



Water Authority-Cayman

Grand Cayman Public Water Supply Biannual Analysis (from Red Gate Plants)

PARAMETER - BIANNUAL ANALYSIS <i>(all results in mg/l, unless otherwise stated)</i>	Sample Date	Sample Date	Sample Date	Sample Date	Sample Date	Sample Date	Sample Date	Sample Date	Sample Date	Sample Date	Sample Date	Sample Date	WHO Health Based Guidelines
	09-Jul-07	08-Dec-08	30-Nov-09	11-Apr-11	29-Nov-11	14-Aug-12	05-Aug-13	06-Aug-14	19-Oct-15	20-Jun-16	10-Jul-17	05-Nov-18	
Alkalinity	4.80	n/r	2.10	n/d	2.30	5.35	2.00	1.80	1.80	2.10	1.00	5.00	none
Aluminum	BDL	BDL	BDL	n/d	<0.005	<0.005	<0.005	0.010	0.005	<0.005	<0.005	n/d	none
Ammonia	BDL	BDL	n/r	BDL	<0.017	<0.017	n/r	< 0.02	<0.02	<0.02	n/r	n/r	none
Bicarbonate	5.9	n/r	2.6	n/d	2.8	6.2	2.4	2.20	2.20	2.60	1.22	6.10	none
Boron	n/d	n/d	1.3	0.7	1.1	1.1	1.5	1.2	1.3	0.9	n/d	1.0	2.4
Calcium	1.4	1.2	0.8	n/d	1.6	0.7	1.8	0.8	0.4	0.2	0.8	1.2	none
Chloride	91.0	108.0	103.9	86.0	98.0	107.9	105.0	102.5	120.0	83.0	84.0	74.0	none
Copper	BDL	0.002	BDL	n/d	<0.021	<0.021	<0.02	0.03	<0.04	<0.04	<0.04	< 0.02	2
Hardness	6.5	10.0	9.0	n/d	4.0	3.5	7.0	4.5	3.5	2.5	5.0	8.0	none
Iron	BDL	0.01	0.02	0.12	<0.008	<0.008	0.01	< 0.02	<0.02	<0.02	<0.02	n/d	none
Magnesium	0.7	1.7	1.7	n/d	0.0	0.4	0.6	0.6	0.6	0.5	0.7	1.0	none
Nitrate as N	BDL	0.30	1.80	BDL	<0.1	<0.1	<0.1	< 0.1	<0.1	0.3	n/d	n/d	50 as NO ₃ ⁻
Orthophosphate	1.74	1.47	2.18	n/d	1.56	1.10	1.10	0.94	1.1	1.0	1.0	1.5	none
Sodium	n/d	n/d	n/d	n/d	n/d	n/d	n/d	n/d	n/d	n/d	n/d	n/d	none
Sulphate	11.5	12.9	10.8	n/d	10.6	8.7	10.9	4.7	7.7	7.7	4.1	7.1	none
Sulfide	BDL	BDL	BDL	BDL	<0.002	<0.002	<0.01	< 0.01	<0.01	<0.01	<0.01	n/d	none
Zinc	0.548	0.484	0.688	0.643	0.461	0.438	0.420	0.34	0.4	0.4	0.4	0.5	none
PARAMETER - DAILY ANALYSIS <i>(all results in mg/l, unless otherwise stated)</i>													
Total dissolved solids	150	195	173	158	170	169	210	156.9	169	165	140	125	none
Electrical conductivity $\mu S/cm$	336	391	369	329	354	353	370	361	352	322	322	262	none
Total chlorine residual	0.55	0.56	0.57	0.56	0.59	0.66	0.65	0.53	0.50	0.53	0.62	0.58	none
Free chlorine residual	0.53	0.51	0.55	0.52	0.56	0.56	0.59	0.51	0.50	0.44	0.51	0.55	≥ 0.5
pH units	7.53	7.09	7.43	7.69	7.74	7.78	7.07	7.51	7.82	7.39	7.51	7.45	none
Total coliform bacteria cfu/100ml	BDL	BDL	BDL	BDL	BDL	<1	<1.0	< 1.0	<1.0	<1.0	<1.0	< 1.0	0
<i>E. coli</i> cfu/100 ml	BDL	BDL	BDL	BDL	BDL	<1	<1.0	< 1.0	<1.0	<1.0	<1.0	< 1.0	0
Thermotolerant coliform bacteria cfu/100ml	BDL	n/d	n/d	n/d	n/d	n/d	n/d	n/d	n/d	n/d	n/d	n/d	0
Heterotrophic Plate Count cfu/ml	0	0	0	n/d	0	0	<0.1	< 0.1	<0.1	<0.1	<0.1	1	none

NOTE: Samples collected @ Red Gate Reservoir Site; n/d = not done; n/a = not applicable; n/r = not reportable; BDL = Below Detection Limit
Results below detection limit are reported as "<" and the detection limit.

Annual analysis instead of biannual from 2002 onwards

Marcela Martinez Ebanks, Laboratory Manager



Water Authority-Cayman

Grand Cayman Public Water Supply Annual Analysis (Lower Valley Facility)

	Sample Date	Sample Date	Sample Date	Sample Date	Sample Date	Sample Date	Sample Date	Sample Date	Sample Date	Sample Date	WHO Health Based Guidelines
PARAMETER - ANNUAL ANALYSIS <i>(all results in mg/l, unless otherwise stated)</i>	09-Dec-08	02-Dec-09	08-Nov-11	21-Aug-12	05-Aug-13	04-Aug-14	26-Oct-15	31-Jul-17	31-Oct-18		
Alkalinity	n/r	2.05	2.67	6.80	2.10	2.00	1.20	4.00	1.80		none
Aluminum	BDL	BDL	<0.005	<0.005	0.01	<0.005	<0.005	<0.005	<0.005	n/d	none
Ammonia	BDL	BDL	<0.017	<0.017	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	none
Bicarbonate	n/r	2.50	3.25	8.30	2.56	2.44	1.46	4.88	2.20		none
Boron	n/d	1.20	1.30	1.30	0.80	0.80	0.60	n/d	1.10		2.4
Calcium	1.2	0.8	1.2	2.0	1.2	1.0	8.0	n/d	1.2		none
Chloride	95	94	104	118	72	81	84	n/d	103		none
Copper	BDL	BDL	<0.021	<0.02	<0.02	0.030	0.06	n/d	<0.02		2
Hardness	6.8	7.0	7.5	7.0	10.0	9.5	9.0	n/d	8.0		none
Iron	BDL	BDL	<0.008	<0.009	<0.01	0.020	<0.02	<0.02	0.04		none
Magnesium	0.9	1.2	1.0	0.5	2.0	2.0	1.7	n/d	1.2		none
Nitrate as N	0.2	0.0	1.0	0.4	<0.1	0.9	n/d	0.02	n/r		50 as NO ₃ ⁻
Orthophosphate	1.84	2.14	2.91	1.88	1.50	1.30	1.60	1.70	1.71		none
Sodium	n/d	n/d	n/d	n/d	n/d	n/d	n/d	n/d	n/d		none
Sulphate	11.7	10.5	13.8	12.5	11.1	6.3	8.3	n/d	n/d		none
Sulphide	BDL	BDL	<0.002	<0.002	<0.01	<0.01	<0.01	n/d	<0.01		none
Zinc	0.61	0.67	0.77	0.65	n/d	0.44	0.49	0.62	0.56		none
PARAMETER - DAILY ANALYSIS <i>(all results in mg/l, unless otherwise stated)</i>											
Total dissolved solids	163	158	185	192	120	140	143	176	180		none
Electrical conductivity $\mu S/cm$	355	321	384	400	258	274	300	357	365		none
Total chlorine residual	0.65	0.55	0.61	0.64	0.57	0.45	0.55	0.68	0.57		none
Free chlorine residual	0.60	0.50	0.57	0.57	0.53	0.41	0.51	0.64	0.50		≥ 0.5
pH units	7.23	7.70	7.40	7.07	7.28	7.46	7.39	7.75	7.56		none
Total coliform bacteria <i>cfu/100ml</i>	BDL	BDL	BDL	<1	<1	<1	<1	<1	<1		0
<i>E. coli cfu/100 ml</i>	BDL	BDL	BDL	<1	<1	<1	<1	<1	<1		0
Thermotolerant coliform bacteria <i>cfu/100ml</i>	n/d	n/d	n/d	n/d	n/d	n/d	n/d	n/d	n/d		0
Heterotrophic Plate Count <i>cfu/ml</i>	0	0	0	0	n/d	0	0	0	2		none

NOTE: Samples collected @ Lower Valley Reservoir Site; n/d = not done; n/a = not applicable; n/r = not reportable; BDL=Below Detection Limit
Results reported with "<" indicate that the result was below the detection limit



Water Authority-Cayman

Grand Cayman Public Water Supply Biannual Analysis (North Side Facility)

	Sample Date	Sample Date	Sample Date	Sample Date	Sample Date	Sample Date	Sample Date	Sample Date	Sample Date	Sample Date	WHO Health Based Guidelines	Aesthetic Guidelines
PARAMETER - ANNUAL ANALYSIS <i>(all results in mg/l, unless otherwise stated)</i>	02-Dec-09	15-Nov-11	20-Aug-12	12-Aug-13	11-Aug-14	29-Oct-15	15-Jun-16	24-Jul-17	17-Oct-18			
Alkalinity	3.70	2.00	2.70	2.10	1.10	2.40	2.50	2.80	2.00	none	none	
Aluminum	0.01	<0.005	<0.005	<0.005	<0.005	<0.005	0.005	<0.005	n/d	none	none	0.2
Ammonia	0.023	<0.017	<0.017	<0.02	<0.02	<0.02	<0.02	0.03	<0.02	none	none	1.5
Bicarbonate	4.51	2.44	3.29	2.56	1.34	2.93	3.10	2.44	3.42	none	none	
Boron	n/d	0.60	0.80	0.70	0.50	0.50	0.50	0.90	0.60	none	2.4	none
Calcium	1.6	3.0	1.2	1.6	1.0	4.00	3.60	11.20	2.00	none	none	
Chloride	113	70	67	75	73	72	74	76	84	none	none	> 250
Copper	n/d	<0.021	<0.021	<0.02	<0.03	<0.04	<0.04	<0.04	<0.04	2	none	>1
Hardness	11.0	12.0	11.0	11.5	12.5	12.0	9.5	36.0	19.0	none	none	200-500
Iron	0.012	<0.008	<0.008	0.010	0.020	<0.02	<0.02	0.04	0.02	none	none	0.3
Magnesium	1.7	1.0	2.0	2.0	2.0	0.5	0.1	1.9	3.4	none	none	
Nitrate as N	0.0	0.2	0.4	<0.1	<0.1	n/d	<0.05	0.03	<0.05	50 as NO ₃	none	none
Orthophosphate	1.48	0.83	1.65	1.50	1.40	1.50	1.50	1.24	1.36	none	none	
Sodium	n/d	n/d	n/d	n/d	n/d	n/d	n/d	n/d	n/d	none	none	200
Sulphate	8.5	8.6	9.2	12.2	8	9.4	10.4	n/d	n/d	none	none	250
Sulphide	n/d	<0.002	<0.002	<0.01	0.002	<0.01	<0.01	<0.01	<0.01	none	none	0.05
Zinc	0.536	0.309	0.532	0.520	0.470	0.55	0.51	0.52	0.44	none	none	3
PARAMETER - DAILY ANALYSIS (all results in mg/l, unless otherwise stated)												
Total dissolved solids	185	119	113	120	140	126	140	160	n/r	none	none	1000-1200
Electrical conductivity μ S/cm	383	250	237	249	264	265	267	315	278	none	none	
Total chlorine residual	0.48	0.63	0.59	0.58	0.65	0.43	0.54	0.58	0.56	none	none	5
Free chlorine residual	0.44	0.61	0.53	0.55	0.54	0.38	0.50	0.52	0.52	\geq 0.5	none	5
pH units	7.60	7.64	7.61	7.29	7.76	7.39	7.57	7.83	7.42	none	none	6.5-9.5
Total coliform bacteria cfu/100ml	BDL	BDL	<1	<1.0	<1	<1	<1.0	<1	<1	0	none	n/a
E. coli cfu/100 ml	BDL	BDL	<1	<1.0	<1	<1	<1.0	<1	<1	0	none	n/a
Thermotolerant coliform bacteria cfu/100ml	n/d	n/d	n/d	n/d	n/d	n/d	n/d	n/d	n/d	0	none	n/a
Heterotrophic Plate Count cfu/ml	0	<0.1	<0.1	<0.1	1	<0.1	0.1	<0.1	<0.1	none	none	none

NOTE: Samples collected @ North Side Reservoir Site; n/d = not done; n/a = not applicable; n/r = not reportable; BDL=Below Detection Limit

Results reported with "<" indicate that the result was below the detection limit

Marcela Martinez Ebanks, Laboratory Manager



Water Authority-Cayman

Cayman Brac Public Water Supply Annual Analysis

PARAMETER - BIANNUAL ANALYSIS <i>(all results in mg/l, unless otherwise stated)</i>	Sample Date	Sample Date	Sample Date	Sample Date	Sample Date	Sample Date	Sample Date	Sample Date	Sample Date	WHO Health Based Guidelines	Aesthetic Guidelines
	17-Dec-08	16-Dec-09	09-Nov-11	22-Aug-12	07-Aug-13	30-Jul-14	21-Oct-15	13-Jul-16	07-Nov-18		
Alkalinity	23.1	n/r	14.6	13.6	27.6	10.3	6.8	7.6	6.8	none	none
Aluminum	BDL	0.01	<0.005	<0.005	0.02	0.01	<0.005	0.01	n/d	none	0.2
Ammonia	BDL	0.00	<0.02	n/r	<0.02	<0.02	<0.02	<0.02	0.04	none	1.5
Bicarbonate	28.2	n/r	17.8	16.6	33.7	12.6	8.3	9.3	8.3	none	none
Calcium	1.6	0.8	0.3	0.4	1.6	0.4	0.4	0.8	1.2	none	none
Chloride	38	32	60	111	56	56	95.0	100.0	8.3	none	> 250
Copper	0.04	0.01	<0.02	<0.02	0.05	<0.03	<0.04	<0.04	0.0	2	>1
Hardness	8.0	3.0	1.5	2.0	4.5	6.5	4.0	8.0	12.0	none	200-500
Iron	0.01	0.01	<0.01	0.02	<0.01	<0.02	<0.02	<0.02	0.1	none	0.3
Magnesium	1.0	0.2	0.2	0.2	0.0	1.0	0.7	1.3	2.2	none	none
Nitrate as N	BDL	n/r	<0.1	<0.1	<0.1	0	0.0	0.3	n/d	50 as NO ₃ ⁻	none
Orthophosphate	0.33	0.60	0.99	0.67	1.30	1.20	1.0	1.2	0.7	none	none
Sulphate	0.0	0.2	<1	<1	<1	<1.0	4.0	<1	n/d	none	250
Sulphide	BDL	n/d	n/d	n/d	BDL	<0.01	<0.01	0.01	n/d	none	0.05
Zinc	0.15	0.45	0.60	0.46	0.42	0.35	0.4	0.5	0.3	none	3
PARAMETER - DAILY ANALYSIS											
<i>(all results in mg/l, unless otherwise stated)</i>											
Total dissolved solids	85	50	105	128	99	98	146	170	135	none	1000-1200
Electrical conductivity $\mu S/cm$	174	103	226	269	198	205	326	367	291	none	none
Total chlorine residual	0.50	0.55	0.52	0.49	0.52	0.54	0.42	0.56	0.65	none	5
Free chlorine residual	0.47	0.52	0.49	0.46	0.50	0.51	0.35	0.48	0.52	≥ 0.5	5
pH units	7.24	6.83	7.55	7.65	7.49	7.47	7.22	7.39	7.16	none	6.5-9.5
Total coliform bacteria cfu/100ml	BDL	0	<1	<1	<1	<1	<1	<1	<1	0	n/a
<i>E. coli</i> cfu/100 ml	BDL	0	<1	<1	<1	<1	<1	<1	<1	0	n/a
Thermotolerant coliform bacteria cfu/100ml	n/d	n/d	n/d	n/d	n/d	n/d	n/d	n/d	n/d	0	n/a
Heterotrophic Plate Count cfu/ml	BDL	0	<0.1	<0.1	<0.1	1	<0.1	0.3	n/d	none	none

NOTE: Samples collected @ Cayman Brac Reservoir; n/d = not done; n/a = not applicable; n/r = not reportable; BDL=Below Detection Limit
 Marcela Martinez Ebanks Laboratory Manager