



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	WHO Health Based Guidelines
	29-Nov-11	14-Aug-12	05-Aug-13	06-Aug-14	19-Oct-15	20-Jun-16	10-Jul-17	05-Nov-18	17-Mar-20	
Alkalinity	2.30	5.35	2.00	1.80	1.80	2.10	1.00	5.00	n/d	none
Aluminum	<0.005	<0.005	<0.005	0.010	0.005	<0.005	<0.005	n/d	<0.024	none
Ammonia	<0.017	<0.017	n/r	< 0.02	<0.02	<0.02	n/r	n/r	n/d	none
Bicarbonate	2.8	6.2	2.4	2.20	2.20	2.60	1.22	6.10	n/d	none
Boron	1.1	1.1	1.5	1.2	1.3	0.9	n/d	1.0	n/r	2.4
Calcium	1.6	0.7	1.8	0.8	0.4	0.2	0.8	1.2	n/d	none
Chloride	98.0	107.9	105.0	102.5	120.0	83.0	84.0	74.0	n/d	none
Copper	<0.021	<0.021	<0.02	0.03	<0.04	<0.04	<0.04	< 0.02	<0.0018	2
Hardness	4.0	3.5	7.0	4.5	3.5	2.5	5.0	8.0	n/d	none
Iron	<0.008	<0.008	0.01	< 0.02	<0.02	<0.02	<0.02	n/d	<0.017	none
Magnesium	0.0	0.4	0.6	0.6	0.6	0.5	0.7	1.0	n/d	none
Nitrate as N	<0.1	<0.1	<0.1	< 0.1	<0.1	0.3	n/d	n/d	n/d	50 as NO ₃ ⁻
Orthophosphate	1.56	1.10	1.10	0.94	1.1	1.0	1.0	1.5	1.6	none
Sodium	n/d	n/d	n/d	n/d	n/d	n/d	n/d	n/d	42.0	none
Sulphate	10.6	8.7	10.9	4.7	7.7	7.7	4.1	7.1	n/d	none
Sulfide	<0.002	<0.002	<0.01	< 0.01	<0.01	<0.01	<0.01	n/d	n/d	none
Zinc	0.461	0.438	0.420	0.34	0.40	0.38	0.37	0.51	0.46	none
PARAMETER - DAILY ANALYSIS <i>(all results in mg/l, unless otherwise stated)</i>										
Total dissolved solids	170	169	210	156.9	169	165	140	125	116	none
Electrical conductivity μ S/cm	354	353	370	361	352	322	322	262	243	none
Total chlorine residual	0.59	0.66	0.65	0.53	0.50	0.53	0.62	0.58	0.57	none
Free chlorine residual	0.56	0.56	0.59	0.51	0.50	0.44	0.51	0.55	0.50	≥ 0.5
pH units	7.74	7.78	7.07	7.51	7.82	7.39	7.51	7.45	7.89	none
Total coliform bacteria cfu/100ml	BDL	<1	<1.0	< 1.0	<1.0	<1.0	<1.0	< 1.0	<1.0	0
<i>E. coli</i> cfu/100 ml	BDL	<1	<1.0	< 1.0	<1.0	<1.0	<1.0	< 1.0	<1.0	0
Thermotolerant coliform bacteria cfu/100ml	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	<0.1	< 0.1	<0.1	<0.1	<0.1	1	<0.1	none

NOTE: Samples collected @ Red Gate Reservoir Site; /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.

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	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	17-Mar-20		
Alkalinity	n/r	2.05	2.67	6.80	2.10	2.00	1.20	4.00	1.80	n/d		none
Aluminum	BDL	BDL	<0.005	<0.005	0.01	<0.005	<0.005	<0.005	n/d	<0.024		none
Ammonia	BDL	BDL	<0.017	<0.017	<0.02	<0.02	<0.02	<0.02	<0.02	n/d		none
Bicarbonate	n/r	2.50	3.25	8.30	2.56	2.44	1.46	4.88	2.20	n/d		none
Boron	n/d	1.20	1.30	1.30	0.80	0.80	0.60	n/d	1.10	n/r		2.4
Calcium	1.2	0.8	1.2	2.0	1.2	1.0	8.0	n/d	1.2	n/d		none
Chloride	95	94	104	118	72	81	84	n/d	103	n/d		none
Copper	BDL	BDL	<0.021	<0.02	<0.02	0.030	0.06	n/d	<0.02	<0.0018		2
Hardness	6.8	7.0	7.5	7.0	10.0	9.5	9.0	n/d	8.0	n/d		none
Iron	BDL	BDL	<0.008	<0.009	<0.01	0.020	<0.02	<0.02	0.04	<0.017		none
Magnesium	0.9	1.2	1.0	0.5	2.0	2.0	1.7	n/d	1.2	n/d		none
Nitrate as N	0.2	0.0	1.0	0.4	<0.1	0.9	n/d	0.02	n/r	n/d		50 as NO ₃ ⁻
Orthophosphate	1.84	2.14	2.91	1.88	1.50	1.30	1.60	1.70	1.71	1.84		none
Sodium	n/d	n/d	n/d	n/d	n/d	n/d	n/d	n/d	n/d	53.0		none
Sulphate	11.7	10.5	13.8	12.5	11.1	6.3	8.3	n/d	n/d	n/d		none
Sulphide	BDL	BDL	<0.002	<0.002	<0.01	<0.01	<0.01	n/d	<0.01	n/d		none
Zinc	0.61	0.67	0.77	0.65	n/d	0.44	0.49	0.62	0.56	0.49		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	153		none
Electrical conductivity μ S/cm	355	321	384	400	258	274	300	357	365	319		none
Total chlorine residual	0.65	0.55	0.61	0.64	0.57	0.45	0.55	0.68	0.57	0.64		none
Free chlorine residual	0.60	0.50	0.57	0.57	0.53	0.41	0.51	0.64	0.50	0.63		≥ 0.5
pH units	7.23	7.70	7.40	7.07	7.28	7.46	7.39	7.75	7.56	7.97		none
Total coliform bacteria cfu/100ml	BDL	BDL	BDL	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0		0
<i>E. coli</i> cfu/100 ml	BDL	BDL	BDL	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0		0
Thermotolerant coliform bacteria cfu/100ml	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	0	n/d	0	0	0	2	0		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)

PARAMETER - ANNUAL 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
	15-Nov-11	20-Aug-12	12-Aug-13	11-Aug-14	29-Oct-15	15-Jun-16	24-Jul-17	17-Oct-18	17-Mar-20		
Alkalinity	2.00	2.70	2.10	1.10	2.40	2.50	2.80	2.00	n/d	none	none
Aluminum	<0.005	<0.005	<0.005	<0.005	<0.005	0.005	<0.005	n/d	<0.024	none	0.2
Ammonia	<0.017	<0.017	<0.02	<0.02	<0.02	<0.02	0.03	<0.02	n/d	none	1.5
Bicarbonate	2.44	3.29	2.56	1.34	2.93	3.10	2.44	3.42	n/d	none	none
Boron	0.60	0.80	0.70	0.50	0.50	0.50	0.90	0.60	n/r	2.4	none
Calcium	3.0	1.2	1.6	1.0	4.00	3.60	11.20	2.00	n/d	none	none
Chloride	70	67	75	73	72	74	76	84	n/d	none	> 250
Copper	<0.021	<0.021	<0.02	<0.03	<0.04	<0.04	<0.04	<0.04	<0.0018	2	>1
Hardness	12.0	11.0	11.5	12.5	12.0	9.5	36.0	19.0	n/d	none	200-500
Iron	<0.008	<0.008	0.010	0.020	<0.02	<0.02	0.04	0.02	<0.017	none	0.3
Magnesium	1.0	2.0	2.0	2.0	0.5	0.1	1.9	3.4	n/d	none	none
Nitrate as N	0.2	0.4	<0.1	<0.1	n/d	<0.05	0.03	<0.05	n/d	50 as NO ₃ ⁻	none
Orthophosphate	0.83	1.65	1.50	1.40	1.50	1.50	1.24	1.36	1.56	none	none
Sodium	n/d	n/d	n/d	n/d	n/d	n/d	n/d	n/d	64.0	none	200
Sulphate	8.6	9.2	12.2	8	9.4	10.4	n/d	n/d	n/d	none	250
Sulphide	<0.002	<0.002	<0.01	0.002	<0.01	<0.01	<0.01	<0.01	n/d	none	0.05
Zinc	0.309	0.532	0.520	0.470	0.55	0.51	0.52	0.44	0.51	none	3
PARAMETER - DAILY ANALYSIS <i>(all results in mg/l, unless otherwise stated)</i>											
Total dissolved solids	119	113	120	140	126	140	160	n/r	181	none	1000-1200
Electrical conductivity $\mu S/cm$	250	237	249	264	265	267	315	278	376	none	none
Total chlorine residual	0.63	0.59	0.58	0.65	0.43	0.54	0.58	0.56	0.45	none	5
Free chlorine residual	0.61	0.53	0.55	0.54	0.38	0.50	0.52	0.52	0.41	≥ 0.5	5
pH units	7.64	7.61	7.29	7.76	7.39	7.57	7.83	7.42	7.68	none	6.5-9.5
Total coliform bacteria cfu/100ml	BDL	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0	n/a
<i>E. coli</i> cfu/100 ml	BDL	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	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	<0.1	<0.1	<0.1	1	<0.1	0.1	<0.1	<0.1	0.5	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

East End Reservoir Annual Analysis

	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 - BIENNIAL ANALYSIS <i>(all results in mg/l, unless otherwise stated)</i>	10-Oct-11	13-Aug-12	05-Aug-13	04-Aug-14	26-Oct-15	27-Jun-16	17-Jul-17	17-Oct-18	20-Jan-20		
Alkalinity	246	270	238	250	224	220	246	256	230	none	none
Aluminum	<0.005	<0.005	0.016	<0.005	<0.005	<0.005	<0.005	n/d	<0.024	none	0.2
Ammonia	0.077	<0.017	0.140	<0.005	0.030	0.020	<0.017	0.010	0.030	none	1.5
Bicarbonate	300.1	329.4	290.4	305.0	273.3	268.4	300.1	312.3	280.6	none	none
Calcium	25.6	64.0	68.8	n/r	68.0	180.0	84.0	64.0	62.4	none	none
Chloride	110	110	102	110	116	-	135	122	128	none	> 250
Copper	<0.021	<0.021	0.040	0.040	<0.050	0.050	<0.021	<0.021	0.013	2	>1
Hardness	280.0	320.0	278.0	n/r	280.0	700.0	410.0	340.0	290.0	none	200-500
Iron	<0.008	0.047	<0.01	0.020	0.020	0.010	0.040	0.120	<0.017	none	0.3
Magnesium	30.0	38.9	30.0	n/r	26.7	-	24.3	43.7	32.6	none	none
Nitrate as N	1.20	0.60	0.90	1.00	n/d	1.00	<0.1	0.02	n/d	50 as NO ₃ ⁻	none
Orthophosphate	0.189	0.020	<0.04	0.140	0.100	0.020	n/d	0.020	0.010	none	none
Sodium	n/d	n/d	n/d	n/d	n/d	n/d	n/d	n/d	74	none	200
Sulphate	22.9	22.3	25.5	16.2	n/r	21.0	19.5	n/d	n/d	none	250
Sulphide	<0.002	<0.002	<0.01	<0.002	0.01	<0.01	-	0	n/d	none	0.05
Zinc	<0.009	<0.009	0.020	0.020	<0.010	0.020	<0.009	<0.009	0.012	none	3
PARAMETER - DAILY ANALYSIS <i>(all results in mg/l, unless otherwise stated)</i>											
Total dissolved solids	369	403	475	480	427	487	580	490	580	none	1000-1200
Electrical conductivity $\mu S/cm$	784	749	801	790	799	768	848	826	904	none	none
Total chlorine residual	1.12	0.93	2.08	0.90	1.11	1.19	0.23	0.54	n/d	none	5
Free chlorine residual	0.98	0.84	2.06	0.85	0.97	1.07	0.21	0.54	n.d	≥ 0.5	5
pH units	7.91	8.09	7.80	8.05	8.08	8.18	7.85	7.78	8.14	none	6.5-9.5
Total coliform bacteria cfu/100ml	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.1	0	n/a
<i>E. coli</i> cfu/100 ml	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	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	n/d		n/d	n/d	n/d	n/d	n/d	n/d	n/d	none	none

NOTE: Samples collected @ East End Reservoir Site; n/d = not done; n/a = not applicable; n/r = not reportable; BDL=Below Detection Limit
 Marcela Martinez Ebansk, Laboratory Manager



Water Authority-Cayman

Cayman Brac Public Water Supply Annual Analysis

	Sample Date	Sample Date	Sample Date	Sample Date	Sample Date	Sample Date	Sample Date	Sample Date	WHO Health Based Guidelines	Aesthetic Guidelines
PARAMETER - BIANNUAL ANALYSIS <i>(all results in mg/l, unless otherwise stated)</i>	09-Nov-11	22-Aug-12	07-Aug-13	30-Jul-14	21-Oct-15	13-Jul-16	07-Nov-18	20-Jan-20		
Alkalinity	14.6	13.6	27.6	10.3	6.8	7.6	6.8	9.2	none	none
Aluminum	<0.005	<0.005	0.02	0.01	<0.005	0.01	n/d	<0.024	none	0.2
Ammonia	<0.02	n/r	<0.02	<0.02	<0.02	<0.02	0.04	<0.02	none	1.5
Bicarbonate	17.8	16.6	33.7	12.6	8.3	9.3	8.3	11.2	none	none
Calcium	0.3	0.4	1.6	0.4	0.4	0.8	1.2	0.8	none	none
Chloride	60	111	56	56	95.0	100.0	8.3	59.5	none	> 250
Copper	<0.02	<0.02	0.05	<0.03	<0.04	<0.04	0.0	<0.0018	2	>1
Hardness	1.5	2.0	4.5	6.5	4.0	8.0	12.0	10.0	none	200-500
Iron	<0.01	0.02	<0.01	<0.02	<0.02	<0.02	0.1	<0.017	none	0.3
Magnesium	0.2	0.2	0.0	1.0	0.7	1.3	2.2	1.9	none	none
Nitrate as N	<0.1	<0.1	<0.1	0	0.0	0.3	n/d	n/d	50 as NO ₃ ⁻	none
Orthophosphate	0.99	0.67	1.30	1.20	1.0	1.2	0.7	0.9	none	none
Sulphate	<1	<1	<1	<1.0	4.0	<1	n/d	36.0	none	250
Sulphide	n/d	n/d	BDL	<0.01	<0.01	0.01	n/d	n/d	none	0.05
Zinc	0.60	0.46	0.42	0.35	0.36	0.46	0.25	0.31	none	3
PARAMETER - DAILY ANALYSIS <i>(all results in mg/l, unless otherwise stated)</i>										
Total dissolved solids	105	128	99	98	146	170	135	120	none	1000-1200
Electrical conductivity $\mu S/cm$	226	269	198	205	326	367	291	211	none	none
Total chlorine residual	0.52	0.49	0.52	0.54	0.42	0.56	0.65	0.53	none	5
Free chlorine residual	0.49	0.46	0.50	0.51	0.35	0.48	0.52	0.51	≥ 0.5	5
pH units	7.55	7.65	7.49	7.47	7.22	7.39	7.16	7.29	none	6.5-9.5
Total coliform bacteria cfu/100ml	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0	n/a
<i>E. coli</i> cfu/100 ml	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0	n/a
Thermotolerant coliform bacteria cfu/100ml	n/d	n/d	n/d	n/d	n/d	n/d	n/d	n/d	0	n/a
Heterotrophic Plate Count cfu/ml	<0.1	<0.1	<0.1	1	<0.1	0.3	n/d	4.9	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