

CONSULTING SERVICE REPORT

CUSTOMER: SERCO - NEW YORK UNIVERSITY, ABU DHABI	To: Mr. Ratheesh Muttath Operations Engineer	DATE: 05-10-2019
CUSTOMER ID: 3003	Copy: SERCO - NYUAD	LAST VISIT: 07-09-2019

WATER ANALYSIS

PARAMETER	CONTROL LIMITS	MAIN WATER TANK			
pH at 25°C	7.0 - 9.2	7.91			
Conductivity at 25°C, µs/cm	1600 Max.	216			
Total Dissolved Solids (TDS)	1000 Max.	141			
Total Hardness, ppm as CaCO ₃	300 Max.	70			
Calcium Hardness, ppm as CaCO ₃	200 Max.	64			
Total Alkalinity	--	45			
Chlorides (Cl ⁻), mg/l	250 Max.	34			
Iron (Fe), mg/l	0.2 Max.	<0.05			
Sulphate (SO ₄), mg/l	250 Max.	<10			
Copper (Cu), mg/l	1 Max.	<0.05			
Aluminum (Al), mg/l	0.2 Max.	<0.05			
Zinc (Zn), mg/l	5 Max.	<0.05			
Nitrate (NO ₃ -N) mg/l	50 Max.	<1.0			
Nitrite (NO ₂ -) mg/l	3.0 Max.	<0.1			
Fluorides (F)	1.5 Max.	<0.05			
Potassium (K)	12 Max.	<5.0			

Treatment Residuals

Odor	Unobjectionabl	ND			
Chlorine Dioxide ClO ₂	0.2 - 0.5	0.47			
Turbidity in NTU	4.0 Max.	<1			

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

COMMENTS:

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

Chlorine dioxide levels found satisfactory. Kindly maintain the same dosage of ClO₂ for effective disinfection of the water.

The acid & chlorite dosing pumps, dosing tubes are in good condition. The system is working effectively.

INVENTORY LEVELS			DOSAGE SCHEDULE	
Chemical	Quantity	Chemical	Present Dosage	Revised Dosage
Bello Zon Acid	15 Cans		--	
Bello Zon Chlorite	15 Cans			
Service Engineer:	Murugaraaj	Client:	Mr. Ratheesh Muttath	
Signature:		Signature:		



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POTABLE WATER ANALYSIS

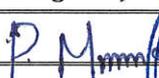
PARAMETER	CONTROL LIMITS	AMBIENT WATER	
		A1D1	
pH at 25°C	7.0 - 9.2	7.64	
Conductivity at 25°C, µs/cm	--	195	
Total Dissolved Solids (TDS)	1000 Max.	126	
Total Hardness, ppm as CaCO ₃	300 Max.	64	
Calcium Hardness, ppm as CaCO ₃	200 Max.	57	
Total Alkalinity	--	32	
Chloride, ppm as Cl ⁻	250 Max.	34	
Iron, ppm as Fe	0.2 Max.	<0.05	
Sulphate (SO ₄), mg/l	250 Max.	<10	
Copper (Cu), mg/l	1 Max.	<0.05	
Aluminum (Al), mg/l	0.2 Max.	<0.05	
Zinc (Zn), mg/l	5 Max.	<0.05	
Nitrate (NO ₃ -), mg/l	50 Max.	<1.0	
Nitrite (NO ₂ -), mg/l	3.0 Max.	<0.05	
Fluorides (F)	1.5 Max.	<0.01	
Potassium (K)	12 Max.	<5.0	

Treatment Residuals

Odor	Unobjectionable	ND	
Chlorine Dioxide ClO ₂	0.2 - 0.5	0.41	
Free Residual Chlorine as Cl	0.2 - 0.5	--	
Turbidity in NTU	4 Max.	<1.0	

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 within control limits ⇨	No action recommended.
Chlorine Dioxide levels found satisfactory ⇨	No action recommended.

INVENTORY LEVELS			DOSAGE SCHEDULE	
Chemical	Quantity	Chemical	Present Dosage	Revised Dosage
Bello Zon Acid			--	--
Bello Zon Chlorite			--	--
Service Engineer:	Murugaraaj	Client:	Mr. Ratheesh Muttath	
Signature:		Signature:		





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POTABLE WATER ANALYSIS

PARAMETER	CONTROL LIMITS	AMBIENT WATER	
		A2A3	
pH at 25°C	7.0 – 9.2	7.84	
Conductivity at 25°C, µs/cm	--	211	
Total Dissolved Solids (TDS)	1000 Max.	137	
Total Hardness, ppm as CaCO ₃	300 Max.	67	
Calcium Hardness, ppm as CaCO ₃	200 Max.	58	
Total Alkalinity	--	31	
Chloride, ppm as Cl ⁻	250 Max.	32	
Iron, ppm as Fe	0.2 Max.	<0.05	
Sulphate (SO ₄), mg/l	250 Max.	<10	
Copper (Cu), mg/l	1 Max.	<0.05	
Aluminum (Al), mg/l	0.2 Max.	<0.05	
Zinc (Zn), mg/l	5 Max	<0.05	
Nitrate (NO ₃ ⁻), mg/l	50 Max.	<1.0	
Nitrite (NO ₂ ⁻), mg/l	3.0 Max.	<0.05	
Fluorides (F)	1.5 Max	<0.01	
Potassium (K)	12 Max.	<5.0	

Treatment Residuals			
Odor	Unobjectionable	ND	
Chlorine Dioxide ClO ₂	0.2 – 0.5	0.38	
Free Residual Chlorine as Cl	0.2 – 0.5	--	
Turbidity in NTU	4 Max	<1.0	

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 within control limits ⇨	No action recommended.
Chlorine Dioxide levels found satisfactory ⇨	No action recommended.

INVENTORY LEVELS			DOSAGE SCHEDULE	
Chemical	Quantity	Chemical	Present Dosage	Revised Dosage
Bello Zon Acid			--	--
Bello Zon Chlorite			--	--
Service Engineer:	Murugaraaj	Client:	Mr. Ratheesh Muttath	
Signature:	<i>P. M. Murugaraaj</i>	Signature:		





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POTABLE WATER ANALYSIS

PARAMETER	CONTROL LIMITS	AMBIENT WATER	
		A4A5	
pH at 25°C	7.0 - 9.2	7.98	
Conductivity at 25°C, µs/cm	--	189	
Total Dissolved Solids (TDS)	1000 Max.	122	
Total Hardness, ppm as CaCO ₃	300 Max.	61	
Calcium Hardness, ppm as CaCO ₃	200 Max.	53	
Total Alkalinity	--	29	
Chloride, ppm as Cl ⁻	250 Max.	27	
Iron, ppm as Fe	0.2 Max.	<0.05	
Sulphate (SO ₄), mg/l	250 Max.	<10	
Copper (Cu), mg/l	1 Max.	<0.05	
Aluminum (Al), mg/l	0.2 Max.	<0.05	
Zinc (Zn), mg/l	5 Max.	<0.05	
Nitrate (NO ₃ -), mg/l	50 Max.	<1.0	
Nitrite (NO ₂ -), mg/l	3.0 Max.	<0.05	
Fluorides (F)	1.5 Max.	<0.01	
Potassium (K)	12 Max.	<5.00	

Treatment Residuals

Odor	Unobjectionable	ND	
Chlorine Dioxide ClO ₂	0.2 - 0.5	0.37	
Free Residual Chlorine as Cl	0.2 - 0.5	--	
Turbidity in NTU	4 Max.	<1.0	

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

COMMENTS:

- The pH and Conductivity/TDS are found satisfactory. ⇨
- Dissolved iron levels are within control limits ⇨
- Chlorine Dioxide levels found satisfactory ⇨

ACTION:

- No action recommended.
- No action recommended.
- No action recommended.

INVENTORY LEVELS

DOSAGE SCHEDULE

Chemical	Quantity	Chemical	Present Dosage	Revised Dosage
Bello Zon Acid			--	--
Bello Zon Chlorite			--	--
Service Engineer:	Murugaraaj	Client:	Mr. Ratheesh Muttath	
Signature:		Signature:		





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POTABLE WATER ANALYSIS

PARAMETER	CONTROL LIMITS	AMBIENT WATER	
		A6D2	
pH at 25°C	7.0 - 9.2	7.87	
Conductivity at 25°C, µs/cm	--	184	
Total Dissolved Solids (TDS)	1000 Max.	119	
Total Hardness, ppm as CaCO ₃	300 Max.	59	
Calcium Hardness, ppm as CaCO ₃	200 Max.	56	
Total Alkalinity	--	32	
Chloride, ppm as Cl ⁻	250 Max.	35	
Iron, ppm as Fe	0.2 Max.	<0.05	
Sulphate (SO ₄), mg/l	250 Max.	<10	
Copper (Cu), mg/l	1 Max.	<0.05	
Aluminum (Al), mg/l	0.2 Max.	<0.05	
Zinc (Zn), mg/l	5 Max	<0.05	
Nitrate (NO ₃ -), mg/l	50 Max.	<1.0	
Nitrite (NO ₂ -), mg/l	3.0 Max.	<0.05	
Fluorides (F)	1.5 Max	<0.01	
Potassium (K)	12 Max.	<5.0	

Treatment Residuals

Odor	Unobjectionable	ND	
Chlorine Dioxide ClO ₂	0.2 - 0.5	0.32	
Free Residual Chlorine as Cl	0.2 - 0.5	--	
Turbidity in NTU	4 Max	<1.0	

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

COMMENTS:

- The pH and Conductivity/TDS are found satisfactory. ⇨
- Dissolved iron levels are within control limits ⇨
- Chlorine Dioxide levels found satisfactory ⇨

ACTION:

- No action recommended.
- No action recommended.
- No action recommended.

INVENTORY LEVELS			DOSAGE SCHEDULE	
Chemical	Quantity	Chemical	Present Dosage	Revised Dosage
Bello Zon Acid			--	--
Bello Zon Chlorite			--	--
Service Engineer:	Murugaraaj	Client:	Mr. Ratheesh Muttath	
Signature:		Signature:		



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POTABLE WATER ANALYSIS

PARAMETER	CONTROL LIMITS	AMBIENT WATER	
		C1B1	
pH at 25°C	7.0 - 9.2	8.12	
Conductivity at 25°C, µs/cm	--	214	
Total Dissolved Solids (TDS)	1000 Max.	139	
Total Hardness, ppm as CaCO ₃	300 Max.	65	
Calcium Hardness, ppm as CaCO ₃	200 Max.	54	
Total Alkalinity	--	31	
Chloride, ppm as Cl ⁻	250 Max.	34	
Iron, ppm as Fe	0.2 Max.	<0.05	
Sulphate (SO ₄), mg/l	250 Max.	<10	
Copper (Cu), mg/l	1 Max.	<0.05	
Aluminum (Al), mg/l	0.2 Max.	<0.05	
Zinc (Zn), mg/l	5 Max.	<0.05	
Nitrate (NO ₃ -), mg/l	50 Max.	<1.0	
Nitrite (NO ₂ -), mg/l	3.0 Max.	<0.05	
Fluorides (F)	1.5 Max.	<0.01	
Potassium (K)	12 Max.	<5.0	

Treatment Residuals

Odor	Unobjectionable	ND	
Chlorine Dioxide ClO ₂	0.2 - 0.5	0.37	
Free Residual Chlorine as Cl	0.2 - 0.5	--	
Turbidity in NTU	4 Max.	<1.0	

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

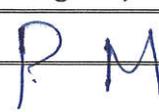
COMMENTS:

ACTION:

The pH and Conductivity/TDS are found satisfactory. ⇨	No action recommended.
Dissolved iron levels are within control limits ⇨	No action recommended.
Chlorine Dioxide levels found satisfactory ⇨	No action recommended.

INVENTORY LEVELS

DOSAGE SCHEDULE

Chemical	Quantity	Chemical	Present Dosage	Revised Dosage
Bello Zon Acid			--	--
Bello Zon Chlorite			--	--
Service Engineer:	Murugaraaj	Client:	Mr. Ratheesh Muttath	
Signature:		Signature:		



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POTABLE WATER ANALYSIS

PARAMETER	CONTROL LIMITS	AMBIENT WATER	
		C2	
pH at 25°C	7.0 - 9.2	8.11	
Conductivity at 25°C, µs/cm	--	207	
Total Dissolved Solids (TDS)	1000 Max.	134	
Total Hardness, ppm as CaCO ₃	300 Max.	63	
Calcium Hardness, ppm as CaCO ₃	200 Max.	52	
Total Alkalinity	--	31	
Chloride, ppm as Cl ⁻	250 Max.	36	
Iron, ppm as Fe	0.2 Max.	<0.05	
Sulphate (SO ₄), mg/l	250 Max.	<10	
Copper (Cu), mg/l	1 Max.	<0.05	
Aluminum (Al), mg/l	0.2 Max.	<0.05	
Zinc (Zn), mg/l	5 Max.	<0.05	
Nitrate (NO ₃ -), mg/l	50 Max.	<1.0	
Nitrite (NO ₂ -), mg/l	3.0 Max.	<0.05	
Fluorides (F)	1.5 Max.	<0.01	
Potassium (K)	12 Max.	<5.00	

Treatment Residuals

Odor	Unobjectionable	ND	
Chlorine Dioxide ClO ₂	0.2 - 0.5	0.35	
Free Residual Chlorine as Cl	0.2 - 0.5	--	
Turbidity in NTU	4 Max.	<1.0	

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

COMMENTS:

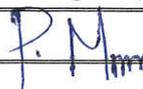
The pH and Conductivity/TDS are found satisfactory. ⇨
 Dissolved iron levels are within control limits ⇨
 Chlorine Dioxide levels found satisfactory ⇨

ACTION:

No action recommended.
 No action recommended.
 No action recommended.

INVENTORY LEVELS

DOSAGE SCHEDULE

Chemical	Quantity	Chemical	Present Dosage	Revised Dosage
Bello Zon Acid			--	--
Bello Zon Chlorite			--	--
Service Engineer:	Murugaraaj	Client:	Mr. Ratheesh Muttath	
Signature:		Signature:		



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POTABLE WATER ANALYSIS

PARAMETER	CONTROL LIMITS	AMBIENT WATER	
		C3B2	
pH at 25°C	7.0 - 9.2	7.84	
Conductivity at 25°C, µs/cm	--	197	
Total Dissolved Solids (TDS)	1000 Max.	128	
Total Hardness, ppm as CaCO ₃	300 Max.	56	
Calcium Hardness, ppm as CaCO ₃	200 Max.	51	
Total Alkalinity	--	31	
Chloride, ppm as Cl ⁻	250 Max.	39	
Iron, ppm as Fe	0.2 Max.	<0.05	
Sulphate (SO ₄), mg/l	250 Max.	<10	
Copper (Cu), mg/l	1 Max.	<0.05	
Aluminum (Al), mg/l	0.2 Max.	<0.05	
Zinc (Zn), mg/l	5 Max.	<0.05	
Nitrate (NO ₃ -), mg/l	50 Max.	<1.0	
Nitrite (NO ₂ -), mg/l	3.0 Max.	<0.05	
Fluorides (F)	1.5 Max.	<0.01	
Potassium (K)	12 Max.	<5.0	

Treatment Residuals

Odor	Unobjectionable	ND	
Chlorine Dioxide ClO ₂	0.2 - 0.5	0.41	
Free Residual Chlorine as Cl	0.2 - 0.5	--	
Turbidity in NTU	4 Max.	<1.0	

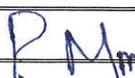
All test results expressed in parts per million (ppm) as CaCO₃ except pH and conductivity (µmhos).

COMMENTS:

The pH and Conductivity/TDS are found satisfactory. ⇨
 Dissolved iron levels are within control limits ⇨
 Chlorine Dioxide levels found satisfactory ⇨

ACTION:

No action recommended.
 No action recommended.
 No action recommended.

INVENTORY LEVELS			DOSAGE SCHEDULE	
Chemical	Quantity	Chemical	Present Dosage	Revised Dosage
Bello Zon Acid			--	--
Bello Zon Chlorite			--	--
Service Engineer:	Murugaraaj	Client:	Mr. Ratheesh Muttath	
Signature:		Signature:		

