

## **Section 9 Attachments**

**Attachment 9.1: Dry Weather Sampling Sites – Updated 06-30-10**

**Attachment 9.2: Laboratory Sampling and Analysis Requirements –  
Updated 06-30-10**

**Attachment 9.3: Numeric Action Levels – Updated 06-30-10**

## **Attachment 9.1 – Dry Weather Sampling Sites**

## Attachment 9.1 Dry Weather Sampling Sites – June 2010

Watershed	Site ID	HSA	Location	Latitude	Longitude	TB Page	TB Grid	Conveyance Type
Santa Margarita River	SMG07	902.22	Sandia Creek @ Sandia Creek Drive (at USGS station)	33.42460	-117.24904	997	F3	Natural Creek
	SMG08	902.21	De Luz Creek @ De Luz Road (Mile Marker 8 @ private driveway)	33.42184	-117.32179	996	G4	Natural Creek
	SMG09	902.22	Santa Margarita River @ SDSU Ecological Reserve Entrance	33.42839	-117.19561	998	C3	Natural Creek
	SMG10	902.21	Santa Margarita River @ Sandia Creek Drive (one-half mile east of De Luz Road)	33.40750	-117.25018	997	G5	Natural Creek
San Luis Rey River	SLR01	903.12	Moosa Canyon Creek @ Old River Road	33.28369	-117.21886	1068	A2	Natural Creek
	SLR02	903.12	Little Gopher Canyon Creek @ Old River Road	33.26578	-117.23320	1067	J4	Natural Creek
	SLR04	903.11	East Channel Creek @ Hutchinson Street and Hidden Lake Lane	33.24084	-117.24198	1087	H1	Natural Creek
	SLR06	903.12	Live Oak Creek @ Oak Cliff Drive	33.33545	-117.18830	1048	E1	Earthen Channel
	SLR08	903.14	Moosa Canyon Creek @ Sunday Drive	33.21497	-117.03338	1090	E4	Earthen Channel
	SLR10	903.13	Old 395 Creek @ Old Hwy 395 (below outfall pipe next to pole # P719838)	33.20494	-117.12968	1089	C5	Outlet
	SLR11	903.13	Old 395 Creek @ 29013 Champagne Blvd. (Old Hwy 395)	33.23783	-117.14607	1089	A1	Earthen Channel
	SLR12	903.12	Green Canyon Creek @ Sycamore Road	33.33312	-117.23551	1047	H2	Natural Creek
	SLR14	903.12	Ostrich Farm Creek @ Highway 76	33.29353	-117.22373	1048	A7	Natural Creek
	SLR15	903.13	Moosa Canyon Creek @ End of Betsworth Road	33.22763	-117.08392	1089	H2	Natural Creek
	SLR16	903.12	San Luis Rey River @ Vista Way	33.26052	-117.23836	1067	H5	Natural Creek
	SLR17	903.12	Keys Creek @ Dunlin Road (San Luis Rey River)	33.32384	-117.15723	1048	H3	Natural Creek
	SLR18	903.21	San Luis Rey River @ Couser Canyon Pass	33.34040	-117.13124	1029	B7	Natural Creek
	SLR20	903.22	Yuima Creek @ Pala Road (Highway 76)	33.28840	-116.95981	1051	D7	Natural Creek

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Watershed	Site ID	HSA	Location	Latitude	Longitude	TB Page	TB Grid	Conveyance Type
	SLR21	903.22	Pauma Creek @ Pala Road (Highway 76)	33.32370	-116.99665	1050	J2	Natural Creek
	SLR27	903.12	Live Oak Creek @ Highway 76	33.31514	-117.19418	1048	D4	Natural Creek
	SLR29	903.12	Keys Creek @ Lilac Road	33.28808	-117.08333	1069	H1	Natural Creek
	SLR30	903.12	Couser Canyon Creek @ Couser Canyon Road	33.33488	-117.13120	1049	B1	Natural Creek
Carlsbad	CAR01	904.61	San Elijo Creek @ La Granada	33.02297	-117.22729	1168	A3	Natural Creek
	CAR02	904.62	Escondido Creek @ East County Club Drive	33.09901	-117.13047	1129	C6	Natural Creek
	CAR03	904.61	Escondido Creek @ El Camino Del Norte	33.04839	-117.22716	1148	A6	Natural Creek
	CAR04	904.52	San Marcos Creek @ Discovery Street	33.13046	-117.20045	1128	D2	Natural Creek
	CAR05	904.32	Buena Creek @ Robelini Drive	33.17239	-117.20997	1108	C3	Earthen Channel
	CAR06	904.53	San Marcos Creek @ Olive Street and Sycamore Drive	33.17993	-117.15341	1108	J2	Earthen Channel
	CAR08	904.62	Reidy Canyon Creek @ Paso Del Norte	33.17810	-117.09193	1109	G2	Natural Creek
	CAR09	904.61	San Elijo Creek @ El Camino Real	33.01084	-117.23985	1167	J4	Natural Creek
	CAR10	904.61	Tributary of San Elijo Creek @ San Elijo Road	33.02585	-117.21569	1168	C2	Natural Creek
	CAR12	904.62	Reidy Canyon Creek @ Bachelor Lane	33.19801	-117.08966	1089	G6	Natural Creek
	CAR13	904.52	Storm Drain Outfall to Lake San Marcos @ End of San Marino Drive	33.12012	-117.20997	1128	C3	Outlet
	CAR14	904.52	Tributary to Lake San Marcos @ End of El Chico Lane	33.11896	-117.20744	1128	C3	Earthen Channel
	CAR15	904.62	Jesmond Dene Creek @ Jesmond Dene Heights Road	33.17084	-117.10002	1109	F3	Natural Creek
San Dieguito River	SDG02	905.41	Etcheverry Creek @ Highway 67	33.02243	-116.89673	1172	D2	Natural Creek
	SDG03	905.41	Santa Maria Creek @ Rangeland Road	33.03379	-116.93608	1151	H7	Natural Creek
	SDG04	905.41	Hatfield Creek @ Magnolia Avenue	33.05258	-116.84492	1153	A4	Natural Creek

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Watershed	Site ID	HSA	Location	Latitude	Longitude	TB Page	TB Grid	Conveyance Type
	SDG05	905.11	San Dieguito River @ El Apajo (end)	32.99948	-117.20550	1168	D6	Natural Creek
	SDG07	905.11	La Zanja Canyon Creek @ Rancho Santa Fe Farms Road	32.97771	-117.18116	1188	G2	Natural Creek
	SDG08	905.11	Green Valley Creek @ Lone Quail Road	33.01962	-117.11974	1169	E3	Earthen Channel
	SDG09	905.23	Felicita Creek @ Quite Hill Farm Road	33.07326	-117.08373	1149	J2	Natural Creek
	SDG10	905.32	Rockwood Canyon Creek @ San Pasqual Road (also called Guejito Creek or Quejito Creek)	33.09456	-116.96132	1131	E6	Natural Creek
	SDG12	905.41	Storm Drain Channel @ 7th Street (below Collier County Park)	33.04211	-116.86165	1152	H6	Concrete Channel
San Diego River	SDR01	907.33	Chocolate Canyon Creek @ Arnold Way	32.84127	-116.80540	1233	F5	Natural Creek
	SDR02	907.33	Alpine Creek @ Tavern Road	32.83192	-116.77528	1234	A6	Natural Creek
	SDR03	907.33	Alpine Creek @ Midway Drive	32.83879	-116.79011	1233	H6	Natural Creek
	SDR05	907.13	Culvert @ Bradley Avenue and Graves Avenue	32.81889	-116.95928	1251	F2	Concrete Channel
	SDR07	907.13	Forrester Creek @ Greenfield Drive	32.80826	-116.91151	1252	C3	Natural Creek
	SDR08	907.14	Los Coches Creek @ I-8 Business Route	32.83599	-116.90040	1232	D7	Natural Creek
	SDR11	907.12	San Diego River @ Channel Road	32.86473	-116.92755	1232	A2	Concrete Channel
	SDR13	907.12	Eucalyptus Hills Creek @ Riverside Drive (Storm Drain Channel)	32.86204	-116.94466	1231	H3	Concrete Channel
	SDR15	907.12	Lindo Lake Outfall @ Petite Lane	32.85716	-116.91278	1232	C3	Outlet
	SDR16	907.14	Los Coches Creek @ Los Coches Road and Ha Hana Road	32.84004	-116.91346	1232	C6	Natural Creek
	SDR17	907.12	San Vicente Creek @ Willow Road	32.87565	-116.92145	1232	B1	Natural Creek
	SDR18	907.12	Quail Creek Outfall @ Lakeshore Drive and Lindo Lake	32.86030	-116.91760	1232	B3	Outlet

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Watershed	Site ID	HSA	Location	Latitude	Longitude	TB Page	TB Grid	Conveyance Type
	SDR19	907.23	Tributary of San Vicente Creek @ San Vicente Road	33.00561	-116.82115	1173	D4	Natural Creek
	SDR20	907.23	San Vicente Creek @ Wildcat Canyon Road	32.99628	-116.84387	1173	A5	Natural Creek
	SDR21	907.14	Oak Creek @ Olde Highway 80	32.84807	-116.86946	1232	H5	Concrete Channel
	SDR22	907.33	Tributary of Chocolate Canyon Creek @ Arnold Way	32.84232	-116.80839	1233	F5	Outlet
	SDR24	907.12	Tributary to the San Diego River @ 11633 Woodside Avenue	32.85504	-116.94268	1231	H4	Earthen Channel
	SDR25	907.23	San Vicente Creek @ San Vicente Road	33.00162	-116.80160	1173	F4	Natural Creek
	SDR34	907.14	Tributary to Los Coches Creek @ 11962 Woodside Avenue	32.85565	-116.93548	1231	J4	Outlet
Sweetwater River	SWT01	909.12	Sweetwater River @ Willow Road	32.65895	-117.04231	1310	F3	Natural Creek
	SWT02	909.12	Long Canyon Creek @ Bonita Road near Acacia Ave.	32.66558	-117.02409	1310	J2	Concrete Channel
	SWT03	909.12	Sweetwater River @ Plaza Bonita Road	32.65069	-117.06374	1310	D4	Natural Creek
	SWT05	909.12	San Miguel Creek @ Bonita Road	32.66692	-117.02325	1310	J2	Earthen Channel
	SWT07	909.12	Spring Valley Creek @ Quarry Road	32.70114	-117.00927	1291	A4	Earthen Channel
	SWT08	909.12	Casa de Oro Creek @ Valencia Street/Kings View Circle	32.73330	-117.00861	1271	A7	Concrete Channel
	SWT09	909.12	Spring Valley Creek @ Valencia Street/Kings View Circle	32.73335	-117.00870	1271	A7	Concrete Channel
	SWT10	909.22	Jamacha Creek @ Jamacha Road near Willow Glen Drive	32.74445	-116.93002	1272	A5	Outlet
	SWT11	909.22	Sweetwater River @ Steele Canyon Road	32.74449	-116.91693	1272	C5	Earthen Channel
	SWT12	909.21	Sweetwater River @ Old Bridge	32.73266	-116.94029	1271	J6	Natural Creek
	SWT13	909.21	Tributary of Sweetwater River @ Millar Ranch Road south of Highway 94	32.73028	-116.93887	1271	J7	Concrete Channel
	SWT14	909.12	Helix Street Drainage Next to Highway 94	32.74968	-117.00087	1271	B5	Concrete Channel

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Watershed	Site ID	HSA	Location	Latitude	Longitude	TB Page	TB Grid	Conveyance Type
	SWT15	909.12	Casa de Oro Creek @ Kenwood Drive and Barbic Court	32.74544	-116.99168	1271	C5	Earthen Channel
	SWT18	909.23	Harbison Canyon Road @ Collier Way	32.81511	-116.83599	1253	C2	Natural Creek
	SWT20	909.26	Viejas Creek @ Via Viejas below Private Lake	32.81894	-116.75211	1254	C1	Outlet
	SWT21	909.26	North Fork of Sweetwater River @ Tavern Road and Hawk Vista Lane	32.80879	-116.78036	1253	J2	Natural Creek
	SWT22	909.21	Indian Springs Creek @ Highway 94	32.71966	-116.87986	1292	G1	Natural Creek
	SWT23	909.21	Mexican Canyon Creek @ Jamul Road	32.72929	-116.87239	1272	H7	Natural Creek
	SWT25	909.21	Mexican Canyon Creek @ Campo Road near Jamacha Road	32.73968	-116.95245	1271	H6	Natural Creek
Otay River	OTY03	910.31	Dulzura Creek @ Otay Lakes Valley Road	32.63624	-116.88456	1293	G6	Natural Creek
	OTY04	910.33	Olive Vista Creek @ Olive Vista Drive	32.72168	-116.85344	1293	A1	Natural Creek
Tijuana River	TIJ01	911.61	Cottonwood Creek @ Old Highway 80 (Bridge Crossing)	32.78844	-116.49732	430	A6	Natural Creek
	TIJ02	911.41	Pine Valley Creek @ Old Highway 80 and Pine Valley Road	32.83776	-116.53725	1237	A5	Natural Creek
	TIJ04	911.82	Campo Creek @ Highway 94	32.60939	-116.47421	430	B10	Natural Creek

## **Attachment 9.2 – Laboratory Sampling and Analysis Requirements**



## Attachment 9.2 Laboratory Sampling and Analysis Requirements

### Summary of Laboratory Sampling and Analysis Requirements

Physical and Inorganic Non-Metals	Permit Requirement?	Analytical or Field Method <sup>5</sup>	Container <sup>1</sup>	Volume (mL)	Preservative (+ 4° C)	Holding Time	Reporting Limit(s)
<b>Field Screening Parameters</b>							
Turbidity	Y	Horiba Multiparameter Water Quality Instrument	in situ field measurement			N/A	N/A
pH	Y		in situ field measurement			N/A	N/A
Conductivity	Y		in situ field measurement			N/A	N/A
Temperature	N		in situ field measurement			N/A	N/A
Dissolved Oxygen	N		in situ field measurement			N/A	N/A
Salinity	N		in situ field measurement			N/A	N/A
Ammonia-N	Y	Field Colorimetric <sup>2</sup>	P	250	none	N/A	0.05 mg/L
Nitrate-N	Y		P	250	none	N/A	2.26 mg/L
Orthophosphate-P	Y		P	250	none	N/A	0.07 mg/L
MBAS	Y	Detergent Test Kit <sup>3</sup>	P	250	none	N/A	0.125 mg/L
<b>Laboratory Analytical Parameters</b>							
Oil and Grease	Y	EPA 1664	G	1000	HCl	28 d	5.0 mg/L
Diazinon	Y	EPA 8141 and EPA 8081	G	1000	none	7 d	0.05 ug/L
Chlorpyrifos	Y				none		0.05 ug/L
Malathion	N				none		0.05 ug/L
Total Hardness	Y	SM 2340B	P	500	none	6 months	2 mg/L as CaCO <sub>3</sub>
Cadmium (dissolved)	Y	EPA 6010, EPA 200.7 and 200.8	P	500	none	6 months after filtration and preservation with HNO <sub>3</sub>	1 ug/L
Copper (dissolved)	Y						1 ug/L
Lead (dissolved)	Y						1 ug/L
Zinc (dissolved)	Y						5 ug/L
Coliform, total <sup>4</sup>	Y	MPN - SM 9221C	P (sterile)	100	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	6 hours at 4°C	20/10 MPN/100 mls
Coliform, fecal <sup>4</sup>	Y	MPN - SM 9221C	P (sterile)				
<i>Enterococcus</i> <sup>4</sup>	Y	MPN - SM 9230B	P (sterile)				

<sup>1</sup>V=VOA / G=Amber Glass / P=Plastic

<sup>2</sup>Analyzed with Chemetrics VVR Water Analysis System - an automatic colorimetric method. Ammonia was measured using a Chemetrics colorimetric test kit using a color wheel beginning July 15, 2002.

<sup>3</sup>Analyzed with Chemetrics detergent test kit - visual colorimetric method using a color wheel

<sup>4</sup>3 extra dilutions for total & fecal Coliform Range: 20 to 1.6 million MPN/100mL and 2 extra dilutions for *Enterococcus* Range: 10 to 160,000 MPN/100m

<sup>5</sup>Analytical methods may vary depending upon laboratory contractors. However EPA or methods consistent with the Permit will be used.

## **Attachment 9.3 – Numeric Action Levels**

### Attachment 9.3 Numeric Action Levels for Field and Laboratory Analyses

<b>Field Screening Analytes</b>	<b>Action Levels<sup>1</sup></b>	<b>Source/ Notes</b>
pH	<6.5 or >9.0	Basin Plan, w/ allowance for elevated pH due to excessive photosynthesis. Elevated pH is especially problematic in combination with high ammonia
Orthophosphate-P (mg/L)	2.0	USEPA Multi-sector General Permit
Nitrate-N (mg/L)	10.0	Basin Plan, and drinking water standards
Ammonia-N (mg/L)	1.0	Based on Workgroup experience. May also consider unionized ammonia fraction
MBAS (mg/L)	1.0	Basin Plan, w/ allowance based on Workgroup field experience and possible field reagent interferences
Turbidity (NTU)	Best Professional Judgment	WQOs relevant to inland surface waters are not available. Base judgment on channel type and bottom, time since last rain, background levels, and most importantly visual observation (e.g. unusual colors and lack of clarity), and unusual odors.
Temperature (°F or °C)	Best Professional Judgment	Base judgment on season, air temperature, channel type, shading, etc.
Conductivity (umhos/cm)	Best Professional Judgment	Values > 5,000 umhos/cm may indicate IC/ID however; EC may be highly elevated in some regions due to high-TDS groundwater exfiltration to surface water, mineral dissolution, drought, and seawater intrusion. Normal source ID and discharge elimination work is not effective in these situations. Knowledge of area background conditions is important. Values < 750 may indicate excessive potable water discharge or flushing.
<b>Laboratory Analytes</b>	<b>Action Levels</b>	<b>Source/ Notes</b>
Oil and Grease (mg/L)	15	USEPA Multi-sector General Permit. If a petroleum sheen is observed, the sample should be collected from the water surface. Visual observations may justify immediate investigation.
Diazinon (ug/L)	0.5	Response to diazinon and chlorpyrifos levels above 0.5 ug/L should focus on education and outreach to potential dischargers in the target drainage basin. Highly elevated levels should be investigated aggressively as with other potential IC/IDs.
Chlorpyrifos (ug/L)	0.5	
Dissolved Cadmium (ug/L)	California Toxics Rule	Use California Toxics Rule Table, 1-hour criteria to determine appropriate action level for individual samples. Table provides benchmarks based on hardness and dissolved metals concentration. For example, at 300 mg/L hardness the following action levels would apply: Cd - 14 ppb; Cu - 38 ppb; Pb - 209 ppb; and Zn - 297 ppb.
Dissolved Copper (ug/L)	California Toxics Rule	
Dissolved Lead (ug/L)	California Toxics Rule	
Dissolved Zinc (ug/L)	California Toxics Rule	
Total Coliform (MPN/ 100 mls)	130,000	Action levels are based on 80 <sup>th</sup> percentile confidence level of Copermittees 2002-2007 dry weather analytical monitoring data.
Fecal Coliform (MPN/ 100 mls)	13,000	
Enterococcus (MPN/ 100 mls)	7,000	

<sup>1</sup>The referenced action levels should not be the sole criteria for initiating a source identification investigation. Dry weather monitoring data should be interpreted using a variety of available information including best professional judgment and within-site and between-site sample variability.