Lake Elsinore and Canyon Lake Nutrient TMDL Monitoring 2017-2018 Quarter 1 Report

Prepared for:
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Lake Elsinore

Monitoring Dates
July 20, 2017, August 21, 2017 and September 21, 2017. Sampling is required monthly in Lake Elsinore during summer months (June – September) and bi-monthly during the remainder of the year (October – May).

Monitoring Locations
Five locations were monitored in Lake Elsinore: Sites LE01, LE02, LE03 and the two in-lake data sondes maintained by Elsinore Valley Municipal Water District (EVMWD): the Lakeshore Sonde and the Grand Avenue Sonde. These sites are depicted in Figure 1.

Weather
July – Clear and hot, high of 93°F.
August – Slightly cloudy and warm, high of 86°F. Partial solar eclipse around 10:20 am.
September – Overcast and mild, windy throughout the day. High of 69°F.

Water Quality Monitoring Activities
Water quality monitoring was successfully performed in accordance with the project specific Work Plan and there were no equipment failures or delays. In addition to the routine water chemistry samples, collection of samples for analysis of cyanobacteria toxins (cyanotoxin) was initiated in June 2017 at the request of the TMDL Task Force. These samples were collected at the same central TMDL station (LE02) and in the same manner as analytical chemistry samples. Field monitoring included the following activities at each location or where noted:

- Vertical water column profile measurements of temperature, conductivity, pH, and dissolved oxygen at all sites;
- Water chemistry sample collection (Site LE02 only) analyzed for Total Dissolved Solids, Sulfide, Nitrate as N, Nitrite as N, Kjeldahl Nitrogen, Total Nitrogen, Ammonia-Nitrogen, Ortho Phosphate Phosphorus, Total Phosphorus, Chlorophyll-a, Microcystin, Cylindrospermopsin, Anatoxin-a, and Nodularin;
- Secchi disk measurements;
- Full water column vertical plankton tows with samples preserved and archived for potential assessment in the future as needed;
- Visual observations of lake conditions.

A summary of water quality profile data are presented in Tables 1 through 3 and results of the water chemistry analyses are presented in Tables 4 through 6.

Satellite imagery of chlorophyll-a concentrations, turbidity, and harmful algal bloom (HAB) probability based on remote sensing data are presented in Figures 2 through 12.

Copies of field datasheets are provided in Appendix A.

Figure 1. Lake Elsinore Sampling Locations

Table 1. Lake Elsinore *In situ* Water Column Profile – July 20, 2017

Site	Time	Measure	Surface	1 m	2 m	3 m	4 m	5 m	6 m	7 m	Water Column Mean
LE01	0930	Temp (°C)	28.4	27.7	27.7	27.7	27.6	27.5	--	--	27.8
		Cond (µS/cm)	3841	3835	3835	3834	3835	3833	--	--	3836
		pH	9.05	8.98	8.98	8.97	8.95	8.90	--	--	8.97
		DO (mg/L)	7.2	4.4	4.3	3.8	2.9	1.3	--	--	4.0
	1420	Temp (°C)	30.5	28.0	27.9	27.8	27.7	27.5	--	--	28.2
		Cond (µS/cm)	3919	3844	3835	3836	3836	3840	--	--	3852
		pH	9.16	9.01	8.95	8.94	8.93	8.97	--	--	8.99
		DO (mg/L)	14.2	5.5	3.8	3.5	3.0	3.6	--	--	5.6
LE02	0824	Temp (°C)	27.6	27.5	27.5	27.5	27.5	27.5	27.5	--	27.5
		Cond (µS/cm)	3827	3829	3827	3827	3827	3828	3828	--	3828
		pH	8.98	8.95	8.94	8.94	8.94	8.94	8.94	--	8.95
		DO (mg/L)	4.2	3.1	2.6	2.5	2.5	2.5	2.3	--	2.8
	1400	Temp (°C)	29.5	28.1	27.8	27.6	27.5	27.5	27.5	--	27.9
		Cond (µS/cm)	3830	3836	3831	3832	3832	3832	3832	--	3832
		pH	9.14	9.00	8.93	8.88	8.88	8.88	8.87	--	8.94
		DO (mg/L)	14.2	6.6	3.3	2.1	2.1	1.9	1.8	--	4.6
LE03	0810	Temp (°C)	27.7	27.6	27.7	27.6	27.6	--	--	--	27.6
		Cond (µS/cm)	3815	3816	3818	3819	3820	--	--	--	3818
		pH	8.99	8.95	8.95	8.95	8.93	--	--	--	8.95
		DO (mg/L)	4.6	3.7	3.4	3.2	2.6	--	--	--	3.5
	1350	Temp (°C)	31.1	29.9	27.7	27.6	26.6	--	--	--	28.6
		Cond (µS/cm)	3900	3816	3818	3831	3830	--	--	--	3839
		pH	9.08	8.86	8.87	8.88	8.88	--	--	--	8.91
		DO (mg/L)	12.3	2.6	2.5	2.6	2.0	--	--	--	4.4
Lakeshore Sonde	0920	Temp (°C)	28.0	27.6	27.6	27.5	27.5	27.5	27.5	--	27.6
		Cond (µS/cm)	3834	3832	3832	3833	3833	3833	3834	--	3833
		pH	9.02	8.92	8.91	8.91	8.91	8.91	8.90	--	8.93
		DO (mg/L)	6.4	2.6	2.3	2.1	2.1	2.1	1.7	--	2.8
	1415	Temp (°C)	31.4	28.3	27.9	27.7	27.6	27.6	27.5	--	28.3
		Cond (µS/cm)	3850	3845	3837	3835	3834	3834	3834	--	3838
		pH	9.20	8.99	8.95	8.90	8.89	8.89	8.89	--	8.96
		DO (mg/L)	6.3	6.2	4.2	2.3	2.1	1.9	1.9	--	3.6
Grand Ave Sonde	0913	Temp (°C)	28.0	27.6	27.6	27.5	27.5	27.5	27.5	--	27.6
		Cond (µS/cm)	3793	3828	3823	3830	3831	3831	3832	--	3824
		pH	8.97	8.99	8.91	8.91	8.91	8.91	8.90	--	8.93
		DO (mg/L)	5.4	3.8	2.7	2.6	2.6	2.3	2.1	--	3.1
	1405	Temp (°C)	31.4	28.0	27.7	27.5	27.5	27.5	27.4	--	28.1
		Cond (µS/cm)	3970	3851	3833	3832	3832	3832	3833	--	3855
		pH	9.26	8.97	8.89	8.88	8.87	8.86	8.87	--	8.94
		DO (mg/L)	18.9	5.1	2.1	1.9	1.5	1.4	1.2	--	4.6

Table 2. Lake Elsinore *In* situ Water Column Profile – August 21, 2017

Site	Time	Measure	Surface	1 m	2 m	3 m	4 m	5 m	6 m	7 m	Water Column Mean
LE01	0940[a]	Temp (°C)	26.1	26.1	26.1	26.1	26.0	25.5	--	--	26.0
		Cond (µS/cm)	4027	4029	4030	4030	4029	4029	--	--	4029
		pH	8.74	8.70	8.67	8.66	8.65	8.62	--	--	8.67
		DO (mg/L)	9.0	7.0	6.0	5.6	5.2	4.8	--	--	6.3
	1420[b]	Temp (°C)	28.7	26.5	26.3	26.0	26.0	25.6	--	--	26.5
		Cond (µS/cm)	4063	4033	4032	4032	4032	4032	--	--	4037
		pH	8.83	8.62	8.60	8.56	8.56	8.51	--	--	8.61
		DO (mg/L)	15.4	5.8	5.1	3.5	3.5	2.2	--	--	5.9
LE02	0830[c]	Temp (°C)	25.3	25.7	25.7	25.7	25.7	25.7	25.7	--	25.6
		Cond (µS/cm)	4011	4019	4019	4023	4022	4023	4024	--	4020
		pH	8.64	8.65	8.64	8.64	8.64	8.63	8.32	--	8.59
		DO (mg/L)	5.3	5.2	5.0	5.0	4.9	4.6	4.5	--	4.9
	1410	Temp (°C)	29.3	26.2	25.9	25.8	25.8	25.7	--	--	26.5
		Cond (µS/cm)	4153	4027	4027	4028	4029	4030	--	--	4049
		pH	8.79	8.59	8.56	8.56	8.56	8.54	--	--	8.60
		DO (mg/L)	12.3	5.3	4.0	3.8	3.7	3.2	--	--	5.4
LE03	0815	Temp (°C)	25.9	26.0	26.0	26.0	26.0	--	--	--	26.0
		Cond (µS/cm)	4015	4017	4020	4022	4022	--	--	--	4019
		pH	8.61	8.61	8.61	8.61	8.61	--	--	--	8.61
		DO (mg/L)	4.8	4.7	4.6	4.5	4.5	--	--	--	4.6
	1400	Temp (°C)	27.8	26.9	26.3	26.2	26.1	--	--	--	26.7
		Cond (µS/cm)	4006	4015	4025	4025	4025	--	--	--	4019
		pH	8.83	8.58	8.56	8.54	8.52	--	--	--	8.61
		DO (mg/L)	17.3	7.2	5.7	4.4	4.0	--	--	--	7.7
Lakeshore Sonde	0923	Temp (°C)	25.6	25.5	25.6	25.6	25.5	25.5	25.5	--	25.5
		Cond (µS/cm)	4021	4023	4024	4025	4026	4026	4026	--	4024
		pH	8.66	8.63	8.63	8.63	8.62	8.62	8.62	--	8.63
		DO (mg/L)	6.2	4.7	4.6	4.5	4.4	4.2	4.1	--	4.7
	NM	Temp (°C)	--	--	--	--	--	--	--	--	--
		Cond (µS/cm)	--	--	--	--	--	--	--	--	--
		pH	--	--	--	--	--	--	--	--	--
		DO (mg/L)	--	--	--	--	--	--	--	--	--
Grand Ave Sonde	0930	Temp (°C)	26.0	25.9	25.9	25.8	25.7	25.7	--	--	25.8
		Cond (µS/cm)	4023	4023	4024	4024	4026	4026	--	--	4024
		pH	8.72	8.68	8.67	8.66	8.63	8.62	--	--	8.66
		DO (mg/L)	8.2	6.6	5.9	5.5	4.5	4.1	--	--	5.8
	NM	Temp (°C)	--	--	--	--	--	--	--	--	--
		Cond (µS/cm)	--	--	--	--	--	--	--	--	--
		pH	--	--	--	--	--	--	--	--	--
		DO (mg/L)	--	--	--	--	--	--	--	--	--

[a] Bottom measurement taken at 4.8m
[b] Bottom measurement taken at 4.5m
[c] Bottom measurement taken at 5.5m
NM Measurements not taken

Table 3. Lake Elsinore *In* situ Water Column Profile – September 21, 2017

Site	Time	Measure	Surface	1 m	2 m	3 m	4 m	5 m	6 m	7 m	Water Column Mean
LE01	0925	Temp (°C)	24.0	24.0	24.0	24.0	24.0	24.0	--	--	24.0
		Cond (µS/cm)	4214	4216	4216	4216	4217	4214	--	--	4216
		pH	9.06	9.06	9.06	9.05	9.05	8.98	--	--	9.00
		DO (mg/L)	6.1	6.1	5.8	5.6	5.5	1.9	--	--	5.2
	1555	Temp (°C)	23.8	23.8	23.8	23.8	23.8	23.8	--	--	23.8
		Cond (µS/cm)	4219	4220	4220	4220	4220	4220	--	--	4219
		pH	9.02	9.02	9.02	9.01	9.02	9.02	--	--	9.00
		DO (mg/L)	5.8	5.7	5.5	5.2	5.3	5.4	--	--	5.5
LE02	0825	Temp (°C)	23.5	23.5	23.5	23.5	23.5	23.5	23.5	--	23.5
		Cond (µS/cm)	4213	4213	4213	4213	4214	4214	4214	--	4213
		pH	9.02	9.02	9.02	9.02	9.02	9.02	8.99	--	9.00
		DO (mg/L)	4.3	4.2	4.2	4.2	4.2	4.2	0.3	--	3.6
	1540	Temp (°C)	23.7	23.7	23.7	23.7	23.7	23.7	23.6	--	23.7
		Cond (µS/cm)	4214	4215	4214	4215	4215	4219	4221	--	4216
		pH	9.03	9.03	9.03	9.03	9.03	9.03	8.96	--	9.00
		DO (mg/L)	5.8	5.8	5.7	5.7	5.7	5.7	0.35	--	5.0
LE03	0730	Temp (°C)	23.3	23.3	23.3	23.3	23.3	--	--	--	23.3
		Cond (µS/cm)	4199	4064	4200	4065	4066	--	--	--	4119
		pH	9.03	9.03	9.03	9.03	9.04	--	--	--	9.00
		DO (mg/L)	3.9	3.8	3.8	3.8	3.7	--	--	--	3.8
	1530	Temp (°C)	23.4	23.4	23.4	23.4	23.4	--	--	--	23.4
		Cond (µS/cm)	4162	4167	4173	4178	4184	--	--	--	4173
		pH	8.98	8.99	9.00	9.00	9.01	--	--	--	9.00
		DO (mg/L)	5.8	5.7	5.7	5.7	5.7	--	--	--	5.7
Lakeshore Sonde	0810	Temp (°C)	23.6	23.6	23.6	23.6	23.6	23.6	23.6	--	23.6
		Cond (µS/cm)	4210	4211	4211	4211	4211	4102	4212	--	4195
		pH	9.04	9.04	9.04	9.04	9.04	9.04	9.04	--	9.00
		DO (mg/L)	4.3	4.3	4.3	4.3	4.3	4.2	4.2	--	4.3
	NM	Temp (°C)	--	--	--	--	--	--	--	--	--
		Cond (µS/cm)	--	--	--	--	--	--	--	--	--
		pH	--	--	--	--	--	--	--	--	--
		DO (mg/L)	--	--	--	--	--	--	--	--	--
Grand Ave Sonde[a]	0750	Temp (°C)	23.6	23.5	23.5	23.5	23.5	23.5	23.5	--	23.5
		Cond (µS/cm)	4204	4205	4205	4206	4206	4207	4207	--	4206
		pH	9.01	9.01	9.01	9.01	9.01	9.01	9.01	--	9.00
		DO (mg/L)	4.0	4.0	4.0	3.9	4.0	4.0	0.26	--	3.4
	NM	Temp (°C)	--	--	--	--	--	--	--	--	--
		Cond (µS/cm)	--	--	--	--	--	--	--	--	--
		pH	--	--	--	--	--	--	--	--	--
		DO (mg/L)	--	--	--	--	--	--	--	--	--

[a] Bottom measurement taken at 5.5m
NM Measurements not taken

Table 4. Water Chemistry for Lake Elsinore – July 20, 2017

Method	Compound	Units	RL	Basin Plan or TMDL Target	Depth Integrated or Surface Sample	LE02
SM 2540C	Total Dissolved Solids	mg/L	10-40	2000[3]	Depth Integrated	**2300**
SM 4500S2 D	Sulfide	mg/L	0.1	NA	Depth Integrated	ND
EPA 300.0	Nitrate as N	mg/L	0.2	NA	Depth Integrated	ND
SM 4500NO2 B	Nitrite as N	mg/L	0.1	NA	Depth Integrated	ND
EPA 351.2	Kjeldahl Nitrogen	mg/L	0.1-0.2	NA	Depth Integrated	4.7
	Total Nitrogen[a]	mg/L	--	0.75[b1]	Depth Integrated	4.7
SM4500NH3H	Ammonia-Nitrogen	mg/L	0.1	CMC: 1.43[c1] CCC: 0.23[c1]	Depth Integrated	0.30
SM 4500P E	Ortho Phosphate Phosphorus	mg/L	0.05	NA	Depth Integrated	0.026
EPA 365.1	Total Phosphorus	mg/L	0.01	0.1[b1]	Depth Integrated	0.049
EPA 10200 H	Chlorophyll-a	µg/L	1.0	25[d1], 40[d2]	Surface (0-2m)	104
EPA 10200 H	Chlorophyll-a	µg/L	1.0	25[d1], 40[d2]	Depth Integrated	138
LC-MS/MS	Total Microcystin	µg/L	0.01	NA	Surface (0-2m)	67.4
					Depth Integrated	2.33
LC-MS/MS	Total Nodularin	µg/L	0.01	NA	Surface (0-2m)	ND
					Depth Integrated	ND
LC-MS/MS	Total Anatoxin-a	µg/L	0.05	NA	Surface (0-2m)	ND
					Depth Integrated	ND
LC-MS/MS	Total Cylindrospermopsin	µg/L	0.28	NA	Surface (0-2m)	ND
					Depth Integrated	ND

Notes:

[a] - Total Nitrogen = TKN+NO2+NO3
[b] - Annual average
[c] - Values are site specific dependent upon pH and temperature recorded at each location
[d] - Summer average
[1] – 2020 TMDL Target, based on Table 5-9n of 2004 TMDL
[2] – 2015 TMDL Target, based on Table 5-9n of 2004 TMDL
[3] – Santa Ana Region Basin Plan Objective
NA – Not applicable/ available
ND – Not detected
Bold Underline - Indicates exceedance of Basin Plan

Table 5. Water Chemistry for Lake Elsinore – August 21, 2017

Method	Compound	Units	RL	Basin Plan or TMDL Target	Depth Integrated or Surface Sample	LE02
SM 2540C	Total Dissolved Solids	mg/L	20-40	2000[3]	Depth Integrated	**2400**
SM 4500S2 D	Sulfide	mg/L	0.1	NA	Depth Integrated	ND
EPA 300.0	Nitrate as N	mg/L	0.2	NA	Depth Integrated	ND
SM 4500NO2 B	Nitrite as N	mg/L	0.1	NA	Depth Integrated	ND
EPA 351.2	Kjeldahl Nitrogen	mg/L	0.1-0.2	NA	Depth Integrated	7.2
	Total Nitrogen[a]	mg/L	--	0.75[b1]	Depth Integrated	7.2
SM4500NH3H	Ammonia-Nitrogen	mg/L	0.1	CMC: 2.70[c1] CCC: 0.46[c1]	Depth Integrated	0.32
SM 4500P E	Ortho Phosphate Phosphorus	mg/L	0.05	NA	Depth Integrated	ND
EPA 365.1	Total Phosphorus	mg/L	0.01	0.1[b1]	Depth Integrated	0.15
EPA 10200 H	Chlorophyll-a	µg/L	1.0	25[d1], 40[d2]	Surface (0-2m)	153
EPA 10200 H	Chlorophyll-a	µg/L	1.0	25[d1], 40[d2]	Depth Integrated	110
LC-MS/MS	Total Microcystin	µg/L	0.001	NA	Surface (0-2m)	4.90
					Depth Integrated	2.82
LC-MS/MS	Total Nodularin	µg/L	0.001	NA	Surface (0-2m)	ND
					Depth Integrated	ND
LC-MS/MS	Total Anatoxin-a	µg/L	0.05	NA	Surface (0-2m)	ND
					Depth Integrated	0.30
LC-MS/MS	Total Cylindrospermopsin	µg/L	0.28	NA	Surface (0-2m)	ND
					Depth Integrated	ND

Notes:
[a] - Total Nitrogen = TKN+NO2+NO3
[b] - Annual average
[c] - Values are site specific dependent upon pH and temperature recorded at each location
[d] - Summer average
[1] – 2020 TMDL Target, based on Table 5-9n of 2004 TMDL
[2] – 2015 TMDL Target, based on Table 5-9n of 2004 TMDL
[3] – Santa Ana Region Basin Plan Objective
NA – Not applicable/ available
ND – Not detected
Bold Underline - Indicates exceedance of Basin Plan

Table 6. Water Chemistry for Lake Elsinore – September 21, 2017

Method	Compound	Units	RL	Basin Plan or TMDL Target	Depth Integrated or Surface Sample	LE02
SM 2540C	Total Dissolved Solids	mg/L	20-40	2000[3]	Depth Integrated	**2300**
SM 4500S2 D	Sulfide	mg/L	0.1	NA	Depth Integrated	ND
EPA 300.0	Nitrate as N	mg/L	0.2	NA	Depth Integrated	ND
SM 4500NO2 B	Nitrite as N	mg/L	0.1	NA	Depth Integrated	ND
EPA 351.2	Kjeldahl Nitrogen	mg/L	0.1-0.2	NA	Depth Integrated	5.2
	Total Nitrogen[a]	mg/L	--	0.75[b1]	Depth Integrated	5.2
SM4500NH3H	Ammonia-Nitrogen	mg/L	0.1	CMC: 1.32[c1] CCC: 0.27[c1]	Depth Integrated	ND
SM 4500P E	Ortho Phosphate Phosphorus	mg/L	0.05	NA	Depth Integrated	ND
EPA 365.1	Total Phosphorus	mg/L	0.01	0.1[b1]	Depth Integrated	0.14
EPA 10200 H	Chlorophyll-a	µg/L	1.0	25[d1], 40[d2]	Surface (0-2m)	225
EPA 10200 H	Chlorophyll-a	µg/L	1.0	25[d1], 40[d2]	Depth Integrated	199
LC-MS/MS	Total Microcystin	µg/L	0.001	NA	Surface (0-2m)	10.3
					Depth Integrated	10.3
LC-MS/MS	Total Nodularin	µg/L	0.001	NA	Surface (0-2m)	ND
					Depth Integrated	ND
LC-MS/MS	Total Anatoxin-a	µg/L	0.001	NA	Surface (0-2m)	ND
					Depth Integrated	ND
LC-MS/MS	Total Cylindrospermopsin	µg/L	0.001	NA	Surface (0-2m)	ND
					Depth Integrated	ND

Notes:
[a] - Total Nitrogen = TKN+NO2+NO3
[b] - Annual average
[c] - Values are site specific dependent upon pH and temperature recorded at each location
[d] - Summer average
[1] – 2020 TMDL Target, based on Table 5-9n of 2004 TMDL
[2] – 2015 TMDL Target, based on Table 5-9n of 2004 TMDL
[3] – Santa Ana Region Basin Plan Objective
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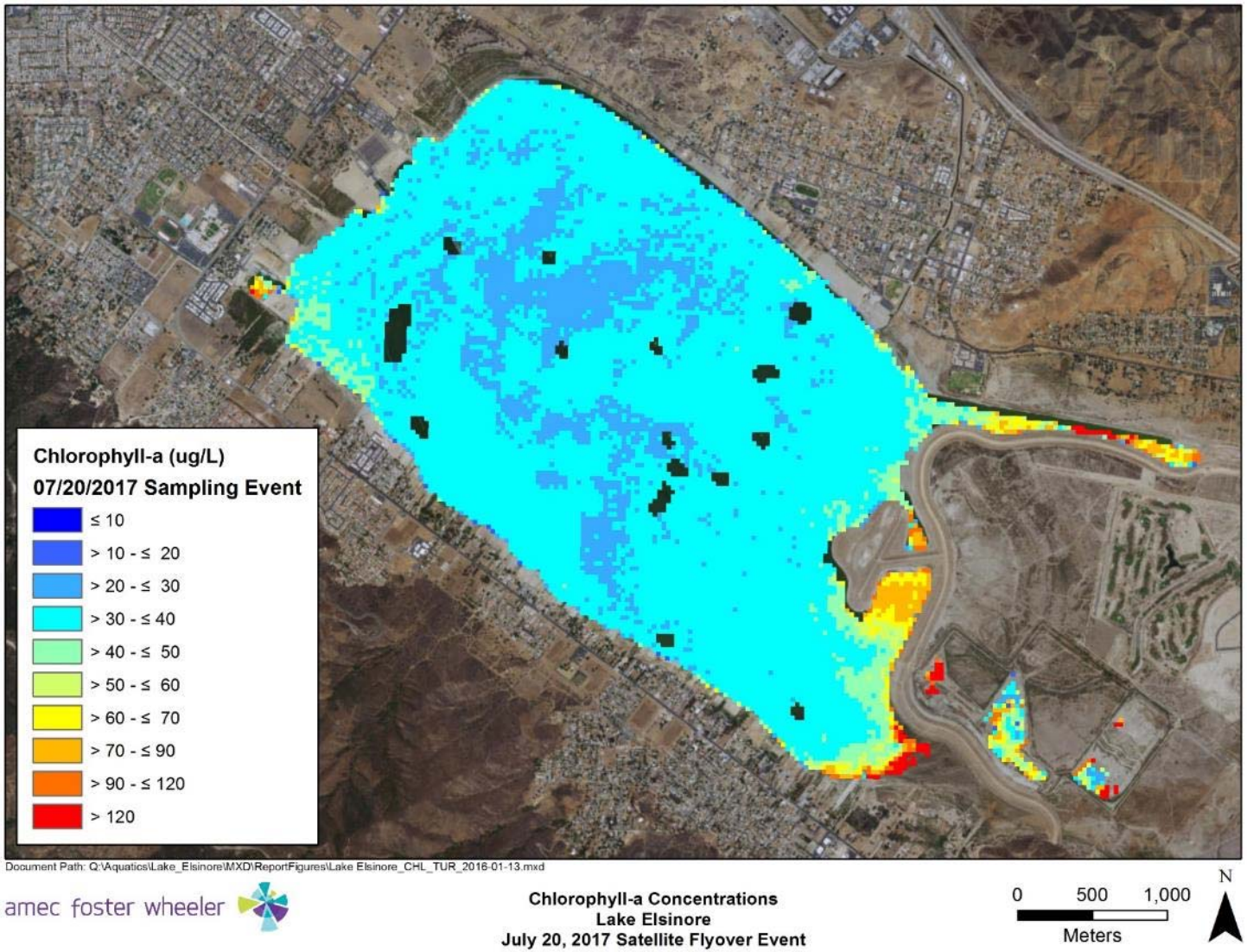

Figure 2. Satellite Imagery of Lake Elsinore Chlorophyll-a Concentrations July 20, 2017

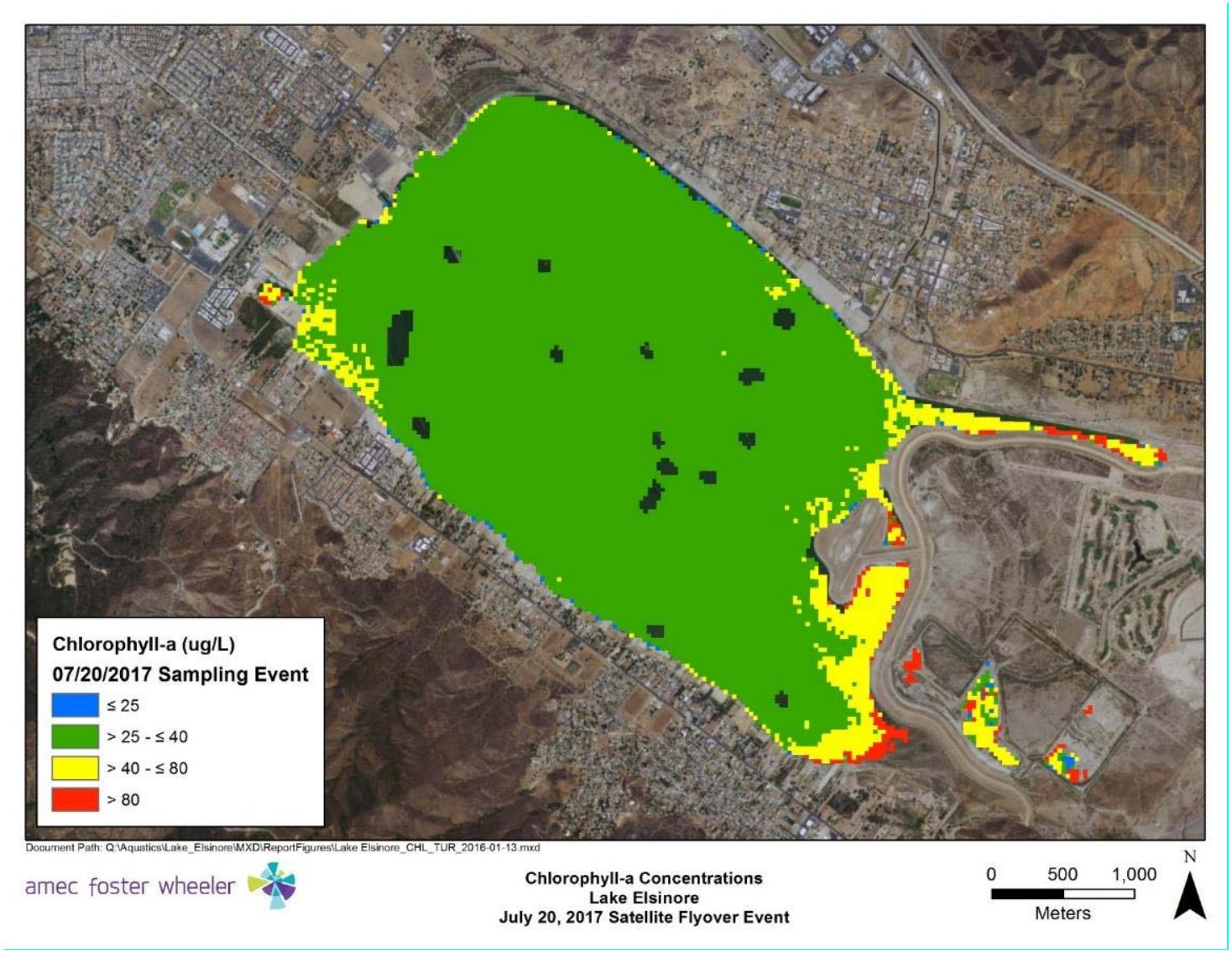

Figure 3. Satellite Imagery of Lake Elsinore Chlorophyll-a Concentrations based on TMDL Targets July 20, 2017

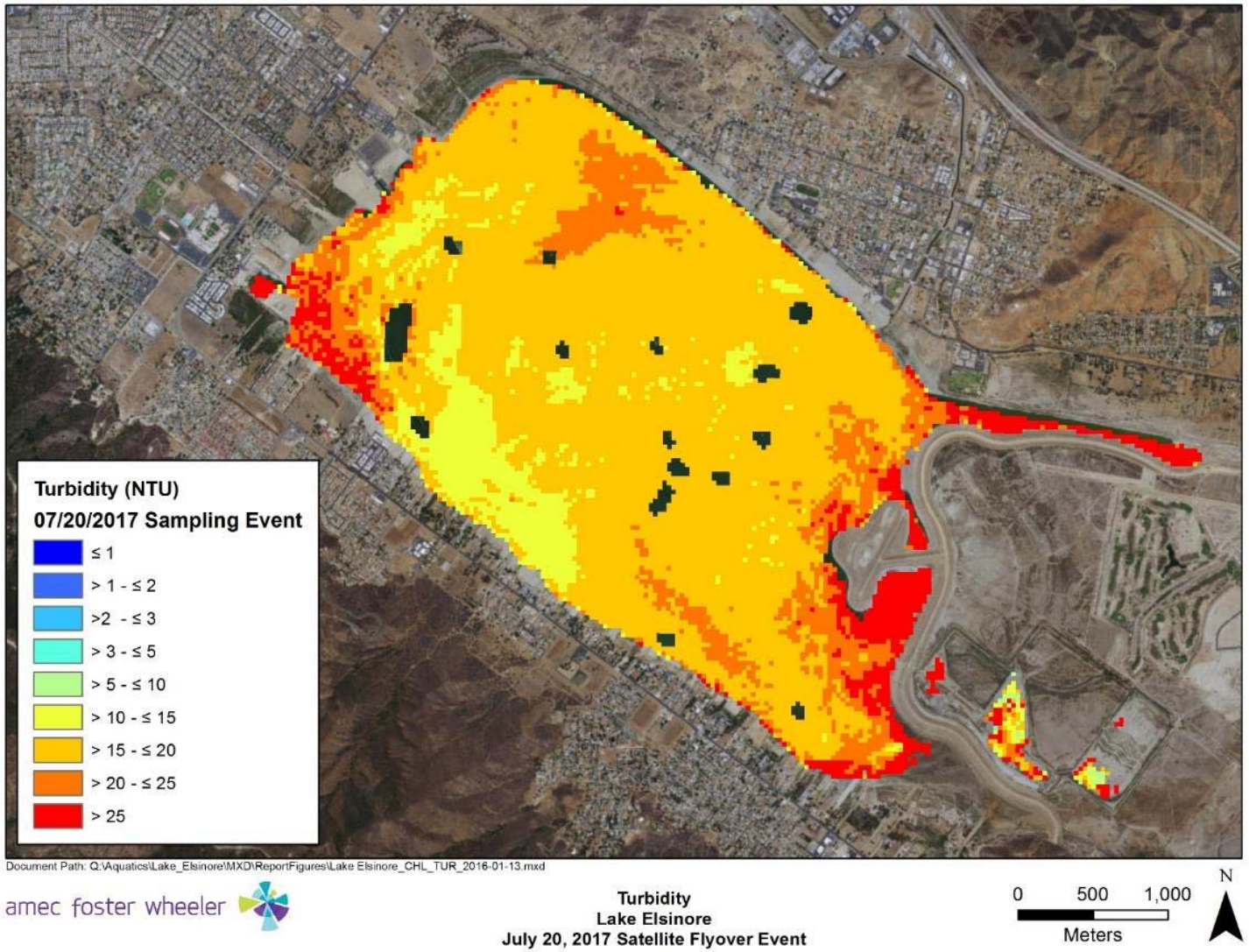

Figure 4. Satellite Imagery of Lake Elsinore Turbidity Measurements July 20, 2017

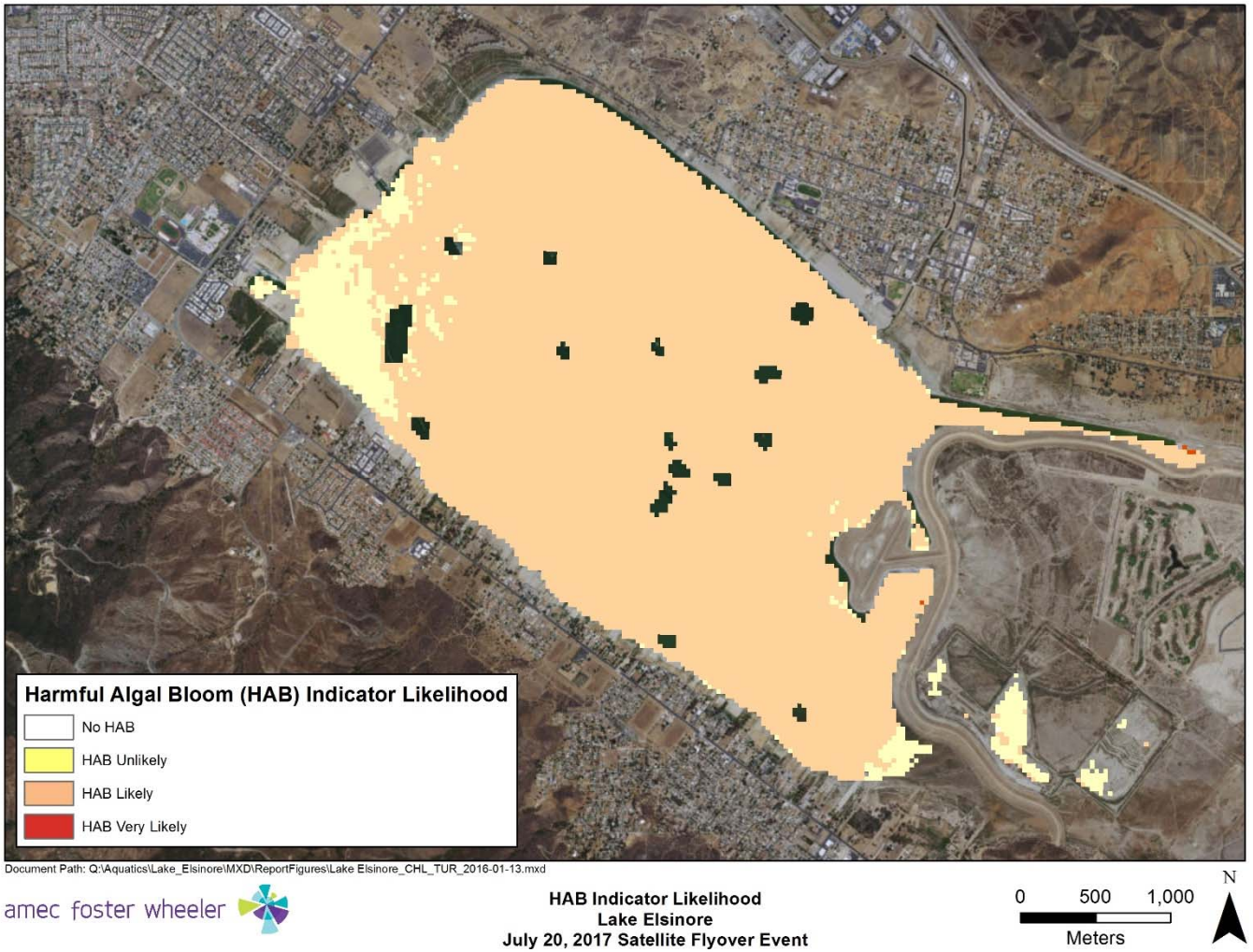

Figure 5. Satellite Imagery of Lake Elsinore HAB Indicator Likelihood July 20, 2017

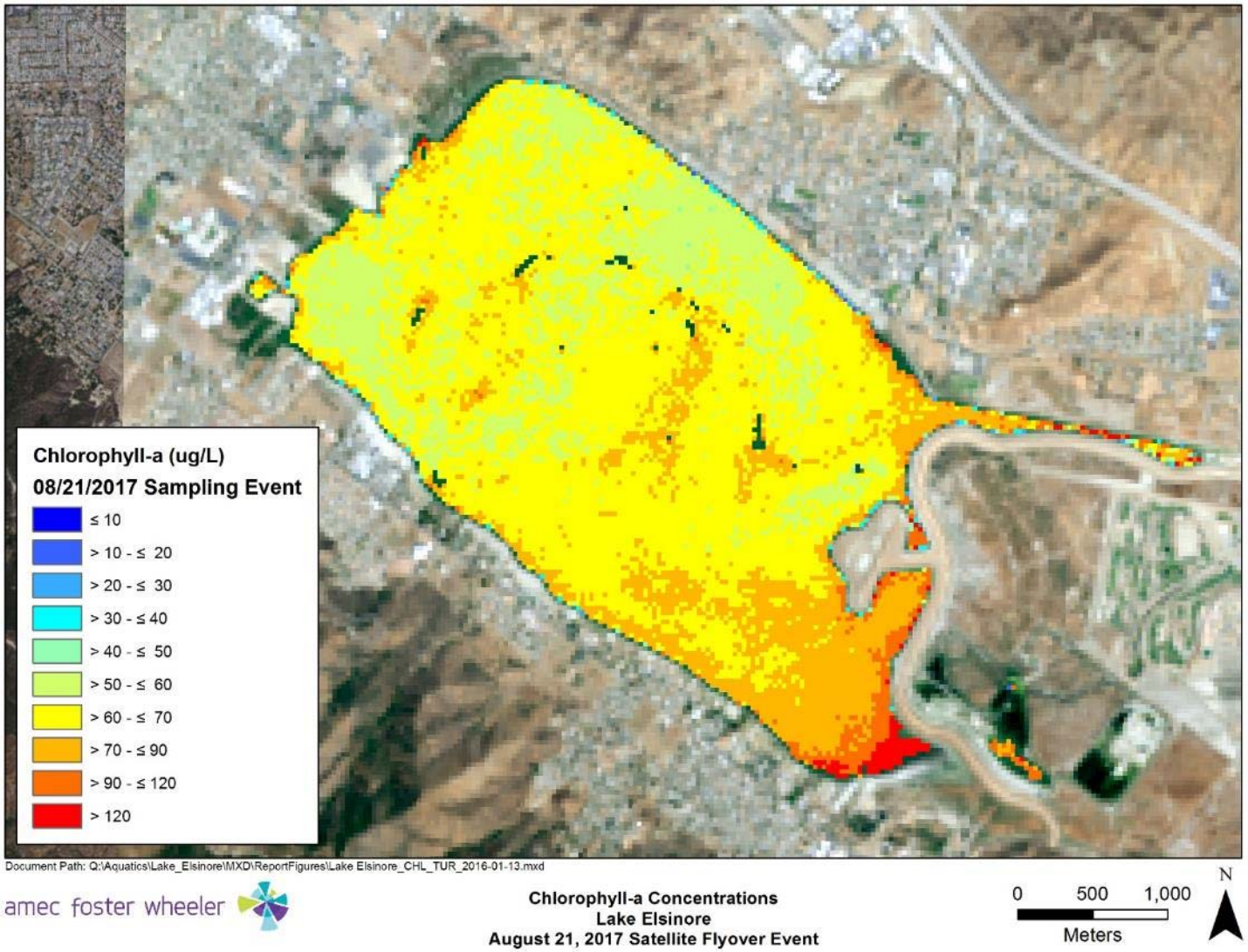

Figure 6. Satellite Imagery of Lake Elsinore Chlorophyll-a Concentrations August 21, 2017

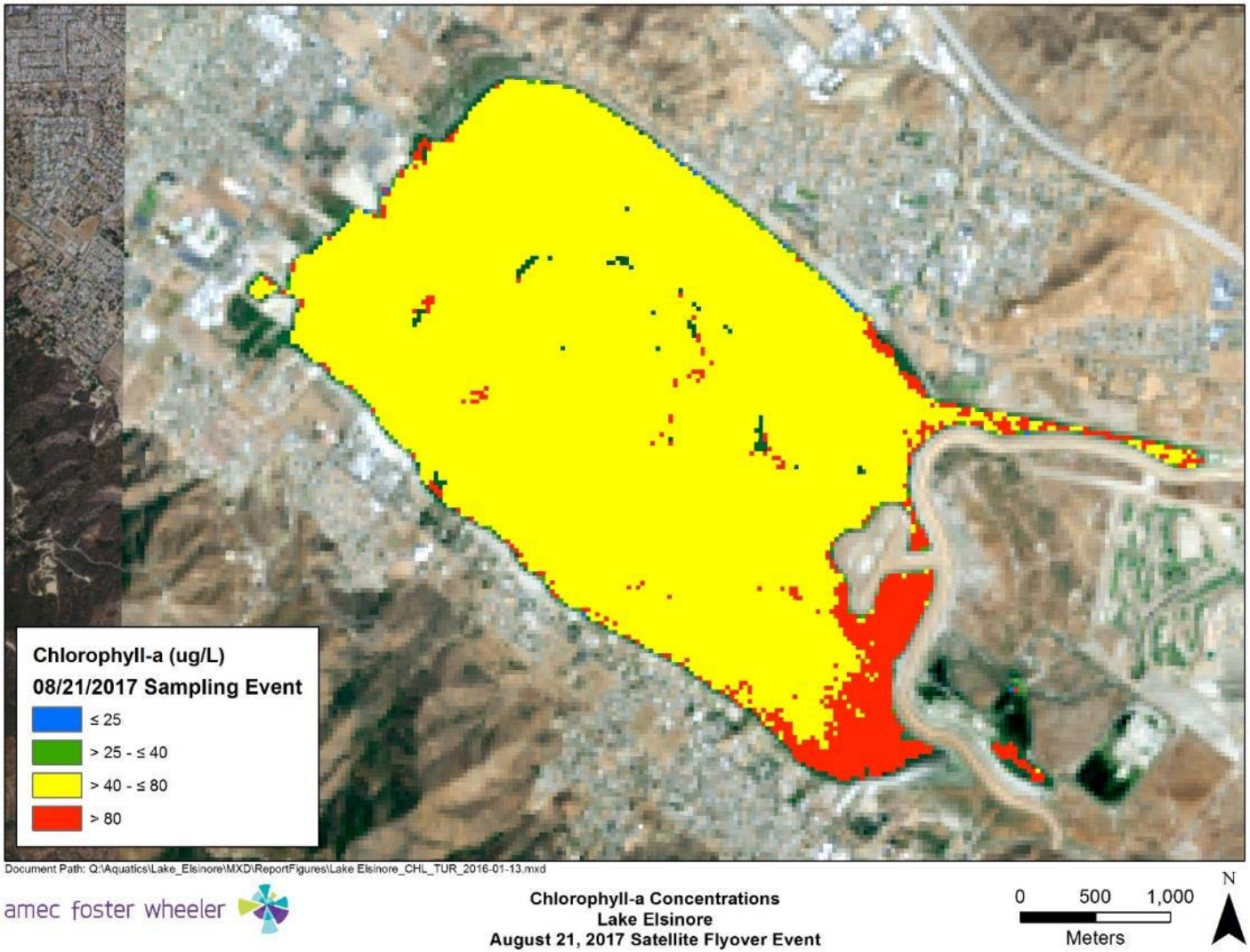

Figure 7. Satellite Imagery of Lake Elsinore Chlorophyll-a Concentrations based on TMDL Targets August 21, 2017

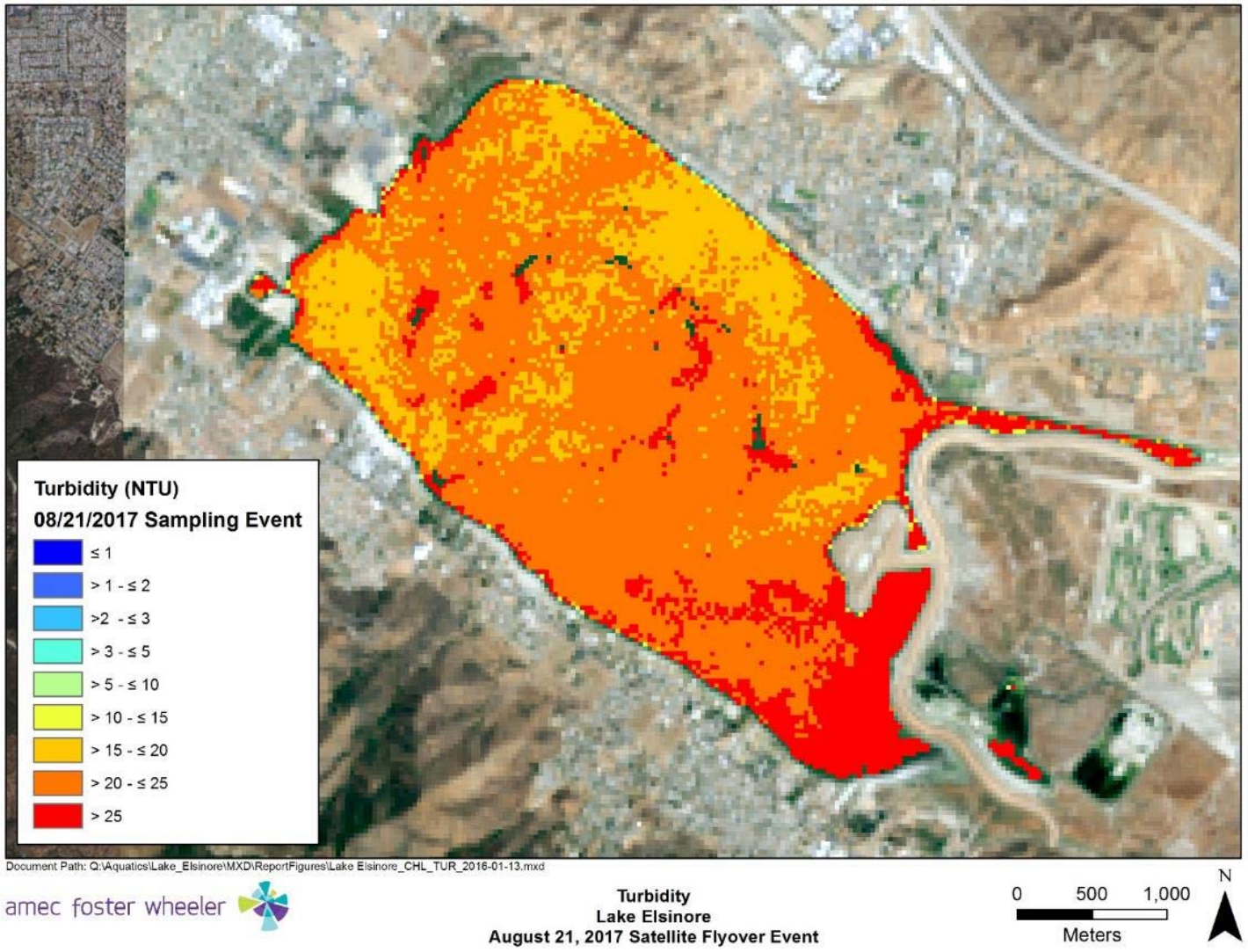

Figure 8. Satellite Imagery of Lake Elsinore Turbidity Measurements August 21, 2017

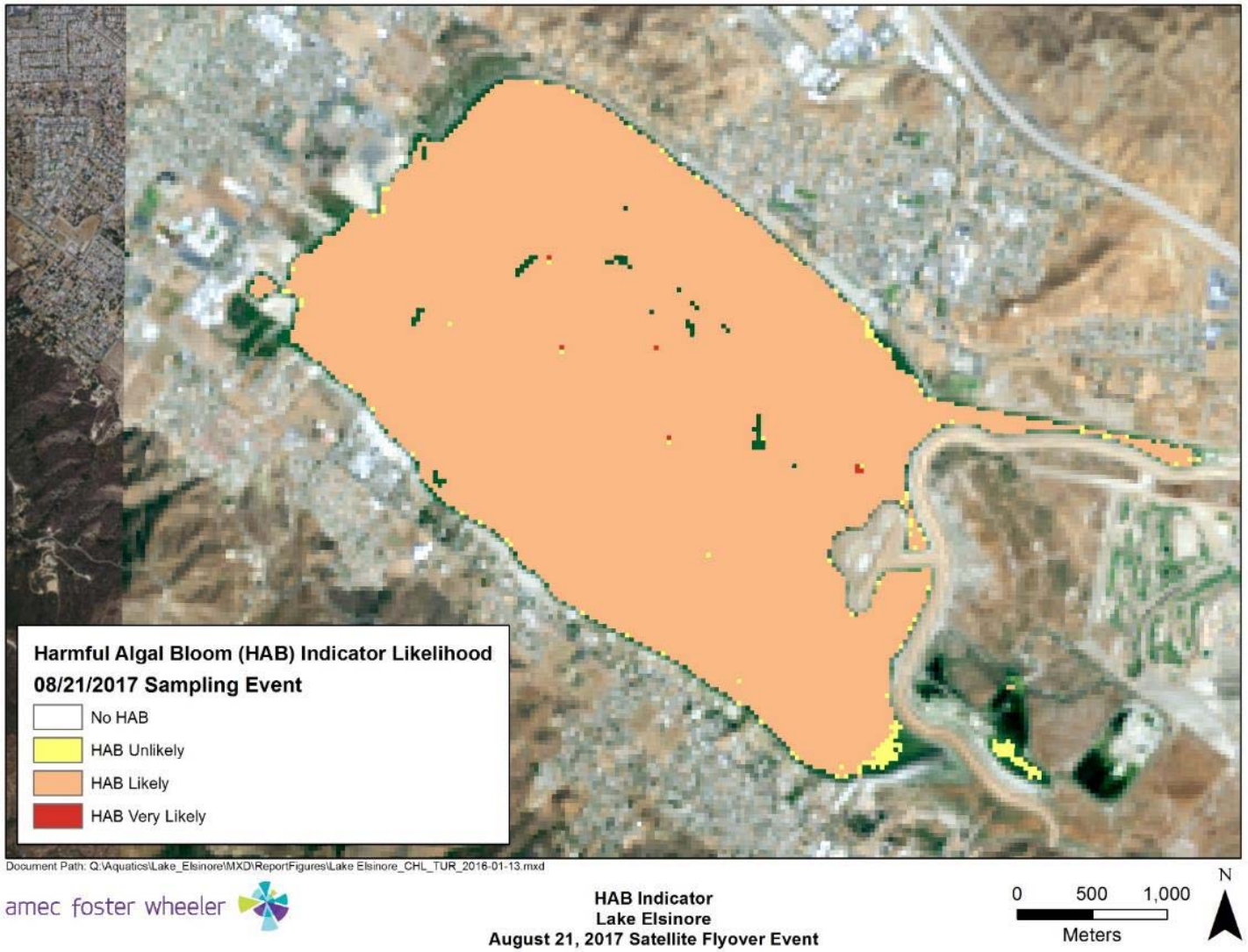

Figure 9. Satellite Imagery of Lake Elsinore HAB Indicator Likelihood August 21, 2017

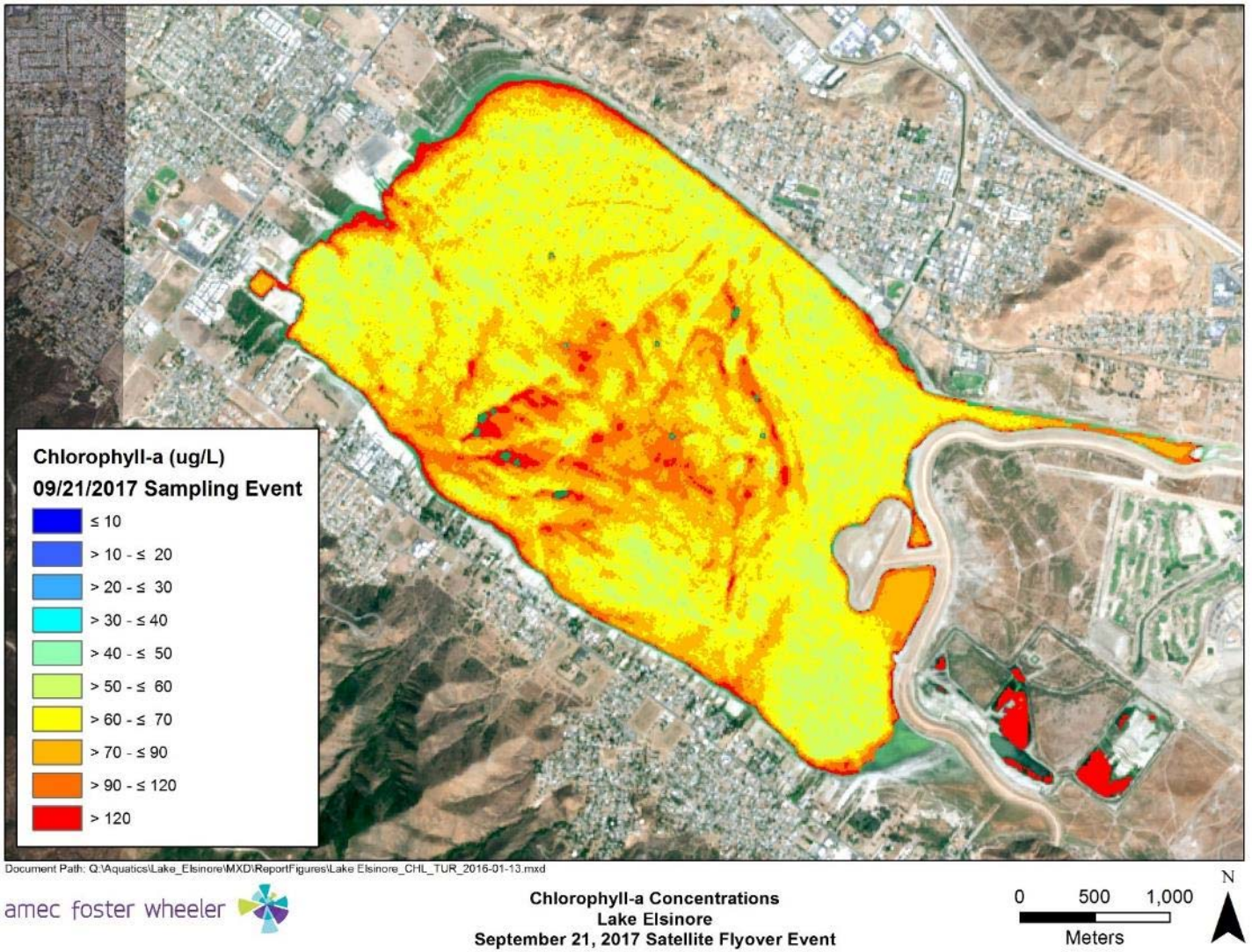

Figure 9. Satellite Imagery of Lake Elsinore Chlorophyll-a Concentrations September 21, 2017

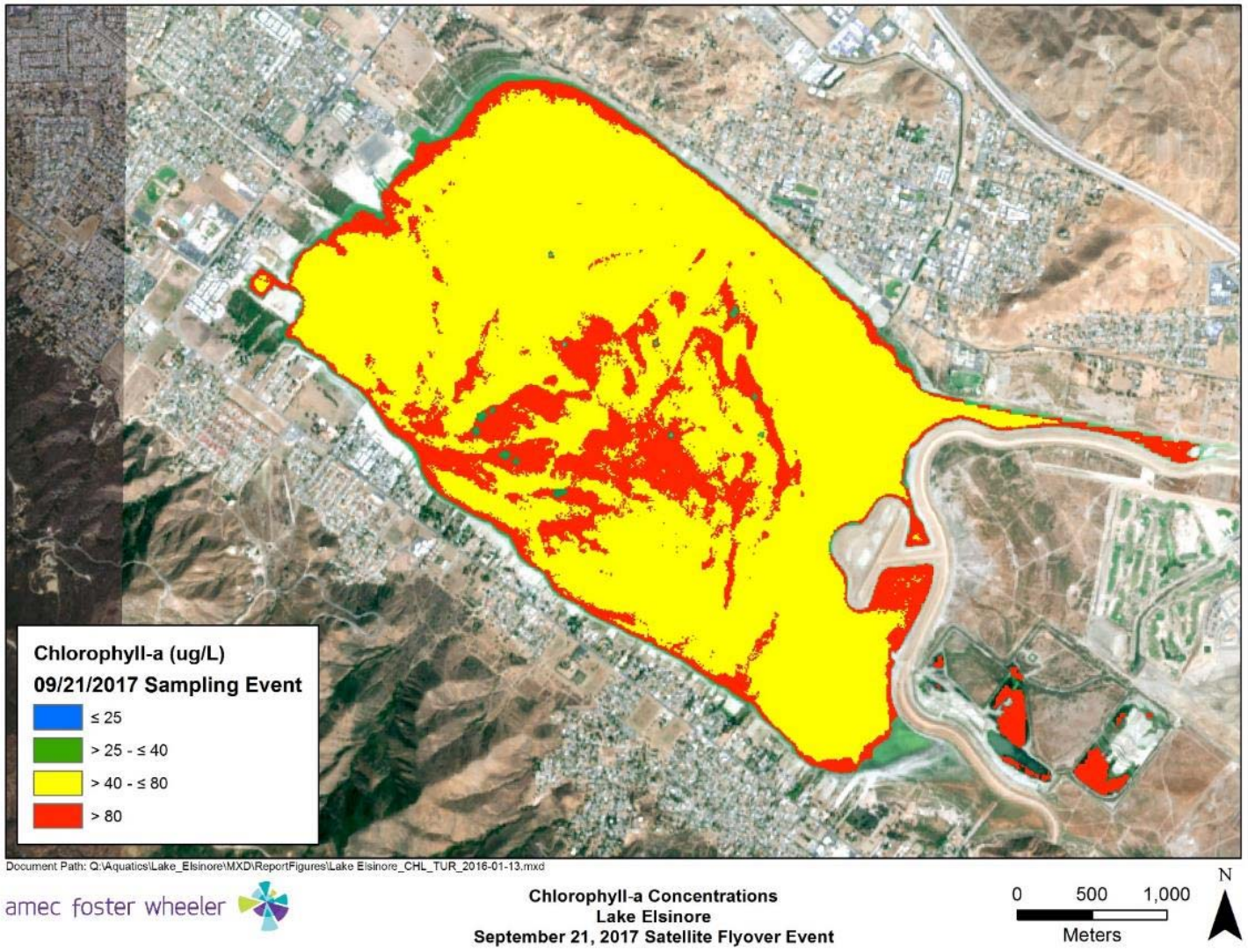

Figure 10. Satellite Imagery of Lake Elsinore Chlorophyll-a Concentrations based on TMDL Targets September 21, 2017

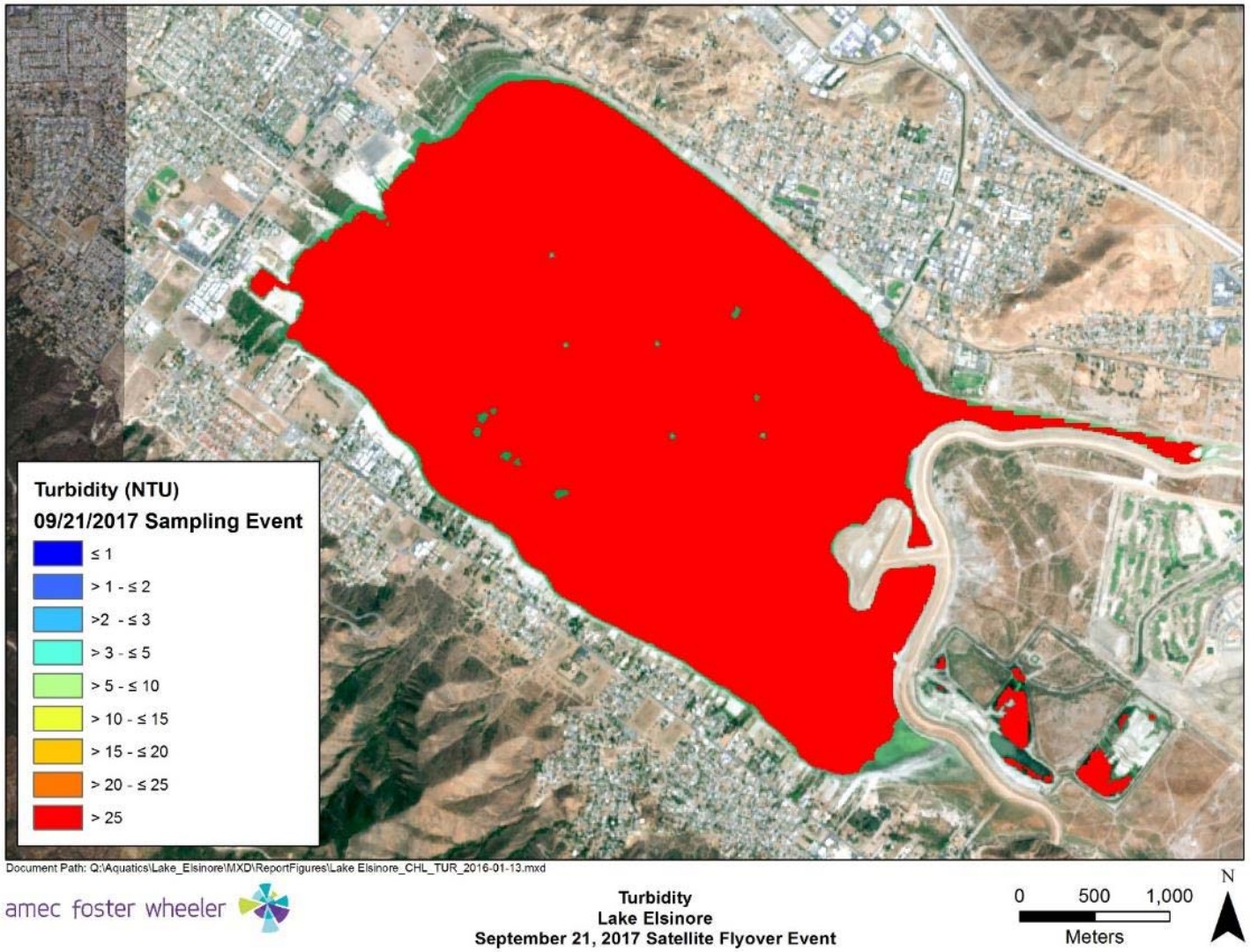

Figure 11. Satellite Imagery of Lake Elsinore Turbidity Measurements September 21, 2017

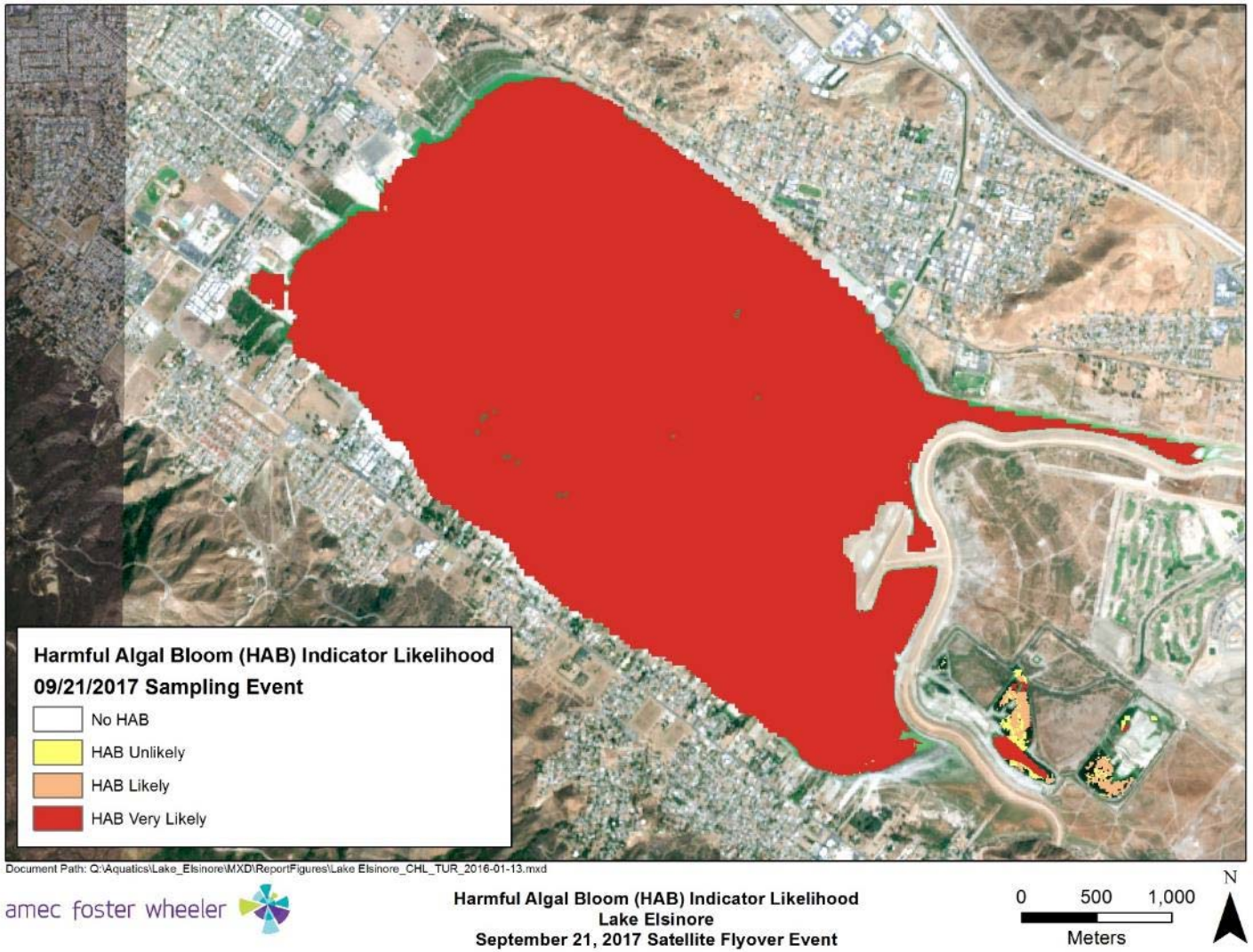

Figure 12. Satellite Imagery of Lake Elsinore HAB Indicator Likelihood September 21, 2017

Canyon Lake

Monitoring Dates
August 21, 2017. Year-round bi-monthly monitoring is required for Canyon Lake.

Locations
Four locations were sampled in Canyon Lake: Sites CL07, CL08, CL09 and CL10. These sites are depicted in Figure 13.

Weather
August – Slightly cloudy and warm, high of 86°F. Partial solar eclipse around 10:20 am.

Water Quality Monitoring Activities
Water quality monitoring was successfully performed in accordance with the TMDL Work Plan for the August 21th event and there were no equipment failures or delays. In addition to the routine water chemistry samples, collection of samples for analysis of cyanobacteria toxins (cyanotoxin) was initiated in June 2017 at the request of the TMDL Task Force. These samples were collected at the same TMDL locations and in the same manner as analytical chemistry samples. Field monitoring included the following activities at each location or where noted:

- Vertical water column profile measurements of temperature, conductivity, pH, and dissolved oxygen at each in-lake site;
- Water chemistry sample collection at Sites CL07, CL08, CL09 and CL10 analyzed for Total Dissolved Solids, Sulfide, Nitrate as N, Nitrite as N, Kjeldahl Nitrogen, Total Nitrogen, Ammonia-Nitrogen, Ortho Phosphate Phosphorus, Total Phosphorus, Total and Dissolved Aluminum;
- Chlorophyll-a surface and depth-integrated samples at CL07, CL08, CL09 and CL10;
- Cyanobacteria toxins (Microcystin, Cylindrospermopsin, Anatoxin-a, Nodularin) depth integrated sample collection at CL07, CL08, CL09 and CL10. Surface (0-2 m) sample taken at CL07;
- Secchi disk measurements;
- Full water column vertical plankton tows with samples preserved and archived for potential assessment in the future as needed;
- Visual observations of lake conditions.

A summary of water quality profile data are presented in Table 7. Results of the water chemistry analyses are presented in Table 8.

Satellite imagery of chlorophyll-a, turbidity, and HAB probability based on remote sensing data are presented in Figures 14 through 17. Satellite chlorophyll-a concentrations in portions of the eastern arm of Canyon Lake are likely impacted by the narrowness of the water body, resulting in an “edge-effect” of the nearby land mass, the consequence of which can be artificially elevated chlorophyll-a concentrations.

Copies of field datasheets are provided in Appendix A.

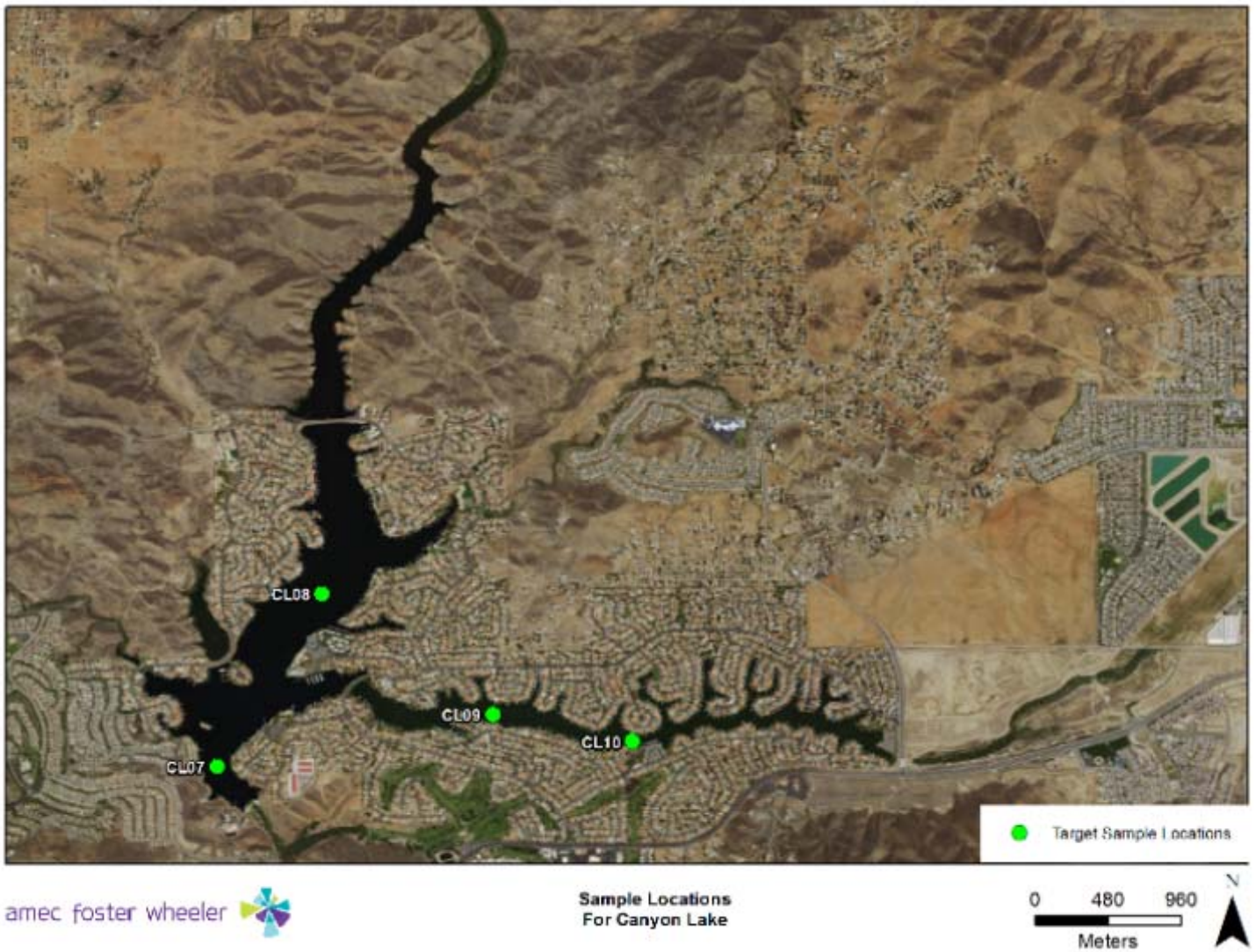

Figure 13. Canyon Lake Sampling Locations

Table 7. Canyon Lake *In situ* Water Column Profile – August 21, 2017

Site	Time	Measure	Surface	1 m	2 m	3 m	4 m	5 m	6 m	7 m	8 m	9 m	10 m	11 m	12 m	13 m	14 m	15 m	16 m	Water Column Mean - All	Water Column Mean - Epilimnion	Water Column Mean - Hypolimnion
CL07[a]	0945[a]	Temp (°C)	27.2	27.2	27.2	27.2	27.2	27.1	24.4	19.3	16.9	15.2	14.3	14.0	13.7	13.6	13.5	--	--	20.5	27.2	13.6
		Cond (µS/cm)	739	739	743	743	744	744	741	681	664	649	646	649	658	658	652	--	--	697	742	656
		pH	9.04	9.04	9.04	9.03	9.02	8.98	7.93	7.19	7.15	7.23	7.26	7.24	7.18	7.18	7.20	--	--	7.98	9.03	7.19
		DO (mg/L)	7.7	7.7	7.6	7.5	7.4	7.2	0.6	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.1	--	--	3.1	7.5	0.1
	1430[a]	Temp (°C)	28.9	28.2	27.6	27.3	27.2	27.1	24.7	19.8	17.0	15.2	14.3	14.0	13.8	13.7	13.6	--	--	20.8	27.7	13.7
		Cond (µS/cm)	747	746	745	744	745	744	747	687	661	645	647	647	660	661	662	--	--	699	745	661
		pH	9.11	9.18	9.15	9.09	9.02	9.03	7.78	7.17	7.13	7.23	7.24	7.23	7.17	7.17	7.16	--	--	7.99	9.10	7.17
		DO (mg/L)	10.2	11.0	10.6	9.8	9.0	9.2	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	--	--	4.1	9.9	0.2
CL08	0900	Temp (°C)	27.3	27.3	27.3	27.3	27.3	27.0	24.0	20.1	--	--	--	--	--	--	--	--	--	26.0	27.3	20.1
		Cond (µS/cm)	743	743	743	743	743	749	733	692	--	--	--	--	--	--	--	--	--	736	744	692
		pH	8.97	8.97	8.98	8.97	8.97	8.52	7.40	7.11	--	--	--	--	--	--	--	--	--	8.49	8.90	7.11
		DO (mg/L)	6.9	6.9	6.9	6.8	6.8	3.4	0.3	0.2	--	--	--	--	--	--	--	--	--	4.7	6.3	0.2
	1420	Temp (°C)	29.5	28.5	27.6	27.5	27.3	26.7	25.0	19.2	--	--	--	--	--	--	--	--	--	26.4	28.1	19.2
		Cond (µS/cm)	745	742	742	742	744	752	743	680	--	--	--	--	--	--	--	--	--	736	743	680
		pH	9.03	9.11	9.07	9.05	8.94	8.17	7.62	7.06	--	--	--	--	--	--	--	--	--	8.51	9.04	7.06
		DO (mg/L)	7.7	8.3	7.9	7.7	6.9	2.3	0.3	0.2	--	--	--	--	--	--	--	--	--	5.2	7.7	0.2
CL09	0810	Temp (°C)	26.8	26.8	26.8	26.8	26.4	22.9	18.9	--	--	--	--	--	--	--	--	--	--	25.1	26.7	18.9
		Cond (µS/cm)	903	902	903	903	941	993	1018	--	--	--	--	--	--	--	--	--	--	938	910	1018
		pH	8.96	8.95	8.96	8.96	8.11	7.04	7.03	--	--	--	--	--	--	--	--	--	--	8.29	8.79	7.03
		DO (mg/L)	7.3	7.1	7.1	7.1	1.5	0.3	0.2	--	--	--	--	--	--	--	--	--	--	4.4	6.0	0.2
	1358	Temp (°C)	28.1	27.1	26.8	26.7	26.5	23.4	19.3	--	--	--	--	--	--	--	--	--	--	25.4	27.0	19.3
		Cond (µS/cm)	898	901	907	908	926	991	1022	--	--	--	--	--	--	--	--	--	--	936	908	1022
		pH	9.09	9.05	8.93	8.88	8.14	7.00	6.97	--	--	--	--	--	--	--	--	--	--	8.29	8.82	6.97
		DO (mg/L)	8.6	8.1	7.4	7.0	2.7	0.3	0.2	--	--	--	--	--	--	--	--	--	--	4.9	6.8	0.2
CL10[b]	0724[b]	Temp (°C)	26.3	26.4	26.4	26.3	--	--	--	--	--	--	--	--	--	--	--	--	--	26.4	--	--
		Cond (µS/cm)	942	941	942	943	--	--	--	--	--	--	--	--	--	--	--	--	--	942	--	--
		pH	8.94	8.94	8.94	8.92	--	--	--	--	--	--	--	--	--	--	--	--	--	8.94	--	--
		DO (mg/L)	7.6	7.6	7.6	7.5	--	--	--	--	--	--	--	--	--	--	--	--	--	7.6	--	--
	1345[b]	Temp (°C)	29.0	27.8	26.8	26.6	--	--	--	--	--	--	--	--	--	--	--	--	--	27.6	--	--
		Cond (µS/cm)	888	922	938	935	--	--	--	--	--	--	--	--	--	--	--	--	--	921	--	--
		pH	9.06	9.17	8.93	7.01	--	--	--	--	--	--	--	--	--	--	--	--	--	8.54	--	--
		DO (mg/L)	9.3	10.0	8.0	8.7	--	--	--	--	--	--	--	--	--	--	--	--	--	9.0	--	--

[a] Bottom measurement taken at 13.5m

[b] Bottom measurement taken at 2.5m

Hypolimnion
Epilimnion
Thermocline

No Shading - Indicates that there is no stratification

Table 8. Canyon Lake Water Chemistry – August 21, 2017

Method	Compound	Units	RL	Basin Plan or TMDL Target	Depth Integrated or Surface Sample	CL07	CL08	CL09	CL10
SM 2540C	Total Dissolved Solids	mg/L	10-40	700	Depth Integrated	420	410	590	580
SM 4500S2 D	Sulfide	mg/L	0.1	NA	Depth Integrated	ND	ND	ND	ND
EPA 300.0	Nitrate as N	mg/L	0.2	10	Depth Integrated	ND	ND	ND	ND
SM 4500NO2 B	Nitrite as N	mg/L	0.1	NA	Depth Integrated	ND	ND	ND	ND
EPA 351.2	Kjeldahl Nitrogen	mg/L	0.1-0.2	NA	Depth Integrated	1.8	0.66	1.5	1.4
	Total Nitrogen[a]	mg/L	--	0.75[b1]	Depth Integrated	1.8	0.66	1.5	1.4
SM4500NH3H	Ammonia-Nitrogen	mg/L	0.1	CMC: 1.46-8.73[c1] CCC: 0.25-1.70[c1]	Depth Integrated	1.1	ND	0.3	ND
SM 4500P E	Ortho Phosphate Phosphorus	mg/L	0.05	NA	Depth Integrated	0.36	0.035	ND	ND
EPA 365.1	Total Phosphorus	mg/L	0.01	0.1[b1]	Depth Integrated	0.38	0.081	0.083	0.073
EPA 200.7	Total Aluminum	µg/L	100	NA	Depth Integrated	ND	ND	72	130
EPA 200.7	Dissolved Aluminum	µg/L	100	NA	Depth Integrated	ND	ND	ND	ND
EPA 10200 H	Chlorophyll-a	µg/L	1.0	25[b1], 40[b2]	Surface (0-2m)	21	24	39	46
EPA 10200 H	Chlorophyll-a	µg/L	1.0	25[b1], 40[b2]	Depth Integrated	37	55	87	47
LC-MS/MS	Total Microcystin	µg/L	0.001	NA	Surface (0-2m)	0.161	NS	NS	NS
					Depth Integrated	0.183	0.199	0.173	0.174
LC-MS/MS	Total Nodularin	µg/L	0.001	NA	Surface (0-2m)	ND	NS	NS	NS
					Depth Integrated	ND	ND	ND	ND
LC-MS/MS	Total Anatoxin-a	µg/L	0.001	NA	Surface (0-2m)	0.343	NS	NS	NS
					Depth Integrated	ND	0.286	0.296	0.276
LC-MS/MS	Total Cylindrospermopsin	µg/L	0.001	NA	Surface (0-2m)	ND	NS	NS	NS
					Depth Integrated	ND	ND	ND	ND

Notes:
[a] - Total Nitrogen = TKN+NO2+NO3
[b] - Annual average
[c] - Values are site specific dependent upon pH and temperature

[1] – 2020 TMDL Target, based on Table 5-9n of 2004 TMDL
[2] – 2015 TMDL Target, based on Table 5-9n of 2004 TMDL
NA – Not applicable/available
NS – Not sampled; ND – Not detected

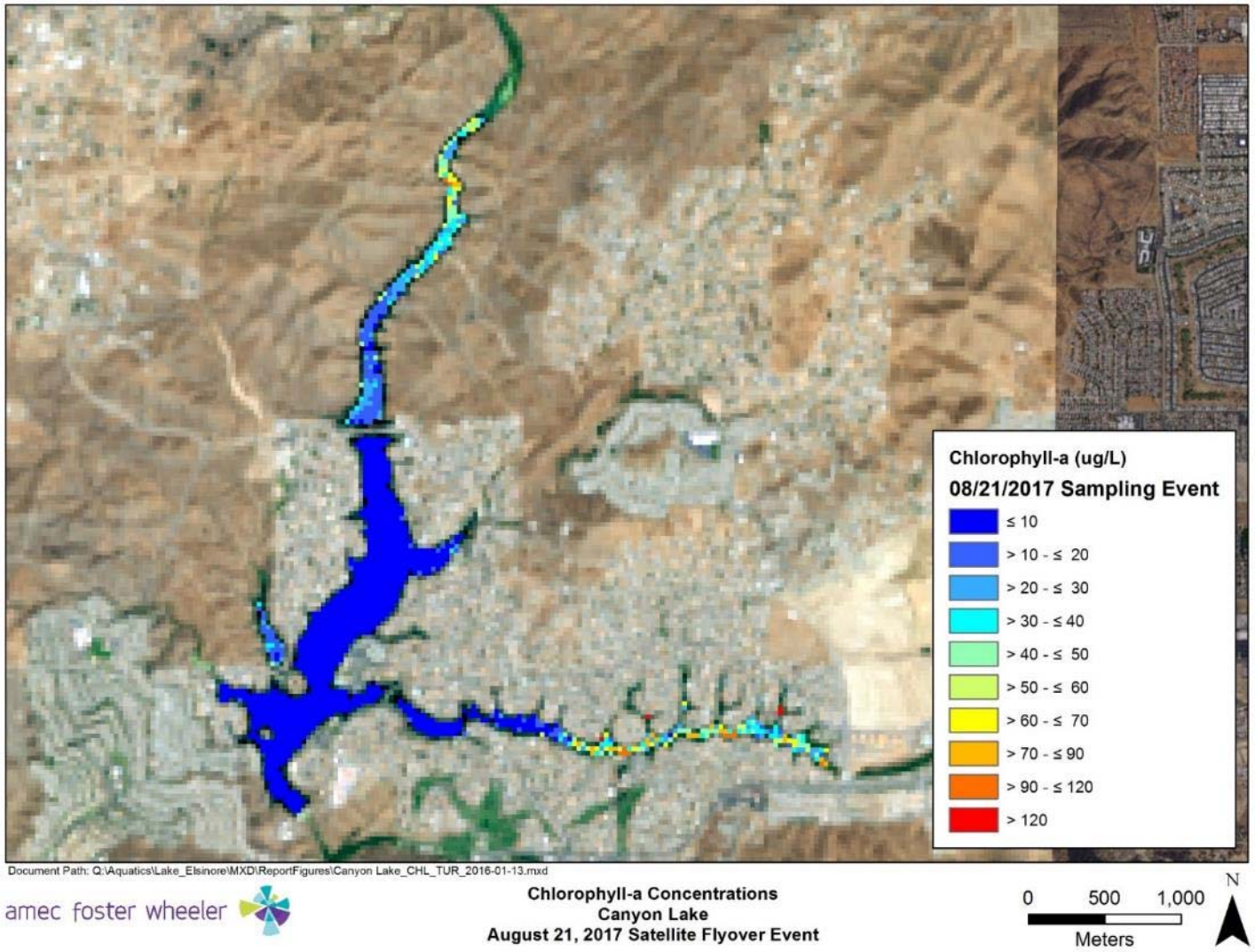

Figure 14. Satellite Imagery of Canyon Lake Chlorophyll-a Concentrations August 21, 2017

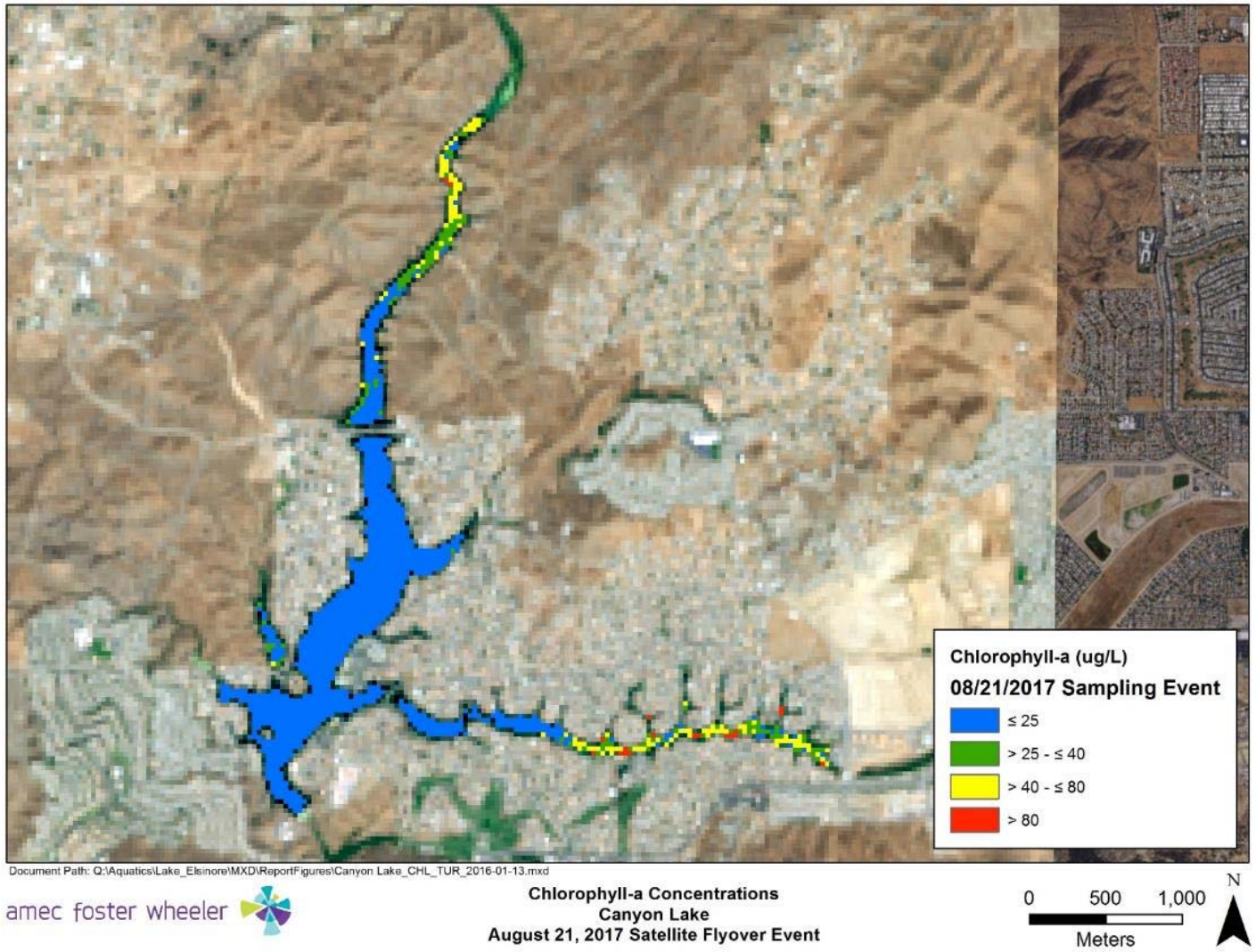

Figure 15. Satellite Imagery of Canyon Lake Chlorophyll-a Concentrations August 21, 2017 based on TMDL Targets

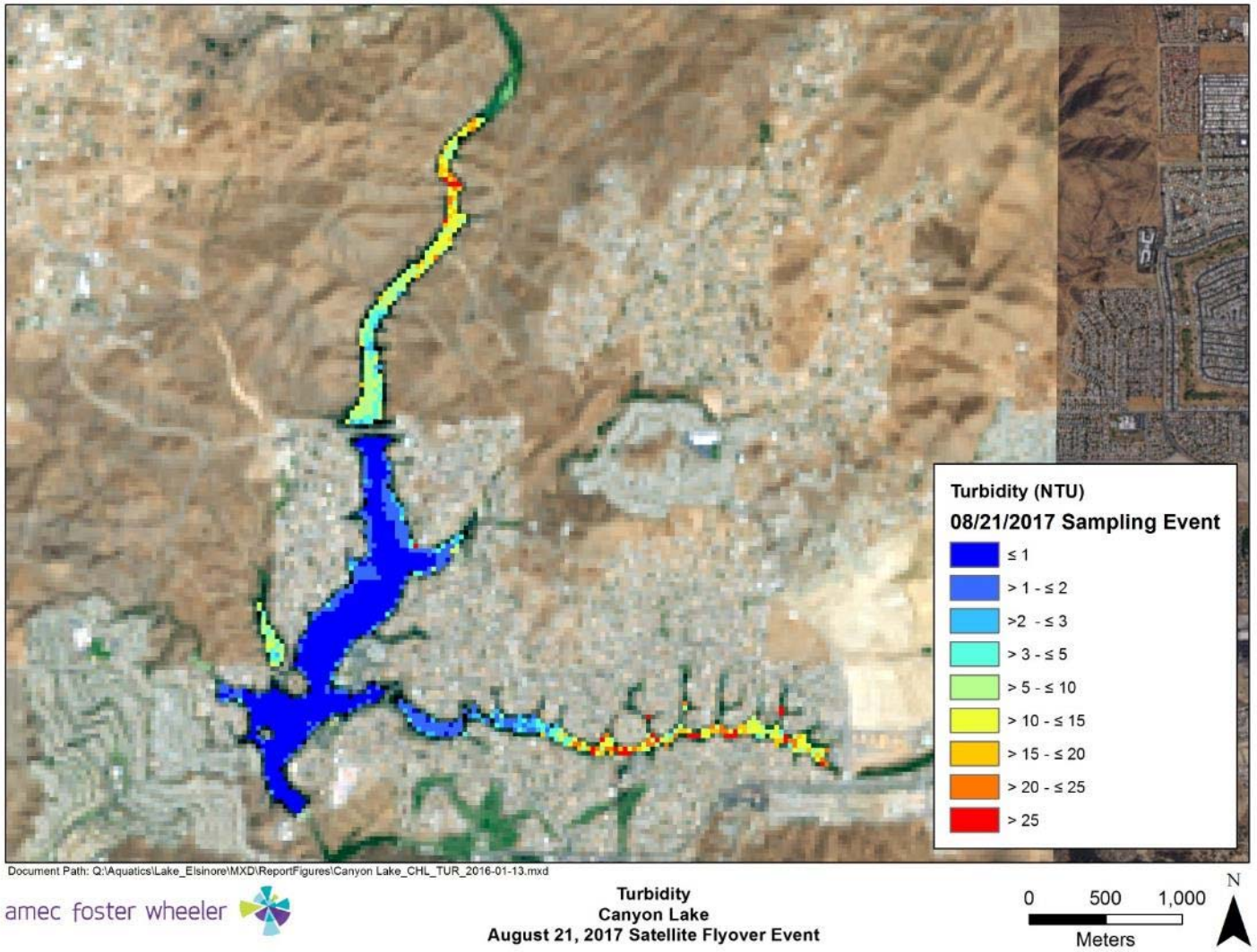

Figure 16. Satellite Imagery of Canyon Lake Turbidity Measurements August 21, 2017

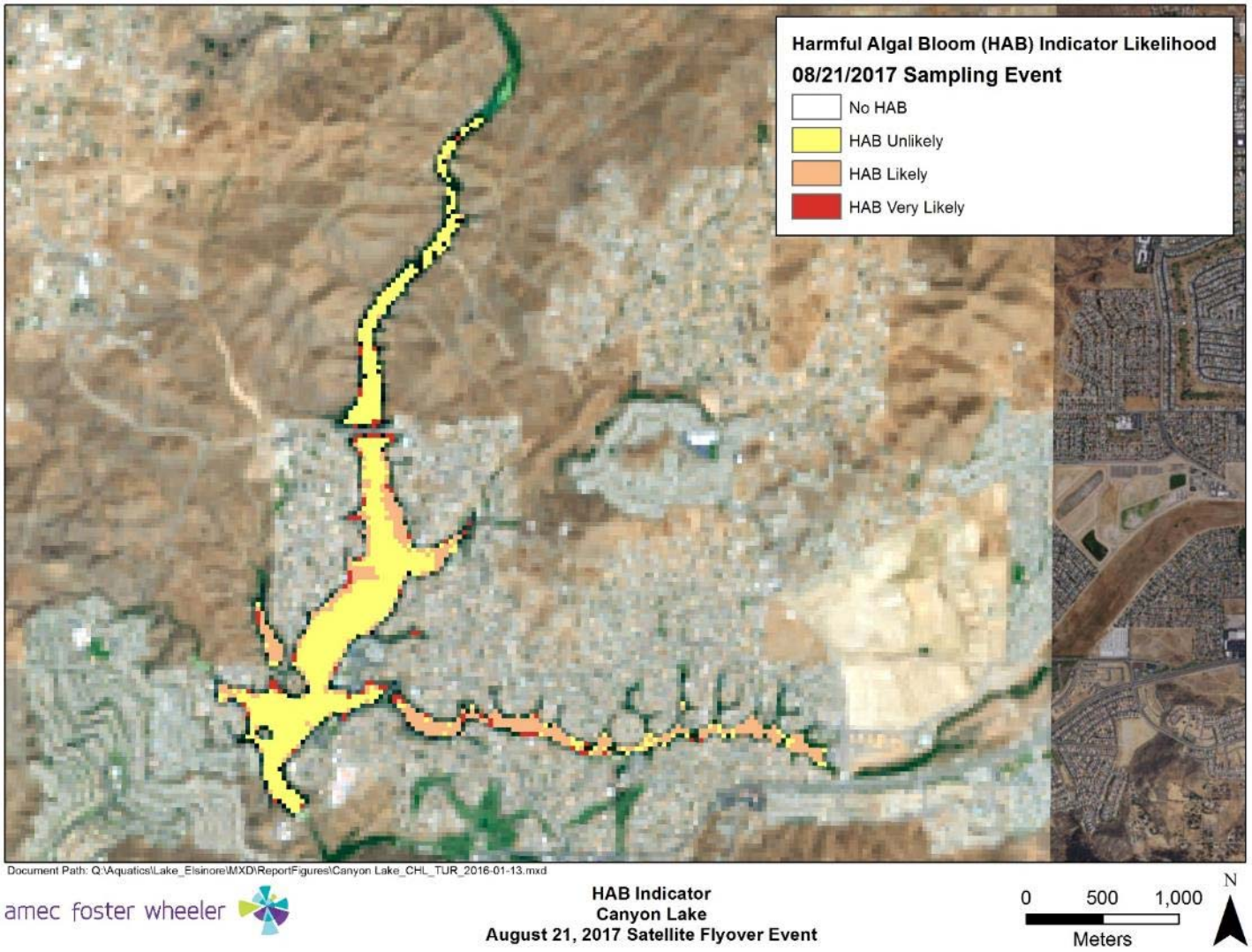

Figure 17. Satellite Imagery of Lake Elsinore HAB Indicator Likelihood August 21, 2017

Appendix A
Field Datasheets

July 20, 2017
Field Datasheets

FIELD DATASHEET

Date: 7-20-17 Location (Circle): Lake Elsinore/Canyon Lake Station: LE01

Time on Station: 0930 Time off Station: 0935

Weather Conditions: Sunny Wind (mph & direction): 0

Lat: _____ Long: _____

Water Depth (m): 5.5 Secchi Depth (m): 0.3

Water Chemistry Sample?: Y / N Chl-a Sample?: Y / N Plankton Sample?: Y / N

Surface volume filtered (ml): _____

Depth-Integrated volume filtered (ml): _____

Comments:

Depth (m)	Temp (°C)	Cond (mS/cm)	pH	DO (mg/L)	Depth (m)	Temp (°C)	Cond (mS/cm)	pH	DO (mg/L)
0	28.4	3841	9.05	7.2	15				
1	27.7	3835	8.98	4.4	16				
2	27.7	3835	8.98	4.3	17				
3	27.7	3834	8.97	3.8	18				
4	27.6	3835	8.95	2.9	19				
5	27.5	3853	8.90	1.3	20				
6					21				
7					22				
8					23				
9					24				
10					25				
11					26				
12					27				
13					28				
14					29				

FIELD DATASHEET

Date: 7-20-17 Location (Circle): Lake Elsinore/Canyon Lake Station: LE02

Time on Station: 824 Time off Station: 0910

Weather Conditions: Sunny Wind (mph & direction): 0

Lat: _____ Long: _____

Water Depth (m): 6.4 Secchi Depth (m): 0.3

Water Chemistry Sample?: (Y) / N Chl-a Sample?: (Y) / N Plankton Sample?: (Y) / N

Surface volume filtered (ml): _____

Depth-Integrated volume filtered (ml): _____

Comments:

Depth (m)	Temp (°C)	Cond (~~m~~S/cm)	pH	DO (mg/L)	Depth (m)	Temp (°C)	Cond (~~m~~S/cm)	pH	DO (mg/L)
0	27.6	3827	8.98	4.2	15				
1	27.5	3829	8.95	3.08	16				
2	27.5	3827	8.94	2.57	17				
3	27.5	3827	8.94	2.52	18				
4	27.5	3827	8.94	2.54	19				
5	27.5	3828	8.94	2.53	20				
6	27.5	3828	8.94	2.34	21				
7					22				
8					23				
9					24				
10					25				
11					26				
12					27				
13					28				
14					29				

FIELD DATASHEET

Date: 7-20-17 Location (Circle): (Lake Elsinore)/Canyon Lake Station: LE03

Time on Station: 8:10 Time off Station: 820

Weather Conditions: Sunny Wind (mph & direction): 0

Lat: _____ Long: _____

Water Depth (m): 4.6 Secchi Depth (m): 0.25

Water Chemistry Sample?: Y / N Chl-a Sample?: Y / N Plankton Sample?: Y / N

Surface volume filtered (ml): _____

Depth-Integrated volume filtered (ml): _____

Comments:

Depth (m)	Temp (°C)	Cond (~~m~~S/cm)	pH	DO (mg/L)	Depth (m)	Temp (°C)	Cond (~~m~~S/cm)	pH	DO (mg/L)
0	27.7	3815	8.99	4.6	15				
1	27.6	3816	8.95	3.7	16				
2	27.7	3818	8.95	3.4	17				
3	27.6	3819	8.95	3.2	18				
4	27.6	3820	8.93	2.6	19				
5					20				
6					21				
7					22				
8					23				
9					24				
10					25				
11					26				
12					27				
13					28				
14					29				

FIELD DATASHEET

Date: 7-20-17 Location (Circle): Lake Elsinore/Canyon Lake Station: Lakeshore

Time on Station: 0920 Time off Station: 0925

Weather Conditions: Sunny Wind (mph & direction): 0

Lat: _____ Long: _____

Water Depth (m): 6.5 Secchi Depth (m): ~~_____~~

Water Chemistry Sample?: Y / N Chl-a Sample?: Y / N Plankton Sample?: Y / N

Surface volume filtered (ml): _____

Depth-Integrated volume filtered (ml): _____

Comments:

Depth (m)	Temp (°C)	Cond (µS/cm)	pH	DO (mg/L)	Depth (m)	Temp (°C)	Cond (µS/cm)	pH	DO (mg/L)
0	28.0	3834	9.02	6.4	15				
1	27.6	3832	8.92	2.6	16				
2	27.6	3832	8.91	2.3	17				
3	27.5	3833	8.91	2.1	18				
4	27.5	3833	8.91	2.1	19				
5	27.5	3833	8.91	2.1	20				
6	27.5	3834	8.90	1.7	21				
7					22				
8					23				
9					24				
10					25				
11					26				
12					27				
13					28				
14					29				

Lake Elsinore and Canyon Lake TMDL Monitoring
2016/2017

FIELD DATASHEET

Date: 7-20-17 Location (Circle): Lake Elsinore/Canyon Lake Station: Grand Ave

Time on Station: 9:13 Time off Station: 9:18

Weather Conditions: Sunny Wind (mph & direction): 0

Lat: _____ Long: _____

Water Depth (m): 6.0 Secchi Depth (m): _____

Water Chemistry Sample?: Y / N Chl-a Sample?: Y / N Plankton Sample?: Y / N

Surface volume filtered (ml): _____

Depth-Integrated volume filtered (ml): _____

Comments:

Depth (m)	Temp (°C)	Cond (mS/cm)	pH	DO (mg/L)	Depth (m)	Temp (°C)	Cond (mS/cm)	pH	DO (mg/L)
0	28.0	3793	8.97	5.4	15				
1	27.6	3828	8.99	3.8	16				
2	27.6	3823	8.91	2.7	17				
3	27.5	3830	8.91	2.6	18				
4	27.5	3831	8.91	2.6	19				
5	27.5	3831	8.91	2.3	20				
6	27.5	3832	8.90	2.1	21				
7					22				
8					23				
9					24				
10					25				
11					26				
12					27				
13					28				
14					29				

FIELD DATASHEET

Date: 7-20-17 Location (Circle): Lake Elsinore/Canyon Lake Station: LE01

Time on Station: ~~1A~~ 1420 Time off Station: 1425

Weather Conditions: Sunny Wind (mph & direction): 5mph

Lat: _____ Long: _____

Water Depth (m): 5.5 Secchi Depth (m): _____

Water Chemistry Sample?: Y / N Chl-a Sample?: Y / N Plankton Sample?: Y / N

Surface volume filtered (ml): _____

Depth-Integrated volume filtered (ml): _____

Comments:

Depth (m)	Temp (°C)	Cond (~~m~~S/cm)	pH	DO (mg/L)	Depth (m)	Temp (°C)	Cond (~~m~~S/cm)	pH	DO (mg/L)
0	30.5	3919	9.16	14.2	15				
1	28.0	3844	9.01	5.5	16				
2	27.9	3835	8.95	3.8	17				
3	27.8	3836	8.94	3.5	18				
4	27.7	3836	8.93	3.0	19				
5	27.5	3840	8.97	3.6	20				
6					21				
7					22				
8					23				
9					24				
10					25				
11					26				
12					27				
13					28				
14					29				

Lake Elsinore and Canyon Lake TMDL Monitoring
2016/2017

FIELD DATASHEET

Date: 7-20-17 Location (Circle): Lake Elsinore/Canyon Lake Station: LEO2

Time on Station: ~~1300~~ 1400 Time off Station: 1405

Weather Conditions: Sunny Wind (mph & direction): ~~N~~ 5mph

Lat: _____ Long: _____

Water Depth (m): 6.4 Secchi Depth (m): _____

Water Chemistry Sample?: Y / N Chl-a Sample?: Y / N Plankton Sample?: Y / N

Surface volume filtered (ml): _____

Depth-Integrated volume filtered (ml): _____

Comments:

Depth (m)	Temp (°C)	Cond (~~m~~S/cm)	pH	DO (mg/L)	Depth (m)	Temp (°C)	Cond (~~m~~S/cm)	pH	DO (mg/L)
0	29.5	3830	9.14	14.2	15				
1	28.1	3836	9.0	6.6	16				
2	27.8	3831	8.93	3.3	17				
3	27.6	3832	8.88	2.1	18				
4	27.5	3832	2.1 ↔ 8.88		19				
5	27.5	3832	1.9 ↔ 8.88		20				
6	27.5	3832	8.87	1.8	21				
7					22				
8					23				
9					24				
10					25				
11					26				
12					27				
13					28				
14					29				

FIELD DATASHEET

Date: 7-20-17 Location (Circle): Lake Elsinore/Canyon Lake Station: LE03

Time on Station: ~~0~~ 1350 Time off Station: 1355

Weather Conditions: Sunny Wind (mph & direction): 5 mph

Lat: _____ Long: _____

Water Depth (m): 4.6 Secchi Depth (m): _____

Water Chemistry Sample?: Y / N Chl-a Sample?: Y / N Plankton Sample?: Y / N

Surface volume filtered (ml): _____

Depth-Integrated volume filtered (ml): _____

Comments:

Depth (m)	Temp (°C)	Cond (~~m~~S/cm)	pH	DO (mg/L)	Depth (m)	Temp (°C)	Cond (~~m~~S/cm)	pH	DO (mg/L)
0	31.1	3900	9.08	12.3	15				
1	29.9	3816	8.86	2.64	16				
2	27.7	3818	8.87	2.5	17				
3	27.6	3831	8.88	2.6	18				
4	26.6	3830	~~8~~ 8.87	2.0	19				
5					20				
6					21				
7					22				
8					23				
9					24				
10					25				
11					26				
12					27				
13					28				
14					29				

FIELD DATASHEET

Date: 7-20-17 Location (Circle): Lake Elsinore/Canyon Lake Station: Lakeshore

Time on Station: 1415 Time off Station: 1420

Weather Conditions: Sunny Wind (mph & direction): 5mph

Lat: _____ Long: _____

Water Depth (m): 6.5 Secchi Depth (m): _____

Water Chemistry Sample?: Y / N Chl-a Sample?: Y / N Plankton Sample?: Y / N

Surface volume filtered (ml): _____

Depth-Integrated volume filtered (ml): _____

Comments:

Depth (m)	Temp (°C)	Cond (mS/cm)	pH	DO (mg/L)	Depth (m)	Temp (°C)	Cond (mS/cm)	pH	DO (mg/L)
0	31.4	3850	9.20	6.3	15				
1	28.3	3845	8.99	6.2	16				
2	27.9	3837	8.95	4.2	17				
3	27.7	3835	8.90	2.3	18				
4	27.6	3834	8.89	2.1	19				
5	27.6	3834	8.89	1.9	20				
6	27.5	3834	8.89	1.9	21				
7					22				
8					23				
9					24				
10					25				
11					26				
12					27				
13					28				
14					29				

FIELD DATASHEET

Date: 7-20-17 Location (Circle): Lake Elsinore/Canyon Lake Station: Grand Ave

Time on Station: ~~1~~ 1405 Time off Station: 1420

Weather Conditions: Sunny Wind (mph & direction): 5mph

Lat: _____ Long: _____

Water Depth (m): 6.0 Secchi Depth (m): _____

Water Chemistry Sample?: Y / N Chl-a Sample?: Y / N Plankton Sample?: Y / N

Surface volume filtered (ml): _____

Depth-Integrated volume filtered (ml): _____

Comments:

Depth (m)	Temp (°C)	Cond (~~m~~S/cm)	pH	DO (mg/L)	Depth (m)	Temp (°C)	Cond (~~m~~S/cm)	pH	DO (mg/L)
0	31.4	3170	9.26	18.9	15				
1	28.0	3851	8.97	5.1	16				
2	27.7	3833	8.89	2.1	17				
3	27.5	3832	8.88	1.9	18				
4	27.5	3832	8.87	1.5	19				
5	27.5	3832	8.86	1.4	20				
6	27.4	3833	8.87	1.2	21				
7					22				
8					23				
9					24				
10					25				
11					26				
12					27				
13					28				
14					29				

FIELD DATASHEET

Date: 7-20-17 Location (Circle): Lake Elsinore/Canyon Lake Station: airation line

Time on Station: 1430 Time off Station: _____

Weather Conditions: Sunny Wind (mph & direction): _____

Lat: _____ Long: _____

Water Depth (m): _____ Secchi Depth (m): _____

Water Chemistry Sample?: Y / N Chl-a Sample?: Y / N Plankton Sample?: Y / N

Surface volume filtered (ml): _____

Depth-Integrated volume filtered (ml): _____

Comments:

Depth (m)	Temp (°C)	Cond (µS/cm)	pH	DO (mg/L)	Depth (m)	Temp (°C)	Cond (µS/cm)	pH	DO (mg/L)
0					15				
~~1~~	airation line			2.7	16				
~~2~~	20m from line			11.3	17				
3	@ surface				18				
4					19				
5					20				
6					21				
7					22				
8					23				
9					24				
10					25				
11					26				
12					27				
13					28				
14					29				

August 21, 2017
Field Datasheets

FIELD DATASHEET

Date: 8/21/17 Location (Circle): Lake Elsinore/Canyon Lake Station: LE01

Time on Station: 0940 Time off Station: _____

Weather Conditions: Clear Wind (mph & direction): 0

Lat: _____ Long: _____

Water Depth (m): 5.1 Secchi Depth (m): 0.3

Water Chemistry Sample?: Y / (N) Chl-a Sample?: Y / (N) Plankton Sample?: Y / (N)

Surface volume filtered (ml): _____

Depth-Integrated volume filtered (ml): _____

Comments:

Depth (m)	Temp (°C)	Cond (µS/cm)	pH	DO (mg/L)	Depth (m)	Temp (°C)	Cond (µS/cm)	pH	DO (mg/L)
0	26.1	4027	8.74	9.0	15				
1	26.1	4029	8.70	7.0	16				
2	26.1	4030	8.67	6.0	17				
3	26.1	4030	8.66	5.6	18				
4	26.0	4029	8.65	5.2	19				
4.85	25.9	4029	8.62	4.8	20				
6					21				
7					22				
8					23				
9					24				
10					25				
11					26				
12					27				
13					28				
14					29				

FIELD DATASHEET

Date: 8/21/17 Location (Circle): Lake Elsinore/Canyon Lake Station: LE01

Time on Station: 1420 Time off Station: _____

Weather Conditions: Clear Sunny Wind (mph & direction): _____

Lat: _____ Long: _____

Water Depth (m): 5.1 Secchi Depth (m): _____

Water Chemistry Sample?: Y / (N) Chl-a Sample?: Y (N) Plankton Sample?: Y / (N)

Surface volume filtered (ml): _____

Depth-Integrated volume filtered (ml): _____

Comments:

Depth (m)	Temp (°C)	Cond (µS/cm)	pH	DO (mg/L)	Depth (m)	Temp (°C)	Cond (µS/cm)	pH	DO (mg/L)
0	28.7	4063	8.83	15.4	15				
1	26.5	4033	8.62	5.8	16				
2	26.3	4032	8.60	5.1	17				
3	26.0	4032	8.56	3.5	18				
4	26.0	4032	8.56	3.5	19				
845	25.6	4032	8.51	2.2	20				
6					21				
7					22				
8					23				
9					24				
10					25				
11					26				
12					27				
13					28				
14					29				

FIELD DATASHEET

Date: 8/21/17 Location (Circle): Lake Elsinore/Canyon Lake Station: LE-02

Time on Station: 0830 Time off Station: 0915

Weather Conditions: Overcast Wind (mph & direction): 1-3 NW

Lat: _____ Long: _____

Water Depth (m): 5.7 Secchi Depth (m): 0.28

Water Chemistry Sample? (Y) / N Chl-a Sample?: (Y) / N Plankton Sample? (Y) / N

Surface volume filtered (ml): _____

Depth-Integrated volume filtered (ml): _____

Comments:

Depth (m)	Temp (°C)	Cond (µS/cm)	pH	DO (mg/L)	Depth (m)	Temp (°C)	Cond (µS/cm)	pH	DO (mg/L)
0	25.3	4011	8.64	5.3	15				
1	25.7	4019	8.65	5.2	16				
2	25.7	4019	8.64	5.0	17				
3	25.7	4023	8.64	5.0	18				
4	25.7	4022	8.64	4.9	19				
5	25.7	4023	8.63	4.6	20				
5.56	25.7	4024	8.32	4.5	21				
7					22				
8					23				
9					24				
10					25				
11					26				
12					27				
13					28				
14					29				

FIELD DATASHEET

Date: 8/21/17 Location (Circle): Lake Elsinore/Canyon Lake Station: LE02

Time on Station: 1410 Time off Station: _____

Weather Conditions: Clear Sunny Wind (mph & direction): 0

Lat: _____ Long: _____

Water Depth (m): 5.7 Secchi Depth (m): _____

Water Chemistry Sample?: Y / (N) Chl-a Sample?: Y / (N) Plankton Sample?: Y / (N)

Surface volume filtered (ml): _____

Depth-Integrated volume filtered (ml): _____

Comments:

Depth (m)	Temp (°C)	Cond (µS/cm)	pH	DO (mg/L)	Depth (m)	Temp (°C)	Cond (µS/cm)	pH	DO (mg/L)
0	29.3	4153	8.79	12.3	15				
1	26.2	4027	8.59	5.3	16				
2	25.9	4027	8.56	4.0	17				
3	25.8	4028	8.56	3.8	18				
4	25.8	4029	8.56	3.7	19				
5	25.7	4030	8.54	3.2	20				
6					21				
7					22				
8					23				
9					24				
10					25				
11					26				
12					27				
13					28				
14					29				

FIELD DATASHEET

Date: 8/21/17 Location (Circle): Lake Elsinore/Canyon Lake Station: LE03

Time on Station: 0815 Time off Station: _____

Weather Conditions: Cloudy Wind (mph & direction): 3 NW

Lat: _____ Long: _____

Water Depth (m): 4.3 Secchi Depth (m): 0.30

Water Chemistry Sample?: Y (N) Chl-a Sample?: Y (N) Plankton Sample?: Y (N)

Surface volume filtered (ml): _____

Depth-Integrated volume filtered (ml): _____

Comments:

Depth (m)	Temp (°C)	Cond (mS/cm)	pH	DO (mg/L)	Depth (m)	Temp (°C)	Cond (mS/cm)	pH	DO (mg/L)
0	25.9	4015	8.61	4.8	15				
1	26.0	4017	8.61	4.7	16				
2	26.0	4020	8.61	4.6	17				
3	26.0	4022	8.61	4.5	18				
4	26.0	4022	8.61	4.5	19				
5					20				
6					21				
7					22				
8					23				
9					24				
10					25				
11					26				
12					27				
13					28				
14					29				

FIELD DATASHEET

Date: 8/21/17 Location (Circle): Lake Elsinore/Canyon Lake Station: Lakeshore Sonde

Time on Station: 0923 Time off Station: _____

Weather Conditions: Clear Wind (mph & direction): 0

Lat: _____ Long: _____

Water Depth (m): 6.4 Secchi Depth (m): ~~_____~~

Water Chemistry Sample?: Y (N) Chl-a Sample?: Y (N) Plankton Sample?: Y (N)

Surface volume filtered (ml): _____

Depth-Integrated volume filtered (ml): _____

Comments:

Depth (m)	Temp (°C)	Cond (µS/cm)	pH	DO (mg/L)	Depth (m)	Temp (°C)	Cond (µS/cm)	pH	DO (mg/L)
0	25.6	4021	8.66	6.2	15				
1	25.5	4023	8.63	4.7	16				
2	25.6	4024	8.63	4.6	17				
3	25.6	4025	8.63	4.5	18				
4	25.5	4026	8.62	4.4	19				
5	25.5	4026	8.62	4.2	20				
6	25.5	4026	8.62	4.1	21				
7					22				
8					23				
9					24				
10					25				
11					26				
12					27				
13					28				
14					29				

FIELD DATASHEET

Date: 8/21/17 Location (Circle): Lake Elsinore/Canyon Lake Station: Grande Ave Sonde

Time on Station: 0930 Time off Station: _____

Weather Conditions: Clear Wind (mph & direction): 0

Lat: _____ Long: _____

Water Depth (m): 5.5 Secchi Depth (m): —

Water Chemistry Sample?: Y /(N) Chl-a Sample?: Y /(N) Plankton Sample?: Y /(N)

Surface volume filtered (ml): _____

Depth-Integrated volume filtered (ml): _____

Comments:

Depth (m)	Temp (°C)	Cond (µS/cm)	pH	DO (mg/L)	Depth (m)	Temp (°C)	Cond (µS/cm)	pH	DO (mg/L)
0	26.0	4023	8.72	8.2	15				
1	25.9	4023	8.68	6.6	16				
2	25.9	4024	8.67	5.9	17				
3	25.8	4024	8.66	5.5	18				
4	25.7	4026	8.63	4.5	19				
5	25.7	4026	8.62	4.1	20				
6					21				
7					22				
8					23				
9					24				
10					25				
11					26				
12					27				
13					28				
14					29				

FIELD DATASHEET

Date: 0945 Location (Circle): Lake Elsinore/Canyon Lake Station: CL07

Time on Station: 0945 Time off Station: _____

Weather Conditions: Sunny Wind (mph & direction): 0

Lat: on target Long: on target

Water Depth (m): 13.8 Secchi Depth (m): 1.1

Water Chemistry Sample?: (Y) / N Chl-a Sample?: (Y) / N Plankton Sample?: Y / (N)

Surface volume filtered (ml): _____

Depth-Integrated volume filtered (ml): _____

Comments:

Depth (m)	Temp (°C)	Cond (µS/cm)	pH	DO (mg/L)	Depth (m)	Temp (°C)	Cond (µS/cm)	pH	DO (mg/L)
0	27.2	739	9.04	7.71	15				
1	27.2	739	9.04	7.68	16				
2	27.2	743	9.04	7.58	17				
3	27.2	743	9.03	7.52	18				
4	27.2	744	9.02	7.39	19				
5	27.1	744	8.98	7.15	20				
6	24.4	741	7.93	0.6	21				
7	19.3	681	7.19	0.31	22				
8	16.9	664	7.15	0.23	23				
9	15.2	649	7.23	0.19	24				
10	14.3	646	7.26	0.17	25				
11	14.0	649	7.24	0.16	26				
12	13.7	658	7.18	0.14	27				
13	13.6	658	7.18	0.14	28				
~~13.5~~	13.5	652	7.20	0.13	29				

FIELD DATASHEET

Date: 8/21/17 Location (Circle): Lake Elsinore/~~Canyon Lake~~ Station: CLO7

Time on Station: 1430 Time off Station: 1434

Weather Conditions: Sunny Wind (mph & direction): 7mph

Lat: on target Long: on target

Water Depth (m): 13.8 Secchi Depth (m): 1.1

Water Chemistry Sample?: Y / ~~N~~ Chl-a Sample?: Y / ~~N~~ Plankton Sample?: Y ~~N~~

Surface volume filtered (ml):_____

Depth-Integrated volume filtered (ml):_____

Comments:

Depth (m)	Temp (°C)	Cond (µS/cm)	pH	DO (mg/L)	Depth (m)	Temp (°C)	Cond (µS/cm)	pH	DO (mg/L)
0	28.9	747	9.11	10.15	15				
1	28.2	746	9.18	10.96	16				
2	27.6	745	9.15	10.58	17				
3	27.3	744	9.09	9.78	18				
4	27.2	745	9.02	9.05	19				
5	27.1	744	9.03	9.16	20				
6	24.7	747	7.78	0.42	21				
7	19.8	687	7.17	0.31	22				
8	17.0	661	7.13	0.26	23				
9	15.2	645	7.23	0.23	24				
10	14.3	647	7.24	0.21	25				
11	14.0	647	7.23	0.20	26				
12	13.8	660	7.17	0.20	27				
13	13.7	661	7.17	0.20	28				
~~13.8~~	13.6	662	7.16	0.18	29				

FIELD DATASHEET

Date: 8-21-17 Location (Circle): Lake Elsinore/Canyon Lake Station: CLO8

Time on Station: 0900 Time off Station: 0935

Weather Conditions: cloudy Wind (mph & direction): 0

Lat: on target Long: on target

Water Depth (m): 7.5 Secchi Depth (m): 1.1

Water Chemistry Sample?: (Y) / N Chl-a Sample?: (Y) / N Plankton Sample?: Y / (N)

Surface volume filtered (ml):_____

Depth-Integrated volume filtered (ml):_____

Comments:

Depth (m)	Temp (°C)	Cond (µS/cm)	pH	DO (mg/L)	Depth (m)	Temp (°C)	Cond (µS/cm)	pH	DO (mg/L)
0	27.3	743	8.97	6.87	15				
1	27.3	743	8.97	6.87	16				
2	27.3	743	8.98	6.86	17				
3	27.3	743	8.97	6.81	18				
4	27.3	743	8.97	6.77	19				
5	27.0	749	8.52	3.35	20				
6	24.0	733	7.40	0.25	21				
7	20.1	692	7.11	0.2	22				
8					23				
9					24				
10					25				
11					26				
12					27				
13					28				
14					29				

FIELD DATASHEET

Date: 8/21/17 Location (Circle): Lake Elsinore/~~Canyon Lake~~ Station: CLC08

Time on Station: 1420 Time off Station: 1425

Weather Conditions: Sunny Wind (mph & direction): 1mph

Lat: on target Long: on target

Water Depth (m): 7.5 Secchi Depth (m): 1.1

Water Chemistry Sample?: Y / (N) Chl-a Sample?: Y / (N) Plankton Sample?: Y / (N)

Surface volume filtered (ml):_____

Depth-Integrated volume filtered (ml):_____

Comments:

Depth (m)	Temp (°C)	Cond (µS/cm)	pH	DO (mg/L)	Depth (m)	Temp (°C)	Cond (µS/cm)	pH	DO (mg/L)
0	29.5	745	9.03	7.71	15				
1	28.5	742	9.11	8.33	16				
2	27.6	742	9.07	7.92	17				
3	27.5	742	9.05	7.70	18				
4	27.3	744	8.94	6.85	19				
5	26.7	752	8.27	2.29	20				
6	25.0	743	7.62	0.29	21				
7	19.2	680	7.06	0.21	22				
8					23				
9					24				
10					25				
11					26				
12					27				
13					28				
14					29				

FIELD DATASHEET

Date: 8-21-17 Location (Circle): Lake Elsinore/Canyon Lake Station: LC09

Time on Station: 0810 Time off Station: 0840

Weather Conditions: cloudy Wind (mph & direction): 2mph

Lat: on target Long: on target

Water Depth (m): 6.4 Secchi Depth (m): 0.65

Water Chemistry Sample?: (Y) / N Chl-a Sample? (Y) / N Plankton Sample?: Y / (N)

Surface volume filtered (ml):_____

Depth-Integrated volume filtered (ml):_____

Comments:

Depth (m)	Temp (°C)	Cond (µS/cm)	pH	DO (mg/L)	Depth (m)	Temp (°C)	Cond (µS/cm)	pH	DO (mg/L)
0	26.8	903	8.96	7.31	15				
1	26.8	902	8.95	7.11	16				
2	26.8	903	8.96	7.07	17				
3	26.8	903	8.96	7.06	18				
4	26.4	941	8.11	1.45	19				
5	22.9	993	7.04	0.3	20				
6	18.9	1018	7.03	0.21	21				
7					22				
8					23				
9					24				
10					25				
11					26				
12					27				
13					28				
14					29				

FIELD DATASHEET

Date: 8/21/17 Location (Circle): Lake Elsinore/~~Canyon Lake~~ Station: CLO9

Time on Station: 1358 Time off Station: 1403

Weather Conditions: Sunny Wind (mph & direction): 1 mph

Lat: on target Long: on target

Water Depth (m): 6.4 Secchi Depth (m): 0.65

Water Chemistry Sample?: Y /(N) Chl-a Sample?: Y /(N) Plankton Sample?: Y /(N)

Surface volume filtered (ml):_____

Depth-Integrated volume filtered (ml):_____

Comments:

Depth (m)	Temp (°C)	Cond (µS/cm)	pH	DO (mg/L)	Depth (m)	Temp (°C)	Cond (µS/cm)	pH	DO (mg/L)
0	28.1	898	9.09	8.63	15				
1	27.1	907	9.05	8.09	16				
2	26.8	907	8.93	7.37	17				
3	26.7	908	8.88	7.04	18				
4	26.5	926	8.14	2.66	19				
5	23.4	991	7.00	0.32	20				
6	19.3	1022	6.97	0.24	21				
7					22				
8					23				
9					24				
10					25				
11					26				
12					27				
13					28				
14					29				

FIELD DATASHEET

Date: 8-21-17 Location (Circle): Lake Elsinore/Canyon Lake Station: CL10

Time on Station: 07:24 Time off Station: 0800

Weather Conditions: cloudy Wind (mph & direction): 2mph

Lat: on target Long: on target

Water Depth (m): 2.7 Secchi Depth (m): 0.4

Water Chemistry Sample?: (Y) / N Chl-a Sample?: (Y) / N Plankton Sample?: Y / (N)

Surface volume filtered (ml):_____

Depth-Integrated volume filtered (ml):_____

Comments:

Depth (m)	Temp (°C)	Cond (µS/cm)	pH	DO (mg/L)	Depth (m)	Temp (°C)	Cond (µS/cm)	pH	DO (mg/L)
0	26.3	942	8.94	7.60	15				
1	26.4	941	8.94	7.58	16				
2	26.4	942	8.94	7.56	17				
2.5	26.3	943	8.92	7.47	18				
4					19				
5					20				
6					21				
7					22				
8					23				
9					24				
10					25				
11					26				
12					27				
13					28				
14					29				

FIELD DATASHEET

Date: 8/21/17 Location (Circle): Lake Elsinore/~~Canyon Lake~~ Station: CL10

Time on Station: 1345 Time off Station: 1350

Weather Conditions: Sunny Wind (mph & direction): 0

Lat: on target Long: on target

Water Depth (m): 2.7 Secchi Depth (m): 0.4

Water Chemistry Sample?: Y / (N) Chl-a Sample?: Y / (N) Plankton Sample?: Y / (N)

Surface volume filtered (ml):

Depth-Integrated volume filtered (ml):

Comments:

Depth (m)	Temp (°C)	Cond (µS/cm)	pH	DO (mg/L)	Depth (m)	Temp (°C)	Cond (µS/cm)	pH	DO (mg/L)
0	29.0	888	9.06	9.27	15				
1	27.8	922	9.17	10.0	16				
2	26.8	938	8.93	8.02	17				
~~2.5~~	26.6	935	7.01	8.69	18				
4					19				
5					20				
6					21				
7					22				
8					23				
9					24				
10					25				
11					26				
12					27				
13					28				
14					29				

September 21, 2017
Field Datasheets

FIELD DATASHEET

Date: 9/21/17 Location (Circle): Lake Elsinore/Canyon Lake Station: LE01

Time on Station: 09:25 Time off Station: 09:32

Weather Conditions: _____ Wind (mph & direction): 0-5 SE

Lat: on target Long: on target

Water Depth (m): 5.3 Secchi Depth (m): 0.25

Water Chemistry Sample?: Y (N) Chl-a Sample?: Y (N) Plankton Sample?: Y (N)

Surface volume filtered (ml): _____

Depth-Integrated volume filtered (ml): _____

Comments:

Depth (m)	Temp (°C)	Cond (µS/cm)	pH	DO (mg/L)	Depth (m)	Temp (°C)	Cond (µS/cm)	pH	DO (mg/L)
0	24.0	4214	9.06	6.05	15				
1	24.0	4216	9.06	6.12	16				
2	24.0	4216	9.06	5.80	17				
3	24.0	4216	9.05	5.56	18				
4	24.0	4217	9.05	5.54	19				
5	24.0	4214	8.98	1.86	20				
6					21				
7					22				
8					23				
9					24				
10					25				
11					26				
12					27				
13					28				
14					29				

FIELD DATASHEET

Date: 9/21/17 Location (Circle): Lake Elsinore/Canyon Lake Station: LE01

Time on Station: 1555 Time off Station: _____

Weather Conditions: cloudy/drizzle Wind (mph & direction): 5-12 W

Lat: on target Long: on target

Water Depth (m): 5.3 m Secchi Depth (m): 0.25

Water Chemistry Sample?: Y (N) Chl-a Sample?: Y (N) Plankton Sample?: Y (N)

Surface volume filtered (ml): ~

Depth-Integrated volume filtered (ml): ~

Comments:

Depth (m)	Temp (°C)	Cond (µS/cm)	pH	DO (mg/L)	Depth (m)	Temp (°C)	Cond (µS/cm)	pH	DO (mg/L)
0	23.8	4219	9.02	5.77	15				
1	23.8	4220	9.02	5.71	16				
2	23.8	4220	9.02	5.53	17				
3	23.8	4220	9.01	5.21	18				
4	23.8	4220	9.02	5.27	19				
5	23.8	4220	9.02	5.39	20				
6					21				
7					22				
8					23				
9					24				
10					25				
11					26				
12					27				
13					28				
14					29				

FIELD DATASHEET

Date: 9/21/17 Location (Circle): Lake Elsinore/Canyon Lake Station: LE02

Time on Station: 8:25 Time off Station: _____

Weather Conditions: partly cloudy Wind (mph & direction): 0-5E

Lat: on target Long: on target

Water Depth (m): 6.2 Secchi Depth (m): 0.25

Water Chemistry Sample? (Y) / N Chl-a Sample? (Y) / N Plankton Sample? (Y) / N

Surface volume filtered (ml): _____

Depth-Integrated volume filtered (ml): _____

Comments:

Depth (m)	Temp (°C)	Cond (µS/cm)	pH	DO (mg/L)	Depth (m)	Temp (°C)	Cond (µS/cm)	pH	DO (mg/L)
0	23.5	4213	9.02	4.25	15				
1	23.5	4213	9.02	4.22	16				
2	23.5	4213	9.02	4.19	17				
3	23.5	4213	9.02	4.21	18				
4	23.5	4214	9.02	4.16	19				
5	23.5	4214	9.02	4.17	20				
6	23.5	4214	8.99	0.30	21				
7					22				
8					23				
9					24				
10					25				
11					26				
12					27				
13					28				
14					29				

FIELD DATASHEET

Date: 9/21/17 Location (Circle): Lake Elsinore/Canyon Lake Station: LE02

Time on Station: 1540 Time off Station: 1545

Weather Conditions: cloudy / drizzle Wind (mph & direction): 5-12 W

Lat: on target Long: on target

Water Depth (m): 6.2 Secchi Depth (m): ~~0.5m~~ 0.25

Water Chemistry Sample?: Y / (N) Chl-a Sample?: Y (N) Plankton Sample?: Y / (N)

Surface volume filtered (ml): \

Depth-Integrated volume filtered (ml): \

Comments:

Depth (m)	Temp (°C)	Cond (µS/cm)	pH	DO (mg/L)	Depth (m)	Temp (°C)	Cond (µS/cm)	pH	DO (mg/L)
0	23.7	4214	9.03	5.80	15				
1	23.7	4215	9.03	5.76	16				
2	23.7	4214	9.03	5.71	17				
3	23.7	4215	9.03	5.69	18				
4	23.7	4215	9.03	5.68	19				
5	23.7	4219	9.03	5.69	20				
6	23.6	4221	8.96	0.35	21				
7					22				
8					23				
9					24				
10					25				
11					26				
12					27				
13					28				
14					29				

FIELD DATASHEET

Date: 9/21/17 Location (Circle) Lake Elsinore/Canyon Lake Station: LE03

Time on Station: 730 Time off Station: 745

Weather Conditions: Sunny Wind (mph & direction): 0-5 SE

Lat: On target Long: On target

Water Depth (m): 4.3 Secchi Depth (m): 0.25

Water Chemistry Sample?: Y (N) Chl-a Sample?: Y (N) Plankton Sample?: Y (N)

Surface volume filtered (ml):_____

Depth-Integrated volume filtered (ml):_____

Comments:

Depth (m)	Temp (°C)	Cond (µS/cm)	pH	DO (mg/L)	Depth (m)	Temp (°C)	Cond (µS/cm)	pH	DO (mg/L)
0	23.3	4199	9.03	3.87	15				
1	23.3	4064	9.03	3.82	16				
2	23.3	4200	9.03	3.77	17				
3	23.3	4065	9.03	3.76	18				
4	23.3	4066	9.04	3.72	19				
5					20				
6					21				
7					22				
8					23				
9					24				
10					25				
11					26				
12					27				
13					28				
14					29				

FIELD DATASHEET

Date: 9/21/17 Location (Circle): Lake Elsinore/Canyon Lake Station: LE03

Time on Station: 1530 Time off Station: 1535

Weather Conditions: cloudy / drizzle Wind (mph & direction): 5-12 W

Lat: on target Long: on target

Water Depth (m): 4.3 Secchi Depth (m): 0.25

Water Chemistry Sample?: Y (N) Chl-a Sample?: Y / (N) Plankton Sample?: Y / (N)

Surface volume filtered (ml): —

Depth-Integrated volume filtered (ml): —

Comments:

Depth (m)	Temp (°C)	Cond (µS/cm)	pH	DO (mg/L)	Depth (m)	Temp (°C)	Cond (µS/cm)	pH	DO (mg/L)
0	23.4	4162	8.98	5.79	15				
1	23.4	4167	8.99	5.72	16				
2	23.4	4173	9.00	5.66	17				
3	23.4	4178	9.00	5.67	18				
4	23.4	4184	9.01	5.66	19				
5					20				
6					21				
7					22				
8					23				
9					24				
10					25				
11					26				
12					27				
13					28				
14					29				

FIELD DATASHEET

Date: 9/21/17 Location (Circle): Lake Elsinore / Canyon Lake Station: Grand Avenue

Time on Station: 7:50 Time off Station: _____

Weather Conditions: partly cloudy Wind (mph & direction): 0-5 SE

Lat: On target Long: On target

Water Depth (m): 5.9 Secchi Depth (m): 0.25

Water Chemistry Sample?: Y / (N) Chl-a Sample?: Y (N) Plankton Sample?: Y (N)

Surface volume filtered (ml): _____

Depth-Integrated volume filtered (ml): _____

Comments:

Depth (m)	Temp (°C)	Cond (µS/cm)	pH	DO (mg/L)	Depth (m)	Temp (°C)	Cond (µS/cm)	pH	DO (mg/L)
0	23.6	4204	9.01	4.03	15				
1	23.5	4205	9.01	4.01	16				
2	23.5	4205	9.01	3.96	17				
3	23.5	4206	9.01	3.93	18				
4	23.5	4206	9.01	3.96	19				
5	23.5	4207	9.01	3.96	20				
5.5 ~~6~~	23.5	4207	9.01	0.26	21				
7					22				
8					23				
9					24				
10					25				
11					26				
12					27				
13					28				
14					29				

FIELD DATASHEET

Date: 9/21/17 Location (Circle): Lake Elsinore/Canyon Lake Station: LE Lakeshore

Time on Station: 8:10 Time off Station: 8:20

Weather Conditions: partly cloudy Wind (mph & direction): 0-5 SE

Lat: On target Long: on target

Water Depth (m): 6.5 Secchi Depth (m): 0.25

Water Chemistry Sample?: Y (N) Chl-a Sample?: Y / (N) Plankton Sample?: Y / (N)

Surface volume filtered (ml):_____

Depth-Integrated volume filtered (ml):_____

Comments:

Depth (m)	Temp (°C)	Cond (µS/cm)	pH	DO (mg/L)	Depth (m)	Temp (°C)	Cond (µS/cm)	pH	DO (mg/L)
0	23.6	4210	9.04	4.28	15				
1	23.6	4211	9.04	4.33	16				
2	23.6	4211	9.04	4.31	17				
3	23.6	4211	9.04	4.27	18				
4	23.6	4214	9.04	4.25	19				
5	23.6	4102	9.04	4.24	20				
6	23.6	4212	9.04	4.22	21				
7					22				
8					23				
9					24				
10					25				
11					26				
12					27				
13					28				
14					29				