

ประเมินผลคุณภาพน้ำใช้ น้ำดื่ม และน้ำเสีย

เสนอ

Centara Grand Mirage Beach Resort Pattaya

มกราคม 2568

บริษัท เทสต์ เทค จำกัด

30, 32 ซอยพระรามที่ 2 ซอย 63 ถนนพระรามที่ 2 แขวงแสมดำ เขตบางขุนเทียน กรุงเทพฯ 10150



SRR NO. 68A0384

Messrs : Centara Grand Mirage Beach Resort Pattaya

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

Factory Site : Centara Grand Pattaya Date : 3 กุมภาพันธ์ 2568

Recommendation For : คุณภาพน้ำใช้และน้ำดื่มประจำเดือนมกราคม 2568

Report Reference : R01794-1802/68, R01442-43/68, R01176-79/68, R01384-85/68, R01554/68

RECOMMENDATION

1. คุณภาพน้ำใช้

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

หมายเหตุ : การดูแล

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

1.2 Soft Water (Main Point) :

- pH ปกติ, ความขุ่นต่ำ
- ค่าความกระด้าง มีค่าต่ำ
- ค่าเหล็กไม่พบ
- ค่าแมงกานีสไม่พบ
- ตรวจไม่พบเชื้อ Coliform, E.Coli
- คุณภาพน้ำทางเคมีอื่น ๆ ปกติอยู่ในมาตรฐาน

หมายเหตุ : การดูแลระบบ

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

1.3 Hot Water System (Main Point) :

- ค่า pH ปกติ, ความขุ่นต่ำ
- ค่าความกระด้างต่ำ
- ค่าเหล็กไม่พบ
- ค่าแมงกานีสไม่พบ
- ตรวจไม่พบ Coliform/E.Coli

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

1.4 Guest Room Usage Water (Cold Water) : คุณภาพน้ำเย็นห้องพักแขก 2 จุด North 1115

และ North 1119 พบค่าดังนี้

- ค่าความกระด้างและคลอรีนไค้ใกล้เคียงน้ำในถังพัก
- ค่าความขุ่นต่ำ
- ค่าเหล็กไม่พบ
- ค่าแมงกานีสไม่พบ
- ตรวจไม่พบ Coliform/ E.Coli

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

1.5 Guest Room Usage Water (Hot Water) : คุณภาพน้ำ 2 จุด คือ North 1115

และ North 1119 พบค่าดังนี้

- ค่าความกระด้างและคลอรีนไค้ใกล้เคียงน้ำในถังพัก
- คุณภาพน้ำทางเคมีพบความขุ่นต่ำ
- ค่าเหล็กไม่พบ
- ค่าแมงกานีสไม่พบ
- ตรวจไม่พบ Coliform/E.Coli

หมายเหตุ : ควร Flushing ระบบท่อ ก่อนเปิดใช้ห้องพักเพื่อป้องกันการสะสมของตะกอนเหล็กในเส้นท่อ

1.6 Cooling :

- 1) คุณภาพน้ำมีค่าการนำไฟฟ้าสูงกว่ามาตรฐาน
- 2) ค่าความกระด้างสูงกว่ามาตรฐาน
- 3) ค่าเหล็กตรวจไม่พบ, ค่าแมงกานีสไม่พบ
- 4) เคมีป้องกันตะกรัน (phosphate) มีค่าต่ำ ควรตรวจสอบการเติมเคมี
- 5) ตรวจไม่พบ Legionella spp.

การดูแล

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

1.7 Chilled Water : คุณภาพน้ำมีค่าเหล็กและ pH สูง ค่า Nitrite ตรวจพบ มีค่าต่ำกว่าเกณฑ์ควบคุม

หมายเหตุ : - ควรเติมเคมีเพิ่มในรอบการบำรุงรักษาถัดไป

2. น้ำดื่ม

- 1) Canteen : ค่าความกระด้างอยู่ในเกณฑ์มาตรฐาน ไม่พบค่าเหล็กและแมงกานีส
คุณภาพน้ำทางเคมีอื่นๆ อยู่ในมาตรฐาน ตรวจไม่พบ Coliform/E.Coli
- 2) Oasis Kitchen : ค่าความกระด้างอยู่ในเกณฑ์มาตรฐาน ไม่พบค่าเหล็กและแมงกานีส
คุณภาพน้ำทางเคมีอื่นๆ อยู่ในมาตรฐาน ตรวจไม่พบ Coliform/E.Coli
- 3) Guest Room (1115) : ค่าความกระด้างอยู่ในเกณฑ์มาตรฐาน ไม่พบค่าเหล็กและแมงกานีส
คุณภาพน้ำทางเคมีอื่นๆ อยู่ในมาตรฐาน ตรวจไม่พบ Coliform/E.Coli

การดูแล :

- ล้างระบบกรอง Softener และล้างส่ม้าเสมอ เพื่อลดค่าความกระด้าง
- Flushing line ด้วยน้ำหลังเติมคลอรีน เพื่อฆ่าเชื้อแบคทีเรียที่สะสมในระบบ
- ตรวจสอบความสะอาดของถังและแท่งคาร์บอนน้ำดื่ม

3. Swimming Pool :

1) Main Pool :

- pH ปกติ
- คลอรีนตรวจพบ 0.87 pm
- ตรวจไม่พบ Coliform/ E.Coli

2) Lab Pool :

- pH ปกติ
- คลอรีนตรวจ 0.91 ppm
- ตรวจไม่พบ Coliform/ E.Coli

3) Lazy Pool :

- pH ปกติ
- คลอรีนตรวจพบ 0.87 ppm
- ตรวจไม่พบ Coliform/E.Coli

4) 18th Flr Pool :

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

หมายเหตุ : การดูแล

1. ควรตรวจสอบ pH ส่ม้าเสมอในกรณีที่มีค่า pH ทำให้ปรับด้วยโซดาไฟหรือ โซดาแอช และปรับด้วยกรดเกลือในกรณีค่า pH สูง
2. ตรวจสอบคลอรีนและเติมให้ส่ม้าเสมอ
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. เติมคลอรีนในน้ำประปา และล้างระบบผลิตน้ำแข็งด้วยน้ำหลังเติมคลอรีน
- 2. ตรวจสอบความสะอาดระบบผลิตน้ำแข็ง
- 3. ภาชนะตักน้ำแข็งต้องสะอาด และถังบรรจุต้องสะอาด และควรล้างทุกวัน
- 4. อย่าแช่อาหารปะปนในถังบรรจุน้ำแข็ง
- 5. ในกรณีน้ำแข็งซื้อ ควรตรวจสอบถุงบรรจุ

5. น้ำเสียออกจากระบบ : ลักษณะน้ำเหลืองจางขุ่น BOD ~ 63 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 : 16/01/2025

Sampling Time : 10:00 AM

Received Date : 16/01/2025

Analytical Date : 16 - 27/01/2025

Report Date : 28/01/2025

Report No. : R01794/68

Parameters	Unit	Method	TW01154 /68	TW01155 /68	TW01156 /68	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	7.1	7.7	6.5-8.5
Turbidity [#]	NTU	SM 2023 (2130 B)	1.12	< 0.50	< 0.50	5
Conductivity [#]	uS/cm	SM 2023 (2510 B)	363	355	356	-
Dissolved Solids [*]	mg/L as NaCl	Electrical Conductivity	218	213	214	1000
Total Hardness [@]	mg/L as CaCO ₃	SM 2023 (2340 C)	92	88	94	300
Chloride [@]	mg/L as Cl ⁻	SM 2023 (4500-Cl ⁻ B)	36	36	36	250
Total Iron [#]	mg/L as Fe	SM 2023 (3500-Fe B)	0.14	< 0.10	< 0.10	0.3
Manganese [#]	mg/L	SM 2023 (3500-Mn B)	0.06	< 0.04	< 0.04	0.1
Nitrate [#]	mg/L as NO ₃ ⁻	SM 2023 (4500-NO ₃ ⁻ E)	12.19	11.86	11.31	50
Sulfate [#]	mg/L as SO ₄ ²⁻	Based on SM 2023 (4500-SO ₄ ²⁻ E)	39.58	37.40	41.50	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-DMSQ.
 4. Test marked " * " on this report are not included in scope of Accreditation
 5. a : Specification for Water Supply Quality of Metropolitan Waterworks Authority.

Analyst

28/01/2025

Technical Manager

28/01/2025

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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



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Sampling by : Test Tech Co., Ltd.

Sampling Date : 16/01/2025

Received Date : 16/01/2025

Report Date : 28/01/2025

Sample Type : Usage Water

Sampling Method : Grab

Sampling Time : 10:00 AM

Analytical Date : 16 - 27/01/2025

Report No. : R01795/68

Parameters	Unit	Method	TW01154 /68	TW01155 /68	TW01156 /68	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.

Analyst

28/01/2025

28/01/2025

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Sampling Site : Centara Grand (Pattaya)

Sample Type : Usage Water

Sampling by : Test Tech Co., Ltd.

Sampling Method : Grab

Sampling Date : 16/01/2025

Sampling Time : 10:00 AM

Received Date : 16/01/2025

Analytical Date : 16 - 27/01/2025

Report Date : 28/01/2025

Report No. : R01796/68

Parameters	Unit	Method	TW01157 /68	TW01158 /68	Standard ^a
			Guest Room Cold Water (North 1115)	Guest Room Cold Water (North 1119)	
pH (25°C) [#]	-	Based on SM 2023 (4500-H ⁺ B)	7.5	7.5	6.5-8.5
Turbidity [#]	NTU	SM 2023 (2130 B)	< 0.50	< 0.50	5
Conductivity [#]	uS/cm	SM 2023 (2510 B)	362	364	-
Dissolved Solids [*]	mg/L as NaCl	Electrical Conductivity	217	218	1000
Total Hardness [@]	mg/L as CaCO ₃	SM 2023 (2340 C)	96	96	300
Chloride [@]	mg/L as Cl ⁻	SM 2023 (4500-Cl ⁻ B)	36	35	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)	12.73	12.30	50
Sulfate [#]	mg/L as SO ₄ ²⁻	Based on SM 2023 (4500-SO ₄ ²⁻ E)	38.22	39.86	250
Sample Condition		Observation	Clear	Clear	

- Remark :
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Sample Type : Usage Water

Sampling Method : Grab

Sampling Time : 10:00 AM

Analytical Date : 16 - 27/01/2025

Report No. : R01797/68

Parameters	Unit	Method	TW01157 /68	TW01158 /68	Standard ^a
			Guest Room Cold Water (North 1115)	Guest Room Cold Water (North 1119)	
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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Sample Type : Usage Water

Sampling Method : Grab

Sampling Time : 10:00 AM

Analytical Date : 16 - 27/01/2025

Report No. : R01798/68

Parameters	Unit	Method	TW01159 /68	TW01160 /68	Standard ^a
			Guest Room Hot Water (North 1115)	Guest Room Hot Water (North 1119)	
pH (25°C) [#]	-	Based on SM 2023 (4500-H ⁺ B)	7.4	7.3	6.5-8.5
Turbidity [#]	NTU	SM 2023 (2130 B)	< 0.50	< 0.50	5
Conductivity [#]	uS/cm	SM 2023 (2510 B)	357	356	-
Dissolved Solids	mg/L as NaCl	Electrical Conductivity	214	214	1000
Total Hardness [@]	mg/L as CaCO ₃	SM 2023 (2340 C)	98	98	300
Chloride [@]	mg/L as Cl ⁻	SM 2023 (4500-Cl ⁻ B)	36	36	250
Total Iron [#]	mg/L as Fe	SM 2023 (3500-Fe B)	0.14	< 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)	11.75	11.86	50
Sulfate [#]	mg/L as SO ₄ ²⁻	Based on SM 2023 (4500-SO ₄ ²⁻ E)	37.40	38.77	250
Sample Condition		Observation	Clear	Clear	

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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)

Sampling by : Test Tech Co., Ltd.

Sampling Date : 16/01/2025

Received Date : 16/01/2025

Report Date : 28/01/2025

Sample Type : Usage Water

Sampling Method : Grab

Sampling Time : 10:00 AM

Analytical Date : 16 - 27/01/2025

Report No. : R01799/68

Parameters	Unit	Method	TW01159 /68	TW01160 /68	Standard ^a
			Guest Room Hot Water (North 1115)	Guest Room Hot Water (North 1119)	
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.

Analyst

28/01/2025

Technical Manager

28/01/2025

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

ISO/IEC 17025
Accreditation No. 1201/64TESTING
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 : Usage Water

Sampling by : Test Tech Co., Ltd.

Sampling Method : Grab

Sampling Date : 16/01/2025

Sampling Time : 10:00 AM

Received Date : 16/01/2025

Analytical Date : 16 - 27/01/2025

Report Date : 28/01/2025

Report No. : R01800/68

Parameters	Unit	Method	TW01161 /68	Standard ^a (Cooling Water)
			Cooling Water	
pH (25°C) [#]	-	Based on SM 2023 (4500-H ⁺ B)	8.5	8.5 - 9.5
Conductivity [#]	uS/cm	SM 2023 (2510 B)	2710	< 2500
Dissolved Solids	mg/L as NaCl	Electrical Conductivity	1626	< 2000
P-Alkalinity	mg/L as CaCO ₃	Titration	5	-
M-Alkalinity	mg/L as CaCO ₃	Titration	175	-
Total Hardness [@]	mg/L as CaCO ₃	SM 2023 (2340 C)	650	< 100
Chloride [@]	mg/L as Cl ⁻	SM 2023 (4500-Cl ⁻ B)	370	< 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)	502	-
Silica	mg/L as SiO ₂	SM 2023 (4500-SiO ₂ C)	60.93	-
Total Phosphorus	mg/L as P	Stannous Chloride	0.14	-
Sample Condition		Observation	Colorless, 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-DMSO.
4. Test marked " * " on this report are not included in scope of Accreditation
5. a : เกณฑ์ควบคุมคุณภาพน้ำในระบบต่าง ๆ

Analyst

28/01/2025

Technical Manager

28/01/2025

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 : Usage Water

Sampling by : Test Tech Co., Ltd.

Sampling Method : Grab

Sampling Date : 16/01/2025

Sampling Time : 10:00 AM

Received Date : 16/01/2025

Analytical Date : 16 - 27/01/2025

Report Date : 28/01/2025

Report No. : R01801/68

Parameters	Unit	Method	TW01161 /68
			Cooling Water
Legionella spp.	/L	ISO 11731 : 2017	not detected
Sample Condition		Observation	Colorless, Brown Particles

Analyst

28/01/2025

Technical Manager

28/01/2025

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)

Sampling by : Test Tech Co., Ltd.

Sampling Date : 16/01/2025

Received Date : 16/01/2025

Report Date : 28/01/2025

Sample Type : Usage Water

Sampling Method : Grab

Sampling Time : 10:00 AM

Analytical Date : 16 - 27/01/2025

Report No. : R01802/68

Parameters	Unit	Method	TW01162 /68	Standard ^a
			Chilled Water	(Chilled Water)
* pH (25°C)	-	Based on SM 2023 (4500-H ⁺ B)	9.8	7.5 - 9.5
Conductivity [#]	uS/cm	SM 2023 (2510 B)	852	-
* Dissolved Solids	mg/L as NaCl	Electrical Conductivity	511	-
* P-Alkalinity	mg/L as CaCO ₃	Titration	30	-
* M-Alkalinity	mg/L as CaCO ₃	Titration	115	-
Total Hardness [@]	mg/L as CaCO ₃	SM 2023 (2340 C)	52	-
Chloride [@]	mg/L as Cl ⁻	SM 2023 (4500-Cl ⁻ B)	54	-
* Total Iron	mg/L as Fe	SM 2023 (3500-Fe B)	2.15	< 1.0
Manganese [#]	mg/L	SM 2023 (3500-Mn B)	0.06	-
Sulfate [#]	mg/L as SO ₄ ²⁻	Based on SM 2023 (4500-SO ₄ ²⁻ E)	49.69	-
Silica [#]	mg/L as SiO ₂	SM 2023 (4500-SiO ₂ C)	4.08	-
* Nitrite	mg/L as NO ₂ ⁻	SM 2023 (4500-NO ₂ ⁻ B)	125	500 - 1000
Sample Condition		Observation	Light Yellow, a little bit 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)

Analyst

28/01/2025

Technical Manager

28/01/2025

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

ISO/IEC 17025
Accreditation No. 1201/54TESTING
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 : Drinking Water

Sampling by : Test Tech Co., Ltd.

Sampling Method : Grab

Sampling Date : 16/01/2025

Sampling Time : 10:00 AM

Received Date : 16/01/2025

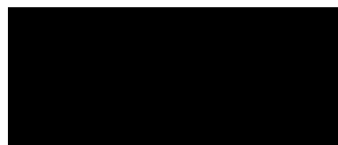
Analytical Date : 16 - 21/01/2025

Report Date : 23/01/2025

Report No. : R01442/68

Parameters	Unit	Method	TW01163 /68	TW01164 /68	TW01165 /68	Standard ^a
			Drinking Water (Canteen)	Drinking Water (Oasis Kitchen)	Drinking Water (Guest Room 1115)	
pH (25°C) [#]	-	Based on SM 2023 (4500-H ⁺ B)	7.5	7.5	7.5	6.5-8.5
Turbidity [#]	NTU	SM 2023 (2130 B)	< 0.50	< 0.50	< 0.50	≤ 5.0
Conductivity [#]	uS/cm	SM 2023 (2510 B)	356	330	310	-
Dissolved Solids	mg/L as NaCl	Electrical Conductivity	214	198	186	-
Total Hardness [@]	mg/L as CaCO ₃	SM 2023 (2340 C)	90	70	52	≤ 100.0
Chloride [@]	mg/L as Cl ⁻	SM 2023 (4500-Cl ⁻ B)	36	30	25	≤ 250.0
Total Iron [#]	mg/L as Fe	SM 2023 (3500-Fe B)	< 0.10	< 0.10	< 0.10	≤ 0.3
Manganese [#]	mg/L	SM 2023 (3500-Mn B)	< 0.04	< 0.04	< 0.04	≤ 0.05
Nitrate Nitrogen [#]	mg/L as NO ₃ ⁻ N	SM 2023 (4500-NO ₃ ⁻ E)	2.73	2.82	1.87	≤ 4.0
Sulfate [#]	mg/L as SO ₄ ²⁻	Based on SM 2023 (4500-SO ₄ ²⁻ E)	41.22	30.03	23.01	≤ 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-DMSO.
 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))



Analyst

23/01/2025



Technical Manager

23/01/2025

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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)

Sampling by : Test Tech Co., Ltd.

Sampling Date : 16/01/2025

Received Date : 16/01/2025

Report Date : 23/01/2025

Sample Type : Drinking Water

Sampling Method : Grab

Sampling Time : 10:00 AM

Analytical Date : 16 - 21/01/2025

Report No. : R01443/68

Parameters	Unit	Method	TW01163 /68	TW01164 /68	TW01165 /68	Standard ^a
			Drinking Water (Canteen)	Drinking Water (Oasis Kitchen)	Drinking Water (Guest Room 1115)	
Coliform Bacteria <i>E. coli</i>	MPN/100 mL /100 mL	SM 2023 (9221 B) SM 2023 (9221 F, Detection)	< 1.1 not found	< 1.1 not found	< 1.1 not found	< 2.2 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., 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))

Analyst

23/01/2025

บริษัท เทสท์ เทค จำกัด

Technical Manager

23/01/2025

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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)

Sampling by : Test Tech Co., Ltd.

Sampling Date : 16/01/2025

Received Date : 16/01/2025

Report Date : 21/01/2025

Sample Type : Swimming Water

Sampling Method : Grab

Sampling Time : 10:00 AM

Analytical Date : 16 - 20/01/2025

Report No. : R01176/68

Parameters	Unit	Method	TW01170 /68	TW01171 /68	Standard ^a
			Main Pool	Lab Pool	
pH (25°C)	-	Based on SM 2023 (4500-H ⁺ B)	7.6	7.5	7.2-8.4
Residual Chlorine	mg/L as Cl ₂	DPD Colorimetric	0.87	0.91	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., 20232. a : Bangkok Metropolitan Administration published in the Royal Government Gazette, Vol.104 ,Part 205,dated October 14,
B.E.2530 (1987)

Analyst

21/01/2025

บริษัท เทสท์ เทค จำกัด

Technical Manager

21/01/2025

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



Accreditation No. 1201/54

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)

Sampling by : Test Tech Co., Ltd.

Sampling Date : 16/01/2025

Received Date : 16/01/2025

Report Date : 21/01/2025

Sample Type : Swimming Water

Sampling Method : Grab

Sampling Time : 10:00 AM

Analytical Date : 16 - 20/01/2025

Report No. : R01177/68

Parameters	Unit	Method	TW01170 /68	TW01171 /68	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., 2023

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

Analyst

21/01/2025

Technical Manager

21/01/2025

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 : Swimming Water

Sampling by : Test Tech Co., Ltd.

Sampling Method : Grab

Sampling Date : 16/01/2025

Sampling Time : 10:00 AM

Received Date : 16/01/2025

Analytical Date : 16 - 20/01/2025

Report Date : 21/01/2025

Report No. : R01178/68

Parameters	Unit	Method	TW01172 /68	TW01173 /68	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	0.87	0.92	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., 20232. a : Bangkok Metropolitan Administration published in the Royal Government Gazette, Vol.104 ,Part 205,dated October 14,
B.E.2530 (1987)

Analyst

21/01/2025

Technical Manager

21/01/2025

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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 : 16/01/2025

Sampling Time : 10:00 AM

Received Date : 16/01/2025

Analytical Date : 16 - 20/01/2025

Report Date : 21/01/2025

Report No. : R01179/68

Parameters	Unit	Method	TW01172 /68	TW01173 /68	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)

Analyst

21/01/2025

Technical Manager

21/01/2025

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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 : 16/01/2025

Sampling Time : 10:00 AM

Received Date : 16/01/2025

Analytical Date : 16 - 20/01/2025

Report Date : 22/01/2025

Report No. : R01384/68

Parameters	Unit	Method	TW01166 /68	TW01167 /68	Standard ^a
			Canteen (Cube)	Banquet (Flake)	
Coliform Bacteria <i>E. coli</i>	MPN/100 mL /100 mL	SM 2023 (9221 B) SM 2023 (9221 F, Detection)	< 1.1 not found	< 1.1 not found	< 2.2 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))

Analyst

22/01/2025

Technical Manager

22/01/2025

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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 : 16/01/2025

Sampling Time : 10:00 AM

Received Date : 16/01/2025

Analytical Date : 16 - 20/01/2025

Report Date : 22/01/2025

Report No. : R01385/68

Parameters	Unit	Method	TW01168 /68	TW01169 /68	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))

Analyst

22/01/2025

Technical Manager

22/01/2025

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)

Sampling by : Test Tech Co., Ltd.

Sampling Date : 16/01/2025

Received Date : 16/01/2025

Report Date : 24/01/2025

Sample Type : Waste Water

Sampling Method : Grab

Sampling Time : 10:00 AM

Analytical Date : 16 - 23/01/2025

Report No. : R01554/68

Parameters	Unit	Method	TW01174 /68	Standard ^a
			Effluent	
pH	-	SM 2023 (4500-H ⁺ B)	7.3	-
BOD	mg/L	SM 2023 (5210 B, 4500-O G)	63	≤ 1000
Total Suspended Solids	mg/L	SM 2023 (2540 D)	95	-
Oil & Grease	mg/L	SM 2023 (5520 D)	8.9	-
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. a : ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 22 (พ.ศ. 2544) เรื่อง กำหนดอัตราค่าบริการบำบัดน้ำเสียของระบบบำบัดน้ำเสียรวมเมืองพัทยา

Analyst

24/01/2025

Technical Manager

24/01/2025

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