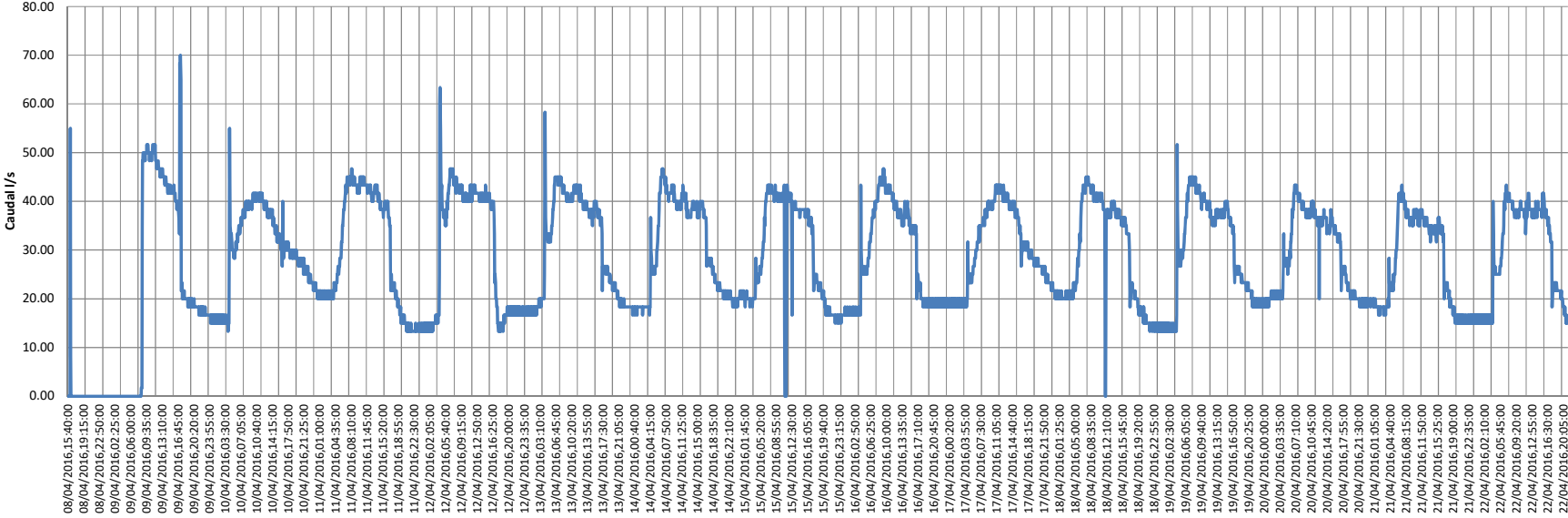
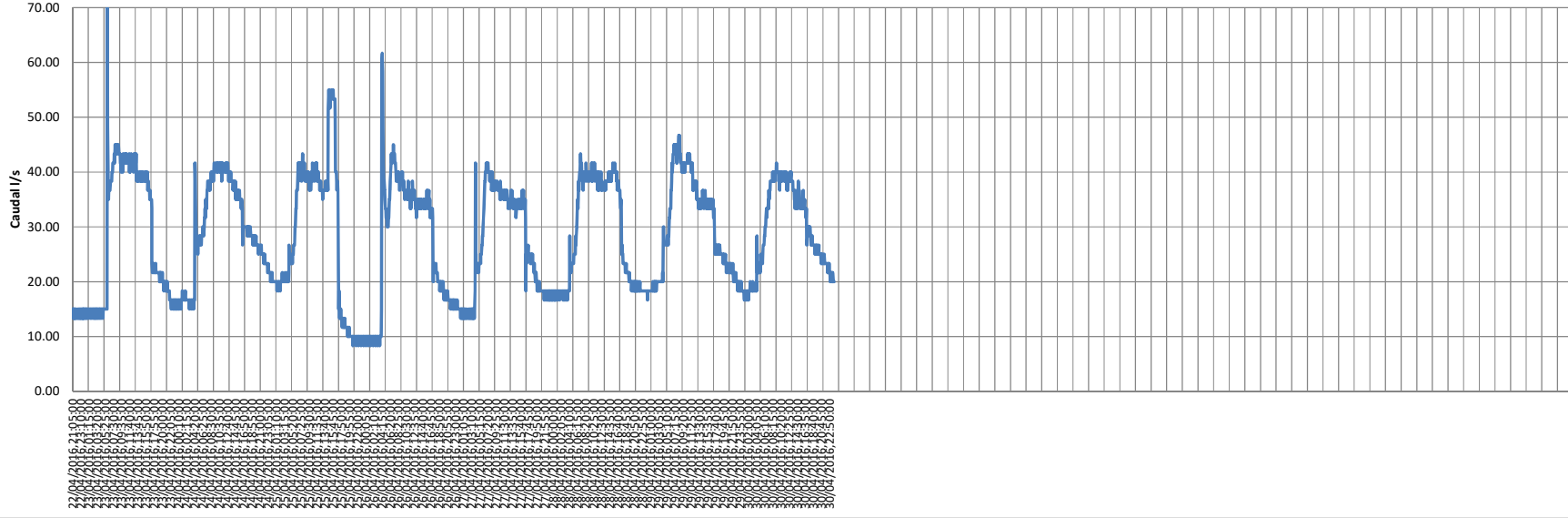


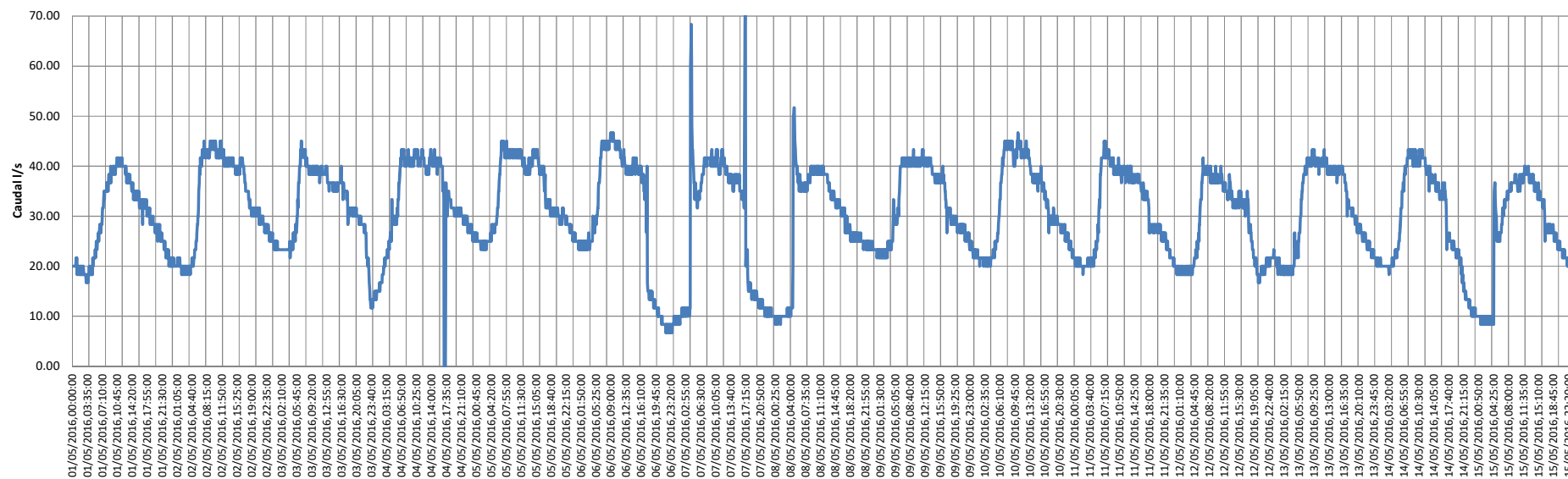
Caudal de salida de Reservoir R5 tub. ø8" Mes de Abril 2016



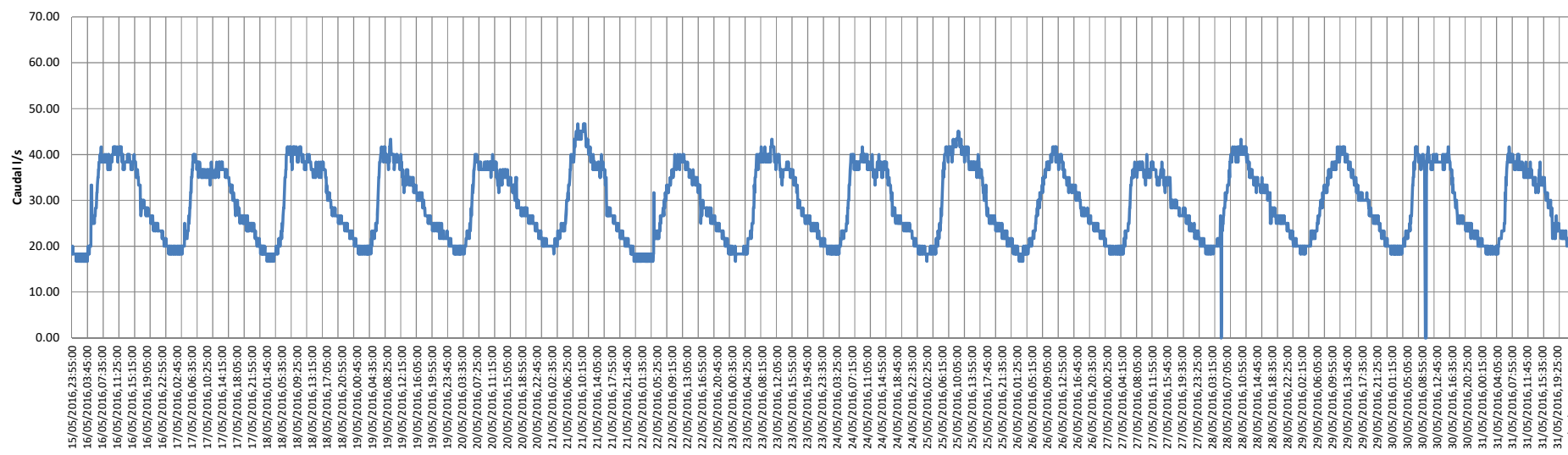
Caudal de salida de Reservoir R5 tub. ø8" Mes de Abril 2016



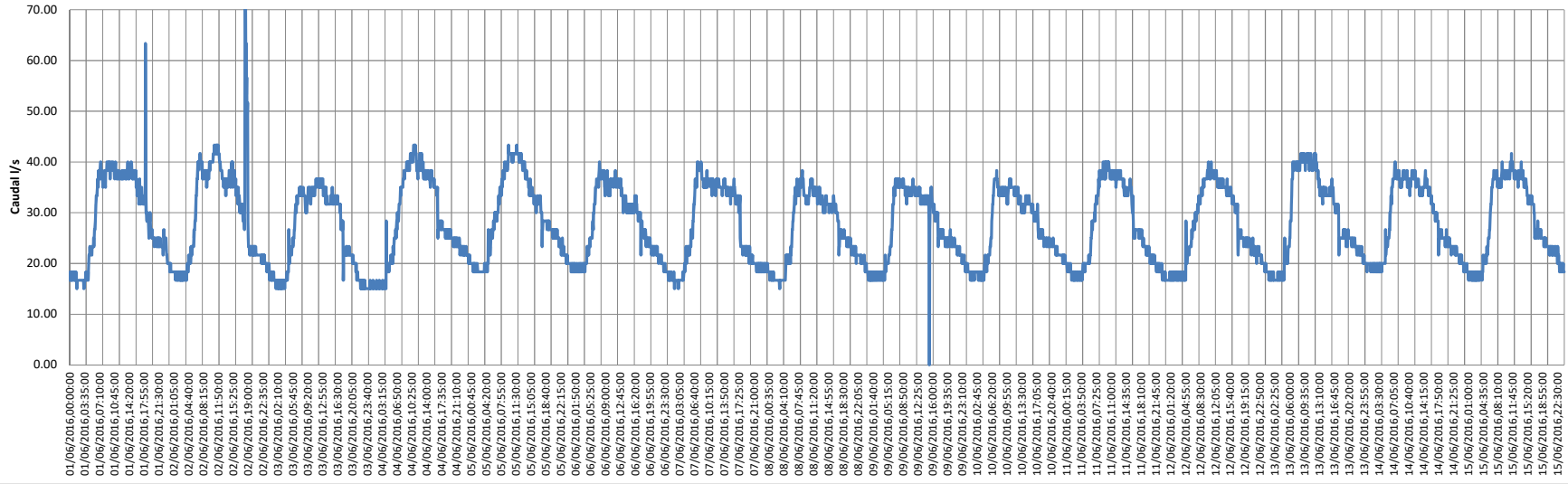
Caudal de salida de Reservoirio R5 tub. ø8" Mes de Mayo 2016



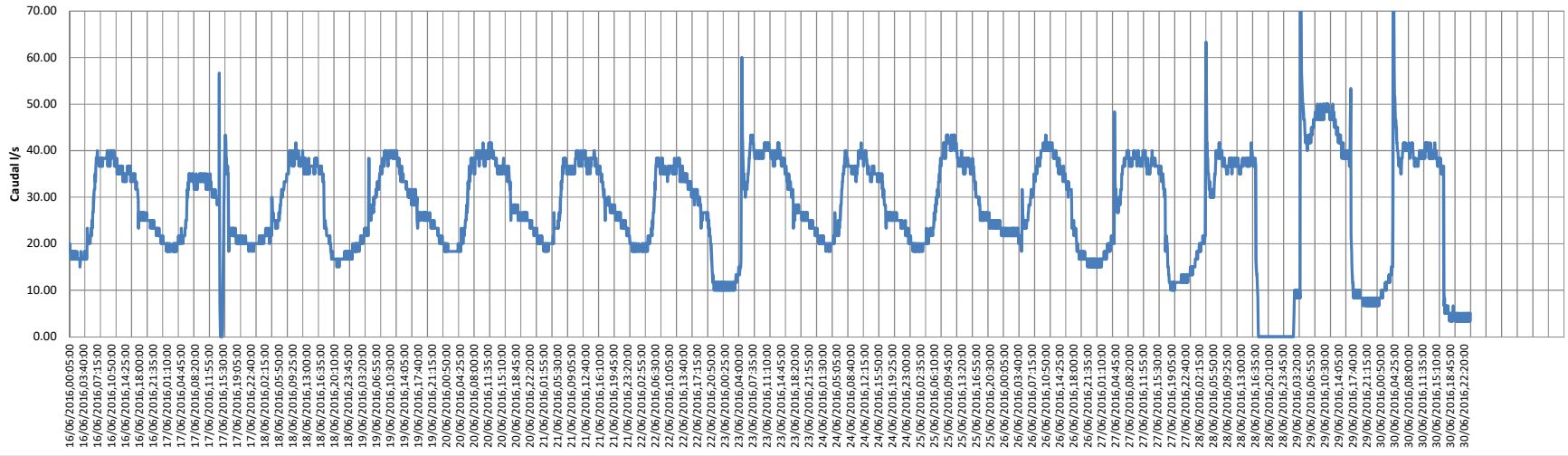
Caudal de salida de Reservoirio R5 tub. ø8" Mes de Mayo 2016



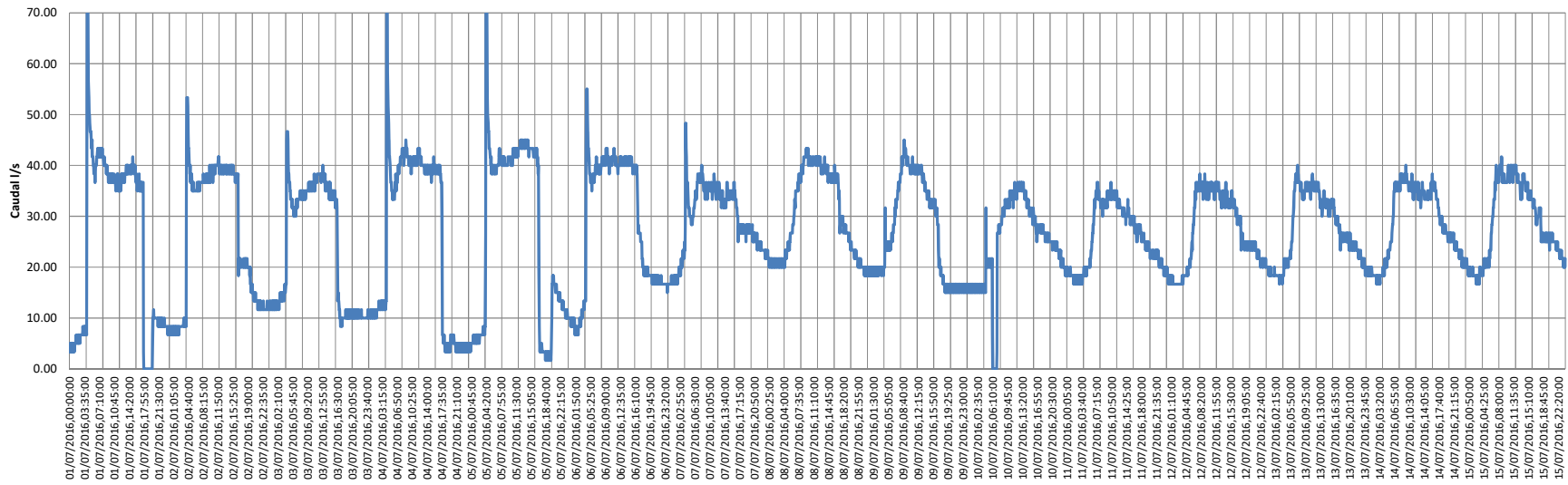
Caudal de salida de Reservorio R5 tub. ø8" Mes de Junio 2016



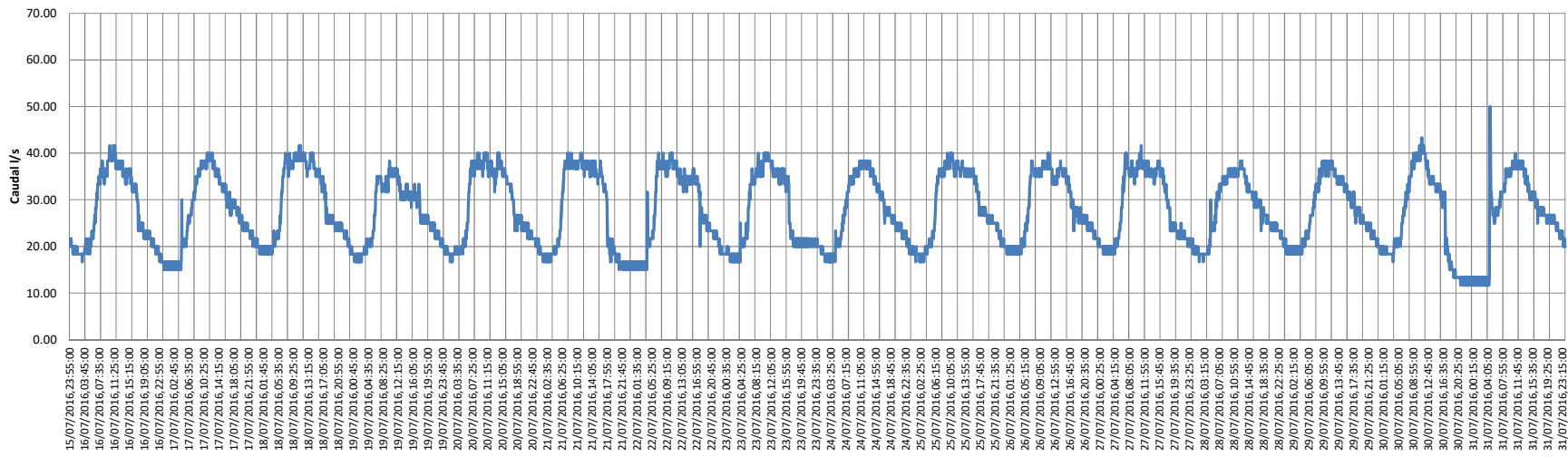
Caudal de salida de Reservorio R5 tub. ø8" Mes de Junio 2016



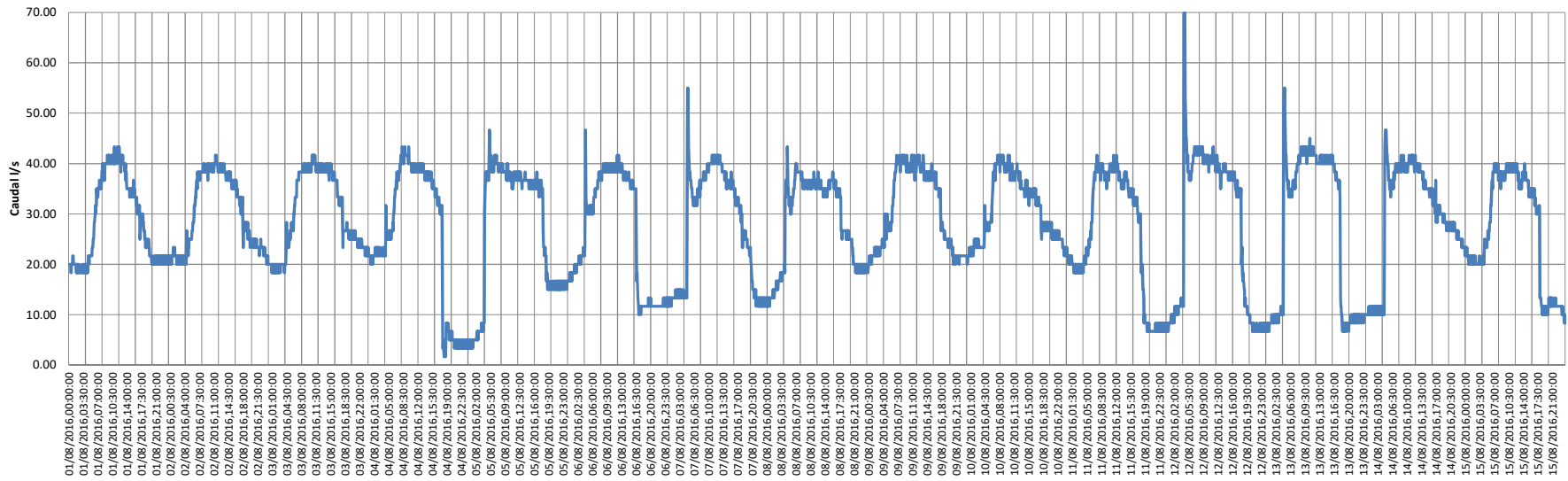
Caudal de salida de Reservorio R5 tub. ø8" Mes de Julio 2016



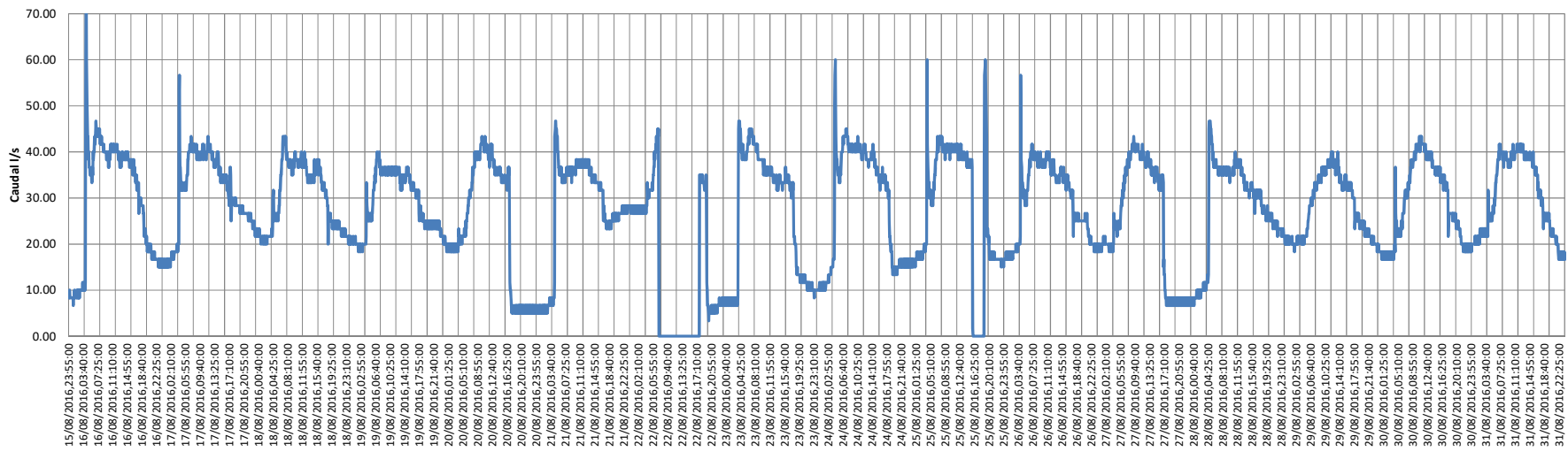
Caudal de salida de Reservorio R5 tub. ø8" Mes de Julio 2016



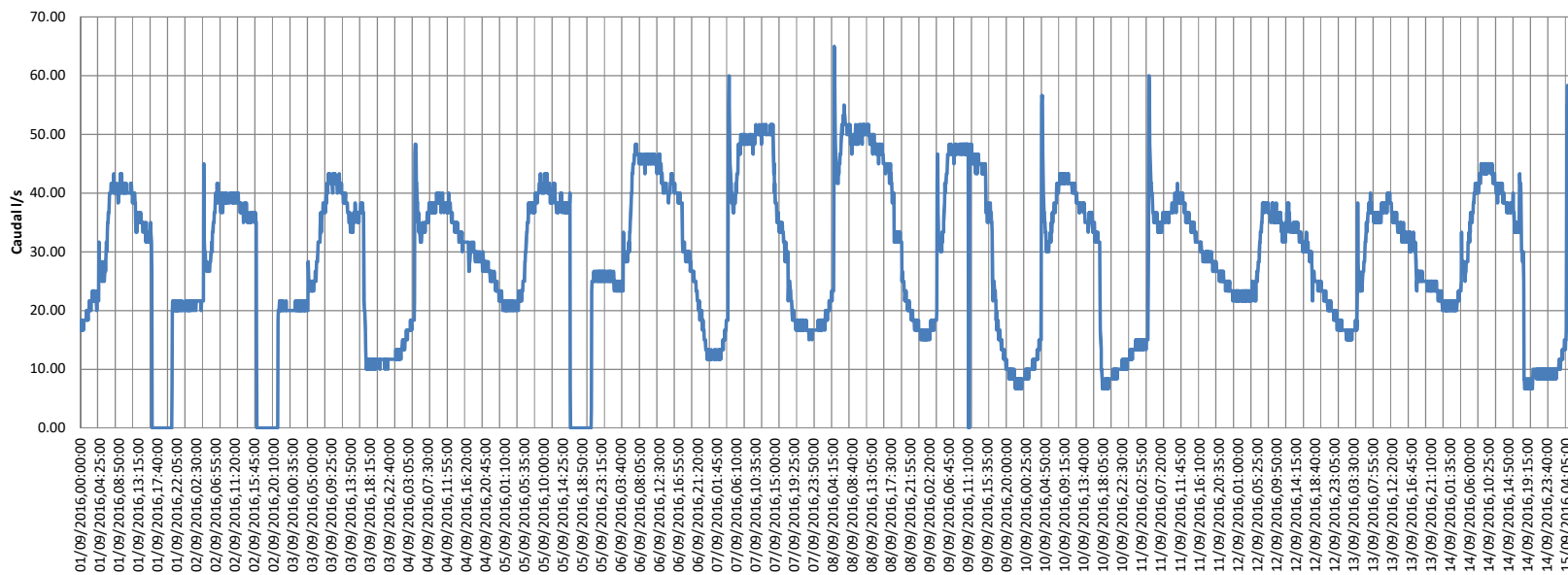
Caudal de salida de Reservorio R5 tub. ø8" Mes de Agosto 2016



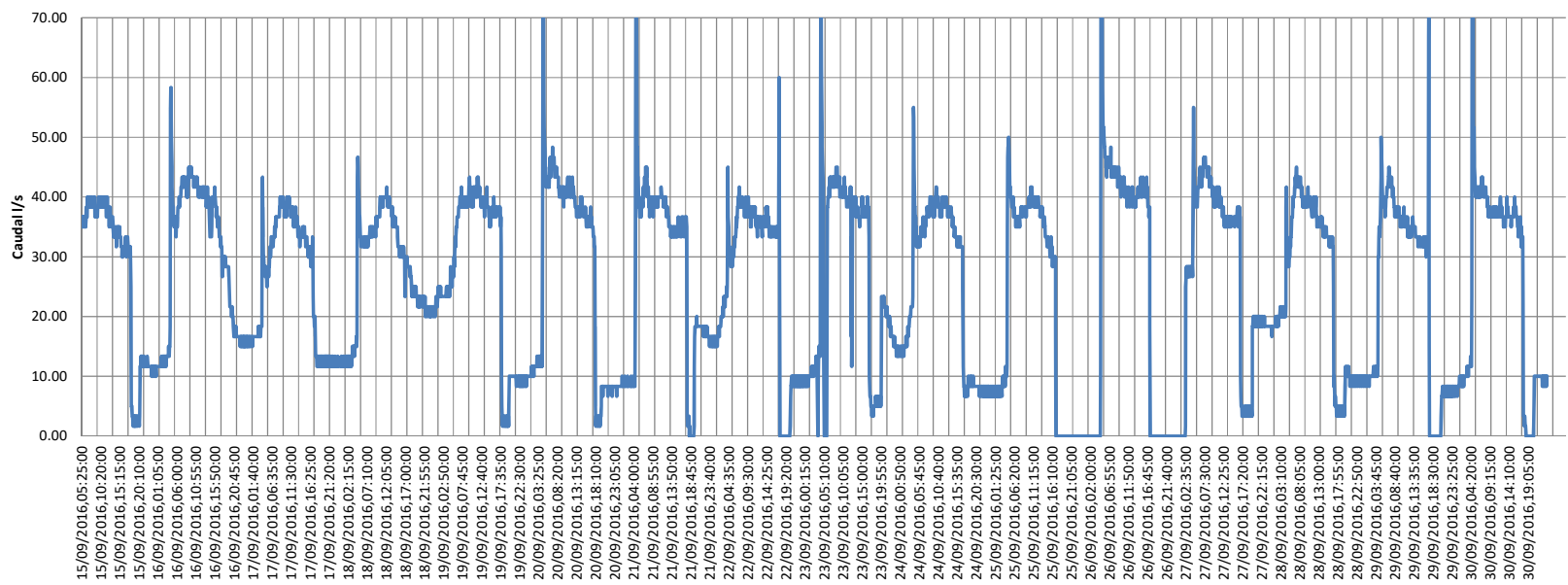
Caudal de salida de Reservorio R5 tub. ø8" Mes de Agosto 2016



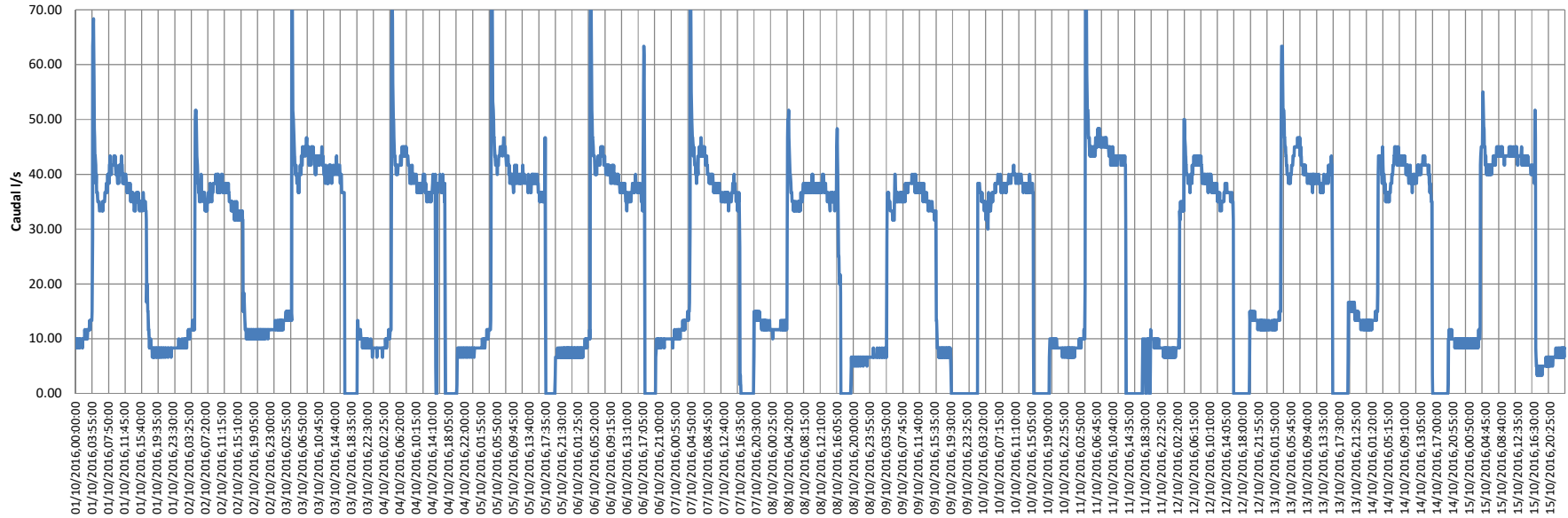
Caudal de salida de Reservoir R5 tub. ø8" Mes de Setiembre 2016



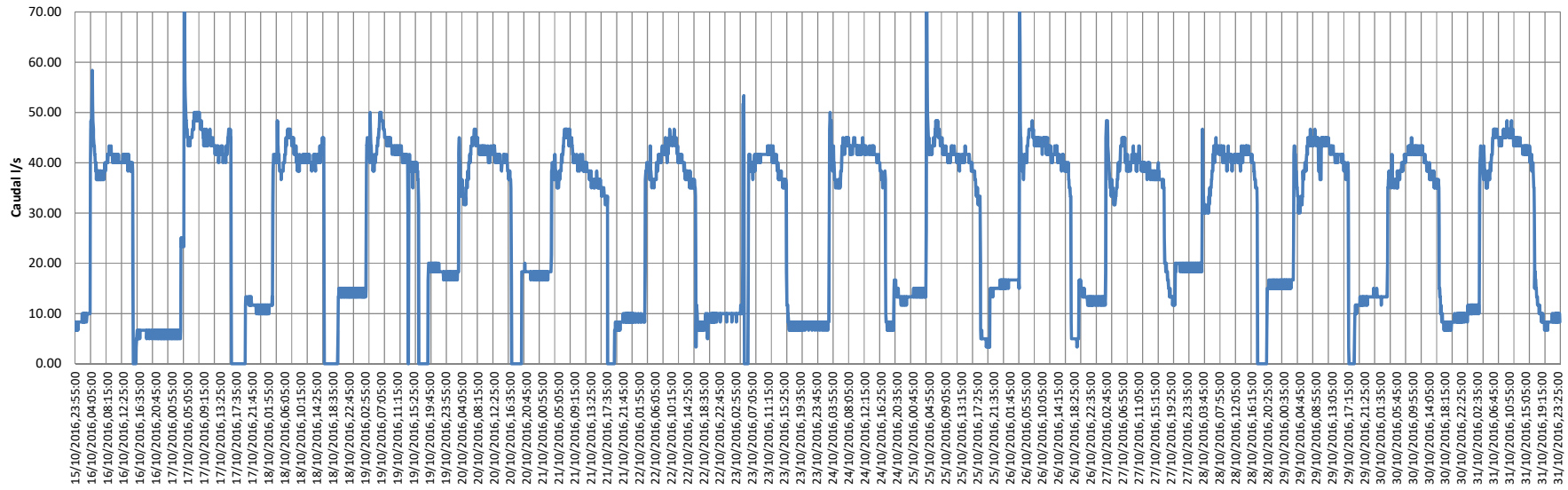
Caudal de salida de Reservoir R5 tub. ø8" Mes de Setiembre 2016



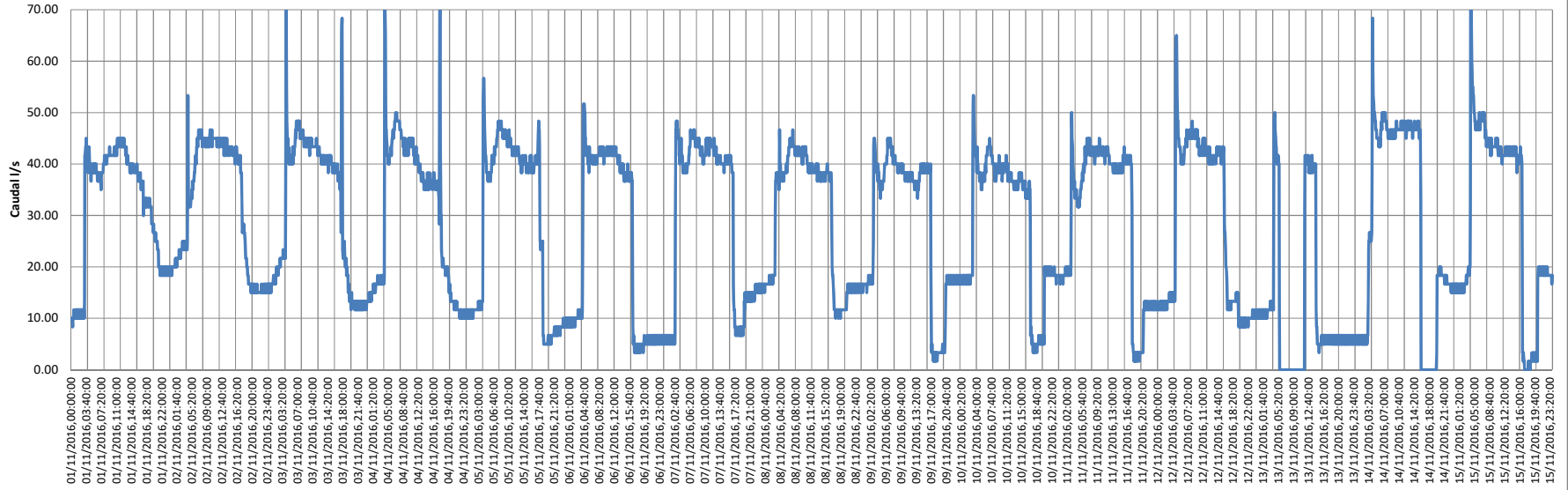
Caudal de salida de Reservorio R5 tub. ø8" Mes de Octubre 2016



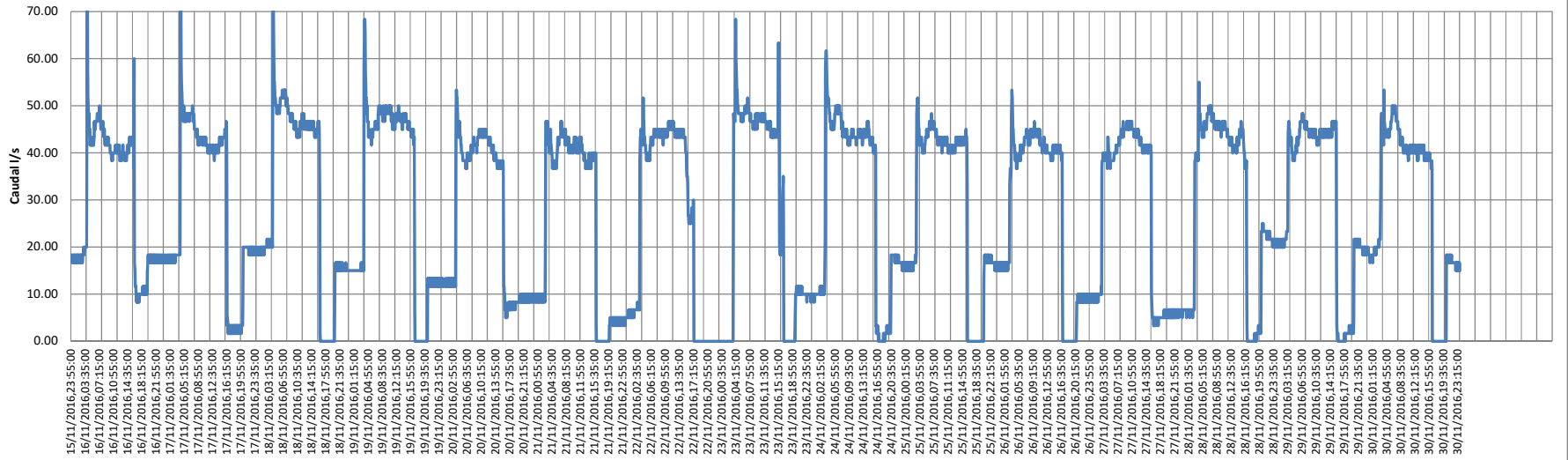
Caudal de salida de Reservorio R5 tub. ø8" Mes de Octubre 2016



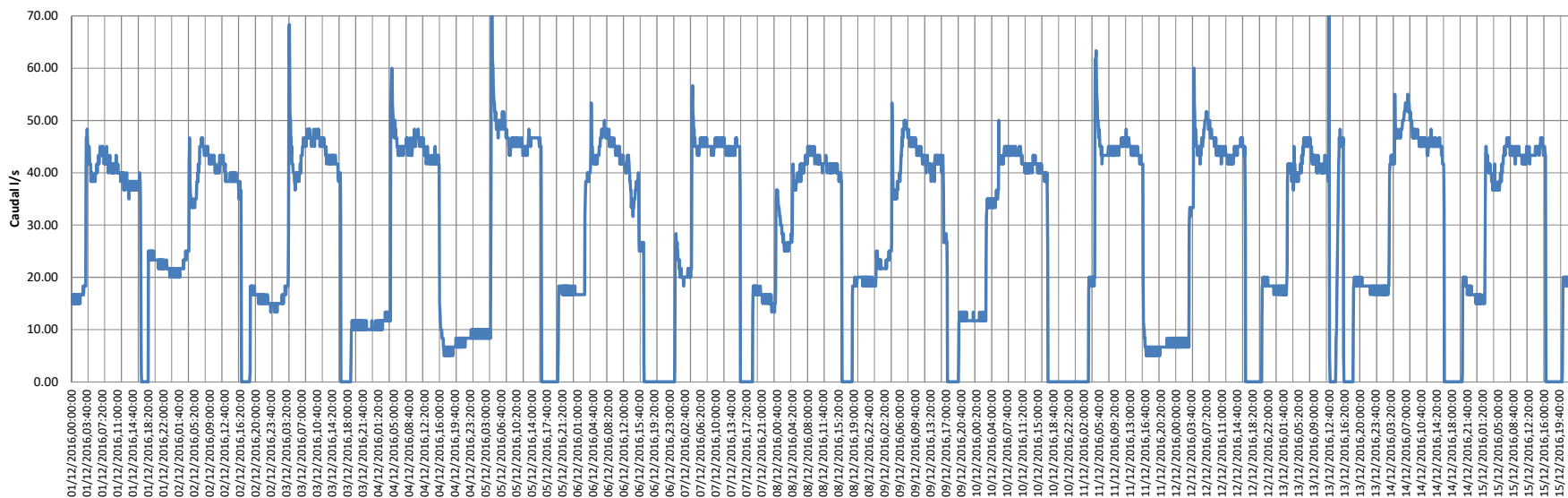
Caudal de salida de Reservoirio R5 tub. ø8" Mes de Noviembre 2016



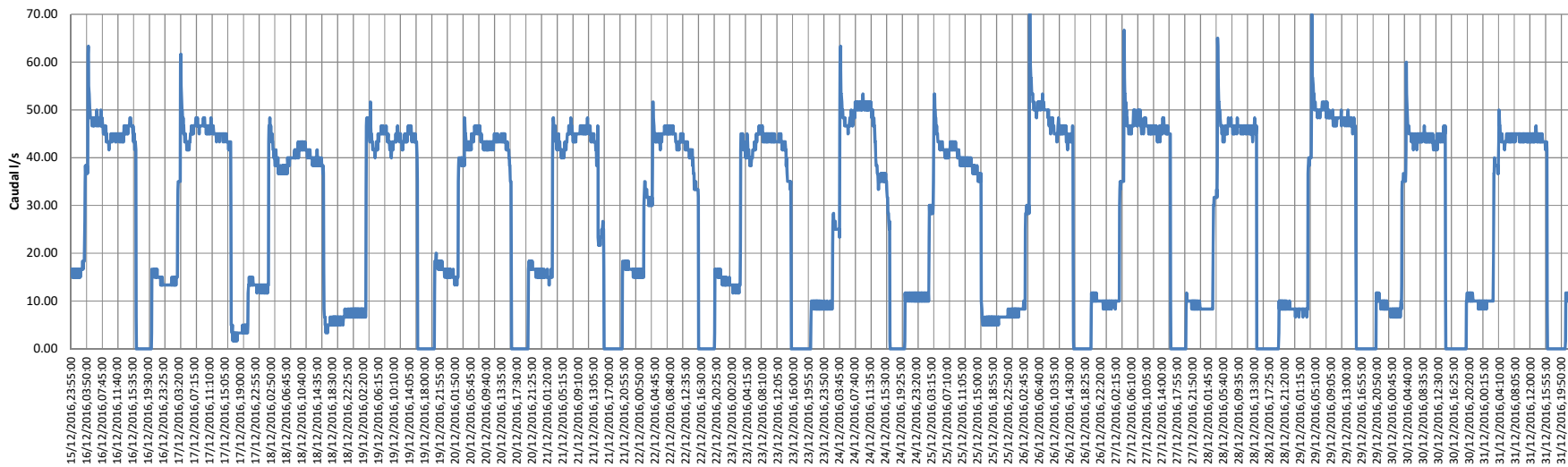
Caudal de salida de Reservoirio R5 tub. ø8" Mes de Noviembre 2016



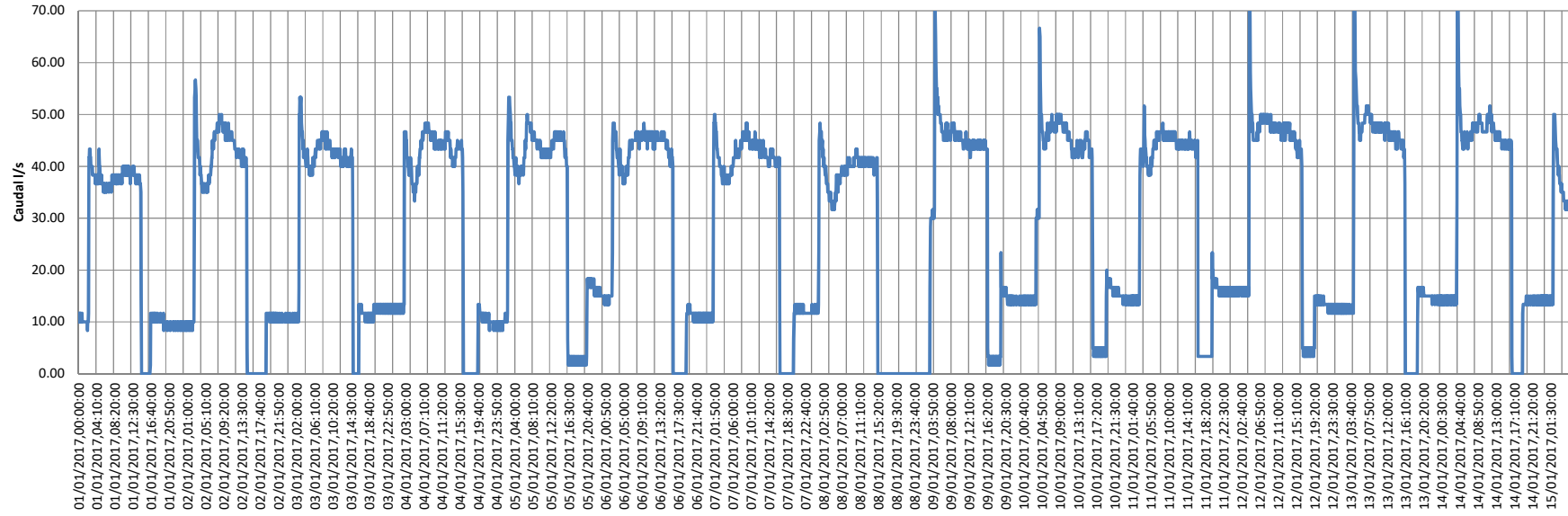
Caudal de salida de Reservorio R5 tub. ø8" Mes de Diciembre 2016



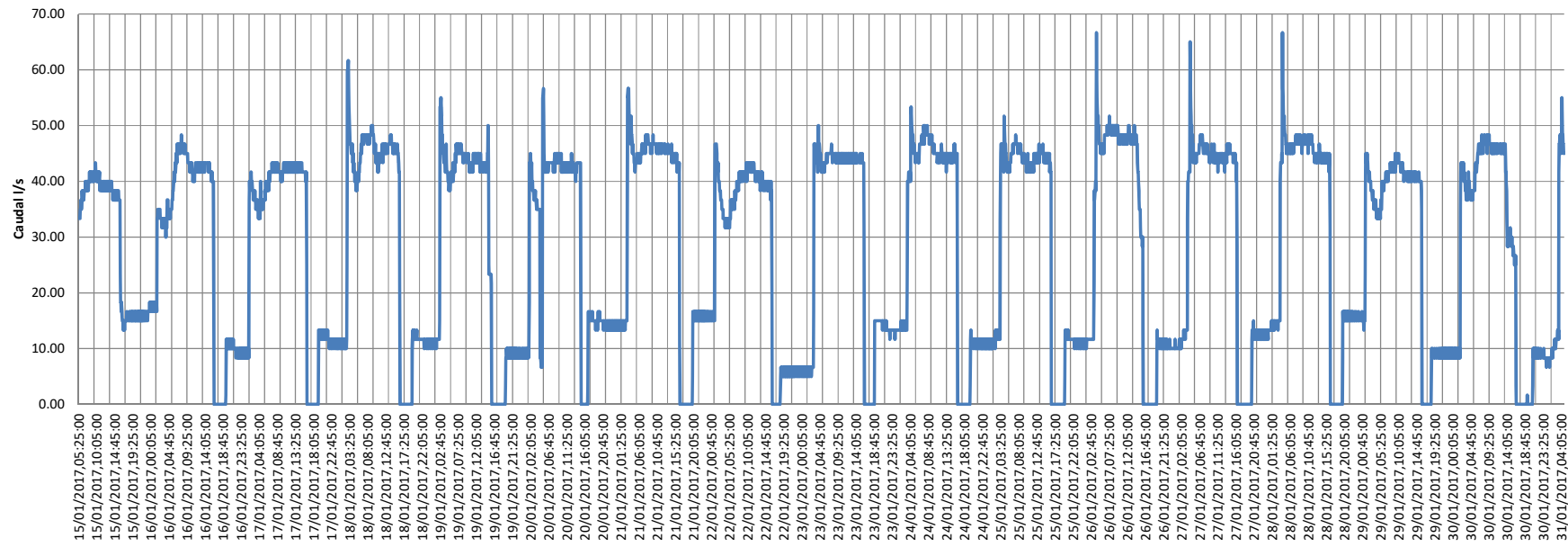
Caudal de salida de Reservorio R5 tub. ø8" Mes de Diciembre 2016



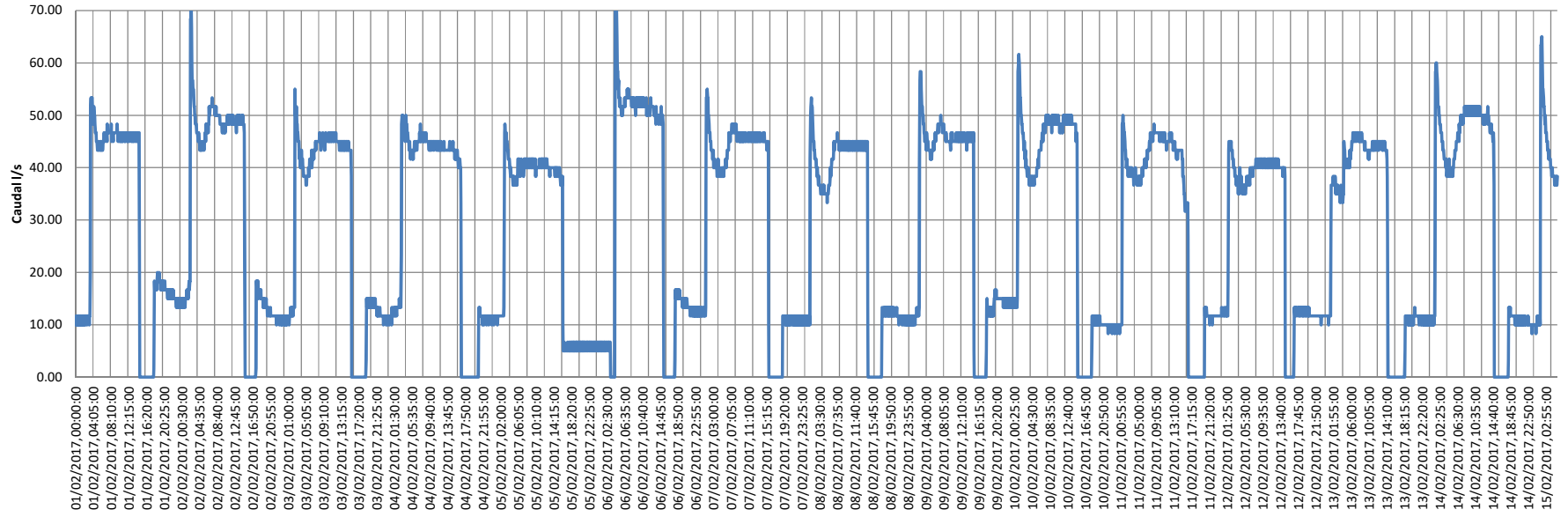
Caudal de salida de Reservorio R5 tub. ø8" Mes de Enero 2017



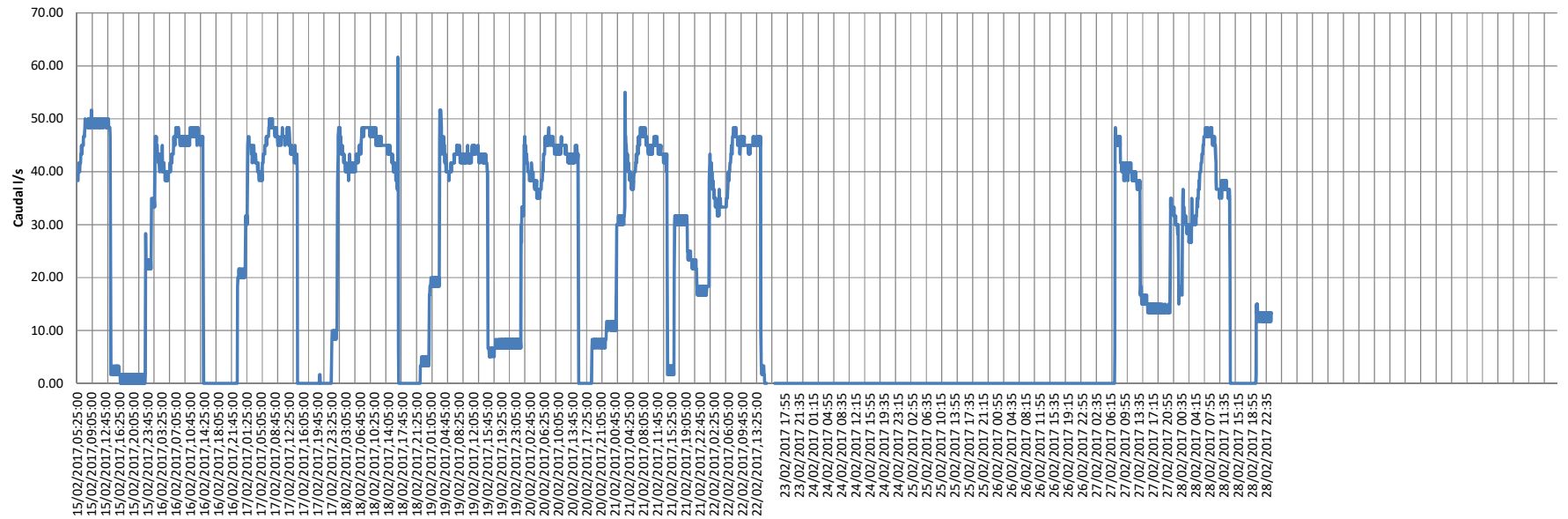
Caudal de salida de Reservorio R5 tub. ø8" Mes de Enero 2017



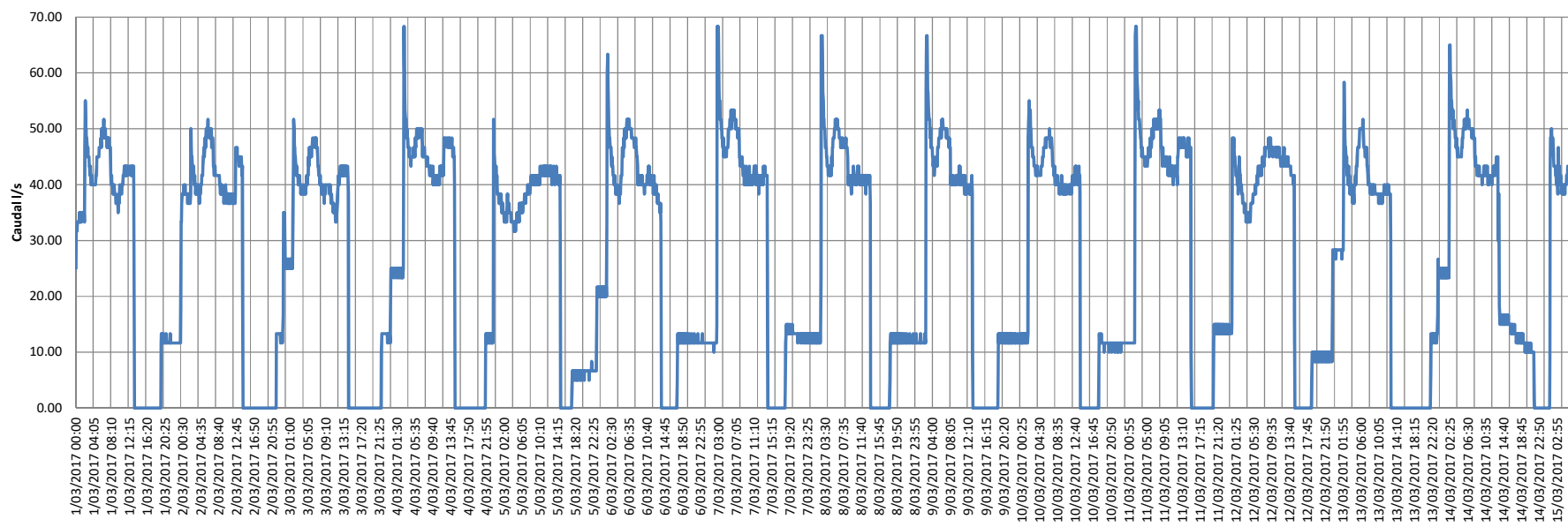
Caudal de salida de Reservorio R5 tub. ø8" M es de Febrero 2017



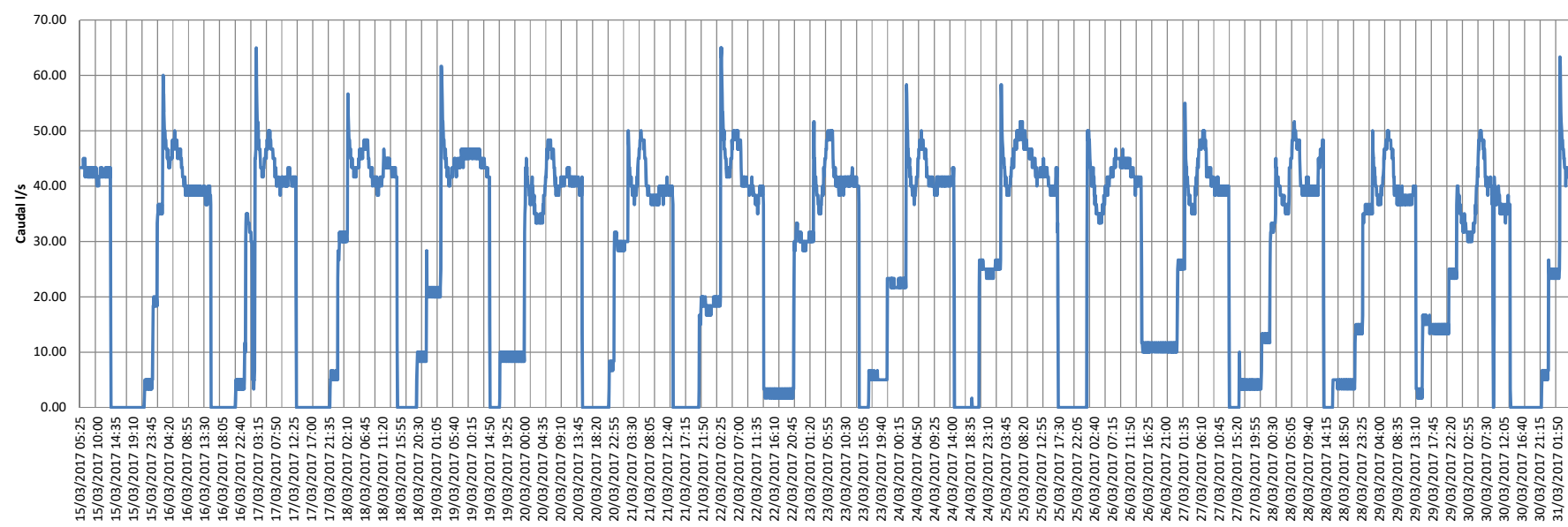
Caudal de salida de Reservorio R5 tub. ø8" M es de Febrero 2017



Caudal de salida de Reservorio R5 tub. ø8" M es de Marzo 2017

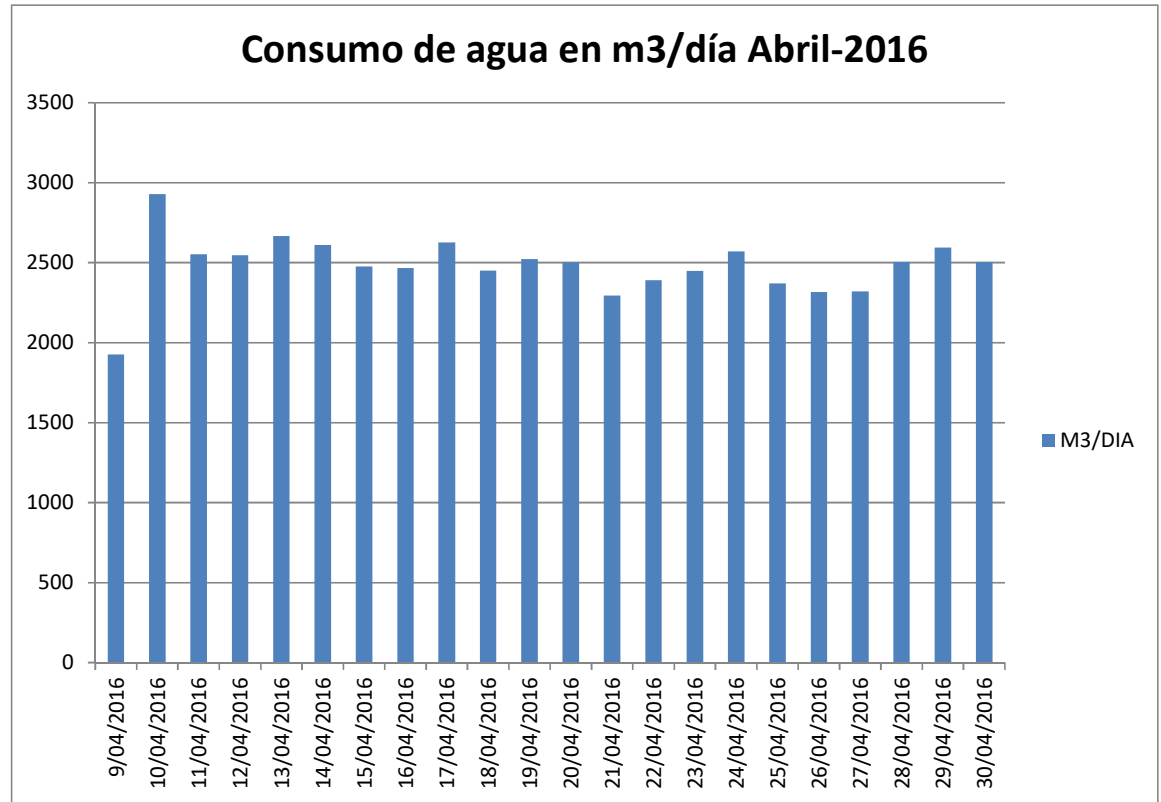


Caudal de salida de Reservorio R5 tub. ø8" Mes de Marzo 2017



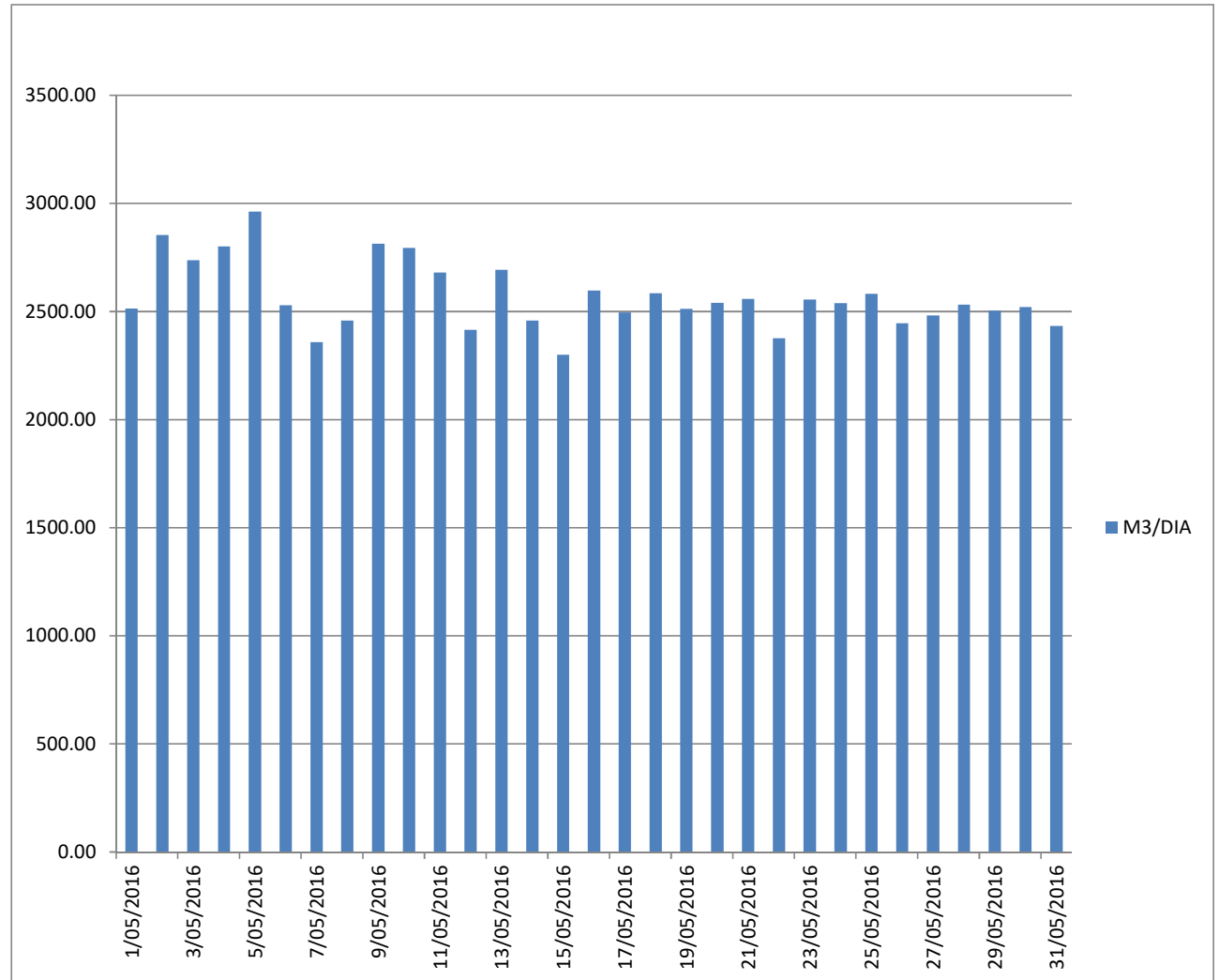
DATOS DE CONSUMO DE AGUA DIARIO MES DE ABRIL-2016

| FECHA | M3/DIA | Q PROMEDIO | Q MAX |
|------------|---------|------------|-------|
| 9/04/2016 | 1927.00 | 22.30 | 51.67 |
| 10/04/2016 | 2928.00 | 33.89 | 41.67 |
| 11/04/2016 | 2553.00 | 29.55 | 46.67 |
| 12/04/2016 | 2547.00 | 29.48 | 46.67 |
| 13/04/2016 | 2668.00 | 30.88 | 45.00 |
| 14/04/2016 | 2612.50 | 30.24 | 46.67 |
| 15/04/2016 | 2476.00 | 28.66 | 43.33 |
| 16/04/2016 | 2468.00 | 28.56 | 46.67 |
| 17/04/2016 | 2627.00 | 30.41 | 43.33 |
| 18/04/2016 | 2450.00 | 28.36 | 45.00 |
| 19/04/2016 | 2524.00 | 29.21 | 45.00 |
| 20/04/2016 | 2502.00 | 28.96 | 43.33 |
| 21/04/2016 | 2294.50 | 26.56 | 43.33 |
| 22/04/2016 | 2391.50 | 27.68 | 43.33 |
| 23/04/2016 | 2448.00 | 28.33 | 45.00 |
| 24/04/2016 | 2570.01 | 29.75 | 41.67 |
| 25/04/2016 | 2371.50 | 27.45 | 43.33 |
| 26/04/2016 | 2316.50 | 26.81 | 45.00 |
| 27/04/2016 | 2320.99 | 26.86 | 41.67 |
| 28/04/2016 | 2503.99 | 28.98 | 43.33 |
| 29/04/2016 | 2595.50 | 30.04 | 46.67 |
| 30/04/2016 | 2503.49 | 28.98 | 41.67 |



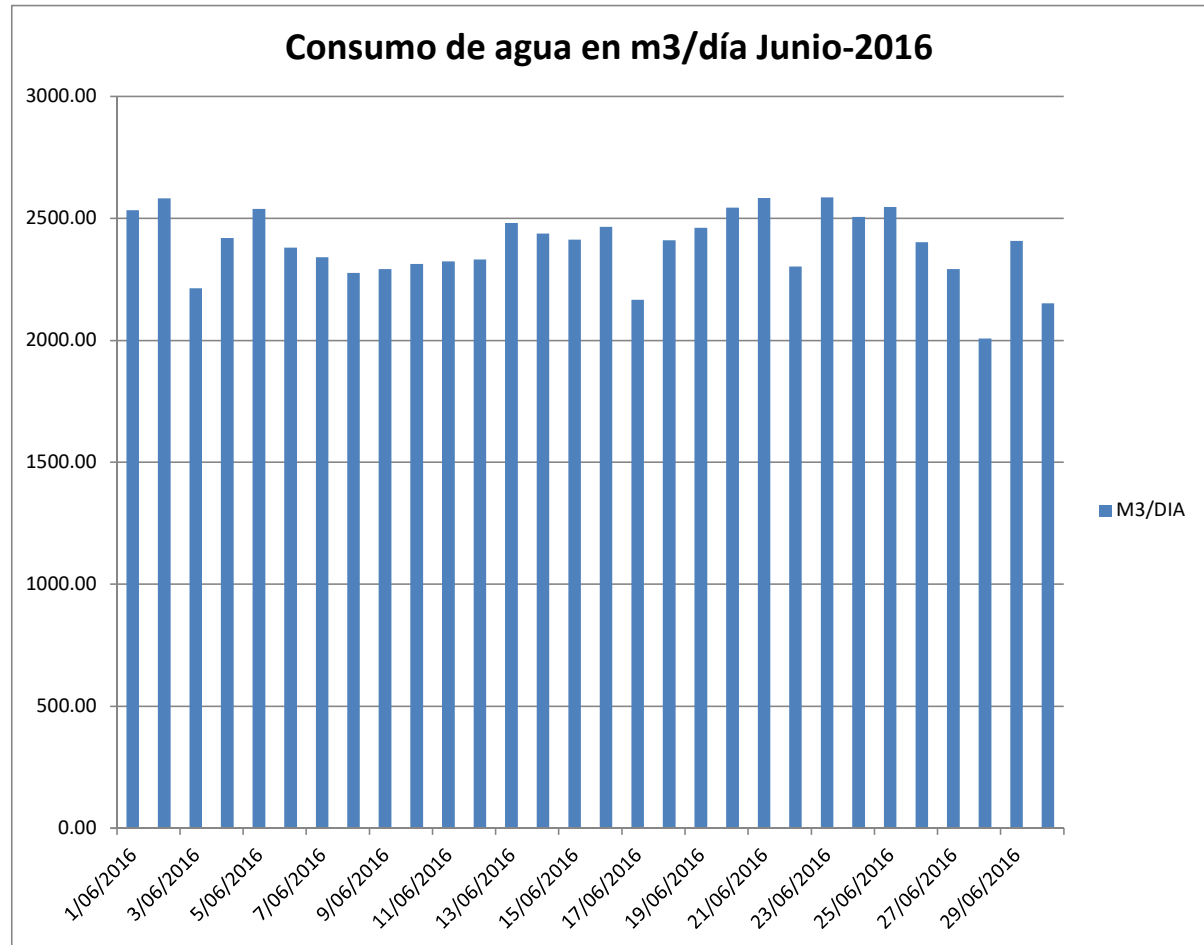
DATOS DE CONSUMO DE AGUA DIARIO MES DE MAYO-2016

| FECHA | M3/DIA | Q PROMEDIO | Q MAX |
|------------|---------|------------|-------|
| 1/05/2016 | 2514.00 | 29.10 | 41.67 |
| 2/05/2016 | 2852.50 | 33.02 | 45.00 |
| 3/05/2016 | 2737.00 | 31.68 | 45.00 |
| 4/05/2016 | 2800.00 | 32.41 | 43.33 |
| 5/05/2016 | 2961.50 | 34.28 | 45.00 |
| 6/05/2016 | 2530.00 | 29.28 | 46.67 |
| 7/05/2016 | 2359.00 | 27.30 | 73.33 |
| 8/05/2016 | 2457.50 | 28.44 | 51.67 |
| 9/05/2016 | 2813.50 | 32.56 | 43.33 |
| 10/05/2016 | 2794.50 | 32.34 | 46.67 |
| 11/05/2016 | 2679.50 | 31.01 | 45.00 |
| 12/05/2016 | 2415.00 | 27.95 | 41.67 |
| 13/05/2016 | 2692.50 | 31.16 | 43.33 |
| 14/05/2016 | 2457.50 | 28.44 | 43.33 |
| 15/05/2016 | 2300.50 | 26.63 | 40.00 |
| 16/05/2016 | 2597.99 | 30.07 | 41.67 |
| 17/05/2016 | 2495.00 | 28.88 | 40.00 |
| 18/05/2016 | 2585.00 | 29.92 | 41.67 |
| 19/05/2016 | 2513.00 | 29.09 | 43.33 |
| 20/05/2016 | 2540.50 | 29.40 | 40.00 |
| 21/05/2016 | 2558.00 | 29.61 | 46.67 |
| 22/05/2016 | 2376.50 | 27.51 | 40.00 |
| 23/05/2016 | 2556.00 | 29.58 | 43.33 |
| 24/05/2016 | 2539.50 | 29.39 | 41.67 |
| 25/05/2016 | 2582.50 | 29.89 | 45.00 |
| 26/05/2016 | 2446.50 | 28.32 | 41.67 |
| 27/05/2016 | 2481.50 | 28.72 | 40.00 |
| 28/05/2016 | 2532.00 | 29.31 | 43.33 |
| 29/05/2016 | 2504.00 | 28.98 | 41.67 |
| 30/05/2016 | 2519.49 | 29.16 | 41.67 |
| 31/05/2016 | 2432.50 | 28.15 | 41.67 |



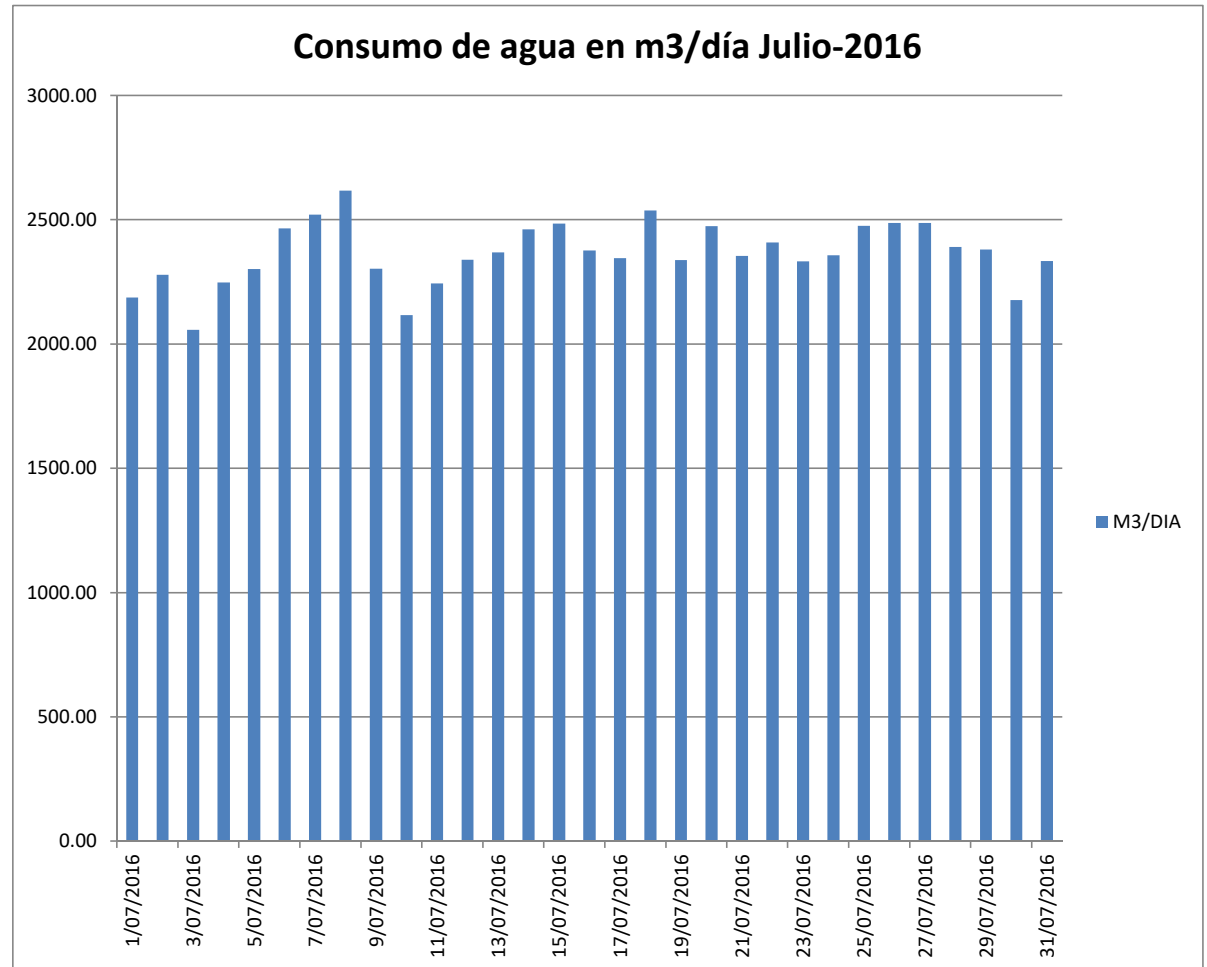
DATOS DE CONSUMO DE AGUA DIARIO MES DE JUNIO-2016

| FECHA | M3/DIA | Q PROMEDIO | Q MAX |
|------------|----------------|------------|-------|
| 1/06/2016 | 2534.00 | 29.33 | 40.00 |
| 2/06/2016 | 2581.50 | 29.88 | 43.33 |
| 3/06/2016 | 2214.01 | 25.63 | 36.67 |
| 4/06/2016 | 2419.00 | 28.00 | 43.33 |
| 5/06/2016 | 2538.00 | 29.38 | 43.33 |
| 6/06/2016 | 2380.00 | 27.55 | 40.00 |
| 7/06/2016 | 2340.50 | 27.09 | 40.00 |
| 8/06/2016 | 2276.50 | 26.35 | 38.33 |
| 9/06/2016 | 2292.50 | 26.53 | 36.67 |
| 10/06/2016 | 2313.50 | 26.78 | 38.33 |
| 11/06/2016 | 2324.00 | 26.90 | 40.00 |
| 12/06/2016 | 2331.50 | 26.98 | 40.00 |
| 13/06/2016 | 2480.50 | 28.71 | 41.67 |
| 14/06/2016 | 2439.00 | 28.23 | 40.00 |
| 15/06/2016 | 2413.00 | 27.93 | 41.67 |
| 16/06/2016 | 2465.50 | 28.54 | 40.00 |
| 17/06/2016 | 2166.00 | 25.07 | 43.33 |
| 18/06/2016 | 2410.01 | 27.89 | 41.67 |
| 19/06/2016 | 2461.50 | 28.49 | 40.00 |
| 20/06/2016 | 2545.00 | 29.46 | 41.67 |
| 21/06/2016 | 2584.50 | 29.91 | 40.00 |
| 22/06/2016 | 2302.00 | 26.64 | 38.33 |
| 23/06/2016 | 2586.50 | 29.94 | 43.33 |
| 24/06/2016 | 2507.00 | 29.02 | 41.67 |
| 25/06/2016 | 2546.50 | 29.47 | 43.33 |
| 26/06/2016 | 2402.50 | 27.81 | 43.33 |
| 27/06/2016 | 2293.00 | 26.54 | 40.00 |
| 28/06/2016 | 2007.50 | 23.23 | 41.67 |
| 29/06/2016 | 2407.99 | 27.87 | 50.00 |
| 30/06/2016 | 2151.50 | 24.90 | 46.67 |



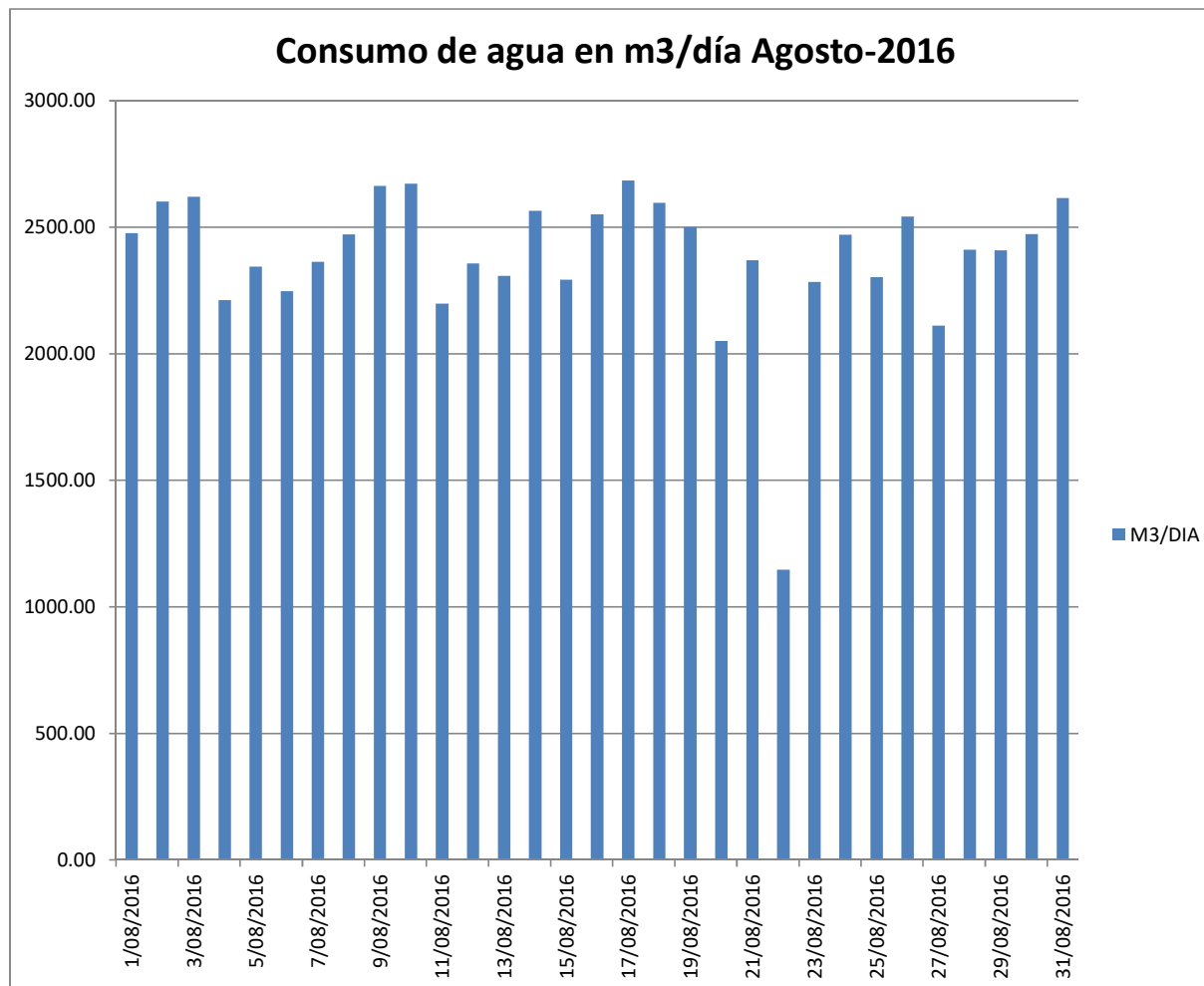
DATOS DE CONSUMO DE AGUA DIARIO MES DE JULIO-2016

| FECHA | M3/DIA | Q PROMEDIO | Q MAX |
|------------|---------|------------|-------|
| 1/07/2016 | 2186.00 | 25.30 | 43.33 |
| 2/07/2016 | 2278.00 | 26.37 | 41.67 |
| 3/07/2016 | 2056.50 | 23.80 | 40.00 |
| 4/07/2016 | 2247.00 | 26.01 | 45.00 |
| 5/07/2016 | 2301.00 | 26.63 | 45.00 |
| 6/07/2016 | 2464.00 | 28.52 | 43.33 |
| 7/07/2016 | 2519.50 | 29.16 | 40.00 |
| 8/07/2016 | 2616.50 | 30.28 | 43.33 |
| 9/07/2016 | 2302.00 | 26.64 | 45.00 |
| 10/07/2016 | 2115.50 | 24.48 | 36.67 |
| 11/07/2016 | 2243.49 | 25.97 | 36.67 |
| 12/07/2016 | 2338.00 | 27.06 | 38.33 |
| 13/07/2016 | 2368.50 | 27.41 | 40.00 |
| 14/07/2016 | 2461.50 | 28.49 | 40.00 |
| 15/07/2016 | 2483.50 | 28.74 | 41.67 |
| 16/07/2016 | 2375.50 | 27.49 | 41.67 |
| 17/07/2016 | 2344.50 | 27.14 | 40.00 |
| 18/07/2016 | 2536.00 | 29.35 | 41.67 |
| 19/07/2016 | 2337.00 | 27.05 | 38.33 |
| 20/07/2016 | 2473.50 | 28.63 | 40.00 |
| 21/07/2016 | 2354.00 | 27.25 | 40.00 |
| 22/07/2016 | 2408.50 | 27.88 | 40.00 |
| 23/07/2016 | 2332.00 | 26.99 | 40.00 |
| 24/07/2016 | 2356.50 | 27.27 | 38.33 |
| 25/07/2016 | 2475.00 | 28.65 | 40.00 |
| 26/07/2016 | 2487.00 | 28.78 | 40.00 |
| 27/07/2016 | 2486.50 | 28.78 | 41.67 |
| 28/07/2016 | 2390.00 | 27.66 | 38.33 |
| 29/07/2016 | 2379.50 | 27.54 | 38.33 |
| 30/07/2016 | 2175.49 | 25.18 | 43.33 |
| 31/07/2016 | 2333.50 | 27.01 | 40.00 |



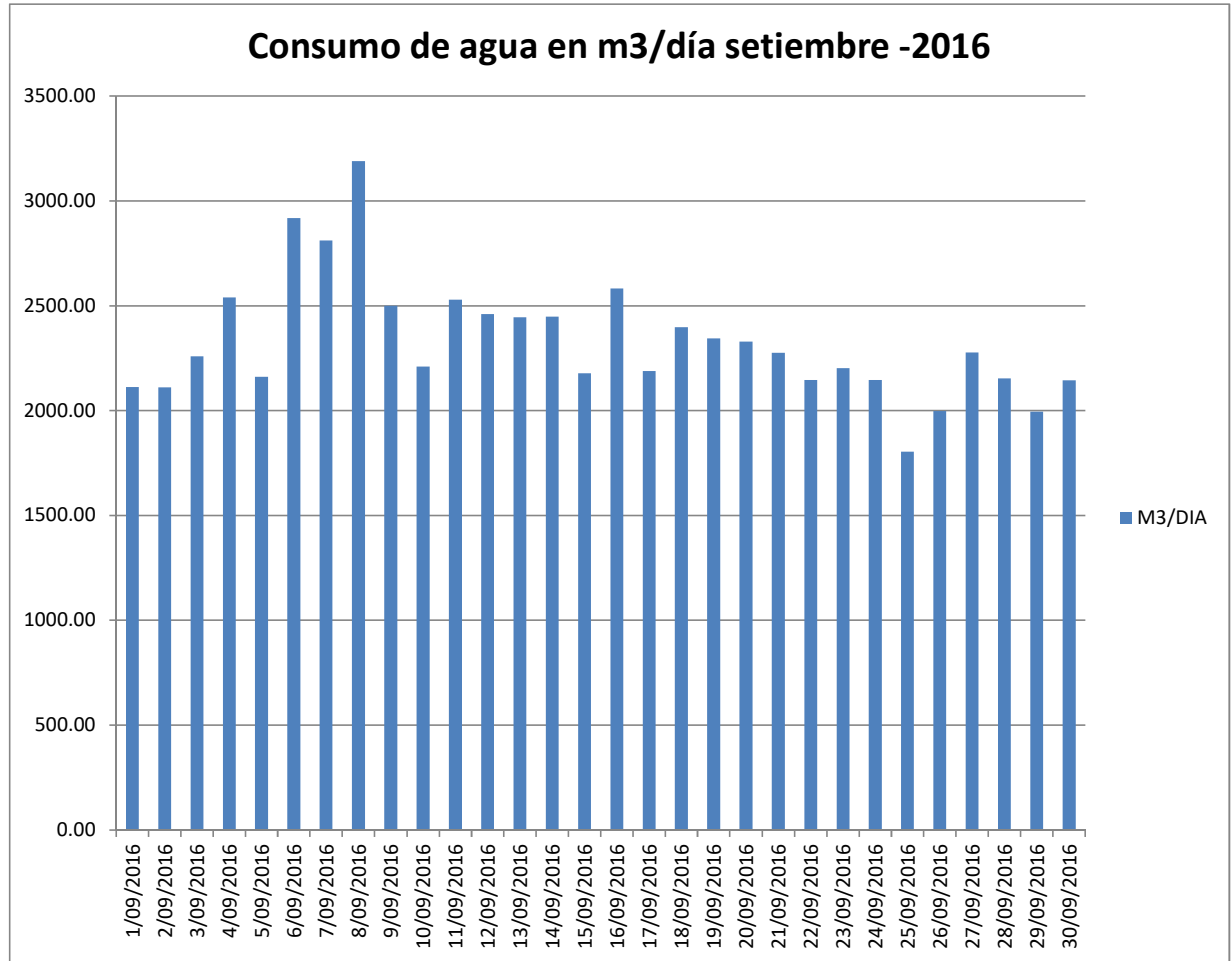
DATOS DE CONSUMO DE AGUA DIARIO MES DE AGOSTO-2016

| FECHA | M3/DIA | Q PROMEDIO | Q MAX |
|------------|---------|------------|-------|
| 1/08/2016 | 2476.50 | 28.66 | 43.33 |
| 2/08/2016 | 2601.50 | 30.11 | 41.67 |
| 3/08/2016 | 2621.49 | 30.34 | 41.67 |
| 4/08/2016 | 2212.00 | 25.60 | 43.33 |
| 5/08/2016 | 2343.50 | 27.12 | 41.67 |
| 6/08/2016 | 2247.01 | 26.01 | 41.67 |
| 7/08/2016 | 2364.00 | 27.36 | 41.67 |
| 8/08/2016 | 2471.50 | 28.61 | 40.00 |
| 9/08/2016 | 2663.00 | 30.82 | 41.67 |
| 10/08/2016 | 2672.50 | 30.93 | 41.67 |
| 11/08/2016 | 2198.50 | 25.45 | 41.67 |
| 12/08/2016 | 2357.50 | 27.29 | 43.33 |
| 13/08/2016 | 2307.50 | 26.71 | 45.00 |
| 14/08/2016 | 2565.50 | 29.69 | 41.67 |
| 15/08/2016 | 2292.50 | 26.53 | 40.00 |
| 16/08/2016 | 2551.00 | 29.53 | 46.67 |
| 17/08/2016 | 2685.50 | 31.08 | 43.33 |
| 18/08/2016 | 2596.50 | 30.05 | 43.33 |
| 19/08/2016 | 2501.00 | 28.95 | 40.00 |
| 20/08/2016 | 2050.50 | 23.73 | 43.33 |
| 21/08/2016 | 2370.01 | 27.43 | 38.33 |
| 22/08/2016 | 1147.00 | 13.28 | 45.00 |
| 23/08/2016 | 2284.00 | 26.44 | 46.67 |
| 24/08/2016 | 2470.50 | 28.59 | 45.00 |
| 25/08/2016 | 2302.50 | 26.65 | 43.33 |
| 26/08/2016 | 2542.00 | 29.42 | 41.67 |
| 27/08/2016 | 2111.00 | 24.43 | 43.33 |
| 28/08/2016 | 2411.50 | 27.91 | 40.00 |
| 29/08/2016 | 2409.00 | 27.88 | 40.00 |
| 30/08/2016 | 2473.50 | 28.63 | 43.33 |
| 31/08/2016 | 2616.00 | 30.28 | 41.67 |



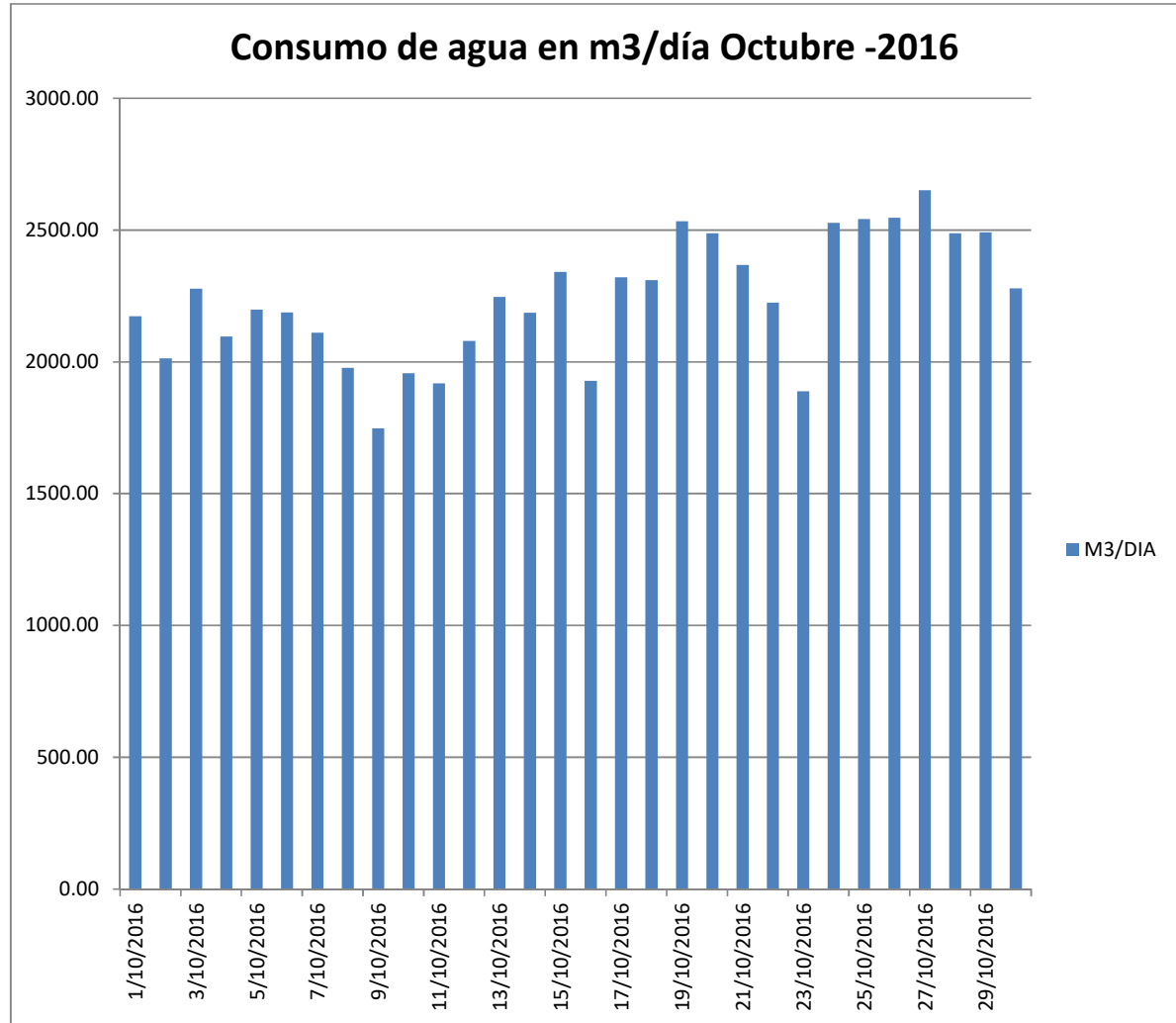
DATOS DE CONSUMO DE AGUA DIARIO MES DE SETIEMBRE-2016

| FECHA | M3/DIA | Q PROMEDIO | Q MAX |
|------------|---------|------------|-------|
| 1/09/2016 | 2112.01 | 24.44 | 43.33 |
| 2/09/2016 | 2110.50 | 24.43 | 45.00 |
| 3/09/2016 | 2259.51 | 26.15 | 43.33 |
| 4/09/2016 | 2539.50 | 29.39 | 40.00 |
| 5/09/2016 | 2160.50 | 25.01 | 43.33 |
| 6/09/2016 | 2919.50 | 33.79 | 48.33 |
| 7/09/2016 | 2811.00 | 32.53 | 51.67 |
| 8/09/2016 | 3190.50 | 36.93 | 55.00 |
| 9/09/2016 | 2500.00 | 28.94 | 48.33 |
| 10/09/2016 | 2209.50 | 25.57 | 43.33 |
| 11/09/2016 | 2529.00 | 29.27 | 41.67 |
| 12/09/2016 | 2460.00 | 28.47 | 38.33 |
| 13/09/2016 | 2444.00 | 28.29 | 40.00 |
| 14/09/2016 | 2448.50 | 28.34 | 45.00 |
| 15/09/2016 | 2178.00 | 25.21 | 40.00 |
| 16/09/2016 | 2582.50 | 29.89 | 45.00 |
| 17/09/2016 | 2187.50 | 25.32 | 40.00 |
| 18/09/2016 | 2398.50 | 27.76 | 41.67 |
| 19/09/2016 | 2344.00 | 27.13 | 43.33 |
| 20/09/2016 | 2330.00 | 26.97 | 48.33 |
| 21/09/2016 | 2275.99 | 26.34 | 45.00 |
| 22/09/2016 | 2146.00 | 24.84 | 45.00 |
| 23/09/2016 | 2202.50 | 25.49 | 45.00 |
| 24/09/2016 | 2145.49 | 24.83 | 41.67 |
| 25/09/2016 | 1804.00 | 20.88 | 41.67 |
| 26/09/2016 | 1998.50 | 23.13 | 48.33 |
| 27/09/2016 | 2277.50 | 26.36 | 46.67 |
| 28/09/2016 | 2153.99 | 24.93 | 45.00 |
| 29/09/2016 | 1995.50 | 23.10 | 45.00 |
| 30/09/2016 | 2144.00 | 24.81 | 43.33 |



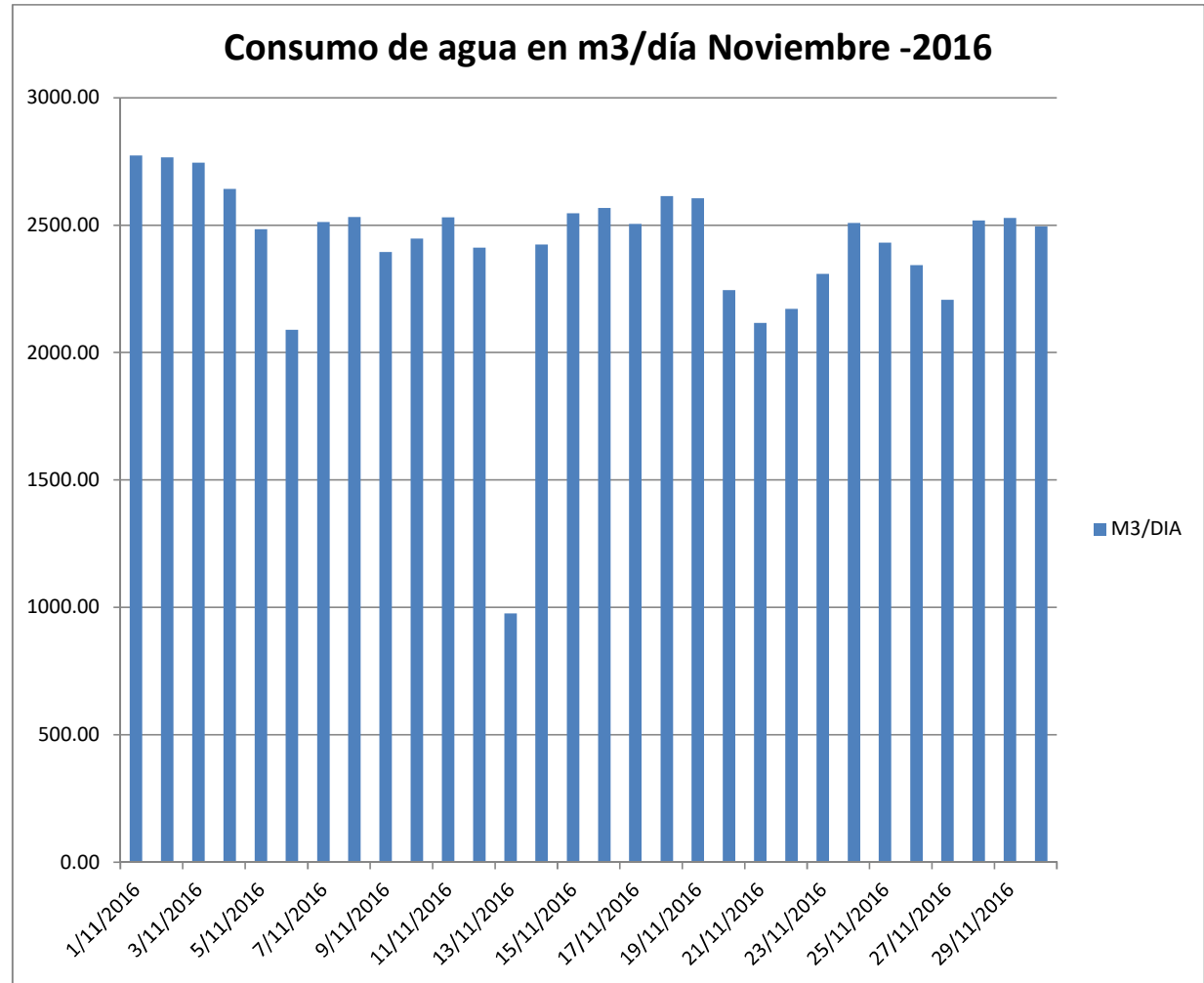
DATOS DE CONSUMO DE AGUA DIARIO MES DE OCTUBRE-2016

| FECHA | M3/DIA | Q PROMEDIO | Q MAX |
|------------|---------|------------|-------|
| 1/10/2016 | 2173.00 | 25.15 | 43.33 |
| 2/10/2016 | 2012.50 | 23.29 | 40.00 |
| 3/10/2016 | 2277.50 | 26.36 | 46.67 |
| 4/10/2016 | 2095.49 | 24.25 | 45.00 |
| 5/10/2016 | 2198.50 | 25.45 | 46.67 |
| 6/10/2016 | 2187.00 | 25.31 | 45.00 |
| 7/10/2016 | 2110.50 | 24.43 | 46.67 |
| 8/10/2016 | 1977.01 | 22.88 | 40.00 |
| 9/10/2016 | 1747.50 | 20.23 | 40.00 |
| 10/10/2016 | 1956.49 | 22.64 | 41.67 |
| 11/10/2016 | 1918.50 | 22.20 | 48.33 |
| 12/10/2016 | 2079.00 | 24.06 | 43.33 |
| 13/10/2016 | 2247.00 | 26.01 | 46.67 |
| 14/10/2016 | 2186.00 | 25.30 | 45.00 |
| 15/10/2016 | 2341.50 | 27.10 | 45.00 |
| 16/10/2016 | 1928.01 | 22.31 | 43.33 |
| 17/10/2016 | 2320.01 | 26.85 | 50.00 |
| 18/10/2016 | 2309.50 | 26.73 | 48.33 |
| 19/10/2016 | 2533.49 | 29.32 | 50.00 |
| 20/10/2016 | 2488.00 | 28.80 | 46.67 |
| 21/10/2016 | 2368.00 | 27.41 | 46.67 |
| 22/10/2016 | 2224.00 | 25.74 | 46.67 |
| 23/10/2016 | 1888.00 | 21.85 | 43.33 |
| 24/10/2016 | 2527.49 | 29.25 | 45.00 |
| 25/10/2016 | 2541.50 | 29.42 | 48.33 |
| 26/10/2016 | 2546.50 | 29.47 | 48.33 |
| 27/10/2016 | 2650.99 | 30.68 | 48.33 |
| 28/10/2016 | 2487.00 | 28.78 | 46.67 |
| 29/10/2016 | 2491.50 | 28.84 | 46.67 |
| 30/10/2016 | 2278.50 | 26.37 | 45.00 |
| 31/10/2016 | 2545.50 | 29.46 | 48.33 |



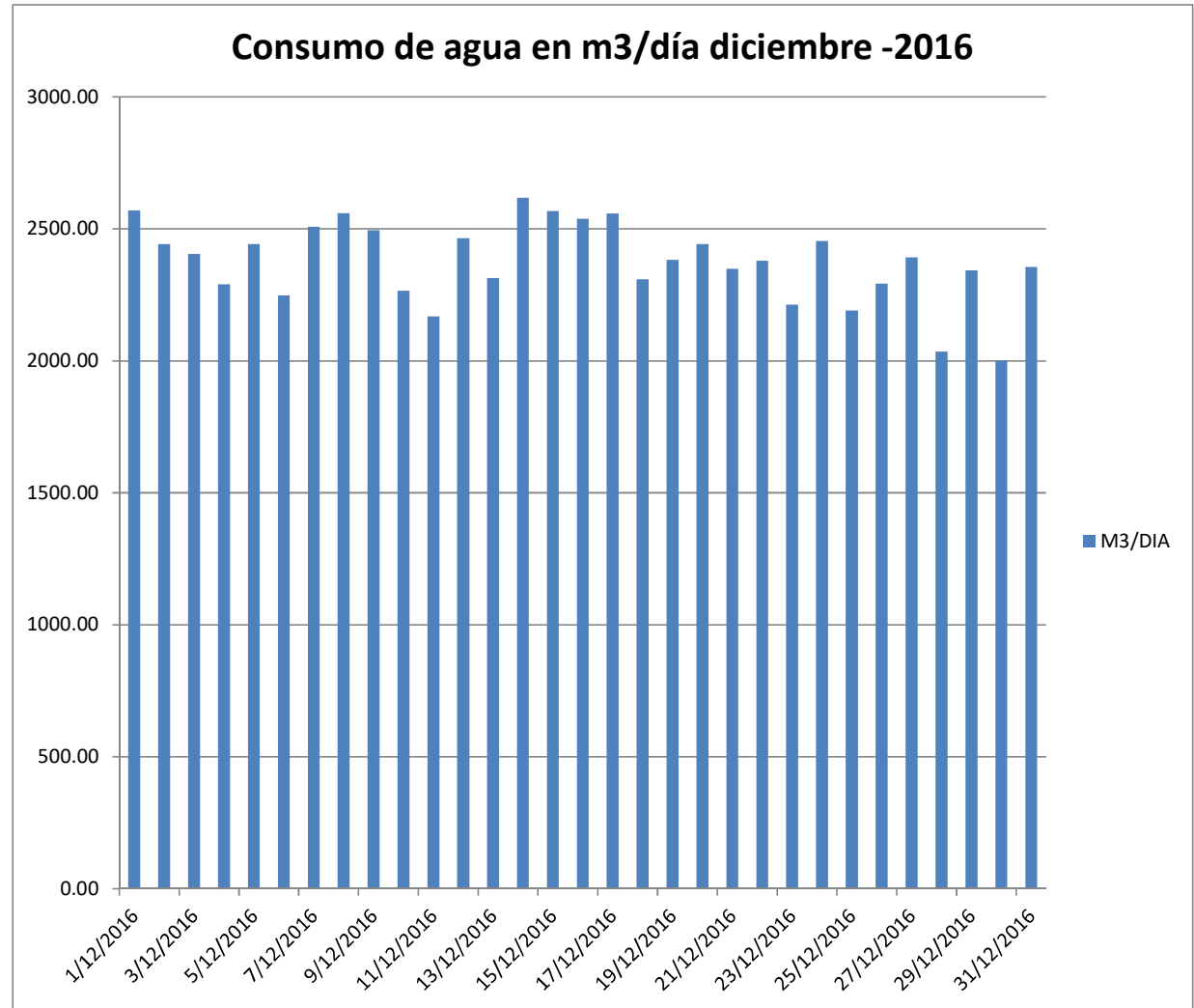
DATOS DE CONSUMO DE AGUA DIARIO MES DE NOVIEMBRE-2016

| FECHA | M3/DIA | Q PROMEDIO | Q MAX |
|------------|---------|------------|-------|
| 1/11/2016 | 2774.00 | 32.11 | 45.00 |
| 2/11/2016 | 2766.00 | 32.01 | 46.67 |
| 3/11/2016 | 2745.50 | 31.78 | 48.33 |
| 4/11/2016 | 2642.00 | 30.58 | 50.00 |
| 5/11/2016 | 2484.50 | 28.76 | 48.33 |
| 6/11/2016 | 2090.50 | 24.20 | 45.00 |
| 7/11/2016 | 2513.00 | 29.09 | 48.33 |
| 8/11/2016 | 2532.00 | 29.31 | 46.67 |
| 9/11/2016 | 2395.00 | 27.72 | 45.00 |
| 10/11/2016 | 2447.00 | 28.32 | 45.00 |
| 11/11/2016 | 2530.50 | 29.29 | 45.00 |
| 12/11/2016 | 2412.00 | 27.92 | 48.33 |
| 13/11/2016 | 977.01 | 11.31 | 50.00 |
| 14/11/2016 | 2425.01 | 28.07 | 50.00 |
| 15/11/2016 | 2548.00 | 29.49 | 50.00 |
| 16/11/2016 | 2567.00 | 29.71 | 50.00 |
| 17/11/2016 | 2505.50 | 29.00 | 50.00 |
| 18/11/2016 | 2614.00 | 30.25 | 53.33 |
| 19/11/2016 | 2606.00 | 30.16 | 50.00 |
| 20/11/2016 | 2245.00 | 25.98 | 46.67 |
| 21/11/2016 | 2116.00 | 24.49 | 46.67 |
| 22/11/2016 | 2171.50 | 25.13 | 46.67 |
| 23/11/2016 | 2308.50 | 26.72 | 51.67 |
| 24/11/2016 | 2508.50 | 29.03 | 50.00 |
| 25/11/2016 | 2432.00 | 28.15 | 48.33 |
| 26/11/2016 | 2343.00 | 27.12 | 46.67 |
| 27/11/2016 | 2208.00 | 25.56 | 46.67 |
| 28/11/2016 | 2518.51 | 29.15 | 50.00 |
| 29/11/2016 | 2529.00 | 29.27 | 48.33 |
| 30/11/2016 | 2495.00 | 28.88 | 50.00 |



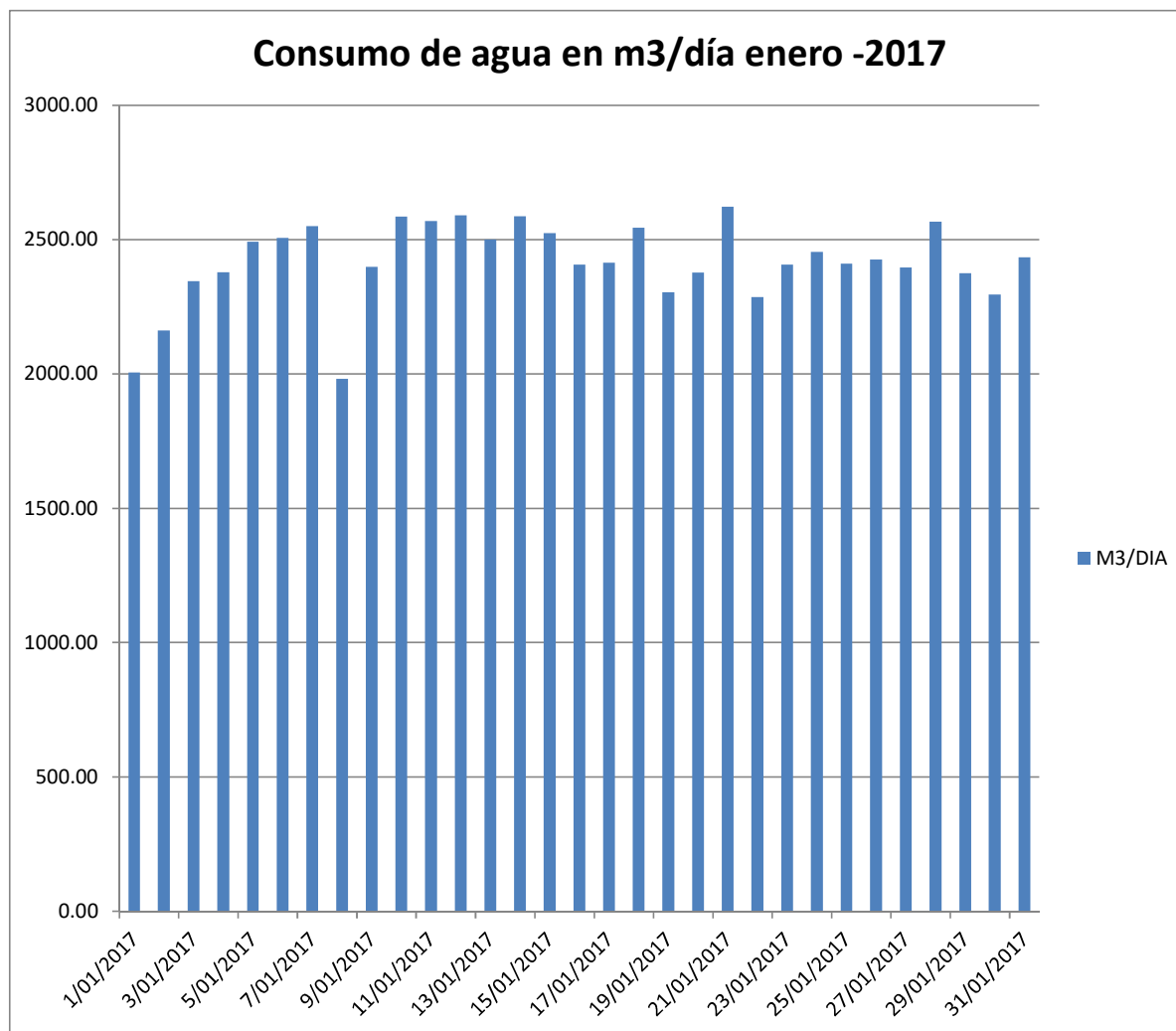
DATOS DE CONSUMO DE AGUA DIARIO MES DE DICIEMBRE-2016

| FECHA | M3/DIA | Q PROMEDIO | Q MAX |
|------------|---------|------------|-------|
| 1/12/2016 | 2570.00 | 29.75 | 45.00 |
| 2/12/2016 | 2442.00 | 28.26 | 46.67 |
| 3/12/2016 | 2405.00 | 27.84 | 48.33 |
| 4/12/2016 | 2290.00 | 26.50 | 48.33 |
| 5/12/2016 | 2442.50 | 28.27 | 51.67 |
| 6/12/2016 | 2248.50 | 26.02 | 50.00 |
| 7/12/2016 | 2507.50 | 29.02 | 48.33 |
| 8/12/2016 | 2560.00 | 29.63 | 45.00 |
| 9/12/2016 | 2495.50 | 28.88 | 50.00 |
| 10/12/2016 | 2266.00 | 26.23 | 45.00 |
| 11/12/2016 | 2169.00 | 25.10 | 48.33 |
| 12/12/2016 | 2465.49 | 28.54 | 51.67 |
| 13/12/2016 | 2313.50 | 26.78 | 46.67 |
| 14/12/2016 | 2617.00 | 30.29 | 55.00 |
| 15/12/2016 | 2567.50 | 29.72 | 46.67 |
| 16/12/2016 | 2538.50 | 29.38 | 50.00 |
| 17/12/2016 | 2558.99 | 29.62 | 48.33 |
| 18/12/2016 | 2308.50 | 26.72 | 48.33 |
| 19/12/2016 | 2383.00 | 27.58 | 48.33 |
| 20/12/2016 | 2442.00 | 28.26 | 48.33 |
| 21/12/2016 | 2348.50 | 27.18 | 48.33 |
| 22/12/2016 | 2379.00 | 27.53 | 51.67 |
| 23/12/2016 | 2212.49 | 25.61 | 46.67 |
| 24/12/2016 | 2454.50 | 28.41 | 53.33 |
| 25/12/2016 | 2190.51 | 25.35 | 46.67 |
| 26/12/2016 | 2292.00 | 26.53 | 53.33 |
| 27/12/2016 | 2392.00 | 27.69 | 50.00 |
| 28/12/2016 | 2035.00 | 23.55 | 48.33 |
| 29/12/2016 | 2342.99 | 27.12 | 51.67 |
| 30/12/2016 | 2002.00 | 23.17 | 46.67 |
| 31/12/2016 | 2356.00 | 27.27 | 50.00 |



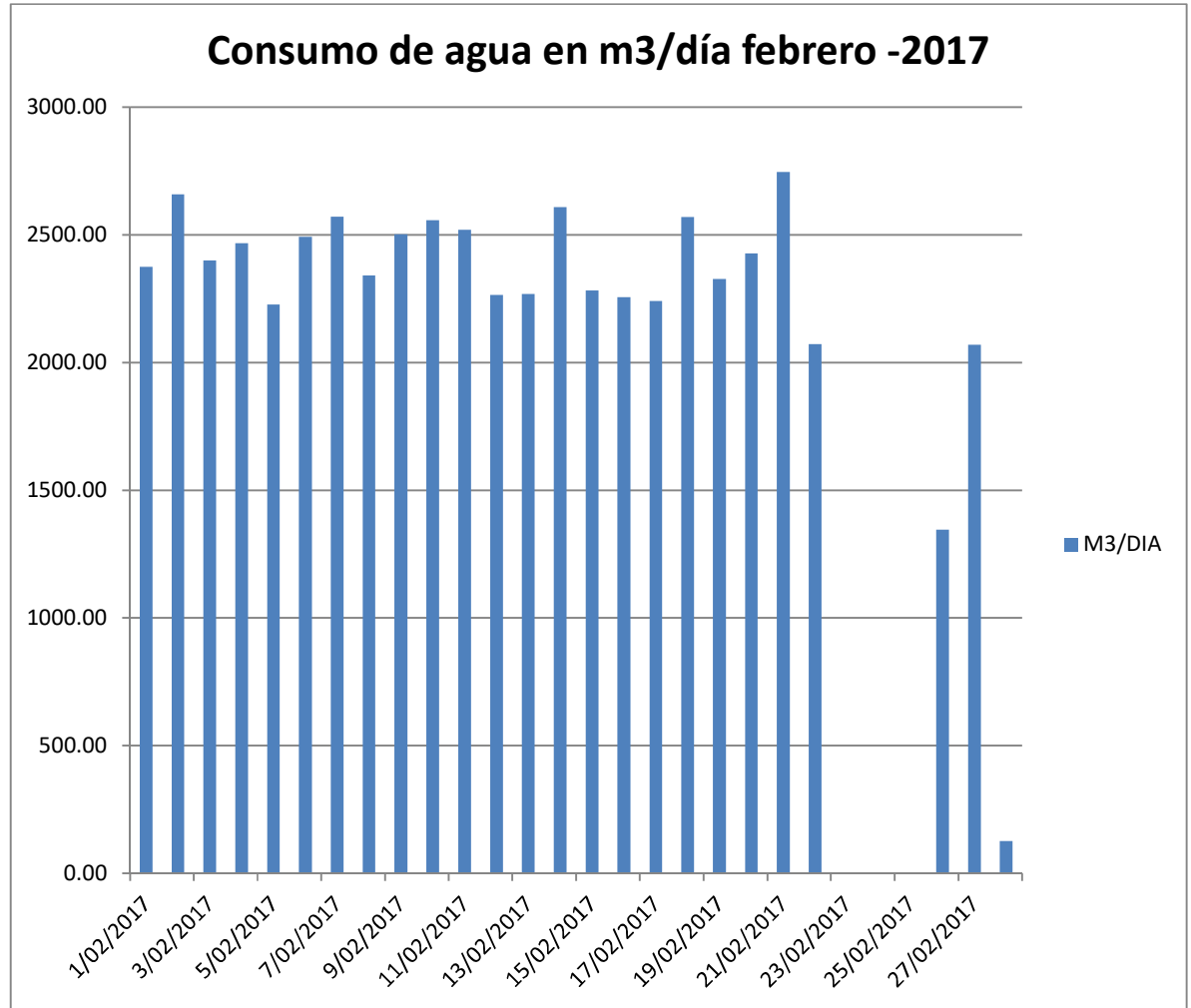
DATOS DE CONSUMO DE AGUA DIARIO MES DE ENERO-2017

| FECHA | M3/DIA | Q PROMEDIO | Q MAX |
|------------|---------|------------|-------|
| 1/01/2017 | 2006.00 | 23.22 | 43.33 |
| 2/01/2017 | 2162.50 | 25.03 | 50.00 |
| 3/01/2017 | 2345.00 | 27.14 | 46.67 |
| 4/01/2017 | 2379.00 | 27.53 | 48.33 |
| 5/01/2017 | 2492.00 | 28.84 | 50.00 |
| 6/01/2017 | 2507.01 | 29.02 | 48.33 |
| 7/01/2017 | 2551.01 | 29.53 | 48.33 |
| 8/01/2017 | 1981.50 | 22.93 | 48.33 |
| 9/01/2017 | 2399.00 | 27.77 | 48.33 |
| 10/01/2017 | 2586.50 | 29.94 | 50.00 |
| 11/01/2017 | 2569.99 | 29.75 | 48.33 |
| 12/01/2017 | 2591.50 | 29.99 | 50.00 |
| 13/01/2017 | 2500.00 | 28.94 | 51.67 |
| 14/01/2017 | 2587.49 | 29.95 | 51.67 |
| 15/01/2017 | 2525.00 | 29.22 | 43.33 |
| 16/01/2017 | 2407.00 | 27.86 | 48.33 |
| 17/01/2017 | 2414.51 | 27.95 | 43.33 |
| 18/01/2017 | 2545.01 | 29.46 | 50.00 |
| 19/01/2017 | 2304.50 | 26.67 | 48.33 |
| 20/01/2017 | 2377.99 | 27.52 | 45.00 |
| 21/01/2017 | 2623.00 | 30.36 | 48.33 |
| 22/01/2017 | 2287.01 | 26.47 | 43.33 |
| 23/01/2017 | 2408.00 | 27.87 | 50.00 |
| 24/01/2017 | 2454.00 | 28.40 | 50.00 |
| 25/01/2017 | 2410.50 | 27.90 | 48.33 |
| 26/01/2017 | 2426.00 | 28.08 | 51.67 |
| 27/01/2017 | 2397.00 | 27.74 | 48.33 |
| 28/01/2017 | 2566.50 | 29.70 | 48.33 |
| 29/01/2017 | 2375.50 | 27.49 | 45.00 |
| 30/01/2017 | 2296.50 | 26.58 | 48.33 |
| 31/01/2017 | 2434.00 | 28.17 | 48.33 |



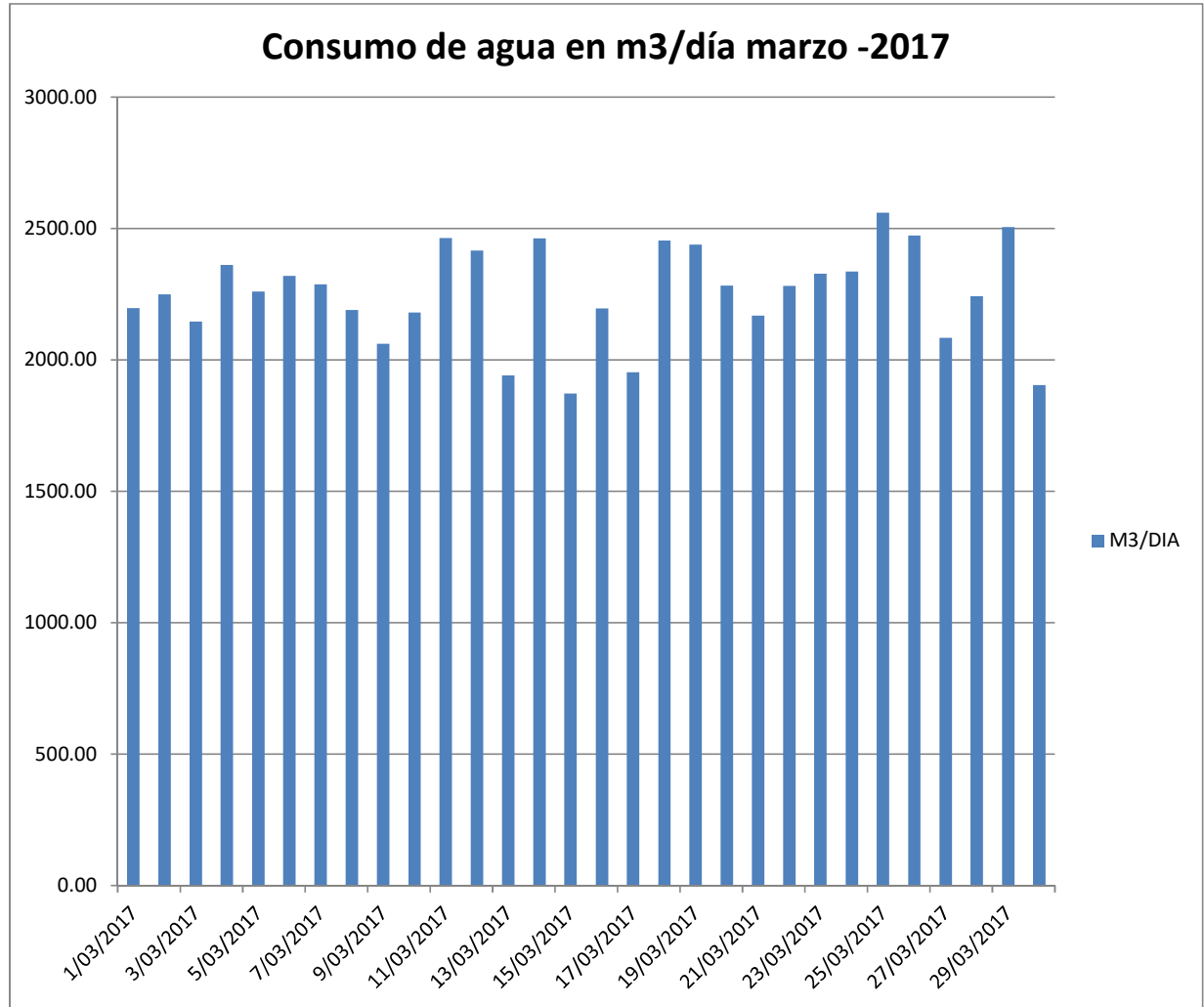
DATOS DE CONSUMO DE AGUA DIARIO MES DE FEBRERO-2017

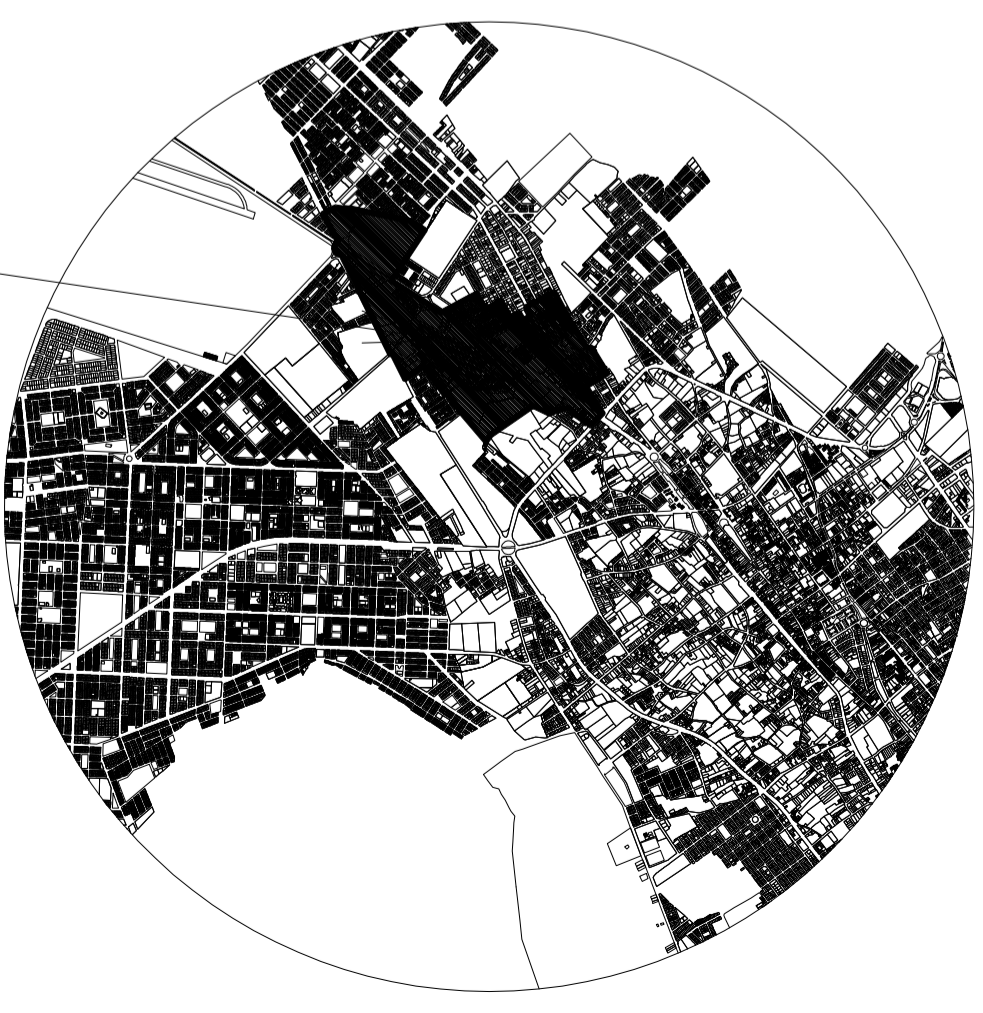
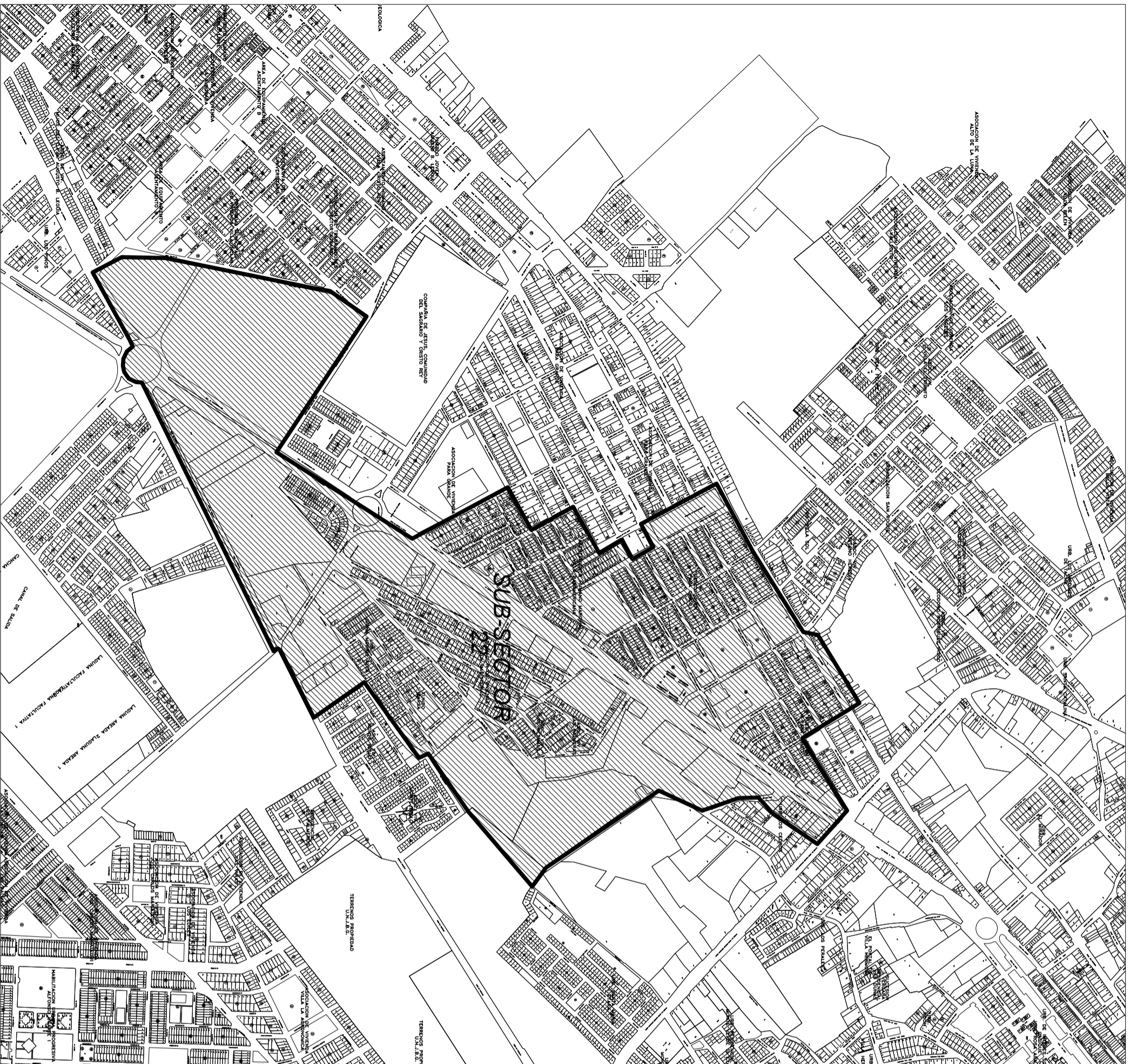
| FECHA | M3/DIA | Q PROMEDIO | Q MAX |
|------------|---------|------------|-------|
| 1/02/2017 | 2375.51 | 27.49 | 48.33 |
| 2/02/2017 | 2658.50 | 30.77 | 53.33 |
| 3/02/2017 | 2399.50 | 27.77 | 46.67 |
| 4/02/2017 | 2467.00 | 28.55 | 48.33 |
| 5/02/2017 | 2227.01 | 25.78 | 43.33 |
| 6/02/2017 | 2493.00 | 28.85 | 55.00 |
| 7/02/2017 | 2571.01 | 29.76 | 48.33 |
| 8/02/2017 | 2341.00 | 27.09 | 46.67 |
| 9/02/2017 | 2502.50 | 28.96 | 50.00 |
| 10/02/2017 | 2557.49 | 29.60 | 50.00 |
| 11/02/2017 | 2520.50 | 29.17 | 48.33 |
| 12/02/2017 | 2264.51 | 26.21 | 41.67 |
| 13/02/2017 | 2268.01 | 26.25 | 46.67 |
| 14/02/2017 | 2609.00 | 30.20 | 51.67 |
| 15/02/2017 | 2282.00 | 26.41 | 51.67 |
| 16/02/2017 | 2255.50 | 26.11 | 48.33 |
| 17/02/2017 | 2240.50 | 25.93 | 50.00 |
| 18/02/2017 | 2569.50 | 29.74 | 48.33 |
| 19/02/2017 | 2326.50 | 26.93 | 46.67 |
| 20/02/2017 | 2427.50 | 28.10 | 48.33 |
| 21/02/2017 | 2745.50 | 31.78 | 48.33 |
| 22/02/2017 | 2072.50 | 23.99 | 48.33 |
| 23/02/2017 | 0.00 | 0.00 | 0.00 |
| 24/02/2017 | 0.00 | 0.00 | 0.00 |
| 25/02/2017 | 0.00 | 0.00 | 0.00 |
| 26/02/2017 | 1345.50 | 15.57 | 48.33 |
| 27/02/2017 | 2069.50 | 23.95 | 48.33 |
| 28/02/2017 | 126.50 | 1.46 | 13.33 |



DATOS DE CONSUMO DE AGUA DIARIO MES DE MARZO-2017

| FECHA | M3/DIA | Q PROMEDIO | Q MAX |
|------------|---------|------------|-------|
| 1/03/2017 | 2197.00 | 25.43 | 51.67 |
| 2/03/2017 | 2248.50 | 26.02 | 51.67 |
| 3/03/2017 | 2146.00 | 24.84 | 48.33 |
| 4/03/2017 | 2361.00 | 27.33 | 50.00 |
| 5/03/2017 | 2259.51 | 26.15 | 43.33 |
| 6/03/2017 | 2319.51 | 26.85 | 51.67 |
| 7/03/2017 | 2287.00 | 26.47 | 53.33 |
| 8/03/2017 | 2190.01 | 25.35 | 51.67 |
| 9/03/2017 | 2062.00 | 23.87 | 51.67 |
| 10/03/2017 | 2180.00 | 25.23 | 50.00 |
| 11/03/2017 | 2463.50 | 28.51 | 53.33 |
| 12/03/2017 | 2416.00 | 27.96 | 48.33 |
| 13/03/2017 | 1940.99 | 22.47 | 51.67 |
| 14/03/2017 | 2462.50 | 28.50 | 53.33 |
| 15/03/2017 | 1871.00 | 21.66 | 46.67 |
| 16/03/2017 | 2196.00 | 25.42 | 50.00 |
| 17/03/2017 | 1953.50 | 22.61 | 50.00 |
| 18/03/2017 | 2454.00 | 28.40 | 48.33 |
| 19/03/2017 | 2438.50 | 28.22 | 46.67 |
| 20/03/2017 | 2283.50 | 26.43 | 48.33 |
| 21/03/2017 | 2167.99 | 25.09 | 50.00 |
| 22/03/2017 | 2281.49 | 26.41 | 50.00 |
| 23/03/2017 | 2327.50 | 26.94 | 51.67 |
| 24/03/2017 | 2335.50 | 27.03 | 50.00 |
| 25/03/2017 | 2561.00 | 29.64 | 51.67 |
| 26/03/2017 | 2474.01 | 28.63 | 46.67 |
| 27/03/2017 | 2083.99 | 24.12 | 50.00 |
| 28/03/2017 | 2242.49 | 25.95 | 51.67 |
| 29/03/2017 | 2504.50 | 28.99 | 50.00 |
| 30/03/2017 | 1903.50 | 22.03 | 50.00 |
| 31/03/2017 | 2112.00 | 24.44 | 51.67 |





UBICACION

ESCALA 1/50000

LOCALIZACION

ESCALA 1/10000

"TESIS: UTILIZACION DE COEFICIENTES DE VARIACION DE CONSUMOS REALES PARA OBRAS DE SANEAMIENTO EN LA REGION DE TACNA-2017"

PLANO

UBICACION Y LOCALIZACION

ELABORADO

J.S.CH.

ESCALA

INDICADA

FECHA

FEB - 2018

MATRIZ DE CONSISTENCIA

Título de la Investigación: “Coeficientes reales de variaciones de consumo de agua para obras de saneamiento en la Region Tacna”

Autor: Ing° Jimmi Silva Charaja

| Problemas | | Objetivos | Hipótesis | Variables | |
|--|---|--|---|--|--|
| Problema General | | Objetivo General | Hipótesis Principal | V.I. | V.D. |
| ¿La determinación de coeficientes reales de variación de consumos de agua optimizara las obras de saneamiento en la Region de Tacna? | | Determinar si los coeficientes de variación de consumos de agua reales optimizan las obras de saneamiento mas efectivas. | Los coeficientes de variación de los consumos reales basados en la informacion historica optimiza las obras de saneamiento en la Region Tacna | V.I. Coeficientes de variaciones de consumos | V.D. Optimizará las obras de saneamiento |
| Problemas Específicos | | Objetivos Específicos | Hipótesis Secundarias | V.I. | V.D. |
| 1 ¿La utilizacion de coeficientes reales de variación de consumos diario de agua permite el diseño de obras de saneamiento mas optimas en la Region de Tacna? | 1 Determinar el coeficientes de variación de consumo maximo diario real que permita estandarizar los parametros para el diseño de obras de saneamiento mas optimas. | 1 La determinacion de los coeficientes de variación de consumo maximos diarios reales permiten el diseño de obras de saneamiento mas optimas. | VI-1 Coeficientes de variación de consumos diarios | V.D.-1 Diseños mas optimos | |
| 2 ¿La utilizacion de coeficientes reales de variación de consumos horarios de agua permite el diseño de obras de saneamiento mas optimas en la Region de Tacna? | 2 Determinar el coeficiente de variación de consumo horario real que permita estandarizar los parametros para el diseño de obras de saneamiento mas optimas. | 2 La determinacion de los coeficientes de variación de consumo maximos horarios reales permiten el diseño de obras de saneamiento mas optimas. | VI-2 Coeficientes de variación de consumos horarios | V.D.-2 Diseños mas optimos | |
| 3 ¿La utilizacion de registros historicos para la determinacion de coeficientes para variaciones de consumos , es un mejor metodo para el diseño de obras de saneamiento ? | 3 Evaluar si el uso de informacion historica de consumos para la determinacion de los coeficientes de variaciones de consumo es un metodo efectivo para el diseño de obras de saneamiento | 3 El uso de registros historicos es un metodo mas efectivo para la determinacion de coeficientes de variaciones de consumo de agua en el diseño de obras de saneamiento. | VI-3 Registros historicos de consumos para determinacion de coeficientes de consumo | V.D.-3 Diseños mas optimos de obras de saneamiento | |

CUADRO DE OPERACIONALIZACION DE VARIABLES

Título de la Investigación: “Coeficientes reales de variaciones de consumo de agua para obras de saneamiento en la Region Tacna”

Autor: Ing° Jimmi Silva Charaja

| Variables | Tipo de Variable | Definicion Conceptual | Dimensiones | Indicadores |
|---|------------------|--|--|--|
| Coeficientes de variaciones de consumos | Independiente | Coeficientes que permiten determinar y aproximar los consumos de agua por parte de una poblacion determinada | <ul style="list-style-type: none"> * Coeficientes de variacion de consumos diarios * Coeficientes de variaciones consumos horarios * Registros historicos de consumos para determinar coeficientes de variacion de consumos | <ul style="list-style-type: none"> * Clima * Caudal promedio * Dotacion de agua * Numero de habitantes * Maximo caudal diario * Maximo Caudal horario * Tipo de macromedidor * Registros de consumos |
| Optimizara las obras de saneamiento | dependiente | Obras de saneamiento que poseen una optimizacion en sus costos y uso de recursos. | Diseños mas eficientes | <ul style="list-style-type: none"> * Presion de servicio * Velocidad media en tuberias |