



Universitat d'Alacant
Universidad de Alicante

Departament de Ciències del Mar i Biologia Aplicada
Departamento de Ciencias del Mar y Biología Aplicada

**PROGRAMA DE VIGILANCIA AMBIENTAL DEL VERTIDO AL
MAR DE LA SALMUERA PROCEDENTE DE LAS PLANTAS
DESALINIZADORAS I Y II DEL NUEVO CANAL DE
CARTAGENA EN SAN PEDRO DEL PINATAR:**

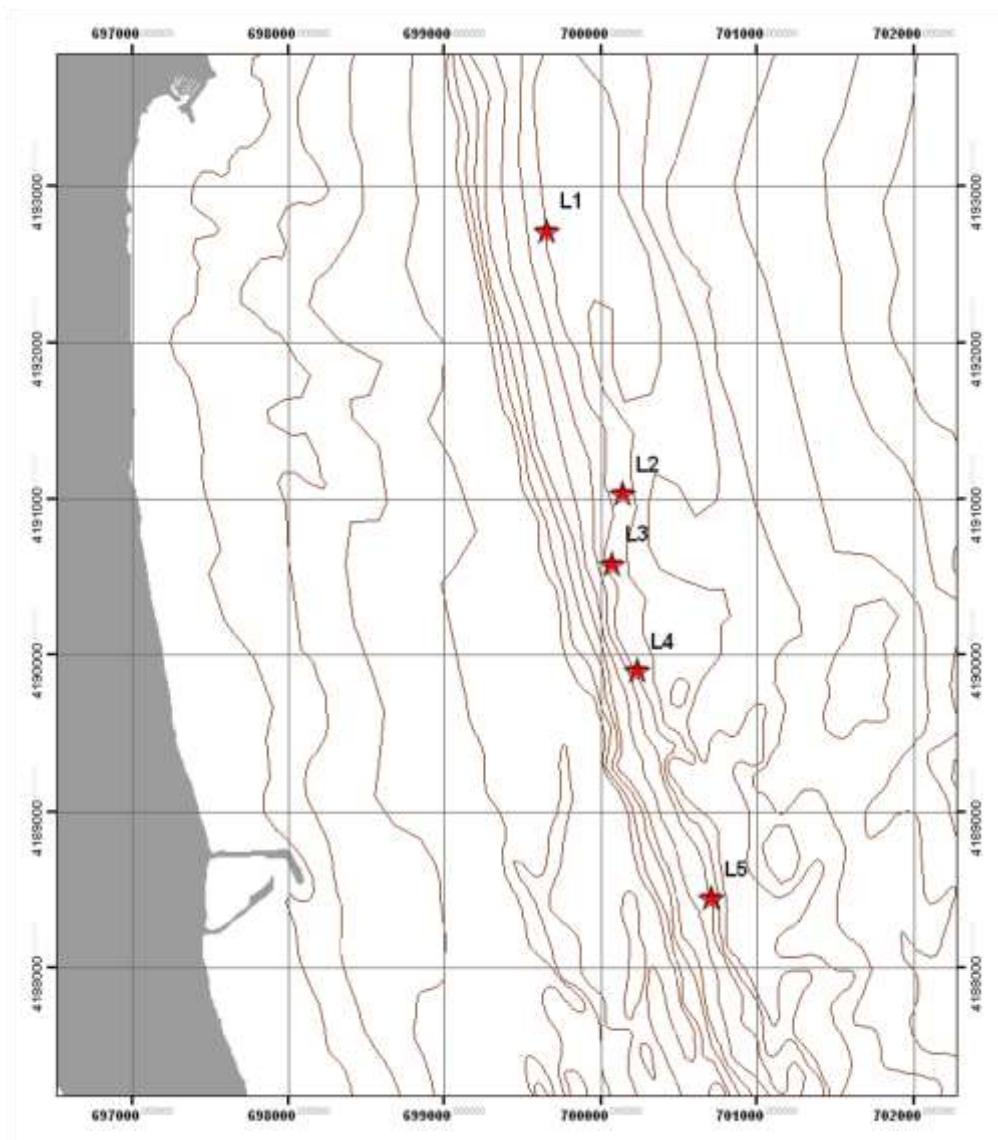
Cuarto informe trimestral desde octubre hasta diciembre de 2019

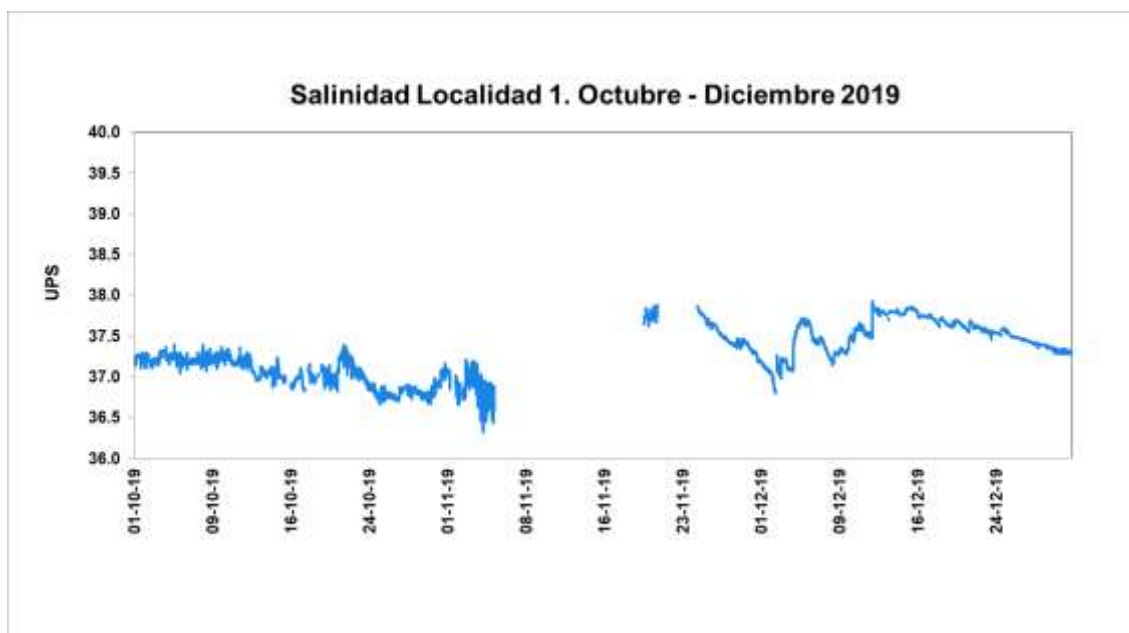
VALORACIÓN: Los valores de salinidad registrados son normales y similares en todas las estaciones por lo que el vertido de las desalinizadoras no alcanza el límite inferior de las praderas de *Posidonia oceanica*.



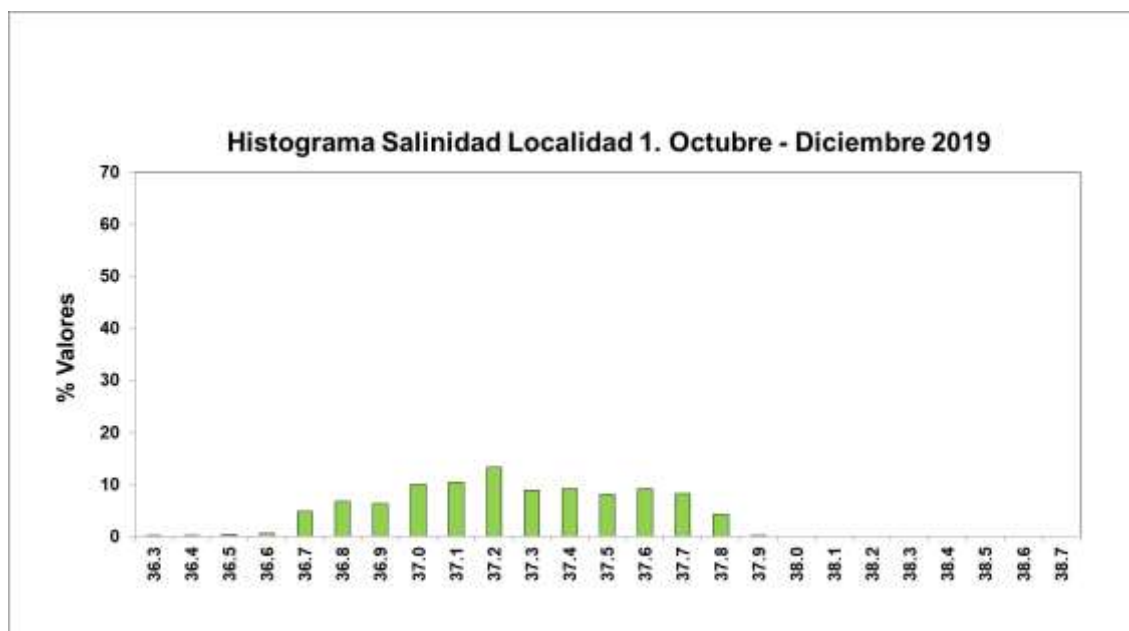
Control de salinidad y temperatura en las aguas receptoras.

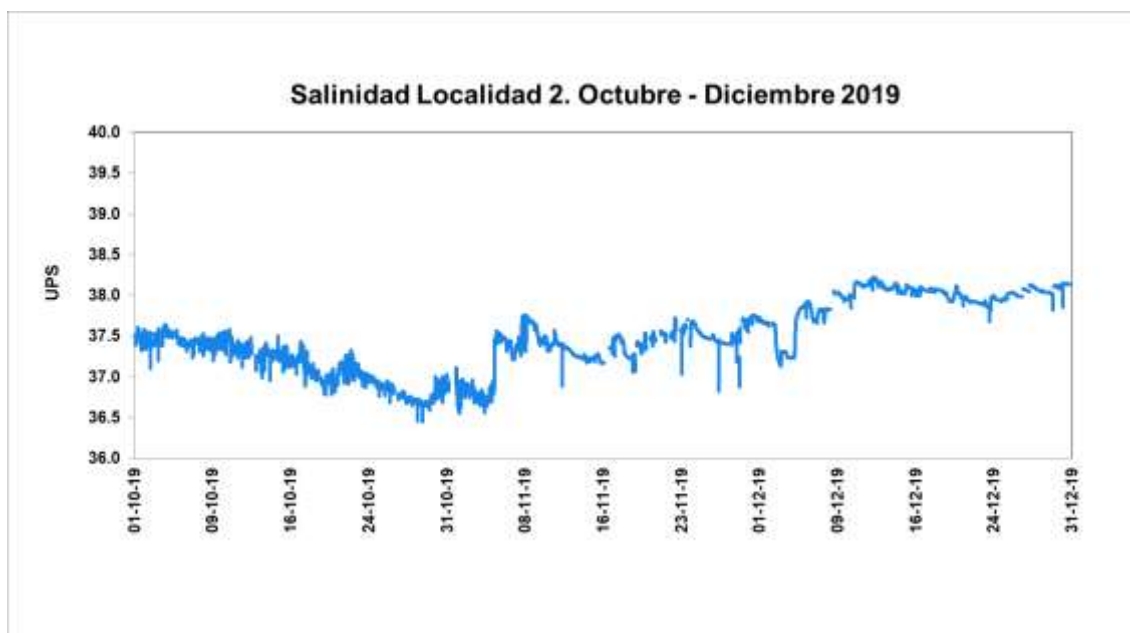
La figura siguiente indica la posición de los sensores de registro de salinidad y temperatura situados aproximadamente a 26 m de profundidad. Además existen otros equipos en las arquetas del vertido.



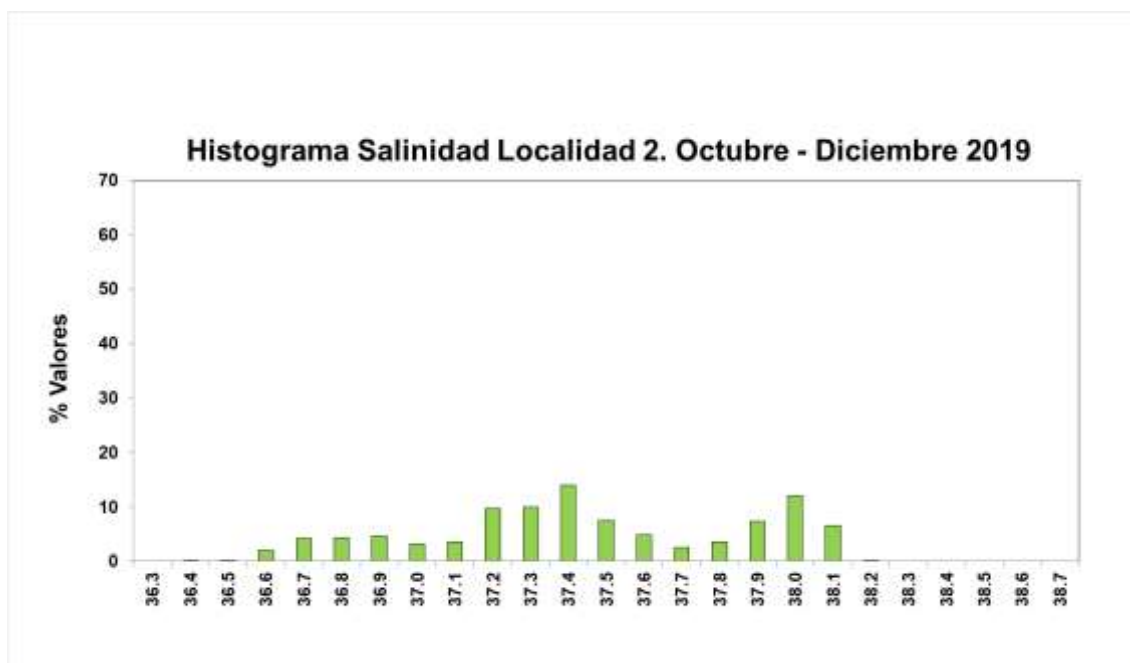


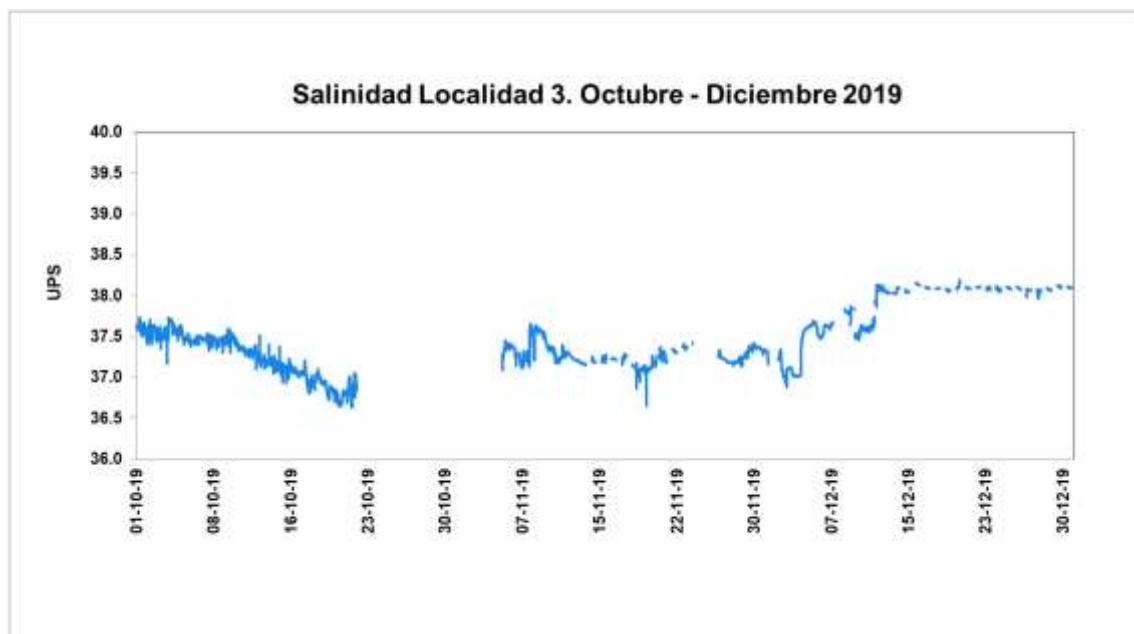
Max	Min	Promedio
38.155	36.612	37.503





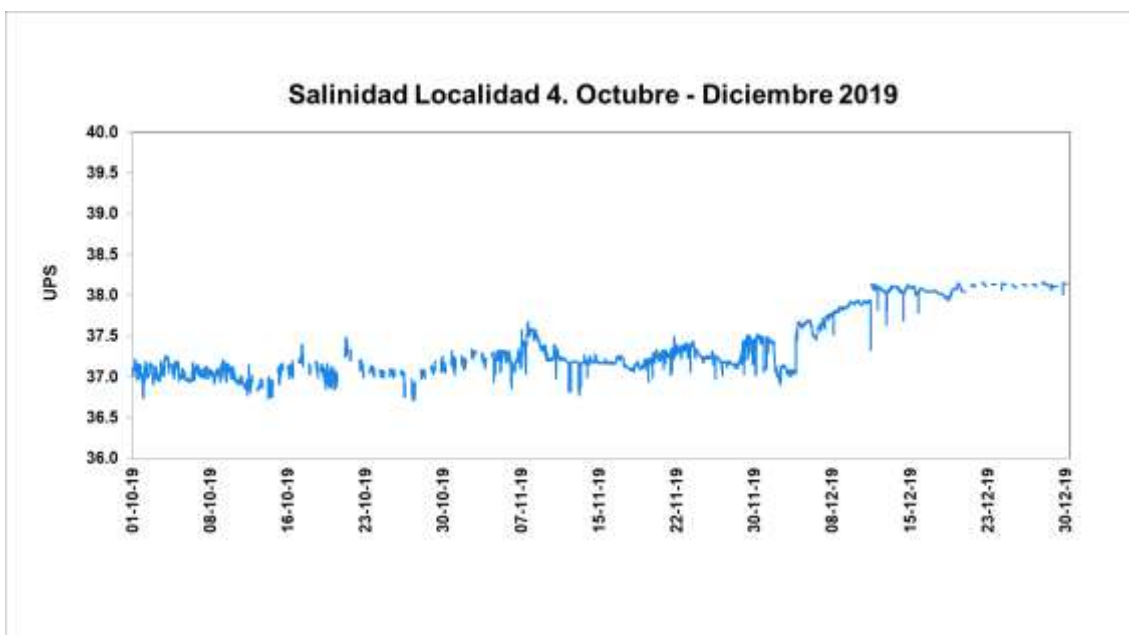
Max	Min	Promedio
38.229	36.450	37.497



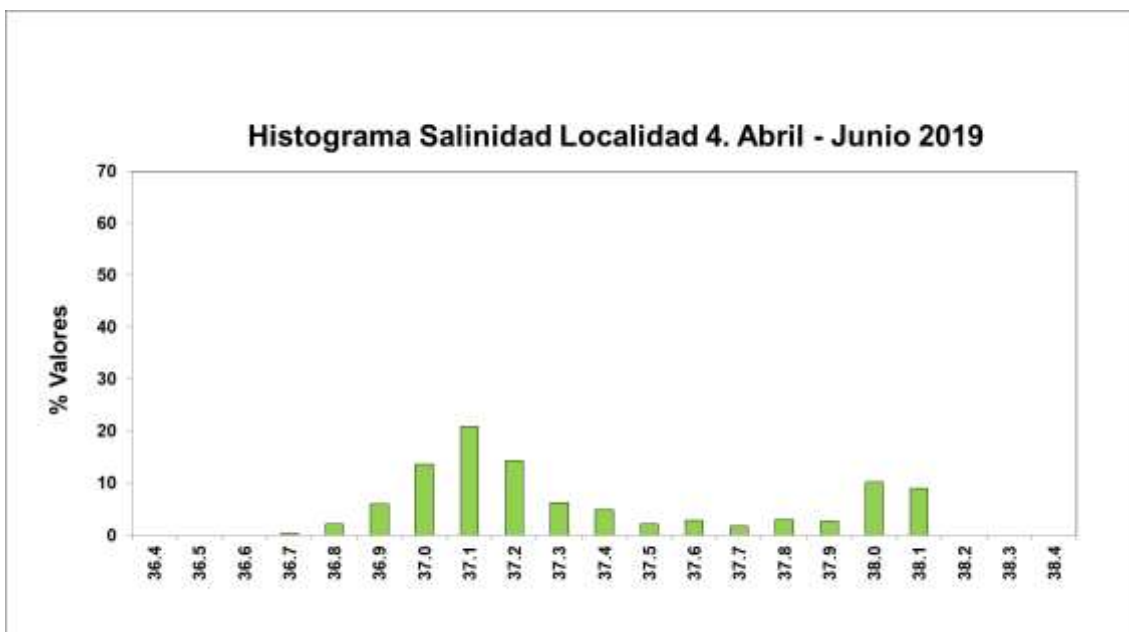


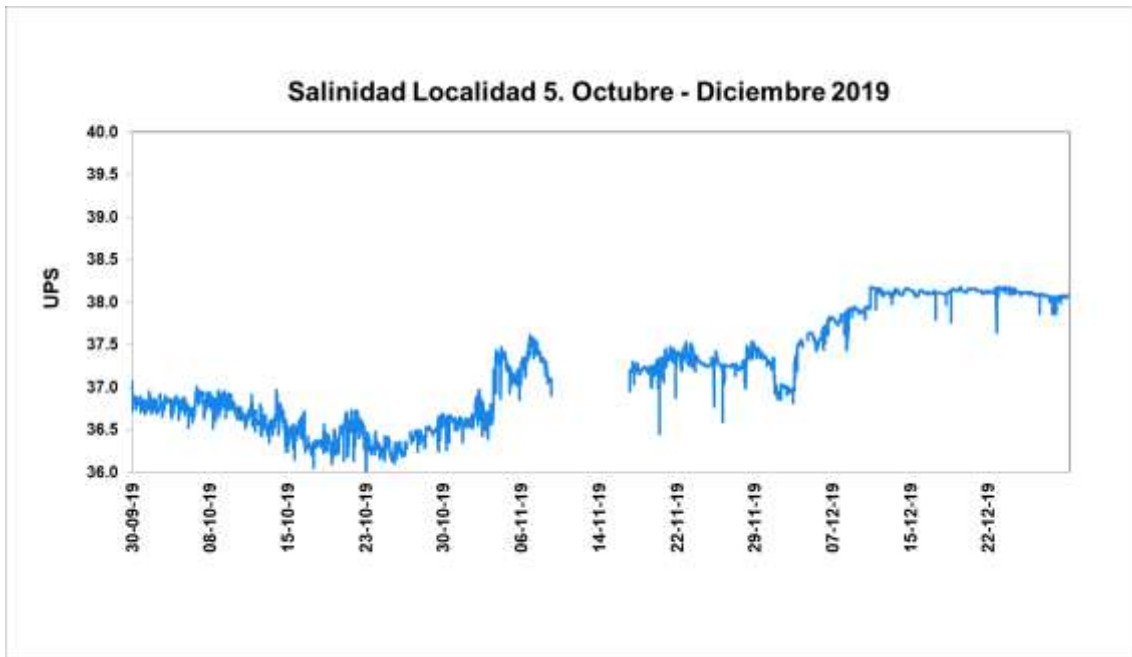
Max	Min	Promedio
38.189	36.620	37.425





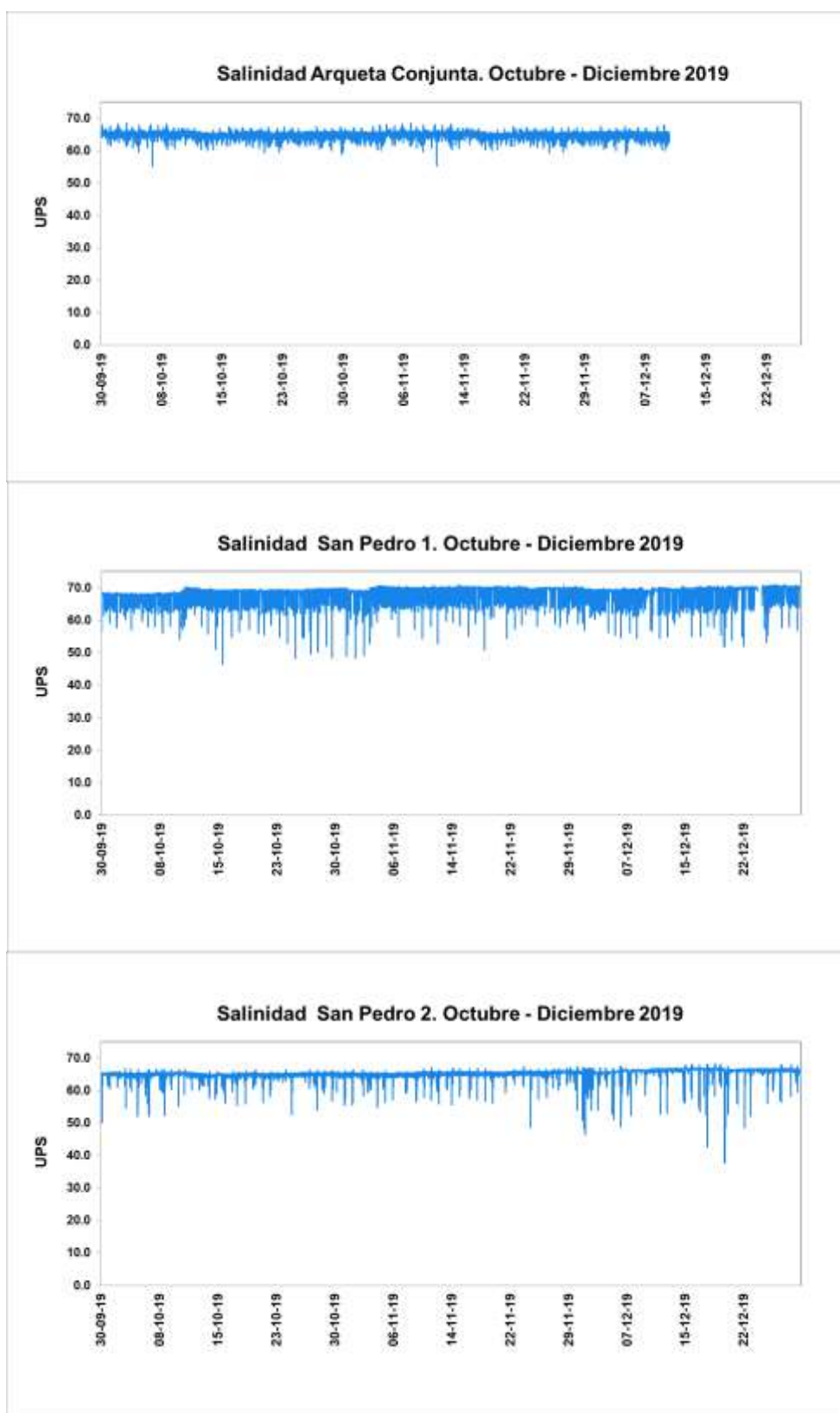
Max	Min	Promedio
38.162	36.706	37.398





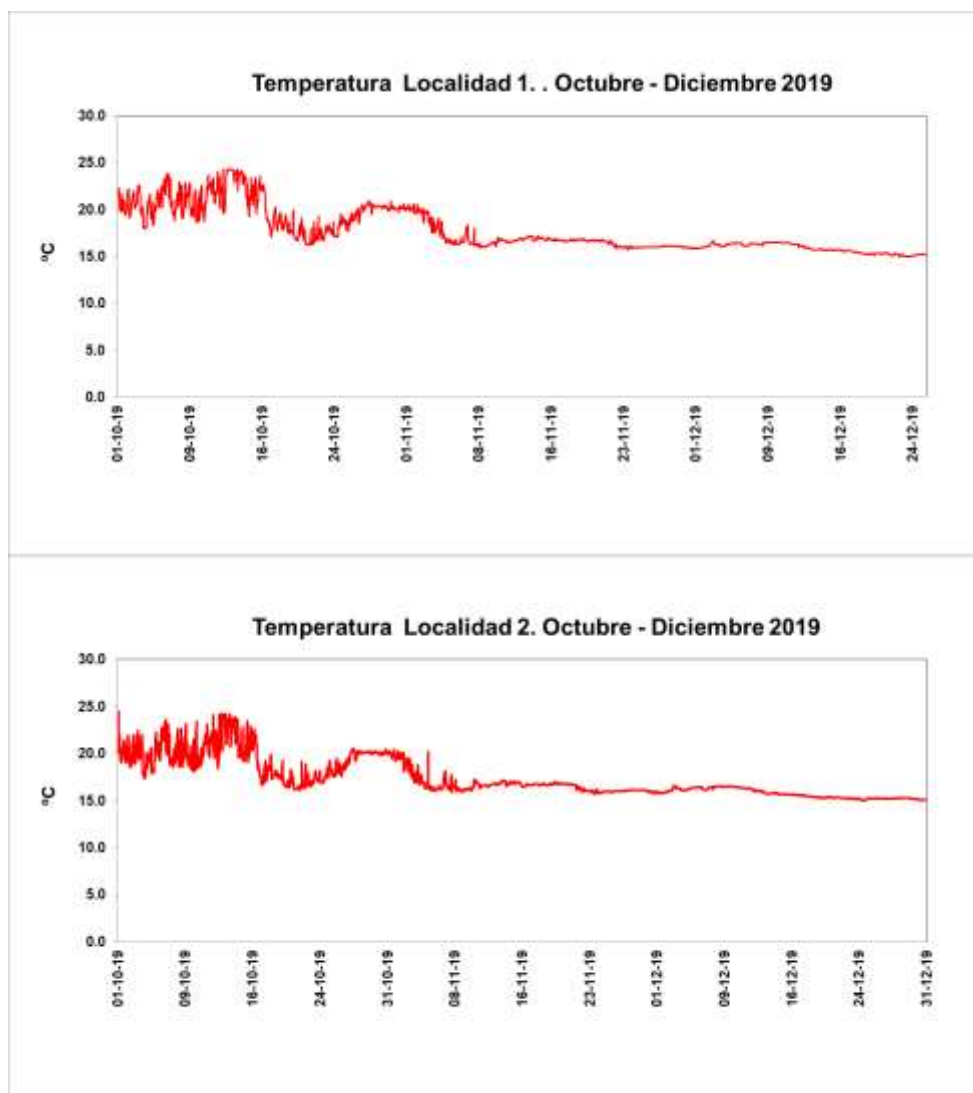
Max	Min	Promedio
38.186	35.670	37.222

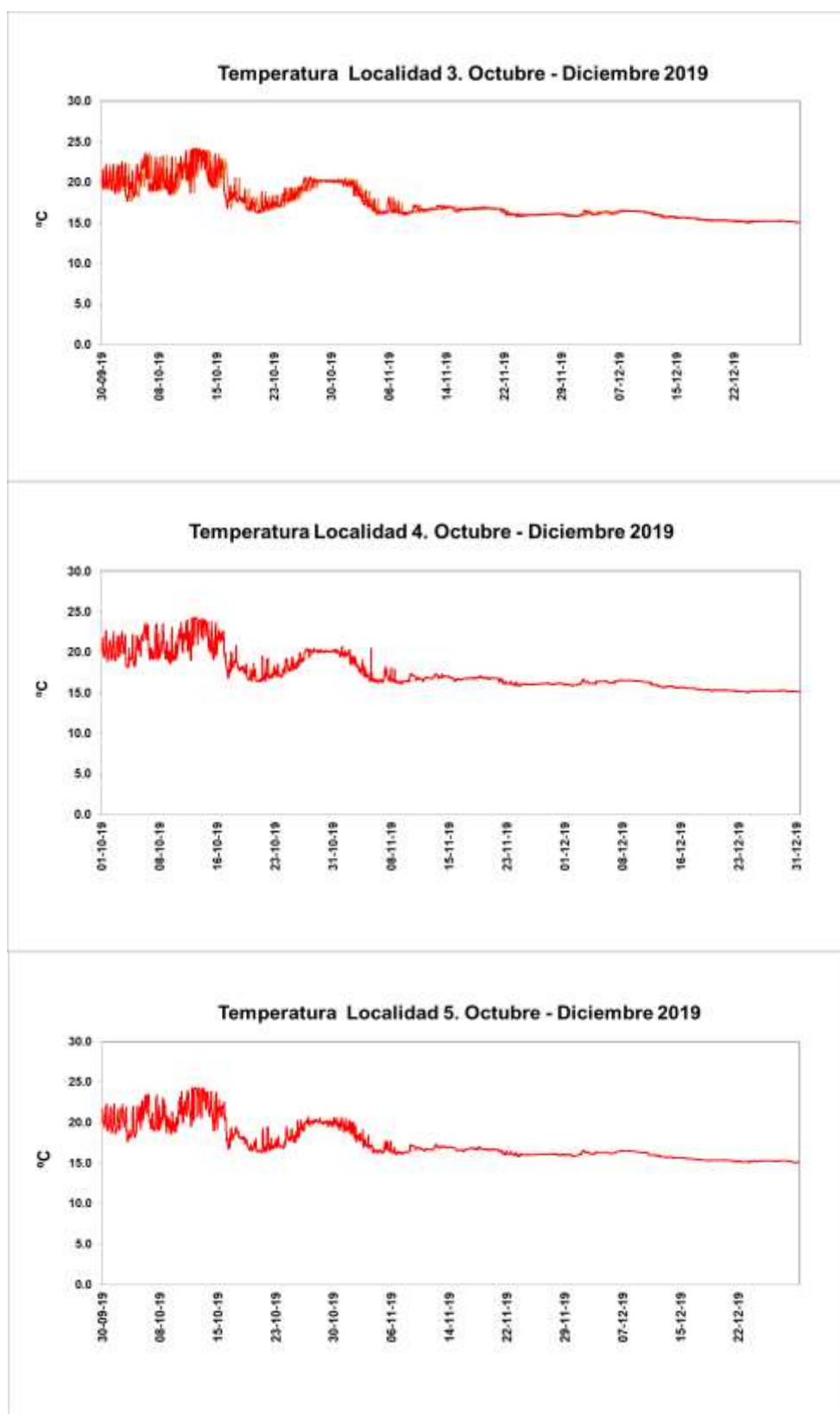






GRÁFICAS DE TEMPERATURA EN LAS DISTINTAS LOCALIDADES DE CONTROL







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Caudales vertidos: Las tablas siguientes presentan los caudales de agua captados, producidos y vertidos durante los meses de octubre, noviembre y diciembre de 2019 por las desalinizadoras de San Pedro I y II.

Campus de Sant Vicent del Raspeig, s/n
Ap. Correus 99 - E-03080 Alacant
Tel. y Fax: +34 96 590 98 40
e-mail: dcmba@ua.es
web: <http://www.ua.es>



DESALINIZADORA ANTONIO LEÓN MARTÍNEZ CAMPOS

San Pedro I	VOLUMEN DE AGUA CAPTADA (m ³ /d)	VOLUMEN DE AGUA PRODUCTO (m ³ /d)	VOLUMEN DE AGUA RECHAZO (m ³ /d)
2019/10/01	137.858	67.615	70.243
2019/10/02	148.004	72.277	75.727
2019/10/03	139.295	68.468	70.827
2019/10/04	140.873	68.784	72.089
2019/10/05	144.177	70.250	73.927
2019/10/06	146.087	71.144	74.943
2019/10/07	145.496	70.964	74.532
2019/10/08	143.769	70.181	73.588
2019/10/09	142.393	69.608	72.785
2019/10/10	143.937	70.412	73.525
2019/10/11	130.906	64.950	65.956
2019/10/12	107.941	52.769	55.172
2019/10/13	126.821	63.288	63.533
2019/10/14	131.291	65.314	65.977
2019/10/15	130.691	64.901	65.790
2019/10/16	130.522	64.862	65.660
2019/10/17	130.813	64.795	66.018
2019/10/18	133.974	65.993	67.981
2019/10/19	128.015	63.650	64.365
2019/10/20	132.313	65.702	66.611
2019/10/21	124.070	61.288	62.782
2019/10/22	130.374	64.417	65.957
2019/10/23	129.455	64.034	65.421
2019/10/24	130.160	64.554	65.606
2019/10/25	129.277	63.997	65.280
2019/10/26	130.582	64.621	65.961
2019/10/27	135.866	67.181	68.685
2019/10/28	128.422	63.581	64.841
2019/10/29	131.969	65.294	66.675
2019/10/30	131.031	65.250	65.781
2019/10/31	126.107	62.728	63.379
TOTAL	4.142.489	2.042.872	2.099.617



San Pedro I	VOLUMEN DE AGUA CAPTADA (m³/d)	VOLUMEN DE AGUA PRODUCTO (m³/d)	VOLUMEN DE AGUA RECHAZO (m³/d)
2019/11/01	128.410	63.894	64.516
2019/11/02	126.816	63.290	63.526
2019/11/03	124.261	61.166	63.095
2019/11/04	123.540	60.650	62.890
2019/11/05	125.468	61.932	63.536
2019/11/06	130.157	65.102	65.055
2019/11/07	130.050	64.668	65.382
2019/11/08	127.568	63.333	64.235
2019/11/09	129.680	64.297	65.383
2019/11/10	129.221	63.956	65.265
2019/11/11	131.932	65.312	66.620
2019/11/12	129.521	63.976	65.545
2019/11/13	128.403	63.382	65.021
2019/11/14	129.428	63.948	65.480
2019/11/15	131.313	64.570	66.743
2019/11/16	130.856	64.716	66.140
2019/11/17	128.301	63.435	64.866
2019/11/18	127.188	63.129	64.059
2019/11/19	129.056	63.892	65.164
2019/11/20	132.633	65.768	66.865
2019/11/21	128.486	63.606	64.880
2019/11/22	133.142	65.962	67.180
2019/11/23	117.666	58.328	59.338
2019/11/24	141.317	69.996	71.321
2019/11/25	131.525	64.750	66.775
2019/11/26	127.378	62.886	64.492
2019/11/27	129.295	63.762	65.533
2019/11/28	130.336	64.556	65.780
2019/11/29	130.963	64.862	66.101
2019/11/30	129.519	63.822	65.697
TOTAL	3.873.429	1.916.946	1.956.483



San Pedro I	VOLUMEN DE AGUA CAPTADA (m³/d)	VOLUMEN DE AGUA RODUCTO (m³/d)	VOLUMEN DE AGUA RECHAZO (m³/d)
2019/12/01	129.482	63.878	65.604
2019/12/02	134.227	66.188	68.039
2019/12/03	90.981	45.110	45.871
2019/12/04	97.457	48.668	48.789
2019/12/05	117.535	58.246	59.289
2019/12/06	110.138	54.720	55.418
2019/12/07	118.388	58.454	59.934
2019/12/08	118.616	58.566	60.050
2019/12/09	120.584	59.414	61.170
2019/12/10	117.340	57.634	59.706
2019/12/11	119.812	58.476	61.336
2019/12/12	105.420	53.265	52.155
2019/12/13	124.391	60.159	64.232
2019/12/14	117.158	57.568	59.590
2019/12/15	115.092	56.552	58.540
2019/12/16	115.414	56.684	58.730
2019/12/17	117.803	57.828	59.975
2019/12/18	113.411	55.734	57.677
2019/12/19	122.048	59.988	62.060
2019/12/20	118.219	59.166	59.053
2019/12/21	117.056	56.634	60.422
2019/12/22	112.879	55.342	57.537
2019/12/23	112.622	55.508	57.114
2019/12/24	117.209	57.930	59.279
2019/12/25	116.457	57.380	59.077
2019/12/26	41.741	23.350	18.391
2019/12/27	106.505	52.720	53.785
2019/12/28	133.439	65.788	67.651
2019/12/29	122.765	60.788	61.977
2019/12/30	131.402	64.090	67.312
2019/12/31	124.205	60.992	63.213
TOTAL	3.559.796	1.756.820	1.802.976



DESALINIZADORA DEL NUEVO CANAL DE CARTAGENA II

San Pedro II	VOLUMEN DE AGUA CAPTADA (m ³ /d)	VOLUMEN DE AGUA PRODUCTO (m ³ /d)	VOLUMEN DE AGUA RECHAZO (m ³ /d)
2019/10/01	144.163	64.679	79.484
2019/10/02	144.536	64.878	79.658
2019/10/03	144.340	64.899	79.441
2019/10/04	144.197	64.743	79.454
2019/10/05	144.447	64.732	79.715
2019/10/06	144.645	64.930	79.715
2019/10/07	145.461	65.310	80.151
2019/10/08	144.405	65.099	79.306
2019/10/09	146.646	65.503	81.143
2019/10/10	144.615	65.022	79.593
2019/10/11	144.346	65.115	79.231
2019/10/12	144.365	65.071	79.294
2019/10/13	144.392	65.221	79.171
2019/10/14	145.687	65.533	80.154
2019/10/15	145.646	65.638	80.008
2019/10/16	145.584	64.924	80.660
2019/10/17	146.008	64.939	81.069
2019/10/18	144.660	64.152	80.508
2019/10/19	144.413	64.912	79.501
2019/10/20	143.764	64.203	79.561
2019/10/21	145.801	64.282	81.519
2019/10/22	146.272	67.108	79.164
2019/10/23	146.041	63.232	82.809
2019/10/24	145.565	68.435	77.130
2019/10/25	145.696	61.415	84.281
2019/10/26	145.846	66.828	79.018
2019/10/27	145.614	67.984	77.630
2019/10/28	146.281	64.397	81.884
2019/10/29	144.810	65.934	78.876
2019/10/30	144.378	61.589	82.789
2019/10/31	146.178	68.295	78.876
TOTAL	145.122.65	65.129.10	80.025.58



San Pedro II	VOLUMEN DE AGUA CAPTADA (m³/d)	VOLUMEN DE AGUA PRODUCTO (m³/d)	VOLUMEN DE AGUA RECHAZO (m³/d)
2019/11/01	145.640	64.755	80.885
2019/11/02	145.951	65.442	80.509
2019/11/03	145.940	65.133	80.807
2019/11/04	146.490	62.679	83.811
2019/11/05	145.877	65.768	80.109
2019/11/06	146.344	63.501	82.843
2019/11/07	144.323	65.785	78.538
2019/11/08	146.475	68.441	78.034
2019/11/09	146.184	64.714	81.470
2019/11/10	146.589	64.427	82.162
2019/11/11	146.480	64.017	82.463
2019/11/12	146.700	66.039	80.661
2019/11/13	146.531	65.733	80.798
2019/11/14	144.330	64.683	79.647
2019/11/15	145.907	64.398	81.509
2019/11/16	146.220	55.666	90.554
2019/11/17	146.267	74.910	71.357
2019/11/18	146.582	63.503	83.079
2019/11/19	145.932	67.288	78.644
2019/11/20	146.068	64.849	81.219
2019/11/21	146.385	66.144	80.241
2019/11/22	145.778	64.361	81.417
2019/11/23	145.956	66.686	79.270
2019/11/24	146.171	65.383	80.788
2019/11/25	146.126	64.067	82.059
2019/11/26	145.768	66.456	79.312
2019/11/27	145.836	63.668	82.168
2019/11/28	146.279	67.236	79.043
2019/11/29	146.061	66.095	79.966
2019/11/30	146.370	66.025	80.345
TOTAL	146.052.00	65.261.73	80.790.27



San Pedro II	VOLUMEN DE AGUA CAPTADA (m³/d)	VOLUMEN DE AGUA PRODUCTO (m³/d)	VOLUMEN DE AGUA RECHAZO (m³/d)
2019/12/01	146.658	63.956	82.702
2019/12/02	128.351	55.440	72.911
2019/12/03	112.631	50.968	61.663
2019/12/04	99.197	43.576	55.621
2019/12/05	98.344	44.003	54.341
2019/12/06	98.472	44.951	53.521
2019/12/07	98.320	44.407	53.913
2019/12/08	98.359	43.263	55.096
2019/12/09	100.707	43.800	56.907
2019/12/10	97.749	43.544	54.205
2019/12/11	97.834	43.822	54.012
2019/12/12	97.455	43.301	54.154
2019/12/13	97.685	42.633	55.052
2019/12/14	97.785	44.250	53.535
2019/12/15	97.506	44.702	52.804
2019/12/16	100.566	42.937	57.629
2019/12/17	98.211	44.017	54.194
2019/12/18	98.425	42.764	55.661
2019/12/19	88.369	41.413	46.956
2019/12/20	81.903	34.753	47.150
2019/12/21	82.208	35.998	46.211
2019/12/22	76.946	32.283	44.664
2019/12/23	82.075	35.995	46.080
2019/12/24	81.709	36.591	45.118
2019/12/25	81.691	37.462	44.229
2019/12/26	81.363	36.391	44.972
2019/12/27	81.774	36.382	45.392
2019/12/28	81.729	36.263	45.466
2019/12/29	81.787	36.038	45.749
2019/12/30	81.448	34.593	46.855
2019/12/31	81.909	36.043	45.866
TOTAL	94.489.23	41.823.81	52.665.42



RESULTADOS DEL ANÁLISIS DE SALMUERA TOMADA EN LA ARQUETA DE LA IDAM

Los análisis fueron realizados siguiendo los procedimientos establecidos en el
“Standard Methods for the examination of water”.

	Octubre	Noviembre	Diciembre
Sólidos en Suspensión (mg/L)	10	16	11
DBO (mg/L)	0.55	< 0.5	< 0.5
DQO (mg/L)	6.3	< 5	< 5
pH (Ud. pH)	7.58	7.6	7.64
Nitrógeno Total (mg/L)	0.89	0.85	0.93
Fósforo Total (µg/L)	107	114	66
Temperatura	68.377	55.176	64.863
Salinidad (ups)	24.188	20.591	19.128
Detergentes (mg/L LAS)	< 0.1	< 0.1	< 0.1
Hierro (µg/L)	29	12.9	7.2
Níquel (µg/L)	0.7	1.8	0.6
Cobre (µg/L)	2.5	3.9	0.8
Cloro residual total (mg/L)	< 0.05	< 0.05	< 0.05