

ประเมินผลคุณภาพน้ำใช้ น้ำดื่ม และน้ำเสีย

เสนอ

Centara Grand Mirage Beach Resort Pattaya

กรกฎาคม 2568

บริษัท เทสต์ เทค จำกัด

30, 32 ซอยพระรามที่ 2 ซอย 63 ถนนพระรามที่ 2 แขวงแสมดำ เขตบางขุนเทียน กรุงเทพฯ 10150
Tel. 0-2893-4211 - 17 Fax : 0-2893-4218



Messrs : Centara Grand Mirage Beach Resort Pattaya

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

Factory Site : Centara Grand Pattaya Date : 4 กรกฎาคม 2568

Recommendation For : คุณภาพน้ำใช้และน้ำดื่มประจำเดือนกรกฎาคม 2568

Report Reference : R16359-67/68, R15945-46/68, R15812-17/68, R15947/68

RECOMMENDATION

1. คุณภาพน้ำใช้

1.1 Storage Tank : คุณภาพน้ำ มีค่าความขุ่นต่ำ ค่าเหล็กและแมงกานีสไม่พบ, ค่าความกระด้างมีค่าต่ำ, ค่าคลอไรด์มีค่าต่ำ ตรวจไม่พบเชื้อ Coliform/E.Coli

หมายเหตุ : การดูแล

- เติมคลอรีนในระบบผลิตน้ำ และน้ำชื้อก่อนเก็บในถังพัก
- 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
- ควรเติมคลอรีนในถังพักน้ำใช้ และ Regenerate Softener ด้วยน้ำหลังเติมคลอรีน เพื่อลดการสะสมของเหล็กใน Softener และฆ่าเชื้อที่สะสมในระบบกรอง

1.3 Hot Water System (Main Point) :

- ค่า pH ปกติ, ความขุ่นต่ำ
- ค่าความกระด้างต่ำ
- ค่าเหล็กต่ำ
- 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 South A 306

และ South A 308 พบค่าดังนี้

- ค่าความกระด้างและคลอไรด์ใกล้เคียงน้ำในถังพัก
- 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 South A 306

และ South A 308 พบค่าดังนี้

- ค่าความกระด้างและคลอไรด์ใกล้เคียงน้ำในถังพัก
- ค่าความขุ่นต่ำ
- ค่าเหล็กต่ำ
- ค่าแมงกานีสไม่พบ
- ตรวจไม่พบ Coliform/E.Coli

หมายเหตุ : ควร Flushing ระบบท่อ ก่อนเปิดใช้ห้องพักเพื่อป้องกันการสะสมของ
ตะกอนเหล็กในเส้นท่อ

1.6 Cooling :

- 1) คุณภาพน้ำมีค่าการนำไฟฟ้าต่ำ
- 2) ค่าความกระด้างสูงกว่ามาตรฐานเล็กน้อย
- 3) ค่าเหล็กตรวจไม่พบ, ค่าแมงกานีสไม่พบ
- 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 : คุณภาพน้ำมีค่าเหล็กอยู่ในเกณฑ์ควบคุม pH สูง ค่า Nitrite ตรวจพบ มีค่าต่ำกว่าเกณฑ์
ควบคุม

หมายเหตุ : - ควรเติมเคมีเพิ่มในรอบการบำรุงรักษาถัดไป

2. น้ำดื่ม

- 1) Canteen : ค่าความกระด้างสูงกว่าเกณฑ์มาตรฐาน ไม่พบค่าเหล็กและแมงกานีส
คุณภาพน้ำทางเคมีอื่นๆ อยู่ในมาตรฐาน ตรวจไม่พบ Coliform/E.Coli
- 2) Oasis Kitchen : ค่าความกระด้างสูงกว่าเกณฑ์มาตรฐาน ไม่พบค่าเหล็กและแมงกานีส
คุณภาพน้ำทางเคมีอื่นๆ อยู่ในมาตรฐาน ตรวจไม่พบ Coliform/E.Coli
- 3) Guest Room (306) : ค่าความกระด้างอยู่ในเกณฑ์มาตรฐาน ไม่พบค่าเหล็กและแมงกานีส
คุณภาพน้ำทางเคมีอื่นๆ อยู่ในมาตรฐาน ตรวจไม่พบ Coliform/E.Coli

การดูแล :

- ล้างระบบกรอง Softener และล้างส้วมเพื่อลดค่าความกระด้าง
- 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
- คลอรีนตรวจพบ 0.87 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 0.87 ppm
- ตรวจไม่พบ Coliform/E.Coli

หมายเหตุ : การดูแล

1. ควรตรวจสอบ pH ส้วมเสมอในกรณีค่า pH ต่ำให้ปรับด้วยโซดาไฟหรือโซดาแอช และปรับด้วยกรดเกลือในกรณีค่า pH สูง
2. ตรวจสอบคลอรีนและเติมให้ส้วมเสมอ
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. อย่าเข้าหารปะปนในถังบรรจุน้ำแข็ง
- 5. ในกรณีน้ำแข็งซื้อ ควรตรวจสอบถุงบรรจุ

5. น้ำเสียออกจากระบบ : ลักษณะน้ำเหลืองจางตะกอนน้ำตาล 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 : 17/07/2025

Sampling Time : 10:00 AM

Received Date : 17/07/2025

Analytical Date : 17 - 29/07/2025

Report Date : 30/07/2025

Report No. : R16359/68

Parameters	Unit	Method	TW14299 /68	TW14300 /68	TW14301 /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)	7.3	7.0	7.3	6.5-8.5
Turbidity [#]	NTU	SM 2023 (2130 B)	< 0.50	< 0.50	< 0.50	5
Conductivity [#]	uS/cm	SM 2023 (2510 B)	510	509	500	-
* Dissolved Solids	mg/L as NaCl	Electrical Conductivity	306	305	300	1000
Total Hardness [@]	mg/L as CaCO ₃	SM 2023 (2340 C)	124	124	114	300
Chloride [@]	mg/L as Cl ⁻	SM 2023 (4500-Cl ⁻ B)	51	50	48	250
Total Iron [#]	mg/L as Fe	SM 2023 (3500-Fe B)	< 0.10	< 0.10	0.15	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)	17.08	16.64	14.90	50
Sulfate [#]	mg/L as SO ₄ ²⁻	Based on SM 2023 (4500-SO ₄ ²⁻ E)	47.78	48.05	49.41	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.

Analyst

30/07/2025

บริษัท เทสท์ เทค จำกัด

30/07/2025

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



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Sampling Site : Centara Grand (Pattaya)

Sample Type : Usage Water

Sampling by : Test Tech Co., Ltd.

Sampling Method : Grab

Sampling Date : 17/07/2025

Sampling Time : 10:00 AM

Received Date : 17/07/2025

Analytical Date : 17 - 29/07/2025

Report Date : 30/07/2025

Report No. : R16360/68

Parameters	Unit	Method	TW14299 /68	TW14300 /68	TW14301 /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

30/07/2025

บริษัท เทสท์ เทค จำกัด

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Analysis/Test Report

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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 : 17/07/2025

Sampling Time : 10:00 AM

Received Date : 17/07/2025

Analytical Date : 17 - 29/07/2025

Report Date : 30/07/2025

Report No. : R16361/68

Parameters	Unit	Method	TW14302 /68	TW14303 /68	Standard ^a
			Guest Room Cold Water (South A 306)	Guest Room Cold Water (South A 308)	
pH (25°C) [#]	-	Based on SM 2023 (4500-H ⁺ B)	7.4	7.4	6.5-8.5
Turbidity [#]	NTU	SM 2023 (2130 B)	< 0.50	< 0.50	5
Conductivity [#]	uS/cm	SM 2023 (2510 B)	509	509	-
* Dissolved Solids	mg/L as NaCl	Electrical Conductivity	305	305	1000
Total Hardness [@]	mg/L as CaCO ₃	SM 2023 (2340 C)	126	128	300
Chloride [@]	mg/L as Cl ⁻	SM 2023 (4500-Cl ⁻ B)	50	51	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)	16.53	14.68	50
Sulfate [#]	mg/L as SO ₄ ²⁻	Based on SM 2023 (4500-SO ₄ ²⁻ E)	50.78	49.69	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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Analyst

30/07/2025



Technical Manager

30/07/2025

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Sampling Site : Centara Grand (Pattaya)

Sample Type : Usage Water

Sampling by : Test Tech Co., Ltd.

Sampling Method : Grab

Sampling Date : 17/07/2025

Sampling Time : 10:00 AM

Received Date : 17/07/2025

Analytical Date : 17 - 29/07/2025

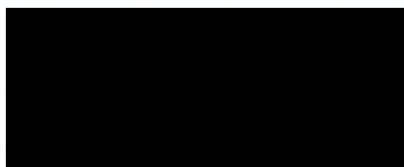
Report Date : 30/07/2025

Report No. : R16362/68

Parameters	Unit	Method	TW14302 /68	TW14303 /68	Standard ^a
			Guest Room Cold Water (South A 306)	Guest Room Cold Water (South A 308)	
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

30/07/2025



Technical Manager

30/07/2025

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Analysis/Test Report

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

Sampling Site : Centara Grand (Pattaya)

Sampling by : Test Tech Co., Ltd.

Sampling Date : 17/07/2025

Received Date : 17/07/2025

Report Date : 30/07/2025

Sample Type : Usage Water

Sampling Method : Grab

Sampling Time : 10:00 AM

Analytical Date : 17 - 29/07/2025

Report No. : R16363/68

Parameters	Unit	Method	TW14304 /68	TW14305 /68	Standard ^a
			Guest Room Hot Water (South A 306)	Guest Room Hot Water (South A 308)	
pH (25°C) [#]	-	Based on SM 2023 (4500-H ⁺ B)	7.2	7.2	6.5-8.5
Turbidity [#]	NTU	SM 2023 (2130 B)	< 0.50	< 0.50	5
Conductivity [#]	uS/cm	SM 2023 (2510 B)	500	499	-
* Dissolved Solids	mg/L as NaCl	Electrical Conductivity	300	299	1000
Total Hardness [@]	mg/L as CaCO ₃	SM 2023 (2340 C)	118	118	300
Chloride [@]	mg/L as Cl ⁻	SM 2023 (4500-Cl ⁻ B)	50	49	250
Total Iron [#]	mg/L as Fe	SM 2023 (3500-Fe B)	0.19	0.11	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)	14.46	13.27	50
Sulfate [#]	mg/L as SO ₄ ²⁻	Based on SM 2023 (4500-SO ₄ ²⁻ E)	50.23	48.59	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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Analyst

30/07/2025



Technical Manager

30/07/2025

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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)

Sample Type : Usage Water

Sampling by : Test Tech Co., Ltd.

Sampling Method : Grab

Sampling Date : 17/07/2025

Sampling Time : 10:00 AM

Received Date : 17/07/2025

Analytical Date : 17 - 29/07/2025

Report Date : 30/07/2025

Report No. : R16364/68

Parameters	Unit	Method	TW14304 /68	TW14305 /68	Standard ^a
			Guest Room Hot Water (South A 306)	Guest Room Hot Water (South A 308)	
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

30/07/2025

Technical Manager

30/07/2025

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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 : Usage Water

Sampling by : Test Tech Co., Ltd.

Sampling Method : Grab

Sampling Date : 17/07/2025

Sampling Time : 10:00 AM

Received Date : 17/07/2025

Analytical Date : 17 - 29/07/2025

Report Date : 30/07/2025

Report No. : R16365/68

Parameters	Unit	Method	TW14306 /68	Standard ^a
			Cooling Water	(Cooling Water)
pH (25°C) [#]	-	Based on SM 2023 (4500-H ⁺ B)	8.6	8.5 - 9.5
Conductivity [#]	uS/cm	SM 2023 (2510 B)	2070	< 2500
* Dissolved Solids	mg/L as NaCl	Electrical Conductivity	1242	< 2000
* P-Alkalinity	mg/L as CaCO ₃	Titration	15	-
* M-Alkalinity	mg/L as CaCO ₃	Titration	140	-
Total Hardness [@]	mg/L as CaCO ₃	SM 2023 (2340 C)	425	< 100
Chloride [@]	mg/L as Cl ⁻	SM 2023 (4500-Cl ⁻ B)	275	< 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)	357	-
* Silica	mg/L as SiO ₂	SM 2023 (4500-SiO ₂ C)	69.01	-
* Total Phosphorus	mg/L as P	Stannous Chloride	0.03	-
Sample Condition		Observation	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

Analyst

30/07/2025

บริษัท เทสท์ เทค จำกัด

30/07/2025

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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)

Sampling by : Test Tech Co., Ltd.

Sampling Date : 17/07/2025

Received Date : 17/07/2025

Report Date : 30/07/2025

Sample Type : Usage Water

Sampling Method : Grab

Sampling Time : 10:00 AM

Analytical Date : 17 - 29/07/2025

Report No. : R16366/68

Parameters	Unit	Method	TW14306 /68
			Cooling Water
<i>Legionella spp.</i>	/L	ISO 11731 : 2017	not detected
Sample Condition		Observation	Clear

Analyst

30/07/2025

Technical Manager

30/07/2025

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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 : 17/07/2025

Received Date : 17/07/2025

Report Date : 30/07/2025

Sample Type : Usage Water

Sampling Method : Grab

Sampling Time : 10:00 AM

Analytical Date : 17 - 29/07/2025

Report No. : R16367/68

Parameters	Unit	Method	TW14307 /68	Standard ^a
			Chilled Water	(Chilled Water)
* pH (25°C)	-	Based on SM 2023 (4500-H ⁺ B)	10.0	7.5 - 9.5
Conductivity [#]	uS/cm	SM 2023 (2510 B)	857	-
* Dissolved Solids	mg/L as NaCl	Electrical Conductivity	514	-
* P-Alkalinity	mg/L as CaCO ₃	Titration	60	-
* M-Alkalinity	mg/L as CaCO ₃	Titration	148	-
Total Hardness [@]	mg/L as CaCO ₃	SM 2023 (2340 C)	21	-
Chloride [@]	mg/L as Cl ⁻	SM 2023 (4500-Cl ⁻ B)	54	-
Total Iron [#]	mg/L as Fe	SM 2023 (3500-Fe B)	0.23	< 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)	45.86	-
Silica [#]	mg/L as SiO ₂	SM 2023 (4500-SiO ₂ C)	5.27	-
* Nitrite	mg/L as NO ₂ ⁻	SM 2023 (4500-NO ₂ ⁻ B)	111	500 - 1000
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 (Chilled Water)

Analyst

30/07/2025

บริษัท เทสต์ เทค จำกัด

Technical Manager

30/07/2025

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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)

Sampling by : Test Tech Co., Ltd.

Sampling Date : 17/07/2025

Received Date : 17/07/2025

Report Date : 25/07/2025

Sample Type : Drinking Water

Sampling Method : Grab

Sampling Time : 10:00 AM

Analytical Date : 17 - 23/07/2025

Report No. : R15945/68

Parameters	Unit	Method	TW14308 /68	TW14309 /68	TW14310 /68	Standard ^a
			Drinking Water (Canteen)	Drinking Water (Oasis Kitchen)	Drinking Water (Guest Room 306)	
pH (25°C) [#]	-	Based on SM 2023 (4500-H ⁺ B)	7.1	7.0	7.6	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)	497	497	676	-
* Dissolved Solids	mg/L as NaCl	Electrical Conductivity	298	298	406	-
Total Hardness [@]	mg/L as CaCO ₃	SM 2023 (2340 C)	120	116	2 *	≤ 100.0
Chloride [@]	mg/L as Cl ⁻	SM 2023 (4500-Cl ⁻ B)	47	47	2 *	≤ 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)	3.02	3.29	0.07	≤ 4.0
Sulfate [#]	mg/L as SO ₄ ²⁻	Based on SM 2023 (4500-SO ₄ ²⁻ E)	49.69	50.50	40.40	≤ 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))



Analyst

25/07/2025



Technical Manager

25/07/2025

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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)

Sampling by : Test Tech Co., Ltd.

Sampling Date : 17/07/2025

Received Date : 17/07/2025

Report Date : 25/07/2025

Sample Type : Drinking Water

Sampling Method : Grab

Sampling Time : 10:00 AM

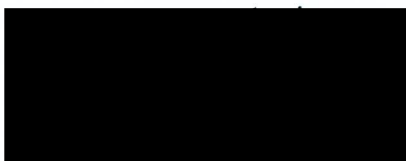
Analytical Date : 17 - 23/07/2025

Report No. : R15946/68

Parameters	Unit	Method	TW14308 /68	TW14309 /68	TW14310 /68	Standard ^a
			Drinking Water (Canteen)	Drinking Water (Oasis Kitchen)	Drinking Water (Guest Room 306)	
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., 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))



Analyst

25/07/2025



Technical Manager

25/07/2025

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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 : 17/07/2025

Received Date : 17/07/2025

Report Date : 23/07/2025

Sample Type : Swimming Water

Sampling Method : Grab

Sampling Time : 10:00 AM

Analytical Date : 17 - 21/07/2025

Report No. : R15812/68

Parameters	Unit	Method	TW14311 /68	TW14312 /68	Standard ^a
			Main Pool	Lab 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	0.87	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

23/07/2025

Technical Manager

23/07/2025

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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)

Sampling by : Test Tech Co., Ltd.

Sampling Date : 17/07/2025

Received Date : 17/07/2025

Report Date : 23/07/2025

Sample Type : Swimming Water

Sampling Method : Grab

Sampling Time : 10:00 AM

Analytical Date : 17 - 21/07/2025

Report No. : R15813/68

Parameters	Unit	Method	TW14311 /68	TW14312 /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

23/07/2025



23/07/2025

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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 : 17/07/2025

Sampling Time : 10:00 AM

Received Date : 17/07/2025

Analytical Date : 17 - 21/07/2025

Report Date : 23/07/2025

Report No. : R15814/68

Parameters	Unit	Method	TW14313 /68	TW14314 /68	Standard ^a
			Lazy Pool	18 th Flr Pool	
pH (25°C)	-	Based on SM 2023 (4500-H ⁺ B)	7.5	7.7	7.2-8.4
Residual Chlorine	mg/L as Cl ₂	DPD Colorimetric	0.92	0.87	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

23/07/2025

บริษัท เทสท์ เทค จำกัด

Technical Manager

23/07/2025

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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 : 17/07/2025

Sampling Time : 10:00 AM

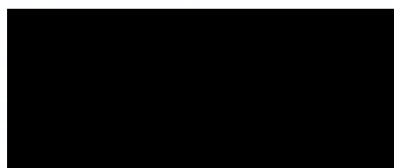
Received Date : 17/07/2025

Analytical Date : 17 - 21/07/2025

Report Date : 23/07/2025

Report No. : R15815/68

Parameters	Unit	Method	TW14313 /68	TW14314 /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

23/07/2025



Technical Manager

23/07/2025

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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 : 17/07/2025

Sampling Time : 10:00 AM

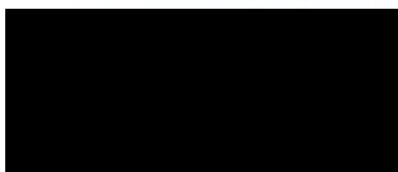
Received Date : 17/07/2025

Analytical Date : 17 - 21/07/2025

Report Date : 23/07/2025

Report No. : R15816/68

Parameters	Unit	Method	TW14315 /68	TW14316 /68	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))

Analyst

23/07/2025



Technical Manager

23/07/2025

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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)

Sampling by : Test Tech Co., Ltd.

Sampling Date : 17/07/2025

Received Date : 17/07/2025

Report Date : 23/07/2025

Sample Type : Ice

Sampling Method : Grab

Sampling Time : 10:00 AM

Analytical Date : 17 - 21/07/2025

Report No. : R15817/68

Parameters	Unit	Method	TW14317 /68	TW14318 /68	Standard ^a
			Flames	Oasis Kitchen (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

23/07/2025

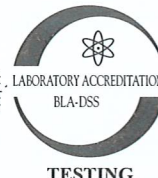
บริษัท เทสท์ เทค จำกัด

23/07/2025

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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 : 17/07/2025

Sampling Time : 10:00 AM

Received Date : 17/07/2025

Analytical Date : 17 - 24/07/2025

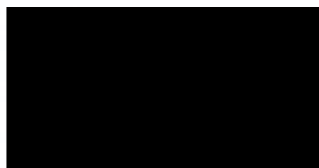
Report Date : 25/07/2025

Report No. : R15947/68

Parameters	Unit	Method	TW14319 /68	Standard ^a
			Effluent	
pH	-	SM 2023 (4500-H ⁺ B)	7.2	-
BOD	mg/L	SM 2023 (5210 B, 4500-O G)	63	≤ 1000
Total Suspended Solids	mg/L	SM 2023 (2540 D)	122	-
Oil & Grease	mg/L	SM 2023 (5520 D)	12.1	-
Sample Condition		Observation	Light Yellow, Cloud, Particles	

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

25/07/2025

บริษัท เทสท์ เทค จำกัด



Technical Manager

25/07/2025

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