

Los Angeles Regional Water Quality Control Board

Enclosure 2 – Revised Monitoring Requirements

City of Gardena

Enclosure 2 contains monitoring locations and monitoring requirements specified in Attachment E of the LA County MS4 Permit, including receiving water monitoring during wet and dry weather, stormwater outfall based monitoring, non-stormwater outfall based screening and monitoring, and aquatic toxicity monitoring. Enclosure 2 also identifies TMDL compliance monitoring that the City is required to conduct per Attachment E and Attachment N Part E (Dominguez Channel and Greater Harbor Waters Toxic Pollutants TMDL) of the LA County MS4 Permit. Furthermore, Attachment E Part VI.C–D, Part VIII.B, and Part IX.G of the LA County MS4 Permit require monitoring for 303(d) listed pollutants. Because the City of Gardena discharges to a 303(d) listed waterbody (Dominguez Channel and the Dominguez Channel Estuary), it must monitor these pollutants.

Table 1. City of Gardena Required Monitoring Locations¹

Station/Site ID	Description	Waterbody	Latitude	Longitude	Details
FS3	Stormwater - Outfall / TMDL - Outfall	Dominguez Channel	33.901836	-118.324964	S. Normandie Ave
FS4	Stormwater - Outfall / TMDL - Outfall	Dominguez Channel	33.872029	-118.298876	Western & Artesia Blvd
S28	Receiving Water - Mass Emission Station	Dominguez Channel	33.8729	-118.3114	Artesia Blvd & Dominguez Channel
R1	Receiving Water - TMDL	Dominguez Channel Estuary	33.871472	-118.290794	Vermont Ave.

¹ All of the monitoring locations in Table 1 (above) and Enclosure 3 (Map of Monitoring Locations) were selected consistent with criteria in Attachment E, Parts VI – IX of the LA County MS4 Permit. Some of the locations in Table 1 (FS3, FS4, and S28) were also proposed by the City of Gardena in their final IMP submitted to the Los Angeles Water Board on April 21, 2016.

Table 2. City of Gardena Monitoring Requirements

Constituent	Annual Frequency (number wet events/number dry events)			
	Dominguez Channel Watershed ²			
	Receiving Water ³	TMDL ⁴	Stormwater ⁵	Non-Stormwater ⁶
	S28	R1	FS3/FS4	
Pollutants identified in Attachment E Table E-2 of the LA County MS4 Permit	1/1 ⁷		3/0 ⁸	0/4 ⁹
Aquatic Toxicity ¹⁰	2/1 ¹¹		12	13
Total Suspended Solids (TSS)	3/2		3/0	0/4
Flow	3/2		3/0	0/4
Hardness	3/2		3/0	0/4
pH	3/2		3/0	0/4
Dissolved Oxygen	3/2		3/0	0/4
Temperature	3/2		3/0	0/4
Specific/Electrical Conductivity	3/2		3/0	0/4
<i>E. coli</i>	3/2		3/0	0/4
Copper, total recoverable	3/2		2/0 ¹⁴	0/1 ¹⁵
Lead, total recoverable	3/2		2/0 ¹⁶	0/1 ¹⁷

² In addition to Attachment N Part E.2.a.ii, samples of non-stormwater collected from outfalls (sites FS3 and FS4) during flow conditions less than the 90th percentile of annual flow rates must demonstrate that the acute and chronic hardness dependent water quality criteria (for copper, lead, and zinc) provided in the California Toxics Rule (CTR) are achieved (see Attachment N Part E.3.a.ii, footnote 6 of the LA County MS4 Permit).

³ Monitoring shall occur as per Attachment E Part VI.B-C of the LA County MS4 Permit. Dry weather monitoring shall be conducted in July, the historically driest month.

⁴ Monitoring for the Dominguez Channel and Greater Los Angeles and Long Beach Harbor Waters Toxic Pollutants TMDL for Dominguez Channel and Dominguez Channel Estuary shall be conducted at sites FS3 and FS4 for pollutants in the water column and in bulk sediment and at site R1 for pollutants in fish tissue and bed sediment.

⁵ Monitoring and sampling shall occur as per Attachment E Part VIII.B-C of the LA County MS4 Permit.

⁶ Sampling shall occur as per Attachment E Part IX.H of the LA County MS4 Permit.

⁷ Wet weather receiving water Table E-2 constituents monitoring requirements per Attachment E Part VI.C.1.e and dry weather receiving water Table E-2 constituents monitoring requirements per Attachment E Part VI.D.1.d of the LA County MS4 Permit.

⁸ Other parameters in Table E-2 identified as exceeding the lowest applicable water quality objective in the nearest downstream receiving water monitoring station per Part VI.C.1.e (Attachment E Part VIII.B.1.d) of the LA County MS4 Permit.

⁹ Other parameters in Table E-2 identified as exceeding the lowest applicable water quality objective in the nearest downstream receiving water monitoring station per Part VI.D.1.d (Attachment E Part IX.G.1.e) of the LA County MS4 Permit.

¹⁰ Aquatic toxicity shall be monitored in accordance with Part XII of Attachment E, and as detailed in the Los Angeles Regional Board August 7, 2015, Memorandum titled "Clarification Regarding Follow-up Monitoring Requirements in Response to Observed Toxicity in Receiving Waters Pursuant to the Monitoring & Reporting Program (Attachment E) of the Los Angeles County MS4 Permit (Order No. R4-2012-0175)".

¹¹ Minimum wet weather receiving water monitoring requirements per Attachment E Part VI.C.1.d.vi, and minimum dry weather receiving water monitoring requirements per Attachment E Part VI.D.1.c.vi of the LA County MS4 Permit.

¹² Minimum storm water outfall based monitoring requirements per Attachment E Part VIII.B.1.c.vi of the LA County MS4 Permit.

¹³ If the discharge exhibits aquatic toxicity, then a TIE shall be conducted per Attachment E Part IX.G.1.d of the LA County MS4 Permit.

¹⁴ Analyzed in the water column and suspended sediment.

¹⁵ Analyzed at FS3 and FS4 in the water column and suspended sediment.

¹⁶ Analyzed in the water column and suspended sediment.

¹⁷ Analyzed at FS3 and FS4 in the water column and suspended sediment.

Constituent	Annual Frequency (number wet events/number dry events)			
	Dominguez Channel Watershed ²			
	Receiving Water ³	TMDL ⁴	Stormwater ⁵	Non-Stormwater ⁶
	S28	R1	FS3/FS4	
Zinc, total recoverable	3/2		2/0 ¹⁸	0/1 ¹⁹
Cadmium, total recoverable			2/0 ²⁰	0/1 ²¹
PCBs ²²			2/0 ²³	
Total PAHs ²⁴			2/0 ²⁵	
Total DDT ²⁶			2/0 ²⁷	
Chlordane ²⁸			2/0 ²⁹	
Dieldrin			2/0 ³⁰	
Toxaphene			2/0	
Ammonia	3/2		3/0	0/4
Benzo[a] Pyrene (3,4-Benzopyrene -7-d)			2/0 ³¹	
Benzo[a] Anthracene			2/0 ³²	
Chrysene (C1-C4)			2/0 ³³	
Phenanthrene			2/0 ³⁴	
Pyrene			2/0 ³⁵	
Municipal Action Levels (MALs) ³⁶			3/0	

¹⁸ Analyzed in the water column and suspended sediment.

¹⁹ Analyzed at FS3 and FS4 in the water column and suspended sediment.

²⁰ Analyzed in the water column and suspended sediment.

²¹ Analyzed at FS3 and FS4 in the water column and suspended sediment.

²² High Resolution (EPA 1668); monitoring for PCBs in sediment or water should be reported as the summation of aroclors and a minimum of 40 (and preferably at least 50) congeners. See Table C8 in the state's Surface Water Ambient Monitoring Program's Quality Assurance Program Plan (page 72 of Appendix C).

²³ Analyzed in the water column and suspended sediment.

²⁴ Total PAHs include but are not limited to: acenaphthene, anthracene, biphenyl, naphthalene, 2,6-dimethylnaphthalene, fluorene, 1-methylnaphthalene, 2-methylnaphthalene, 1-methylphenanthrene, phenanthrene, benzo(a)anthracene, benzo(a)pyrene, benzo(e)pyrene, chrysene, dibenz(a,h)anthracene, fluoranthene, perylene, and pyrene.

²⁵ Analyzed in the water column and suspended sediment.

²⁶ High Resolution (EPA 1699); DDT is defined as the sum of 2,4'-DDD, 2,4'-DDE, 2,4'-DDT, 4,4'-DDD, 4,4'-DDE, and 4,4'-DDT.

²⁷ Analyzed in the water column and suspended sediment.

²⁸ Chlordane is defined as cis-Chlordane (alpha-Chlordane), trans-Chlordane (gamma-Chlordane), oxychlordane, cis-nonachlor, and trans-nonachlor.

²⁹ Analyzed in the water column and suspended sediment.

³⁰ Analyzed in the water column and suspended sediment.

³¹ Analyzed in the water column and suspended sediment.

³² Analyzed in the water column and suspended sediment.

³³ Analyzed in the water column and suspended sediment.

³⁴ Analyzed in the water column and suspended sediment.

³⁵ Analyzed in the water column and suspended sediment.

³⁶ Municipal action level monitoring pursuant to Attachment G Part VIII of the LA County MS4 Permit. The following constituents shall be analyzed: pH, TSS, COD, TKN, nitrate + nitrite as N, total phosphorus, total Cd, total Cr, total Cu, total Pb, total Ni, total Zn, total Hg. For those constituents that are also required to be sampled per the Harbor Toxics TMDL, the two wet weather events used to meet TMDL monitoring requirements may be used to fulfill two of the three MAL sampling events.

Constituent	Annual Frequency (number wet events/number dry events)			
	Dominguez Channel Watershed ²			
	Receiving Water ³	TMDL ⁴	Stormwater ⁵	Non-Stormwater ⁶
	S28	R1	FS3/FS4	
Non-Stormwater Action Levels (ALs) ³⁷				0/4
Sediment Monitoring		³⁸		
Fish Tissue Monitoring		³⁹		

³⁷ Non-stormwater action level monitoring pursuant to Attachment G Part III of the LA County MS4 Permit. The following constituents shall be analyzed: pH, hardness, *E. coli*, total recoverable cyanide, total recoverable copper, total recoverable lead, total recoverable mercury, and total recoverable selenium. For those constituents that are also required to be sampled per the Harbor Toxics TMDL, the one dry weather event used to meet the TMDL monitoring requirement may be used to fulfill one of the four sampling events for each of the non-stormwater outfall/field screening points, FS3 and FS4.

³⁸ Refer to Table 3. Sediment and Fish Tissue Monitoring Requirements.

³⁹ Refer to Table 3. Sediment and Fish Tissue Monitoring Requirements.

Table 3. Sediment and Fish Tissue Monitoring Requirements⁴⁰

Parameter	Frequency
Sediment Monitoring ⁴¹	
Copper	Once every 2 years
Lead	
Zinc	
Cadmium	
PAHs, total ⁴²	
Chlordane ⁴³	
Dieldrin	
DDT, total ⁴⁴	
PCBs, total ⁴⁵	
Total Organic Carbon (TOC)	
Grain Size	
Sediment Toxicity	
Benthic Community	
Fish Tissue ⁴⁶	
Chlordane	Once every 2 years
Dieldrin	
Toxaphene	
DDT	
PCBs ⁴⁷	

⁴⁰ Sediment and fish tissue monitoring requirements pursuant to Attachment N, Part E of the LA County MS4 Permit.

⁴¹ Pursuant to Attachment N, Part E.4.d.iv of the LA County MS4 Permit, samples shall be collected in accordance with SWAMP protocols and for analysis of general sediment quality constituents and the full chemical suite as specified in the State Water Board's Water Quality Control Plan for Enclosed Bays and Estuaries – Part 1 Sediment Quality (SQO).

⁴² Total PAHs include but are not limited to: acenaphthene, anthracene, biphenyl, naphthalene, 2,6-dimethylnaphthalene, fluorene, 1-methylnaphthalene, 2-methylnaphthalene, 1-methylphenanthrene, phenanthrene, benzo(a)anthracene, benzo(a)pyrene, benzo(e)pyrene, chrysene, dibenz(a,h)anthracene, fluoranthene, perylene, and pyrene.

⁴³ Chlordane is defined as cis-Chlordane (alpha-Chlordane), trans-Chlordane (gamma-Chlordane), oxychlordane, cis-nonachlor, and trans-nonachlor.

⁴⁴ DDT is defined as the sum of 2,4'-DDD, 2,4'-DDE, 2,4'-DDT, 4,4'-DDD, 4,4'-DDE, and 4,4'-DDT.

⁴⁵ High Resolution (EPA 1668); monitoring for PCBs in sediment or water should be reported as the summation of aroclors and a minimum of 40 (and preferably at least 50) congeners. See Table C8 in the state's Surface Water Ambient Monitoring Program's Quality Assurance Program Plan (page 72 of Appendix C).

⁴⁶ The target species in the Dominguez Channel Estuary shall be selected based on residency, local abundance and fish size at the time of field collection. Tissues analyzed shall be based on the most common preparation for the selected fish species. The City shall provide justification for its selection of the target fish species and method of tissue preparation when reporting the results of the tissue sampling.

⁴⁷ Total PCBs are defined as the sum of Congeners.