

## TEST REPORT

Report No: QMTL/R-148334/2021

<b>CLIENT : CRYSTALLINE ENVIRONMENTAL SERVICES</b> Abu Dhabi PO Box : 131463 United Arab Emirates  <b>ATTN : MR. JASMAN PINTO</b>		Sample ID	QMTL/S-148334
		Date Received	14 Feb 2021
		Date(s) Tested	14 Feb 2021 - 16 Feb 2021
		Date Reported	28 Feb 2021
Sample Description	Cooling Tower Make Up Water -1		
Sample Type	Water	Sampling Method	QMTL-WI-15
Client Name/Project	NP	Sampled By	QMTL Representative
Location	Healthpoint Hospital, Abu Dhabi	Sampling Date/Time	14.02.2021 / 3:50 PM
Sample Container	1x500ml PB	Sampling Point	Tank
Sample Receipt Temp	4°C	Sample Onsite Temp	28.1°C
Sample Appearance	Clear	On-site Treatment	NA
Reference	NP		

### TEST RESULTS

PARAMETERS	TEST METHODS	UNITS	GUIDELINES	RESULTS
<b>MICROBIOLOGICAL PARAMETERS</b>				
Total Bacterial Count*	APHA 9215 B -23rd Edition	CFU/ml	10,000	<b>160</b>
Total Coliforms*	APHA 9222 B -23rd Edition	CFU/100 ml	-	<b>Zero</b>
Fecal Coliforms*	APHA 9222 D -23rd Edition	CFU/100 ml	-	<b>Zero</b>
Pseudomonas aeruginosa*	APHA 9213 E -23rd Edition	CFU/100 ml	-	<b>Zero</b>
E.coli*	APHA 9222 I -23rd Edition	CFU/100 ml	-	<b>Zero</b>

The Analysis results denoted by (\*) are part of the laboratory ENAS Accreditation to ISO/IEC 17025 : 2017.

Remarks	The sample meets DM Water Systems quality (2010) specifications for Cooling Water Systems with respect to the above tests only.
Keywords	CFU: Colony Forming Unit, APHA: American Public Health Association, DM: Dubai Municipality, NP: Not Provided, NA: Not Applicable, WI: Work Instruction
Test method deviation	None
Test performed by Emp#	103 & 14
Report prepared by Emp#	72
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-148335/2021

<b>CLIENT : CRYSTALLINE ENVIRONMENTAL SERVICES</b> Abu Dhabi PO Box : 131463 United Arab Emirates		Sample ID	QMTL/S-148335
		Date Received	14 Feb 2021
		Date(s) Tested	14 Feb 2021 - 16 Feb 2021
<b>ATTN : MR. JASMAN PINTO</b>		Date Reported	28 Feb 2021
Sample Description	Cooling Tower Make Up Water -2		
Sample Type	Water	Sampling Method	QMTL-WI-15
Client Name/Project	NP	Sampled By	QMTL Representative
Location	Healthpoint Hospital, Abu Dhabi	Sampling Date/Time	14.02.2021 / 3:55 PM
Sample Container	1x500ml PB	Sampling Point	Tank
Sample Receipt Temp	4°C	Sample Onsite Temp	28.1°C
Sample Appearance	Clear	On-site Treatment	NA
Reference	NP		

## TEST RESULTS

PARAMETERS	TEST METHODS	UNITS	GUIDELINES	RESULTS
<b>MICROBIOLOGICAL PARAMETERS</b>				
Total Bacterial Count*	APHA 9215 B -23rd Edition	CFU/ml	10,000	<b>140</b>
Total Coliforms*	APHA 9222 B -23rd Edition	CFU/100 ml	-	<b>Zero</b>
Fecal Coliforms*	APHA 9222 D -23rd Edition	CFU/100 ml	-	<b>Zero</b>
Pseudomonas aeruginosa*	APHA 9213 E -23rd Edition	CFU/100 ml	-	<b>Zero</b>
E.coli*	APHA 9222 I -23rd Edition	CFU/100 ml	-	<b>Zero</b>

The Analysis results denoted by (\*) are part of the laboratory ENAS Accreditation to ISO/IEC 17025 : 2017.

Remarks	The sample meets DM Water Systems quality (2010) specifications for Cooling Water Systems with respect to the above tests only.
Keywords	CFU: Colony Forming Unit, APHA: American Public Health Association, DM: Dubai Municipality, NP: Not Provided, NA: Not Applicable, WI: Work Instruction
Test method deviation	None
Test performed by Emp#	103 & 14
Report prepared by Emp#	72
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**END OF REPORT**

## TEST REPORT

Report No: QMTL/R-148336/2021

CLIENT : CRYSTALLINE ENVIRONMENTAL SERVICES Abu Dhabi PO Box : 131463 United Arab Emirates		Sample ID	QMTL/S-148336
ATTN : MR. JASMAN PINTO		Date Received	14 Feb 2021
		Date(s) Tested	14 Feb 2021 - 16 Feb 2021
		Date Reported	28 Feb 2021
Sample Description	Cooling Tower Make Up Water -3		
Sample Type	Water	Sampling Method	QMTL-WI-15
Client Name/Project	NP	Sampled By	QMTL Representative
Location	Healthpoint Hospital, Abu Dhabi	Sampling Date/Time	14.02.2021 / 4:00 PM
Sample Container	1x500ml PB	Sampling Point	Tank
Sample Receipt Temp	4°C	Sample Onsite Temp	29.1°C
Sample Appearance	Clear	On-site Treatment	NA
Reference	NP		

## TEST RESULTS

PARAMETERS	TEST METHODS	UNITS	GUIDELINES	RESULTS
<b>MICROBIOLOGICAL PARAMETERS</b>				
Total Bacterial Count*	APHA 9215 B -23rd Edition	CFU/ml	10,000	<b>130</b>
Total Coliforms*	APHA 9222 B -23rd Edition	CFU/100 ml	-	<b>Zero</b>
Fecal Coliforms*	APHA 9222 D -23rd Edition	CFU/100 ml	-	<b>Zero</b>
Pseudomonas aeruginosa*	APHA 9213 E -23rd Edition	CFU/100 ml	-	<b>Zero</b>
E.coli*	APHA 9222 I -23rd Edition	CFU/100 ml	-	<b>Zero</b>

The Analysis results denoted by (\*) are part of the laboratory ENAS Accreditation to ISO/IEC 17025 : 2017.

Remarks	The sample meets DM Water Systems quality (2010) specifications for Cooling Water Systems with respect to the above tests only.
Keywords	CFU: Colony Forming Unit, APHA: American Public Health Association, DM: Dubai Municipality, NP: Not Provided, NA: Not Applicable, WI: Work Instruction
Test method deviation	None
Test performed by Emp#	103 & 14
Report prepared by Emp#	72
The above test results are only applicable to the sample(s) referred above.	

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## TEST REPORT

Report No: QMTL/R-148337/2021

CLIENT : CRYSTALLINE ENVIRONMENTAL SERVICES Abu Dhabi PO Box : 131463 United Arab Emirates		Sample ID	QMTL/S-148337
		Date Received	14 Feb 2021
		Date(s) Tested	14 Feb 2021 - 16 Feb 2021
ATTN : MR. JASMAN PINTO		Date Reported	28 Feb 2021
Sample Description	Cooling Tower Make Up Water -4		
Sample Type	Water	Sampling Method	QMTL-WI-15
Client Name/Project	NP	Sampled By	QMTL Representative
Location	Healthpoint Hospital, Abu Dhabi	Sampling Date/Time	14.02.2021 / 4:05 PM
Sample Container	1x500ml PB	Sampling Point	Tank
Sample Receipt Temp	4°C	Sample Onsite Temp	28.4°C
Sample Appearance	Clear	On-site Treatment	NA
Reference	NP		

### TEST RESULTS

PARAMETERS	TEST METHODS	UNITS	GUIDELINES	RESULTS
<b>MICROBIOLOGICAL PARAMETERS</b>				
Total Bacterial Count*	APHA 9215 B -23rd Edition	CFU/ml	10,000	<b>110</b>
Total Coliforms*	APHA 9222 B -23rd Edition	CFU/100 ml	-	<b>Zero</b>
Fecal Coliforms*	APHA 9222 D -23rd Edition	CFU/100 ml	-	<b>Zero</b>
Pseudomonas aeruginosa*	APHA 9213 E -23rd Edition	CFU/100 ml	-	<b>Zero</b>
E.coli*	APHA 9222 I -23rd Edition	CFU/100 ml	-	<b>Zero</b>

The Analysis results denoted by (\*) are part of the laboratory ENAS Accreditation to ISO/IEC 17025 : 2017.

Remarks	The sample meets DM Water Systems quality (2010) specifications for Cooling Water Systems with respect to the above tests only.
Keywords	CFU: Colony Forming Unit, APHA: American Public Health Association, DM: Dubai Municipality, NP: Not Provided, NA: Not Applicable, WI: Work Instruction
Test method deviation	None
Test performed by Emp#	103 & 14
Report prepared by Emp#	72
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## TEST REPORT

Report No: QMTL/R-148381/2021

CLIENT : CRYSTALLINE ENVIRONMENTAL SERVICES Abu Dhabi PO Box : 131463 United Arab Emirates	Sample ID	QMTL/S-148381	
	Date Received	14 Feb 2021	
	Date(s) Tested	14 Feb 2021 - 24 Feb 2021	
	Date Reported	03 Mar 2021	
ATTN : MR. JASMAN PINTO			
Sample Description	Cooling Tower -1		
Sample Type	Water	Sampling Method	QMTL-WI-16
Client Name/Project	NP	Sampled By	QMTL Representative
Location	Healthpoint Hospital, Abu Dhabi	Sampling Date/Time	14.02.2021 / 3:20 PM
Sample Container	1x1L PB	Sampling Point	Basin
Sample Receipt Temp	21°C	Sample Onsite Temp	23°C
Sample Appearance	Clear	On-site Treatment	NA
Reference	NP		

### TEST RESULTS

PARAMETERS	TEST METHODS	UNITS	GUIDELINES	RESULTS
<b>LEGIONELLA ANALYSIS</b>				
Legionella*	ISO 11731:2017 E (Matrix B, Procedure- 8, 9 & 10)	CFU/litre	1000	<100
Legionella Species	ISO 11731:2017 E	-	-	Absent
Legionella pneumophila sero group 1	ISO 11731:2017 E	-	-	Absent
Legionella pneumophila sero group 2-15	ISO 11731:2017 E	-	-	Absent

The Analysis result denoted by (\*) is part of the laboratory ENAS Accreditation to ISO/IEC 17025 : 2017.

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, DM: Dubai Municipality, ISO: International Organization for Standardization NP: Not Provided, NA: Not Applicable, WI: Work Instruction, GVPC: Glycine Vancomycin Polymyxin Cycloheximide. Culture Media: GVPC Agar
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Test method deviation	None
Test performed by Emp#	103 & 14
Report prepared by Emp#	72

The above test results are only applicable to the sample(s) referred above.

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## TEST REPORT

Report No: QMTL/R-148382/2021

CLIENT : CRYSTALLINE ENVIRONMENTAL SERVICES Abu Dhabi PO Box : 131463 United Arab Emirates	Sample ID	QMTL/S-148382	
	Date Received	14 Feb 2021	
	Date(s) Tested	14 Feb 2021 - 24 Feb 2021	
	Date Reported	03 Mar 2021	
ATTN : MR. JASMAN PINTO			
Sample Description	Cooling Tower -2		
Sample Type	Water	Sampling Method	QMTL-WI-16
Client Name/Project	NP	Sampled By	QMTL Representative
Location	Healthpoint Hospital, Abu Dhabi	Sampling Date/Time	14.02.2021 / 3:30 PM
Sample Container	1x1L PB	Sampling Point	Basin
Sample Receipt Temp	21°C	Sample Onsite Temp	20°C
Sample Appearance	Clear	On-site Treatment	NA
Reference	NP		

### TEST RESULTS

PARAMETERS	TEST METHODS	UNITS	GUIDELINES	RESULTS
<b>LEGIONELLA ANALYSIS</b>				
Legionella*	ISO 11731:2017 E (Matrix B, Procedure- 8, 9 & 10)	CFU/litre	1000	<100
Legionella Species	ISO 11731:2017 E	-	-	Absent
Legionella pnueumophila sero group 1	ISO 11731:2017 E	-	-	Absent
Legionella pnueumophila sero group 2-15	ISO 11731:2017 E	-	-	Absent

The Analysis result denoted by (\*) is part of the laboratory ENAS Accreditation to ISO/IEC 17025 : 2017.

Remarks	The sample meets DM Water Systems quality (2010) specifications for Cooling Water Systems with respect to the above tests only.
Keywords	CFU: Colony Forming Unit, DM: Dubai Municipality, ISO: International Organization for Standardization NP: Not Provided, NA: Not Applicable, WI: Work Instruction, GVPC: Glycine Vancomycin Polymyxin Cycloheximide. Culture Media: GVPC Agar
Test method deviation	None
Test performed by Emp#	103 & 14
Report prepared by Emp#	72
The above test results are only applicable to the sample(s) referred above.	

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## TEST REPORT

Report No: QMTL/R-148383/2021

CLIENT : CRYSTALLINE ENVIRONMENTAL SERVICES Abu Dhabi PO Box : 131463 United Arab Emirates	Sample ID	QMTL/S-148383	
	Date Received	14 Feb 2021	
	Date(s) Tested	14 Feb 2021 - 24 Feb 2021	
	Date Reported	03 Mar 2021	
ATTN : MR. JASMAN PINTO			
Sample Description	Cooling Tower -3		
Sample Type	Water	Sampling Method	QMTL-WI-16
Client Name/Project	NP	Sampled By	QMTL Representative
Location	Healthpoint Hospital, Abu Dhabi	Sampling Date/Time	14.02.2021 / 3:40 PM
Sample Container	1x1L PB	Sampling Point	Basin
Sample Receipt Temp	21°C	Sample Onsite Temp	20°C
Sample Appearance	Clear	On-site Treatment	NA
Reference	NP		

### TEST RESULTS

PARAMETERS	TEST METHODS	UNITS	GUIDELINES	RESULTS
<b>LEGIONELLA ANALYSIS</b>				
Legionella*	ISO 11731:2017 E (Matrix B, Procedure- 8, 9 & 10)	CFU/litre	1000	<100
Legionella Species	ISO 11731:2017 E	-	-	Absent
Legionella pneumophila sero group 1	ISO 11731:2017 E	-	-	Absent
Legionella pneumophila sero group 2-15	ISO 11731:2017 E	-	-	Absent

The Analysis result denoted by (\*) is part of the laboratory ENAS Accreditation to ISO/IEC 17025 : 2017.

Remarks	The sample meets DM Water Systems quality (2010) specifications for Cooling Water Systems with respect to the above tests only.
Keywords	CFU: Colony Forming Unit, DM: Dubai Municipality, ISO: International Organization for Standardization NP: Not Provided, NA: Not Applicable, WI: Work Instruction, GVPC: Glycine Vancomycin Polymyxin Cycloheximide. Culture Media: GVPC Agar
Test method deviation	None
Test performed by Emp#	103 & 14
Report prepared by Emp#	72
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-148384/2021

CLIENT : CRYSTALLINE ENVIRONMENTAL SERVICES Abu Dhabi PO Box : 131463 United Arab Emirates	Sample ID	QMTL/S-148384	
	Date Received	14 Feb 2021	
	Date(s) Tested	14 Feb 2021 - 24 Feb 2021	
	Date Reported	03 Mar 2021	
ATTN : MR. JASMAN PINTO			
Sample Description	Cooling Tower -4		
Sample Type	Water	Sampling Method	QMTL-WI-16
Client Name/Project	NP	Sampled By	QMTL Representative
Location	Healthpoint Hospital, Abu Dhabi	Sampling Date/Time	14.02.2021 / 3:45 PM
Sample Container	1x1L PB	Sampling Point	Basin
Sample Receipt Temp	21°C	Sample Onsite Temp	23°C
Sample Appearance	Clear	On-site Treatment	NA
Reference	NP		

### TEST RESULTS

PARAMETERS	TEST METHODS	UNITS	GUIDELINES	RESULTS
<b>LEGIONELLA ANALYSIS</b>				
Legionella*	ISO 11731:2017 E (Matrix B, Procedure- 8, 9 & 10)	CFU/litre	1000	<100
Legionella Species	ISO 11731:2017 E	-	-	Absent
Legionella pnueumophila sero group 1	ISO 11731:2017 E	-	-	Absent
Legionella pnueumophila sero group 2-15	ISO 11731:2017 E	-	-	Absent

The Analysis result denoted by (\*) is part of the laboratory ENAS Accreditation to ISO/IEC 17025 : 2017.

Remarks	The sample meets DM Water Systems quality (2010) specifications for Cooling Water Systems with respect to the above tests only.
Keywords	CFU: Colony Forming Unit, DM: Dubai Municipality, ISO: International Organization for Standardization NP: Not Provided, NA: Not Applicable, WI: Work Instruction, GVPC: Glycine Vancomycin Polymyxin Cycloheximide. Culture Media: GVPC Agar
Test method deviation	None
Test performed by Emp#	103 & 14
Report prepared by Emp#	72
The above test results are only applicable to the sample(s) referred above.	

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END OF REPORT



## CONSULTING SERVICE REPORT

<b>CUSTOMER: EFS FACILITIES SERVICES - HEALTHPOINT HOSPITAL, ABU DHABI</b>	<b>To: Mr. ANJANEYA MOORTHY JR. OPERATION MANAGER</b>	<b>DATE: 14-02-2021</b>
<b>CUSTOMER ID: 4003</b>	<b>Copy: EFS FACILITIES SERVICES - HEALTHPOINT</b>	<b>SAMPLE LOCATION: LEVEL-4 COOLING TOWER #01</b>

### COOLING WATER ANALYSIS

PARAMETER	CONTROL LIMITS	Make Up Water - 1	Cooling Tower - 1		
pH	8.5 - 9.5	8.34	8.69		
Conductivity, $\mu\text{s}/\text{cm}$	Max 1500	227	980		
TDS, ppm	Max 1000	147	637		
'P' Alkalinity, ppm as $\text{CaCO}_3$	--				
Total Hardness, ppm as $\text{CaCO}_3$	--				
Calcium Hardness, ppm as $\text{CaCO}_3$	200 - 350	39	98		
Chloride, ppm as $\text{Cl}^-$	Max 200	44	106		
Iron, ppm as Fe	0 - 2.0	<0.05	1.03		

#### Treatment Residuals

Cycles of Concentration	5 - 6		2.4		
CaH Balance	0.95 - 1.05		1.04		
Dipslide	<10 <sup>3</sup>		10 <sup>3</sup>		
Phosphate/Phosphonate	4 - 6		<4		
Free Residual Chlorine as Cl	0.2 - 0.5		Nil		
Cynauric Acid					

All test results expressed in parts per million (ppm) as  $\text{CaCO}_3$  except pH and conductivity ( $\mu\text{mhos}$ ).

#### COMMENTS:

#### ACTION:

pH and conductivity & TDS levels are satisfactory $\Rightarrow$	No action recommended
Chloride levels are satisfactory $\Rightarrow$	No action recommended

#### INVENTORY LEVELS

#### DOSAGE SCHEDULE

Chemical	Quantity	Chemical	Present Dosage	Revised Dosage
Crystal 9265		Scale/Corrosion		
Crystal 7106		Non-Oxidizing Biocide		
Crystal 1591		Non-Oxidizing Biocide		
Crystal 9079		Biodispersent		
Crystal 7615		Oxidizing Biocide		

Service Engineer:	MURUGARAJ	Client:	Mr. ANJANEYA MOORTHY
Signature:		Signature:	



## CONSULTING SERVICE REPORT

<b>CUSTOMER: EFS FACILITIES SERVICES - HEALTHPOINT HOSPITAL, ABU DHABI</b>	<b>To: Mr. ANJANEYA MOORTHY JR. OPERATION MANAGER</b>	<b>DATE: 14-02-2021</b>
<b>CUSTOMER ID: 4003</b>	<b>Copy: EFS FACILITIES SERVICES - HEALTHPOINT</b>	<b>SAMPLE LOCATION: LEVEL-4 COOLING TOWER # 02</b>

### COOLING WATER ANALYSIS

PARAMETER	CONTROL LIMITS	Make Up Water - 2	Cooling Tower - 2			
pH	8.5 - 9.5	8.46	8.72			
Conductivity, $\mu\text{s}/\text{cm}$	Max 1500	231	1870			
TDS, ppm	Max 1000	153	1215			
'P' Alkalinity, ppm as $\text{CaCO}_3$	--					
Total Hardness, ppm as $\text{CaCO}_3$	--					
Calcium Hardness, ppm as $\text{CaCO}_3$	200 - 350	41	138			
Chloride, ppm as $\text{Cl}^-$	Max 200	47	108			
Iron, ppm as Fe	0 - 2.0	<0.05	0.14			

#### Treatment Residuals

Cycles of Concentration	5 - 6		2.2			
CaH Balance	0.95 - 1.05		1.52			
Dipslide	<10 <sup>3</sup>		10 <sup>2</sup>			
Phosphate/Phosphonate	4 - 6		<4			
Free Residual Chlorine as Cl	0.2 - 0.5		Nil			
Cynauric Acid						

All test results expressed in parts per million (ppm) as  $\text{CaCO}_3$  except pH and conductivity ( $\mu\text{mhos}$ ).

#### COMMENTS:

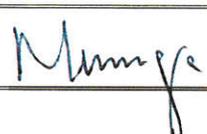
#### ACTION:

pH and conductivity & TDS levels are satisfactory	⇒	No action recommended
Calcium Hardness levels are low	⇒	Please maintain the desired control limit
Chloride levels are satisfactory	⇒	No action recommended

#### INVENTORY LEVELS

#### DOSAGE SCHEDULE

Chemical	Quantity	Chemical	Present Dosage	Revised Dosage
Crystal 9265		Scale/Corrosion		
Crystal 7106		Non-Oxidizing Biocide		
Crystal 1591		Non-Oxidizing Biocide		
Crystal 9079		Biodispersent		
Crystal 7615		Oxidizing Biocide		

Service Engineer:	MURUGARAJ	Client:	Mr. ANJANEYA MOORTHY
Signature:		Signature:	



## CONSULTING SERVICE REPORT

<b>CUSTOMER: EFS FACILITIES SERVICES - HEALTHPOINT HOSPITAL, ABU DHABI</b>	<b>To: Mr. ANJANEYA MOORTHI JR. OPERATION MANAGER</b>	<b>DATE: 14-02-2021</b>
<b>CUSTOMER ID: 4003</b>	<b>Copy: EFS FACILITIES SERVICES - HEALTHPOINT</b>	<b>SAMPLE LOCATION: LEVEL-4 COOLING TOWER # 03</b>

### COOLING WATER ANALYSIS

PARAMETER	CONTROL LIMITS	Make Up Water - 3	Cooling Tower - 3		
pH	8.5 - 9.5	8.39	8.72		
Conductivity, $\mu\text{s}/\text{cm}$	Max 1500	234	1836		
TDS, ppm	Max 1000	152	1193		
'P' Alkalinity, ppm as $\text{CaCO}_3$	--				
Total Hardness, ppm as $\text{CaCO}_3$	--				
Calcium Hardness, ppm as $\text{CaCO}_3$	200 - 350	36	148		
Chloride, ppm as $\text{Cl}^-$	Max 200	45	116		
Iron, ppm as Fe	0 - 2.0	<0.05	0.16		

#### Treatment Residuals

Cycles of Concentration	5 - 6		2.5		
CaH Balance	0.95 - 1.05		1.64		
Dipslide	<10 <sup>3</sup>		10 <sup>2</sup>		
Phosphate/Phosphonate	4 - 6		<4		
Free Residual Chlorine as Cl	0.2 - 0.5		Nil		
Cynauric Acid					

All test results expressed in parts per million (ppm) as  $\text{CaCO}_3$  except pH and conductivity ( $\mu\text{mhos}$ ).

#### COMMENTS:

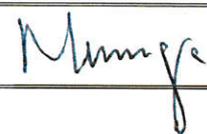
#### ACTION:

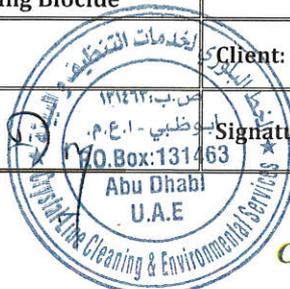
pH and conductivity & TDS levels are satisfactory	⇒	No action recommended
Calcium Hardness levels are low	⇒	Please maintain the desired control limit
Chloride levels are satisfactory	⇒	No action recommended

#### INVENTORY LEVELS

#### DOSAGE SCHEDULE

Chemical	Quantity	Chemical	Present Dosage	Revised Dosage
Crystal 9265		Scale/Corrosion		
Crystal 7106		Non-Oxidizing Biocide		
Crystal 1591		Non-Oxidizing Biocide		
Crystal 9079		Biodispersent		
Crystal 7615		Oxidizing Biocide		

Service Engineer:	MURUGARAJ	Client:	Mr. ANJANEYA MOORTHI
Signature:		Signature:	



## CONSULTING SERVICE REPORT

<b>CUSTOMER: EFS FACILITIES SERVICES - HEALTHPOINT HOSPITAL, ABU DHABI</b>	<b>To: Mr. ANJANEYA MOORTHY JR. OPERATION MANAGER</b>	<b>DATE: 14-02-2021</b>
<b>CUSTOMER ID: 4003</b>	<b>Copy: EFS FACILITIES SERVICES - HEALTHPOINT</b>	<b>SAMPLE LOCATION: LEVEL-4 COOLING TOWER # 04</b>

### COOLING WATER ANALYSIS

PARAMETER	CONTROL LIMITS	Make Up Water - 4	Cooling Tower - 4			
pH	8.5 - 9.5	8.47	8.63			
Conductivity, $\mu\text{s}/\text{cm}$	Max 1500	228	1908			
TDS, ppm	Max 1000	148	1240			
'P' Alkalinity, ppm as $\text{CaCO}_3$	--					
Total Hardness, ppm as $\text{CaCO}_3$	--					
Calcium Hardness, ppm as $\text{CaCO}_3$	200 - 350	40	154			
Chloride, ppm as $\text{Cl}^-$	Max 200	48	126			
Iron, ppm as Fe	0 - 2.0	<0.05	0.23			

#### Treatment Residuals

Cycles of Concentration	5 - 6		2.6			
CaH Balance	0.95 - 1.05		1.48			
Dipslide	<10 <sup>3</sup>		10 <sup>2</sup>			
Phosphate/Phosphonate	4 - 6		<4			
Free Residual Chlorine as Cl	0.2 - 0.5		Nil			
Cynauric Acid						

All test results expressed in parts per million (ppm) as  $\text{CaCO}_3$  except pH and conductivity ( $\mu\text{mhos}$ ).

#### COMMENTS:

pH and conductivity & TDS levels are satisfactory  $\Rightarrow$

Calcium Hardness levels are low  $\Rightarrow$

Chloride levels are satisfactory  $\Rightarrow$

#### ACTION:

No action recommended

Please maintain the desired control limit

No action recommended

#### INVENTORY LEVELS

#### DOSAGE SCHEDULE

Chemical	Quantity	Chemical	Present Dosage	Revised Dosage
Crystal 9265		Scale/Corrosion		
Crystal 7106		Non-Oxidizing Biocide		
Crystal 1591		Non-Oxidizing Biocide		
Crystal 9079		Biodispersent		
Crystal 7615		Oxidizing Biocide		

Service Engineer: **MURUGARAJ**

Client:

Mr. ANJANEYA MOORTHY

Signature:

*Murugaraaj*

Signature:

