



CONSULTING SERVICE REPORT

CUSTOMER: SERCO - NEW YORK UNIVERSITY, ABU DHABI		To: Mr. Ratheesh Muttath Operations Engineer		DATE: 13-06-2020	
CUSTOMER ID: 3003		Copy: SERCO - NYUAD		LAST VISIT: 09-05-2020	
CLOSED LOOP SOLAR SYSTEM ANALYSIS					
PARAMETER	CONTROL LIMITS	A1D1			
pH	9.0 - 10.5	9.88			
Conductivity, $\mu\text{s/cm}$	Max 3500	1881			
TDS, ppm	--	1222			
'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	0.16			
Treatment Residuals					
Nitrite, ppm	$\gt 800$	880			
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 levels are 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.		
INVENTORY LEVELS					
INVENTORY LEVELS			DOSAGE SCHEDULE		
Chemical	Quantity	Chemical	Present Dosage	Revised Dosage	
Crystal 5547C			--		
Crystal 9040			--		
			--		
Service Engineer:	Murugaraaj		Client:	Mr. Ratheesh Muttath	
Signature:			Signature:		



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CLOSED LOOP SOLAR SYSTEM ANALYSIS

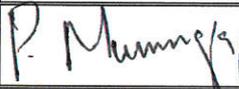
PARAMETER	CONTROL LIMITS	A2A3			
pH	9.0 - 10.5	9.98			
Conductivity, $\mu\text{s}/\text{cm}$	Max 3500	2132			
TDS, ppm	--	1385			
'P' Alkalinity, ppm as CaCO_3	--				
Total Hardness, ppm as CaCO_3	--				
Calcium Hardness, ppm as CaCO_3	--				
Chloride, ppm as Cl^-	--				
Iron, ppm as Fe	0 - 2.0	0.19			

Treatment Residuals					
Nitrite, ppm	\gt 800	990			
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 within control limits. \Rightarrow	No action recommended.
Corrosion Inhibitor levels satisfactory \Rightarrow	No action recommended.

INVENTORY LEVELS			DOSAGE SCHEDULE	
Chemical	Quantity	Chemical	Present Dosage	Revised Dosage
Crystal 5547C			--	
Crystal 9040			--	
			--	

Service Engineer:	Murugaraaj	Client:	Mr. Ratheesh Muttath
Signature:		Signature:	





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CLOSED LOOP SOLAR SYSTEM ANALYSIS

PARAMETER	CONTROL LIMITS	A4A5			
pH	9.0 - 10.5	9.82			
Conductivity, $\mu\text{s}/\text{cm}$	Max 3500	2511			
TDS, ppm	--	1632			
'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	1240			
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 found are satisfactory ⇒	No action recommended.
Dissolved iron levels are found within control limits. ⇒	No action recommended.
Corrosion Inhibitor levels satisfactory ⇒	No action recommended.

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





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CLOSED LOOP SOLAR SYSTEM ANALYSIS

PARAMETER	CONTROL LIMITS	C1B1			
pH	9.0 - 10.5	10.03			
Conductivity, $\mu\text{s}/\text{cm}$	Max 3500	2035			
TDS, ppm	--	1322			
'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	0.11			

Treatment Residuals

Nitrite, ppm	➤ 800	930			
CaH Balance					
Dipslide	<10 ³	ND			
Phosphate/Phosphonate					
Free Residual Chlorine as Cl	--	--			

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

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

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

