

เอกสารแนบ 4

เอกสารผลการตรวจวิเคราะห์คุณภาพ
สิ่งแวดล้อม



ENVIRONMENTAL MEASUREMENTS CO., LTD.

5/45 Baan Klang Krung Biz Town, Soi Srinagarindra 46/1 (Pramote), NONG BON Sub-district, PRAWET District, BANGKOK 10250

Tel: 0-2716-3506-7 Fax: 0-2716-3507

ANALYSIS REPORT

Customer Name : Sofitel Bangkok Sukhumvit
Address : 189 Sukhumvit Road Klong Toei Nuea Watthana Bangkok 10110
Sample Date : 26/07/2024 Analytical Date : 26/07-06/08/2024
Sample Type : Waste water Report Date : 09/08/2024
Customer Code : JP-023-7-00

Parameter	Unit	Method of Analysis	Detection Limit	Result			Regulatory Standard
				St.1	St.2	St.3	
pH	-	Electrometric Method	-	7.0	6.9	7.2	5-9
BOD	mg/L	5 Day BOD Membrane Electrode	<2.0	202	16	18	20
Total Suspended Solids	mg/L	Dried at 103-105 °C	<2.5	226	26	12	30
Total Dissolved Solids	mg/L	Dried at 103-105 °C	<2.5	472	478	264	500*
Settleable Solids	ml/L	Volumetric Method	<0.1	<0.1	<0.1	<0.1	0.5
Sulfide	mg/L as H ₂ S	Iodometric Method	<1.0	<1.0	<1.0	<1.0	1.0
TKN ²⁾	mg/L as N	Macro-Kjeldahl Method	<1.5	22	48	<1.5	35
Oil & Grease	mg/L	Partition - gravimetric method	<2.0	26	<2.0	<2.0	20
Residue Chlorine	mg/L as Cl ₂	DPD Colorimetric Method	<0.10	<0.10	<0.10	<0.10	-
Fecal Coliform Bacteria ²⁾	MPN/100ml	MPN Method	<1.8	52,000	>160,000	50,000	-
Analysis No.				WW 1640	WW 1641	WW 1642	
Sampling Time				14:25	14:16	14:10	
Sample Condition				Grey Sediment	Yellow Sediment	Yellow Sediment	

Regulatory Standard: Announcement of the Ministry of Science Technology and Environment Subject: Establishing Control Standards Drainage from certain types and sizes of buildings

: ²⁾ Subcontract: UAE

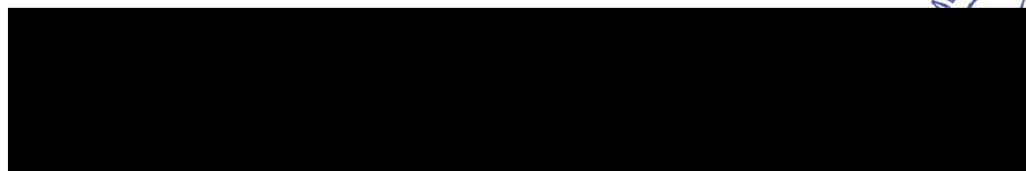
: Total Dissolved Solids for Waste water (St.3) 498 mg/L

: Total Dissolved Solids for Tap water 216 mg/L

St.1 = Equalization Tank

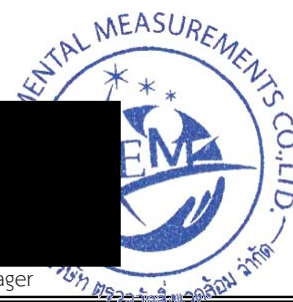
St.2 = Clear Water Tank

St.3 = Discharged to the public



Analyst

Laboratory Manager



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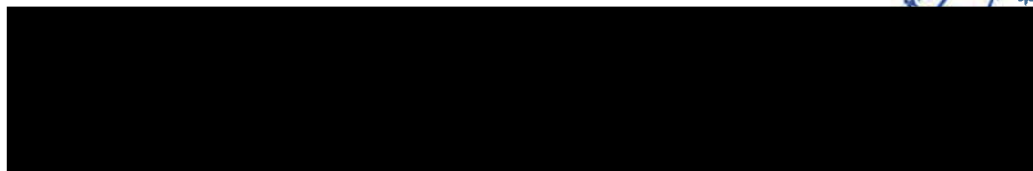
10250 Tel: 0-2716-3506-7 Fax: 0-2716-3507

ANALYSIS REPORT

Customer Name : Sofitel Bangkok Sukhumvit
Address : 189 Sukhumvit Road Klong Toei Nuea Watthana Bangkok 10110
Sample Date : 26/07/2024 Analytical Date : 26/07-07/08/2024
Sample Type : Drinking Water (Ice) Report Date : 09/08/2024
Customer Code : JP-023-7-00

Parameter	Unit	Method of Analysis	Detection Limit	Result		Regulatory Standard
				Corridor Floor 15	Corridor Floor 18	
Standard plate Count ²⁾	CFU/ml	Standard Plate Count	<1	<1	<1	-
Total Coliform Bacteria ²⁾	MPN/100ml	MPN Method	<1.1	<1.1	<1.1	-
Fecal Coliform Bacteria ²⁾	MPN/100ml	MPN Method	<1.1	<1.1	<1.1	Not detected
<i>E. coli</i> ²⁾	/100ml	MPN Method, Detection	<1.1	<1.1	<1.1	Not detected
Analysis No.				WW 1644	WW 1645	
Sampling Time				13:21	13:27	
Sample Condition				Clear	Clear	

Regulatory Standard : World Health Organization Recommendation Criteria for Drinking Water Quality, 2013
: ²⁾ Subcontract: UAE



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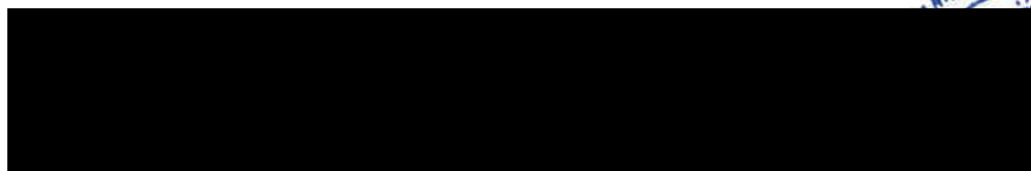
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Address : 189 Sukhumvit Road Klong Toei Nuea Watthana Bangkok 10110
Sample Date : 26/07/2024 Analytical Date : 26/07-07/08/2024
Sample Type : Drinking Water (Ice) Report Date : 09/08/2024
Customer Code : JP-023-7-00

Parameter	Unit	Method of Analysis	Detection Limit	Result		Regulatory Standard
				Corridor Floor 12	Pool Bar Floor 9	
Standard Plate Count ²⁾	CFU/ml	Standard Plate Count	<1	<1	<1	-
Total Coliform Bacteria ²⁾	MPN/100ml	MPN Method	<1.1	<1.1	<1.1	-
Fecal Coliform Bacteria ²⁾	MPN/100ml	MPN Method	<1.1	<1.1	<1.1	Not detected
<i>E. coli</i> ²⁾	/100ml	MPN Method, Detection	<1.1	<1.1	<1.1	Not detected
Analysis No.				WW 0121	WW 1647	
Sampling Time				13:33	13:38	
Sample Condition				Clear	Clear	

Regulatory Standard : World Health Organization Recommendation Criteria for Drinking Water Quality, 2013
: ²⁾ Subcontract: UAE



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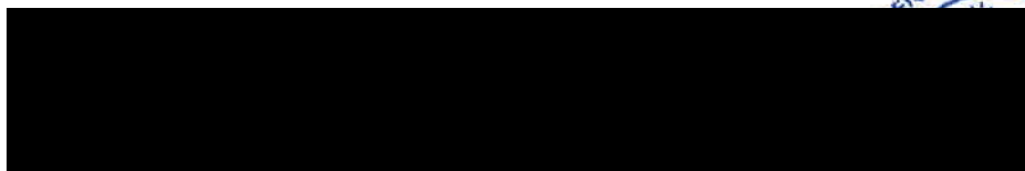
ANALYSIS REPORT

Customer Name : Sofitel Bangkok Sukhumvit
Address : 189 Sukhumvit Road Klong Toei Nuea Watthana Bangkok 10110
Sample Date : 26/07/2024 Analytical Date : 26/07-06/08/2024
Sample Type : Swimming Pool Report Date : 09/08/2024
Customer Code : JP-023-7-00

Parameter	Unit	Method of Analysis	Detection Limit	Result	Regulatory Standard
				Swimming Pool	
pH	-	Electrometric Method	-	8.3	7.2-8.4
Free chlorine ²⁾	mg/L as Cl ₂	DPD Ferrous Titrimetric Method	<0.01	1.0	0.6-1.0
Chloride ²⁾	mg/L as Cl ⁻	Argentometric Method	<2.0	547	600
Alkalinity ²⁾	mg/L as CaCO ₃	Titration Method	-	98	80-100
Calcium Hardness ²⁾	mg/L as CaCO ₃	EDTA Titrimetric Method	<4.0	76	250-600
Cyanuric acid ²⁾	mg/L	Turbidimetric Method	<1	1	30-60
Ammonia ²⁾	mg/L as NH ₃	Phenate Method	<0.05	0.15	20
Nitrate ²⁾	mg/L as NO ₃ ⁻	Cadmium Reduction Method	<0.09	0.75	50
Total Coliform Bacteria ²⁾	MPN/100ml	MPN Method	<1.1	<1.1	10
<i>Staphylococcus aureus</i> ²⁾	/100ml	Membrane Filtration Method	Not Detected	Not Detected	Not Detected
<i>Pseudomonas aeruginosa</i> ²⁾	/100ml	Membrane Filtration Method	Not Detected	Not Detected	Not Detected
Analysis No.				WW 1643	
Sampling Time				13:42	
Sample Condition				Clear	

Regulatory Standard : Ministry of Health (Thailand), Swimming pool business control or other similar businesses, 2007

: ²⁾ Subcontract: UAE



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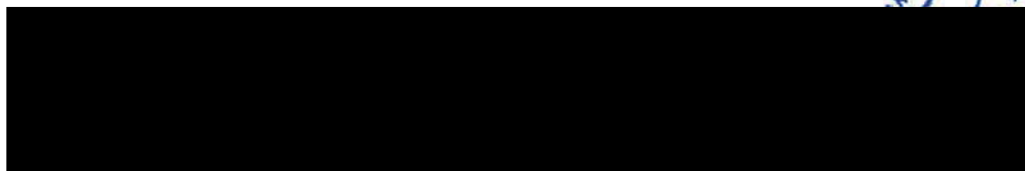
ANALYSIS REPORT

Customer Name : Sofitel Bangkok Sukhumvit
Address : 189 Sukhumvit Road Klong Toei Nuea Watthana Bangkok 10110
Sample Date : 26/07/2024 Analytical Date : 26/07-06/08/2024
Sample Type : Swimming Pool Report Date : 09/08/2024
Customer Code : JP-023-7-00

Parameter	Unit	Method of Analysis	Detection Limit	Result	Regulatory Standard
				Swimming Pool	
pH	-	Electrometric Method	-	8.3	7.2-8.4
Free chlorine ²⁾	mg/L as Cl ₂	DPD Ferrous Titrimetric Method	<0.01	1.0	0.6-1.0
Total Bacteria ²⁾	CFU/100ml	Standard Plate Count	<1.1	<1.1	-
Total Coliform Bacteria ²⁾	MPN/100ml	MPN Method	<1.1	<1.1	10
Fecal Coliform Bacteria ²⁾	MPN/100ml	MPN Method	<1.1	<1.1	-
<i>E. coli</i> ²⁾	/100ml	MPN Method, Detection	<1.1	<1.1	Not detected
Analysis No.				WW 1643	
Sampling Time				13:42	
Sample Condition				Clear	

Regulatory Standard : Ministry of Health (Thailand), Swimming pool business control or other similar businesses, 2007

: ²⁾ Subcontract: UAE



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ANALYSIS REPORT

Customer Name : Sofitel Bangkok Sukhumvit
Address : 189 Sukhumvit Road Klong Toei Nuea Watthana Bangkok 10110
Sample Date : 22/08/2024 Analytical Date : 23-29/08/2024
Sample Type : Waste water Report Date : 05/09/2024
Customer Code : JP 023-8-00

Parameter	Unit	Method of Analysis	Detection Limit	Result			Regulatory Standard
				St.1	St.2	St.3	
pH	-	Electrometric Method	-	7.0	7.0	7.1	5-9
BOD	mg/L	5 Day BOD Membrane Electrode	<2.0	197	14	19	20
Total Suspended Solids	mg/L	Dried at 103-105 °C	<2.5	224	34	26	30
Total Dissolved Solids	mg/L	Dried at 103-105 °C	<2.5	468	568	260	500*
Settleable Solids	ml/L	Volumetric Method	<0.1	<0.1	<0.1	<0.1	0.5
Sulfide	mg/L as H ₂ S	Iodometric Method	<1.0	<1.0	<1.0	<1.0	1.0
TKN ²⁾	mg/L as N	Macro-Kjeldahl Method	<1.5	20	48	<1.5	35
Oil & Grease	mg/L	Partition - gravimetric method	<2.0	8.0	<2.0	<2.0	20
Residue Chlorine	mg/L as Cl ₂	DPD Colorimetric Method	<0.10	<0.10	<0.10	<0.10	-
Fecal Coliform Bacteria ²⁾	MPN/100ml	MPN Method	<1.8	48,000	>160,000	46,000	-
Analysis No.				WW 1848	WW 1849	WW 1850	
Sampling Time				14:30	14:25	14:00	
Sample Condition				Grey Sediment	Yellow Sediment	Yellow Sediment	

Regulatory Standard: Announcement of the Ministry of Science Technology and Environment Subject: Establishing Control Standards Drainage from certain types and sizes of buildings

: ²⁾ Subcontract: UAE

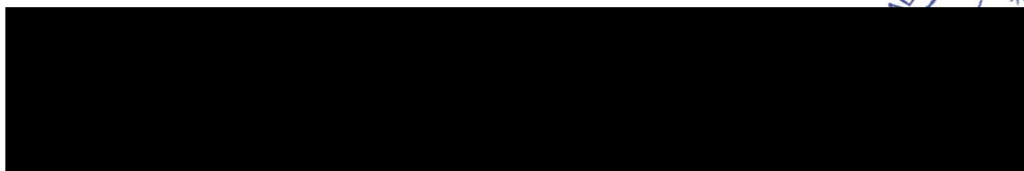
: Total Dissolved Solids for Waste water (St.3) 490 mg/L

: Total Dissolved Solids for Tap water 242 mg/L

St.1 = Equalization Tank

St.2 = Clear Water Tank

St.3 = Discharged to the public



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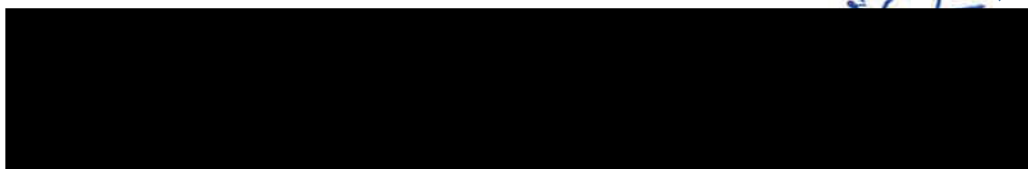
ANALYSIS REPORT

Customer Name : Sofitel Bangkok Sukhumvit
Address : 189 Sukhumvit Road Klong Toei Nuea Watthana Bangkok 10110
Sample Date : 22/08/2024 Analytical Date : 23-29/08/2024
Sample Type : Swimming Pool Report Date : 05/09/2024
Customer Code : JP 023-8-00

Parameter	Unit	Method of Analysis	Detection Limit	Result	Regulatory Standard
				Swimming Pool	
pH	-	Electrometric Method	-	8.2	7.2-8.4
Free chlorine ²⁾	mg/L as Cl ₂	DPD Colorimetric Method	<0.10	1.0	0.6-1.0
Total Bacteria ²⁾	CFU/100ml	MPN Method	<1	<1	-
Total Coliform Bacteria ²⁾	MPN/100ml	MPN Method	<1.1	<1.1	10
Fecal Coliform Bacteria ²⁾	MPN/100ml	MPN Method	<1.1	<1.1	-
<i>E. coli</i> ²⁾	/100ml	MPN Method, Detection	<1.1	<1.1	Not detected
Analysis No.				WW 1851	
Sampling Time				13:37	
Sample Condition				Clear	

Regulatory Standard : Ministry of Health (Thailand), Swimming pool business control or other similar businesses, 2007

: ²⁾ Subcontract: UAE



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ANALYSIS REPORT

Customer Name : Sofitel Bangkok Sukhumvit
Address : 189 Sukhumvit Road Klong Toei Nuea Watthana Bangkok 10110
Sample Date : 22/08/2024 Analytical Date : 23/08-05/09/2024
Sample Type : Tap Water Report Date : 05/09/2024
Customer Code : JP 023-8-00

Parameter	Unit	Method of Analysis	Detection Limit	Result	Regulatory Standard
				Shower Water (Room 1406)	
<i>E. coli</i> ²⁾	/100ml	MPN Method, Detection	<1.1	<1.1	Not detected
<i>Legionella spp.</i> ²⁾	CFU/L	Membrane Filtration Technique	Not detected	Not detected	Not detected
Analysis No.				WW 1851	
Sampling Time				13:25	
Sample Condition				Clear	

Regulatory Standard : Criteria to determine the quality of tap water Metropolitan Waterworks Authority, 2017

: ²⁾ Subcontract: UAE



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ANALYSIS REPORT

Customer Name : Sofitel Bangkok Sukhumvit
Address : 189 Sukhumvit Road Klong Toei Nuea Watthana Bangkok 10110
Sample Date : 20/09/2024 Analytical Date : 23/09-04/10/2024
Sample Type : Waste water Report Date : 08/10/2024
Customer Code : JP 023-9-00

Parameter	Unit	Method of Analysis	Detection Limit	Result			Regulatory Standard
				St.1	St.2	St.3	
pH	-	Electrometric Method	-	7.1	7.0	7.1	5.5-9.0
BOD	mg/L	5 Day BOD Membrane Electrode	<2.0	261	20	19	20
Total Suspended Solids	mg/L	Dried at 103-105 °C	<2.5	202	34	26	30
Total Dissolved Solids	mg/L	Dried at 180 °C	<2.5	442	488	532	1,000
Settleable Solids	ml/L	Volumetric Method	<0.1	<0.1	<0.1	<0.1	-
Sulfide	mg/L as H ₂ S	Iodometric Method	<1.0	<1.0	<1.0	<1.0	1.0
TKN ²⁾	mg/L as N	Macro-Kjeldahl Method	<1.5	32	66	<1.5	35
Oil & Grease	mg/L	Partition - gravimetric method	<2.0	16	<2.0	<2.0	20
Residue Chlorine	mg/L as Cl ₂	DPD Colorimetric Method	<0.10	<0.10	<0.10	<0.10	-
Fecal Coliform Bacteria ²⁾	MPN/100ml	MPN Method	<1.8	50,000	>160,000	48,000	-
Analysis No.				WW 2142	WW 2143	WW 2144	
Sampling Time				14:20	14:30	14:05	
Sample Condition				Grey Sediment	Yellow Sediment	Yellow Sediment	

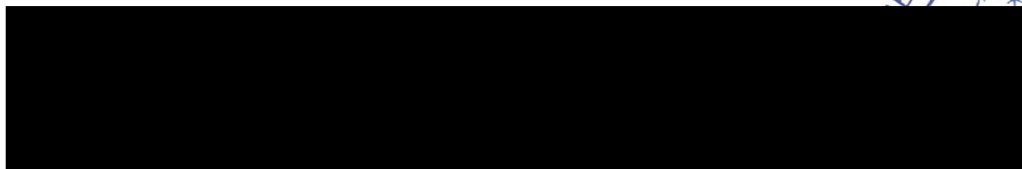
Regulatory Standard: Announcement of the Ministry of Science Technology and Environment Subject: Establishing Control Standards Drainage from certain types and sizes of buildings

: ²⁾ Subcontract: UAE

St.1 = Equalization Tank

St.2 = Clear Water Tank

St.3 = Discharged to the public



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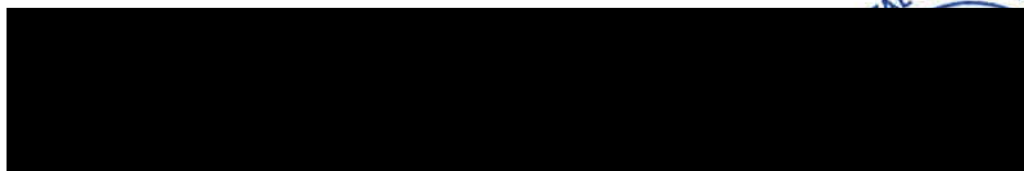
ANALYSIS REPORT

Customer Name : Sofitel Bangkok Sukhumvit
Address : 189 Sukhumvit Road Klong Toei Nuea Watthana Bangkok 10110
Sample Date : 20/09/2024 Analytical Date : 23/09-04/10/2024
Sample Type : Swimming Pool Report Date : 08/10/2024
Customer Code : JP 023-9-00

Parameter	Unit	Method of Analysis	Detection Limit	Result	Regulatory Standard
				Swimming Pool	
pH	-	Electrometric Method	-	8.2	7.2-8.4
Free chlorine ²⁾	mg/L as Cl ₂	DPD Colorimetric Method	<0.10	1.0	0.6-1.0
Total Bacteria ²⁾	CFU/100ml	MPN Method	<1	<1	-
Total Coliform Bacteria ²⁾	MPN/100ml	MPN Method	<1.1	<1.1	10
Fecal Coliform Bacteria ²⁾	MPN/100ml	MPN Method	<1.1	<1.1	-
<i>E. coli</i> ²⁾	/100ml	MPN Method, Detection	<1.1	<1.1	Not detected
Analysis No.				WW 2145	
Sampling Time				13:46	
Sample Condition				Clear	

Regulatory Standard : Ministry of Health (Thailand), Swimming pool business control or other similar businesses, 2007

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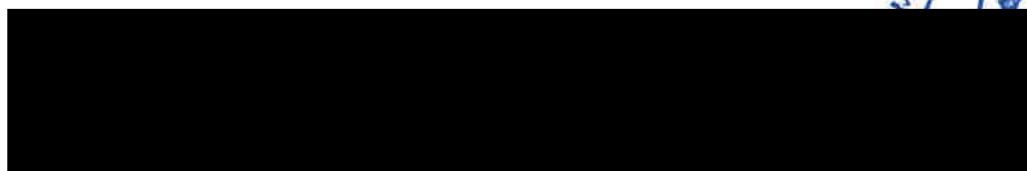
ANALYSIS REPORT

Customer Name : Sofitel Bangkok Sukhumvit
Address : 189 Sukhumvit Road Klong Toei Nuea Watthana Bangkok 10110
Sample Date : 20/09/2024 Analytical Date : 23/09-04/10/2024
Sample Type : Drinking Water Report Date : 08/10/2024
Customer Code : JP 023-9-00

Parameter	Unit	Method of Analysis	Detection Limit	Result		Regulatory Standard
				Portable Water Main Kitchen	Portable Water Canteen Kitchen	
Total Viable Count ²⁾	CFU/ml	Standard Plate Count	<1	<1	<1	-
Total Coliform Bacteria ²⁾	MPN/100ml	MPN Method	<1.1	<1.1	<1.1	-
Fecal Coliform Bacteria ²⁾	MPN/100ml	MPN Method	<1.1	<1.1	<1.1	Not detected
<i>E. coli</i> ²⁾	MPN/100ml	MPN Method, Detection	<1.1	<1.1	<1.1	Not detected
<i>Staphylococcus aureus</i> ²⁾	/100ml	Membrane Filtration	Not detected	Not detected	Not detected	-
<i>Salmonella spp.</i> ²⁾	/100ml	Membrane Filtration	Not detected	Not detected	Not detected	-
<i>Clostridium perfringens</i> ²⁾	/100ml	Membrane Filtration	Not detected	Not detected	Not detected	Not detected
Analysis No.				WW 2147	WW 2148	
Sampling Time				13:21	13:27	
Sample Condition				Clear	Clear	

Regulatory Standard : World Health Organization Recommendation Criteria for Drinking Water Quality, 2013

: ²⁾ Subcontract: UAE



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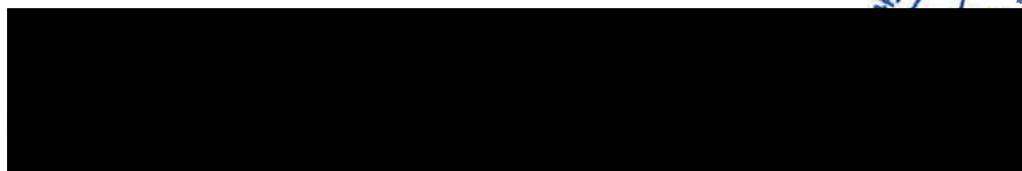
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Customer Name : Sofitel Bangkok Sukhumvit
Address : 189 Sukhumvit Road Klong Toei Nuea Watthana Bangkok 10110
Sample Date : 20/09/2024 Analytical Date : 23/09-04/10/2024
Sample Type : Tap Water Report Date : 08/10/2024
Customer Code : JP 023-9-00

Parameter	Unit	Method of Analysis	Detection Limit	Result	Regulatory Standard
				Jacucci (Room No. 2718)	
pH	-	Electrometric Method	-	7.6	6.5-8.5
Free chlorine ²⁾	mg/L as Cl ₂	DPD Colorimetric Method	<0.10	0.2	0.2-2.0
Total Bacteria ²⁾	CFU/100ml	Standard Plate Count	<1	<1	500
Total Coliform Bacteria ²⁾	MPN/100ml	MPN Method	<1.1	<1.1	Not detected
Fecal Coliform Bacteria ²⁾	MPN/100ml	MPN Method	<1.1	<1.1	-
<i>E. coli</i> ²⁾	/100ml	MPN Method, Detection	<1.1	<1.1	Not detected
Analysis No.				WW 2150	
Sampling Time				13:30	
Sample Condition				Clear	

Regulatory Standard : Criteria to determine the quality of tap water Metropolitan Waterworks Authority, 2017

: ²⁾ Subcontract: Test Tech



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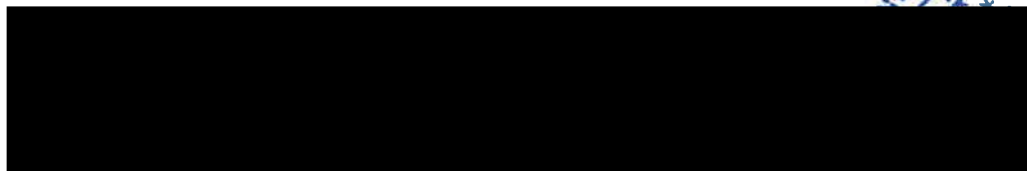
ANALYSIS REPORT

Customer Name : Sofitel Bangkok Sukhumvit
Address : 189 Sukhumvit Road Klong Toei Nuea Watthana Bangkok 10110
Sample Date : 20/09/2024 Analytical Date : 23/09-04/10/2024
Sample Type : Tap Water Report Date : 08/10/2024
Customer Code : JP 023-9-00

Parameter	Unit	Method of Analysis	Detection Limit	Result	Regulatory Standard
				Spa Water LEMONGRASS	
<i>Legionella spp.</i> ²⁾	CFU/L	Membrane Filtration Technique	Not detected	Not detected	Not detected
<i>E. Coli</i> ²⁾	/100ml	MPN Method, Detection	<1.1	<1.1	Not detected
Analysis No.				WW 2149	
Sampling Time				13:44	
Sample Condition				Clear	

Regulatory Standard : Criteria to determine the quality of tap water Metropolitan Waterworks Authority, 2017

: ²⁾ Subcontract: Test Tech



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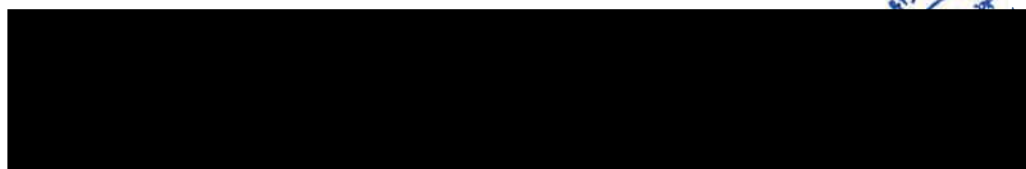
ANALYSIS REPORT

Customer Name : Sofitel Bangkok Sukhumvit
Address : 189 Sukhumvit Road Klong Toei Nuea Watthana Bangkok 10110
Sample Date : 20/09/2024 Analytical Date : 23/09-04/10/2024
Sample Type : Cooling Water Report Date : 04/10/2024
Customer Code : JP 023-9-00

Parameter	Unit	Method of Analysis	Detection Limit	Result	Regulatory Standard
				Cooling Water	
<i>E. Coli</i> ²⁾	/100ml	MPN Method, Detection	<1.8	<1.8	-
<i>Legionella spp.</i> ²⁾	/100ml	Membrane Filtration Method	Not detected	Not detected	Not detected
Analysis No.				WW 2146	
Sampling Time				13:55	
Sample Condition				Clear, Yellow	

Regulatory Standard : Announcement of the department of health (Thailand), Practice for the control of legionella bacteria in cooling towers, January 2001

: ²⁾ Subcontract: UAE



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ANALYSIS REPORT

Customer Name : Sofitel Bangkok Sukhumvit
Address : 189 Sukhumvit Road Klong Toei Nuea Watthana Bangkok 10110
Sample Date : 25/10/2024 Analytical Date : 28/10-04/11/2024
Sample Type : Waste water Report Date : 05/10/2024
Customer Code : JP 023-10-00

Parameter	Unit	Method of Analysis	Detection Limit	Result			Regulatory Standard
				St.1	St.2	St.3	
pH	-	Electrometric Method	-	6.9	6.8	7.1	5.5-9.0
BOD	mg/L	5 Day BOD Membrane Electrode	<2.0	198	14	16	20
Total Suspended Solids	mg/L	Dried at 103-105 °C	<2.5	246	33	24	30
Total Dissolved Solids	mg/L	Dried at 180 °C	<2.5	462	548	514	1,000
Settleable Solids	ml/L	Volumetric Method	<0.1	<0.1	<0.1	<0.1	-
Sulfide	mg/L as H ₂ S	Iodometric Method	<1.0	<1.0	<1.0	<1.0	1.0
TKN ²⁾	mg/L as N	Macro-Kjeldahl Method	<1.5	22	66	<1.5	35
Oil & Grease	mg/L	Partition - gravimetric method	<2.0	12	<2.0	<2.0	20
Residue Chlorine	mg/L as Cl ₂	DPD Colorimetric Method	<0.10	<0.10	<0.10	<0.10	-
Fecal Coliform Bacteria ²⁾	MPN/100ml	MPN Method	<1.8	50,000	>160,000	52,000	-
Analysis No.				WW 2424	WW 2425	WW 2426	
Sampling Time				14:22	14:35	14:00	
Sample Condition				Grey Sediment	Yellow Sediment	Yellow Sediment	

Regulatory Standard: Announcement of the Ministry of Science Technology and Environment Subject: Establishing Control Standards Drainage from certain types and sizes of buildings

: ²⁾ Subcontract: UAE

St.1 = Equalization Tank

St.2 = Clear Water Tank

St.3 = Discharged to the public

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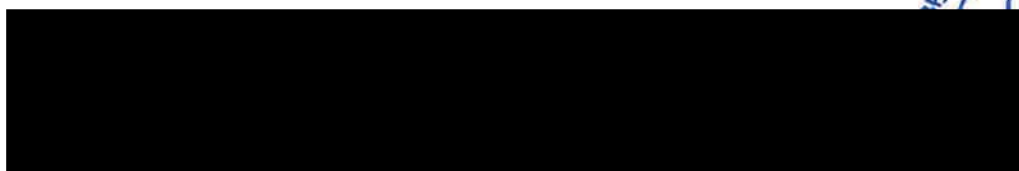
ANALYSIS REPORT

Customer Name : Sofitel Bangkok Sukhumvit
Address : 189 Sukhumvit Road Klong Toei Nuea Watthana Bangkok 10110
Sample Date : 25/10/2024 Analytical Date : 28/10-04/11/2024
Sample Type : Drinking Water (Ice) Report Date : 05/11/2024
Customer Code : JP-023-10-00

Parameter	Unit	Method of Analysis	Detection Limit	Result		Regulatory Standard
				Belga Kitchen (IC-F3-01 201 Floor 32)	ห้องอาหาร Canteen (Bon Bon)	
Standard plate Count ²⁾	CFU/ml	Standard Plate Count	<1	<1	<1	-
Total Coliform Bacteria ²⁾	MPN/100ml	MPN Method	<1.1	<1.1	<1.1	-
Fecal Coliform Bacteria ²⁾	MPN/100ml	MPN Method	<1.1	<1.1	<1.1	Not detected
<i>E. coli</i> ²⁾	/100ml	MPN Method, Detection	<1.1	<1.1	<1.1	Not detected
Analysis No.				WW 2427	WW 2428	
Sampling Time				13:18	13:29	
Sample Condition				Clear	Clear	

Regulatory Standard : World Health Organization Recommendation Criteria for Drinking Water Quality, 2013

: ²⁾ Subcontract: UAE



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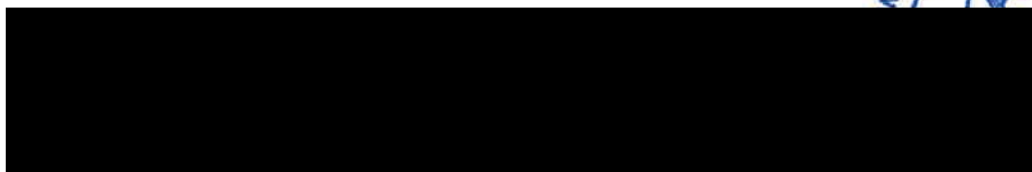
ANALYSIS REPORT

Customer Name : Sofitel Bangkok Sukhumvit
Address : 189 Sukhumvit Road Klong Toei Nuea Watthana Bangkok 10110
Sample Date : 25/10/2024 Analytical Date : 28/10-04/11/2024
Sample Type : Drinking Water (Ice) Report Date : 05/11/2024
Customer Code : JP-023-10-00

Parameter	Unit	Method of Analysis	Detection Limit	Result		Regulatory Standard
				Room Service (IC-F3-01 Floor 2)	Le Macaron Floor G	
Standard Plate Count ²⁾	CFU/ml	Standard Plate Count	<1	<1	<1	-
Total Coliform Bacteria ²⁾	MPN/100ml	MPN Method	<1.1	<1.1	<1.1	-
Fecal Coliform Bacteria ²⁾	MPN/100ml	MPN Method	<1.1	<1.1	<1.1	Not detected
<i>E. coli</i> ²⁾	/100ml	MPN Method, Detection	<1.1	<1.1	<1.1	Not detected
Analysis No.				WW 2429	WW 2430	
Sampling Time				13:34	13:41	
Sample Condition				Clear	Clear	

Regulatory Standard : World Health Organization Recommendation Criteria for Drinking Water Quality, 2013

: ²⁾ Subcontract: UAE



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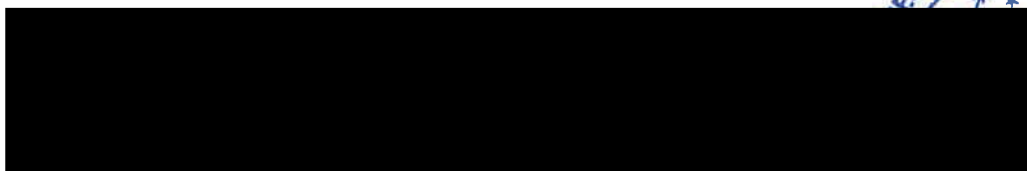
ANALYSIS REPORT

Customer Name : Sofitel Bangkok Sukhumvit
Address : 189 Sukhumvit Road Klong Toei Nuea Watthana Bangkok 10110
Sample Date : 25/10/2024 Analytical Date : 28/10-04/11/2024
Sample Type : Swimming Pool Report Date : 05/11/2024
Customer Code : JP-023-10-00

Parameter	Unit	Method of Analysis	Detection Limit	Result	Regulatory Standard
				Swimming Pool	
pH	-	Electrometric Method	-	8.2	7.2-8.4
Free chlorine ²⁾	mg/L as Cl ₂	DPD Ferrous Titrimetric Method	<0.01	1.0	0.6-1.0
Total Bacteria ²⁾	CFU/100ml	Standard Plate Count	<1	<1	-
Total Coliform Bacteria ²⁾	MPN/100ml	MPN Method	<1.1	<1.1	10
Fecal Coliform Bacteria ²⁾	MPN/100ml	MPN Method	<1.1	<1.1	-
<i>E. coli</i> ²⁾	/100ml	MPN Method, Detection	<1.1	<1.1	Not detected
Analysis No.				WW 2431	
Sampling Time				13:48	
Sample Condition				Clear	

Regulatory Standard : Ministry of Health (Thailand), Swimming pool business control or other similar businesses, 2007

: ²⁾ Subcontract: UAE



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ANALYSIS REPORT

Customer Name : Sofitel Bangkok Sukhumvit
Address : 189 Sukhumvit Road Klong Toei Nuea Watthana Bangkok 10110
Sample Date : 21/11/2024 Analytical Date : 21-27/11/2024
Sample Type : Waste water Report Date : 27/11/2024
Customer Code : JP 023-11-00

Parameter	Unit	Method of Analysis	Detection Limit	Result			Regulatory Standard
				St.1	St.2	St.3	
pH	-	Electrometric Method	-	7.1	6.8	7.0	5.5-9.0
BOD	mg/L	5 Day BOD Membrane Electrode	<2.0	202	22	19	20
Total Suspended Solids	mg/L	Dried at 103-105 °C	<2.5	202	42	22	30
Total Dissolved Solids	mg/L	Dried at 180 °C	<2.5	472	568	538	1,000
Settleable Solids	ml/L	Volumetric Method	<0.1	<0.1	<0.1	<0.1	-
Sulfide	mg/L as H ₂ S	Iodometric Method	<1.0	<1.0	<1.0	<1.0	1.0
TKN ²⁾	mg/L as N	Macro-Kjeldahl Method	<1.5	22	52	<1.5	35
Oil & Grease	mg/L	Partition - gravimetric method	<2.0	16	<2.0	<2.0	20
Residue Chlorine	mg/L as Cl ₂	DPD Colorimetric Method	<0.10	<0.10	<0.10	<0.10	-
Fecal Coliform Bacteria ²⁾	MPN/100ml	MPN Method	<1.8	55,000	>160,000	54,000	-
Analysis No.				WW 2662	WW 2663	WW 2664	
Sampling Time				14:00	14:20	14:32	
Sample Condition				Grey Sediment	Yellow Sediment	Yellow Sediment	

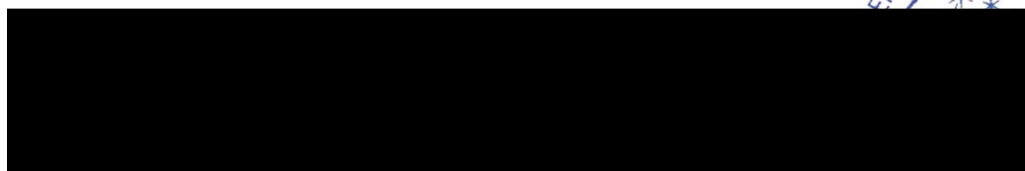
Regulatory Standard: Announcement of the Ministry of Science Technology and Environment Subject: Establishing Control Standards Drainage from certain types and sizes of buildings

: ²⁾ Subcontract: UAE

St.1 = Equalization Tank

St.2 = Clear Water Tank

St.3 = Discharged to the public



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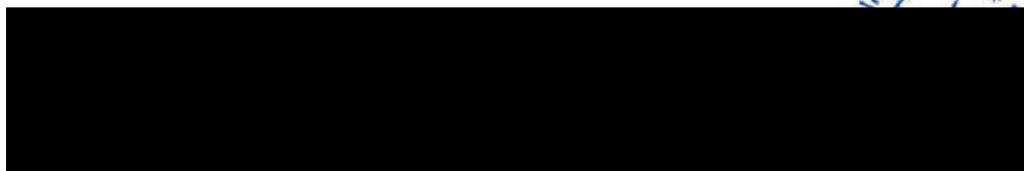
ANALYSIS REPORT

Customer Name : Sofitel Bangkok Sukhumvit
Address : 189 Sukhumvit Road Klong Toei Nuea Watthana Bangkok 10110
Sample Date : 21/11/2024 Analytical Date : 22-29/11/2024
Sample Type : Swimming Pool Report Date : 03/12/2024
Customer Code : JP 023-11-00

Parameter	Unit	Method of Analysis	Detection Limit	Result	Regulatory Standard
				Swimming Pool	
pH	-	Electrometric Method	-	7.8	7.2-8.4
Free chlorine ²⁾	mg/L as Cl ₂	DPD Colorimetric Method	<0.10	1.0	0.6-1.0
Total Bacteria ²⁾	CFU/100ml	MPN Method	<1	<1	-
Total Coliform Bacteria ²⁾	MPN/100ml	MPN Method	<1.1	<1.1	10
Fecal Coliform Bacteria ²⁾	MPN/100ml	MPN Method	<1.1	<1.1	-
<i>E. coli</i> ²⁾	/100ml	MPN Method, Detection	<1.1	<1.1	Not detected
Analysis No.				WW 2657	
Sampling Time				14:12	
Sample Condition				Clear	

Regulatory Standard : Ministry of Health (Thailand), Swimming pool business control or other similar businesses, 2007

: ²⁾ Subcontract: UAE



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ANALYSIS REPORT

Customer Name : Sofitel Bangkok Sukhumvit
Address : 189 Sukhumvit Road Klong Toei Nuea Watthana Bangkok 10110
Sample Date : 21/11/2024 Analytical Date : 22-28/11/2024
Sample Type : Drinking Water Report Date : 03/12/2024
Customer Code : JP-023-11-00

Parameter	Unit	Method of Analysis	Detection Limit	Result		Regulatory Standard
				ICE IC F6 01	Drinking Water ห้องครัว ชั้น 2	
Colour, Odour	-	Sensory Test	-	Not detected	Not detected	Not detected
Turbidity	NTU	Nephelometric	<0.01	0.14	0.27	5
pH	-	Electrometric	-	6.7	7.2	6.5-9
Total Solids	mg/L	Dried at 103-105 °C	<2.5	<2.5	188	-
Chlorine ²⁾	mg/L as Cl ₂	DPD Colorimetric	<2.0	<2.0	<2.0	250
Total Hardness	mg/L as CaCO ₃	EDTA Titrimetric	<1.0	<1.0	92	500
Nitrate-Nitrogen ²⁾	mg/L as NO ₃ -N	Cadmium Reduction	<0.02	<0.02	0.11	50
Sulfate ²⁾	mg/L as SO ₄ ²⁻	Turbidimetric	<0.3	<0.3	<0.3	1000
Arsenic (As) ²⁾	mg/L	Hydride Generation, AAS	<0.0003	<0.0003	0.0006	0.01
Barium (Ba) ²⁾	mg/L	Direct, ICP Method	<0.003	<0.003	0.021	1.7
Cadmium (Cd) ²⁾	mg/L	Direct, ICP Method	<0.001	<0.0001	<0.0001	0.03
Chromium (Cr) ²⁾	mg/L	Direct, ICP Method	<0.001	<0.001	<0.001	0.05
Copper (Cu) ²⁾	mg/L	Direct, ICP Method	<0.001	0.007	0.131	1
Iron (Fe) ²⁾	mg/L	Direct, ICP Method	<0.002	<0.002	<0.002	0.3
Lead (Pb) ²⁾	mg/L	Direct, ICP Method	<0.002	<0.002	<0.002	0.01
Manganese (Mn) ²⁾	mg/L	Direct, ICP Method	<0.001	<0.001	0.003	0.1
Mercury (Hg) ²⁾	mg/L	Cold-Vapor, AAS	<0.0001	<0.0001	<0.0001	0.001
Selenium (Se) ²⁾	mg/L	Hydride Generation, AAS	<0.0005	<0.0005	<0.0005	0.01
Silver (Ag) ²⁾	mg/L	Direct, ICP Method	<0.003	<0.003	<0.003	0.005
Zinc (Zn) ²⁾	mg/L	Direct, ICP Method	<0.001	<0.001	0.069	4
Aluminum (Al) ²⁾	mg/L	Direct, ICP Method	<0.005	<0.005	0.045	0.2
Phenol ²⁾	mg/L	Pyridine-Barbituric acid	<0.001	<0.001	<0.001	-
Cyanide ²⁾	mg/L as CN ⁻	Distillation 4-Aminoantipyrine	<0.001	<0.001	<0.001	0.07
Analysis No.				WW 2655	WW 2656	
Sampling Time				13:55	13:59	
Sample Condition				Clear	Clear	

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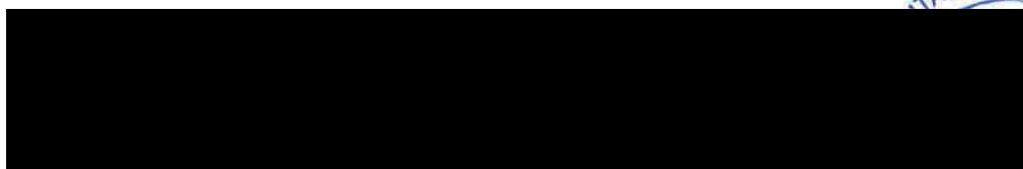
ANALYSIS REPORT

Customer Name : Sofitel Bangkok Sukhumvit
Address : 189 Sukhumvit Road Klong Toei Nuea Watthana Bangkok 10110
Sample Date : 21/11/2024 Analytical Date : 22-28/11/2024
Sample Type : Drinking Water Report Date : 03/12/2024
Customer Code : JP-023-11-00

Parameter	Unit	Method of Analysis	Detection Limit	Result		Regulatory Standard
				ICE IC F2 01	Drinking Water ห้องครัว ชั้น 2	
Residual Chlorine ²⁾	mg/L as Cl ₂	DPD Colorimetric	<0.1	<0.1	<0.1	0.6-1.1
Alkylbenzene Sulphonate ²⁾	mg/L	Colorimetric Method	<0.035	<0.035	<0.035	-
Fluoride ²⁾	mg/L as F ⁻	SPADNS Method	<0.02	0.03	0.26	1.5
Total Bacteria ²⁾	CFU/ml	MPN Method	<1	<1	<1	Not detected
Total Coliform Bacteria ²⁾	MPN/100ml	MPN Method	<1.1	<1.1	<1.1	Not detected
<i>E. coli</i> ²⁾	MPN/100ml	MPN Method, Detection	<1.1	<1.1	<1.1	Not detected
<i>Staphylococcus aureus</i> ²⁾	/100ml	Membrane Filtration	Not detected	Not detected	Not detected	Not detected
<i>Salmonella spp.</i> ²⁾	/100ml	Membrane Filtration	Not detected	Not detected	Not detected	Not detected
<i>Clostridium perfringens</i> ²⁾	/100ml	Membrane Filtration	Not detected	Not detected	Not detected	Not detected
Analysis No.				WW 2655	WW 2656	
Sampling Time				13:55	13:59	
Sample Condition				Clear	Clear	

Regulatory Standard : World Health Organization Recommendation Criteria for Drinking Water Quality, 2013

: ²⁾ Subcontract: UAE



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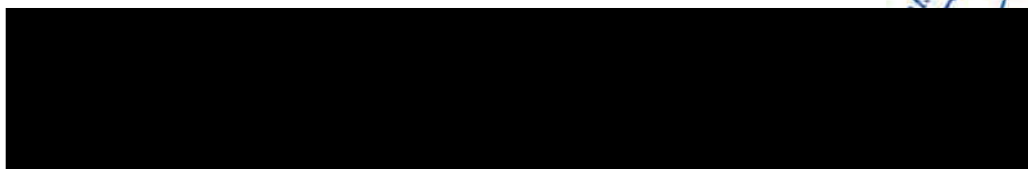
ANALYSIS REPORT

Customer Name : Sofitel Bangkok Sukhumvit
Address : 189 Sukhumvit Road Klong Toei Nuea Watthana Bangkok 10110
Sample Date : 21/11/2024 Analytical Date : 22/11-03/12/2024
Sample Type : Tap Water Report Date : 03/12/2024
Customer Code : JP 023-11-00

Parameter	Unit	Method of Analysis	Detection Limit	Result	Regulatory Standard
				Shower Water (Room 1018)	
<i>Legionella spp.</i> ²⁾	CFU/L	Membrane Filtration Technique	Not detected	Not detected	Not detected
<i>E. Coli</i> ²⁾	/100ml	MPN Method, Detection	<1.1	<1.1	Not detected
Analysis No.				WW 2658	
Sampling Time				14:18	
Sample Condition				Clear	

Regulatory Standard : Criteria to determine the quality of tap water Metropolitan Waterworks Authority, 2017

: ²⁾ Subcontract: UAE



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Tel: 0-2716-3506-7 Fax: 0-2716-3507

ANALYSIS REPORT

Customer Name : Sofitel Bangkok Sukhumvit
Address : 189 Sukhumvit Road Klong Toei Nuea Watthana Bangkok 10110
Sample Date : 20/12/2024 Analytical Date : 21-27/12/2024
Sample Type : Waste water Report Date : 07/01/2025
Customer Code : JP 023-12-00

Parameter	Unit	Method of Analysis	Detection Limit	Result			Regulatory Standard
				St.1	St.2	St.3	
pH	-	Electrometric Method	-	7.0	6.9	7.2	5.5-9.0
BOD	mg/L	5 Day BOD Membrane Electrode	<2.0	218	15	18	20
Total Suspended Solids	mg/L	Dried at 103-105 °C	<2.5	242	36	17	30
Total Dissolved Solids	mg/L	Dried at 180 °C	<2.5	470	578	516	1,000
Settleable Solids	ml/L	Volumetric Method	<0.1	<0.1	<0.1	<0.1	-
Sulfide	mg/L as H ₂ S	Iodometric Method	<1.0	<1.0	<1.0	<1.0	1.0
TKN ²⁾	mg/L as N	Macro-Kjeldahl Method	<1.5	14	57	<1.5	35
Oil & Grease	mg/L	Partition - gravimetric method	<2.0	13	<2.0	<2.0	20
Residue Chlorine	mg/L as Cl ₂	DPD Colorimetric Method	<0.10	<0.10	<0.10	<0.10	-
Fecal Coliform Bacteria ²⁾	MPN/100ml	MPN Method	<1.8	54,000	>160,000	54,000	-
Analysis No.				WW 3004	WW 3005	WW 3006	
Sampling Time				14:44	14:50	15:25	
Sample Condition				Grey Sediment	Yellow Sediment	Yellow Sediment	

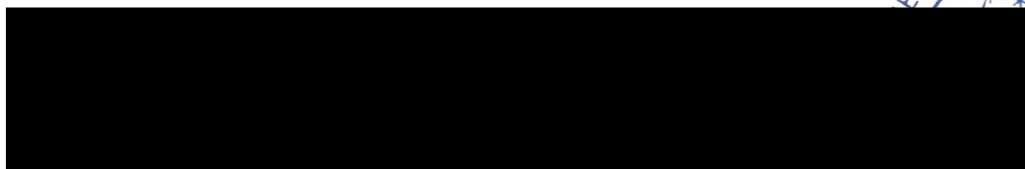
Regulatory Standard: Announcement of the Ministry of Science Technology and Environment Subject: Establishing Control Standards Drainage from certain types and sizes of buildings

: ²⁾ Subcontract: UAE

St.1 = Equalization Tank

St.2 = Clear Water Tank

St.3 = Discharged to the public



Analyst

Laboratory Manager



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Tel: 0-2716-3506-7 Fax: 0-2716-3507

ANALYSIS REPORT

Customer Name : Sofitel Bangkok Sukhumvit
Address : 189 Sukhumvit Road Klong Toei Nuea Watthana Bangkok 10110
Sample Date : 20/12/2024 Analytical Date : 21-27/12/2024
Sample Type : Swimming Pool Report Date : 07/01/2025
Customer Code : JP 023-12-00

Parameter	Unit	Method of Analysis	Detection Limit	Result	Regulatory Standard
				Swimming Pool	
pH	-	Electrometric Method	-	7.2	7.2-8.4
Free chlorine ²⁾	mg/L as Cl ₂	DPD Colorimetric Method	<0.10	0.6	0.6-1.0
Total Bacteria ²⁾	CFU/100ml	MPN Method	<1	<1	-
Total Coliform Bacteria ²⁾	MPN/100ml	MPN Method	<1.1	<1.1	10
Fecal Coliform Bacteria ²⁾	MPN/100ml	MPN Method	<1.1	<1.1	-
<i>E. coli</i> ²⁾	/100ml	MPN Method, Detection	<1.1	<1.1	Not detected
Analysis No.				WW 3006	
Sampling Time				13:54	
Sample Condition				Clear	

Regulatory Standard : Ministry of Health (Thailand), Swimming pool business control or other similar businesses, 2007

: ²⁾ Subcontract: UAE



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Tel: 0-2716-3506-7 Fax: 0-2716-3507

ANALYSIS REPORT

Customer Name : Sofitel Bangkok Sukhumvit
Address : 189 Sukhumvit Road Klong Toei Nuea Watthana Bangkok 10110
Sample Date : 20/12/2024 Analytical Date : 21-31/12/2024
Sample Type : Cooling Water Report Date : 07/01/2025
Customer Code : JP 023-12-00

Parameter	Unit	Method of Analysis	Detection Limit	Result	Regulatory Standard
				Cooling Water	
<i>E. Coli</i> ²⁾	/100ml	MPN Method, Detection	<1.8	<1.8	-
<i>Legionella spp.</i> ²⁾	/100ml	Membrane Filtration Method	Not detected	Not detected	Not detected
Analysis No.				WW 3008	
Sampling Time				14:00	
Sample Condition				Clear, Yellow	

Regulatory Standard : Announcement of the department of health (Thailand), Practice for the control of legionella bacteria in cooling towers, January 2001

: ²⁾ Subcontract: UAE



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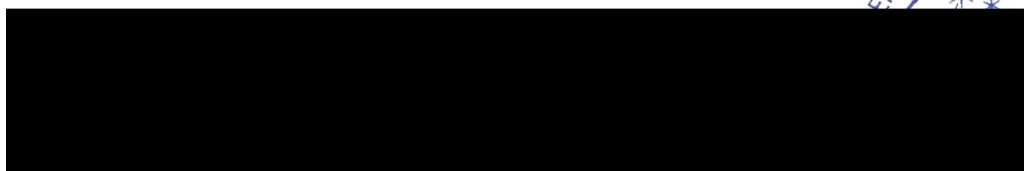
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10250 Tel: 0-2716-3506-7 Fax: 0-2716-3507

ANALYSIS REPORT

Customer Name : Sofitel Bangkok Sukhumvit
Address : 189 Sukhumvit Road Klong Toei Nuea Watthana Bangkok 10110
Sample Date : 20/12/2024 Analytical Date : 21-28/12/2024
Sample Type : Drinking Water Report Date : 07/01/2025
Customer Code : JP 023-12-00

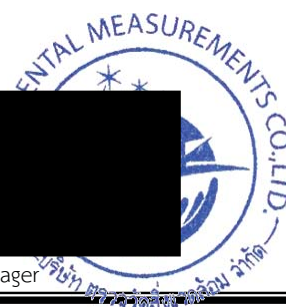
Parameter	Unit	Method of Analysis	Detection Limit	Result	Regulatory Standard
				Portable Water Canteen Kitchen floor 31	
Total Viable Count ²⁾	CFU/ml	Standard Plate Count	<1	<1	-
Total Coliform Bacteria ²⁾	MPN/100ml	MPN Method	<1.1	<1.1	-
Fecal Coliform Bacteria ²⁾	MPN/100ml	MPN Method	<1.1	<1.1	Not detected
<i>E. coli</i> ²⁾	MPN/100ml	MPN Method, Detection	<1.1	<1.1	Not detected
<i>Staphylococcus aureus</i> ²⁾	/100ml	Membrane Filtration	Not detected	Not detected	-
<i>Salmonella spp.</i> ²⁾	/100ml	Membrane Filtration	Not detected	Not detected	-
<i>Clostridium perfringens</i> ²⁾	/100ml	Membrane Filtration	Not detected	Not detected	Not detected
Analysis No.				VW 3009	
Sampling Time				13:34	
Sample Condition				Clear	

Regulatory Standard : World Health Organization Recommendation Criteria for Drinking Water Quality, 2013
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Tel: 0-2716-3506-7 Fax: 0-2716-3507

ANALYSIS REPORT

Customer Name : Sofitel Bangkok Sukhumvit
Address : 189 Sukhumvit Road Klong Toei Nuea Watthana Bangkok 10110
Sample Date : 20/12/2024 Analytical Date : -
Sample Type : Tap Water Report Date : 25/12/2024
Customer Code : JP 023-12-00

Parameter	Unit	Method of Analysis	Detection Limit	Result	Regulatory Standard
				Jacucci	
pH	-	Electrometric Method	-	**	6.5-8.5
Free chlorine ²⁾	mg/L as Cl ₂	DPD Colorimetric Method	<0.10	**	0.2-2.0
Total Bacteria ²⁾	CFU/100ml	Standard Plate Count	<1	**	500
Total Coliform Bacteria ²⁾	MPN/100ml	MPN Method	<1.1	**	Not detected
Fecal Coliform Bacteria ²⁾	MPN/100ml	MPN Method	<1.1	**	-
E. coli ²⁾	/100ml	MPN Method, Detection	<1.1	**	Not detected
Analysis No.					
Sampling Time					
Sample Condition					

Regulatory Standard : Criteria to determine the quality of tap water Metropolitan Waterworks Authority, 2017

: ²⁾ Subcontract: UAE

** Unable to collect samples



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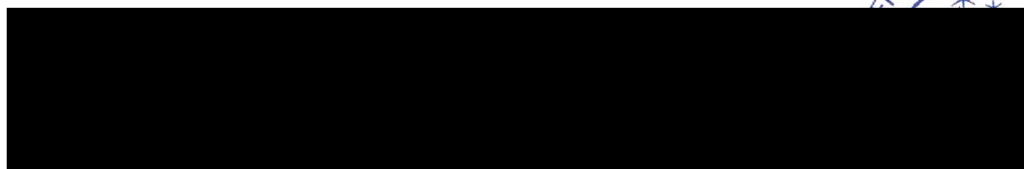
ANALYSIS REPORT

Customer Name : Sofitel Bangkok Sukhumvit
Address : 189 Sukhumvit Road Klong Toei Nuea Watthana Bangkok 10110
Sample Date : 20/12/2024 Analytical Date : 21-27/12/2024
Sample Type : Tap Water Report Date : 07/01/2025
Customer Code : JP 023-12-00

Parameter	Unit	Method of Analysis	Detection Limit	Result	Regulatory Standard
				Spa Water Almond	
<i>Legionella spp.</i> ²⁾	CFU/L	Membrane Filtration Technique	Not detected	Not detected	Not detected
<i>E. Coli</i> ²⁾	/100ml	MPN Method, Detection	<1.1	<1.1	Not detected
Analysis No.				WW 3010	
Sampling Time				13:49	
Sample Condition				Clear	

Regulatory Standard : Criteria to determine the quality of tap water Metropolitan Waterworks Authority, 2017

: ²⁾ Subcontract: UAE



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Tel: 0-2716-3506-7 Fax: 0-2716-3507

ANALYSIS REPORT

Customer Name

:

Sofitel Bangkok Sukhumvit

Address

:

189 Sukhumvit Road Klong Toei Nuea Watthana Bangkok 10110

Sample Date

:

20/12/2024

Analytical Date

:

21/12/2024-06/01/2025

Sample Type

:

Tap Water

Report Date

:

07/01/2025

Customer Code

:

JP 023-12-00

Parameter	Unit	Method of Analysis	Detection Limit	Result	Regulatory Standard
				น้ำตกหน้าโรงแรม	
Legionella spp. ²⁾	CFU/L	Membrane Filtration Technique	Not detected	Not detected	Not detected
Analysis No.				WW 3011	
Sampling Time				14:10	
Sample Condition				Clear	

Regulatory Standard : Criteria to determine the quality of tap water Metropolitan Waterworks Authority,2017
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