

TEST REPORT

Report No: QMTL/R-98426/2020

CLIENT : CRYSTALLINE ENVIRONMENTAL SERVICES Abu Dhabi PO Box : 131463 United Arab Emirates		Sample ID	QMTL/S-98426
ATTN : MR. JASMAN PINTO		Date Received	18 Mar 2020
		Date(s) Tested	19 Mar 2020 - 21 Mar 2020
		Date Reported	30 Mar 2020
Sample Description	Chilled Water, SV1 Building, ETS Room		
Sample Type	Water	Sampling Method	QMTL-WI-15
Client Name/Project	NP	Sampled By	QMTL Representative
Location	Zayed University	Sampling Date/Time	19.03.2020/10:00 AM
Sample Container	1x500ml PB	Sampling Point	Valve
Sample Receipt Temp	4.5°C	Sample Onsite Temp	13°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	<1
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#	74 & 78
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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.	
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Reported By




ANILA GEORGE
LABORATORY MANAGER

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END OF REPORT

TEST REPORT

Report No: QMTL/R-98427/2020

CLIENT : CRYSTALLINE ENVIRONMENTAL SERVICES Abu Dhabi PO Box : 131463 United Arab Emirates ATTN : MR. JASMAN PINTO	Sample ID	QMTL/S-98427	
	Date Received	18 Mar 2020	
	Date(s) Tested	19 Mar 2020 - 21 Mar 2020	
	Date Reported	30 Mar 2020	
Sample Description	Chilled Water, MF.2 Plant Room Roof		
Sample Type	Water	Sampling Method	QMTL-WI-15
Client Name/Project	NP	Sampled By	QMTL Representative
Location	Zayed University	Sampling Date/Time	19.03.2020/10:20 AM
Sample Container	1x500ml PB	Sampling Point	Valve
Sample Receipt Temp	4.5°C	Sample Onsite Temp	8.5°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#	74 & 78
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Report prepared by Emp#	72
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END OF REPORT

TEST REPORT

Report No: QMTL/R-98428/2020

CLIENT : CRYSTALLINE ENVIRONMENTAL SERVICES Abu Dhabi PO Box : 131463 United Arab Emirates		Sample ID	QMTL/S-98428
		Date Received	18 Mar 2020
		Date(s) Tested	19 Mar 2020 - 21 Mar 2020
ATTN : MR. JASMAN PINTO		Date Reported	30 Mar 2020
Sample Description	Chilled Water, SV2 Buidling-ETS Room, Ground Floor		
Sample Type	Water	Sampling Method	QMTL-WI-15
Client Name/Project	NP	Sampled By	QMTL Representative
Location	Zayed University	Sampling Date/Time	19.03.2020/10:50 AM
Sample Container	1x500ml PB	Sampling Point	Valve
Sample Receipt Temp	4.5°C	Sample Onsite Temp	10°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	<1
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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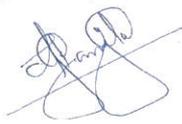
Test method deviation	None
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Test performed by Emp#	74 & 78
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Report prepared by Emp#	72
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The above test results are only applicable to the sample(s) referred above.

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END OF REPORT

TEST REPORT

Report No: QMTL/R-98429/2020

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-98429</td> </tr> <tr> <td>Date Received</td> <td>18 Mar 2020</td> </tr> <tr> <td>Date(s) Tested</td> <td>19 Mar 2020 - 21 Mar 2020</td> </tr> <tr> <td>Date Reported</td> <td>30 Mar 2020</td> </tr> </table>	Sample ID	QMTL/S-98429	Date Received	18 Mar 2020	Date(s) Tested	19 Mar 2020 - 21 Mar 2020	Date Reported	30 Mar 2020
Sample ID	QMTL/S-98429								
Date Received	18 Mar 2020								
Date(s) Tested	19 Mar 2020 - 21 Mar 2020								
Date Reported	30 Mar 2020								
Sample Description	Chilled Water FF1-Plant Room Roof								
Sample Type	Water	Sampling Method	QMTL-WI-15						
Client Name/Project	NP	Sampled By	QMTL Representative						
Location	Zayed University	Sampling Date/Time	19.03.2020/11:15 AM						
Sample Container	1x500ml PB	Sampling Point	Valve						
Sample Receipt Temp	4.5°C	Sample Onsite Temp	9.6°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	110
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#	74 & 78
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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



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LABORATORY MANAGER



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END OF REPORT



CONSULTING SERVICE REPORT

CUSTOMER: SERCO FACILITY MANAGEMENT.	To: MR. MUHAMMED AFSHAR OPERATIONS ENGINEER	DATE: 18-03-2020
SITE: ZAYED UNIVERSITY, ABU DHABI	Copy: SERCO	LOCATION: SV1 - CHILLER PLANT ROOM

CHILLED WATER ANALYSIS

PARAMETER	CONTROL LIMITS	CHILLED WATER
pH	9.0 - 10.5	09.94
Conductivity, $\mu\text{s}/\text{cm}$	Max 3500	1314
TDS, ppm	--	854
'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	0.21

Treatment Residuals		
Nitrite, ppm	> 800	730
CaH Balance		
Dipslide	<10 ³	ND

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. ⇨	No action recommended.
Dissolved iron levels are found within control limits. ⇨	No action recommended.
Corrosion Inhibitor levels are low ⇨	Kindly Maintain the nitrite level above 800ppm

INVENTORY LEVELS			DOSAGE SCHEDULE	
Chemical	Quantity	Chemical	Present Dosage	Revised Dosage
Crystal 5547C			--	
Crystal 9040			--	
			--	
Service Engineer:	MURUGARAJ		Client:	Mr. MUHAMMED AFSHAR
Signature:			Signature:	





CONSULTING SERVICE REPORT

CUSTOMER: SERCO FACILITY MANAGEMENT.	To: MR. MUHAMMED AFSHAR OPERATIONS ENGINEER	DATE: 18-03-2020
SITE: ZAYED UNIVERSITY, ABU DHABI	Copy: SERCO	LOCATION: SV2 - CHILLER PLANT ROOM

CHILLED WATER ANALYSIS

PARAMETER	CONTROL LIMITS	CHILLED WATER	
pH	9.0 – 10.5	10.09	
Conductivity, $\mu\text{s/cm}$	Max 3500	1084	
TDS, ppm	--	704	
'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	0.32	

Treatment Residuals			
Nitrite, ppm	➤ 800	580	
CaH Balance			
Dipslide	<10 ³	ND	

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. ⇨	No action recommended.
Dissolved iron levels are found within control limits. ⇨	No action recommended.
Corrosion Inhibitor levels are low ⇨	Kindly Maintain the nitrite level above 800ppm

INVENTORY LEVELS			DOSAGE SCHEDULE	
Chemical	Quantity	Chemical	Present Dosage	Revised Dosage
Crystal 5547C			--	
Crystal 9040			--	
			--	
Service Engineer:	MURUGARAJ		Client:	Mr. MUHAMMED AFSHAR
Signature:			Signature:	





CONSULTING SERVICE REPORT

CUSTOMER: SERCO FACILITY MANAGEMENT.	To: MR. MUHAMMED AFSHAR OPERATIONS ENGINEER	DATE: 18-03-2020
SITE: ZAYED UNIVERSITY, ABU DHABI	Copy: SERCO	LOCATION: FF2 - CHILLER PLANT ROOM

CHILLED WATER ANALYSIS

PARAMETER	CONTROL LIMITS	CHILLED WATER	
pH	9.0 – 10.5	9.96	
Conductivity, $\mu\text{s}/\text{cm}$	Max 3500	1263	
TDS, ppm	--	821	
'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	0.13	

Treatment Residuals

Nitrite, ppm	➤ 800	710	
CaH Balance			
Dipslide	<10 ³	ND	

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. ⇨	No action recommended.
Dissolved iron levels are found within control limits. ⇨	No action recommended.
Corrosion Inhibitor levels are low ⇨	Kindly Maintain the nitrite level above 800ppm

INVENTORY LEVELS

DOSAGE SCHEDULE

Chemical	Quantity	Chemical	Present Dosage	Revised Dosage
Crystal 5547C			--	
Crystal 9040			--	
			--	

Service Engineer:	MURUGARAJ	Client:	Mr. MUHAMMED AFSHAR
Signature:	<i>P. Murugaraaj</i>	Signature:	





CONSULTING SERVICE REPORT

CUSTOMER: SERCO FACILITY MANAGEMENT.	To: MR. MUHAMMED AFSHAR OPERATIONS ENGINEER	DATE: 18-03-2020
SITE: ZAYED UNIVERSITY, ABU DHABI	Copy: SERCO	LOCATION: MF2 - CHILLER PLANT ROOM

CHILLED WATER ANALYSIS

PARAMETER	CONTROL LIMITS	CHILLED WATER	
pH	9.0 - 10.5	09.63	
Conductivity, $\mu\text{s/cm}$	Max 3500	1095	
TDS, ppm	--	711	
'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	610	
CaH Balance			
Dipslide	<10 ³	ND	

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 low.	⇒	Kindly Maintain the desired control limit.
Dissolved iron levels are found within control limits.	⇒	No action recommended.
Corrosion Inhibitor levels are low	⇒	Kindly Maintain the nitrite level above 800ppm

INVENTORY LEVELS

DOSAGE SCHEDULE

Chemical	Quantity	Chemical	Present Dosage	Revised Dosage
Crystal 5547C			--	
Crystal 9040			--	
			--	

Service Engineer:	MURUGARAJ	Client:	Mr. MUHAMMED AFSHAR
Signature:		Signature:	

