

TEST REPORT

REPORT NO: - QMTL/R-80355

CLIENT:- CRYSTALLINE ENVIRONMENTAL SERVICES		
P.O.Box.131463, Abu Dhabi, U.A.E Ph:02-6508930/0557167017		
ATTN: Mr. JASMAN PINTO		
Product: Water	Sampling Method: APHA 9060 A	Sample ID: QMTL/S- 80355
Reference: HEALTHPOINT HOSPITAL	Sampled By: QMTL Representative	Date Received: 17.11.2019
Sample Description: L-4 Cooling Tower-1, Cooled Water Sample Onsite Temp: 23°C Sample Receipt Temp: 4°C	Source: Cooling Tower	Date(s) Tested: 17-19.11.2019
	Sample Container: 1x500 ml PB	Date Reported: 23.11.2019
	Sample Appearance: Clear	Date of Sampling/Time: 17.11.2019/04:30PM
On-Site Treatment: NA	Tested by Emp#: 74 & 55	Location: AUH

TEST RESULTS

PARAMETERS	TEST METHODS (APHA 23 RD EDITION)	UNITS	SPECIFICATIONS	RESULTS
MICROBIOLOGICAL ANALYSIS				
Total Bacterial Count	APHA 9215 B	CFU/ml	10,000	180
Total Coliforms	APHA 9222 B	CFU/100ml	-	Zero
Faecal coliform	APHA 9222 D	CFU/100ml	-	Zero
Pseudomonas aeruginosa	APHA 9213 E	CFU/100ml	-	Zero
Escherichia coli	APHA 9222 H & I	CFU/100ml	-	Zero

REMARKS: The sample meets DM Water Systems quality (2010) specifications for Cooling Water Systems with respect to the above tests only.

Key Words:- CFU: Colony Forming Unit. APHA: American Public Health Association, DM: Dubai Municipality, NA: Not Applicable

Report prepared by Emp#: 61
Test Method deviation : None
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-80356

CLIENT:- CRYSTALLINE ENVIRONMENTAL SERVICES P.O.Box.131463, Abu Dhabi, U.A.E Ph:02-6508930/0557167017 ATTN: Mr. JASMAN PINTO		
Product: Water	Sampling Method: APHA 9060 A	Sample ID: QMTL/S- 80356
Reference: HEALTHPOINT HOSPITAL	Sampled By: QMTL Representative	Date Received: 17.11.2019
Sample Description: L-4 Cooling Tower-2, Cooled Water Sample Onsite Temp: 23°C Sample Receipt Temp: 4°C	Source: Cooling Tower	Date(s) Tested: 17-19.11.2019
	Sample Container: 1x500 ml PB	Date Reported: 23.11.2019
	Sample Appearance: Clear	Date of Sampling/Time: 17.11.2019/04:30PM
On-Site Treatment: NA	Tested by Emp#: 74 & 55	Location: AUH

TEST RESULTS

PARAMETERS	TEST METHODS (APHA 23 RD EDITION)	UNITS	SPECIFICATIONS	RESULTS
MICROBIOLOGICAL ANALYSIS				
Total Bacterial Count	APHA 9215 B	CFU/ml	10,000	180
Total Coliforms	APHA 9222 B	CFU/100ml	-	Zero
Faecal coliform	APHA 9222 D	CFU/100ml	-	Zero
Pseudomonas aeruginosa	APHA 9213 E	CFU/100ml	-	Zero
Escherichia coli	APHA 9222 H & I	CFU/100ml	-	Zero

REMARKS: The sample meets DM Water Systems quality (2010) specifications for Cooling Water Systems with respect to the above tests only.

Key Words:- CFU: Colony Forming Unit, APHA: American Public Health Association, DM: Dubai Municipality, NA: Not Applicable

Report prepared by Emp#: 61

Test Method deviation : None

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

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REPORT NO: - QMTL/R-80357

CLIENT:- CRYSTALLINE ENVIRONMENTAL SERVICES P.O.Box.131463, Abu Dhabi, U.A.E Ph:02-6508930/0557167017 ATTN: Mr. JASMAN PINTO		
Product: Water	Sampling Method: APHA 9060 A	Sample ID: QMTL/S- 80357
Reference: HEALTHPOINT HOSPITAL	Sampled By: QMTL Representative	Date Received: 17.11.2019
Sample Description: L-4 Cooling Tower-3, Cooled Water Sample Onsite Temp: 27°C Sample Receipt Temp: 4°C	Source: Cooling Tower	Date(s) Tested: 17-19.11.2019
	Sample Container: 1x500 ml PB	Date Reported: 23.11.2019
	Sample Appearance: Clear	Date of Sampling/Time: 17.11.2019/04:30PM
On-Site Treatment: NA	Tested by Emp#: 74 & 55	Location: AUH

TEST RESULTS

PARAMETERS	TEST METHODS (APHA 23 RD EDITION)	UNITS	SPECIFICATIONS	RESULTS
MICROBIOLOGICAL ANALYSIS				
Total Bacterial Count	APHA 9215 B	CFU/ml	10,000	210
Total Coliforms	APHA 9222 B	CFU/100ml	-	Zero
Faecal coliform	APHA 9222 D	CFU/100ml	-	Zero
Pseudomonas aeruginosa	APHA 9213 E	CFU/100ml	-	Zero
Escherichia coli	APHA 9222 H & I	CFU/100ml	-	Zero

REMARKS: The sample meets DM Water Systems quality (2010) specifications for Cooling Water Systems with respect to the above tests only.

Key Words:- CFU: Colony Forming Unit, APHA: American Public Health Association, DM: Dubai Municipality, NA: Not Applicable

Report prepared by Emp#: 61

Test Method deviation : None

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

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REPORT NO: - QMTL/R-80358

CLIENT:- CRYSTALLINE ENVIRONMENTAL SERVICES P.O.Box.131463, Abu Dhabi, U.A.E Ph:02-6508930/0557167017 ATTN: Mr. JASMAN PINTO		
Product: Water	Sampling Method: APHA 9060 A	Sample ID: QMTL/S- 80358
Reference: HEALTHPOINT HOSPITAL	Sampled By: QMTL Representative	Date Received: 17.11.2019
Sample Description: L-4 Cooling Tower-4, Cooled Water Sample Onsite Temp: 30°C Sample Receipt Temp: 4°C	Source: Cooling Tower	Date(s) Tested: 17-19.11.2019
	Sample Container: 1x500 ml PB	Date Reported: 23.11.2019
	Sample Appearance: Clear	Date of Sampling/Time: 17.11.2019/04:30PM
On-Site Treatment: NA	Tested by Emp#: 74 & 55	Location: AUH

TEST RESULTS

PARAMETERS	TEST METHODS (APHA 23 RD EDITION)	UNITS	SPECIFICATIONS	RESULTS
MICROBIOLOGICAL ANALYSIS				
Total Bacterial Count	APHA 9215 B	CFU/ml	10,000	300
Total Coliforms	APHA 9222 B	CFU/100ml	-	Zero
Faecal coliform	APHA 9222 D	CFU/100ml	-	Zero
Pseudomonas aeruginosa	APHA 9213 E	CFU/100ml	-	Zero
Escherichia coli	APHA 9222 H & I	CFU/100ml	-	Zero

REMARKS: The sample meets DM Water Systems quality (2010) specifications for Cooling Water Systems with respect to the above tests only.

Key Words:- CFU: Colony Forming Unit, APHA: American Public Health Association, DM: Dubai Municipality, NA: Not Applicable

Report prepared by Emp#: 61
Test Method deviation : None
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TEST REPORT

REPORT NO: - QMTL/R-80359

CLIENT:- CRYSTALLINE ENVIRONMENTAL SERVICES		
P.O.Box.131463, Abu Dhabi, U.A.E Ph:02-6508930/0557167017		
ATTN: Mr. JASMAN PINTO		
Product: Water	Sampling Method: APHA 9060 A	Sample ID: QMTL/S- 80359
Reference: HEALTHPOINT HOSPITAL	Sampled By: QMTL Representative	Date Received: 17.11.2019
Sample Description: L-4 Cooling Tower-1, Make Up Water Sample Onsite Temp: 26°C Sample Receipt Temp: 4°C	Source: Valve	Date(s) Tested: 17-19.11.2019
	Sample Container: 1x500 ml PB	Date Reported: 23.11.2019
	Sample Appearance: Clear	Date of Sampling/Time: 17.11.2019/04:30PM
On-Site Treatment: NA	Tested by Emp#: 74 & 55	Location: AUH

TEST RESULTS

PARAMETERS	TEST METHODS (APHA 23 RD EDITION)	UNITS	SPECIFICATIONS	RESULTS
MICROBIOLOGICAL ANALYSIS				
Total Bacterial Count	APHA 9215 B	CFU/ml	500	250
Total Coliforms	APHA 9222 B	CFU/100ml	-	Zero
Faecal coliform	APHA 9222 D	CFU/100ml	-	Zero
Pseudomonas aeruginosa	APHA 9213 E	CFU/100ml	-	Zero
Escherichia coli	APHA 9222 H & I	CFU/100ml	-	Zero

REMARKS: The sample meets DM Water Systems quality (2010) specifications for Hot & Cold Water Systems with respect to the above tests only.

Key Words:- CFU: Colony Forming Unit, APHA: American Public Health Association, DM: Dubai Municipality, NA: Not Applicable

Report prepared by Emp#: 61

Test Method deviation : None

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REPORT NO: - QMTL/R-80360

CLIENT:- CRYSTALLINE ENVIRONMENTAL SERVICES P.O.Box.131463, Abu Dhabi, U.A.E Ph:02-6508930/0557167017 ATTN: Mr. JASMAN PINTO		
Product: Water	Sampling Method: APHA 9060 A	Sample ID: QMTL/S- 80360
Reference: HEALTHPOINT HOSPITAL	Sampled By: QMTL Representative	Date Received: 17.11.2019
Sample Description: L-4 Cooling Tower-2, Make Up Water Sample Onsite Temp: 26.8°C Sample Receipt Temp: 4°C	Source: Valve	Date(s) Tested: 17-19.11.2019
	Sample Container: 1x500 ml PB	Date Reported: 23.11.2019
	Sample Appearance: Clear	Date of Sampling/Time: 17.11.2019/04:30PM
On-Site Treatment: NA	Tested by Emp#: 74 & 55	Location: AUH

TEST RESULTS

PARAMETERS	TEST METHODS (APHA 23 RD EDITION)	UNITS	SPECIFICATIONS	RESULTS
MICROBIOLOGICAL ANALYSIS				
Total Bacterial Count	APHA 9215 B	CFU/ml	500	240
Total Coliforms	APHA 9222 B	CFU/100ml	-	Zero
Faecal coliform	APHA 9222 D	CFU/100ml	-	Zero
Pseudomonas aeruginosa	APHA 9213 E	CFU/100ml	-	Zero
Escherichia coli	APHA 9222 H & I	CFU/100ml	-	Zero

REMARKS: The sample meets DM Water Systems quality (2010) specifications for Hot & Cold Water Systems with respect to the above tests only.

Key Words:- CFU: Colony Forming Unit, APHA: American Public Health Association, DM: Dubai Municipality, NA: Not Applicable

Report prepared by Emp#: 61

Test Method deviation : None

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TEST REPORT

REPORT NO: - QMTL/R-80361

CLIENT:- CRYSTALLINE ENVIRONMENTAL SERVICES P.O.Box.131463, Abu Dhabi, U.A.E Ph:02-6508930/0557167017 ATTN: Mr. JASMAN PINTO		
Product: Water	Sampling Method: APHA 9060 A	Sample ID: QMTL/S- 80361
Reference: HEALTHPOINT HOSPITAL	Sampled By: QMTL Representative	Date Received: 17.11.2019
Sample Description: L-4 Cooling Tower-3, Make Up Water Sample Onsite Temp: 27.4°C Sample Receipt Temp: 4°C	Source: Valve	Date(s) Tested: 17-19.11.2019
	Sample Container: 1x500 ml PB	Date Reported: 23.11.2019
	Sample Appearance: Clear	Date of Sampling/Time: 17.11.2019/04:30PM
On-Site Treatment: NA	Tested by Emp#: 74 & 55	Location: AUH

TEST RESULTS

PARAMETERS	TEST METHODS (APHA 23 RD EDITION)	UNITS	SPECIFICATIONS	RESULTS
MICROBIOLOGICAL ANALYSIS				
Total Bacterial Count	APHA 9215 B	CFU/ml	500	160
Total Coliforms	APHA 9222 B	CFU/100ml	-	Zero
Faecal coliform	APHA 9222 D	CFU/100ml	-	Zero
Pseudomonas aeruginosa	APHA 9213 E	CFU/100ml	-	Zero
Escherichia coli	APHA 9222 H & I	CFU/100ml	-	Zero

REMARKS: The sample meets DM Water Systems quality (2010) specifications for Hot & Cold Water Systems with respect to the above tests only.

Key Words:- CFU: Colony Forming Unit, APHA: American Public Health Association, DM: Dubai Municipality, NA: Not Applicable

Report prepared by Emp#: 61
Test Method deviation : None
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TEST REPORT

REPORT NO: - QMTL/R-80362

CLIENT:- CRYSTALLINE ENVIRONMENTAL SERVICES P.O.Box.131463, Abu Dhabi, U.A.E Ph:02-6508930/0557167017 ATTN: Mr. JASMAN PINTO		
Product: Water	Sampling Method: APHA 9060 A	Sample ID: QMTL/S- 80362
Reference: HEALTHPOINT HOSPITAL	Sampled By: QMTL Representative	Date Received: 17.11.2019
Sample Description: L-4 Cooling Tower-4, Make Up Water Sample Onsite Temp: 27°C Sample Receipt Temp: 4°C	Source: Valve	Date(s) Tested: 17-19.11.2019
	Sample Container: 1x500 ml PB	Date Reported: 23.11.2019
	Sample Appearance: Clear	Date of Sampling/Time: 17.11.2019/04:30PM
On-Site Treatment: NA	Tested by Emp#: 74 & 55	Location: AUH

TEST RESULTS

PARAMETERS	TEST METHODS (APHA 23 RD EDITION)	UNITS	SPECIFICATIONS	RESULTS
MICROBIOLOGICAL ANALYSIS				
Total Bacterial Count	APHA 9215 B	CFU/ml	500	210
Total Coliforms	APHA 9222 B	CFU/100ml	-	Zero
Faecal coliform	APHA 9222 D	CFU/100ml	-	Zero
Pseudomonas aeruginosa	APHA 9213 E	CFU/100ml	-	Zero
Escherichia coli	APHA 9222 H & I	CFU/100ml	-	Zero

REMARKS: The sample meets DM Water Systems quality (2010) specifications for Hot & Cold Water Systems with respect to the above tests only.

Key Words:- CFU: Colony Forming Unit, APHA: American Public Health Association, DM: Dubai Municipality, NA: Not Applicable

Report prepared by Emp#: 61
Test Method deviation : None
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END OF REPORT



CONSULTING SERVICE REPORT

CUSTOMER: EFS FACILITIES SERVICES - HEALTHPOINT HOSPITAL, ABU DHABI	To: Mr. ANJANEYA MOORTHY JR. OPERATION MANAGER	DATE: 14-11-2019
CUSTOMER ID: 4003	Copy: EFS FACILITIES SERVICES - HEALTHPOINT	

COOLING WATER ANALYSIS

PARAMETER	CONTROL LIMITS	Make Up Water - 1	Cooling Tower - 1		
pH	8.5 - 9.5	8.26	8.31		
Conductivity, $\mu\text{s}/\text{cm}$	Max 1500	194	1130		
TDS, ppm	Max 1000	126	723		
'P' Alkalinity, ppm as CaCO_3	--				
Total Hardness, ppm as CaCO_3	--				
Calcium Hardness, ppm as CaCO_3	200 - 350	45	314		
Chloride, ppm as Cl^-	Max 200	27	142		
Iron, ppm as Fe	0 - 2.0		<0.05		

Treatment Residuals

Cycles of Concentration	5 - 6		5.2		
CaH Balance	0.95 - 1.05		1.3		
Dipslide	<10 ³		10 ²		
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 CaCO_3 except pH and conductivity (μmhos).

COMMENTS:

The Conductivity are satisfactory \Rightarrow

Chloride & Calcium Hardness levels are satisfactory \Rightarrow

Chemical levels are slightly low \Rightarrow

ACTION:

No action recommended.

No action recommended.

Please maintain desired control limit

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:

P.M.

Signature:



CONSULTING SERVICE REPORT

CUSTOMER: EFS FACILITIES SERVICES - HEALTHPOINT HOSPITAL, ABU DHABI	To: Mr. ANJANEYA MOORTHI JR. OPERATION MANAGER	DATE: 14-11-2019
CUSTOMER ID: 4003	Copy: EFS FACILITIES SERVICES - HEALTHPOINT	

COOLING WATER ANALYSIS

PARAMETER	CONTROL LIMITS	Make Up Water - 2	Cooling Tower - 2			
pH	8.5 - 9.5	8.31	9.14			
Conductivity, $\mu\text{s}/\text{cm}$	Max 1500	192	1207			
TDS, ppm	Max 1000		784			
'P' Alkalinity, ppm as CaCO_3	--					
Total Hardness, ppm as CaCO_3	--					
Calcium Hardness, ppm as CaCO_3	200 - 350	46	331			
Chloride, ppm as Cl^-	Max 200	28	167			
Iron, ppm as Fe	0 - 2.0		<0.05			

Treatment Residuals

Cycles of Concentration	5 - 6		5.9			
CaH Balance	0.95 - 1.05		1.2			
Dipslide	<10 ³		10 ³			
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 CaCO_3 except pH and conductivity (μmhos).

COMMENTS:

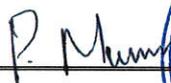
ACTION:

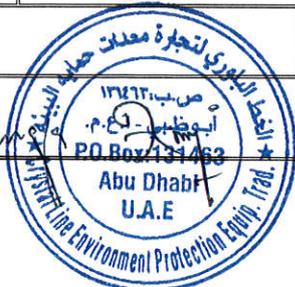
The Conductivity are satisfactory \Rightarrow	No action recommended.
Calcium Hardness & Chloride levels are satisfactory \Rightarrow	No action recommended.
Chemical levels are low \Rightarrow	Please maintain desired control limit

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

CUSTOMER: EFS FACILITIES SERVICES - HEALTHPOINT HOSPITAL, ABU DHABI	To: Mr. ANJANEYA MOORTHY JR. OPERATION MANAGER	DATE: 14-11-2019
CUSTOMER ID: 4003	Copy: EFS FACILITIES SERVICES - HEALTHPOINT	

COOLING WATER ANALYSIS

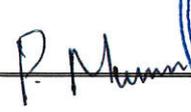
PARAMETER	CONTROL LIMITS	Make Up Water - 3	Cooling Tower - 3		
pH	8.5 - 9.5	8.17	9.31		
Conductivity, $\mu\text{s}/\text{cm}$	Max 1500	192	1140		
TDS, ppm	Max 1000	124	741		
'P' Alkalinity, ppm as CaCO_3	--				
Total Hardness, ppm as CaCO_3	--				
Calcium Hardness, ppm as CaCO_3	200 - 350	47	334		
Chloride, ppm as Cl^-	Max 200	24	142		
Iron, ppm as Fe	0 - 2.0		<0.05		

Treatment Residuals					
Cycles of Concentration	5 - 6		5.9		
CaH Balance	0.95 - 1.05		1.2		
Dipslide	<10 ³		10 ²		
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 CaCO_3 except pH and conductivity (μmhos).

"

COMMENTS:	ACTION:
The Conductivity are satisfactory \Rightarrow	No action recommended.
Calcium Hardness & Chloride levels are satisfactory \Rightarrow	No action recommended.
Chemical levels are low \Rightarrow	Please maintain desired control limit

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:		 <p>P.O.Box: 131463 Abu Dhabi U.A.E.</p>	Signature:	

CONSULTING SERVICE REPORT

CUSTOMER: EFS FACILITIES SERVICES - HEALTHPOINT HOSPITAL, ABU DHABI	To: Mr. ANJANEYA MOORTHI JR. OPERATION MANAGER	DATE: 14-11-2019
CUSTOMER ID: 4003	Copy: EFS FACILITIES SERVICES - HEALTHPOINT	

COOLING WATER ANALYSIS

PARAMETER	CONTROL LIMITS	Make Up Water - 4	Cooling Tower - 4		
pH	8.5 - 9.5	8.27	9.24		
Conductivity, $\mu\text{s}/\text{cm}$	Max 1500	196	1094		
TDS, ppm	Max 1000	127	711		
'P' Alkalinity, ppm as CaCO_3	--				
Total Hardness, ppm as CaCO_3	--				
Calcium Hardness, ppm as CaCO_3	200 - 350	49	321		
Chloride, ppm as Cl^-	Max 200	27	156		
Iron, ppm as Fe	0 - 2.0		<0.05		

Treatment Residuals

Cycles of Concentration	5 - 6		5.7		
CaH Balance	0.95 - 1.05		1.14		
Dipslide	<10 ³		10 ²		
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 CaCO_3 except pH and conductivity (μmhos).

COMMENTS:

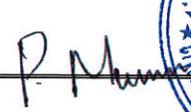
ACTION:

The Conductivity are satisfactory \Rightarrow	No action recommended.
Calcium Hardness & Chloride levels are satisfactory \Rightarrow	No action recommended.
Chemical levels are low \Rightarrow	Please maintain desired control limit

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:	

