

ประเมินผลคุณภาพน้ำใช้ และน้ำดื่ม

เสนอ

Centara Grand Mirage Beach Resort Pattaya

มีนาคม 2567

บริษัท เทสท์ เทค จำกัด

30, 32 ซอยพระรามที่ 2 ซอย 63 ถนนพระรามที่ 2 แขวงสามตำ เขตบางขุนเทียน กรุงเทพฯ 10150
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SRR NO. 67L1062

Messrs : Centara Grand Mirage Beach Resort Pattaya

Address : 277 Moo 5 , Naklua, Banglamung, Pattaya, Chonburi 20150, Thailand

Factory Site : Centara Grand Pattaya Date : 30 มีนาคม 2567

Recommendation For : คุณภาพน้ำใช้และน้ำดื่มประจำเดือนมีนาคม 2567

Report Reference : R07458-66, R07010-11, R06865-68, R06952-53, R07142/67

RECOMMENDATION

1. คุณภาพน้ำใช้

1.1 Storage Tank : คุณภาพน้ำ มีค่าความขุ่นต่ำ ค่าเหล็กตรวจไม่พบ ค่าความกระด้างมีค่าต่ำ, ค่าคลอไรด์มีค่าต่ำ ตรวจไม่พบเชื้อ Coliform/E.Coli (คุณภาพน้ำมีค่าสารละลายต่างๆ ใกล้เคียงจากเดือนกุมภาพันธ์ 2567)

หมายเหตุ : การดูแล

- เติมน้ำเกลือในระบบผลิตน้ำ และน้ำเชื้อก่อนเก็บในถังพัก
- ควรตรวจสอบถังพัก 2 ครั้ง/เดือน และล้างถังเพื่อลดการสะสมของเหล็ก
- ควรดูแลขบวนการปรับสภาพน้ำส่วนต่อเนื่อง

1.2 Soft Water (Main Point) :

- pH ปกติ, ความขุ่นต่ำ
- ค่าความกระด้าง มีค่าต่ำ
- ค่าเหล็กตรวจไม่พบ
- ค่าแมกนีเซียมตรวจไม่พบ
- ตรวจไม่พบเชื้อ Coliform, E.Coli
- คุณภาพน้ำทางเคมีอื่น ๆ ปกติอยู่ในมาตรฐาน

หมายเหตุ : การดูแลระบบ

- ควบคุมค่าเหล็กของน้ำในถังพักให้มีค่าต่ำ เพื่อลดการสะสมของเหล็กใน Softener
- ล้างกลับระบบ Softener ให้บ่อย เพื่อลดการสะสมของเหล็กและเชื้อในระบบกรอง
- ตรวจสอบค่าความกระด้าง และควบคุมการล้างเกลือ Softener ให้ต่อเนื่อง เพื่อควบคุมค่าความกระด้าง และควบคุมการล้างเกลือที่ตกค้างให้หมด ก่อนใช้งานปกติ
- ควรเติมน้ำเกลือในถังพักน้ำใช้ และ Regenerate Softener ด้วยน้ำหลังเติมน้ำเกลือ เพื่อลดการสะสมของเหล็กใน Softener และฆ่าเชื้อที่สะสมในระบบกรอง

1.3 Hot Water System (Main Point) :

- ค่า pH ปกติ, ความขุ่นต่ำ
- ค่าเหล็กมีค่าต่ำ
- ค่าแมกนีเซียมมีค่าต่ำ
- ตรวจไม่พบ Coliform/E.Coli
- ค่าความกระด้างต่ำ

หมายเหตุ : - ควร Flushing ในระบบผลิตน้ำร้อน เพื่อลดการสะสมของเหล็กในระบบ
- ควบคุม Softener เพื่อควบคุมความกระด้างในระบบผลิตน้ำร้อน อาจก่อให้เกิดปัญหาตะกรันในระบบ

1.4 Guest Room Usage Water (Cold Water) : คุณภาพน้ำเย็นห้องพักแยก 2 จุด South A1602

และ South A1612 พบค่าดังนี้

- ค่าเหล็กตรวจไม่พบ
- ค่าแมกนีเซียมตรวจไม่พบ
- ค่าความกระด้างและคลอไรด์ใกล้เคียงน้ำในถังพัก
- ตรวจไม่พบ Coliform/ E.Coli

หมายเหตุ : ในกรณีไม่ค่อยเปิดใช้ห้อง ควร Flushing ท่อก่อนเปิดใช้ในโซนที่ไม่ค่อยเปิดห้องพัก เพื่อลดการสะสมของเหล็ก/แมกนีเซียมในเส้นท่อ
- ตรวจสอบการเติมคลอรีนในถังพักน้ำประปา เพื่อฆ่าเชื้อที่สะสม

1.5 Guest Room Usage Water (Hot Water) : คุณภาพน้ำ 2 จุด คือ South A1602

และ South A1612 พบค่าดังนี้

- คุณภาพน้ำทางเคมีพบความขุ่นต่ำ
- ค่าเหล็กมีค่าต่ำ
- ค่าแมกนีเซียมมีค่าต่ำ
- ตรวจไม่พบ Coliform/E.Coli
- ค่าความกระด้างและคลอไรด์ใกล้เคียงน้ำในถังพัก

หมายเหตุ : ควร Flushing ระบบท่อ ก่อนเปิดใช้ห้องพักเพื่อป้องกันการสะสมของตะกอนเหล็กในเส้นท่อ

1.6 Cooling :

- 1) คุณภาพน้ำมีค่าการนำไฟฟ้าสูงกว่ามาตรฐาน
- 2) ค่าความกระด้างสูงกว่ามาตรฐาน
- 3) ค่าเหล็กและแมงกานีสตรวจไม่พบ
- 4) เคมิป้องกันตะกรัน (phosphate) มีค่าต่ำ ควรตรวจสอบการเติมเคมี
- 5) ตรวจไม่พบ Legionella spp.

การดูแล

- ตรวจเช็คระบบ Softener และผลิตน้ำ Soft ใช้เป็น Make Up Water ให้เพียงพอ และควบคุมการล้างเกลือ เพื่อควบคุมค่าความกระด้าง ≤ 20 ppm
- ควบคุมการเติมเคมีป้องกันตะกรัน และตะไคร่น้ำ เนื่องจาก เคมิป้องกันตะกรัน (phosphate) ยังต่ำ
- ควบคุมการระบายน้ำทิ้ง ให้สม่ำเสมอ เพื่อควบคุมค่า การนำไฟฟ้า ≤ 2500 umhos/cm

1.7 Chilled Water : คุณภาพน้ำใส และค่าเหล็กสูง ค่า Nitrite ตรวจพบ มีค่าต่ำกว่าเกณฑ์ควบคุม มีค่า pH สูง
หมายเหตุ : - ควรเติมเคมีเพิ่มในรอบการบำรุงรักษาถัดไป

2. น้ำดื่ม

- 1) Canteen : ค่าความกระด้างต่ำกว่ามาตรฐาน ค่าเหล็กต่ำ ค่าแมงกานีสสูง
คุณภาพน้ำทางเคมีอื่นๆ อยู่ในมาตรฐาน ตรวจไม่พบ Coliform/E.Coli
- 2) Oasis Kitchen : ค่าความกระด้างต่ำกว่ามาตรฐาน ค่าเหล็กต่ำ ค่าแมงกานีสสูง
คุณภาพน้ำทางเคมีอื่นๆ อยู่ในมาตรฐาน ตรวจไม่พบ Coliform/E.Coli
- 3) Guest Room (1602) : ค่าความกระด้างต่ำ, ค่าเหล็กต่ำ ค่าแมงกานีสสูง
ตรวจไม่พบ Coliform/E.Coli

การดูแล :

- ล้างระบบกรอง Softener และล้างสม่ำเสมอ เพื่อลดค่าความกระด้าง
- Flushing line ด้วยน้ำหลังเติมคลอรีน เพื่อฆ่าเชื้อแบคทีเรียที่สะสมในระบบ
- ตรวจสอบความสะอาดของถังและแท็งก์บรรจุน้ำดื่ม

3. Swimming Pool :

1) Main Pool :

- pH ปกติ
- คลอรีนตรวจพบ 0.89 pm
- ตรวจไม่พบ Coliform/ E.Coli

2) Lab Pool :

- pH ปกติ
- คลอรีนตรวจพบ 0.92 ppm
- ตรวจไม่พบ Coliform/ E.Coli

3) Lazy Pool :

- pH ปกติ
- คลอรีนตรวจพบ 0.92 ppm
- ตรวจไม่พบ Coliform/E.Coli

4) 18th Flr Pool :

- pH ปกติ
- คลอรีนตรวจพบ 0.89 ppm
- ตรวจไม่พบ Coliform/E.Coli

หมายเหตุ : การดูแล

1. ควบคุมตรวจสอบ pH สม่าเสมอในกรณีค่า pH ต่ำให้ปรับด้วยโซดาไฟหรือโซดาแอช และปรับด้วยกรดเกลือในกรณีค่า pH สูง
2. ตรวจสอบคลอรีนและเติมให้สม่าเสมอ
3. หมุนเวียนน้ำผ่านกรอง เพื่อไม่ให้ตะกอนสะสม และเชื้อแบคทีเรีย

4. น้ำแข็ง :

- 1) Canteen (Cube) : ตรวจไม่พบ Coliform/E.Coli
- 2) Banquet (Flake) : ตรวจไม่พบ Coliform/E.Coli
- 3) Flames : ตรวจไม่พบ Coliform/E.Coli
- 4) Oasis Kitchen (Flake) : ตรวจไม่พบ Coliform/E.Coli

การดูแล :

1. เติมน้ำประปา และล้างระบบผลิตน้ำแข็งด้วยน้ำหลังเติมน้ำ
2. ตรวจสอบความสะอาดระบบผลิตน้ำแข็ง
3. ภาชนะตักน้ำแข็งต้องสะอาด และถึงบรรจุต้องสะอาด และควรล้างทุกวัน
4. อย่าให้อาหารปะปนในถังบรรจุน้ำแข็ง
5. ในกรณีน้ำแข็งซื้อ ควรตรวจสอบถุงบรรจุ

5. น้ำเสียออกจากระบบ : ลักษณะน้ำเหลืองขุ่น BOD ~ 541 mg/l และอยู่ในเกณฑ์การควบคุมของ
พหยา ในการปล่อยน้ำทิ้งลงระบบบำบัดรวม ($BOD \leq 1000$ mg/l) โดยต้องจ่ายค่าบริการบำบัดน้ำทิ้ง
ตามข้อกำหนด



Analysis/Test Report

Customer Name : Centara Grand Mirage Beach Resort Pattaya

Address : 277 Moo 5, Naklua, Banglamung, Pattaya, Chonburi 20150, Thailand

Sampling Site : Centara Grand (Pattaya)

Sample Type : Usage Water

Sampling by : Test Tech Co., Ltd.

Sampling Method : Grab

Sampling Date : 13/03/2024

Sampling Time : 10:30 AM

Received Date : 13/03/2024

Analytical Date : 13 - 25/03/2024

Report Date : 26/03/2024

Report No. : R07458/67

Parameters	Unit	Method	TW06190 /67	TW06191 /67	TW06192 /67	Standard ^a
			Water in Storage Tank	Soft Water System (Main Point)	Hot Water System (Main Point)	
pH (25°C) [#]	-	Based on SM 2023 (4500-H ⁺ B)	7.8	7.5	7.3	6.5-8.5
Turbidity [#]	NTU	SM 2023 (2130 B)	< 0.50	0.61	0.69	5
Conductivity [#]	uS/cm	SM 2023 (2510 B)	395	395	388	-
* Dissolved Solids	mg/L as NaCl	Electrical Conductivity	237	237	233	1000
Total Hardness [@]	mg/L as CaCO ₃	SM 2023 (2340 C)	86	88	82	300
Chloride [@]	mg/L as Cl ⁻	SM 2023 (4500-Cl ⁻ B)	48	48	47	250
Total Iron [#]	mg/L as Fe	SM 2023 (3500-Fe B)	< 0.10	< 0.10	0.18	0.3
Manganese [#]	mg/L	SM 2023 (3500-Mn B)	< 0.04	< 0.04	0.04	0.1
Nitrate [#]	mg/L as NO ₃ ⁻	SM 2023 (4500-NO ₃ ⁻ E)	4.20	4.12	3.10	50
Sulfate [#]	mg/L as SO ₄ ²⁻	Based on SM 2023 (4500-SO ₄ ²⁻ E)	42.14	43.64	43.95	250
Sample Condition		Observation	Clear	Clear	Clear	

Remark : 1. SM 2023 : Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023

2. Test marked "# " on this report are Accredited International Standard ISO/IEC 17025 by BLA-DSS.

3. Test marked "@ " on this report are Accredited International Standard ISO/IEC 17025 by BLQS-DMSc.

4. Test marked " * " on this report are not included in scope of Accreditation

5. a : Specification for Water Supply Quality of Metropolitan Waterworks Authority.

Reported results refer to the sample as received only.

Test report shall not be reproduced except in full, without written approved of the laboratory.

The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025

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Report Date : 26/03/2024

Report No. : R07459/67

Parameters	Unit	Method	TW06190 /67	TW06191 /67	TW06192 /67	Standard ^a
			Water in Storage Tank	Soft Water System (Main Point)	Hot Water System (Main Point)	
Coliform Bacteria	MPN/100 mL	SM 2023 (9221 B)	< 1.1	< 1.1	< 1.1	not found
<i>E. coli</i>	/100 mL	SM 2023 (9221 F, Detection)	not found	not found	not found	not found
Sample Condition		Observation	Clear	Clear	Clear	

Remark : 1. SM 2023 : Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023

2. a : Specification for Water Supply Quality of Metropolitan Waterworks Authority.

3. Coliform Bacteria < 1.1 MPN/100 mL is meaning not found

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Sampling by : Test Tech Co., Ltd.

Sampling Method : Grab

Sampling Date : 13/03/2024

Sampling Time : 10:30 AM

Received Date : 13/03/2024

Analytical Date : 13 - 25/03/2024

Report Date : 26/03/2024

Report No. : R07460/67

Parameters	Unit	Method	TW06193 /67	TW06194 /67	Standard ^a
			Guest Room Cold Water (South A 1602)	Guest Room Cold Water (South A 1612)	
pH (25°C) [#]	-	Based on SM 2023 (4500-H ⁺ B)	7.4	7.5	6.5-8.5
Turbidity [#]	NTU	SM 2023 (2130 B)	0.55	< 0.50	5
Conductivity [#]	uS/cm	SM 2023 (2510 B)	395	394	-
* Dissolved Solids	mg/L as NaCl	Electrical Conductivity	237	236	1000
Total Hardness [@]	mg/L as CaCO ₃	SM 2023 (2340 C)	88	88	300
Chloride [@]	mg/L as Cl ⁻	SM 2023 (4500-Cl ⁻ B)	48	46	250
Total Iron [#]	mg/L as Fe	SM 2023 (3500-Fe B)	< 0.10	< 0.10	0.3
Manganese [#]	mg/L	SM 2023 (3500-Mn B)	< 0.04	< 0.04	0.1
Nitrate [#]	mg/L as NO ₃ ⁻	SM 2023 (4500-NO ₃ ⁻ E)	4.38	4.08	50
Sulfate [#]	mg/L as SO ₄ ²⁻	Based on SM 2023 (4500-SO ₄ ²⁻ E)	44.55	43.34	250
Sample Condition		Observation	Clear	Clear	

- Remark :
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Sample Type : Usage Water

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Sampling Method : Grab

Sampling Date : 13/03/2024

Sampling Time : 10:30 AM

Received Date : 13/03/2024

Analytical Date : 13 - 25/03/2024

Report Date : 26/03/2024

Report No. : R07461/67

Parameters	Unit	Method	TW06193 /67	TW06194 /67	Standard ^a
			Guest Room Cold Water (South A 1602)	Guest Room Cold Water (South A 1612)	
Coliform Bacteria	MPN/100 mL	SM 2023 (9221 B)	< 1.1	< 1.1	not found
<i>E. coli</i>	/100 mL	SM 2023 (9221 F, Detection)	not found	not found	not found
Sample Condition		Observation	Clear	Clear	

Remark : 1. SM 2023 : Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023

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3. Coliform Bacteria < 1.1 MPN/100 mL is meaning not found

26/03/2024

26/03/2024

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Sample Type : Usage Water

Sampling by : Test Tech Co., Ltd.

Sampling Method : Grab

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Sampling Time : 10:30 AM

Received Date : 13/03/2024

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Report No. : R07462/67

Parameters	Unit	Method	TW06195 /67	TW06196 /67	Standard ^a
			Guest Room Hot Water (South A 1602)	Guest Room Hot Water (South A 1612)	
pH (25°C) [#]	-	Based on SM 2023 (4500-H ⁺ B)	7.5	7.4	6.5-8.5
Turbidity [#]	NTU	SM 2023 (2130 B)	0.61	0.56	5
Conductivity [#]	uS/cm	SM 2023 (2510 B)	386	386	-
* Dissolved Solids	mg/L as NaCl	Electrical Conductivity	232	232	1000
Total Hardness [@]	mg/L as CaCO ₃	SM 2023 (2340 C)	82	84	300
Chloride [@]	mg/L as Cl ⁻	SM 2023 (4500-Cl ⁻ B)	48	47	250
Total Iron [#]	mg/L as Fe	SM 2023 (3500-Fe B)	0.13	0.12	0.3
Manganese [#]	mg/L	SM 2023 (3500-Mn B)	0.04	< 0.04	0.1
Nitrate [#]	mg/L as NO ₃ ⁻	SM 2023 (4500-NO ₃ ⁻ E)	3.44	3.28	50
Sulfate [#]	mg/L as SO ₄ ²⁻	Based on SM 2023 (4500-SO ₄ ²⁻ E)	42.44	43.95	250
Sample Condition		Observation	Clear	Clear	

- Remark : 1. SM 2023 : Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023
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Sampling Time : 10:30 AM

Received Date : 13/03/2024

Analytical Date : 13 - 25/03/2024

Report Date : 26/03/2024

Report No. : R07463/67

Parameters	Unit	Method	TW06195 /67	TW06196 /67	Standard ^a
			Guest Room Hot Water (South A 1602)	Guest Room Hot Water (South A 1612)	
Coliform Bacteria	MPN/100 mL	SM 2023 (9221 B)	< 1.1	< 1.1	not found
<i>E. coli</i>	/100 mL	SM 2023 (9221 F, Detection)	not found	not found	not found
Sample Condition		Observation	Clear	Clear	

Remark : 1. SM 2023 : Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023

2. a : Specification for Water Supply Quality of Metropolitan Waterworks Authority.

3. Coliform Bacteria < 1.1 MPN/100 mL is meaning not found

26/03/2024

26/03/2024

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Test report shall not be reproduced except in full, without written approved of the laboratory.

The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025



Analysis/Test Report

Customer Name : Centara Grand Mirage Beach Resort Pattaya

Address : 277 Moo 5, Naklua, Banglamung, Pattaya, Chonburi 20150, Thailand

Sampling Site : Centara Grand (Pattaya)

Sample Type : Usage Water

Sampling by : Test Tech Co., Ltd.

Sampling Method : Grab

Sampling Date : 13/03/2024

Sampling Time : 10:30 AM

Received Date : 13/03/2024

Analytical Date : 13 - 25/03/2024

Report Date : 26/03/2024

Report No. : R07464/67

Parameters	Unit	Method	TW06197 /67	Standard ^a
			Cooling Water	(Cooling Water)
pH (25°C) [#]	-	Based on SM 2023 (4500-H ⁺ B)	8.4	8.5 - 9.5
Conductivity [#]	uS/cm	SM 2023 (2510 B)	3490	< 2500
* Dissolved Solids	mg/L as NaCl	Electrical Conductivity	2094	< 2000
* P-Alkalinity	mg/L as CaCO ₃	Titration	5	-
* M-Alkalinity	mg/L as CaCO ₃	Titration	95	-
Total Hardness [@]	mg/L as CaCO ₃	SM 2023 (2340 C)	620	< 100
Chloride [@]	mg/L as Cl ⁻	SM 2023 (4500-Cl ⁻ B)	660	< 400
Total Iron [#]	mg/L as Fe	SM 2023 (3500-Fe B)	< 0.10	< 1.0
Manganese [#]	mg/L	SM 2023 (3500-Mn B)	< 0.04	-
* Sulfate	mg/L as SO ₄ ²⁻	Based on SM 2023 (4500-SO ₄ ²⁻ E)	533	-
* Silica	mg/L as SiO ₂	SM 2023 (4500-SiO ₂ C)	34.65	-
* Total Phosphorus	mg/L as P	Stannous Chloride	0.01	-
Sample Condition		Observation	Light Yellow, Clear	

Remark : 1. SM 2023 : Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023

2. Test marked "# " on this report are Accredited International Standard ISO/IEC 17025 by BLA-DSS.

3. Test marked "@ " on this report are Accredited International Standard ISO/IEC 17025 by BLQS-DMSc.

4. Test marked " * " on this report are not included in scope of Accreditation

5. a : เกณฑ์ควบคุมคุณภาพน้ำในระบบต่าง ๆ

26/03/2024

26/03/2024

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Analysis/Test Report

Customer Name : Centara Grand Mirage Beach Resort Pattaya

Address : 277 Moo 5, Naklua, Banglamung, Pattaya, Chonburi 20150, Thailand

Sampling Site : Centara Grand (Pattaya)

Sample Type : Usage Water

Sampling by : Test Tech Co., Ltd.

Sampling Method : Grab

Sampling Date : 13/03/2024

Sampling Time : 10:30 AM

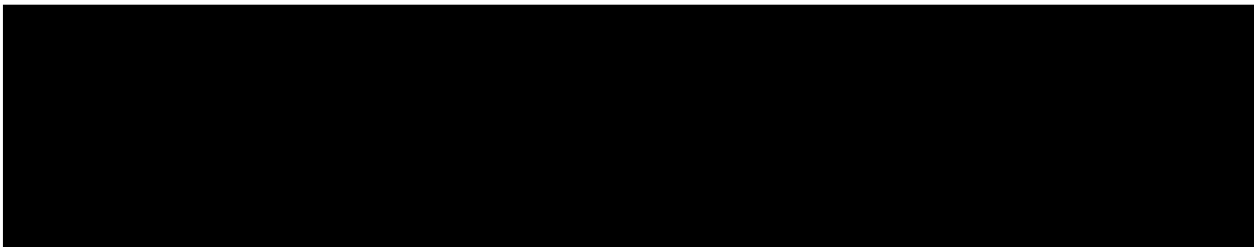
Received Date : 13/03/2024

Analytical Date : 13 - 25/03/2024

Report Date : 26/03/2024

Report No. : R07465/67

Parameters	Unit	Method	TW06197 /67
			Cooling Water
Legionella spp.	CFU/L	ISO 11731 : 2017	not detected
Sample Condition		Observation	Light Yellow, Clear



26/03/2024

26/03/2024

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Analysis/Test Report

Customer Name : Centara Grand Mirage Beach Resort Pattaya

Address : 277 Moo 5, Naklua, Banglamung, Pattaya, Chonburi 20150, Thailand

Sampling Site : Centara Grand (Pattaya)

Sample Type : Usage Water

Sampling by : Test Tech Co., Ltd.

Sampling Method : Grab

Sampling Date : 13/03/2024

Sampling Time : 10:30 AM

Received Date : 13/03/2024

Analytical Date : 13 - 25/03/2024

Report Date : 26/03/2024

Report No. : R07466/67

Parameters	Unit	Method	TW06198 /67	Standard ^a (Chilled Water)
			Chilled Water	
* pH (25 °C)	-	Based on SM 2023 (4500-H ⁺ B)	10.1	7.5 - 9.5
Conductivity [#]	uS/cm	SM 2023 (2510 B)	794	-
* Dissolved Solids	mg/L as NaCl	Electrical Conductivity	476	-
* P-Alkalinity	mg/L as CaCO ₃	Titration	30	-
* M-Alkalinity	mg/L as CaCO ₃	Titration	95	-
Total Hardness [@]	mg/L as CaCO ₃	SM 2023 (2340 C)	44	-
Chloride [@]	mg/L as Cl ⁻	SM 2023 (4500-Cl ⁻ B)	46	-
Total Iron [#]	mg/L as Fe	SM 2023 (3500-Fe B)	1.11	< 1.0
Manganese [#]	mg/L	SM 2023 (3500-Mn B)	< 0.04	-
Sulfate [#]	mg/L as SO ₄ ²⁻	Based on SM 2023 (4500-SO ₄ ²⁻ E)	41.84	-
Silica [#]	mg/L as SiO ₂	SM 2023 (4500-SiO ₂ C)	3.15	-
* Nitrite	mg/L as NO ₂ ⁻	SM 2023 (4500-NO ₂ ⁻ B)	135	500 - 1000
Sample Condition		Observation	Light Yellow, Brown Particles	

- Remark : 1. SM 2023 : Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023
2. Test marked "# " on this report are Accredited International Standard ISO/IEC 17025 by BLA-DSS.
3. Test marked "@ " on this report are Accredited International Standard ISO/IEC 17025 by BLQS-DMSc.
4. Test marked " * " on this report are not included in scope of Accreditation
5. a : เกณฑ์ควบคุมคุณภาพน้ำในระบบต่าง ๆ (Chilled Water)

26/03/2024

26/03/2024

Reported results refer to the sample as received only.

Test report shall not be reproduced except in full, without written approved of the laboratory.

The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025



Analysis/Test Report

Customer Name : Centara Grand Mirage Beach Resort Pattaya

Address : 277 Moo 5, Naklua, Banglamung, Pattaya, Chonburi 20150, Thailand

Sampling Site : Centara Grand (Pattaya)

Sample Type : Drinking Water

Sampling by : Test Tech Co., Ltd.

Sampling Method : Grab

Sampling Date : 13/03/2024

Sampling Time : 10:30 AM

Received Date : 13/03/2024

Analytical Date : 13 - 19/03/2024

Report Date : 21/03/2024

Report No. : R07010/67

Parameters	Unit	Method	TW06199 /67	TW06200 /67	TW06201 /67	Standard ^a
			Drinking Water (Canteen)	Drinking Water (Oasis Kitchen)	Drinking Water (Guest Room 1602)	
pH (25°C) [#]	-	Based on SM 2023 (4500-H ⁺ B)	7.6	7.6	7.2	6.5-8.5
Turbidity [#]	NTU	SM 2023 (2130 B)	0.71	1.02	< 0.50	≤ 5.0
Conductivity [#]	uS/cm	SM 2023 (2510 B)	394	394	395	-
* Dissolved Solids	mg/L as NaCl	Electrical Conductivity	236	236	237	-
Total Hardness [@]	mg/L as CaCO ₃	SM 2023 (2340 C)	83	82	84	≤ 100.0
Chloride [@]	mg/L as Cl ⁻	SM 2023 (4500-Cl ⁻ B)	47	48	47	≤ 250.0
Total Iron [#]	mg/L as Fe	SM 2023 (3500-Fe B)	0.12	0.14	0.15	≤ 0.3
Manganese [#]	mg/L	SM 2023 (3500-Mn B)	0.15	0.17	0.17	≤ 0.05
Nitrate Nitrogen [#]	mg/L as NO ₃ ⁻ -N	SM 2023 (4500-NO ₃ ⁻ E)	0.87	0.89	0.80	≤ 4.0
Sulfate [#]	mg/L as SO ₄ ²⁻	Based on SM 2023 (4500-SO ₄ ²⁻ E)	44.55	42.74	43.34	≤ 250.0
Sample Condition		Observation	Clear	Clear	Clear	

- Remark : 1. SM 2023 : Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023
2. Test marked "# " on this report are Accredited International Standard ISO/IEC 17025 by BLA-DSS.
3. Test marked "@ " on this report are Accredited International Standard ISO/IEC 17025 by BLQS-DMSc.
4. Test marked " * " on this report are not included in scope of Accreditation
5. a : Notification of the Ministry of Public Health, No. 284 , B.E. 2547 (2004) on "Drinking Water in Sealed Container" (No.5) (Included No. 135 , B.E. 2534 (1991) and No. 61, B.E. 2524 (1981))

บริษัท เทสท์ เทค จำกัด

21/03/2024

21/03/2024

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Test report shall not be reproduced except in full, without written approved of the laboratory.

The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025



Analysis/Test Report

Customer Name : Centara Grand Mirage Beach Resort Pattaya

Address : 277 Moo 5, Naklua, Banglamung, Pattaya, Chonburi 20150, Thailand

Sampling Site : Centara Grand (Pattaya)

Sample Type : Drinking Water

Sampling by : Test Tech Co., Ltd.

Sampling Method : Grab

Sampling Date : 13/03/2024

Sampling Time : 10:30 AM

Received Date : 13/03/2024

Analytical Date : 13 - 19/03/2024

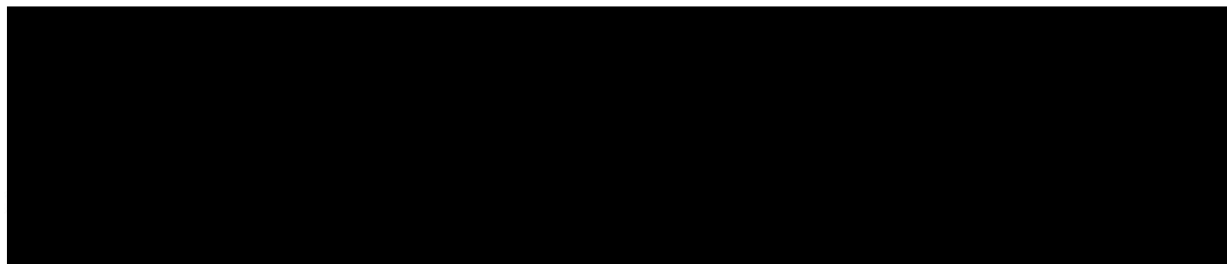
Report Date : 21/03/2024

Report No. : R07011/67

Parameters	Unit	Method	TW06199 /67	TW06200 /67	TW06201 /67	Standard ^a
			Drinking Water (Canteen)	Drinking Water (Oasis Kitchen)	Drinking Water (Guest Room 1602)	
Coliform Bacteria	MPN/100 mL	SM 2023 (9221 B)	< 1.1	< 1.1	< 1.1	< 2.2
<i>E. coli</i>	/100 mL	SM 2023 (9221 F, Detection)	not found	not found	not found	negative
Sample Condition		Observation	Clear	Clear	Clear	

Remark : 1. SM 2023 : Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023

2. a : Notification of the Ministry of Public Health, No. 284 , B.E. 2547 (2004) on "Drinking Water in Sealed Container" (No.5)
(Included No. 135 , B.E. 2534 (1991) and No. 61, B.E. 2524 (1981))



21/03/2024

21/03/2024

Reported results refer to the sample as received only.

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The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025

Analysis/Test Report

Customer Name : Centara Grand Mirage Beach Resort Pattaya

Address : 277 Moo 5, Naklua, Banglamung, Pattaya, Chonburi 20150, Thailand

Sampling Site : Centara Grand (Pattaya)

Sample Type : Swimming Water

Sampling by : Test Tech Co., Ltd.

Sampling Method : Grab

Sampling Date : 13/03/2024

Sampling Time : 10:30 AM

Received Date : 13/03/2024

Analytical Date : 13 - 18/03/2024

Report Date : 19/03/2024

Report No. : R06865/67

Parameters	Unit	Method	TW06202 /67	TW06203 /67	Standard ^a
			Main Pool	Lab Pool	
pH (25°C)	-	Based on SM 2023 (4500-H ⁺ B)	7.6	7.7	7.2-8.4
Residual Chlorine	mg/L as Cl ₂	DPD Colorimetric	0.89	0.92	0.6-1.0
Sample Condition			Clear	Clear	

Remark : 1. SM 2023 : Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023

2. a : Bangkok Metropolitan Administration published in the Royal Government Gazette, Vol.104 ,Part 205,dated October 14, B.E.2530 (1987)

19/03/2024

19/03/2024

Reported results refer to the sample as received only.

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The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025

Analysis/Test Report

Customer Name : Centara Grand Mirage Beach Resort Pattaya

Address : 277 Moo 5, Naklua, Banglamung, Pattaya, Chonburi 20150, Thailand

Sampling Site : Centara Grand (Pattaya)

Sample Type : Swimming Water

Sampling by : Test Tech Co., Ltd.

Sampling Method : Grab

Sampling Date : 13/03/2024

Sampling Time : 10:30 AM

Received Date : 13/03/2024

Analytical Date : 13 - 18/03/2024

Report Date : 19/03/2024

Report No. : R06866/67

Parameters	Unit	Method	TW06202 /67	TW06203 /67	Standard ^a
			Main Pool	Lab Pool	
Coliform Bacteria	MPN/100 mL	SM 2023 (9221 B)	< 1.8	< 1.8	< 10
<i>E. coli</i>	/100 mL	SM 2023 (9221 F, Detection)	not found	not found	negative
Sample Condition		Observation	Clear	Clear	

Remark : 1. SM 2023 : Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 20232. a : Bangkok Metropolitan Administration published in the Royal Government Gazette, Vol.104 ,Part 205,dated October 14,
B.E.2530 (1987)

19/03/2024

19/03/2024

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The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025

Analysis/Test Report

Customer Name : Centara Grand Mirage Beach Resort Pattaya

Address : 277 Moo 5, Naklua, Banglamung, Pattaya, Chonburi 20150, Thailand

Sampling Site : Centara Grand (Pattaya)

Sample Type : Swimming Water

Sampling by : Test Tech Co., Ltd.

Sampling Method : Grab

Sampling Date : 13/03/2024

Sampling Time : 10:30 AM

Received Date : 13/03/2024

Analytical Date : 13 - 18/03/2024

Report Date : 19/03/2024

Report No. : R06867/67

Parameters	Unit	Method	TW06204 /67	TW06205 /67	Standard ^a
			Lazy Pool	18 th Flr Pool	
pH (25°C)	-	Based on SM 2023 (4500-H ⁺ B)	7.4	7.6	7.2-8.4
Residual Chlorine	mg/L as Cl ₂	DPD Colorimetric	0.92	0.89	0.6-1.0
Sample Condition		Observation	Clear	Clear	

Remark : 1. SM 2023 : Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023

2. a : Bangkok Metropolitan Administration published in the Royal Government Gazette, Vol.104 ,Part 205,dated October 14, B.E.2530 (1987)

19/03/2024

19/03/2024

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Analysis/Test Report

Customer Name : Centara Grand Mirage Beach Resort Pattaya

Address : 277 Moo 5, Naklua, Banglamung, Pattaya, Chonburi 20150, Thailand

Sampling Site : Centara Grand (Pattaya)

Sample Type : Swimming Water

Sampling by : Test Tech Co., Ltd.

Sampling Method : Grab

Sampling Date : 13/03/2024

Sampling Time : 10:30 AM

Received Date : 13/03/2024

Analytical Date : 13 - 18/03/2024

Report Date : 19/03/2024

Report No. : R06868/67

Parameters	Unit	Method	TW06204 /67	TW06205 /67	Standard ^a
			Lazy Pool	18 th Flr Pool	
Coliform Bacteria	MPN/100 mL	SM 2023 (9221 B)	< 1.8	< 1.8	< 10
<i>E. coli</i>	/100 mL	SM 2023 (9221 F, Detection)	not found	not found	negative
Sample Condition		Observation	Clear	Clear	

Remark : 1. SM 2023 : Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 20232. a : Bangkok Metropolitan Administration published in the Royal Government Gazette, Vol.104 ,Part 205,dated October 14,
B.E.2530 (1987)

19/03/2024

19/03/2024

Reported results refer to the sample as received only.

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Analysis/Test Report

Customer Name : Centara Grand Mirage Beach Resort Pattaya

Address : 277 Moo 5, Naklua, Banglamung, Pattaya, Chonburi 20150, Thailand

Sampling Site : Centara Grand (Pattaya)

Sample Type : Ice

Sampling by : Test Tech Co., Ltd.

Sampling Method : Grab

Sampling Date : 13/03/2024

Sampling Time : 10:30 AM

Received Date : 13/03/2024

Analytical Date : 13 - 18/03/2024

Report Date : 20/03/2024

Report No. : R06952/67

Parameters	Unit	Method	TW06206 /67	TW06207 /67	Standard ^a
			Canteen (Cube)	Banquet (Flake)	
Coliform Bacteria	MPN/100 mL	SM 2023 (9221 B)	< 1.1	< 1.1	< 2.2
<i>E. coli</i>	/100 mL	SM 2023 (9221 F, Detection)	not found	not found	negative
Sample Condition		Observation	Clear	Clear	

Remark : 1. SM 2023 : Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 20232. a : Notification of the Ministry of Public Health, No. 284 , B.E. 2547 (2004) on "Drinking Water in Sealed Container" (No.5)
(Included No. 135 , B.E. 2534 (1991) and No. 61, B.E. 2524 (1981))

20/03/2024

20/03/2024

Reported results refer to the sample as received only.

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The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025

Analysis/Test Report

Customer Name : Centara Grand Mirage Beach Resort Pattaya

Address : 277 Moo 5, Naklua, Banglamung, Pattaya, Chonburi 20150, Thailand

Sampling Site : Centara Grand (Pattaya)

Sample Type : Ice

Sampling by : Test Tech Co., Ltd.

Sampling Method : Grab

Sampling Date : 13/03/2024

Sampling Time : 10:30 AM

Received Date : 13/03/2024

Analytical Date : 13 - 18/03/2024

Report Date : 20/03/2024

Report No. : R06953/67

Parameters	Unit	Method	TW06208 /67	TW06209 /67	Standard ^a
			Flames	Oasis Kitchen (Flake)	
Coliform Bacteria	MPN/100 mL	SM 2023 (9221 B)	< 1.1	< 1.1	< 2.2
<i>E. coli</i>	/100 mL	SM 2023 (9221 F, Detection)	not found	not found	negative
Sample Condition		Observation	Clear	Clear	

Remark : 1. SM 2023 : Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 20232. a : Notification of the Ministry of Public Health, No. 284 , B.E. 2547 (2004) on "Drinking Water in Sealed Container" (No.5)
(Included No. 135 , B.E. 2534 (1991) and No. 61, B.E. 2524 (1981))

20/03/2024

20/03/2024

Reported results refer to the sample as received only.

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The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025

TESTING
NO.0001

Analysis/Test Report

Customer Name : Centara Grand Mirage Beach Resort Pattaya

Address : 277 Moo 5, Naklua, Banglamung, Pattaya, Chonburi 20150, Thailand

Sampling Site : Centara Grand (Pattaya)

Sample Type : Waste Water

Sampling by : Test Tech Co., Ltd.

Sampling Method : Grab

Sampling Date : 13/03/2024

Sampling Time : 10:30 AM

Received Date : 13/03/2024

Analytical Date : 13 - 20/03/2024

Report Date : 22/03/2024

Report No. : R07142/67

Parameters	Unit	Method	TW06210 /67	Standard ^a
			Effluent	
pH	-	SM 2023 (4500-H ⁺ B)	6.8	-
BOD	mg/L	SM 2023 (5210 B, 4500-O G)	541	≤ 1000
Total Suspended Solids	mg/L	SM 2023 (2540 D)	291	-
* Oil & Grease	mg/L	SM 2023 (5520 D)	150	-
Sample Condition		Observation	Light Yellow, Cloud	

Remark : 1. SM 2023 : Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023

2. Test marked " * " on this report are not included in scope of Accreditation

3. a : ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 22 (พ.ศ. 2544) เรื่อง กำหนดอัตราค่าบริการบำบัดน้ำเสียของระบบบำบัดน้ำเสียรวมเมืองพัทยา

22/03/2024

22/03/2024

Reported results refer to the sample as received only.

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The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025