



September 30, 2021

Reference No. 11225022-00

Mr. Bruce Bernard
Manager of Field Operations
Calvin, Giordano & Associates, Inc.
1800 Eller Drive, Suite 600
Fort Lauderdale, FL 33316

Dear Mr. Bernard:

Re: **Water Quality Sampling Report – August 2021**
Lakes 3 and 6 – Miromar Lakes
Fort Myers, Lee County, Florida

GHD Services Inc. (GHD) is pleased to present the results of our water quality sampling services for Lakes 3 and 6 – Miromar Lakes.

1. Water Quality Sampling - August 2021

The August 2021 sampling event consisted of the collection of surface water samples from a total of five (5) test locations (WQ #1 through #4 and #6) from Lake 6 – Miromar Lakes, and one (1) location (WQ #5) at the outfall of Lake 3 within the Miromar Lakes Golf Club as identified on **Figure 1**. As discussed in May 2019, due to limitations of the lake depth at the weir location (i.e. WQ #3) and the potential for disturbance of sediments impacting the sample results, the sample collected at a depth of 36 inches was moved to a deeper area of the lake, at the west entrance to the east-west canal that discharges at the weir, and renamed to WQ Location #6. The August 2021 sampling event represents the sixth sampling event for the new WQ Location #6.

The sampling plan includes sample collection at the following locations and depths:

Sample Identification	Sampling Location	Sample Depth
WQ Location #1	Rip Rap in front of the Miromar Lakes Pkwy Bridge	18 inches
WQ Location #2	Mouth of Canal (west of Via Portofino Way)	18 inches
WQ Location #3A	Back of Weir (southeast of Via Navona Way)	18 inches
WQ Location #4	Beach front (east of the Miromar Lakes Pkwy & Montlelago Ct.)	18 inches
WQ Location #5	Lake 3 Outfall within the Miromar Lakes Golf Club	18 inches
WQ Location #6	Front of Weir (southeast of Via Navona Way)	36 inches

Conductivity, dissolved oxygen, pH, and temperature were measured in the field with a calibrated YSI Model 556 multi-parameter water quality meter. Turbidity and total water depth were measured. Water clarity/transparency (i.e. Secchi depth) was also observed using a Secchi disk. Surface Water Field Sheets are attached. Field data is summarized in **Table 1**.



Samples are collected using direct-dip sampling methods. The samples are capped, labeled, packed on ice, and transported to Benchmark EnviroAnalytical, Inc., in North Port, Florida. Benchmark EnviroAnalytical, Inc. is certified by the State of Florida and NELAP (National Environmental Laboratory Accreditation Conference). Laboratory analysis are conducted for 5-Day Biochemical Oxygen Demand (BOD5), Total Suspended Solids (TSS), Total Nitrogen, nitrogen speciation (ammonia, TKN, and nitrate + nitrite), Total Phosphorus, Ortho Phosphorus (Field Filtered) and Chlorophyll-a.

All samples collected during the August 2021 sampling event were prepared and analyzed within the method required holding times. The laboratory data have been reviewed with respect to authenticity, precision, limits of detection, and accuracy of the data. The laboratory analytical results are summarized in the attached **Table 1**. The laboratory report and data compliance memorandum are also attached.

Trend graphs have been prepared for each monitor location for laboratory analytical results and select field measurements. The trend graphs include water quality action levels for select parameters as developed and presented in the Lake Management Plan for Miromar Lakes. GHD recommends that if a single measurement exceeds an action level the District notify their lake maintenance contractor to inspect the lake(s) for evidence of potential algal blooms and treat as needed. If a subsequent measurement exceeds an action level, it is recommended the District investigate potential reasons behind the change and take appropriate action(s) as applicable based on the findings.

2. Analytical Summary

It appears that between the prior sampling event in October 2020 and the recent sampling event conducted on August 5, 2021:

- BOD5 levels remained consistent except for at WQL #5 which slightly increased;
- Dissolved Oxygen and DO% results varied, but remained relatively constant according to historical trends;
- TKN and Total Nitrogen remained constant at all 6 sampling locations;
- Orthophosphorus and Total Phosphorous decreased slightly at all locations with all results around 0.02 mg/L and 0.015 mg/l, respectively;
- Total Suspended Solids and turbidity remained constant;
- Chlorophyll-a results remained constant except at WQL #5 which increased to 22.9 mg/L;
- pH at almost all locations decreased, except for WQL #5, which remained constant;

The dissolved oxygen readings at the monitoring locations fluctuate throughout the year as anticipated given the temperature of the water and biological activity. In general, the dissolved oxygen remains well above the action level for dissolved oxygen percent (%) of a minimum of 38%. Dissolved oxygen at WQL #3A shows a downward trend the last 3 sampling events, but still remain within their historical ranges. All other sample locations had relatively consistent dissolved oxygen levels as the last sampling event except for WQL #5, which increased. The dissolved oxygen fluctuates throughout the year with apparent lows



during the later part of the year (e.g. September to December months). GHD recommends the District notify their lake maintenance contractor to continue to watch for evidence of algal blooms during these time periods.

The pH at the monitoring locations generally remains consistent over time. Although the pH fluctuates, the pH typically remains within the upper and lower action levels. The pH during this month's sampling event decreased at all locations, except for WQL #5, which remained consistent with last month's level.

The concentrations of chlorophyll-a were below the action level at all sample locations except for WQL #5, which was 22.9 mg/m³. It appears chlorophyll-a is elevated in Lake 3 during the monitor events conducted in warmer months of the year. Given the slight exceedance of chlorophyll-a at WQL #5, the lake maintenance contractor may need to inspect Lake 3 more often for evidence of potential algal blooms and treat as needed.

During the August 2021 monitoring event, the concentrations of total phosphorus decreased slightly at all locations to about 0.015 mg/L, below the action level limit.

During the August 2021 sampling event, the concentrations of orthophosphorous decreased slightly at all locations to about 0.02 mg/L, below the action level limit.

While the total nitrogen has fluctuated in the past, it has remained below the action levels. Total nitrogen remained consistent at all sample locations during the August 2021 monitoring event.

While turbidity has fluctuated in the past, the observed turbidity generally has stayed well below the action level and remained consistent.

Of note for future months prior to the next sampling event, based on historical data, it appears the BOD tends to be elevated during April/May. While the BOD fluctuates, including detections above the action level, the BOD generally does not remain above its action level for more than one monitoring event.

During the months of April/May, particularly at Lake 3, the lake maintenance contractor may need to inspect the lakes more often for evidence of potential algal blooms and treat as needed.

The conductivity at the monitoring locations fluctuate throughout the year but generally remain similar to other monitoring locations with the exception of WQL #5. The WQL #5 location is at the weir of the Lake 3 on the golf course, whereas the other sample locations are from Lake 6 in the residential development area. Therefore, the variation from WQL #5 to the other locations is not unexpected. The conductivity at WQL #5 is generally higher than the conductivity at the other monitoring locations, but this month was well below the others at 82.9 umhos/cm. This may be caused by high levels of recent rain diluting the isolated water.

While the total suspended solids (TSS) have fluctuated, it generally remains below the action level. The results from August 2021 were consistent with historical trends and below the action level.



3. Conclusions and Recommendations

It appears water quality conditions have improved between October 2020 and August 2021, particularly at location WQ#3A (outlet weir location).

There do not appear to be water quality concerns at this time.

The next tri-annual sampling event is planned for October 2021.

Please call if you have questions or need additional information.

Sincerely,

GHD

A handwritten signature in black ink, appearing to read "C Haydon", written over a horizontal line.

Connor Haydon
Environmental Engineer

A handwritten signature in black ink, appearing to read "Lori Coolidge", written over a horizontal line.

Lori Coolidge, P.G.
Principal Geologist

Encl: Attachments: Table 1
Figure 1
Trend Graphs
Laboratory Analytical Reports
Surface Water Field Sheets
Laboratory Data Compliance Memo

Table

Table 1
Analytical Results Summary
Surface Water Quality Monitoring
Miromar Lakes, Fort Myers, Florida
August 2021

Sample Location/Sample ID:		WQ Location #1 / WQL1																	
Sample Date:		04/27/16	08/03/16	10/31/16	01/31/17	05/04/17	08/02/17	12/06/17	04/26/18	08/22/18	12/11/18	04/16/19	10/24/2019	2/17/2020	06/03/2020	10/21/2020	03/03/2021	08/05/2021	
Field Parameters	Units																		
Total Water Depth	Feet	7.66	NS	6.1	5.83	3.5	6.2	4.89	2.90	5.7	4.95	6.83	7.2	4.2	3.9	6.5	5.4	6.0	
Sample Depth	Feet	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
Conductivity, field	umhos/cm	408	353	387	369.3	405	413.1	348.2	407.3	354.6	312.7	387.3	348.4	369	689	300	292	358	
Dissolved oxygen (DO), field	mg/L	8.03	5.91	7.53	8.13	7.95	5.91	6.95	6.89	7.39	8.54	6.49	6.1	8.02	6.05	7.07	7.51	7.0	
Dissolved oxygen (DO), field	%	100.9*	79.3	89.4	88.5	101.6	79.6	83.0	87.6	98.9	96.0	80.9	78.1	94.5	77.0	87.1	90.6	93.1	
pH, field	s.u.	8.44	8.19	7.92	8.13	7.97	8.23	8.08	8.37	8.24	8.31	8.13	8.36	8.26	8.29	8.57	8.82	8.10	
Temperature, field	Deg C	27.08	30.8	24	19.5	28.0	31	24.3	27.7	30.6	21.1	26.6	28.1	23.44	29.1	26.6	25.0	29.91	
Turbidity, field	NTU	2.41	3.44	3.55	4.64	8.16	5.05	3.02	2.90	5.53	4.39	3.32	3.71	1.66	3.63	2.42	1.58	1.87	
Secchi Disk	Depth	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	4.80	4.20	3.90	6.0	5.4	6.0	
Wet Parameters	Units																		
Ammonia-N	mg/L	U	0.026 I	U	0.035	0.008 U	0.008 U	0.026 I	0.008 U	0.022 I	0.008 U	0.008 U	0.017 I	0.008 U	0.008 U	0.008 U	0.008 U	0.008 I	
TAN criteria calculation	mg/L	0.24	0.29	0.67	0.66	0.48	0.27	0.52	0.26	0.27	0.45	0.42	0.26	0.42	0.28	NS	NS	NS	
Total kjeldahl nitrogen (TKN)	mg/L	0.626	0.878	0.911	0.968	0.611	0.580	0.629	0.551	0.565	0.632	0.619	0.588	0.632	0.591	0.05 U	0.480	0.474	
Total nitrogen	mg/L	0.626	0.878	0.911	0.974	0.616	0.592	0.629	0.565	0.574	0.639	0.619	0.588	0.639	0.591	0.05 U	0.480	0.474	
Nitrite/Nitrate	mg/L	U	U	U	0.006 I	0.005 I	0.012 I	0.004 U	0.014 I	0.009 I	0.007 I	0.006 U	0.006 U	0.007 I	0.006 U	0.006 U	0.006 U	0.006 U	
Ortho phosphorus (Field Filtered)	mg/L	0.074	0.071	0.030	0.012	0.027	0.038	0.026	0.014	0.017	0.014	0.024	0.026	0.028	0.051	0.0126	0.024	0.011	
Total phosphorus	mg/L	0.087	0.091	0.068	0.038	0.027 I	0.041	0.121	0.017 I	0.018 I	0.026 I	0.034	0.063	0.035	0.053	0.011 I	0.059	0.022 I	
Chlorophyll	mg/m3	5.91	7.32	7.86	11.1	8.42	9.27	5.25	10.1	10.1	6.92	3.72	7.81	3.71	3.96	5.76	3.55	7.44	
Total suspended solids (TSS)	mg/L	2.35	3.49	4.80	7.00	7.80	6.15	3.67	3.67	4.00	4.20	1.20 I	2.20 I	3.50	3.20	2.40	2.00 I	2.80	
Biochemical oxygen demand (total BOD5)	mg/L	0.706 I	U	U	1.06 I	1.40 I	1.05 I	1 U	1.16 I	2.72 I	1.85 I	1.24 I	1.03 I	1 U	1 U	1 U	1 U	1 U	
Sample Location/Sample ID:		WQ Location #2 / WQL2																	
Sample Date:		04/27/16	08/03/16	10/31/16	01/31/17	05/04/17	08/02/17	12/06/17	04/26/18	08/22/18	12/11/18	04/16/19	10/24/2019	2/17/2020	06/03/2020	10/21/2020	03/03/2021	08/05/2021	
Field Parameters	Units																		
Total Water Depth	Feet	7.43	NS	9.2	8.56	6	6.2	8.01	6.00	10.2	8.65	8.31	10.4	7.8	6.35	9.0	8.8	10.25	
Sample Depth	Feet	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
Conductivity, field	umhos/cm	422	359	384	385.7	414	435.0	638.9	417.0	363.7	321.2	411.8	346.4	373	701	300	303	346	
Dissolved oxygen (DO), field	mg/L	7.67	5.55	7.12	8.05	7.87	6.21	6.58	6.95	7.52	9.90	6.88	6.27	8.12	5.86	4.64	7.04	7.09	
Dissolved oxygen (DO), field	%	97.4	74.0	84.7	87.6	101.8	82.9	77.7	88.0	100.2	110.0	85.9	81.0	96.2	77.2	51.1	86.9	93.7	
pH, field	s.u.	8.37	8.07	7.68	7.97	8.21	8.11	7.89	8.31	8.03	8.06	8.25	8.27	8.49	8.31	8.26	8.72	8.0	
Temperature, field	Deg C	27.62	30.4	24.1	19.5	28.7	30.5	23.7	27.5	30.4	20.5	26.7	28.5	23.9	30.1	27.1	25.5	29.87	
Turbidity, field	NTU	3.97	31.71	4.38	4.66	7.15	3.12	3.20	8.22	3.75	5.76	3.37	3.55	2.18	3.49	2.40	3.41	2.44	
Secchi Disk	Depth	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	5.30	NS	5.5	6.5	7.0	7.0	
Wet Parameters	Units																		
Ammonia-N	mg/L	U	0.019 I	U	0.071	0.008 U	0.008 U	0.036	0.008 U	0.008 U	0.008 U	0.027	0.008 U	0.008 U	0.008 U	0.009 I	0.008 U	0.017 I	
TAN criteria calculation	mg/L	0.26	0.36	0.90	0.84	0.32	0.34	0.71	0.30	0.38	0.69	0.34	0.30	0.28	0.25	NS	NS	NS	
Total kjeldahl nitrogen (TKN)	mg/L	0.745	1.15	0.888	1.04	0.507	0.641	0.710	0.675	0.613	0.693	0.606	0.605	0.403	0.556	0.500	0.450	0.469	
Total nitrogen	mg/L	0.745	1.15	0.900	1.04	0.514	0.645	0.710	0.690	0.618	0.698	0.606	0.605	0.403	0.556	0.500	0.450	0.469	
Nitrite/Nitrate	mg/L	U	U	0.012 I	U	0.007 I	0.004 I	0.004 U	0.015 I	0.005 I	0.006 I	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	
Ortho phosphorus (Field Filtered)	mg/L	0.077	0.070	0.064	0.015	0.028	0.050	0.025	0.015	0.020	0.008	0.002 U	0.055	0.035	0.053	0.0288	0.026	0.016	
Total phosphorus	mg/L	0.079	0.087	0.066	0.031 I	0.054	0.065	0.042	0.023 I	0.008 U	0.009 I	0.008 U	0.073	0.069	0.062	0.012 I	0.032	0.017 I	
Chlorophyll	mg/m3	6.59	7.28	8.08	11.7	7.76	7.13	5.42	8.35	9.06	8.80	5.28	9.11	4.34	5.11	6.13	2.04	5.95	
Total suspended solids (TSS)	mg/L	4.21	3.90	4.60	7.20	6.60	2.60	3.60	8.00	1.00 I	4.67	3.80	2.40	3.00	2.40	2.40	2.80	2.80	
Biochemical oxygen demand (total BOD5)	mg/L	0.778 I	U	U	1.33 I	1.13 I	1 U	1 U	1.36 I	1.89 I	1.10 I	1.40 I	1.50 I	1 U	1 U	1 U	1 U	1 U	

Table 1
Analytical Results Summary
Surface Water Quality Monitoring
Miromar Lakes, Fort Myers, Florida
August 2021

Sample Location/Sample ID:		WQ Location #3A / WQL3A																
Sample Date:		04/27/16	08/03/16	10/31/16	01/31/17	05/04/17	08/02/17	12/06/17	04/26/18	08/22/18	12/11/18	04/16/19	10/24/2019	2/17/2020	06/03/2020	10/21/2020	03/03/2021	08/05/2021
Field Parameters	Units																	
Total Water Depth	Feet	3.78	3.64	3.52	2.81	1.5	4.6	3.35	3.2	3.6	5.87	2.95	4.5	3	1.5	4.0	3.0	3.33
Sample Depth	Feet	1.5	1.5	1.5	1.5	1.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1	1.5	1.5	1.5
Conductivity, field	umhos/cm	406	329	255	375.7	430	200.4	339	418.9	365.1	323	391.9	373.2	381	690	293	297	363
Dissolved oxygen (DO), field	mg/L	7.31	4.78	2.93	7.40	14.02	1.38	6.49	6.16	7.33	8.44	5.82	2.05	5.77	6.49	6.41	5.62	3.15
Dissolved oxygen (DO), field	%	91.8	62.9	34.3	81.5	198	17.42	76.4	78.2	97.9	94.3	72.7	25.7	68.5	85.4	80.5	70.2	39.0
pH, field	s.u.	8.44	8.0	6.99	7.96	9.32	6.91	7.97	8.15	8.13	7.53	8.21	7.34	7.93	8.44	8.38	8.49	7.16
Temperature, field	Deg C	27.0	29.7	23.2	20.1	33.7	27.3	23.5	27.6	30.5	20.8	26.7	26.8	23.77	29.3	27.0	25.4	26.24
Turbidity, field	NTU	7.64	78.77	3.48	5.42	86.9	2.99	3.05	3.94	3.63	4.20	2.20	2.79	1.31	3.49	2.76	4.13	1.77
Secchi Disk	Depth	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	Lake Bottom	Lake Bottom	Lake Bottom	4.0	3.0	3.33
Wet Parameters	Units																	
Ammonia-N	mg/L	U	0.029 I	0.044	0.027 I	0.008 U	0.008 U	0.009 I	U	0.023 I	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.009 I	0.008 U	0.035
TAN criteria calculation	mg/L	0.25	0.42	1.54	0.82	0.04	1.22	0.65	0.38	0.32	1.29	0.37	1.02	0.67	0.21	NS	NS	NS
Total kjeldahl nitrogen (TKN)	mg/L	0.581	0.949	1.11	1.06	3.73	0.642	0.634	0.645	0.621	0.949	0.598	0.635	0.451	0.510	0.216	0.526	0.546
Total nitrogen	mg/L	0.581	0.949	1.13	1.06	3.73	0.650	0.634	0.658	0.626	0.954	0.598	0.635	0.451	0.510	0.216	0.526	0.546
Nitrite/Nitrate	mg/L	U	U	0.021	U	0.008 I	0.008 I	0.004 U	0.013 I	0.005 I	0.006 I	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U
Ortho phosphorus (Field Filtered)	mg/L	0.073	0.012	0.051	0.012	0.018	0.029	0.031	0.016	0.020	0.025	0.014	0.060	0.043	0.048	0.0199	0.030	0.017
Total phosphorus	mg/L	0.088	0.026 I	0.052	0.033	0.090	0.039	0.048	0.024 I	0.008 U	0.019 I	0.018 I	0.066	0.069	0.064	0.012 I	0.046	0.021 I
Chlorophyll	mg/m3	5.76	8.71	10.1	10.4	249	10.1	4.83	7.85	10.6	8.15	4.60	7.88	3.79	5.10	5.52	4.00	7.06
Total suspended solids (TSS)	mg/L	7.06	6.42	5.11	7.20	95.0	3.80	4.00	3.60	6.00	4.33	2.60	2.40	1.50 I	4.80	2.40	4.20	2.00 I
Biochemical oxygen demand (total BOD5)	mg/L	U	U	U	1.11 I	10.6	1.39 I	1 U	1.12 I	1.66 I	1.19 I	2.32 I	1.27 I	1 U	1 U	1 U	1.30 I	1.32 I
Sample Location/Sample ID:		WQ Location #3B / WQL3B											WQL6	WQL6	WQL6	WQL6	WQL6	WQL6
Sample Date:		04/27/16	08/03/16	10/31/16	01/31/17	05/04/17	08/02/17	12/06/17	04/26/18	08/22/18	12/11/18	04/16/19	10/24/2019	2/17/2020	06/03/2020	10/21/2020	03/03/2021	08/05/2021
Field Parameters	Units																	
Total Water Depth	Feet	3.78	4	3.52	2.98	2	4.6	6.94	3.2	3.6	5.87	3.50	12.5	17.6	15.5	10.5	14.4	12.3
Sample Depth	Feet	3	3	3	2.5	1.5	3	3.0	NS	3	3	3	3	3	3	1.5	3	3
Conductivity, field	umhos/cm	405	341	369	313.1	406	384.1	338.6	NS	354.5	322.4	391.3	340.8	362	688	290	295	365
Dissolved oxygen (DO), field	mg/L	7.32	6.22	6.82	6.58	8.46	5.59	5.87	NS	7.39	6.32	5.7	5.63	8.44	6.49	6.66	7.43	6.82
Dissolved oxygen (DO), field	%	91.1	82.8	81.2	67.9	109.3	74.0	68.8	NS	98.8	70.6	71.2	72.4	99.2	85.7	83.4	90.4	90.3
pH, field	s.u.	8.46	8.14	7.68	7.77	8.12	8.10	8.00	NS	8.18	8.08	8.22	8.16	8.5	8.51	8.63	8.74	7.59
Temperature, field	Deg C	26.55	30.3	24.1	16.9	28.6	30.0	23.3	NS	30.6	20.8	26.7	28.3	23.28	29.4	29.3	25.2	30.07
Turbidity, field	NTU	7.98	10.03	3.15	21.38	3.93	4.15	2.84	NS	26.26	7.10	2.17	4.85	1.48	2.83	2.13	1.75	2.19
Secchi Disk	Depth	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	5.80	8.00	7.20	7.0	7.5	6.4
Wet Parameters	Units																	
Ammonia-N	mg/L	U	0.15 I	U	0.097	0.008 U	0.008 U	0.028 I	NS	0.015 I	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.009 I	0.008 U	0.012 I
TAN criteria calculation	mg/L	0.24	0.32	0.90	1.29	0.37	0.35	0.63	NS	0.30	0.66	0.36	0.36	0.28	0.19	NS	NS	NS
Total kjeldahl nitrogen (TKN)	mg/L	0.736	0.880	1.04	2.90	0.462	0.715	0.731	NS	0.757	0.722	0.683	0.612	0.414	0.490	0.05 U	0.559	0.448
Total nitrogen	mg/L	0.744	0.880	1.05	2.90	0.472	0.715	0.731	NS	0.763	0.727	0.683	0.612	0.414	0.490	0.05 U	0.559	0.448
Nitrite/Nitrate	mg/L	0.008 I	U	0.012 I	U	0.010 I	0.004 U	0.004 U	NS	0.006 I	0.006 I	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U
Ortho phosphorus (Field Filtered)	mg/L	0.088	0.064	0.029	0.012	0.029	0.226	0.272	NS	0.020	0.022	0.027	0.063	0.032	0.059	0.0155	0.026	0.002 I
Total phosphorus	mg/L	0.092	0.098	0.031 I	0.168	0.054	1.08	0.501	NS	0.013 I	0.033	0.029 I	0.067	0.035	0.064	0.016 I	0.055	0.023 I
Chlorophyll	mg/m3	5.99	7.05	7.57	64.5	5.44	9.14	3.94	NS	10.8	7.61	5.38	8.86	3.18	4.95	4.80	2.48	7.62
Total suspended solids (TSS)	mg/L	7.11	5.78	3.80	44.7	4.20	4.80	3.20	NS	26.0	3.33	6.20	2.60	1.25 I	3.20	2.60	1.80 I	1.20 I
Biochemical oxygen demand (total BOD5)	mg/L	0.556 I	U	U	6.47	1 U	1.45 I	1 U	NS	2.01 I	1 U	1.16 I	1.04 I	1 U	1 U	1.39 I	1 U	1 U

Table 1
Analytical Results Summary
Surface Water Quality Monitoring
Miromar Lakes, Fort Myers, Florida
August 2021

Sample Location/Sample ID:		WQ Location #4 / WQL4																
Sample Date:		04/27/16	08/03/16	10/31/16	01/31/17	05/04/17	08/02/17	12/06/17	04/26/18	08/22/18	12/11/18	04/16/19	10/24/2019	2/17/2020	06/03/2020	10/21/2020	03/03/2021	08/05/2021
Field Parameters	Units																	
Total Water Depth	Feet	12	7.77	14.88	7.91	5.0	10.7	7.9	6.90	11.8	10.7	14.20	15.4	13.55	12.55	13.0	8.01	7.2
Sample Depth	Feet	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Conductivity, field	umhos/cm	403	340	373	361.8	405	404.8	342.0	399.7	342	310.3	382.1	337.0	363	682	286	291	349
Dissolved oxygen (DO), field	mg/L	7.72	6.55	7.14	8.06	8.33	5.02	5.73	7.13	6.96	7.84	7.28	6.42	8.45	6.42	1.41	7.75	7.31
Dissolved oxygen (DO), field	%	96.4	88.3	85.6	88.3	106.6	66.8	68.2	89.2	92.9	87.8	90.2	82.8	99.4	83.4	17.0	93.5	94.2
pH, field	s.u.	8.58	8.31	7.59	8.10	7.65	8.16	8.08	8.39	8.34	7.99	7.97	8.38	8.58	8.57	8.66	8.80	6.62
Temperature, field	Deg C	26.71	31.1	24.5	19.8	28.1	30.3	24.1	26.8	30.5	20.9	26.3	28.5	23.49	29.9	27.5	24.8	29.95
Turbidity, field	NTU	1.87	2.04	4.44	3.02	3.11	1.81	2.48	3.38	3.56	4.10	2.72	2.58	1.04	2.48	1.85	2.28	1.76
Secchi Disk	Depth	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	5.50	8.50	7.00	6.5	8.01	7.2
Wet Parameters	Units																	
Ammonia-N	mg/L	U	0.023 I	U	0.012 I	0.008 U	0.008 U	0.026 I	0.008 U	0.014 I	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.025 I
TAN criteria calculation	mg/L	0.20	0.23	0.96	0.68	0.72	0.31	0.53	0.27	0.23	0.74	0.54	0.25	0.24	0.16	NS	NS	NS
Total kjeldahl nitrogen (TKN)	mg/L	0.868	0.887	0.780	0.976	0.518	0.570	0.612	0.610	0.640	0.885	0.615	0.126 I	0.371	0.633	0.05 U	0.538	0.469
Total nitrogen	mg/L	0.868	0.887	0.808	0.976	0.524	0.570	0.612	0.623	0.645	0.885	0.615	0.126	0.371	0.633	0.05 U	0.538	0.469
Nitrite/Nitrate	mg/L	U	U	0.028	U	0.006 I	0.004 U	0.004 U	0.013 I	0.005 I	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U
Ortho phosphorus (Field Filtered)	mg/L	0.094	0.017	0.024	0.017	0.030	0.044	0.027	0.019	0.017	0.022	0.026	0.065	0.037	0.042	0.0180	0.021	0.012
Total phosphorus	mg/L	0.101	0.021 I	0.027 I	0.038	0.048	0.067	0.038	0.030 I	0.044	0.043	0.038	0.070	0.064	0.064	0.014 I	0.043	0.032
Chlorophyll	mg/m3	4.92	7.11	7.78	9.09	3.94	9.31	4.62	8.66	10.5	8.43	3.43	7.38	2.75	3.78	5.05	1.74	5.39
Total suspended solids (TSS)	mg/L	2.33	2.84	3.60	5.20	3.26	2.60	1.60 I	2.00 I	5.50	2.33	3.40	3.20	1.25 I	3.40	1.80 I	0.570 U	3.60
Biochemical oxygen demand (total BOD5)	mg/L	U	U	U	1.09 I	1 U	1 U	1 U	1.16 I	1.47 I	1 U	1 U	1.07 I	1 U	1 U	1.51 I	1 U	1 U

Sample Location/Sample ID:		WQ Location #5 / WQL5																
Sample Date:		04/27/16	08/03/16	10/31/16	01/31/17	05/04/17	08/02/17	12/06/17	04/26/18	08/22/18	12/11/18	04/16/19	10/24/2019	2/17/2020	06/03/2020	10/21/2020	03/03/2021	08/05/2021
Field Parameters	Units																	
Total Water Depth	Feet	NS	2	2.03	1.42	2.5	4.32	2.84	S	2.7	1.10	1.50	1.98	1.72	<1	2.0	2.5	NM
Sample Depth	Feet	NS	1.5	1.5	0.5	1.5	1.5	1.5	S	1.5	0.5	0.75	1.0	1	<1	1.5	1.5	1.5
Conductivity, field	umhos/cm	NS	411	515	462.0	464	478.4	447.9	464.1	405.1	427.2	475.8	465.0	480	802	373	409	82.9
Dissolved oxygen (DO), field	mg/L	NS	4.84	6.22	6.88	8.50	8.03	4.21	5.47	6.09	4.21	5.00	3.20	7.6	5.18	7.65	3.05	6.07
Dissolved oxygen (DO), field	%	NS	64.7	77.2	72.2	111.1	109.1	49.6	68.2	81.2	46.1	61.0	41.3	89.3	69.0	96.5	37.5	80.6
pH, field	s.u.	NS	7.83	7.77	7.65	7.77	8.10	7.58	7.61	7.80	6.38	6.44	7.99	8.35	8.28	8.18	8.04	8.12
Temperature, field	Deg C	NS	30.6	26.4	17.7	29.3	31.5	23.6	26.6	30.4	19.8	25.4	28.4	23.42	30.3	27.4	25.3	30.19
Turbidity, field	NTU	NS	2.08	3.62	3.60	5.77	4.65	1.99	4.93	3.40	4.18	4.98	4.71	2.45	5.74	2.96	2.27	4.05
Secchi Disk	Depth	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	Lake Bottom	Lake Bottom	Lake Bottom	NS	NS	NS
Wet Parameters	Units																	
Ammonia-N	mg/L	NS	0.033	U	0.008 I	0.008 U	0.008 U	0.034	0.008 U	0.010 I	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.023 I	0.008 U
TAN criteria calculation	mg/L	NS	0.49	0.70	1.40	0.58	0.32	1.03	0.82	0.52	2.19	1.51	0.46	0.36	0.26	NS	NS	NS
Total kjeldahl nitrogen (TKN)	mg/L	NS	0.845	0.786	0.962	0.754	0.756	0.838	1.11	0.857	0.944	0.902	0.807	0.688	1.08	0.137 I	0.755	0.720
Total nitrogen	mg/L	NS	0.845	0.794	0.962	0.762	0.760	0.854	1.13	0.863	0.957	0.902	0.807	0.688	1.08	0.137	0.755	0.720
Nitrite/Nitrate	mg/L	NS	U	0.008 I	U	0.008 I	0.004 I	0.016	0.016	0.006 I	0.013 I	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U
Ortho phosphorus (Field Filtered)	mg/L	NS	0.022	0.042	0.017	0.027	0.019	0.022	0.016	0.015	0.019	0.023	0.050	0.038	0.055	0.075	0.029	0.014
Total phosphorus	mg/L	NS	0.065	0.042	0.036	0.035	0.067	0.046	0.027 I	0.025 I	0.024 I	0.028 I	0.081	0.049	0.102	0.084	0.067	0.035
Chlorophyll	mg/m3	NS	15.1	12.5	13.9	16.0	25.0	17.3	27.6	19.8	15.4	23.4	15.7	12.6	30.4	22.7	4.93	22.9
Total suspended solids (TSS)	mg/L	NS	4.10	4.80	5.00	8.11	11.0	0.570 U	6.20	4.00	3.00	7.60	2.40	3.25	9.00	4.20	3.00	5.40
Biochemical oxygen demand (total BOD5)	mg/L	NS	1.31 I	1.56 I	1.36 I	2.41 I	2.14 I	1.64 I	3.38 I	1.15 I	1.38 I	3.39 I	1.54 I	1.32 I	3.01 I	1.73 I	1 U	1.55 I

Notes:

- S - Sample collected from edge of lake
- U - Not detected at the associated reporting limit
- * DO values at or above 100% are possible super-saturation conditions due to high water temperatures and/or high volume of algae.
- NS - Not sampled during noted event
- I - Reported value is between method detection limit and the practical quantitation limit

Figure 1



SITE:
Water Quality Sampling Report
 March 2021 Lakes 3 and 6 Miromar
 Lakes, Lee County, Florida



PROJECT #:	11225022
DATE:	March 2021
CAD FILE:	

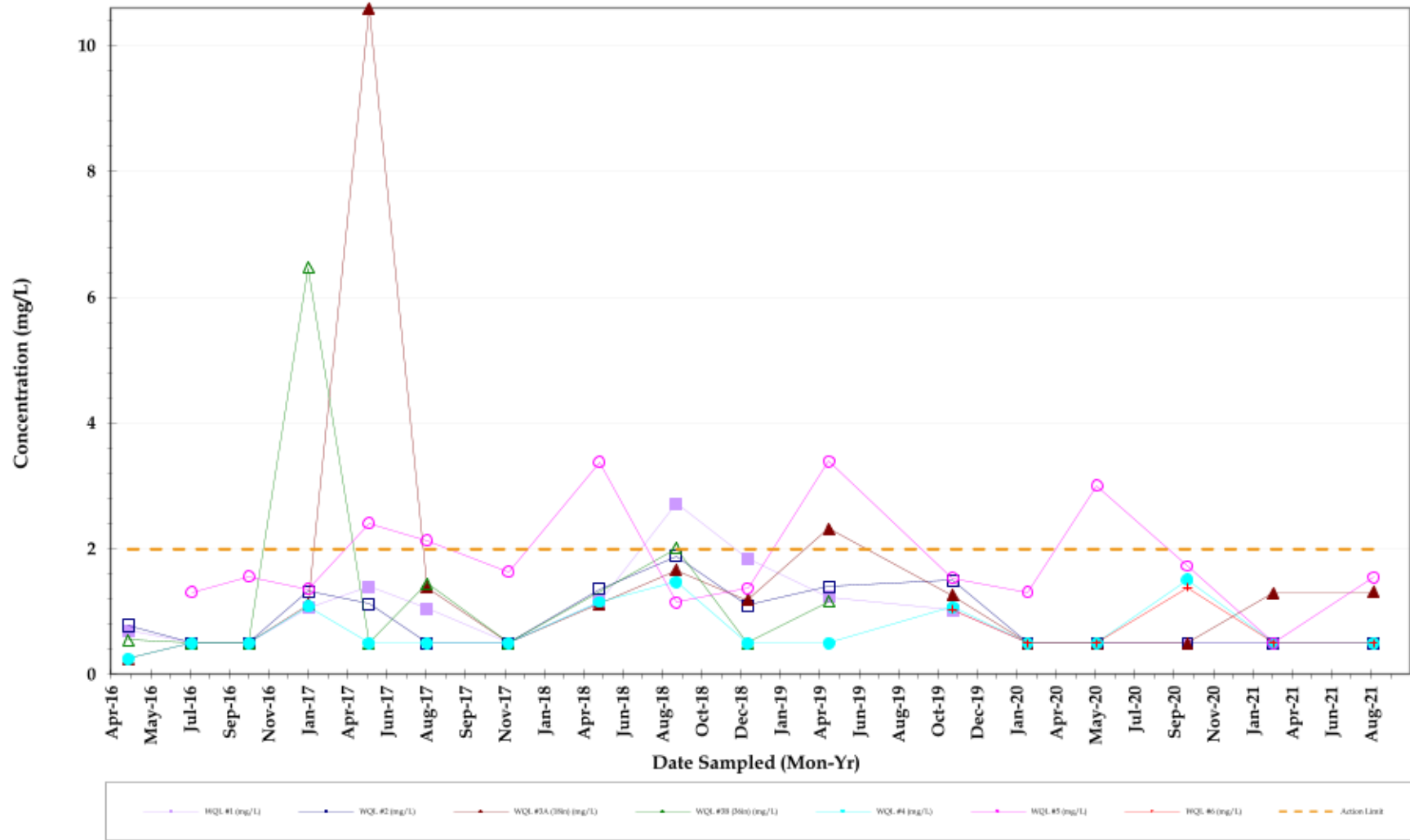
DESIGNED:	AW
DRAWN:	AW
CHECKED:	

SHEET TITLE:
Location Map

FIGURE: 1



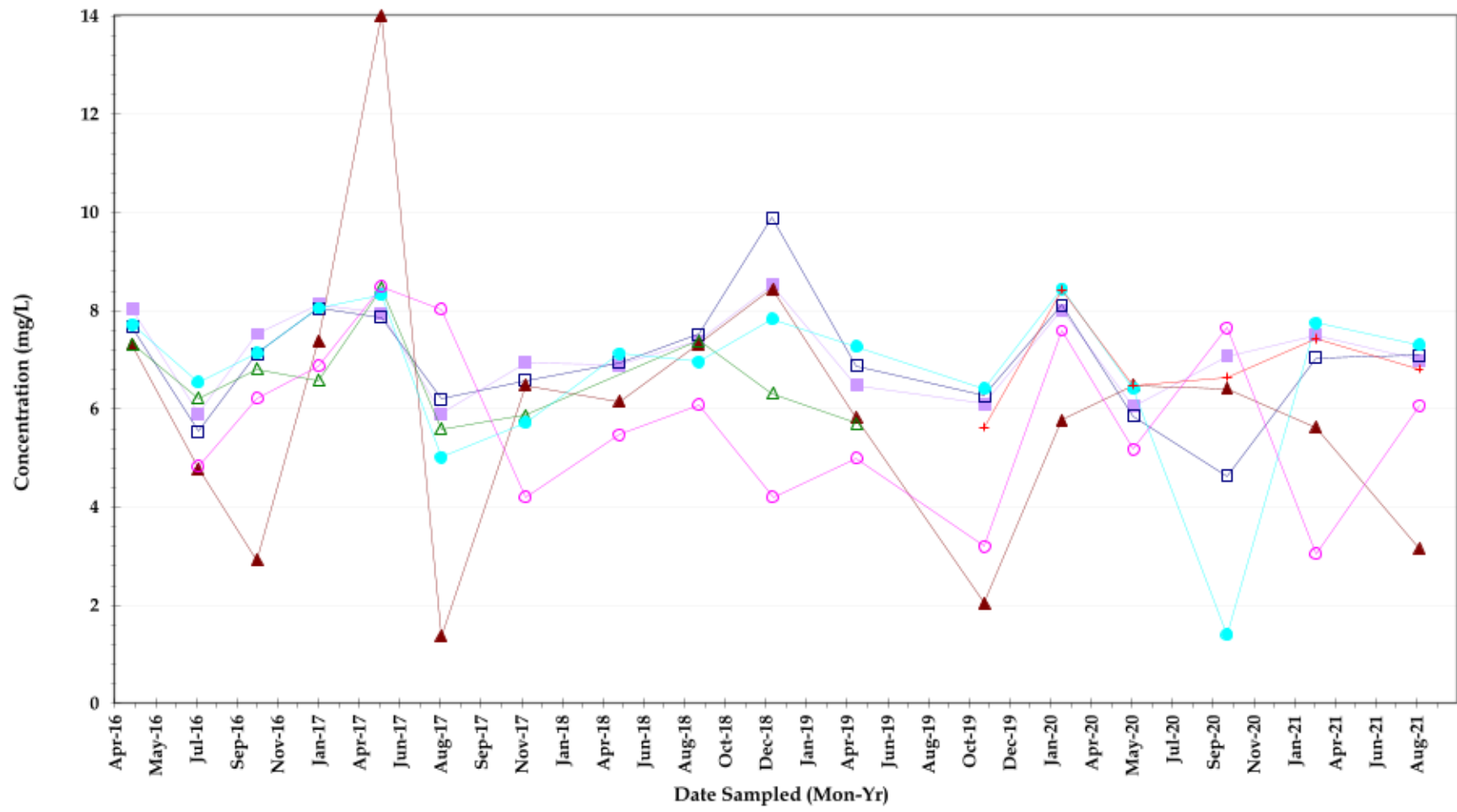
Trend Graphs



Biochemical Oxygen Demand

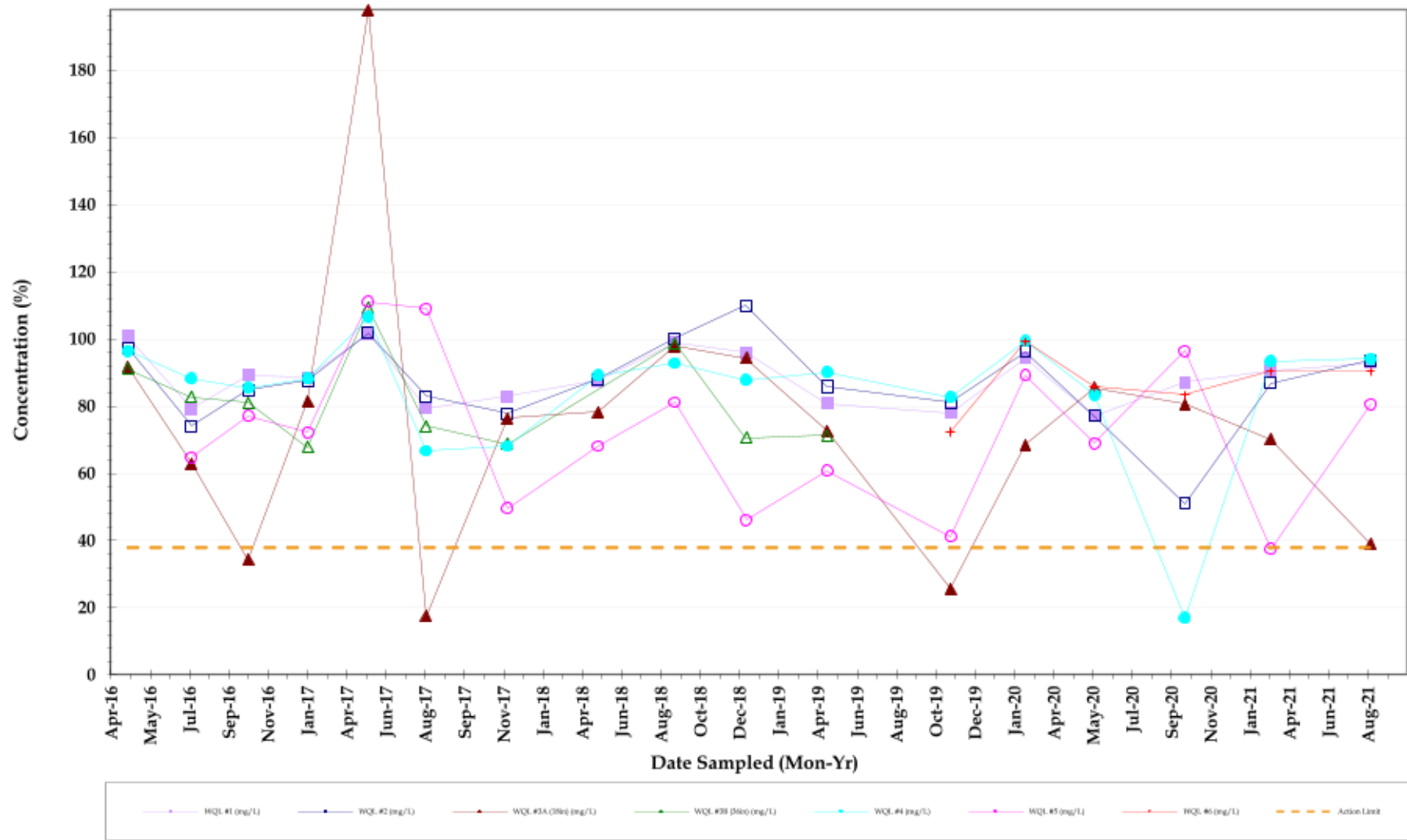


Miromar Lakes
 Water Quality Surface Water Sample results
 AUGUST 2021



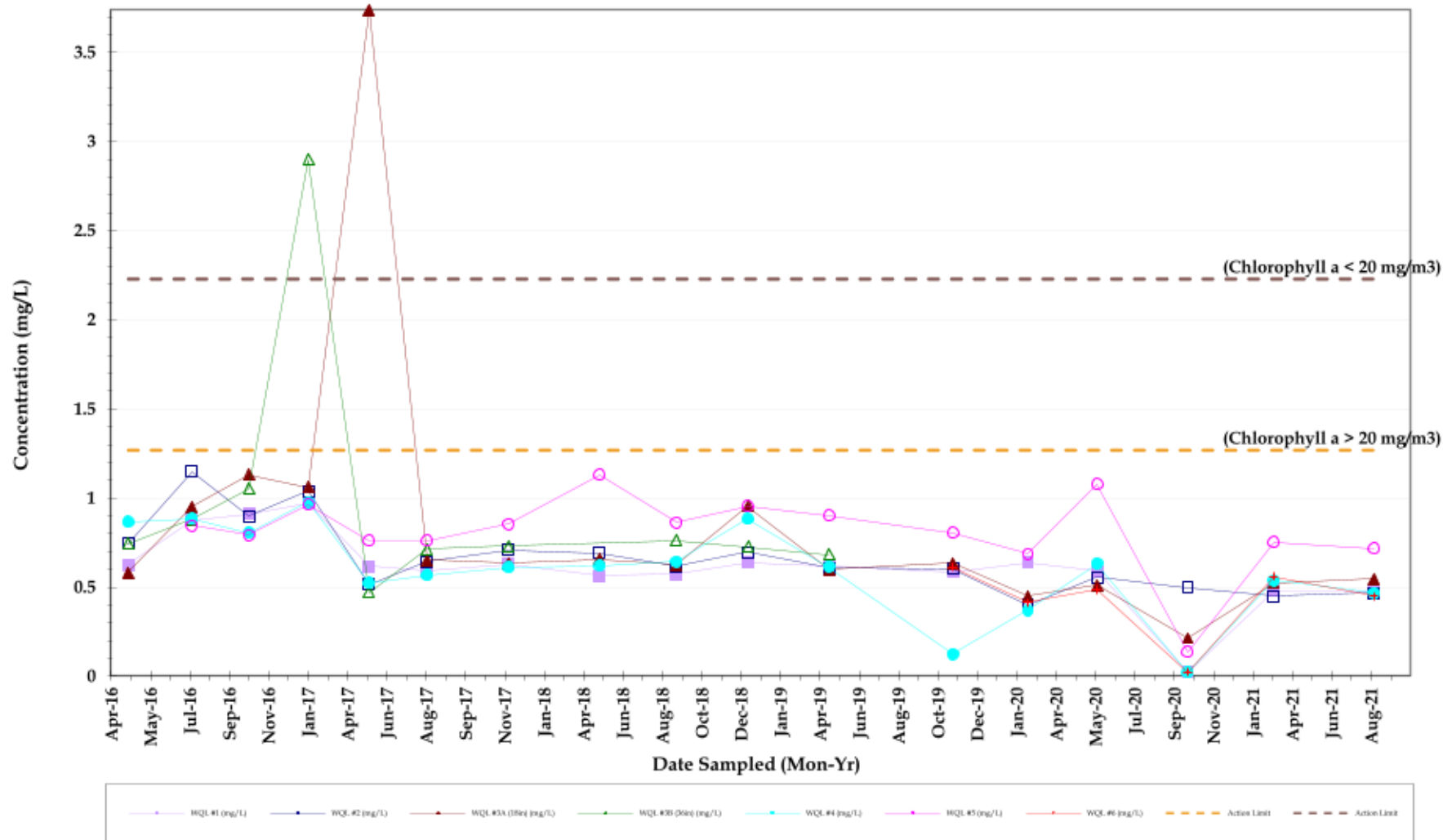
Dissolved Oxygen (mg/L)

Miromar Lakes
 Water Quality Surface Water Sample results
 AUGUST 2021



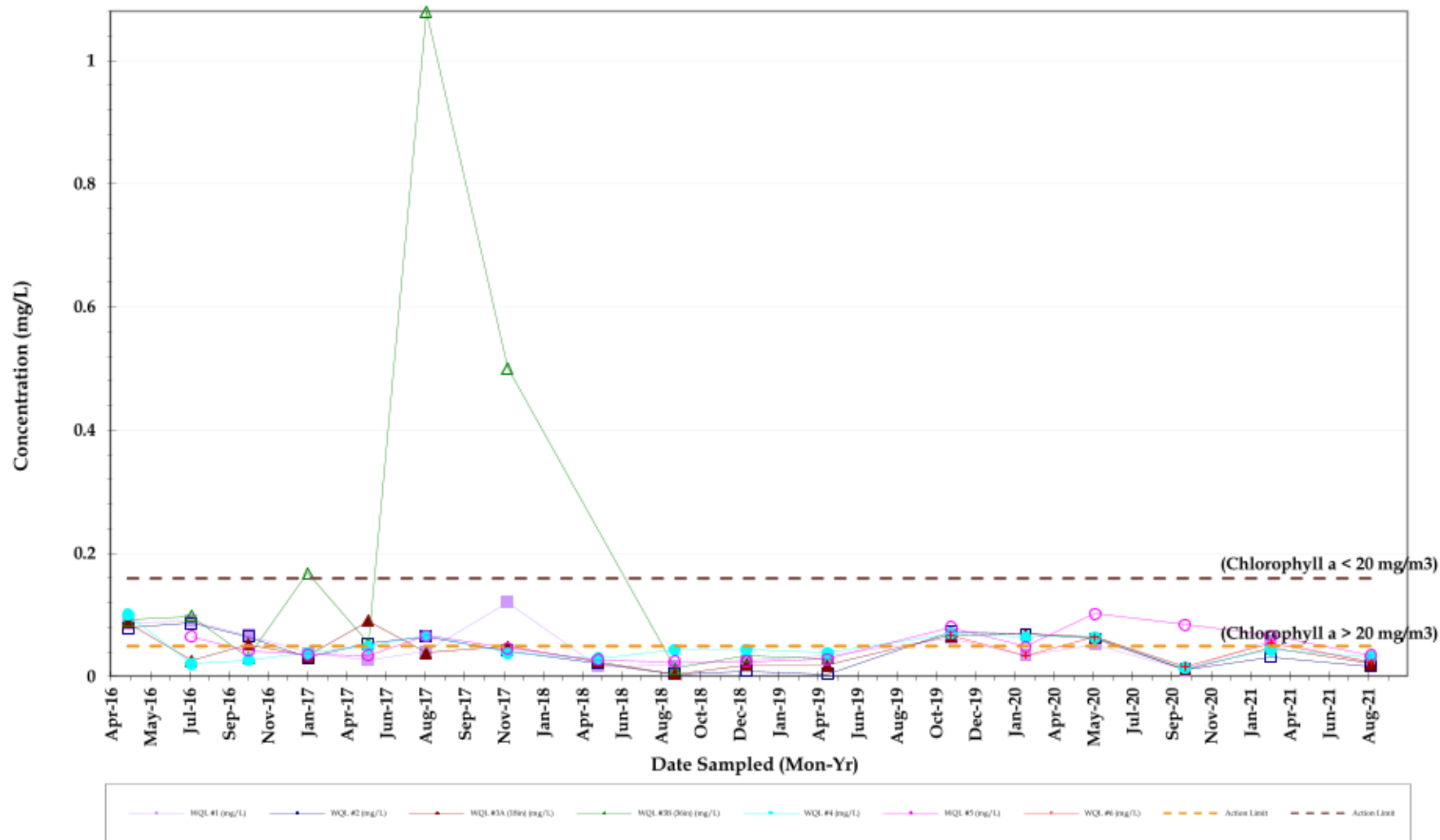
Dissolved Oxygen (%)





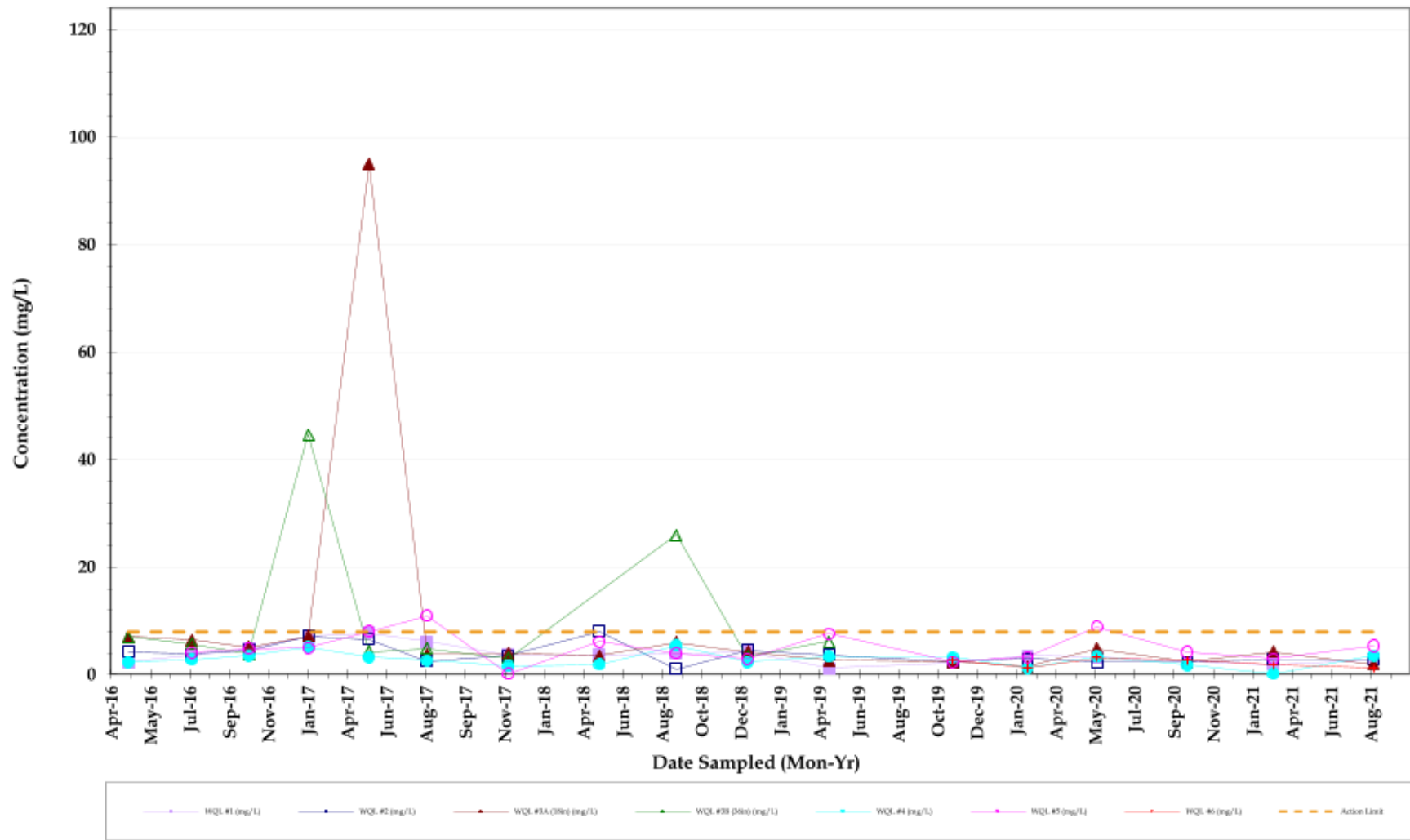
Total Nitrogen

Miromar Lakes
 Water Quality Surface Water Sample results
 AUGUST 2021



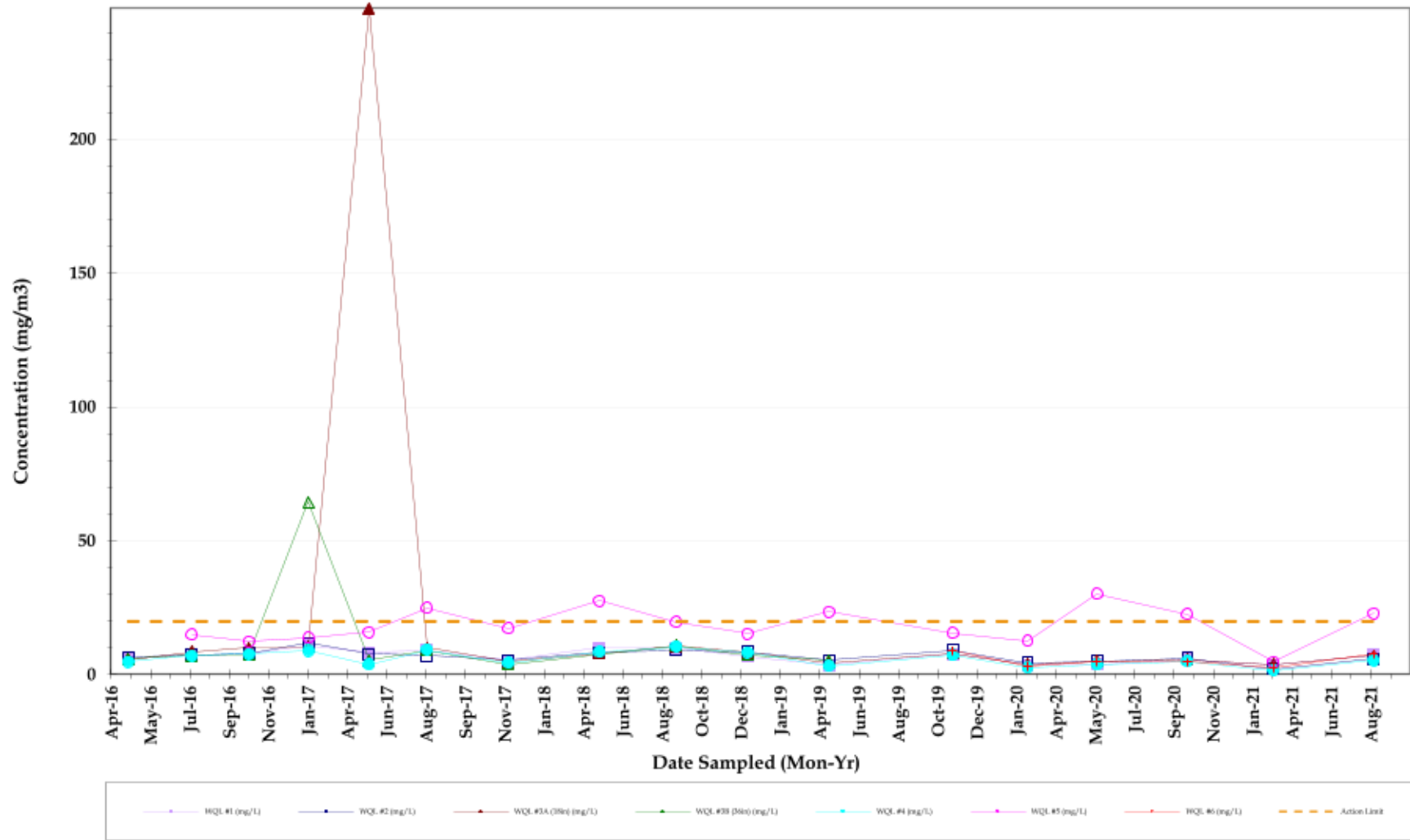
Total Phosphorus

Miomar Lakes
 Water Quality Surface Water Sample results
 AUGUST 2021



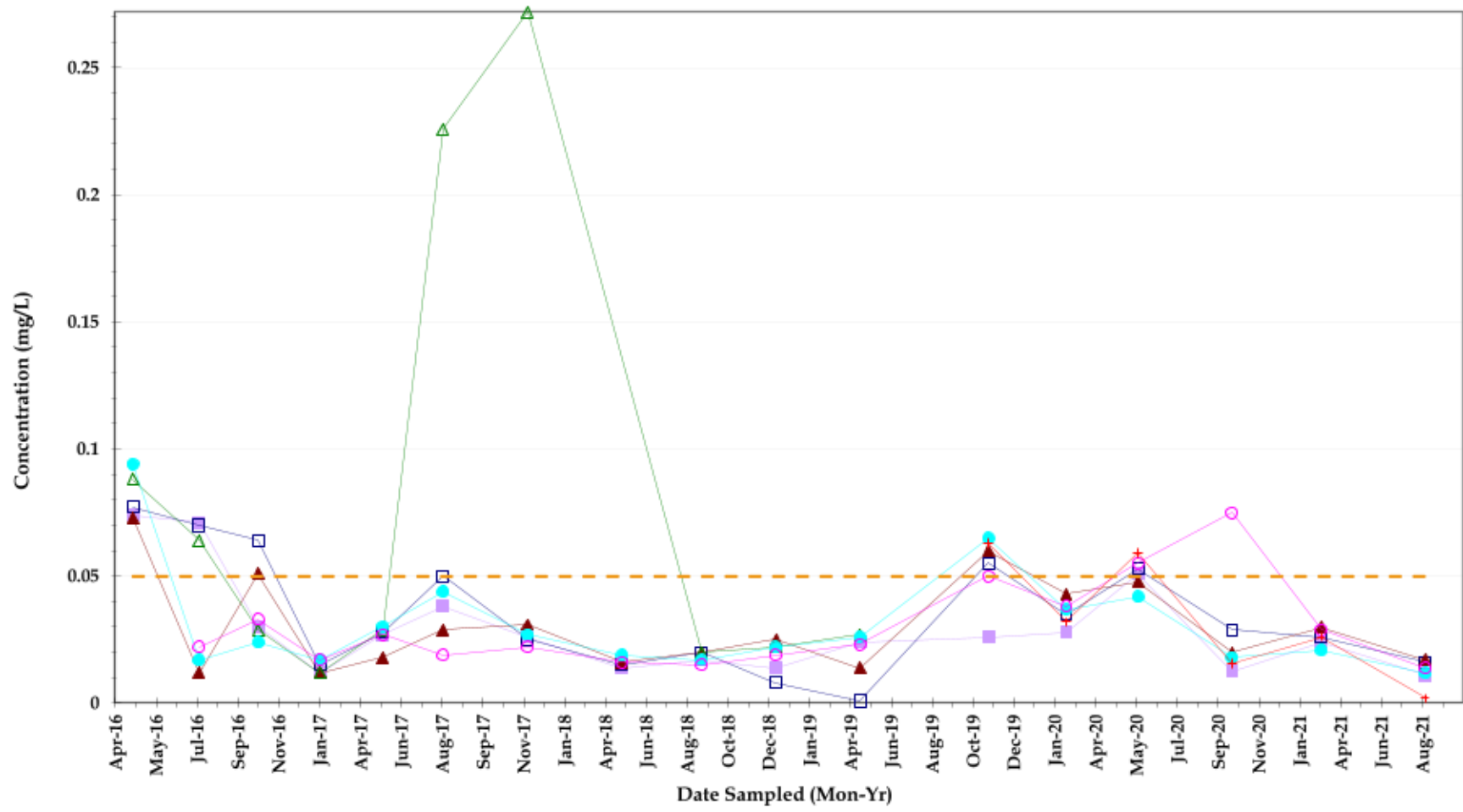
Total Suspended Solids





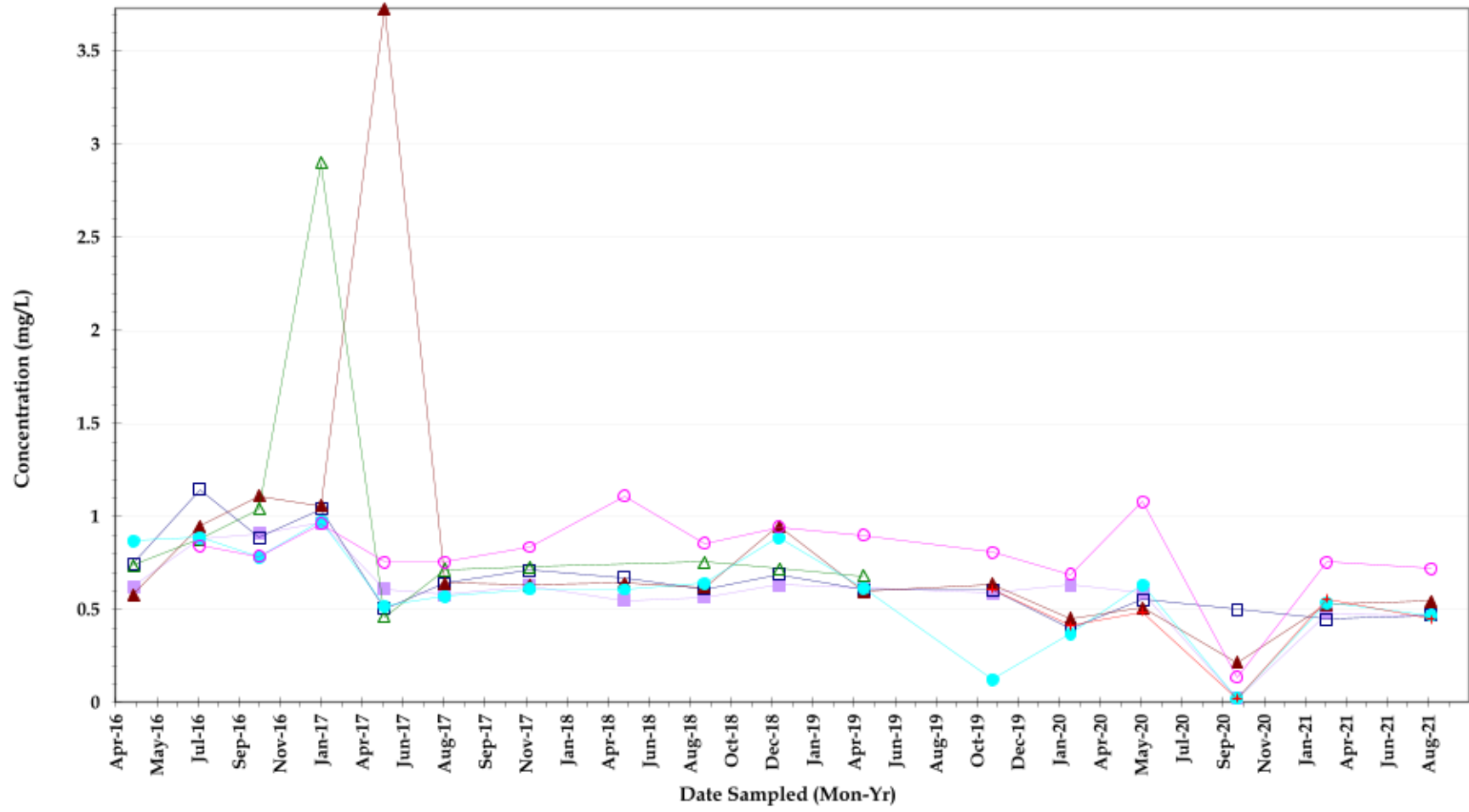
Chlorophyll a

Miromar Lakes
 Water Quality Surface Water Sample results
 AUGUST 2021



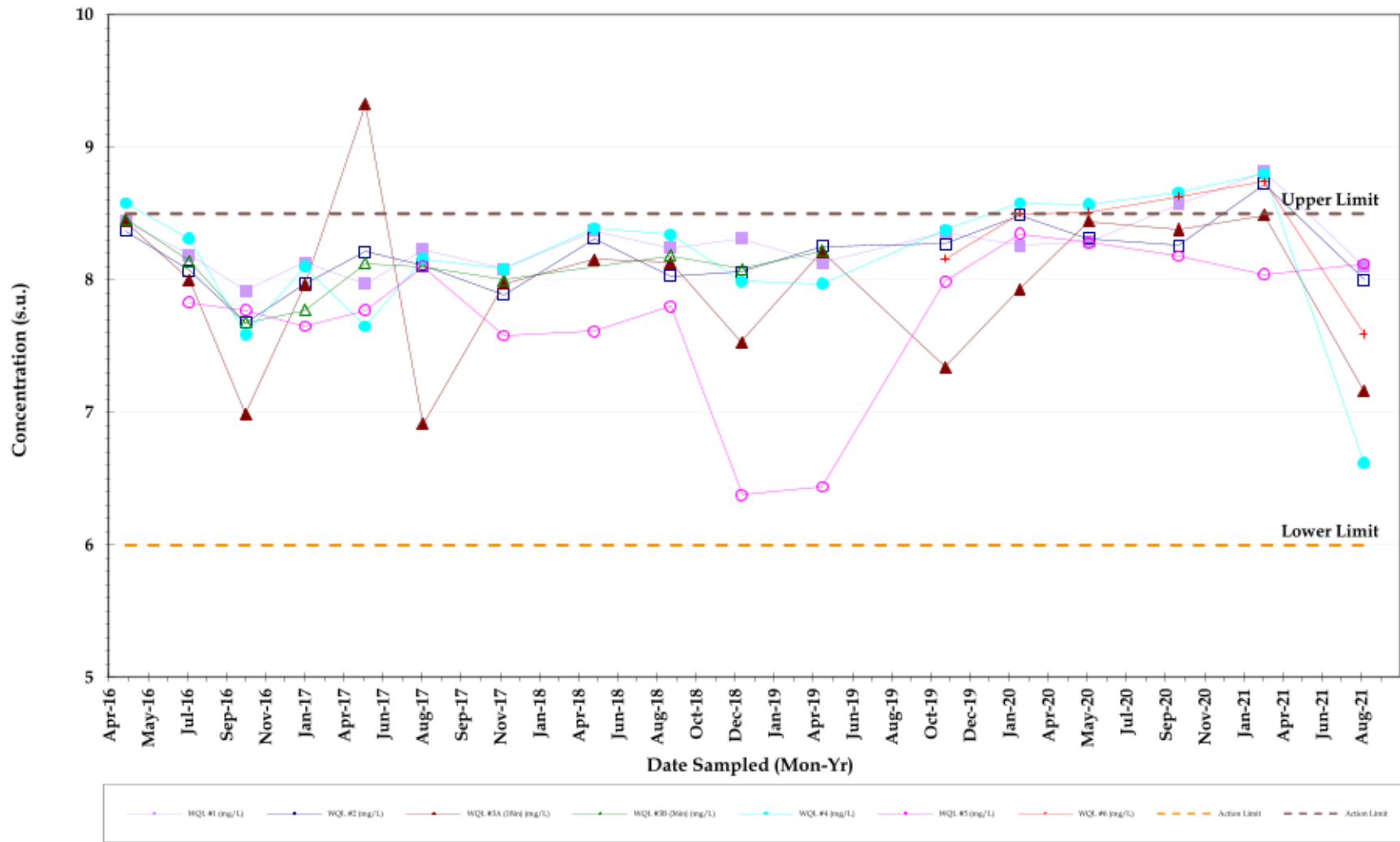
Orthophosphate

Miromar Lakes
 Water Quality Surface Water Sample results
 AUGUST 2021



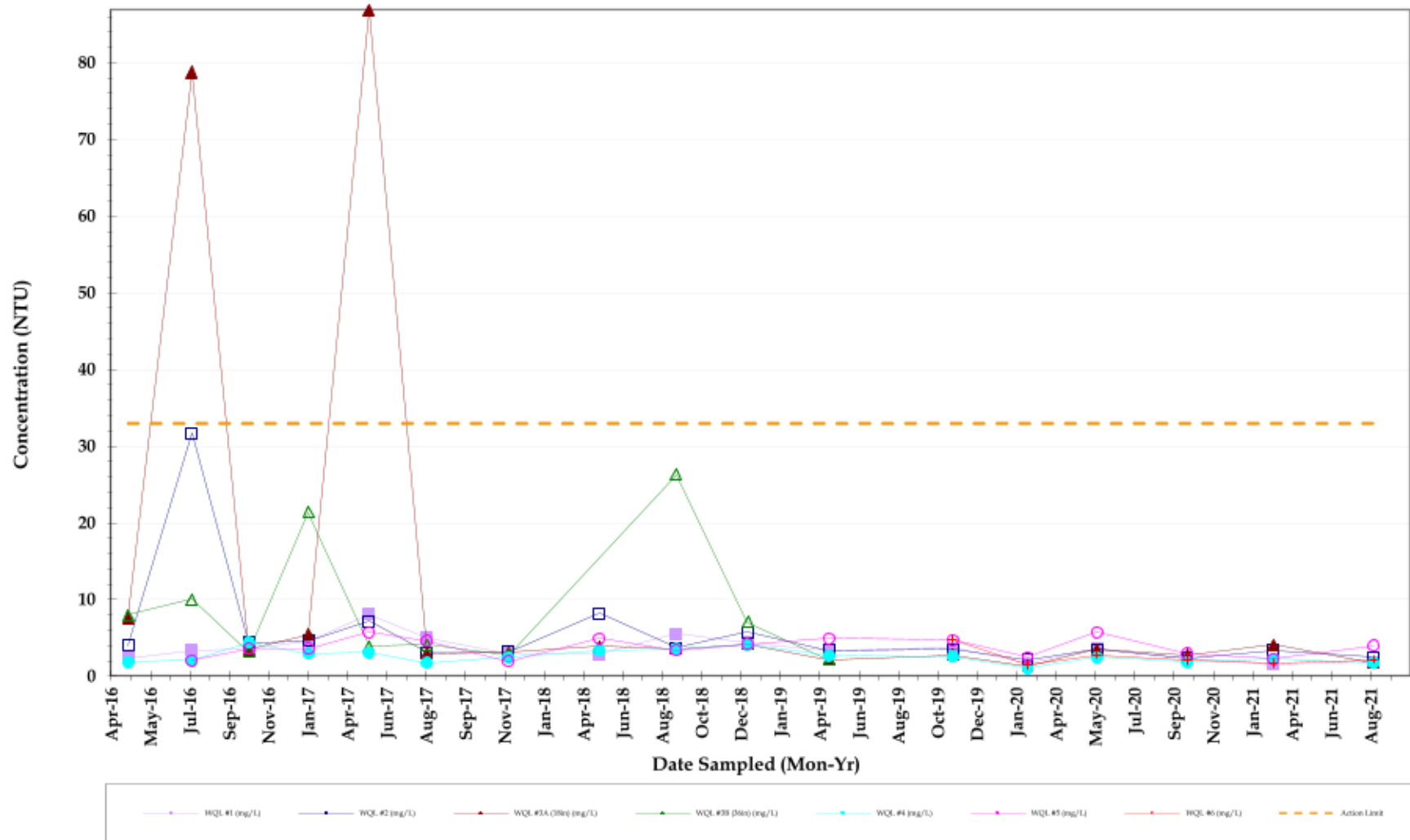
Total kjeldahl nitrogen (TKN)

*Miromar Lakes
Water Quality Surface Water Sample results
AUGUST 2021*



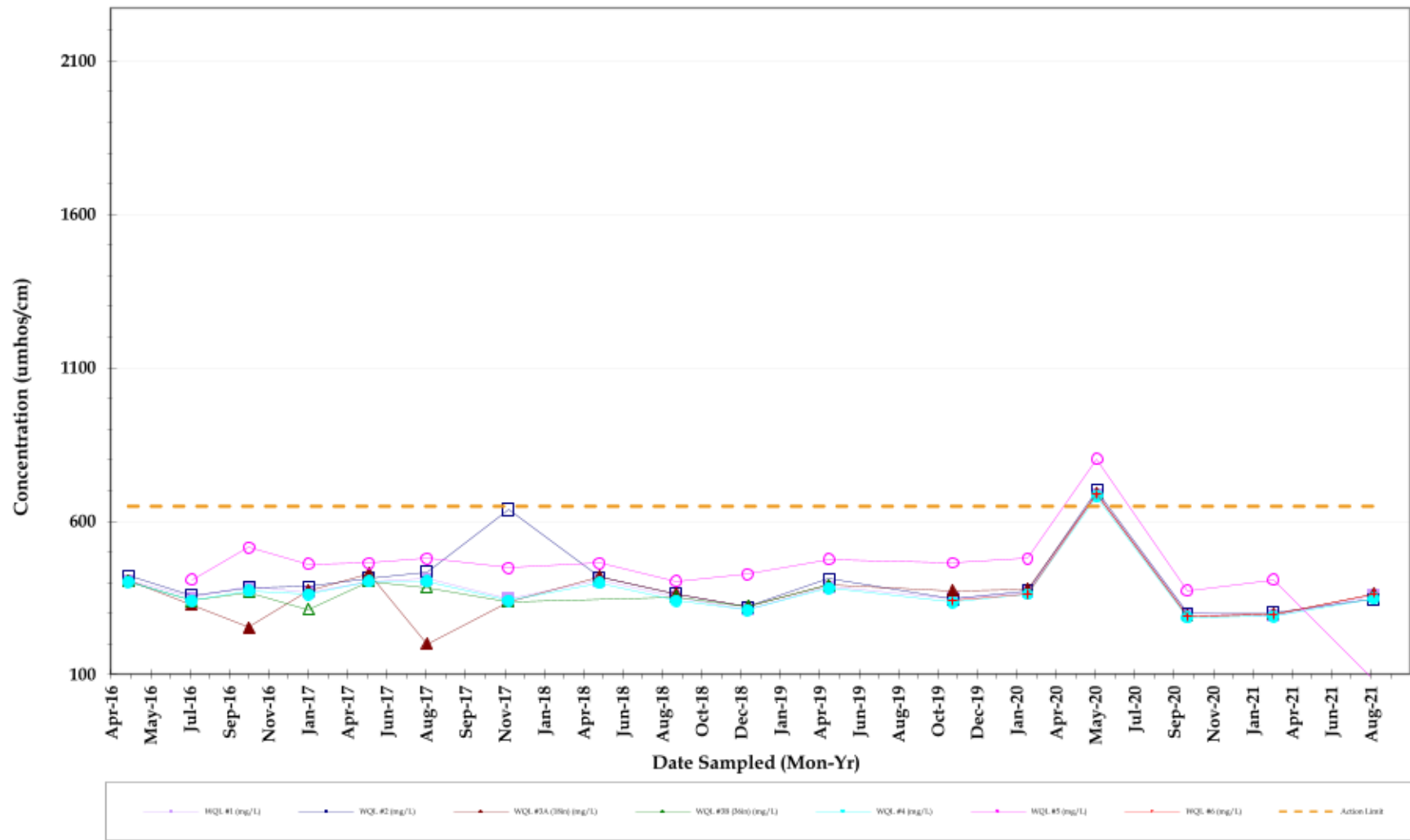
pH, Field

Miromar Lakes
 Water Quality Surface Water Sample results
 AUGUST 2021



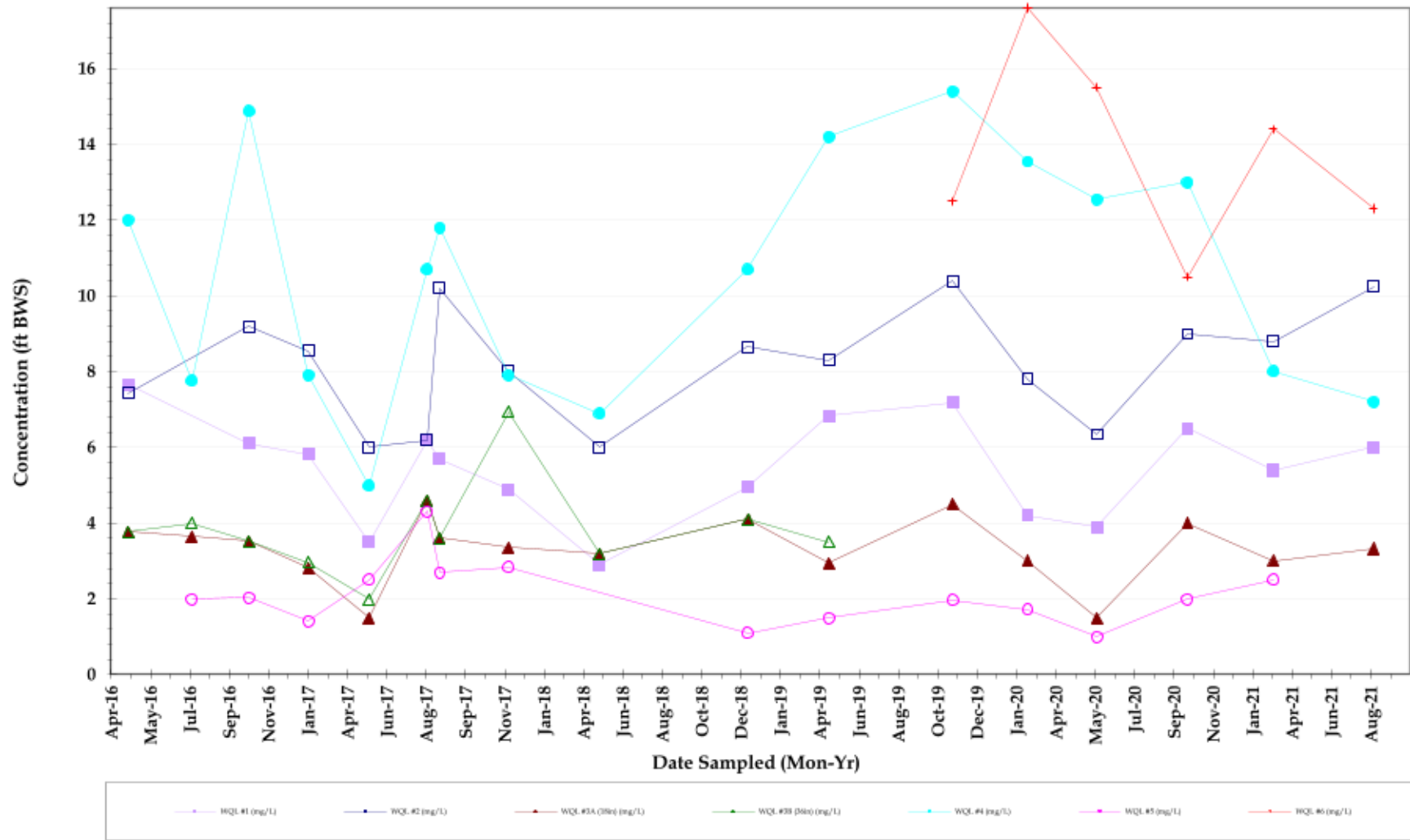
Turbidity

Miromar Lakes
 Water Quality Surface Water Sample results
 AUGUST 2021



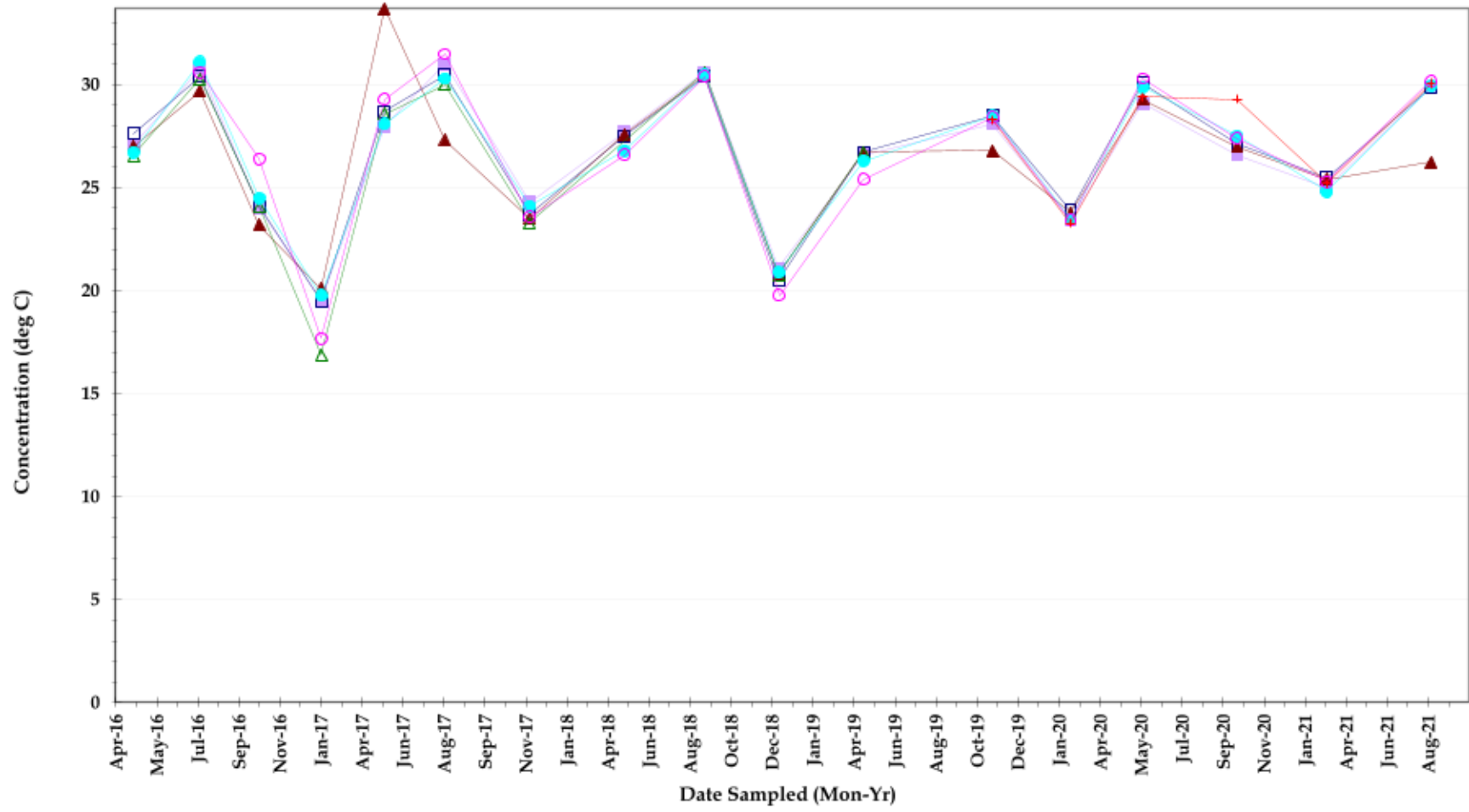
Conductivity





Water Depth

Miomar Lakes
 Water Quality Surface Water Sample results
 AUGUST 2021



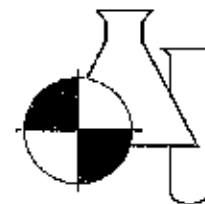
Temperature, sample

Miromar Lakes
 Water Quality Surface Water Sample results
 AUGUST 2021

Laboratory Analytical Report

BENCHMARK

EnviroAnalytical Inc.



NELAC Certification #E84167

ANALYTICAL TEST REPORT

THESE RESULTS MEET NELAC STANDARDS

Submission Number : 21080318

GHD Services, Inc.
2675 Winkler Ave., Ste.180
Fort Myers, FL 33901

Project Name : MIROMAR LAKES WQM QTLY

Date Received : 08/05/2021

Time Received : 1500

Submission Number:	21080318	Sample Date:	08/05/2021
Sample Number:	001	Sample Time:	0810
Sample Description:	WQL #4	Sample Method:	Grab

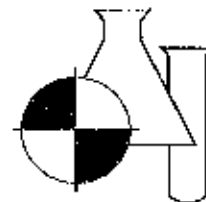
Parameter	Result	Units	MDL	PQL	Procedure	Analysis Date/Time	Analyst
AMMONIA NITROGEN	0.025 I	MG/L	0.008	0.032	350.1	08/16/2021 10:35	CW
TOTAL KJELDAHL NITROGEN	0.489	MG/L	0.05	0.20	351.2	08/23/2021 11:15	JS
ORTHO PHOSPHORUS AS P	0.012	MG/L	0.002	0.008	365.3	08/05/2021 17:11	KA
TOTAL PHOSPHORUS AS P	0.032	MG/L	0.008	0.032	365.3	08/17/2021 15:37	KA
CHLOROPHYLL A	6.39	MG/M3	0.25	1.00	445.0	08/18/2021 09:08	PN
TOTAL SUSPENDED SOLIDS	3.60	MG/L	0.570	2.280	SM2540D	08/08/2021 11:24	CM
BIOCHEMICAL OXYGEN DEMAND	1 U	MG/L	1	4	SM5210B	08/08/2021 13:24	LD/LD
NITRATE+NITRITE AS N	0.008 U	MG/L	0.008	0.024	SYSTEAS EASY	08/16/2021 14:08	CW
TOTAL NITROGEN	0.480	MG/L	0.05	0.20	SYSTEAS+351	08/23/2021 11:15	JS/CW

Submission Number:	21080318	Sample Date:	08/05/2021
Sample Number:	002	Sample Time:	0945
Sample Description:	WQL #5	Sample Method:	Grab

Parameter	Result	Units	MDL	PQL	Procedure	Analysis Date/Time	Analyst
AMMONIA NITROGEN	0.008 U	MG/L	0.008	0.032	350.1	08/16/2021 10:38	CW
TOTAL KJELDAHL NITROGEN	0.720	MG/L	0.05	0.20	351.2	08/23/2021 11:18	JS
ORTHO PHOSPHORUS AS P	0.014	MG/L	0.002	0.008	365.3	08/05/2021 17:18	KA
TOTAL PHOSPHORUS AS P	0.035	MG/L	0.008	0.032	365.3	08/17/2021 15:38	KA
CHLOROPHYLL A	22.8	MG/M3	0.25	1.00	445.0	08/18/2021 09:08	PN
TOTAL SUSPENDED SOLIDS	5.40	MG/L	0.570	2.280	SM2540D	08/08/2021 11:24	CM
BIOCHEMICAL OXYGEN DEMAND	1.961	MG/L	1	4	SM5210B	08/08/2021 13:24	LD/LD
NITRATE-NITRITE AS N	0.006 U	MG/L	0.008	0.024	SYSTEAS EASY	08/16/2021 14:10	CW
TOTAL NITROGEN	0.720	MG/L	0.05	0.20	SYSTEAS+351	08/23/2021 11:18	JS/CW

BENCHMARK

EnviroAnalytical Inc.



NELAC Certification #E84167

Submission Number: 21080318
Sample Number: 003
Sample Description: WQL #6

Sample Date: 08/05/2021
Sample Time: 0830
Sample Method: Grab

Parameter	Result	Units	MDL	PQL	Procedure	Analysis Date/Time	Analyst
AMMONIA NITROGEN	0.0121	MG/L	0.008	0.032	350.1	08/19/2021 10:41	CW
TOTAL KJELDAHL NITROGEN	0.448	MG/L	0.05	0.20	351.2	08/23/2021 11:18	JS
ORTHO PHOSPHORUS AS P	0.0021	MG/L	0.002	0.008	365.3	08/05/2021 17:56	KA
TOTAL PHOSPHORUS AS P	0.0231	MG/L	0.005	0.032	365.3	08/17/2021 15:39	KA
CHLOROPHYLL A	7.62	MG/M3	0.25	1.00	445.0	08/18/2021 09:08	PN
TOTAL SUSPENDED SOLIDS	1.201	MG/L	0.570	2.280	SM2540D	08/06/2021 11:24	CM
BIOCHEMICAL OXYGEN DEMAND	1 U	MG/L	1	4	SM5210B	08/06/2021 13:24	LD/LD
NITRATE+NITRITE AS N	0.006 U	MG/L	0.006	0.024	SYSTEMA EASY	08/16/2021 14:11	CW
TOTAL NITROGEN	0.448	MG/L	0.05	0.20	SYSTEMA+351	08/23/2021 11:18	JS/CW

Submission Number: 21080318
Sample Number: 004
Sample Description: WQL #1

Sample Date: 08/05/2021
Sample Time: 0915
Sample Method: Grab

Parameter	Result	Units	MDL	PQL	Procedure	Analysis Date/Time	Analyst
AMMONIA NITROGEN	0.0081	MG/L	0.008	0.032	350.1	08/18/2021 10:43	CW
TOTAL KJELDAHL NITROGEN	0.474	MG/L	0.05	0.20	351.2	08/23/2021 11:19	JS
ORTHO PHOSPHORUS AS P	0.011	MG/L	0.002	0.008	365.3	08/06/2021 17:19	KA
TOTAL PHOSPHORUS AS P	0.0221	MG/L	0.005	0.032	365.3	08/17/2021 15:40	KA
CHLOROPHYLL A	7.44	MG/M3	0.25	1.00	445.0	08/18/2021 09:08	PN
TOTAL SUSPENDED SOLIDS	2.80	MG/L	0.570	2.280	SM2540D	08/06/2021 11:24	CM
BIOCHEMICAL OXYGEN DEMAND	1 U	MG/L	1	4	SM5210B	08/06/2021 13:24	LD/LD
NITRATE+NITRITE AS N	0.008 U	MG/L	0.008	0.024	SYSTEMA EASY	08/16/2021 14:12	CW
TOTAL NITROGEN	0.474	MG/L	0.05	0.20	SYSTEMA-351	08/23/2021 11:19	JS/CW

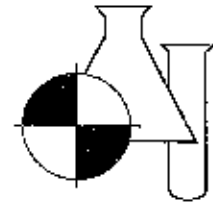
Submission Number: 21080318
Sample Number: 005
Sample Description: WQL #2

Sample Date: 08/05/2021
Sample Time: 0900
Sample Method: Grab

Parameter	Result	Units	MDL	PQL	Procedure	Analysis Date/Time	Analyst
AMMONIA NITROGEN	0.0171	MG/L	0.008	0.032	350.1	08/16/2021 10:45	CW
TOTAL KJELDAHL NITROGEN	0.469	MG/L	0.05	0.20	351.2	08/23/2021 11:29	JS
ORTHO PHOSPHORUS AS P	0.018	MG/L	0.002	0.008	365.3	08/05/2021 17:20	KA
TOTAL PHOSPHORUS AS P	0.0171	MG/L	0.005	0.032	365.3	08/17/2021 15:41	KA
CHLOROPHYLL A	5.95	MG/M3	0.25	1.00	445.0	08/18/2021 09:08	PN

BENCHMARK

EnviroAnalytical Inc.



NH/AC Certification #E84167

TOTAL SUSPENDED SOLIDS	2.80	MG/L	0.570	2.280	SM2540D	08/06/2021	11:24	CM
BIOCHEMICAL OXYGEN DEMAND	1 U	MG/L	1	4	SM5210B	08/06/2021	13:24	LD/LD
NITRATE+NITRITE AS N	0.006 U	MG/L	0.008	0.024	SYSTEAE EASY	08/16/2021	14:13	CW
TOTAL NITROGEN	0.469	MG/L	0.05	0.20	SYSTEAE+351	08/23/2021	11:29	JS/CW

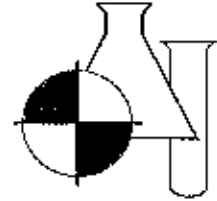
Submission Number: 21080318
Sample Number: 006
Sample Description: WQL #3A

Sample Date: 08/05/2021
Sample Time: 0845
Sample Method: Grab

Parameter	Result	Units	MDL	PQL	Procedure	Analysis Date/Time	Analyst
AMMONIA NITROGEN	0.035	MG/L	0.008	0.032	360.1	08/16/2021 10:47	CW
TOTAL KJELDAHL NITROGEN	0.546	MG/L	0.05	0.20	361.2	08/23/2021 11:30	JS
OXIDIZING PHOSPHORUS AS P	0.017	MG/L	0.002	0.008	365.3	08/05/2021 17:21	KA
TOTAL PHOSPHORUS AS P	0.021	MG/L	0.002	0.032	365.3	08/17/2021 15:42	KA
CHLOROPHYLL A	7.06	MG/M3	0.25	1.00	445.0	08/18/2021 09:08	PN
TOTAL SUSPENDED SOLIDS	2.001	MG/L	0.570	2.280	SM2540D	08/08/2021 11:24	CM
BIOCHEMICAL OXYGEN DEMAND	1.321	MG/L	1	4	SM5210B	08/08/2021 13:24	LD/LD
NITRATE+NITRITE AS N	0.006 U	MG/L	0.008	0.024	SYSTEAE EASY	08/16/2021 14:14	CW
TOTAL NITROGEN	0.546	MG/L	0.05	0.20	SYSTEAE+351	08/23/2021 11:30	JS/CW

BENCHMARK

EnviroAnalytical Inc.



NELAC Certification NE84167

Dale D. Dixon
Dale D. Dixon / Laboratory Director

08/24/2021

Date

Tülay Tarrisever - Technical Director/QC Officer

Kara Peterson - QA Officer

DATA QUALIFIERS THAT MAY APPLY:

A = Value reported is an average of two or more determinations.
B = Results based upon colony counts outside the ideal range.
H = Value based on field kit determination. Results may not be accurate.
I = Reported value is between the laboratory MDL and the PQL.
J1 = Estimated value. Storage/recovery limits exceeded.
J2 = Estimated value. No quality control criteria exists for component.
J3 = Estimated value. Quality control criteria for precision or accuracy not met.
J4 = Estimated value. Sample matrix interference suspected.
J6 = Estimated value. Data questionable due to improper lab or field protocols.
K = Off-scale low. Value is known to be < the value reported.
L = Off-scale high. Value is known to be > the value reported.
N = Presumptive evidence of absence of material.
O = Sampled, but analysis test not performed.
Q = Sample held beyond accepted hold time.

T = Value reported is < MDL. Reported for informational purposes only and shall not be used in statistical analysis.
U = Analyte analyzed but not detected at the value indicated.
V = Analyte detected in sample and method blank. Results for this analyte in associated samples may be biased high. Standards, Duplicate and Spike values are within control limits. Reported data are usable.
Y = Analysis performed on an improperly preserved sample. Data may be inaccurate.
Z = Too many colonies were present (TNTC). The numeric value represents the filtration volume.
! = Data deviate from historically established concentration ranges.
? = Data rejected and should not be used. Some or all of QC data were outside criteria, and the presence or absence of the analyte cannot be determined from the data.
* = Not reported due to interference.
Oil & Grease - If client does not send sufficient sample quantity for spko evaluation surface water samples are supplied by the laboratory.

NOTES:

MRAS calculated as 1 AS; molecular weight = 340
PQL = 4xMDL
ND = Not detected at or above the adjusted reporting limit

G1 = Accuracy standard does not meet method control limits but does meet lab control limits that are in agreement with USEPA generated data. USEPA letter available upon request.

COMMENTS:

Chlorophyll A lab filtered at E85286 on 08/05/21 at 1228.

For questions or comments regarding these results, please contact us at (941) 723-0986.

Results relate only to the samples.

Benchmark EA South
 1001 Corporate Avenue, Suite 102
 North Port, FL 34289
 (941) 625-3157 / (800) 736-9986
 (941) 423-7336 fax
 Sample Temperature checked upon receipt at SISA with
 with Temperature Cor. ID #7

Benchmark EA, Inc.
 1711 12th St. East
 Palmrest, FL 34221
 (941) 723-9986 / (800) 736-9986
 (941) 723-6061-fax
 Sample Temperature checked upon receipt at SISA with
 Temperature Cor ID #RATL006570137

Client: GHD Services, Inc. (SISA INC.)
 2675 Winkler Ave. Suite 180
 Ft. Myers FL 33901
 Erik Isom (239) 215-3914
 Shannon Tucker 239-210-8653
 Email EDD Reports to: Andrew Wyatt (Andrew.Wyatt@ghd.com)

KF Shipped to client via UPS Standard to 1 large cooler

2020 PO# 34043123

Chain of Custody Form: Mironar Lakes WQM
 Project Number: 11225022-00

Profile: 840, QC Report

Laboratory Submission #: 21080318

Station ID	Sample Type	Sample Matrix	NO ₃ -NO ₂ (as N) TP (as N) NH ₃ (as N) TP (as N) I-N (Calc.)	BOD5 (as O ₂) Plant	Orcho-Plos (Laboratory Filtered) (as O ₂)	TSS (as O ₂) Plant	Chlorophyll a (as O ₂) Filtered @ BEAS 9/5/21 12:28	Laboratory Submission #
WA Location 4	Grab	SW	08/15/21 08:10					1
WA Location 5	Grab	SW	09/15					2
WA Location 6	Grab	SW	08/30					3
WA Location 1	Grab	SW	09/15					4
WA Location 2	Grab	SW	09/00					5
WA Location 3A	Grab	SW	08/15					6

Signature: [Signature]

Collector: [Signature]

Relinquished By: [Signature]

Relinquished Date: 8/15/21 11:50

Received By: [Signature]

Received Date: 8/16/21 15:00

Received Date: 8/15/21 11:50

Received Date: 8/16/21 15:00

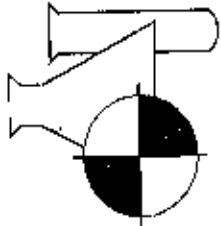
Laboratory Sample Acceptability: pH < 2
 BEAS Temperature: 1.9 C
 BEA Temperature: 0.2 C

Lab #: 1140

BENCHMARK

EnviroAnalytical, Inc.

QC REPORT



NILAC CERTIFICATION #E84167

Submission Number: 21080318
 Project Name: MIROMAR LAKES WOM QTLY

SUBMISSION	METHOD	ANALYTE	LAB SAMPLE	ANALYSIS DATE	QC FLAG	QC VALUE	SAMPLE RESULT	DUPLICATE RESULT	LR %RSD	SPK RESULT	STD-SPK RECOVERY
21080318	001	AMMONIA NITROGEN	590551	08/16/2021 10:35	LR		0.026	0.025	0.00		
21080570	002	AMMONIA NITROGEN	591074	08/16/2021 09:42	LR		0.217	0.216	0.33		
	350.1	AMMONIA NITROGEN		08/16/2021 09:30	MB	0.00	0.000				
	350.1	AMMONIA NITROGEN		08/16/2021 09:32	MB	0.00	0.000				
	350.1	AMMONIA NITROGEN		08/16/2021 10:31	MB	0.00	0.000				
	350.1	AMMONIA NITROGEN		08/16/2021 10:27	MB	0.00	0.000				
	350.1	AMMONIA NITROGEN		08/16/2021 10:55	MB	0.00	0.000				
	350.1	AMMONIA NITROGEN		08/16/2021 11:17	MB	0.00	0.000				
	350.1	AMMONIA NITROGEN		08/16/2021 09:36	FQL	0.03	0.030				100.0
21080251	01B	AMMONIA NITROGEN		08/16/2021 09:38	SPK	1.00	1.510			1.490	98.2
21080395	01B	AMMONIA NITROGEN	590768	08/16/2021 10:05	SPK	1.00	1.010			1.020	102.0
21080674	001	AMMONIA NITROGEN	591282	08/16/2021 10:31	SPK	1.00	1.050			1.030	97.7
21080674	002	AMMONIA NITROGEN	591283	08/16/2021 10:59	SPK	1.00	1.030			1.070	103.0
	350.1	AMMONIA NITROGEN		08/16/2021 09:34	STD	1.00	0.896				89.5
	350.1	AMMONIA NITROGEN		08/16/2021 10:03	STD	1.00	0.915				91.5
	350.1	AMMONIA NITROGEN		08/16/2021 10:29	STD	1.00	0.917				91.7
	350.1	AMMONIA NITROGEN		08/16/2021 10:57	STD	1.00	0.949				94.9
	350.1	AMMONIA NITROGEN		08/16/2021 11:18	STD	1.00	0.942				94.2
	351.2	TOTAL KJELDAHL NITROGEN		08/23/2021 10:49	LCS	2.00	2.100				105.0
	351.2	TOTAL KJELDAHL NITROGEN		08/23/2021 11:05	LCS	2.00	2.110				106.0
	351.2	TOTAL KJELDAHL NITROGEN		08/23/2021 11:24	LCS	2.00	2.090				105.0
	351.2	TOTAL KJELDAHL NITROGEN		08/23/2021 11:41	LCS	2.00	2.080				104.0
	351.2	TOTAL KJELDAHL NITROGEN		08/23/2021 11:47	LCS	2.00	2.090				105.0

QC FLAGS: MB or BLK = METHOD BLANK LR = LAB REPLICATE MSD = MATRIX SPIKE DUPLICATE STD or LCS = STANDARD SPK or MS = MATRIX SPIKE

SUBMISSION	METHOD	ANALYTE	LAB SAMPLE	ANALYSIS DATE	QC FLAG	QC VALUE	SAMPLE		LR	SPK RESULT	STD-SPK RECOVERY
							RESULT	RESULT			
351.2	TOTAL KJELDAHL NITROGEN	08/23/2021 14:48	LCS	2.00	2.100					106.6	
351.2	TOTAL KJELDAHL NITROGEN	08/23/2021 15:04	LCS	2.00	2.160					108.0	
351.2	TOTAL KJELDAHL NITROGEN	08/23/2021 15:22	LCS	2.00	2.190					110.0	
351.2	TOTAL KJELDAHL NITROGEN	08/23/2021 15:41	LCS	2.00	1.980					99.9	
21071296 012	TOTAL KJELDAHL NITROGEN	08/23/2021 11:12	LR		-0.063	-0.089		0.00			
21071864 004	TOTAL KJELDAHL NITROGEN	08/23/2021 10:38	LR		-0.104	-0.077		0.00			
21080677 001	TOTAL KJELDAHL NITROGEN	08/23/2021 15:11	LR		52.800	52.100		0.94			
21080898 001	TOTAL KJELDAHL NITROGEN	08/23/2021 14:38	LR		55.400	52.900		3.26			
351.2	TOTAL KJELDAHL NITROGEN	08/23/2021 10:31	MB	0.00	0.000						
351.2	TOTAL KJELDAHL NITROGEN	08/23/2021 10:48	MB	0.00	0.000						
351.2	TOTAL KJELDAHL NITROGEN	08/23/2021 11:04	MB	0.00	0.000						
351.2	TOTAL KJELDAHL NITROGEN	08/23/2021 11:22	MB	0.00	0.000						
351.2	TOTAL KJELDAHL NITROGEN	08/23/2021 11:40	MB	0.00	0.000						
351.2	TOTAL KJELDAHL NITROGEN	08/23/2021 11:45	MB	0.00	0.000						
351.2	TOTAL KJELDAHL NITROGEN	08/23/2021 14:34	MB	0.00	0.000						
351.2	TOTAL KJELDAHL NITROGEN	08/23/2021 14:46	MB	0.00	0.000						
351.2	TOTAL KJELDAHL NITROGEN	08/23/2021 15:03	MB	0.00	0.000						
351.2	TOTAL KJELDAHL NITROGEN	08/23/2021 15:21	MB	0.00	0.000						
351.2	TOTAL KJELDAHL NITROGEN	08/23/2021 15:40	MB	0.00	0.000						
351.2	TOTAL KJELDAHL NITROGEN	08/23/2021 10:27	PQL	0.25	0.163					66.2	
351.2	TOTAL KJELDAHL NITROGEN	08/23/2021 14:30	PQL	0.25	0.219					87.5	
351.2	TOTAL KJELDAHL NITROGEN	08/23/2021 10:19	QCS	2.50	2.693					108.0	
351.2	TOTAL KJELDAHL NITROGEN	08/23/2021 14:15	QCS	2.50	2.540					102.0	
21080392 002	TOTAL KJELDAHL NITROGEN	08/23/2021 15:27	SPK	2.00	2.630				2.760	106.0	
21080395 01B	TOTAL KJELDAHL NITROGEN	08/23/2021 14:52	SPK	2.00	2.520				2.720	110.0	
21080995 001	TOTAL KJELDAHL NITROGEN	08/23/2021 11:09	SPK	2.00	2.770				2.720	97.4	
21080998 002	TOTAL KJELDAHL NITROGEN	08/23/2021 14:36	SPK	2.00	3.393				3.390	103.0	
21081063 002	TOTAL KJELDAHL NITROGEN	08/23/2021 11:28	SPK	2.00	6.860				6.820	98.5	
21081068 001	TOTAL KJELDAHL NITROGEN	08/23/2021 10:36	SPK	2.00	2.980				3.180	110.0	
21081068 001	TOTAL KJELDAHL NITROGEN	08/23/2021 10:53	SPK	2.00	2.863				2.990	107.0	
21080318 001	ORTHO PHOSPHORUS AS P	08/05/2021 17:11	LR		0.012	0.018		27.70			
365.3	ORTHO PHOSPHORUS AS P	08/05/2021 17:05	MB	0.00	0.000						
365.3	ORTHO PHOSPHORUS AS P	08/05/2021 17:52	MB	0.00	0.000						

QC FLAGS: MB or BLK = METHOD BLANK LR = LAB REPLICATE MSD = MATRIX SPIKE DUPLICATE STD or LCS = STANDARD SPK or MS = MATRIX SPIKE

SUBMISSION	METHOD	ANALYTE	LAB SAMPLE	ANALYSIS DATE	QC FLAG	QC VALUE	SAMPLE RESULT	DUPLICATE RESULT	LR %RSD	SPK RESULT	STD-SPK RECOVERY
	365.3	ORTHOPHOSPHORUS AS P		08/05/2021 17:22	MB	0.00	0.000				56.0
	365.3	ORTHOPHOSPHORUS AS P		08/05/2021 17:10	PQL	0.01	0.007			0.312	107.0
21080744 001	365.3	ORTHOPHOSPHORUS AS P	590492	08/05/2021 17:35	SPK	0.20	0.259				92.0
	365.3	ORTHOPHOSPHORUS AS P		08/05/2021 17:06	STD	0.20	0.184				93.4
	365.3	ORTHOPHOSPHORUS AS P		08/05/2021 17:57	STD	0.20	0.187				
21080469 011	365.3	TOTAL PHOSPHORUS AS P	590886	08/17/2021 15:06	LR		0.460	0.462	0.37		
21080484 001	365.3	TOTAL PHOSPHORUS AS P	590917	08/17/2021 13:32	LR		8.150	7.320	7.57		
	365.3	TOTAL PHOSPHORUS AS P		08/17/2021 13:28	MB	0.00	0.000				
	365.3	TOTAL PHOSPHORUS AS P		08/17/2021 13:29	MB	0.00	0.000				
	365.3	TOTAL PHOSPHORUS AS P		08/17/2021 13:43	MB	0.00	0.000				
	365.3	TOTAL PHOSPHORUS AS P		08/17/2021 14:09	MB	0.00	0.000				
	365.3	TOTAL PHOSPHORUS AS P		08/17/2021 14:22	MB	0.00	0.000				
	365.3	TOTAL PHOSPHORUS AS P		08/17/2021 14:33	MB	0.00	0.000				87.0
	365.3	TOTAL PHOSPHORUS AS P		08/17/2021 10:18	PQL	0.02	0.017			0.290	55.5
	365.3	TOTAL PHOSPHORUS AS P		08/17/2021 15:05	PQL	0.02	0.011			0.395	87.2
21180469 002	365.3	TOTAL PHOSPHORUS AS P	590877	08/17/2021 15:08	SPK	0.20	0.316			0.377	98.7
21080574 002	365.3	TOTAL PHOSPHORUS AS P	591283	08/17/2021 08:03	SPK	0.20	0.398			0.326	91.0
21080771 002	365.3	TOTAL PHOSPHORUS AS P	591457	08/17/2021 08:52	SPK	0.20	0.336				81.0
21080871 002	365.3	TOTAL PHOSPHORUS AS P	591614	08/17/2021 14:49	SPK	0.20	0.364				83.2
	365.3	TOTAL PHOSPHORUS AS P		08/17/2021 08:50	STD	0.20	0.166				80.4
	365.3	TOTAL PHOSPHORUS AS P		08/17/2021 14:47	STD	0.20	0.161				80.1
	365.3	TOTAL PHOSPHORUS AS P		08/17/2021 13:44	STD	0.20	0.160				80.4
	365.3	TOTAL PHOSPHORUS AS P		08/17/2021 15:44	STD	0.20	0.151				80.9
	365.3	TOTAL PHOSPHORUS AS P		08/17/2021 15:45	STD	0.20	0.160				80.0
	365.3	TOTAL PHOSPHORUS AS P		08/17/2021 15:22	STD	0.20	0.158				
21080318 005	445.0	CHLOROPHYLL A	590555	08/18/2021 09:08	LR		5.947	6.310	4.19		
21080323 01B	445.0	CHLOROPHYLL A	590565	08/18/2021 09:08	LR		6.280	6.200	0.90		
21080469 002	445.0	CHLOROPHYLL A, CORRECTED	590877	08/18/2021 09:08	LR		94.526	120.380	17.01		
	445.0	CHLOROPHYLL A, CORRECTED		08/18/2021 09:08	MB	0.00	0.073				94.9
	445.0	CHLOROPHYLL A, CORRECTED		08/18/2021 09:08	STD	42.93	40.721				
21080469 002	445.0	PHEOPHYTIN	590877	08/18/2021 09:08	LR		-7.563	-22.640	0.00		
21080432 001	SM2540D	TOTAL SUSPENDED SOLIDS	590820	08/06/2021 11:24	LR		152.000	140.000	5.81		
	SM2540D	TOTAL SUSPENDED SOLIDS		08/06/2021 11:24	MB	0.00	0.000				

QC FLAGS: MB or BLK = METHOD BLANK LR = LAB REPLICATE MSD = MATRIX SPIKE DUPLICATE STD or LCS = STANDARD SPK or MS = MATRIX SPIKE

SUBMISSION	METHOD	ANALYTE	LAB SAMPLE	ANALYSIS DATE	QC FLAG	QC VALUE	SAMPLE RESULT	DUPLICATE RESULT	LR %RSD	SPK RESULT	STD-SPK RECOVERY
	SM2540D	TOTAL SUSPENDED SOLIDS		08/06/2021 11:24	STD	951.00	938.000				98.4
21080336	001	BIOCHEMICAL OXYGEN DEMAND	590650	08/05/2021 13:24	LR		54.300	55.700	1.80		
	SM5210B	BIOCHEMICAL OXYGEN DEMAND		08/06/2021 13:24	MB	0.00	0.020				141.9
	SM5210B	BIOCHEMICAL OXYGEN DEMAND		08/06/2021 13:24	STD	198.00	281.050				139.9
	SM5210B	BIOCHEMICAL OXYGEN DEMAND		08/06/2021 13:24	STD	198.00	217.550				115.4
	SM5210B	BIOCHEMICAL OXYGEN DEMAND		08/06/2021 13:24	STD	198.00	228.550				100.3
	SM5210B	BIOCHEMICAL OXYGEN DEMAND		08/06/2021 13:24	STD	198.00	198.550				
	SYSTEMEAS	NITRATE+NITRITE AS N		08/16/2021 14:00	MB	0.00	0.000				
	SYSTEMEAS	NITRATE+NITRITE AS N		08/16/2021 14:01	MB	0.00	0.000				
	SYSTEMEAS	NITRATE+NITRITE AS N		08/16/2021 14:15	MB	0.00	0.000				
	SYSTEMEAS	NITRATE+NITRITE AS N		08/16/2021 14:27	MB	0.00	0.000				
	SYSTEMEAS	NITRATE+NITRITE AS N		08/16/2021 14:39	MB	0.00	0.000				
	SYSTEMEAS	NITRATE+NITRITE AS N		08/16/2021 14:47	MB	0.00	0.000				
	SYSTEMEAS	NITRATE+NITRITE AS N		08/16/2021 14:58	PQL	0.01	0.005				51.0
21080577	001	SYSTEMEAS	591083	08/16/2021 14:29	SPK	2.00	2.250			2.430	109.0
21380577	002	SYSTEMEAS	591084	08/16/2021 14:41	SPK	2.00	2.210			2.680	123.0
21080771	001	SYSTEMEAS	591456	08/16/2021 14:04	SPK	2.00	2.260			2.460	110.0
21080771	002	SYSTEMEAS	591457	08/16/2021 14:16	SPK	2.00	2.180			2.210	102.0
	SYSTEMEAS	NITRATE+NITRITE AS N		08/16/2021 14:02	STD	0.25	0.255				102.0
	SYSTEMEAS	NITRATE+NITRITE AS N		08/16/2021 14:03	STD	0.25	0.259				104.0
	SYSTEMEAS	NITRATE+NITRITE AS N		08/16/2021 14:16	STD	0.25	0.256				103.0
	SYSTEMEAS	NITRATE+NITRITE AS N		08/16/2021 14:28	STD	0.25	0.256				102.0
	SYSTEMEAS	NITRATE+NITRITE AS N		08/16/2021 14:40	STD	0.25	0.247				98.8
	SYSTEMEAS	NITRATE+NITRITE AS N		08/16/2021 14:48	STD	0.25	0.262				105.0

NOTES:

Surface Water Field Sheets

SURFACE WATER FIELD SHEET
Station Information



STATION ID:	WQ Location #4
LOCATION:	Miromar Lakes Parkway Bridge - North Side Rip Rap
DATE/TIME:	8/5/21 0810
ALL TIMES ARE:	<u>ETZ</u> or CTZ (circle one)

WATERBODY TYPE: (Circle One)	Small Lake (>4 and <10HA) (collect samples in middle of open water)	<u>Large Lake (>10HA)</u> (collect samples at selected location point)
	Small Stream (collect samples in representative area)	Large River (collect samples in representative area)

Water Characteristics

TOTAL WATER DEPTH: (Average of 2 measurements)	7.2	(feet)	Sample Depth:	1.5	(feet)
STREAM FLOW:	(Circle One if applicable)	No Flow	<u>Flow within Banks</u>	Flood Conditions	
WATER LEVEL:	(Circle One)	Low	<u>Normal</u>	High	
WATER SAMPLE COLLECTION DEVICE (Circle One)	Van Dorn	<u>Direct Grab with Sample Bottle</u>	Dipper	Other	

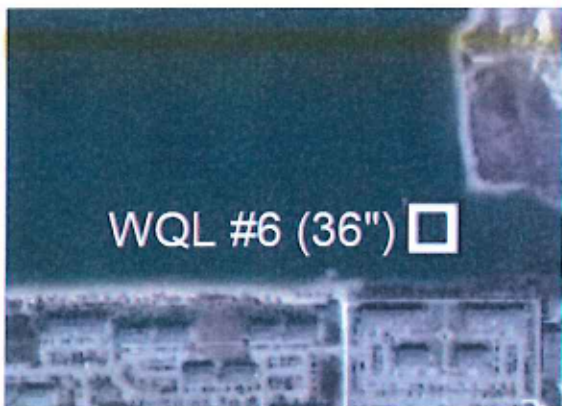
Field Measurements		Meter ID#			Field Measurements Read By: (initials)		
Time (24 hr.)	Surface Depth Collected (feet)	pH* (SU)	D.O.(mg./L)	D.O. (%)	Temp (°C)	Conductivity (µmhos/cm)	Turbidity (NTU)
0810	1.5	6.62	7.31	94.2	29.95	349	1.76
Time (24 hr.)	Bottom Depth Collected (feet)	pH (SU)	D.O.(mg./L)	D.O. (%)	Temp (°C)	Conductivity (µmhos/cm)	Turbidity (NTU)

*pH of preserved sample: number of drops of sulfuric acid added in field to achieve pH of less than 2: N/A
 Samples immediately placed on ice? Yes No

WEATHER CONDITIONS: (circle) raining, clear, partly cloudy, windy
 PERSONNEL ON SITE: Connor Heydon, Bill McKinney

REMARKS: sample collected @ 1.5 ft depth near buoy. Clear water, no odor, sunny disc clear until 7.2 ft

SURFACE WATER FIELD SHEET
Station Information



STATION ID:	WQ Location #6
LOCATION:	West end of channel. SE corner of south lake @ Depth of 36-inches
DATE/TIME:	015/21 0830
ALL TIMES ARE:	<u>ETZ</u> or CTZ (circle one)

WATERBODY TYPE: (Circle One)	Small Lake (>4 and <10HA) (collect samples in middle of open water)	<u>Large Lake (>10HA)</u> (collect samples at selected location point)
	Small Stream (collect samples in representative area)	Large River (collect samples in representative area)

Water Characteristics

TOTAL WATER DEPTH: (Average of 2 measurements)	^{Sucky disk} 6.4 12.3 12.3 (feet)	Sample Depth:	3.0 (feet)
STREAM FLOW: (Circle One if applicable)	No Flow	<u>Flow within Banks</u>	Flood Conditions
WATER LEVEL: (Circle One)	Low	<u>Normal</u>	High
WATER SAMPLE COLLECTION DEVICE (Circle One)	Van Dorn	<u>Direct Grab with Sample Bottle</u>	Dipper Other

Field Measurements		Meter ID#		Field Measurements Read By: (initials)			
Time (24 hr.)	Surface Depth Collected (feet)	pH* (SU)	D.O.(mg./L)	D.O. (%)	Temp (°C)	Conductivity (µmhos/cm)	Turbidity (NTU)
0830	3.0	7.59	6.82	90.3	30.07	365	2.19
Time (24 hr.)	Bottom Depth Collected (feet)	pH (SU)	D.O.(mg./L)	D.O. (%)	Temp (°C)	Conductivity (µmhos/cm)	Turbidity (NTU)

*pH of preserved sample: number of drops of sulfuric acid added in field to achieve pH of less than 2: N/A
 Samples immediately placed on ice? (Yes) No

WEATHER CONDITIONS: (circle) raining, clear, partly cloudy, windy

PERSONNEL ON SITE: Connor Hayden, Bill McKinney

REMARKS: Sample collected 3 ft below surface, clear water, no odor. Sucky disk "clear" until 6.4 ft

SURFACE WATER FIELD SHEET
Station Information



STATION ID: **WQ Location #3A**

LOCATION: Outlet Weir – South of Via Salerno Way @ Depth of 18-inches

DATE/TIME: 8/5/21 0845

ALL TIMES ARE: ETZ or CTZ (circle one)

WATERBODY TYPE: (Circle One)

Small Lake (>4 and <10HA) (collect samples in middle of open water)

Large Lake (>10HA) (collect samples at selected location point)

Small Stream (collect samples in representative area)

Large River (collect samples in representative area)

Water Characteristics

TOTAL WATER DEPTH: 3.33 (feet) (Average of 2 measurements)

Sample Depth: 1.5 (feet)

STREAM FLOW: (Circle One if applicable) No Flow Flow within Banks Flood Conditions

WATER LEVEL: (Circle One) Low Normal High

WATER SAMPLE COLLECTION DEVICE (Circle One) Van Dorn Direct Grab with Sample Bottle Dipper Other _____

Field Measurements		Meter ID#		Field Measurements Read By: (initials)			
Time (24 hr.)	Surface Depth Collected (feet)	pH* (SU)	D.O.(mg./L)	D.O. (%)	Temp (°C)	Conductivity (µmhos/cm)	Turbidity (NTU)
<u>0845</u>	<u>1.5</u>	<u>7.16</u>	<u>3.15</u>	<u>39.0</u>	<u>26.24</u>	<u>363</u>	<u>1.77</u>
Time (24 hr.)	Bottom Depth Collected (feet)	pH (SU)	D.O.(mg./L)	D.O. (%)	Temp (°C)	Conductivity (µmhos/cm)	Turbidity (NTU)

*pH of preserved sample: number of drops of sulfuric acid added in field to achieve pH of less than 2: N/A

Samples immediately placed on ice? Yes No

WEATHER CONDITIONS: (circle) raining, clear partly cloudy, windy

PERSONNEL ON SITE: Lanor Hayden, Bill McKinney

REMARKS: Sample collect 1.5 ft below surface, clear water, no odor, white succy disk clear until 3.33 ft (total depth)

SURFACE WATER FIELD SHEET
Station Information



STATION ID:	WQ Location #2
LOCATION:	Mouth of Canal – Northeast of Via Portofino Way
DATE/TIME:	8/5/21 0900
ALL TIMES ARE:	<u>ETZ</u> or CTZ (circle one)

WATERBODY TYPE: (Circle One)	Small Lake (>4 and <10HA) (collect samples in middle of open water)	<u>Large Lake (>10HA)</u> (collect samples at selected location point)
	Small Stream (collect samples in representative area)	Large River (collect samples in representative area)

Water Characteristics

TOTAL WATER DEPTH: (Average of 2 measurements)	10.25	(feet)	Sample Depth:	1.5	(feet)
STREAM FLOW:	(Circle One if applicable)	No Flow	<u>Flow within Banks</u>	Flood Conditions	
WATER LEVEL:	(Circle One)	Low	<u>Normal</u>	High	
WATER SAMPLE COLLECTION DEVICE (Circle One)	Van Dorn	<u>Direct Grab with Sample Bottle</u>	Dipper	Other _____	

Field Measurements		Meter ID#			Field Measurements		
Time (24 hr.)	Surface Depth Collected (feet)	pH* (SU)	D.O.(mg./L)	D.O. (%)	Temp (°C)	Conductivity (µmhos/cm)	Turbidity (NTU)
0900	1.5	8.0	7.09	93.7	29.87	346	2.44
Time (24 hr.)	Bottom Depth Collected (feet)	pH (SU)	D.O.(mg./L)	D.O. (%)	Temp (°C)	Conductivity (µmhos/cm)	Turbidity (NTU)

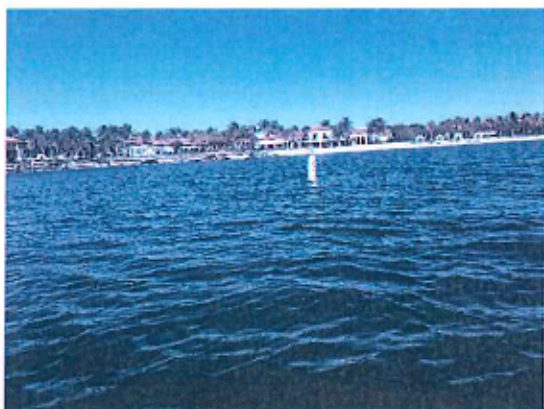
*pH of preserved sample: number of drops of sulfuric acid added in field to achieve pH of less than 2: N/A
 Samples immediately placed on ice? (Yes) No

WEATHER CONDITIONS: (circle) raining, clear, partly cloudy, windy

PERSONNEL ON SITE: Connor Hayden, Bill McKinney

REMARKS: sample collected 1.5 ft below surface. clear water, no odor
sucy disc near until 7.0 ft

SURFACE WATER FIELD SHEET
Station Information



STATION ID:	WQ Location #4
LOCATION:	South End of Beach – East of Miromar Lakes Pkwy - Buoy
DATE/TIME:	8/5/21 0915
ALL TIMES ARE:	<input checked="" type="radio"/> ETZ or <input type="radio"/> CTZ (circle one)

WATERBODY TYPE: (Circle One)	Small Lake (>4 and <10HA) (collect samples in middle of open water)	<input checked="" type="radio"/> Large Lake (>10HA) (collect samples at selected location point)
	Small Stream (collect samples in representative area)	Large River (collect samples in representative area)

Water Characteristics

TOTAL WATER DEPTH: (Average of 2 measurements)	6.0	(feet)	Sample Depth:	1.5	(feet)
STREAM FLOW:	(Circle One if applicable)	No Flow	<input checked="" type="radio"/> Flow within Banks	Flood Conditions	
WATER LEVEL:	(Circle One)	Low	<input checked="" type="radio"/> Normal	High	
WATER SAMPLE COLLECTION DEVICE (Circle One)	Van Dorn	<input checked="" type="radio"/> Direct Grab with Sample Bottle	Dipper	Other _____	

Field Measurements		Meter ID#			Field Measurements Read By: (initials)		
Time (24 hr.)	Surface Depth Collected (feet)	pH* (SU)	D.O.(mg./L)	D.O. (%)	Temp (°C)	Conductivity (µmhos/cm)	Turbidity (NTU)
0915	1.5	8.10	7.0	93.1	21.91	358	1.87
Time (24 hr.)	Bottom Depth Collected (feet)	pH (SU)	D.O.(mg./L)	D.O. (%)	Temp (°C)	Conductivity (µmhos/cm)	Turbidity (NTU)

*pH of preserved sample: number of drops of sulfuric acid added in field to achieve pH of less than 2:
Samples immediately placed on ice? N/A
 Yes No

WEATHER CONDITIONS: (circle) raining, clear, partly cloudy, windy

PERSONNEL ON SITE: Connor Hayden, Bill McKinney

REMARKS: Sample collected under bridge @ 1.5 ft below surface.
water clear, no odor, sunny disc clear until 6.0 ft

SURFACE WATER FIELD SHEET
Station Information



STATION ID: **WQ Location #5**

LOCATION: **Lake #30 Outfall**

DATE/TIME: **8/5/21 0945**

ALL TIMES ARE: ETZ or CTZ (circle one)

WATERBODY TYPE: (Circle One)

Small Lake (>4 and <10HA) (collect samples in middle of open water)

Large Lake (>10HA) (collect samples at selected location point)

Small Stream (collect samples in representative area)

Large River (collect samples in representative area)

Water Characteristics

TOTAL WATER DEPTH: NM (feet) (Average of 2 measurements)

Sample Depth: 1.5 (feet)

STREAM FLOW: (Circle One if applicable) No Flow Flow within Banks Flood Conditions

WATER LEVEL: (Circle One) Low Normal High

WATER SAMPLE COLLECTION DEVICE (Circle One) Van Dorn Direct Grab with Sample Bottle Dipper Other _____

Field Measurements		Meter ID#		Field Measurements Read By: (initials)			
Time (24 hr.)	Surface Depth Collected (feet)	pH* (SU)	D.O.(mg./L)	D.O. (%)	Temp (°C)	Conductivity (µmhos/cm)	Turbidity (NTU)
0945	1.5	8.12	6.07	82.0	30.19	82.9	4.05
Time (24 hr.)	Bottom Depth Collected (feet)	pH (SU)	D.O.(mg./L)	D.O. (%)	Temp (°C)	Conductivity (µmhos/cm)	Turbidity (NTU)

*pH of preserved sample: number of drops of sulfuric acid added in field to achieve pH of less than 2: N/A

Samples immediately placed on ice? Yes No

WEATHER CONDITIONS: (circle) raining, clear, partly cloudy, windy

PERSONNEL ON SITE: Connor Hayden, Bin McKinney

REMARKS: sample collected 1.5 ft below surface @ outfall. no odor, clear water

Laboratory Data Compliance Memo



Memorandum

September 3, 2021

To: Mr. Bruce Bernard
Manager of Field Operations
Calvin, Giordano & Associates, Inc.
1800 Eller Drive, Suite 600
Fort Lauderdale, FL 33316

Ref. No.: 11225022

From: Ruth Mickle/eew-4

Tel: 612-524-6872

**Subject: Analytical Results Compliance Report
Surface Water Quality Monitoring
Miromar Lakes
Fort Myers, Florida
August 2021**

1. Compliance Review

Samples were collected in August 2021 in support of the Miromar Lakes Surface Water Quality Monitoring sampling. The analytical results are summarized in Table 1. All samples were prepared and analyzed within the method required holding times. The method blank results were non-detect. All reported laboratory control sample (LCS) analyses demonstrated acceptable accuracy. Laboratory duplicate analyses were performed for some analytes. All results were acceptable, indicating good analytical precision. The matrix spike (MS) results were evaluated per the laboratory limits. The MS analyses performed were acceptable, demonstrating good analytical accuracy.

Based on this compliance review, the results in Table 1 are acceptable for use.

Table 1
Analytical Results Summary
Surface Water Quality Monitoring
Miromar Lakes, Fort Myers, Florida
August 2021

Sample Location/Sample ID:		WQ Location #1 / WQL1																	
Sample Date:		04/27/16	08/03/16	10/31/16	01/31/17	05/04/17	08/02/17	12/06/17	04/26/18	08/22/18	12/11/18	04/16/19	10/24/2019	2/17/2020	06/03/2020	10/21/2020	03/03/2021	08/05/2021	
Field Parameters	Units																		
Total Water Depth	Feet	7.66	NS	6.1	5.83	3.5	6.2	4.89	2.90	5.7	4.95	6.83	7.2	4.2	3.9	6.5	5.4	6.0	
Sample Depth	Feet	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
Conductivity, field	umhos/cm	408	353	387	369.3	405	413.1	348.2	407.3	354.6	312.7	387.3	348.4	369	689	300	292	358	
Dissolved oxygen (DO), field	mg/L	8.03	5.91	7.53	8.13	7.95	5.91	6.95	6.89	7.39	8.54	6.49	6.1	8.02	6.05	7.07	7.51	7.0	
Dissolved oxygen (DO), field	%	100.9*	79.3	89.4	88.5	101.6	79.6	83.0	87.6	98.9	96.0	80.9	78.1	94.5	77.0	87.1	90.6	93.1	
pH, field	s.u.	8.44	8.19	7.92	8.13	7.97	8.23	8.08	8.37	8.24	8.31	8.13	8.36	8.26	8.29	8.57	8.82	8.10	
Temperature, field	Deg C	27.08	30.8	24	19.5	28.0	31	24.3	27.7	30.6	21.1	26.6	28.1	23.44	29.1	26.6	25.0	29.91	
Turbidity, field	NTU	2.41	3.44	3.55	4.64	8.16	5.05	3.02	2.90	5.53	4.39	3.32	3.71	1.66	3.63	2.42	1.58	1.87	
Secchi Disk	Depth	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	4.80	4.20	3.90	6.0	5.4	6.0	
Wet Parameters	Units																		
Ammonia-N	mg/L	U	0.026 I	U	0.035	0.008 U	0.008 U	0.026 I	0.008 U	0.022 I	0.008 U	0.008 U	0.017 I	0.008 U	0.008 U	0.008 U	0.008 U	0.008 I	
TAN criteria calculation	mg/L	0.24	0.29	0.67	0.66	0.48	0.27	0.52	0.26	0.27	0.45	0.42	0.26	0.42	0.28	NS	NS	NS	
Total kjeldahl nitrogen (TKN)	mg/L	0.626	0.878	0.911	0.968	0.611	0.580	0.629	0.551	0.565	0.632	0.619	0.588	0.632	0.591	0.05 U	0.480	0.474	
Total nitrogen	mg/L	0.626	0.878	0.911	0.974	0.616	0.592	0.629	0.565	0.574	0.639	0.619	0.588	0.639	0.591	0.05 U	0.480	0.474	
Nitrite/Nitrate	mg/L	U	U	U	0.006 I	0.005 I	0.012 I	0.004 U	0.014 I	0.009 I	0.007 I	0.006 U	0.006 U	0.007 I	0.006 U	0.006 U	0.006 U	0.006 U	
Ortho phosphorus (Field Filtered)	mg/L	0.074	0.071	0.030	0.012	0.027	0.038	0.026	0.014	0.017	0.014	0.024	0.026	0.028	0.051	0.0126	0.024	0.011	
Total phosphorus	mg/L	0.087	0.091	0.068	0.038	0.027 I	0.041	0.121	0.017 I	0.018 I	0.026 I	0.034	0.063	0.035	0.053	0.011 I	0.059	0.022 I	
Chlorophyll	mg/m3	5.91	7.32	7.86	11.1	8.42	9.27	5.25	10.1	10.1	6.92	3.72	7.81	3.71	3.96	5.76	3.55	7.44	
Total suspended solids (TSS)	mg/L	2.35	3.49	4.80	7.00	7.80	6.15	3.67	3.67	4.00	4.20	1.20 I	2.20 I	3.50	3.20	2.40	2.00 I	2.80	
Biochemical oxygen demand (total BOD5)	mg/L	0.706 I	U	U	1.06 I	1.40 I	1.05 I	1 U	1.16 I	2.72 I	1.85 I	1.24 I	1.03 I	1 U	1 U	1 U	1 U	1 U	
Sample Location/Sample ID:		WQ Location #2 / WQL2																	
Sample Date:		04/27/16	08/03/16	10/31/16	01/31/17	05/04/17	08/02/17	12/06/17	04/26/18	08/22/18	12/11/18	04/16/19	10/24/2019	2/17/2020	06/03/2020	10/21/2020	03/03/2021	08/05/2021	
Field Parameters	Units																		
Total Water Depth	Feet	7.43	NS	9.2	8.56	6	6.2	8.01	6.00	10.2	8.65	8.31	10.4	7.8	6.35	9.0	8.8	10.25	
Sample Depth	Feet	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
Conductivity, field	umhos/cm	422	359	384	385.7	414	435.0	638.9	417.0	363.7	321.2	411.8	346.4	373	701	300	303	346	
Dissolved oxygen (DO), field	mg/L	7.67	5.55	7.12	8.05	7.87	6.21	6.58	6.95	7.52	9.90	6.88	6.27	8.12	5.86	4.64	7.04	7.09	
Dissolved oxygen (DO), field	%	97.4	74.0	84.7	87.6	101.8	82.9	77.7	88.0	100.2	110.0	85.9	81.0	96.2	77.2	51.1	86.9	93.7	
pH, field	s.u.	8.37	8.07	7.68	7.97	8.21	8.11	7.89	8.31	8.03	8.06	8.25	8.27	8.49	8.31	8.26	8.72	8.0	
Temperature, field	Deg C	27.62	30.4	24.1	19.5	28.7	30.5	23.7	27.5	30.4	20.5	26.7	28.5	23.9	30.1	27.1	25.5	29.87	
Turbidity, field	NTU	3.97	31.71	4.38	4.66	7.15	3.12	3.20	8.22	3.75	5.76	3.37	3.55	2.18	3.49	2.40	3.41	2.44	
Secchi Disk	Depth	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	5.30	NS	5.5	6.5	7.0	7.0	
Wet Parameters	Units																		
Ammonia-N	mg/L	U	0.019 I	U	0.071	0.008 U	0.008 U	0.036	0.008 U	0.008 U	0.008 U	0.027	0.008 U	0.008 U	0.008 U	0.009 I	0.008 U	0.017 I	
TAN criteria calculation	mg/L	0.26	0.36	0.90	0.84	0.32	0.34	0.71	0.30	0.38	0.69	0.34	0.30	0.28	0.25	NS	NS	NS	
Total kjeldahl nitrogen (TKN)	mg/L	0.745	1.15	0.888	1.04	0.507	0.641	0.710	0.675	0.613	0.693	0.606	0.605	0.403	0.556	0.500	0.450	0.469	
Total nitrogen	mg/L	0.745	1.15	0.900	1.04	0.514	0.645	0.710	0.690	0.618	0.698	0.606	0.605	0.403	0.556	0.500	0.450	0.469	
Nitrite/Nitrate	mg/L	U	U	0.012 I	U	0.007 I	0.004 I	0.004 U	0.015 I	0.005 I	0.006 I	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	
Ortho phosphorus (Field Filtered)	mg/L	0.077	0.070	0.064	0.015	0.028	0.050	0.025	0.015	0.020	0.008	0.002 U	0.055	0.035	0.053	0.0288	0.026	0.016	
Total phosphorus	mg/L	0.079	0.087	0.066	0.031 I	0.054	0.065	0.042	0.023 I	0.008 U	0.009 I	0.008 U	0.073	0.069	0.062	0.012 I	0.032	0.017 I	
Chlorophyll	mg/m3	6.59	7.28	8.08	11.7	7.76	7.13	5.42	8.35	9.06	8.80	5.28	9.11	4.34	5.11	6.13	2.04	5.95	
Total suspended solids (TSS)	mg/L	4.21	3.90	4.60	7.20	6.60	2.60	3.60	8.00	1.00 I	4.67	3.80	2.40	3.00	2.40	2.40	2.80	2.80	
Biochemical oxygen demand (total BOD5)	mg/L	0.778 I	U	U	1.33 I	1.13 I	1 U	1 U	1.36 I	1.89 I	1.10 I	1.40 I	1.50 I	1 U	1 U	1 U	1 U	1 U	

Table 1
Analytical Results Summary
Surface Water Quality Monitoring
Miromar Lakes, Fort Myers, Florida
August 2021

Sample Location/Sample ID:		WQ Location #3A / WQL3A																
Sample Date:		04/27/16	08/03/16	10/31/16	01/31/17	05/04/17	08/02/17	12/06/17	04/26/18	08/22/18	12/11/18	04/16/19	10/24/2019	2/17/2020	06/03/2020	10/21/2020	03/03/2021	08/05/2021
Field Parameters	Units																	
Total Water Depth	Feet	3.78	3.64	3.52	2.81	1.5	4.6	3.35	3.2	3.6	5.87	2.95	4.5	3	1.5	4.0	3.0	3.33
Sample Depth	Feet	1.5	1.5	1.5	1.5	1.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1	1.5	1.5	1.5
Conductivity, field	umhos/cm	406	329	255	375.7	430	200.4	339	418.9	365.1	323	391.9	373.2	381	690	293	297	363
Dissolved oxygen (DO), field	mg/L	7.31	4.78	2.93	7.40	14.02	1.38	6.49	6.16	7.33	8.44	5.82	2.05	5.77	6.49	6.41	5.62	3.15
Dissolved oxygen (DO), field	%	91.8	62.9	34.3	81.5	198	17.42	76.4	78.2	97.9	94.3	72.7	25.7	68.5	85.4	80.5	70.2	39.0
pH, field	s.u.	8.44	8.0	6.99	7.96	9.32	6.91	7.97	8.15	8.13	7.53	8.21	7.34	7.93	8.44	8.38	8.49	7.16
Temperature, field	Deg C	27.0	29.7	23.2	20.1	33.7	27.3	23.5	27.6	30.5	20.8	26.7	26.8	23.77	29.3	27.0	25.4	26.24
Turbidity, field	NTU	7.64	78.77	3.48	5.42	86.9	2.99	3.05	3.94	3.63	4.20	2.20	2.79	1.31	3.49	2.76	4.13	1.77
Secchi Disk	Depth	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	Lake Bottom	Lake Bottom	Lake Bottom	4.0	3.0	3.33
Wet Parameters	Units																	
Ammonia-N	mg/L	U	0.029 I	0.044	0.027 I	0.008 U	0.008 U	0.009 I	U	0.023 I	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.009 I	0.008 U	0.035
TAN criteria calculation	mg/L	0.25	0.42	1.54	0.82	0.04	1.22	0.65	0.38	0.32	1.29	0.37	1.02	0.67	0.21	NS	NS	NS
Total kjeldahl nitrogen (TKN)	mg/L	0.581	0.949	1.11	1.06	3.73	0.642	0.634	0.645	0.621	0.949	0.598	0.635	0.451	0.510	0.216	0.526	0.546
Total nitrogen	mg/L	0.581	0.949	1.13	1.06	3.73	0.650	0.634	0.658	0.626	0.954	0.598	0.635	0.451	0.510	0.216	0.526	0.546
Nitrite/Nitrate	mg/L	U	U	0.021	U	0.008 I	0.008 I	0.004 U	0.013 I	0.005 I	0.006 I	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U
Ortho phosphorus (Field Filtered)	mg/L	0.073	0.012	0.051	0.012	0.018	0.029	0.031	0.016	0.020	0.025	0.014	0.060	0.043	0.048	0.0199	0.030	0.017
Total phosphorus	mg/L	0.088	0.026 I	0.052	0.033	0.090	0.039	0.048	0.024 I	0.008 U	0.019 I	0.018 I	0.066	0.069	0.064	0.012 I	0.046	0.021 I
Chlorophyll	mg/m3	5.76	8.71	10.1	10.4	249	10.1	4.83	7.85	10.6	8.15	4.60	7.88	3.79	5.10	5.52	4.00	7.06
Total suspended solids (TSS)	mg/L	7.06	6.42	5.11	7.20	95.0	3.80	4.00	3.60	6.00	4.33	2.60	2.40	1.50 I	4.80	2.40	4.20	2.00 I
Biochemical oxygen demand (total BOD5)	mg/L	U	U	U	1.11 I	10.6	1.39 I	1 U	1.12 I	1.66 I	1.19 I	2.32 I	1.27 I	1 U	1 U	1 U	1.30 I	1.32 I
Sample Location/Sample ID:		WQ Location #3B / WQL3B											WQL6	WQL6	WQL6	WQL6	WQL6	WQL6
Sample Date:		04/27/16	08/03/16	10/31/16	01/31/17	05/04/17	08/02/17	12/06/17	04/26/18	08/22/18	12/11/18	04/16/19	10/24/2019	2/17/2020	06/03/2020	10/21/2020	03/03/2021	08/05/2021
Field Parameters	Units																	
Total Water Depth	Feet	3.78	4	3.52	2.98	2	4.6	6.94	3.2	3.6	5.87	3.50	12.5	17.6	15.5	10.5	14.4	12.3
Sample Depth	Feet	3	3	3	2.5	1.5	3	3.0	NS	3	3	3	3	3	3	1.5	3	3
Conductivity, field	umhos/cm	405	341	369	313.1	406	384.1	338.6	NS	354.5	322.4	391.3	340.8	362	688	290	295	365
Dissolved oxygen (DO), field	mg/L	7.32	6.22	6.82	6.58	8.46	5.59	5.87	NS	7.39	6.32	5.7	5.63	8.44	6.49	6.66	7.43	6.82
Dissolved oxygen (DO), field	%	91.1	82.8	81.2	67.9	109.3	74.0	68.8	NS	98.8	70.6	71.2	72.4	99.2	85.7	83.4	90.4	90.3
pH, field	s.u.	8.46	8.14	7.68	7.77	8.12	8.10	8.00	NS	8.18	8.08	8.22	8.16	8.5	8.51	8.63	8.74	7.59
Temperature, field	Deg C	26.55	30.3	24.1	16.9	28.6	30.0	23.3	NS	30.6	20.8	26.7	28.3	23.28	29.4	29.3	25.2	30.07
Turbidity, field	NTU	7.98	10.03	3.15	21.38	3.93	4.15	2.84	NS	26.26	7.10	2.17	4.85	1.48	2.83	2.13	1.75	2.19
Secchi Disk	Depth	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	5.80	8.00	7.20	7.0	7.5	6.4
Wet Parameters	Units																	
Ammonia-N	mg/L	U	0.15 I	U	0.097	0.008 U	0.008 U	0.028 I	NS	0.015 I	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.009 I	0.008 U	0.012 I
TAN criteria calculation	mg/L	0.24	0.32	0.90	1.29	0.37	0.35	0.63	NS	0.30	0.66	0.36	0.36	0.28	0.19	NS	NS	NS
Total kjeldahl nitrogen (TKN)	mg/L	0.736	0.880	1.04	2.90	0.462	0.715	0.731	NS	0.757	0.722	0.683	0.612	0.414	0.490	0.05 U	0.559	0.448
Total nitrogen	mg/L	0.744	0.880	1.05	2.90	0.472	0.715	0.731	NS	0.763	0.727	0.683	0.612	0.414	0.490	0.05 U	0.559	0.448
Nitrite/Nitrate	mg/L	0.008 I	U	0.012 I	U	0.010 I	0.004 U	0.004 U	NS	0.006 I	0.006 I	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U
Ortho phosphorus (Field Filtered)	mg/L	0.088	0.064	0.029	0.012	0.029	0.226	0.272	NS	0.020	0.022	0.027	0.063	0.032	0.059	0.0155	0.026	0.002 I
Total phosphorus	mg/L	0.092	0.098	0.031 I	0.168	0.054	1.08	0.501	NS	0.013 I	0.033	0.029 I	0.067	0.035	0.064	0.016 I	0.055	0.023 I
Chlorophyll	mg/m3	5.99	7.05	7.57	64.5	5.44	9.14	3.94	NS	10.8	7.61	5.38	8.86	3.18	4.95	4.80	2.48	7.62
Total suspended solids (TSS)	mg/L	7.11	5.78	3.80	44.7	4.20	4.80	3.20	NS	26.0	3.33	6.20	2.60	1.25 I	3.20	2.60	1.80 I	1.20 I
Biochemical oxygen demand (total BOD5)	mg/L	0.556 I	U	U	6.47	1 U	1.45 I	1 U	NS	2.01 I	1 U	1.16 I	1.04 I	1 U	1 U	1.39 I	1 U	1 U

Table 1
Analytical Results Summary
Surface Water Quality Monitoring
Miromar Lakes, Fort Myers, Florida
August 2021

Sample Location/Sample ID:		WQ Location #4 / WQL4																
Sample Date:		04/27/16	08/03/16	10/31/16	01/31/17	05/04/17	08/02/17	12/06/17	04/26/18	08/22/18	12/11/18	04/16/19	10/24/2019	2/17/2020	06/03/2020	10/21/2020	03/03/2021	08/05/2021
Field Parameters	Units																	
Total Water Depth	Feet	12	7.77	14.88	7.91	5.0	10.7	7.9	6.90	11.8	10.7	14.20	15.4	13.55	12.55	13.0	8.01	7.2
Sample Depth	Feet	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Conductivity, field	umhos/cm	403	340	373	361.8	405	404.8	342.0	399.7	342	310.3	382.1	337.0	363	682	286	291	349
Dissolved oxygen (DO), field	mg/L	7.72	6.55	7.14	8.06	8.33	5.02	5.73	7.13	6.96	7.84	7.28	6.42	8.45	6.42	1.41	7.75	7.31
Dissolved oxygen (DO), field	%	96.4	88.3	85.6	88.3	106.6	66.8	68.2	89.2	92.9	87.8	90.2	82.8	99.4	83.4	17.0	93.5	94.2
pH, field	s.u.	8.58	8.31	7.59	8.10	7.65	8.16	8.08	8.39	8.34	7.99	7.97	8.38	8.58	8.57	8.66	8.80	6.62
Temperature, field	Deg C	26.71	31.1	24.5	19.8	28.1	30.3	24.1	26.8	30.5	20.9	26.3	28.5	23.49	29.9	27.5	24.8	29.95
Turbidity, field	NTU	1.87	2.04	4.44	3.02	3.11	1.81	2.48	3.38	3.56	4.10	2.72	2.58	1.04	2.48	1.85	2.28	1.76
Secchi Disk	Depth	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	5.50	8.50	7.00	6.5	8.01	7.2
Wet Parameters	Units																	
Ammonia-N	mg/L	U	0.023 I	U	0.012 I	0.008 U	0.008 U	0.026 I	0.008 U	0.014 I	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.025 I
TAN criteria calculation	mg/L	0.20	0.23	0.96	0.68	0.72	0.31	0.53	0.27	0.23	0.74	0.54	0.25	0.24	0.16	NS	NS	NS
Total kjeldahl nitrogen (TKN)	mg/L	0.868	0.887	0.780	0.976	0.518	0.570	0.612	0.610	0.640	0.885	0.615	0.126 I	0.371	0.633	0.05 U	0.538	0.469
Total nitrogen	mg/L	0.868	0.887	0.808	0.976	0.524	0.570	0.612	0.623	0.645	0.885	0.615	0.126	0.371	0.633	0.05 U	0.538	0.469
Nitrite/Nitrate	mg/L	U	U	0.028	U	0.006 I	0.004 U	0.004 U	0.013 I	0.005 I	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U
Ortho phosphorus (Field Filtered)	mg/L	0.094	0.017	0.024	0.017	0.030	0.044	0.027	0.019	0.017	0.022	0.026	0.065	0.037	0.042	0.0180	0.021	0.012
Total phosphorus	mg/L	0.101	0.021 I	0.027 I	0.038	0.048	0.067	0.038	0.030 I	0.044	0.043	0.038	0.070	0.064	0.064	0.014 I	0.043	0.032
Chlorophyll	mg/m3	4.92	7.11	7.78	9.09	3.94	9.31	4.62	8.66	10.5	8.43	3.43	7.38	2.75	3.78	5.05	1.74	5.39
Total suspended solids (TSS)	mg/L	2.33	2.84	3.60	5.20	3.26	2.60	1.60 I	2.00 I	5.50	2.33	3.40	3.20	1.25 I	3.40	1.80 I	0.570 U	3.60
Biochemical oxygen demand (total BOD5)	mg/L	U	U	U	1.09 I	1 U	1 U	1 U	1.16 I	1.47 I	1 U	1 U	1.07 I	1 U	1 U	1.51 I	1 U	1 U
Sample Location/Sample ID:		WQ Location #5 / WQL5																
Sample Date:		04/27/16	08/03/16	10/31/16	01/31/17	05/04/17	08/02/17	12/06/17	04/26/18	08/22/18	12/11/18	04/16/19	10/24/2019	2/17/2020	06/03/2020	10/21/2020	03/03/2021	08/05/2021
Field Parameters	Units																	
Total Water Depth	Feet	NS	2	2.03	1.42	2.5	4.32	2.84	S	2.7	1.10	1.50	1.98	1.72	<1	2.0	2.5	NM
Sample Depth	Feet	NS	1.5	1.5	0.5	1.5	1.5	1.5	S	1.5	0.5	0.75	1.0	1	<1	1.5	1.5	1.5
Conductivity, field	umhos/cm	NS	411	515	462.0	464	478.4	447.9	464.1	405.1	427.2	475.8	465.0	480	802	373	409	82.9
Dissolved oxygen (DO), field	mg/L	NS	4.84	6.22	6.88	8.50	8.03	4.21	5.47	6.09	4.21	5.00	3.20	7.6	5.18	7.65	3.05	6.07
Dissolved oxygen (DO), field	%	NS	64.7	77.2	72.2	111.1	109.1	49.6	68.2	81.2	46.1	61.0	41.3	89.3	69.0	96.5	37.5	80.6
pH, field	s.u.	NS	7.83	7.77	7.65	7.77	8.10	7.58	7.61	7.80	6.38	6.44	7.99	8.35	8.28	8.18	8.04	8.12
Temperature, field	Deg C	NS	30.6	26.4	17.7	29.3	31.5	23.6	26.6	30.4	19.8	25.4	28.4	23.42	30.3	27.4	25.3	30.19
Turbidity, field	NTU	NS	2.08	3.62	3.60	5.77	4.65	1.99	4.93	3.40	4.18	4.98	4.71	2.45	5.74	2.96	2.27	4.05
Secchi Disk	Depth	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	Lake Bottom	Lake Bottom	Lake Bottom	NS	NS	NS
Wet Parameters	Units																	
Ammonia-N	mg/L	NS	0.033	U	0.008 I	0.008 U	0.008 U	0.034	0.008 U	0.010 I	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.023 I	0.008 U
TAN criteria calculation	mg/L	NS	0.49	0.70	1.40	0.58	0.32	1.03	0.82	0.52	2.19	1.51	0.46	0.36	0.26	NS	NS	NS
Total kjeldahl nitrogen (TKN)	mg/L	NS	0.845	0.786	0.962	0.754	0.756	0.838	1.11	0.857	0.944	0.902	0.807	0.688	1.08	0.137 I	0.755	0.720
Total nitrogen	mg/L	NS	0.845	0.794	0.962	0.762	0.760	0.854	1.13	0.863	0.957	0.902	0.807	0.688	1.08	0.137	0.755	0.720
Nitrite/Nitrate	mg/L	NS	U	0.008 I	U	0.008 I	0.004 I	0.016	0.016	0.006 I	0.013 I	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U
Ortho phosphorus (Field Filtered)	mg/L	NS	0.022	0.042	0.017	0.027	0.019	0.022	0.016	0.015	0.019	0.023	0.050	0.038	0.055	0.075	0.029	0.014
Total phosphorus	mg/L	NS	0.065	0.042	0.036	0.035	0.067	0.046	0.027 I	0.025 I	0.024 I	0.028 I	0.081	0.049	0.102	0.084	0.067	0.035
Chlorophyll	mg/m3	NS	15.1	12.5	13.9	16.0	25.0	17.3	27.6	19.8	15.4	23.4	15.7	12.6	30.4	22.7	4.93	22.9
Total suspended solids (TSS)	mg/L	NS	4.10	4.80	5.00	8.11	11.0	0.570 U	6.20	4.00	3.00	7.60	2.40	3.25	9.00	4.20	3.00	5.40
Biochemical oxygen demand (total BOD5)	mg/L	NS	1.31 I	1.56 I	1.36 I	2.41 I	2.14 I	1.64 I	3.38 I	1.15 I	1.38 I	3.39 I	1.54 I	1.32 I	3.01 I	1.73 I	1 U	1.55 I

Notes:
 S - Sample collected from edge of lake NS - Not sampled during noted event
 U - Not detected at the associated reporting limit I - Reported value is between method detection limit and the practical quantitation limit
 * DO values at or above 100% are possible super-saturation conditions due to high water temperatures and/or high volume of algae.