

Recommendation & Water Analysis Report
for
Centara Grand Mirage Beach Resort Pattaya

November, 2025

บริษัท เทสต์ เทค จำกัด

30, 32 ซอยพระรามที่ 2 ซอย 63 ถนนพระรามที่ 2 แขวงสามตำบล เขตบางขุนเทียน กรุงเทพฯ 10150
Tel. 02-893-4211 - 17 Fax : 02-893-4218



SRR NO. 68A3335

Messrs : Centara Grand Mirage Beach Resort Pattaya

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

Factory Site : Centara Grand Pattaya Date : December 3, 2025

Recommendation For : Water Analysis of November, 2025

Report Reference : R25729-37/68, R25309-310/68, R25178-83/68, R25311/68, R25238/68

RECOMMENDATION

1. Raw Water

1.1 Storage Tank :

- Hardness was low.
- Iron and manganese was not found.
- Turbidity was low.
- Chloride was low.
- Coliform/E.coli was not found.

- Note** :
- Storage Tank should be check and cleaned 1-2 time/month to reduce iron accumulation.
 - Chlorine should be routine added into buied-water and feeding into raw water to prevent bacterial growth.
 - Softener in next step treatment must be taken care.

1.2 Soft Water (Main Point) :

- Turbidity was low.
- Hardness was low.
- Iron was not found.
- Manganese was not found.
- Coliform/E.coli was not found.

Note : The system should be operated.

- Water storage tank should be checked and cleaned if iron and bacteria accumulation.
- Softener should be flushing with low iron of raw water to reduce iron and bacteria accumulation, rinsing step must be checked before use.
- The regeneration with salt should be routine operation to control hardness.



- Chlorine should be added in storage tank and back wash softener/regeneration should be done with chlorinated-water to prevent bacteria growth and accumulation.

1.3 Hot Water System (Main Point) :

- Turbidity was low.
- Hardness was low.
- Iron was low.
- Manganese was low.
- Coliform/E.coli was not found.

Note : The system should be checked.

- Raw water storage tank cleaning and flushing should be done increase of iron accumulation.
- Hot water unit should be flushing with low iron water.
- Metal type in hot water system and pipe line should be checked to prevent Galvanic Corrosion Problems.

1.4 Guest Room Usage Water (Cold Water) : (South A 506, South A 510)

- Total Hardness and Chloride was like raw water.
- Turbidity was low.
- Iron was not found.
- Manganese was not found.
- Coliform/E.coli was not found.

Note : In the room which not usually open, flushing pipe line before open should be done to reduce iron and bacteria accumulation.

- Chlorine should be routine added into water supply.

1.5 Guest Room Usage Water (Hot Water) : (South A 506, South A 510)

- Total Hardness was and Chloride like raw water.
- Turbidity was low.
- Iron was low.
- Manganese was not found.
- Coliform/E.coli was not found.

Note:

- Flushing of pipe-line before used should be done to reduce iron accumulation in pipe line.
- Soft water before hot water machine should be checked.

1.6 Cooling :

- 1) Conductivity was high. Hardness was high.
- 2) Iron was not found. Manganese was not found.
- 3) Antiscale and anticorrosion chemicals including with biocide should be adding into system.
- 4) Legionella spp. was not found.

- Note :**
- Bleed off should be controlled.
 - Softener should be checked about regeneration cycle to control hardness < 20 ppm.
 - Cooling water must be drained and adding new make up water to reduce TDS.

- 1.7 Chilled :** Iron was in control. pH was high. Anti corrosion chemical (Nitrite) was low for control.
Anti corrosion chemical should be added after cleaning, incase of maintenance.

2. Drinking Water :

- 1) Canteen : Hardness was high. Iron and Manganese was not found.
Other water quality was in standard. Coliform/E.coli was not found.
- 2) Oasis Kitchen : Hardness was high. Iron and Manganese was not found.
Other water quality was in standard. Coliform/E.coli was not found.
- 3) Guest Room (225) : Hardness was in standard. Iron and Manganese was not found.
Other water quality was in standard. Coliform/E.coli was not found.

Note :

- Chlorine feeding into raw water should be done.
- Clean unit and Tank with chlorination water should be done.
- Drinking water treatment unit should be cleaned and regenerate to reduce hardness.

3. Swimming Water :

1) Main Pool : On used.

- pH was normal.
- Chlorine was found 0.81 ppm.
- Coliform/E.coli was not found.

2) Lab Pool : On used.

- pH was normal.
- Chlorine was found 0.72 ppm.
- Coliform/E.coli was not found.

3) Lazy Pool :

- pH was normal.
- Chlorine was found 0.69 ppm.
- Coliform/E.coli was not found.

4) 18th Flr Pool

- pH was normal.
- Chlorine was found 0.77 ppm.
- Coliform/E.coli was not found.

Recommendation :

1. pH should be routine checked. If pH low, the feeding of NaOH or Na₂CO₃ should be done.
If pH high, the pH adjustment by HCl should be added.
2. Chlorine should be routine checked to control ~ 1-3 ppm.
3. Circulation water should be passed through filter for reduce bacteria accumulation.

4. Ice

- 1) Canteen (Cube) : Coliform/E.coli was not found.
- 2) Banquet (Flake) : Coliform/E.coli was not found.
- 3) Flames : Coliform/E.coli was not found.
- 4) Oasis Kitchen (Flake) : Coliform/E.coli was not found.

Recommendation : The ice machine should be disinfection by.

- 1. Flushing system by chlorine-added water should be done.
- 2. Scoop equipment should be cleaned without contamination.
- 3. Ice machine and filter system should be cleaned.
- 4. Ice box should be cleaned.

5. Waste Water : BOD of Effluent 30 mg/L was in Pattaya Regulation (≤ 1000 mg/L).

The owner should pay for treatment following regulation rate.

6. Sea Water : TSS was low. Coliform Bacteria was found 35,000 MPN/100 mL



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 : November 13, 2025

Sampling Time : 11:00 AM - 12:00 PM

Received Date : November 13, 2025

Analytical Date : November 13 - 25, 2025

Report Date : November 26, 2025

Report No. : R25729/68

Parameters	Unit	Method	TW22815 /68	TW22816 /68	TW22817 /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)	7.4	7.1	7.3	6.5-8.5
Turbidity [#]	NTU	SM 2023 (2130 B)	2.03	< 0.50	0.82	4
Conductivity [#]	uS/cm	SM 2023 (2510 B)	488	494	492	-
* Dissolved Solids	mg/L as NaCl	Electrical Conductivity	293	296	295	600
Total Hardness [@]	mg/L as CaCO ₃	SM 2023 (2340 C)	114	118	114	300
Chloride [@]	mg/L as Cl ⁻	SM 2023 (4500-Cl ⁻ B)	44	44	43	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	0.08
Nitrate [#]	mg/L as NO ₃ ⁻	SM 2023 (4500-NO ₃ ⁻ E)	13.15	15.76	14.58	50
Sulfate [#]	mg/L as SO ₄ ²⁻	Based on SM 2023 (4500-SO ₄ ²⁻ E)	44.50	47.23	46.41	250
Sample Condition		Observation	Clear	Clear	Clear	

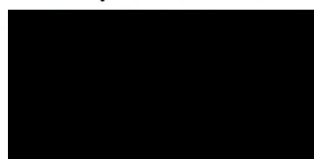
Remark : 1. SM 2023 : Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023

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 Provincial Waterworks Authority (PWA)



Analyst

November 26, 2025



Technical Manager

November 26, 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)

Sample Type : Usage Water

Sampling by : Test Tech Co., Ltd.

Sampling Method : Grab

Sampling Date : November 13, 2025

Sampling Time : 11:00 AM - 12:00 PM

Received Date : November 13, 2025

Analytical Date : November 13 - 25, 2025

Report Date : November 26, 2025

Report No. : R25730/68

Parameters	Unit	Method	TW22815 /68	TW22816 /68	TW22817 /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			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 Provincial Waterworks Authority (PWA)

Analyst

November 26, 2025

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Technical Manager

November 26, 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 : November 13, 2025

Sampling Time : 11:00 AM

Received Date : November 13, 2025

Analytical Date : November 13 - 25, 2025

Report Date : November 26, 2025

Report No. : R25731/68

Parameters	Unit	Method	TW22818 /68	TW22819 /68	Standard ^a
			Guest Room Cold Water (South A 506)	Guest Room Cold Water (South A 510)	
pH (25°C) [#]	-	Based on SM 2023 (4500-H ⁺ B)	7.3	7.3	6.5-8.5
Turbidity [#]	NTU	SM 2023 (2130 B)	< 0.50	0.52	4
Conductivity [#]	uS/cm	SM 2023 (2510 B)	488	488	-
* Dissolved Solids	mg/L as NaCl	Electrical Conductivity	293	293	600
Total Hardness [@]	mg/L as CaCO ₃	SM 2023 (2340 C)	112	118	300
Chloride [@]	mg/L as Cl ⁻	SM 2023 (4500-Cl ⁻ B)	43	45	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	0.08
Nitrate [#]	mg/L as NO ₃ ⁻	SM 2023 (4500-NO ₃ ⁻ E)	13.27	15.44	50
Sulfate [#]	mg/L as SO ₄ ²⁻	Based on SM 2023 (4500-SO ₄ ²⁻ E)	46.68	47.78	250
Sample Condition		Observation	Clear	Clear	

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Technical Manager

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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 : November 13, 2025 Sampling Time : 11:00 AM
 Received Date : November 13, 2025 Analytical Date : November 13 - 25, 2025
 Report Date : November 26, 2025 Report No. : R25732/68

Parameters	Unit	Method	TW22818 /68	TW22819 /68	Standard ^a
			Guest Room Cold Water (South A 506)	Guest Room Cold Water (South A 510)	
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 Provincial Waterworks Authority (PWA)



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November 26, 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)

Sample Type : Usage Water

Sampling by : Test Tech Co., Ltd.

Sampling Method : Grab

Sampling Date : November 13, 2025

Sampling Time : 11:00 AM

Received Date : November 13, 2025

Analytical Date : November 13 - 25, 2025

Report Date : November 26, 2025

Report No. : R25733/68

Parameters	Unit	Method	TW22820 /68	TW22821 /68	Standard ^a
			Guest Room Hot Water (South A 506)	Guest Room Hot Water (South A 510)	
pH (25°C) [#]	-	Based on SM 2023 (4500-H ⁺ B)	7.4	7.3	6.5-8.5
Turbidity [#]	NTU	SM 2023 (2130 B)	0.82	0.77	4
Conductivity [#]	uS/cm	SM 2023 (2510 B)	490	490	-
* Dissolved Solids	mg/L as NaCl	Electrical Conductivity	294	294	600
Total Hardness [@]	mg/L as CaCO ₃	SM 2023 (2340 C)	122	115	300
Chloride [@]	mg/L as Cl ⁻	SM 2023 (4500-Cl ⁻ B)	44	44	250
Total Iron [#]	mg/L as Fe	SM 2023 (3500-Fe B)	0.10	0.14	0.3
Manganese [#]	mg/L	SM 2023 (3500-Mn B)	< 0.04	< 0.04	0.08
Nitrate [#]	mg/L as NO ₃ ⁻	SM 2023 (4500-NO ₃ ⁻ E)	16.09	15.21	50
Sulfate [#]	mg/L as SO ₄ ²⁻	Based on SM 2023 (4500-SO ₄ ²⁻ E)	47.50	47.78	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)

Sample Type : Usage Water

Sampling by : Test Tech Co., Ltd.

Sampling Method : Grab

Sampling Date : November 13, 2025

Sampling Time : 11:00 AM

Received Date : November 13, 2025

Analytical Date : November 13 - 25, 2025

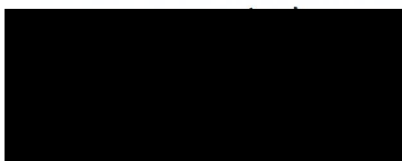
Report Date : November 26, 2025

Report No. : R25734/68

Parameters	Unit	Method	TW22820 /68	TW22821 /68	Standard ^a
			Guest Room Hot Water (South A 506)	Guest Room Hot Water (South A 510)	
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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November 26, 2025



Technical Manager

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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 : November 13, 2025

Sampling Time : 11:00 AM

Received Date : November 13, 2025

Analytical Date : November 13 - 25, 2025

Report Date : November 26, 2025

Report No. : R25735/68

Parameters	Unit	Method	TW22822 /68	Standard ^a (Cooling Water)
			Cooling Water	
pH (25°C) [#]	-	Based on SM 2023 (4500-H ⁺ B)	8.7	8.5 - 9.5
Conductivity [#]	uS/cm	SM 2023 (2510 B)	3990	< 2500
* Dissolved Solids	mg/L as NaCl	Electrical Conductivity	2394	< 2000
* P-Alkalinity	mg/L as CaCO ₃	SM 2023 (2320 B)	10	-
* M-Alkalinity	mg/L as CaCO ₃	SM 2023 (2320 B)	195	-
Total Hardness [@]	mg/L as CaCO ₃	SM 2023 (2340 C)	740	< 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)	708	-
* Silica	mg/L as SiO ₂	SM 2023 (4500-SiO ₂ C)	10.23	-
* Total Phosphorus	mg/L as P	SM 2023 (4500-P D)	0.03	-
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

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5. a : เกณฑ์ควบคุมคุณภาพน้ำในระบบต่าง ๆ



Analyst

November 26, 2025



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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 : November 13, 2025

Received Date : November 13, 2025

Report Date : November 26, 2025

Sample Type : Usage Water

Sampling Method : Grab

Sampling Time : 11:00 AM

Analytical Date : November 13 - 25, 2025

Report No. : R25736/68

Parameters	Unit	Method	TW22822 /68
			Cooling Water
<i>Legionella spp.</i>	/L	ISO 11731 : 2017	not detected
Sample Condition		Observation	Light Yellow, Clear

Analyst

November 26, 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)

Sample Type : Usage Water

Sampling by : Test Tech Co., Ltd.

Sampling Method : Grab

Sampling Date : November 13, 2025

Sampling Time : 11:00 AM

Received Date : November 13, 2025

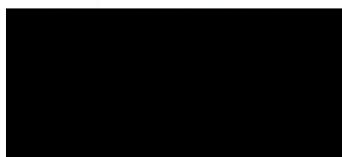
Analytical Date : November 13 - 25, 2025

Report Date : November 26, 2025

Report No. : R25737/68

Parameters	Unit	Method	TW22823 /68	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)	895	-
* Dissolved Solids	mg/L as NaCl	Electrical Conductivity	537	-
* P-Alkalinity	mg/L as CaCO ₃	SM 2023 (2320 B)	85	-
* M-Alkalinity	mg/L as CaCO ₃	SM 2023 (2320 B)	170	-
Total Hardness [@]	mg/L as CaCO ₃	SM 2023 (2340 C)	22	-
Chloride [@]	mg/L as Cl ⁻	SM 2023 (4500-Cl ⁻ B)	44	-
Total Iron [#]	mg/L as Fe	SM 2023 (3500-Fe B)	0.21	< 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)	44.23	-
Silica [#]	mg/L as SiO ₂	SM 2023 (4500-SiO ₂ C)	4.93	-
* Nitrite	mg/L as NO ₂ ⁻	SM 2023 (4500-NO ₂ ⁻ B)	107	500 - 1000
Sample Condition		Observation	Clear	

- Remark :
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 2. Test marked "#" on this report are Accredited International Standard ISO/IEC 17025 by BLA-DSS.
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 5. a : เกณฑ์ควบคุมคุณภาพน้ำในระบบต่าง ๆ (Chilled Water)



Analyst

November 26, 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 : November 13, 2025

Received Date : November 13, 2025

Report Date : November 21, 2025

Sample Type : Drinking Water

Sampling Method : Grab

Sampling Time : 11:00 AM

Analytical Date : November 13 - 19, 2025

Report No. : R25309/68

Parameters	Unit	Method	TW22824 /68	TW22825 /68	TW22826 /68	Standard ^a
			Drinking Water (Canteen)	Drinking Water (Oasis Kitchen)	Drinking Water (Guest Room 448)	
pH (25°C) [#]	-	Based on SM 2023 (4500-H ⁺ B)	7.3	7.3	7.7	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)	491	491	678	-
* Dissolved Solids	mg/L as NaCl	Electrical Conductivity	295	295	407	-
Total Hardness [@]	mg/L as CaCO ₃	SM 2023 (2340 C)	124	118	3 *	≤ 100.0
Chloride [@]	mg/L as Cl ⁻	SM 2023 (4500-Cl ⁻ B)	44	46	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)	3.44	3.49	0.09	≤ 4.0
Sulfate [#]	mg/L as SO ₄ ²⁻	Based on SM 2023 (4500-SO ₄ ²⁻ E)	47.50	49.14	38.49	≤ 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

November 21, 2025

Technical Manager

November 21, 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 : November 13, 2025

Received Date : November 13, 2025

Report Date : November 21, 2025

Sample Type : Drinking Water

Sampling Method : Grab

Sampling Time : 11:00 AM

Analytical Date : November 13 - 19, 2025

Report No. : R25310/68

Parameters	Unit	Method	TW22824 /68	TW22825 /68	TW22826 /68	Standard ^a
			Drinking Water (Canteen)	Drinking Water (Oasis Kitchen)	Drinking Water (Guest Room 448)	
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., 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

November 21, 2025

November 21, 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 : November 13, 2025

Sampling Time : 11:00 AM

Received Date : November 13, 2025

Analytical Date : November 13 - 17, 2025

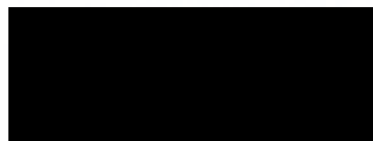
Report Date : November 20, 2025

Report No. : R25178/68

Parameters	Unit	Method	TW22827 /68	TW22828 /68	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	SM 2023 (4500-Cl G)	0.81	0.72	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)



Analyst

November 20, 2025



Technical Manager

November 20, 2025

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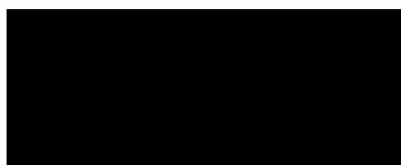
ISO/IEC 17025
 Accreditation No. 1201/54

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) Sample Type : Swimming Water
 Sampling by : Test Tech Co., Ltd. Sampling Method : Grab
 Sampling Date : November 13, 2025 Sampling Time : 11:00 AM
 Received Date : November 13, 2025 Analytical Date : November 13 - 17, 2025
 Report Date : November 20, 2025 Report No. : R25179/68

Parameters	Unit	Method	TW22827 /68	TW22828 /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

November 20, 2025



Technical Manager

November 20, 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 : November 13, 2025

Sampling Time : 11:00 AM

Received Date : November 13, 2025

Analytical Date : November 13 - 17, 2025

Report Date : November 20, 2025

Report No. : R25180/68

Parameters	Unit	Method	TW22829 /68	TW22830 /68	Standard ^a
			Lazy Pool	18 th Flr Pool	
pH (25°C)	-	Based on SM 2023 (4500-H ⁺ B)	7.4	7.7	7.2-8.4
Residual Chlorine	mg/L as Cl ₂	SM 2023 (4500-Cl G)	0.69	0.77	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

November 20, 2025

Technical Manager

November 20, 2025

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

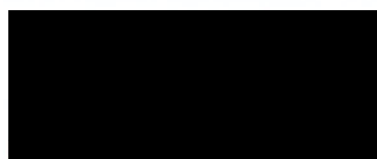


Analysis/Test Report

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 : Swimming Water
 Sampling by : Test Tech Co., Ltd. Sampling Method : Grab
 Sampling Date : November 13, 2025 Sampling Time : 11:00 AM
 Received Date : November 13, 2025 Analytical Date : November 13 - 17, 2025
 Report Date : November 20, 2025 Report No. : R25181/68

Parameters	Unit	Method	TW22829 /68	TW22830 /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., 2023
 2. a : Bangkok Metropolitan Administration published in the Royal Government Gazette, Vol.104 ,Part 205,dated October 14, B.E.2530 (1987)



Analyst

November 20, 2025



Technical Manager

November 20, 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 : November 13, 2025

Sampling Time : 11:00 AM

Received Date : November 13, 2025

Analytical Date : November 13 - 17, 2025

Report Date : November 20, 2025

Report No. : R25182/68

Parameters	Unit	Method	TW22831 /68	TW22832 /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

November 20, 2025

Technical Manager

November 20, 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 : November 13, 2025

Sampling Time : 11:00 AM

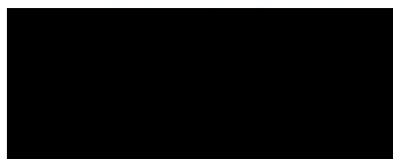
Received Date : November 13, 2025

Analytical Date : November 13 - 17, 2025

Report Date : November 20, 2025

Report No. : R25183/68

Parameters	Unit	Method	TW22833 /68	TW22834 /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

November 20, 2025



Technical Manager

November 20, 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 : Waste Water

Sampling by : Test Tech Co., Ltd.

Sampling Method : Grab

Sampling Date : November 13, 2025

Sampling Time : 11:00 AM

Received Date : November 13, 2025

Analytical Date : November 13 - 20, 2025

Report Date : November 21, 2025

Report No. : R25311/68

Parameters	Unit	Method	TW22835 /68	Standard ^a
			Effluent	
pH	-	SM 2023 (4500-H ⁺ B)	7.2	-
BOD	mg/L	SM 2023 (5210 B, 4500-O G)	30	≤ 1000
Total Suspended Solids	mg/L	SM 2023 (2540 D)	188	-
Oil & Grease	mg/L	SM 2023 (5520 D)	11.6	-
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

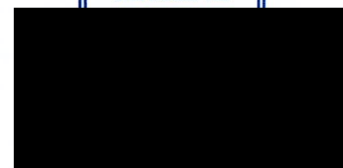
2. a : ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 22 (พ.ศ. 2544) เรื่อง กำหนดอัตราค่าบริการบำบัดน้ำเสียของระบบบำบัดน้ำเสียรวมเมืองพัทยา



Analyst

November 21, 2025

บริษัท เทสท์ เทค จำกัด



November 21, 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 : Sea Water

Sampling by : Test Tech Co., Ltd.

Sampling Method : Grab

Sampling Date : November 13, 2025

Sampling Time : 11:00 AM

Received Date : November 13, 2025

Analytical Date : November 13 - 19, 2025

Report Date : November 21, 2025

Report No. : R25238/68

Parameters	Unit	Method	TW22836 /68
			Sea Water
Dissolved Oxygen	mg/L	DO - Meter	6.71
Total Suspended Solids	mg/L	Dried at 103 - 105 °C	8
Oil & Grease	mg/L	Soxhlet Extraction	< 3.0
Total Coliform Bacteria	MPN/100 mL	MPN	3.5 x 10 ⁴
Temperature	°C	Laboratory and Field	29.7
Transparency	m	Secchi Disc	1.00
Sample Condition		Observation	Light Yellow, a little bit Particles

Analyst

November 21, 2025

บริษัท เทสท์ เทค จำกัด

November 21, 2025

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