09:38 AM
Sample Container	1x500ml PB	Sampling Point	Valve
Sample Receipt Temp	4°C	Sample Onsite Temp	16.8°C
Sample Appearance	Clear	On-site Treatment	NA
Reference	NP		

TEST RESULTS

PARAMETERS	TEST METHODS	UNITS	GUIDELINES	RESULTS
MICROBIOLOGICAL ANALYSIS				
E.coli	APHA 9222 H & I (23rd Edition)	CFU/100 ml	-	Zero
Fecal Coliforms	APHA 9222 D (23rd Edition)	CFU/100 ml	-	Zero
Pseudomonas aeruginosa	APHA 9213 E (23rd Edition)	CFU/100 ml	-	Zero
Total Bacterial Count	APHA 9215 B (23rd Edition)	CFU/ml	10,000	120
Total Coliforms	APHA 9222 B (23rd Edition)	CFU/100 ml	-	Zero

Remarks	The sample meets DM Water Systems quality (2010) specifications for Cooling Water Systems with respect to the above tests only.
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Keywords	CFU: Colony Forming Unit, APHA: American Public Health Association, DM: Dubai Municipality, NP: Not Provided, NA: Not Applicable, WI: Work Instruction
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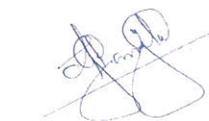
Test method deviation	None
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Test performed by Emp#	14 & 74
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Report prepared by Emp#	72
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END OF REPORT

TEST REPORT

Report No: QMTL/R-115179/2020

CLIENT : CRYSTALLINE ENVIRONMENTAL SERVICES Abu Dhabi PO Box : 131463 United Arab Emirates		Sample ID	QMTL/S-115179
ATTN : MR. JASMAN PINTO		Date Received	08 Aug 2020
		Date(s) Tested	08 Aug 2020 - 10 Aug 2020
		Date Reported	12 Aug 2020
Sample Description	Redundant Chilled Water		
Sample Type	Water	Sampling Method	QMTL-WI-15
Client Name/Project	NP	Sampled By	QMTL Representative
Location	NYUAD	Sampling Date/Time	08.08.2020 / 04:30 PM
Sample Container	1x500ml PB	Sampling Point	Valve
Sample Receipt Temp	4°C	Sample Onsite Temp	14.2°C
Sample Appearance	Clear	On-site Treatment	NA
Reference	NP		

TEST RESULTS

PARAMETERS	TEST METHODS	UNITS	GUIDELINES	RESULTS
MICROBIOLOGICAL ANALYSIS				
E.coli	APHA 9222 H & I (23rd Edition)	CFU/100 ml	-	Zero
Fecal Coliforms	APHA 9222 D (23rd Edition)	CFU/100 ml	-	Zero
Pseudomonas aeruginosa	APHA 9213 E (23rd Edition)	CFU/100 ml	-	Zero
Total Bacterial Count	APHA 9215 B (23rd Edition)	CFU/ml	10,000	2
Total Coliforms	APHA 9222 B (23rd Edition)	CFU/100 ml	-	Zero

Remarks	The sample meets DM Water Systems quality (2010) specifications for Cooling Water Systems with respect to the above tests only.
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Keywords	CFU: Colony Forming Unit, APHA: American Public Health Association, DM: Dubai Municipality, NP: Not Provided, NA: Not Applicable, WI: Work Instruction
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Test method deviation	None
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Test performed by Emp#	14 & 74
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Report prepared by Emp#	72
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TEST REPORT

Report No: QMTL/R-115153/2020

CLIENT : CRYSTALLINE ENVIRONMENTAL SERVICES Abu Dhabi PO Box : 131463 United Arab Emirates		Sample ID	QMTL/S-115153
ATTN : MR. JASMAN PINTO		Date Received	08 Aug 2020
		Date(s) Tested	08 Aug 2020 - 10 Aug 2020
		Date Reported	12 Aug 2020
Sample Description	RTER Chilled Water		
Sample Type	Water	Sampling Method	QMTL-WI-15
Client Name/Project	NP	Sampled By	QMTL Representative
Location	NYUAD	Sampling Date/Time	08.08.2020 / 09:45 AM
Sample Container	1x500ml PB	Sampling Point	Valve
Sample Receipt Temp	4°C	Sample Onsite Temp	17°C
Sample Appearance	Clear	On-site Treatment	NA
Reference	NP		

TEST RESULTS

PARAMETERS	TEST METHODS	UNITS	GUIDELINES	RESULTS
MICROBIOLOGICAL ANALYSIS				
E.coli	APHA 9222 H & I (23rd Edition)	CFU/100 ml	-	Zero
Fecal Coliforms	APHA 9222 D (23rd Edition)	CFU/100 ml	-	Zero
Pseudomonas aeruginosa	APHA 9213 E (23rd Edition)	CFU/100 ml	-	Zero
Total Bacterial Count	APHA 9215 B (23rd Edition)	CFU/ml	10,000	30
Total Coliforms	APHA 9222 B (23rd Edition)	CFU/100 ml	-	Zero

Remarks	The sample meets DM Water Systems quality (2010) specifications for Cooling Water Systems with respect to the above tests only.
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Keywords	CFU: Colony Forming Unit, APHA: American Public Health Association, DM: Dubai Municipality, NP: Not Provided, NA: Not Applicable, WI: Work Instruction
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Test method deviation	None
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Test performed by Emp#	14 & 74
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END OF REPORT

CONSULTING SERVICE REPORT

CUSTOMER: SERCO - NEW YORK UNIVERSITY, ABU DHABI	To: Mr. Ratheesh Muttath Operations Engineer	DATE: 08-08-2020
CUSTOMER ID: 3003	Copy: SERCO - NYUAD	LAST VISIT: 11-07-2020

CHILLED WATER ANALYSIS

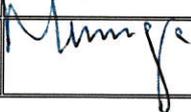
PARAMETER	CONTROL LIMITS	ETS			
pH	9.0 - 10.5	9.99			
Conductivity, $\mu\text{s}/\text{cm}$	Max 3500	1864			
TDS, ppm	--	1211			
'P' Alkalinity, ppm as CaCO_3	--				
Total Hardness, ppm as CaCO_3	--				
Calcium Hardness, ppm as CaCO_3	--				
Chloride, ppm as Cl^-	--				
Iron, ppm as Fe	0 - 2.0	0.12			

Treatment Residuals					
Nitrite, ppm	\gt 800	840			
CaH Balance					
Dipslide	$<10^3$	ND			
Phosphate/Phosphonate					
Free Residual Chlorine as Cl	--	--			
Cynauric Acid					

All test results expressed in parts per million (ppm) as CaCO_3 except pH and conductivity (μmhos).

COMMENTS:	ACTION:
The pH and Conductivity/TDS are found satisfactory. \Rightarrow	No action recommended.
Dissolved iron levels are found within control limits. \Rightarrow	No action recommended.
Corrosion Inhibitor levels found satisfactory. \Rightarrow	No action recommended.

The chilled water controller is calibrated. Dosing pumps, tubes and tank are in good condition.

INVENTORY LEVELS			DOSAGE SCHEDULE	
Chemical	Quantity	Chemical	Present Dosage	Revised Dosage
Crystal 5547C			--	
Crystal 9040			--	
			--	
Service Engineer:	Murugaraaj		Client:	Mr. Ratheesh Muttath
Signature:			Signature:	



CONSULTING SERVICE REPORT

CUSTOMER: SERCO – NEW YORK UNIVERSITY, ABU DHABI		To: Mr. Ratheesh Muttath Operations Engineer		DATE: 08-08-2020	
CUSTOMER ID: 3003		Copy: SERCO - NYUAD		LAST VISIT: 11-07-2020	
CHILLED WATER ANALYSIS					
PARAMETER	CONTROL LIMITS	MTER			
pH	9.0 – 10.5	10.12			
Conductivity, $\mu\text{s}/\text{cm}$	Max 3500	2188			
TDS, ppm	--	1422			
'P' Alkalinity, ppm as CaCO_3	--				
Total Hardness, ppm as CaCO_3	--				
Calcium Hardness, ppm as CaCO_3	--				
Chloride, ppm as Cl^-	--				
Iron, ppm as Fe	0 – 2.0	0.14			
Treatment Residuals					
Nitrite, ppm	> 800	920			
CaH Balance					
Dipslide	<10 ³	ND			
Phosphate/Phosphonate					
Free Residual Chlorine as Cl	--	--			
Cynauric Acid					
<i>All test results expressed in parts per million (ppm) as CaCO_3 except pH and conductivity (μmhos).</i>					
COMMENTS:			ACTION:		
The pH and Conductivity/TDS are found satisfactory. \Rightarrow			No action recommended.		
Dissolved iron levels are within control limits. \Rightarrow			No action recommended.		
Corrosion Inhibitor levels found satisfactory. \Rightarrow			No action recommended		
<p>The chilled water controller is calibrated. Dosing pumps, tubes and tank are in good condition. Corrosion inhibitor sensor are ok.</p>					
INVENTORY LEVELS			DOSAGE SCHEDULE		
Chemical	Quantity	Chemical	Present Dosage	Revised Dosage	
Crystal 5547C			--		
Crystal 9040			--		
			--		
Service Engineer:	Murugaraaj		Client:	Mr. Ratheesh Muttath	
Signature:			Signature:		



CONSULTING SERVICE REPORT

CUSTOMER: SERCO – NEW YORK UNIVERSITY, ABU DHABI	To: Mr. Ratheesh Muttath Operations Engineer	DATE: 08-08-2020
CUSTOMER ID: 3003	Copy: SERCO - NYUAD	LAST VISIT: 11-07-2020

CHILLED WATER ANALYSIS

PARAMETER	CONTROL LIMITS	Redundant			
pH	9.0 – 10.5	10.22			
Conductivity, µs/cm	Max 3500	1763			
TDS, ppm	--	1145			
'P' Alkalinity, ppm as CaCO ₃	--				
Total Hardness, ppm as CaCO ₃	--				
Calcium Hardness, ppm as CaCO ₃	--				
Chloride, ppm as Cl ⁻	--				
Iron, ppm as Fe	0 – 2.0	0.19			

Treatment Residuals

Nitrite, ppm	➤ 800	950			
CaH Balance					
Dipslide	<10 ³	ND			
Phosphate/Phosphonate					
Free Residual Chlorine as Cl	--	--			
Cynauric Acid					

All test results expressed in parts per million (ppm) as CaCO₃ except pH and conductivity (µmhos).

COMMENTS:

ACTION:

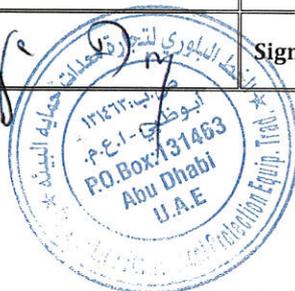
The pH and Conductivity/TDS are found satisfactory.	⇒	No action recommended.
Dissolved iron levels are satisfactory.	⇒	No action recommended.
Corrosion Inhibitor levels satisfactory	⇒	No action recommended.

The chilled water controller is calibrated. Dosing pumps, tubes and tank are in good condition.

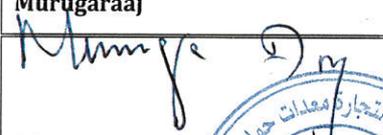
INVENTORY LEVELS

DOSAGE SCHEDULE

Chemical	Quantity	Chemical	Present Dosage	Revised Dosage
Crystal 5547C			--	
Crystal 9040			--	
			--	
Service Engineer:	Murugaraaj		Client:	Mr. Ratheesh Muttath
Signature:			Signature:	



CONSULTING SERVICE REPORT

CUSTOMER: SERCO - NEW YORK UNIVERSITY, ABU DHABI	To: Mr. Ratheesh Muttath Operations Engineer	DATE: 08-08-2020			
CUSTOMER ID: 3003	Copy: SERCO - NYUAD	LAST VISIT: 11-07-2020			
CHILLED WATER ANALYSIS					
PARAMETER	CONTROL LIMITS	RTER			
pH	9.0 - 10.5	10.08			
Conductivity, $\mu\text{s}/\text{cm}$	Max 3500	1866			
TDS, ppm	--	1212			
'P' Alkalinity, ppm as CaCO_3	--				
Total Hardness, ppm as CaCO_3	--				
Calcium Hardness, ppm as CaCO_3	--				
Chloride, ppm as Cl^-	--				
Iron, ppm as Fe	0 - 2.0	0.10			
Treatment Residuals					
Nitrite, ppm	> 800	970			
CaH Balance					
Dipslide	<10 ³	ND			
Phosphate/Phosphonate					
Free Residual Chlorine as Cl	--	--			
Cynauric Acid					
<i>All test results expressed in parts per million (ppm) as CaCO_3 except pH and conductivity (μmhos).</i>					
COMMENTS:			ACTION:		
The pH and Conductivity/TDS are found satisfactory. \Rightarrow			No action recommended.		
Dissolved iron levels are satisfactory. \Rightarrow			No action recommended.		
Corrosion Inhibitor levels found satisfactory \Rightarrow			No action recommended.		
The chilled water controller is calibrated. Dosing pumps, tubes and tank are in good condition.					
INVENTORY LEVELS			DOSAGE SCHEDULE		
Chemical	Quantity	Chemical	Present Dosage	Revised Dosage	
Crystal 5547C			--		
Crystal 9040			--		
Service Engineer:	Murugaraaj		Client:	Mr. Ratheesh Muttath	
Signature:			Signature:		

