



Memorandum

To: Santa Ana Watershed Project Authority

From: CDM Smith

Date: July 12, 2018

Subject: 2018 Quarter 2 Report

This technical memorandum summarizes the Santa Ana River Regional Monitoring Program activities that occurred during the second quarter (April 1 through June 30) of 2018. It includes a brief description of monitoring activities from the second quarter, upcoming monitoring activities, a summary of data resulting from monitoring activities, and status of the 2017-2018 Annual Report. These monitoring activities were conducted under the Monitoring Plan and Quality Assurance Project Plan (QAPP) for the Santa Ana River Watershed Bacteria Monitoring Program, which was approved on March 11, 2016.

Monitoring Activities

During the second quarter of 2018, dry weather monitoring activities began during the week of May 6. The first eight of the twenty weeks of monitoring have been completed to date for Priority 1 and 2 sites. The five-week monitoring program for Priority 3 Group 4 sites have been partially completed. Although Priority 3 Group 3 sites were planned to be monitored from the weeks of May 6 through June 3, Los Trancos Creek and Morning Canyon Creek will be monitored from the weeks of October 28 through November 25 instead. Samples from Priority 4 sites in Riverside and San Bernardino Counties have been collected.

The Priority 3 Group 3 and Group 4 sites are listed as follows:

- Group 3 – Los Trancos Creek, Morning Canyon Creek, and Buck Gully Creek
- Group 4 – Santa Ana River Reach 4

Water Quality Data

Dry weather monitoring samples were analyzed for *E. coli* (**Table 1**) and TSS (**Table 2**) by Babcock Laboratories for Riverside and San Bernardino County sites. Rolling 5-week geomeans for Priority 1 and 2 sites are presented in **Table 3**.

Both Priority 4 sites in Riverside County (P4-RC2) and San Bernardino County (P4-SBC1) had *E. coli* levels below the antidegradation targets of 725 and 1,385 MPN/100 mL, respectively.¹ Per the Monitoring Plan requirements, Priority 4 sampling at these sites is considered complete for the 2018 dry season.

¹ Antidegradation targets established in coordination with Santa Ana Regional Water Quality Control Board staff.

Table 1 – 2018 Quarter 2 Dry Weather Average *E. coli* Concentrations (MPN/100 mL)

	County	Site	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8
			5/6/2016	5/13/2016	5/20/2016	5/27/2016	6/3/2016	6/10/2016	6/17/2016	6/24/2016
P1-1	Riverside	Canyon Lake at Holiday Harbor	3.1	1.0	ND	2.0	2.0	5.2	3.0	3.1
P1-2	Riverside	Lake Elsinore	70	20	2.0	ND	ND	2.0	1.0	ND
P1-3	Riverside	Lake Perris	55	5.2	16	11	34	3.1	3.1	17
P1-4	San Bernardino	Big Bear Lake at Swim Beach	4.1	ND	3.1	11	ND	ND	ND	ND
P1-5	San Bernardino	Mill Creek Reach 2	3.1	3.1	1.0	1.0	7.4	4.1	ND	1.0
P1-6	San Bernardino	Lytle Creek	2.0	45	11	100	17	6.3	3.1	20
WW-S1	Riverside	Santa Ana River Reach 3 at MWD Crossing	610	160	330	320	170	480	270	270
WW-S4	Riverside	Santa Ana River Reach 3 at Pedley Avenue	41	140	86	140	170	150	86	60
WW-C3	San Bernardino	Prado Park Lake	250	52	210	4900	Dry	63	160	41
WW-C7	San Bernardino	Chino Creek at Central Avenue	1300	160	300	1900	310	150	310	290
WW-M6	San Bernardino	Mill-Cucamonga Creek below Wetlands	75	150	420	210	180	120	120	310
P3-OC3	Orange	Buck Gully Creek	144	345	135	74	74			
P3-SBC1	San Bernardino	Santa Ana River Reach 4						29	96	58
P4-RC2	Riverside	Temescal Creek at Lincoln Avenue							240	
P4-SBC1	San Bernardino	Cucamonga Creek at Hellman Avenue							330	

Note: ND = below method detection limit
 1 Data are not available from the laboratory yet

Table 2 – 2018 Quarter 2 Dry Weather TSS Concentrations (mg/L)

Site ID	County	Site	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8
			5/6/2016	5/13/2016	5/20/2016	5/27/2016	6/3/2016	6/10/2016	6/17/2016	6/24/2016
P1-1	Riverside	Canyon Lake at Holiday Harbor	4.0	8.0	7.0	10.0	6.0	7.0	7.0	7.0
P1-2	Riverside	Lake Elsinore	40	65	32	48	32	34	40	29
P1-3	Riverside	Lake Perris	18	40	15	6.0	3.0	ND	2.0	3.0
P1-4	San Bernardino	Big Bear Lake at Swim Beach	4.0	2.0	15	210	14	12	8.0	6
P1-5	San Bernardino	Mill Creek Reach 2	4.0	ND	2.0	6	2.0	ND	2.0	ND
P1-6	San Bernardino	Lytle Creek	3.0	ND	2.0	4	2.0	ND	ND	ND
WW-S1	Riverside	Santa Ana River Reach 3 at MWD Crossing	8.0	11	8.0	6.0	4.0	3.0	4.0	3.0
WW-S4	Riverside	Santa Ana River Reach 3 at Pedley Avenue	9.0	8.0	4.0	6.0	14	3.0	4.0	ND
WW-C3	San Bernardino	Prado Park Lake	21	16	10	6.0	Dry	51	12	5.0
WW-C7	San Bernardino	Chino Creek at Central Avenue	2.0	2.0	ND	4.0	4.0	2.0	4.0	12
WW-M6	San Bernardino	Mill-Cucamonga Creek below Wetlands	ND	2.0	ND	3.0	4.0	ND	ND	6.0
P3-OC3	Orange	Buck Gully Creek	< 5	< 5	5	< 5	7			
P3-SBC1	San Bernardino	Santa Ana River Reach 4						2.0	5.0	2.0
P4-RC2	Riverside	Temescal Creek at Lincoln Avenue							39	
P4-SBC1	San Bernardino	Cucamonga Creek at Hellman Avenue							2.0	

Note: ND = below method detection limit

1 Data are not available from the laboratory yet

Table 3 – 2018 Quarter 2 Dry Weather *E. coli* Concentration Geomeans (MPN/100 ml)

Site ID	County	Site	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8
			5/6/2016	5/13/2016	5/20/2016	5/27/2016	6/3/2016	6/10/2016	6/17/2016	6/24/2016
P1-1	Riverside	Canyon Lake at Holiday Harbor					1.4	1.6	2.0	2.9
P1-2	Riverside	Lake Elsinore					3.7	1.8	1.0	0.8
P1-3	Riverside	Lake Perris					18	9.9	9.0	9.1
P1-4	San Bernardino	Big Bear Lake at Swim Beach					2.0	1.3	1.3	0.9
P1-5	San Bernardino	Mill Creek Reach 2					2.3	2.5	1.7	1.7
P1-6	San Bernardino	Lytle Creek					18	22	13	15
WW-S1	Riverside	Santa Ana River Reach 3 at MWD Crossing					281	268	297	286
WW-S4	Riverside	Santa Ana River Reach 3 at Pedley Avenue					103	134	121	113
WW-C3	San Bernardino	Prado Park Lake					340	241	319	212
WW-C7	San Bernardino	Chino Creek at Central Avenue					516	335	382	380
WW-M6	San Bernardino	Mill-Cucamonga Creek below Wetlands					178	196	187	176

Note: For calculation purposes, samples that were below detection limit were assumed to be half of the reporting limit

QA/QC

TSS for six samples collected during the week of June 17, 2018 was analyzed outside of the EPA recommended holding time due to a laboratory error. This includes Priority 1 samples from Canyon Lake, Lake Elsinore, and Lake Perris, Priority 3 sample from Santa Ana River Reach 4, and Priority 4 samples from Temescal Creek and Cucamonga Creek. *E. coli* was analyzed within the EPA holding time for the corresponding samples. CDM Smith is working with the Babcock Laboratory manager to ensure that holding time exceedances do not occur in the future.

Due to a scheduling error, some Priority 3 Group 3 sites (Los Trancos Creek and Morning Canyon Creek) were not monitored during the second quarter as planned. To maintain the rotational monitoring schedule for these two Priority 3 sites to address seasonal variability, the 2019-2020 Priority 3 Group 3 schedule will be used for the 2018-2019 monitoring year. As a result, these sites will be monitored during the 2018 fourth quarter cool season period. In the 2019-2020 monitoring year, Priority 3 Group 3 sites will be monitored using the 2018-2019 schedule, which will occur during the weeks of May 5, 2019 through June 2, 2019. CDM Smith is working with the Regional Board to adjust the monitoring schedule as described.

Other

The 2017-2018 Annual Report was finalized based on comments received from the Task Force and provided to SAWPA on June 30th for distribution to the Task Force.

Upcoming Activities

The Orange County Public Works (OCPW) Monitoring Manager will continue to coordinate with Orange County Public Health Laboratory (OCPHL) and Orange County sampling personnel regarding Priority 3 and 4 sites located in their jurisdiction. CDM Smith will continue to coordinate with Babcock Laboratories and CWE sampling personnel regarding all sites located in Riverside and San Bernardino Counties.

Dry weather monitoring will continue at Priority 1, 2, and 3 sites through the third quarter of 2018 and temporarily conclude on the week of September 16 until the cool season begins during the fourth quarter. Priority 4 Orange County sites will be sampled during the upcoming quarter.