

3. If an analytical effluent sampling result exceeds the turbidity NEL (as listed in Table 1), the discharger is in violation of this General Permit and shall electronically file the results in violation within 24-hours of obtaining the results.
4. If ATS effluent is authorized to discharge into a sanitary sewer system, the discharger shall comply with any pre-treatment requirements applicable for that system. The discharger shall include any specific criteria required by the municipality in the ATS Plan.
5. Compliance Storm Event:

Discharges of storm water from ATS shall comply with applicable NELs (above) unless the storm event causing the discharges is determined after the fact to be equal to or larger than the Compliance Storm Event (expressed in inches of rainfall). The Compliance Storm Event for ATS discharges is the 10 year, 24 hour storm, as determined using these maps:

<http://www.wrcc.dri.edu/pcpnfreq/nca10y24.gif>  
<http://www.wrcc.dri.edu/pcpnfreq/sca10y24.gif>

This exemption is dependent on the submission of rain gauge data verifying the storm event is equal to or larger than the Compliance Storm.

#### **J. Operation and Maintenance Plan**

1. Each Project shall have a site-specific Operation and Maintenance (O&M) Manual covering the procedures required to install, operate and maintain the ATS.<sup>8</sup>
2. The O&M Manual shall only be used in conjunction with appropriate project-specific design specifications that describe the system configuration and operating parameters.
3. The O&M Manual shall have operating manuals for specific pumps, generators, control systems, and other equipment.

#### **K. Sampling and Reporting Quality Assurance/ Quality Check (QA/QC) Plan**

4. A project-specific QA/QC Plan shall be developed for each project. The QA/QC Plan shall include at a minimum:
  - a. Calibration – Calibration methods and frequencies for all system and field instruments shall be specified.

<sup>8</sup> The manual is typically in a modular format covering generalized procedures for each component that is utilized in a particular system.

- b. Method Detection Limits (MDLs) – The methods for determining MDLs shall be specified for each residual coagulant measurement method. Acceptable minimum MDLs for each method, specific to individual coagulants, shall be specified.
- c. Laboratory Duplicates – Requirements for monthly laboratory duplicates for residual coagulant analysis shall be specified.

#### **L. Personnel Training**

- 1. Operators shall have training specific to using an ATS and liquid coagulants for storm water discharges in California.
- 2. The training shall be in the form of a formal class with a certificate and requirements for testing and certificate renewal.
- 3. Training shall include a minimum of eight hours classroom and 32 hours field training. The course shall cover the following topics:
  - a. Coagulation Basics –Chemistry and physical processes
  - b. ATS System Design and Operating Principles
  - c. ATS Control Systems
  - d. Coagulant Selection – Jar testing, dose determination, etc.
  - e. Aquatic Safety/Toxicity of Coagulants, proper handling and safety
  - f. Monitoring, Sampling, and Analysis
  - g. Reporting and Recordkeeping
  - h. Emergency Response

#### **M. Active Treatment System (ATS) Monitoring Requirements**

Any discharger who deploys an ATS on their site shall conduct the following:

- 1. Visual Monitoring
  - a. A designated responsible person shall be on site daily at all times during treatment operations.

- b. Daily on-site visual monitoring of the system for proper performance shall be conducted and recorded in the project data log.
  - i. The log shall include the name and phone number of the person responsible for system operation and monitoring.
  - ii. The log shall include documentation of the responsible person's training.

## 2. Operational and Compliance Monitoring

- a. Flow shall be continuously monitored and recorded at not greater than 15-minute intervals for total volume treated and discharged.
- b. Influent and effluent pH must be continuously monitored and recorded at not greater than 15-minute intervals.
- c. Influent and effluent turbidity (expressed in NTU) must be continuously monitored and recorded at not greater than 15-minute intervals.
- d. The type and amount of chemical used for pH adjustment, if any, shall be monitored and recorded.
- e. Dose rate of chemical used in the ATS system (expressed in mg/L) shall be monitored and reported 15-minutes after startup and every 8 hours of operation.
- f. Laboratory duplicates – monthly laboratory duplicates for residual coagulant analysis must be performed and records shall be maintained onsite.
- g. Effluent shall be monitored and recorded for residual chemical/additive levels.
- h. If a residual chemical/additive test does not exist and the ATS is operating in a batch treatment mode of operation refer to the toxicity monitoring requirements below.

## 3. Toxicity Monitoring

A discharger operating in batch treatment mode shall perform toxicity testing in accordance with the following:

- a. The discharger shall initiate acute toxicity testing on effluent samples representing effluent from each batch prior to discharge.<sup>9</sup> All bioassays shall be sent to a laboratory certified by the Department of Health Services (DHS)

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<sup>9</sup> This requirement only requires that the test be initiated prior to discharge.

Environmental Laboratory Accreditation Program (ELAP). The required field of testing number for Whole Effluent Toxicity (WET) testing is E113.<sup>10</sup>

- b. Acute toxicity tests shall be conducted with the following species and protocols. The methods to be used in the acute toxicity testing shall be those outlined for a 96-hour acute test in “Methods for Measuring the Acute Toxicity of Effluents and Receiving Water to Freshwater and Marine Organisms, USEPA-841-R-02-012” for Fathead minnow, *Pimephales promelas* or Rainbow trout *Oncorhynchus mykiss* may be used as a substitute for fathead minnow.
- c. All toxicity tests shall meet quality assurance criteria and test acceptability criteria in the most recent versions of the EPA test method for WET testing.<sup>11</sup>

#### 4. Reporting and Recordkeeping

At a minimum, every 30 days a LRP representing the discharger shall access the State Water Boards Storm Water Multit-Application and Report Tracking system (SMARTS) and electronically upload field data from the ATS. Records must be kept for three years after the project is completed .

#### 5. Non-compliance Reporting

- a. Any indications of toxicity or other violations of water quality objectives shall be reported to the appropriate regulatory agency as required by this General Permit.
- b. Upon any measurements that exceed water quality standards, the system operator shall immediately notify his supervisor or other responsible parties, who shall notify the Regional Water Board.
- c. If any monitoring data exceeds any applicable NEL in this General Permit, the discharger shall electronically submit a NEL Violation Report to the State Water Board within 24 hours after the NEL exceedance has been identified.
  - i. ATS dischargers shall certify each NEL Violation Report in accordance with the Special Provisions for Construction Activity in this General Permit.
  - ii. ATS dischargers shall retain an electronic or paper copy of each NEL Violation Report for a minimum of three years after the date the annual report is filed.
  - iii. ATS dischargers shall include in the NEL Violation Report:

<sup>10</sup> [http://www.dhs.ca.gov/ps/ls/elap/pdf/FOT\\_Desc.pdf](http://www.dhs.ca.gov/ps/ls/elap/pdf/FOT_Desc.pdf).

<sup>11</sup> <http://www.epa.gov/waterscience/methods/wet/>.

- (1) The analytical method(s), method reporting unit(s), and method detection limit(s) of each analytical parameter (analytical results that are less than the method detection limit shall be reported as “less than the method detection limit”);
  - (2) The date, place, time of sampling, visual observation (inspections), and/or measurements, including precipitation; and
  - (3) A description of the current onsite BMPs, and the proposed corrective actions taken to manage the NEL exceedance.
- iv. Compliance Storm Exemption - In the event that an applicable NEL has been exceeded during a storm event equal to or larger than the Compliance Storm Event, ATS dischargers shall report the on-site rain gauge reading and nearby governmental rain gauge readings for verification.



	A	B	C
1	<b>Sediment Risk Factor Worksheet</b>		<b>Entry</b>
2	<b>A) R Factor</b>		
3	Analyses of data indicated that when factors other than rainfall are held constant, soil loss is directly proportional to a rainfall factor composed of total storm kinetic energy (E) times the maximum 30-min intensity (I30) (Wischmeier and Smith, 1958). The numerical value of R is the average annual sum of EI30 for storm events during a rainfall record of at least 22 years. "Isoerodent" maps were developed based on R values calculated for more than 1000 locations in the Western U.S. Refer to the link below to determine the R factor for the project site.		
4	<a href="http://cfpub.epa.gov/npdes/stormwater/LEW/lewCalculator.cfm">http://cfpub.epa.gov/npdes/stormwater/LEW/lewCalculator.cfm</a>		
5		<b>R Factor Value</b>	0
6	<b>B) K Factor (weighted average, by area, for all site soils)</b>		
7	The soil-erodibility factor K represents: (1) susceptibility of soil or surface material to erosion, (2) transportability of the sediment, and (3) the amount and rate of runoff given a particular rainfall input, as measured under a standard condition. Fine-textured soils that are high in clay have low K values (about 0.05 to 0.15) because the particles are resistant to detachment. Coarse-textured soils, such as sandy soils, also have low K values (about 0.05 to 0.2) because of high infiltration resulting in low runoff even though these particles are easily detached. Medium-textured soils, such as a silt loam, have moderate K values (about 0.25 to 0.45) because they are moderately susceptible to particle detachment and they produce runoff at moderate rates. Soils having a high silt content are especially susceptible to erosion and have high K values, which can exceed 0.45 and can be as large as 0.65. Silt-size particles are easily detached and tend to crust, producing high rates and large volumes of runoff. Use Site-specific data must be submitted.		
8	<a href="#">Site-specific K factor guidance</a>		
9		<b>K Factor Value</b>	0
10	<b>C) LS Factor (weighted average, by area, for all slopes)</b>		
11	The effect of topography on erosion is accounted for by the LS factor, which combines the effects of a hillslope-length factor, L, and a hillslope-gradient factor, S. Generally speaking, as hillslope length and/or hillslope gradient increase, soil loss increases. As hillslope length increases, total soil loss and soil loss per unit area increase due to the progressive accumulation of runoff in the downslope direction. As the hillslope gradient increases, the velocity and erosivity of runoff increases. Use the LS table located in separate tab of this spreadsheet to determine LS factors. Estimate the weighted LS for the site prior to construction.		
12	<a href="#">LS Table</a>		
13		<b>LS Factor Value</b>	0
14			
15	<b>Watershed Erosion Estimate (=R<sub>x</sub>K<sub>x</sub>LS) in tons/acre</b>		0
16	<b>Site Sediment Risk Factor</b>		<b>Low</b>
17	Low Sediment Risk: < 15 tons/acre		
18	Medium Sediment Risk: >=15 and <75 tons/acre		
19	High Sediment Risk: >= 75 tons/acre		
20			
21			
22			
23	<b>GIS Map Method:</b>		
24	1. The R factor for the project is calculated using the online calculator at:		
25	<a href="http://cfpub.epa.gov/npdes/stormwater/LEW/lewCalculator.cfm">http://cfpub.epa.gov/npdes/stormwater/LEW/lewCalculator.cfm</a>		
26			
27	2. The K and LS factors may be obtained by accessing the GIS maps located on the State Water Board FTP website at:		
28	<a href="ftp://swrcb2a.waterboards.ca.gov/pub/swrcb/dwg/cgp/Risk/">ftp://swrcb2a.waterboards.ca.gov/pub/swrcb/dwg/cgp/Risk/</a>		
29			

Receiving Water (RW) Risk Factor Worksheet	Entry	Score
<b>A. Watershed Characteristics</b>	yes/no	
A.1. Does the disturbed area discharge (either directly or indirectly) to a <b>303(d)-listed waterbody impaired by sediment</b> (For help with impaired waterbodies please visit the link below) or has a <b>USEPA approved TMDL implementation plan for sediment?</b> :	no	Low
<a href="http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml">http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml</a>		
<b><u>OR</u></b>		
A.2. Does the disturbed area discharge to a waterbody with designated beneficial uses of SPAWN & COLD & MIGRATORY? (For help please review the appropriate Regional Board Basin Plan)		
<a href="http://www.waterboards.ca.gov/waterboards_map.shtml">http://www.waterboards.ca.gov/waterboards_map.shtml</a>		
<a href="#">Region 1 Basin Plan</a> <a href="#">Region 2 Basin Plan</a> <a href="#">Region 3 Basin Plan</a> <a href="#">Region 4 Basin Plan</a> <a href="#">Region 5 Basin Plan</a> <a href="#">Region 6 Basin Plan</a> <a href="#">Region 7 Basin Plan</a> <a href="#">Region 8 Basin Plan</a> <a href="#">Region 9 Basin Plan</a>		



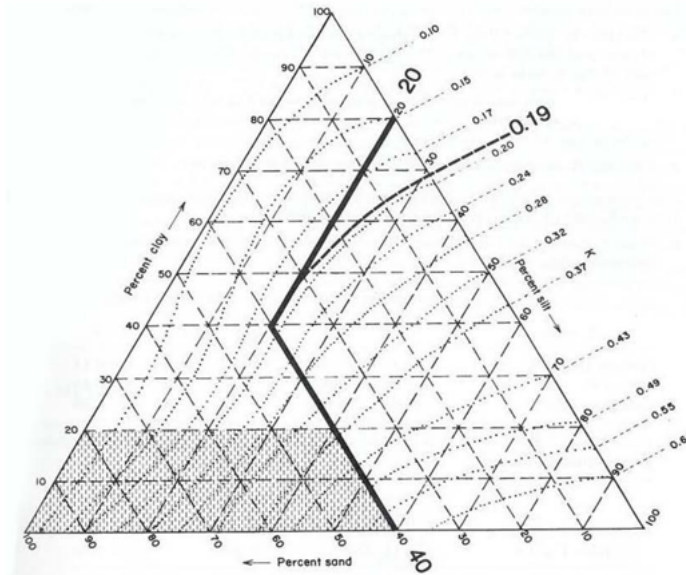
# Combined Risk Level Matrix

		<u>Sediment Risk</u>		
		Low	Medium	High
<u>Receiving Water Risk</u>	Low	Level 1	Level 2	
	High	Level 2		Level 3

Project Sediment Risk: **Low**  
Project RW Risk: **Low**  
Project Combined Risk: **Level 1**

### Soil Erodibility Factor (K)

The K factor can be determined by using the nomograph method, which requires that a particle size analysis (ASTM D-422) be done to determine the percentages of sand, very fine sand, silt and clay. Use the figure below to determine appropriate K value.



Erickson triangular nomograph used to estimate soil erodibility (K) factor.

The figure above is the USDA nomograph used to determine the K factor for a soil, based on its texture (% silt plus very fine sand, % sand, % organic matter, soil structure, and permeability). *Nomograph from Erickson 1977 as referenced in Goldman et. al., 1986.*

Sheet Flow Length (ft)	Average Watershed Slope (%)																			
	0.2	0.5	1.0	2.0	3.0	4.0	5.0	6.0	8.0	10.0	12.0	14.0	16.0	20.0	25.0	30.0	40.0	50.0	60.0	
<3	0.05	0.07	0.09	0.13	0.17	0.20	0.23	0.26	0.32	0.35	0.36	0.38	0.39	0.41	0.45	0.48	0.53	0.58	0.63	
6	0.05	0.07	0.09	0.13	0.17	0.20	0.23	0.26	0.32	0.37	0.41	0.45	0.49	0.56	0.64	0.72	0.85	0.97	1.07	
9	0.05	0.07	0.09	0.13	0.17	0.20	0.23	0.26	0.32	0.38	0.45	0.51	0.56	0.67	0.80	0.91	1.13	1.31	1.47	
12	0.05	0.07	0.09	0.13	0.17	0.20	0.23	0.26	0.32	0.39	0.47	0.55	0.62	0.76	0.93	1.08	1.37	1.62	1.84	
15	0.05	0.07	0.09	0.13	0.17	0.20	0.23	0.26	0.32	0.40	0.49	0.58	0.67	0.84	1.04	1.24	1.59	1.91	2.19	
25	0.05	0.07	0.10	0.16	0.21	0.26	0.31	0.36	0.45	0.57	0.71	0.85	0.98	1.24	1.56	1.86	2.41	2.91	3.36	
50	0.05	0.08	0.13	0.21	0.30	0.38	0.46	0.54	0.70	0.91	1.15	1.40	1.64	2.10	2.67	3.22	4.24	5.16	5.97	
75	0.05	0.08	0.14	0.25	0.36	0.47	0.58	0.69	0.91	1.20	1.54	1.87	2.21	2.86	3.67	4.44	5.89	7.20	8.37	
100	0.05	0.09	0.15	0.28	0.41	0.55	0.68	0.82	1.10	1.46	1.88	2.31	2.73	3.57	4.59	5.58	7.44	9.13	10.63	
150	0.05	0.09	0.17	0.33	0.50	0.68	0.86	1.05	1.43	1.92	2.51	3.09	3.68	4.85	6.30	7.70	10.35	12.75	14.89	
200	0.06	0.10	0.18	0.37	0.57	0.79	1.02	1.25	1.72	2.34	3.07	3.81	4.56	6.04	7.88	9.87	13.07	16.16	18.92	
250	0.06	0.10	0.19	0.40	0.64	0.89	1.16	1.43	1.99	2.72	3.60	4.48	5.37	7.16	9.38	11.55	15.67	19.42	22.78	
300	0.06	0.10	0.20	0.43	0.69	0.98	1.28	1.60	2.24	3.09	4.09	5.11	6.15	8.23	10.81	13.35	18.17	22.57	26.51	
400	0.06	0.11	0.22	0.48	0.80	1.14	1.51	1.90	2.70	3.75	5.01	6.30	7.60	10.24	13.53	16.77	22.95	28.60	33.67	
600	0.06	0.12	0.24	0.56	0.96	1.42	1.91	2.43	3.52	4.95	6.67	8.45	10.26	13.94	18.57	23.14	31.89	39.95	47.18	
800	0.06	0.12	0.26	0.63	1.10	1.65	2.25	2.89	4.24	6.03	8.17	10.40	12.69	17.35	23.24	29.07	40.29	50.63	59.93	
1000	0.06	0.13	0.27	0.69	1.23	1.86	2.55	3.30	4.91	7.02	9.57	12.23	14.96	20.57	27.66	34.71	48.29	60.84	72.15	

LS Factors for Construction Sites. Table from Renard et. al., 1997.

## **APPENDIX 2: Post-Construction Water Balance Performance Standard Spreadsheet**

The discharger shall submit with their Notice of Intent (NOI) the following information to demonstrate compliance with the New and Re-Development Water Balance Performance Standard.

### **Map Instructions**

The discharger must submit a small-scale topographic map of the site to show the existing contour elevations, pre- and post-construction drainage divides, and the total length of stream in each watershed area. Recommended scales include 1 in. = 20 ft., 1 in. = 30 ft., 1 in. = 40 ft., or 1 in. = 50 ft. The suggested contour interval is usually 1 to 5 feet, depending upon the slope of the terrain. The contour interval may be increased on steep slopes. Other contour intervals and scales may be appropriate given the magnitude of land disturbance.

### **Spreadsheet Instructions**

The intent of the spreadsheet is to help dischargers calculate the project-related increase in runoff volume and select impervious area and runoff reduction credits to reduce the project-related increase in runoff volume to pre-project levels.

The discharger has the option of using the spreadsheet (**Appendix 2.1**) or a more sophisticated, watershed process-based model (e.g. Storm Water Management Model, Hydrological Simulation Program Fortran) to determine the project-related increase in runoff volume.

***In Appendix 4.1, you must complete the worksheet for each land use/soil type combination for each project sub-watershed.***

### **Steps 1 through 9 pertain specifically to the Runoff Volume Calculator:**

Step 1: Enter the county where the project is located in cell H3.

Step 2: Enter the soil type in cell H6.

Step 3: Enter the existing pervious (dominant) land use type in cell H7.

Step 4: Enter the proposed pervious (dominant) land use type in cell H8.

Step 5: Enter the total project site area in cell H11 or J11.

Step 6: Enter the sub-watershed area in cell H12 or J12.

- Step 7: Enter the existing rooftop area in cell H17 or J17, the existing non-rooftop impervious area in cell H18 or J18, the proposed rooftop area in cell H19 or J19, and the proposed non-rooftop impervious area in cell H20 or J20
- Step 8: Work through each of the impervious area reduction credits and claim credits where applicable. Volume that cannot be addressed using non-structural practices must be captured in structural practices and approved by the Regional Water Board.
- Step 9: Work through each of the impervious volume reduction credits and claim credits where applicable. Volume that cannot be addressed using non-structural practices must be captured in structural practices and approved by the Regional Water Board.

### **Non-structural Practices Available for Crediting**

- ***Porous Pavement***
- ***Tree Planting***
- ***Downspout Disconnection***
- ***Impervious Area Disconnection***
- ***Green Roof***
- ***Stream Buffer***
- ***Vegetated Swales***
- ***Rain Barrels and Cisterns***
- ***Landscaping Soil Quality***

# Post-Construction Water Balance Calculator

A	B	C	D	E	F	G	H	I	J	K	L	M	N																	
1	<b>Post-Construction Water Balance Calculator</b>																													
2																														
3	User may make changes from any cell that is orange or brown in color (similar to the cells to the immediate right). Cells in green are calculated for you.			(Step 1a) If you know the 85th percentile storm event for your location enter it in the box below		(Step 1b) If you can not answer 1a then select the county where the project is located (click on the cell to the right for drop-down): This will determine the average 85th percentile 24 hr. storm event for your site, which will appear under precipitation to left.			SACRAMENTO																					
4									(Step 1c) If you would like a more precise value select the location closest to your site. If you do not recognize any of these locations, leave this drop-down menu at location. The average value for the County will be used.			SACRAMENTO FAA ARPT																		
5	<b>Project Information</b>					<b>Runoff Calculations</b>																								
6	Project Name:		Optional		(Step 2) Indicate the Soil Type (dropdown menu to right):			Group C Soils		Low infiltration. Sandy clay loam. Infiltration rate 0.05 to 0.15 inch/hr when wet.																				
7	Waste Discharge Identification (WDID):		Optional					(Step 3) Indicate the existing dominant non-built land Use Type (dropdown menu to right):			Wood & Grass: <50% ground cover																			
8	Date:		Optional		(Step 4) Indicate the proposed dominant non-built land Use Type (dropdown menu to right):						Lawn, Grass, or Pasture covering more than 75% of the open space																			
9	Sub Drainage Area Name (from map):		Optional								Complete Either																			
10	<b>Runoff Curve Numbers</b>										Sq Ft	Acres	Acres																	
11	Existing Pervious Runoff Curve Number		82		(Step 5) Total Project Site Area:			5.00		5.00																				
12	Proposed Development Pervious Runoff Curve Number		74					(Step 6) Sub-watershed Area:			5.00		5.00																	
13	<b>Design Storm</b>										Percent of total project : 100%																			
14	Based on the County you indicated above, we have included the 85 percentile average 24 hr event - P85 (in)" for your area.		0.62		in		(Step 7) Sub-watershed Conditions			Complete Either		Calculated Acres																		
15	The Amount of rainfall needed for runoff to occur (Existing runoff curve number -P from existing RCN (in)"*)		0.44		In					Sq Ft		Acres		5.00																
16	P used for calculations (in) (the greater of the above two criteria)		0.62		In					Sub-watershed Area (acres)		0		0.00																
17	<a href="http://www.cabmphandbooks.com">Available at www.cabmphandbooks.com</a>						Existing Rooftop Impervious Coverage		0		0.00																			
18											Existing Non-Rooftop Impervious Coverage		0		0.00															
19																	Proposed Rooftop Impervious Coverage		0		0.00									
20																							Proposed Non-Rooftop Impervious Coverage		0		0.00			
21																														
22																														
23																														
24																														
25																	Pre-Project Runoff Volume (cu ft)		247		Cu.Ft.									
26																	Project-Related Runoff Volume Increase w/o credits (cu ft)		0		Cu.Ft.		Impervious Area Disconnection		0.00		0			
27																			Green Roof		0.00		0							
28																			Stream Buffer		0.00		0							
29																			Vegetated Swales		0.00		0							
30																			Project-Related Volume Increase with Credits (cu ft)		0		Cu.Ft.		Subtotal		0.00		0	
31																			You have achieved your minimum requirements						Subtotal Runoff Volume Reduction Credit		0 Cu. Ft.			
32																														
33																														
34																														
35																														
36																														
37																														
38																														
39																														

**Porous Pavement Credit Worksheet**

Please fill out a porous pavement credit worksheet for each project sub-watershed.  
For the *PROPOSED* Development:

Proposed Porous Pavement	Runoff Reduction*	Fill in either Acres or SqFt		Equivalent Acres
		In SqFt.	In Acres	
Area of <b>Brick without Grout</b> on <u>less than 12 inches</u> of base with at least 20% void space over soil	0.45			0.00
Area of <b>Brick without Grout</b> on <u>more than 12 inches</u> of base with at least 20% void space over soil	0.90			0.00
Area of <b>Cobbles</b> <u>less than 12 inches deep</u> and over soil	0.30			0.00
Area of <b>Cobbles</b> <u>less than 12 inches deep</u> and over soil	0.60			0.00
Area of <b>Reinforced Grass Pavement</b> on <u>less than 12 inches</u> of base with at least 20% void space over soil	0.45			0.00
Area of <b>Reinforced Grass Pavement</b> on <u>at least 12 inches</u> of base with at least 20% void space over soil	0.90			0.00
Area of <b>Porous Gravel Pavement</b> on <u>less than 12 inches</u> of base with at least 20% void space over soil	0.38			0.00
Area of <b>Porous Gravel Pavement</b> on <u>at least 12 inches</u> of base with at least 20% void space over soil	0.75			0.00
Area of <b>Poured Porous Concrete or Asphalt Pavement</b> with <u>less than 4 inches</u> of gravel base (washed stone)	0.40			0.00
Area of <b>Poured Porous Concrete or Asphalt Pavement</b> with <u>4 to 8 inches</u> of gravel base (washed stone)	0.60			0.00
Area of <b>Poured Porous Concrete or Asphalt Pavement</b> with <u>8 to 12 inches</u> of gravel base (washed stone)	0.80			0.00
Area of <b>Poured Porous Concrete or Asphalt Pavement</b> with <u>12 or more</u> inches of gravel base (washed stone)	1.00			0.00

\*=1-Rv\*\*

[Return to Calculator](#)

\*\*Using Site Design Techniques to meet Development Standards for Stormwater Quality (BASMAA 2003)  
\*\*NCDENR Stormwater BMP Manual (2007)

**Tree Planting Credit Worksheet**

Please fill out a tree canopy credit worksheet for each project sub-watershed.

<b>Tree Canopy Credit Criteria</b>	Number of Trees Planted	Credit (acres)
Number of proposed evergreen trees to be planted (credit = number of trees x 0.005)*	0	0.00
Number of proposed deciduous trees to be planted (credit = number of trees x 0.0025)*		0.00
	Square feet Under Canopy	
Square feet under an existing tree canopy, that will remain on the property, with an average diameter at 4.5 ft above grade (i.e., diameter at breast height or DBH) is LESS than 12 in diameter.		0.00
Square feet under an existing tree canopy that will remain on the property, with an average diameter at 4.5 ft above grade (i.e., diameter at breast height or DBH) is 12 in diameter or GREATER.		0.00
Please describe below how the project will ensure that these trees will be maintained.		

0

[Return to Calculator](#)

\* credit amount based on credits from Stormwater Quality Design Manual for the Sacramento and South Placer Regions



**Downspout Disconnection Credit Worksheet**

Please fill out a downspout disconnection credit worksheet for each project subwatershed. If you answer yes to all questions, all rooftop area draining to each downspout will be subtracted from your proposed rooftop impervious coverage.

Downspout Disconnection Credit Criteria					
Do downspouts and any extensions extend at least six feet from a basement and two feet from a crawl space or concrete slab?				<input type="radio"/> Yes	<input checked="" type="radio"/> No
Is the area of rooftop connecting to each disconnected downspout 600 square feet or less?				<input type="radio"/> Yes	<input checked="" type="radio"/> No
Is the roof runoff from the design storm event fully contained in a raised bed or planter box or does it drain as sheet flow to a landscaped area large enough to contain the roof runoff from the design storm event?				<input type="radio"/> Yes	<input checked="" type="radio"/> No
The Stream Buffer and/or Vegetated Swale credits <b>will not</b> be taken in this sub-watershed area?				<input type="radio"/> Yes	<input checked="" type="radio"/> No
Percentage of existing	0.00	Acres	of rooftop surface has disconnected downspouts		
Percentage of the proposed	0.00	Acres	of rooftop surface has disconnected downspouts		
				<a href="#">Return to Calculator</a>	

**Impervious Area Disconnection Credit Worksheet**

Please fill out an impervious area disconnection credit worksheet for each project sub-watershed. If you answer yes to all questions, all non-rooftop impervious surface area will be subtracted from your proposed non-rooftop impervious coverage.

Non-Rooftop Disconnection Credit Criteria	Response
Is the maximum contributing impervious flow path length less than 75 feet or, if equal or greater than 75 feet, is a storage device (e.g. French drain, bioretention area, gravel trench) implemented to achieve the required disconnection length?	<input checked="" type="radio"/> Yes <input type="radio"/> No
Is the impervious area to any one discharge location less than 5,000 square feet?	<input checked="" type="radio"/> Yes <input type="radio"/> No
The Stream Buffer credit <b>will not</b> be taken in this sub-watershed area?	<input checked="" type="radio"/> Yes <input type="radio"/> No

Percentage of existing	0.00	Acres non-rooftop surface area disconnected	
Percentage of the proposed	0.00	Acres non-rooftop surface area disconnected	70

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## Green Roof Credit Worksheet

Please fill out a greenroof credit worksheet for each project sub-watershed. If you answer yes to all questions, 70% of the greenroof area will be subtracted from your proposed rooftop impervious coverage.

Green Roof Credit Criteria		Response
Is the roof slope less than 15% or does it have a grid to hold the substrate in place until it forms a thick vegetation mat?		<input checked="" type="radio"/> <b>Yes</b> <input type="radio"/> <b>No</b>
Has a professional engineer assessed the necessary load reserves and designed a roof structure to meet state and local codes?		<input checked="" type="radio"/> <b>Yes</b> <input type="radio"/> <b>No</b>
Is the irrigation needed for plant establishment and/or to sustain the green roof during extended dry periods, is the source from stored, recycled, reclaimed, or reused water?		<input checked="" type="radio"/> <b>Yes</b> <input type="radio"/> <b>No</b>
Percentage of existing	0.0 0 Acres rooftop surface area in greenroof	
Percentage of the proposed	0.0 0 Acres rooftop surface area in greenroof	
		<a href="#">Return to Calculator</a>

## Stream Buffer Credit Worksheet

Please fill out a stream buffer credit worksheet for each project sub-watershed. If you answer yes to all questions, you may subtract all impervious surface draining to each stream buffer that has not been addressed using the Downspout and/or Impervious Area Disconnection credits.

Stream Buffer Credit Criteria				Response
Does runoff enter the floodprone width* or within 500 feet (whichever is larger) of a stream channel as sheet flow**?				<input type="radio"/> Yes <input checked="" type="radio"/> No
Is the contributing overland slope 5% or less, or if greater than 5%, is a level spreader used?				<input type="radio"/> Yes <input checked="" type="radio"/> No
Is the buffer area protected from vehicle or other traffic barriers to reduce compaction?				<input type="radio"/> Yes <input checked="" type="radio"/> No
Will the stream buffer be maintained in an ungraded and uncompacted condition and will the vegetation be maintained in a natural condition?				<input type="radio"/> Yes <input checked="" type="radio"/> No
Percentage of existing	0.00	Acres	impervious surface area draining into a stream buffer:	
Percentage of the proposed	0.00	Acres	impervious surface area that will drain into a stream buffer:	
Please describe below how the project will ensure that the buffer areas will remain in ungraded and uncompacted condition and that the vegetation will be maintained in a natural condition.				

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\* floodprone width is the width at twice the bankfull depth.

\*\* the maximum contributing length shall be 75 feet for impervious area

**Vegetated Swale Credit Worksheet**

Please fill out a vegetated swale worksheet for each project subwatershed. If you answer yes to all questions, you may subtract all impervious surface draining to each stream buffer that has not been addressed using the Downspout Disconnection credit.

**Vegetated Swale Credit Criteria**

Have all vegetated swales been designed in accordance with Treatment Control BMP 30 (TC-30 - Vegetated Swale) from the California Stormwater BMP Handbook, New Development and Redevelopment (available at [www.cabmphandbooks.com](http://www.cabmphandbooks.com))?

<input type="radio"/> Yes	<input checked="" type="radio"/> No
<input type="radio"/> Yes	<input checked="" type="radio"/> No

Is the maximum flow velocity for runoff from the design storm event less than or equal to 1.0 foot per second?

Percentage of existing	0.00	Acres of impervious area draining to a vegetated swale	
Percentage of the proposed	0.00	Acres of impervious area draining to a vegetated swale	

[Return to Calculator](#)

**Rain Barrel/Cistern Credit Worksheet**

Please fill out a rain barrel/cistern worksheet for each project sub-watershed.

Rain Barrel/Cistern Credit Criteria	Response
Total number of rain barrel(s)/cisterns	
Average capacity of rain barrel(s)/cistern(s) (in gallons)	
Total capacity rain barrel(s)/cistern(s) (in cu ft) <sup>1</sup>	0

<sup>1</sup> accounts for 10% loss

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Please fill out a soil quality worksheet for each project sub-watershed.

	Response
Will the landscaped area be lined with an impervious membrane?	
Will the soils used for landscaping meet the ideal bulk densities listed in Table 1 below? <sup>1</sup>	<input type="radio"/> Yes <input checked="" type="radio"/> No
If you answered yes to the question above, and you know the area-weighted bulk density within the top 12 inches for soils used for landscaping (in g/cm <sup>3</sup> )*, fill in the cell to the right and skip to cell G11. If not select from the drop-down menu in G10.	1.3
If you answered yes to the question above, but you do not know the exact bulk density, which of the soil types in the drop down menu to the right best describes the top 12 inches for soils used for landscaping (in g/cm <sup>3</sup> ).	Sandy loams, loams
What is the average depth of your landscaped soil media meeting the above criteria (inches)?	12
What is the total area of the landscaped areas meeting the above criteria (in acres)?	2.97

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Table 1

Sands, loamy sands	<1.6
Sandy loams, loams	<1.4
Sandy clay loams, loams, clay loams	<1.4
Silts, silt loams	<1.3
Silt loams, silty clay loams	<1.1
Sandy clays, silty clays, some clay loams (35-45% clay)	<1.1
Clays (>45% clay)	<1.1

Porosity (%) 50.94%

Mineral grains in many soils are mainly quartz and feldspar, so 2.65 a good average for particle density. To determine percent porosity, use the formula: Porosity (%) = (1-Bulk Density/2.65) X 100

<sup>1</sup> USDA NRCS. "Soil Quality Urban Technical Note No.2-Urban Soil Compaction". March 2000.

[http://soils.usda.gov/sqi/management/files/sq\\_utn\\_2.pdf](http://soils.usda.gov/sqi/management/files/sq_utn_2.pdf)

\* To determine how to calculate density see:

<http://www.globe.gov/tctg/bulkden.pdf?sectionID=94>

### APPENDIX 3 Bioassessment Monitoring Guidelines

Bioassessment monitoring is required for projects that meet all of the following criteria:

1. The project is rated Risk Level 3 or LUP Type 3
2. The project directly discharges runoff to a freshwater wadeable stream (or streams) that is either: (a) listed by the State Water Board or USEPA as impaired due to sediment, and/or (b) tributary to any downstream water body that is listed for sediment; and/or have the beneficial use SPAWN & COLD & MIGRATORY
3. Total project-related ground disturbance exceeds 30 acres.

For all such projects, the discharger shall conduct bioassessment monitoring, as described in this section, to assess the effect of the project on the biological integrity of receiving waters.

Bioassessment shall include:

1. The collection and reporting of specified instream biological data
2. The collection and reporting of specified instream physical habitat data

#### Bioassessment Exception

If a site qualifies for bioassessment, but construction commences out of an index period for the site location, the discharger shall:

1. Receive Regional Water Board approval for the sampling exception
2. Make a check payable to: Cal State Chico Foundation (SWAMP Bank Account) or San Jose State Foundation (SWAMP Bank Account) and include the WDID# on the check for the amount calculated for the exempted project.
3. Send a copy of the check to the Regional Water Board office for the site's region
4. Invest **7,500.00 X The number of samples required** into the SWAMP program as compensation (upon Regional Water Board approval).
5. Conduct bioassessment monitoring, as described in Appendix 4
6. Include the collection and reporting of specified instream biological data and physical habitat
7. Use the bioassessment sample collection and Quality Assurance & Quality Control (QA/QC) protocols developed by the State of California's Surface Water Ambient Monitoring Program (SWAMP)

#### Site Locations and Frequency

Macroinvertebrate samples shall be collected both before ground disturbance is initiated and after the project is completed. The "after" sample(s) shall be collected after at least one winter season resulting in surface runoff has transpired after project-related ground disturbance has ceased. "Before" and "after" samples shall be collected both upstream and downstream of the project's



discharge. Upstream samples should be taken immediately before the sites outfall and downstream samples should be taken immediately after the outfall (when safe to collect the samples). Samples should be collected for each freshwater wadeable stream that is listed as impaired due to sediment, or tributary to a water body that is listed for sediment. Habitat assessment data shall be collected concurrently with all required macroinvertebrate samples.

#### Index Period (Timing of Sample Collection)

Macroinvertebrate sampling shall be conducted during the time of year (i.e., the “index period”) most appropriate for bioassessment sampling, depending on ecoregion. This map is posted on the State Water Board’s Website:

[http://www.waterboards.ca.gov/water\\_issues/programs/stormwater/construction.shtml](http://www.waterboards.ca.gov/water_issues/programs/stormwater/construction.shtml)

#### Field Methods for Macroinvertebrate Collections

In collecting macroinvertebrate samples, the discharger shall use the “Reachwide Benthos (Multi-habitat) Procedure” specified in *Standard Operating Procedures for Collecting Benthic Macroinvertebrate Samples and Associated Physical and Chemical Data for Ambient Bioassessments in California* (Ode 2007).<sup>1</sup>

#### Physical - Habitat Assessment Methods

The discharger shall conduct, concurrently with all required macroinvertebrate collections, the “Full” suite of physical habitat characterization measurements as specified in *Standard Operating Procedures for Collecting Benthic Macroinvertebrate Samples and Associated Physical and Chemical Data for Ambient Bioassessments in California* (Ode 2007), and as summarized in the Surface Water Ambient Monitoring Program’s *Stream Habitat Characterization Form — Full Version*.

#### Laboratory Methods

Macroinvertebrates shall be identified and classified according to the Standard Taxonomic Effort (STE) Level I of the Southwestern Association of Freshwater Invertebrate Taxonomists (SAFIT),<sup>2</sup> and using a fixed-count of 600 organisms per sample.

#### Quality Assurance

The discharger or its consultant(s) shall have and follow a quality assurance (QA) plan that covers the required bioassessment monitoring. The QA plan shall include, or be supplemented to include, a specific requirement for external QA checks (i.e., verification of taxonomic identifications and correction of data where

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<sup>1</sup> This document is available on the Internet at: [http://www.swrcb.ca.gov/swamp/docs/phab\\_sopr6.pdf](http://www.swrcb.ca.gov/swamp/docs/phab_sopr6.pdf).  
[http://swamp.mpsl.mlml.calstate.edu/wp-content/uploads/2009/04/swamp\\_sop\\_bioassessment\\_collection\\_020107.pdf](http://swamp.mpsl.mlml.calstate.edu/wp-content/uploads/2009/04/swamp_sop_bioassessment_collection_020107.pdf).

<sup>2</sup> The current SAFIT STEs (28 November 2006) list requirements for both the Level I and Level II taxonomic effort, and are located at: [http://www.swrcb.ca.gov/swamp/docs/safit/ste\\_list.pdf](http://www.swrcb.ca.gov/swamp/docs/safit/ste_list.pdf)  
[http://www.safit.org/Docs/ste\\_list.pdf](http://www.safit.org/Docs/ste_list.pdf). When new editions are published by SAFIT, they will supersede all previous editions. All editions will be posted at the State Water Board’s SWAMP website.

errors are identified). External QA checks shall be performed on one of the discharger's macroinvertebrate samples collected per calendar year, or ten percent of the samples per year (whichever is greater). QA samples shall be randomly selected. The external QA checks shall be paid for by the discharger, and performed by the California Department of Fish and Game's Aquatic Bioassessment Laboratory. An alternate laboratory with equivalent or better expertise and performance may be used if approved in writing by State Water Board staff.

#### Sample Preservation and Archiving

The original sample material shall be stored in 70 percent ethanol and retained by the discharger until: 1) all QA analyses specified herein and in the relevant QA plan are completed; and 2) any data corrections and/or re-analyses recommended by the external QA laboratory have been implemented. The remaining subsampled material shall be stored in 70 percent ethanol and retained until completeness checks have been performed according to the relevant QA plan. The identified organisms shall be stored in 70 percent ethanol, in separate glass vials for each final ID taxon. (For example, a sample with 45 identified taxa would be archived in a minimum of 45 vials, each containing all individuals of the identified taxon.) Each of the vials containing identified organisms shall be labeled with taxonomic information (i.e., taxon name, organism count) and collection information (i.e., site name/site code, waterbody name, date collected, method of collection). The identified organisms shall be archived (i.e., retained) by the discharger for a period of not less than three years from the date that all QA steps are completed, and shall be checked at least once per year and "topped off" with ethanol to prevent desiccation. The identified organisms shall be relinquished to the State Water Board upon request by any State Water Board staff.

#### Data Submittal

The macroinvertebrate results (i.e., taxonomic identifications consistent with the specified SAFIT STEs, and number of organisms within each taxa) shall be submitted to the State Water Board in electronic format. The State Water Board's Surface Water Ambient Monitoring Program (SWAMP) is currently developing standardized formats for reporting bioassessment data. All bioassessment data collected after those formats become available shall be submitted using the SWAMP formats. Until those formats are available, the biological data shall be submitted in MS-Excel (or equivalent) format.<sup>3</sup>

The physical/habitat data shall be reported using the standard format titled *SWAMP Stream Habitat Characterization Form — Full Version*.<sup>4</sup>

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<sup>3</sup> Any version of Excel, 2000 or later, may be used.

<sup>4</sup> Available at:

[http://www.waterboards.ca.gov/water\\_issues/programs/swamp/docs/reports/fieldforms\\_fullversion052908.pdf](http://www.waterboards.ca.gov/water_issues/programs/swamp/docs/reports/fieldforms_fullversion052908.pdf)

### Invasive Species Prevention

In conducting the required bioassessment monitoring, the discharger and its consultants shall take precautions to prevent the introduction or spread of aquatic invasive species. At minimum, the discharger and its consultants shall follow the recommendations of the California Department of Fish and Game to minimize the introduction or spread of the New Zealand mudsnail.<sup>5</sup>

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<sup>5</sup> Instructions for controlling the spread of NZ mudsnails, including decontamination methods, can be found at: <http://www.dfg.ca.gov/invasives/mudsnail/>  
More information on AIS More information on AIS  
[http://www.waterboards.ca.gov/water\\_issues/programs/swamp/ais/](http://www.waterboards.ca.gov/water_issues/programs/swamp/ais/)

Appendix 4 Non Sediment TMDLs

Region 1 Lost River-DIN and CBOD

Region 1 Source: Cal Trans Construction TMDL Completion Date: 12 30 2008 TMDL Type: River, Lake Watershed Area= 2996 mi <sup>2</sup> Lost River from the Oregon border to Tule Lake Tule Lake Refuge Lower Klamath Refuge	Pollutant Stressors/WLA	
	Dissolved inorganic nitrogen (DIN) (metric tons/yr)	Carbonaceous biochemical oxygen demand (CBOD) (metric tons/yr)
	.1	.2
	.1	.2
	.1	.2

Region 2 San Francisco Bay-Mercury

Region 2 Source: Non-Urban Stormwater Runoff TMDL Type: Bay	Name	Pollutant Stressor/WLA	TMDL Completion Date
	San Francisco Bay	Mercury 25 kg/year	08 09 2006

Region 4 Ballona Creek-Metals and Selenium

Region 4 Source: NPDES General Construction TMDL Completion Date: 12 22 2005 TMDL Type: Creek Ballona Creek	Pollutant Stressors/WLA							
	Copper (Cu)		Lead (Pb)		Selenium (Se)		Zinc (Zn)	
	g/day	g/day/acre	g/day	g/day/acre	g/day	g/day/acre	g/day	g/day/acre
	4.94E-07 x Daily storm volume (L)	2.20E-10 x Daily storm volume (L)	1.62E-06 x Daily storm volume (L)	7.20E-10 x Daily storm volume (L)	1.37E-07 x Daily storm volume (L)	6.10E-11 x Daily storm volume (L)	3.27E-06 x Daily storm volume (L)	1.45E-09 x Daily storm volume (L)

**General Construction Storm Water Permits:**

Waste load allocations will be incorporated into the State Board general permit upon renewal or into a watershed-specific general permit developed by the Regional Board.

- Dry-weather Implementation Non-storm water flows authorized by the General Permit for Storm Water Discharges Associated with Construction Activity (Water Quality Order No. 99-08 DWQ), or any successor order, are exempt from the dry-weather waste load allocation equal to zero as long as they comply with the provisions of sections C.3 and A.9 of the Order No. 99-08 DWQ, which state that these authorized non-storm discharges shall be:
  - (1) infeasible to eliminate
  - (2) comply with BMPs as described in the Storm Water Pollution Prevention Plan prepared by the permittee, and
  - (3) not cause or contribute to a violation of water quality standards, or comparable provisions in any successor order.
 Unauthorized non-storm water flows are already prohibited by Order No. 99-08 DWQ.
- Wet-weather Implementation Within seven years of the effective date of the TMDL, the construction industry will submit the results of BMP effectiveness studies to determine BMPs that will achieve compliance with the final waste load allocations assigned to construction storm water permittees.
- Regional Board staff will bring the recommended BMPs before the Regional Board for consideration within eight years of the effective date of the TMDL.
- General construction storm water permittees will be considered in compliance with final waste load allocations if they implement these Regional Board approved BMPs. All permittees must implement the approved BMPs within nine years of the effective date of the TMDL. If no effectiveness studies are conducted and no BMPs are approved by the Regional Board within eight years of the effective date of the TMDL, each general construction storm water permit holder will be subject to site-specific BMPs and monitoring requirements to demonstrate compliance with final waste load allocations.

**Region 4 Calleguas Creek-OC Pesticides, PCBs, and Siltation**

**Interim Requirements**

**Region 4 Calleguas Creek**  
 Source: Minor NPDES point sources/WDRs  
 TMDL Completion Date: 3 14 2006  
 TMDL Type:Creek

Pollutant Stressor	WLA Daily Max (µg/L)	WLA Monthly Ave (µg/L)
Chlordane	1.2	0.59
4,4-DDD	1.7	0.84
4,4-DDE	1.2	0.59
4,4-DDT	1.2	0.59
Dieldrin	0.28	0.14
PCB's	0.34	0.17
Toxaphene	0.33	0.16

Final WLA (ng/g)										
Region 4 Calleguas Creek										
Source: Stormwater Permitttees										
TMDL Completion Date: 3 14 2006										
TMDL Type:Creek										
Mugu Lagoon*	3.3	2.0	2.2	0.3	4.3	180.0	360.0			
Calleguas Creek	3.3	2.0	1.4	0.3	0.2	120.0	0.6			
Revolon Slough (SW)*	0.9	2.0	1.4	0.3	0.1	130.0	1.0			
Arroyo Las posas(SW)*	3.3	2.0	1.4	0.3	0.2	120.0	0.6			
Arroyo Simi	3.3	2.0	1.4	0.3	0.2	120.0	0.6			
Conejo Creek	3.3	2.0	1.4	0.3	0.2	120.0	0.6			
Interim Requirements (ng/g)										
Mugu Lagoon*	25.0	69.0	300.0	39.0	19.0	180.	22900.0			
Calleguas Creek	17.0	66.0	470.0	110.0	3.0	3800.0	260.0			
Revolon Slough (SW)*	48.0	400.0	1600.0	690.0	5.7	7600.0	790.0			
Arroyo Las posas(SW)*	3.3	290.0	950.0	670.0	1.1	25700.0	230.0			
Arroyo Simi	3.3	14.0	170.0	25.0	1.1	25700.0	230.0			
Conejo Creek	3.4	5.3	20.0	2.0	3.0	3800.0	260.0			

\*(SW)=Subwatershed

\*Mugu Lagoon includes Duck pond/Agricultural Drain/Mugu/Oxnard Drain #2

Compliance with sediment based WLAs is measured as an instream annual average at the base of each subwatershed where the discharges are located.

**Region 4 Calleguas Creek-Salts**

Final Dry Weather Pollutant WLA (mg/L)						
Region 4 Calleguas Creek						
Source Permitted Stormwater Dischargers TMDL						
Completion Date: 12 2 2008						
TMDL Type:Creek						
Simi	1.39	1738.0	9849.0	2897.0	12.0	
Las Posas	0.13	157.0	887.0	261.0	N/A	
Conejo	1.26	1576.0	8931.0	2627.0	N/A	

Dry Weather Interim Pollutant WLA (mg/L)						
	Chloride (mg/L)	TDS (mg/L)	Sulfate (mg/L)	Boron (mg/L)		
Camarillo	0.06	72.0	406.0	119.0		N/A
Pleasant Valley (Calleguas)	0.12	150.0	850.0	250.0		N/A
Pleasant Valley (Revolon)	0.25	314.0	1778.0	523.0		2.0
Simi						
	230.0	1720.0	1289.0	1289.0		1.3
Las Posas						
	230.0	1720.0	1289.0	1289.0		1.3
Conejo						
	230.0	1720.0	1289.0	1289.0		1.3
Camarillo						
	230.0	1720.0	1289.0	1289.0		1.3
Pleasant Valley (Calleguas)						
	230.0	1720.0	1289.0	1289.0		1.3
Pleasant Valley (Revolon)						
	230.0	1720.0	1289.0	1289.0		1.3

- General Construction permittees are assigned a dry weather wasteload allocation equal to the average dry weather critical condition flow rate multiplied by the numeric target for each constituent. Waste load allocations apply in the receiving water at the base of each subwatershed. Dry weather allocations apply when instream flow rates are below the 86th percentile flow and there has been no measurable precipitation in the previous 24 hours.
- Because wet weather flows transport a large mass of salts at low concentrations, these dischargers meet water quality objectives during wet weather.
- Interim limits are assigned for dry weather discharges from areas covered by NPDES stormwater permits to allow time to implement appropriate actions. The interim limits are assigned as concentration based receiving water limits set to the 95th percentile of the discharger data as a monthly average limit except for chloride. The 95th percentile for chloride was 267 mg/L which is higher than the recommended criteria set forth in the Basin Plan for protection of sensitive beneficial uses including aquatic life. Therefore, the interim limit for chloride for Permitted Stormwater Dischargers is set equal to 230 mg/L to ensure protection of sensitive beneficial uses in the Calleguas Creek watershed.

**Region 4 San Gabriel River and Tributaries-Metals and Selenium**

<b>Region 4 San Gabriel River and Tributaries</b> Source: Construction Stormwater Dischargers TMDL Completion Date: 3 2007 TMDL Type: Creek	<b>Pollutant Stressor</b>	<b>Wet weather Allocations</b>	<b>Dry Weather Allocations</b>	<b>% of Watershed</b>
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San Gabriel Reach 2	Lead (Pb)	0.7% * 166 µg/l * Daily Storm Vol	N/A	0.7%
San Gabriel Reach 2	Lead (Pb) Mass based	0.8 kg/d	N/A	0.7%
Coyote Creek	Copper (Cu)	0.285 kg/d	0	5.0%
Coyote Creek	Lead (Pb)	1.70 kg/d	N/A	5.0%
Coyote Creek	Zinc (Zn)	2.4 kg/d	N/A	5.0%
San Jose Creek Reach 1 and 2	Selenium	5 µg/L	5 µg/L	5.0%

Wet-weather allocations for lead in San Gabriel River Reach 2. Concentration-based allocations apply to non-stormwater NPDES discharges. Stormwater allocations are expressed as a percent of load duration curve. Mass-based values presented in table are based on a flow of 260 cfs (daily storm volume = 6.4 x10<sup>8</sup> liters).

There are 1555 acres of water in the entire watershed, 37.4 acres of water in the Reach 1 subwatershed (2.4%), and 269 acres in the Coyote Creek subwatershed (17%).

**General Construction Storm Water Permits**

Waste load allocations for the general construction storm water permits may be incorporated into the State Board general permit upon renewal or into a watershed-specific general permit developed by the Regional Board. An estimate of direct atmospheric deposition is developed based on the percent area of surface water in the watershed. Approximately 0.4% of the watershed area draining to San Gabriel River Reach 2 is comprised of water and approximately 0.2% of the watershed area draining to Coyote Creek is comprised of water.

**Region 4 The Harbor Beaches of Ventura County-Bacteria**

The TMDL has a multi-part numeric target based on the bacteriological water quality objectives for marine water to protect the water contact recreation use. These targets are the most appropriate indicators of public health risk in recreational waters. Bacteriological objectives are set forth in Chapter 3 of the Basin Plan. The objectives are based on four bacteria indicators and include both geometric mean limits and single sample limits. The Basin Plan objectives that serve as the numeric targets for this TMDL are:



The General NPDES Construction permit is seen as a minor contributor and is given no allocation

General NPDES permits, individual NPDES permits, the Statewide Industrial Storm Water General Permit, the Statewide Construction Activity Storm Water General Permit, and WDR permittees in the Channel Islands Harbor subwatershed are assigned WLAs of zero (0) days of allowable exceedances for all three time periods and for the single sample limits and the rolling 30-day geometric mean. Any future enrollees under a general NPDES permit, individual NPDES permit, the Statewide Industrial Storm Water General Permit, the Statewide Construction Activity Storm Water General Permit, and WDR will also be subject to a WLA of zero (0) days of allowable exceedances.

**Region 4 Resolution No. 03-009 Los Angeles River and Tributaries-Nutrients**

**Minor Point Sources**

Waste loads are allocated to minor point sources enrolled under NPDES or WDR permits including but not limited to Tapia WRP, Whittier Narrows WRP, Los Angeles Zoo WRP, industrial and construction stormwater, and municipal storm water and urban runoff from municipal separate storm sewer systems (MS4s)

Region 4 Minor Point Sources for NPDES/WDR Permits TMDL Completion Date: 7 10 2003	Pollutant Stressor/WLA				
	Total Ammonia (NH <sub>3</sub> )		Nitrate-nitrogen (NO <sub>3</sub> -N)	Nitrite-nitrogen (NO <sub>2</sub> -N)	NO <sub>3</sub> -N + NO <sub>3</sub> -N
	1 Hr Ave mg/l	30 Day Ave mg/l	30 Day Ave mg/l		
TMDL Type: River					
LA River Above Los Angeles-Glendale WRP (LAG)	4.7	1.6	8.0	1.0	8.0
LA River Below LAG	8.7	2.4	8.0	1.0	8.0
Los Angeles Tributaries	10.1	2.3	8.0	1.0	8.0

**Malibu Creek Attachment A to Resolution No. 2004-019R-Bacteria**

12 13 2004 The WLAs for permittees under the NPDES General Stormwater Construction Permit are zero (0) days of allowable exceedances for all three time periods and for the single sample limits and the rolling 30-day geometric mean.

**Region 4 Marina del Rey Harbor, Mothers' Beach and Back Basins**

**Attachment A to Resolution No. 2003-012-Bacteria**

8 7 2003 As discussed in “Source Analysis”, discharges from general NPDES permits, general industrial storm water permits and general construction storm water permits are not expected to be a significant source of bacteria. Therefore, the WLAs for these discharges are zero (0) days of allowable exceedances for all three time periods and for the single sample limits and the rolling 30-day geometric mean. Any future enrollees under a general NPDES permit, general industrial storm water permit or general construction storm water permit within the Mdr Watershed will also be subject to a WLA of zero days of allowable exceedances.

**Region 4 San Gabriel River and Tributaries-Metals and Selenium**

Dry Weather Selenium WLA

A zero WLA is assigned to the industrial and construction stormwater permits during dry weather. Non-storm water discharges are already prohibited or restricted by existing general permits.

	Total Recoverable Metals (kg/day)		
	Copper (Cu) Kg/day	Lead (Pb) Kg/day	Zinc (Zn) Kg/day
<b>Region 4</b> General Construction Permittees TMDL Completion Date: 7 13 2006 TMDL Type: River			
San Gabriel River Reach 2 and upstream reaches/tributaries	XXXX	Daily storm volume x 1.24 µg/L	XXXX
Coyote Creek and Tributaries	Daily storm volume x 0.7 µg/L	Daily storm volume x 4.3 µg/L	Daily storm volume x 6.2 µg/L

Each enrollee under the general construction stormwater permit receives a WLA on a per acre basis

	Total Recoverable Metals (kg/day/acre)		
	Copper (Cu) Kg/acre/day	Lead (Pb) Kg/acre/day	Zinc (Zn) Kg/acre/day
<b>Region 4</b> General Construction Permittees TMDL Completion Date: 7 13 2006 TMDL Type: River			
San Gabriel River Reach 2 and upstream reaches/tributaries	XXXX	Daily storm volume x 0.56 µg/L	XXXX

Coyote Creek and Tributaries	Daily storm volume x 0.12 µg/L	Daily storm volume x 0.70 µg/L	Daily storm volume x 1.01 µg/L
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For the general industrial and construction storm water permits, the daily storm volume is measured at USGS station 11085000 for discharges to Reach 2 and above and at LACDPW flow gauge station F354-R for discharges to Coyote Creek.

**General construction storm water permits**

WLAs will be incorporated into the State Board general permit upon renewal or into a watershed-specific general permit developed by the Regional Board.

**Dry-weather implementation**

Non-storm water flows authorized by the General Permit for Storm Water Discharges Associated with Construction Activity (NPDES Permit No. CAS000002), or any successor permit, are exempt from the dry-weather WLA equal to zero as long as they comply with the provisions of sections C.3 and A.9 of the Order No. 99-08 DWQ, which state that these authorized non-storm discharges shall be (1) infeasible to eliminate (2) comply with BMPs as described in the Storm Water Pollution Prevention Plan prepared by the permittee, and (3) not cause or contribute to a violation of water quality standards, or comparable provisions in any successor order. Unauthorized non-storm water flows are already prohibited by Permit No. CAS000002.

**Upon permit issuance, renewal, or re-opener**

Non-storm water flows not authorized by Order No. 99-08 DWQ, or any successor order, shall achieve dry-weather WLAs. WLAs shall be expressed as NPDES water quality-based effluent limitations specified in accordance with federal regulations and state policy on water quality control. Effluent limitations may be expressed as permit conditions, such as the installation, maintenance, and monitoring of Regional Board-approved BMPs.

**Six years from the effective date of the TMDL**

The construction industry will submit the results of wet-weather BMP effectiveness studies to the Los Angeles Regional Board for consideration. In the event that no effectiveness studies are conducted and no BMPs are approved, permittees shall be subject to site-specific BMPs and monitoring to demonstrate BMP effectiveness.

**Seven years from the effective date of the TMDL**

The Los Angeles Regional Board will consider results of the wet weather BMP effectiveness studies and consider approval of BMPs.

**Eight years from the effective date of the TMDL**

All general construction storm water permittees shall implement Regional Board-approved BMPs.

**Region 8 RESOLUTION NO. R8-2007- 0024**

Total Maximum Daily Loads (TMDLs) for San Diego Creek, Upper and Lower Newport Bay, Orange County, California

Region 8 NPDES Construction Permit TMDL Completion Date: 1 24 1995	Organochlorine Compounds										
	Total DDT			Chlordane			Total PCBs			Toxaphene	
	g/day	g/yr	g/day	g/day	g/yr	g/day	g/day	g/yr	g/day	g/day	g/yr
TMDL Type: River. Cr, Bay											
San Diego Creek	.27	99.8	.18*		64.3*	.09*		31.5*	.004		1.5
Upper Newport Bay	.11	40.3	.06		23.4	.06		23.2	X		X
Lower Newport Bay	.04	14.9	.02		8.6	.17		60.7	X		X

\*Red= Informational WLA only, not for enforcement purposes

**Organochlorine Compounds TMDLs Implementation Tasks and Schedule**

Regional Board staff shall develop a SWPPP Improvement Program that identifies the Regional Board's expectations with respect to the content of SWPPPs, including documentation regarding the selection and implementation of BMPs, and a sampling and analysis plan. The Improvement Program shall include specific guidance regarding the development and implementation of monitoring plans, including the constituents to be monitored, sampling frequency and analytical protocols. The SWPPP Improvement Program shall be completed by *(the date of OAL approval of this BPA)*. **No later than two months** from completion of the Improvement Program, Board staff shall assure that the requirements of the Program are communicated to interested parties, including dischargers with existing authorizations under the General Construction Permit. Existing, authorized dischargers shall revise their project SWPPPs as needed to address the Program requirements as soon as possible but **no later than (three months of completion of the SWPPP Improvement Program)**. Applicable SWPPPs that do not adequately address the Program requirements shall be considered inadequate and enforcement by the Regional Board shall proceed accordingly. The Caltrans and Orange County MS4 permits shall be revised as needed to assure that the permittees communicate the Regional Board's SWPPP expectations, based on the SWPPP Improvement Program, with the Standard Conditions of Approval.

**Appendix 4 Sediment TMDLs**

Implemented Sediment TMDLs in California. Construction was listed as a source in all of these TMDLs in relation to road construction. Although construction was mentioned as a source, it was not given a specific allocation amount. The closest allocation amount would be for the road activity management WLA. **Implementation Phase** – Adoption process by the Regional Board, the State Water Resources Control Board, the Office of Administrative Law, and the US Environmental Protection Agency completed and TMDL being implemented.

<b>A. Region</b>	<b>Type</b>	<b>Name</b>	<b>Pollutant Stressor</b>	<b>Potential Sources</b>	<b>TMDL Completion Date</b>	<b>Watershed Acres</b>	<b>WLA tons mi<sup>2</sup> yr</b>
1 R1.epa.albionfinaltmdl	R	Albion River	Sedimentation	Road Construction	2001	43 acres	See A (table 6)

<b>B Region</b>	<b>Type</b>	<b>Name</b>	<b>Pollutant Stressor</b>	<b>Potential Sources</b>	<b>TMDL Completion Date</b>	<b>Watershed Acres</b>	<b>WLA tons mi<sup>2</sup> yr</b>
1 R1.epa.EelR-middle.mainSed.temp	R	Middle Main Eel River and Tributaries (from Dos Rios to the South Fork)	Sedimentation	Road Construction	2005-2006	521 mi <sup>2</sup>	100

<b>C Region</b>	<b>Type</b>	<b>Name</b>	<b>Pollutant Stressor</b>	<b>Potential Sources</b>	<b>TMDL Completion Date</b>	<b>Watershed Acres</b>	<b>WLA tons mi<sup>2</sup> yr</b>
1 R1.epa.EelRsouth.sed.temp	R	South Fork Eel River	Sedimentation	Road Construction	12 1999	See chart	473

<b>D Region</b>	<b>Type</b>	<b>Name</b>	<b>Pollutant Stressor</b>	<b>Potential Sources</b>	<b>TMDL Completion Date</b>	<b>Watershed Acres</b>	<b>WLA tons mi<sup>2</sup> yr</b>
1 R1.epa.bigfinaltmdl	R	Big River	Sedimentation	Road Construction	12 2001	181 mi <sup>2</sup> watershed drainage	TMDL = loading capacity = nonpoint sources + background =



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I Region	Type	Name	Pollutant Stressor	Potential Sources	TMDL Completion Date	Watershed Acres	WLA tons mi <sup>2</sup> yr
1 R1.epa.gualalafina lftmdl	R	Gualala River	Sedimentation	Road Construction	Not sure	300 (191,145 acres)	7

J Region	Type	Name	Pollutant Stressor	Potential Sources	TMDL Completion Date	Watershed Acres mi <sup>2</sup>	WLA tons mi <sup>2</sup> yr
1 R1.epa.Mad-sed.turbidity	R	Mad River	Sedimentation	Road Construction	12 21 2007	480	174

K Region	Type	Name	Pollutant Stressor	Potential Sources	TMDL Completion Date	Watershed Acres mi <sup>2</sup>	WLA tons mi <sup>2</sup> yr
1 R1.epa.mattole.sediment	R	Mattole River	Sedimentation	Road Construction	12 30 2003	296	27 or 520+27 = 547

L Region	Type	Name	Pollutant Stressor	Potential Sources	TMDL Completion Date	Watershed Acres mi <sup>2</sup>	WLA tons mi <sup>2</sup> yr
1 R1.epa.navarro.sed.temp	R	Navarro River	Sedimentation	Road Construction	Not sure	315 (201,600 acres).	50

M Region	Type	Name	Pollutant Stressor	Potential Sources	TMDL Completion Date	Watershed Acres mi <sup>2</sup>	WLA tons mi <sup>2</sup> yr
1 R1.epa.noyo.sediment	R	Noyo River	Sedimentation	Road Construction	12 16 1999	113 (72,323 acres)	68 (three areas measured) Table 16 in the TMDL

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N Region	Type	Name	Pollutant Stressor	Potential Sources	TMDL Completion Date	Watershed Acres mi <sup>2</sup>	WLA tons mi <sup>2</sup> yr
1 R1.epa.RedwoodCk.sed	Cr	Redwood Creek	Sedimentation	Road Construction	12 30 1998	278	1900 Total allocation

O Region	Type	Name	Pollutant Stressor	Potential Sources	TMDL Completion Date	Watershed Acres mi <sup>2</sup>	WLA – Roads tons mi <sup>2</sup> yr
1 R1.epa.tenmile.sed	R	Ten Mile River	Sedimentation	Road Construction	2000	120	9

P Region	Type	Name	Pollutant Stressor	Potential Sources	TMDL Completion Date	Watershed Acres mi <sup>2</sup>	WLA management tons mi <sup>2</sup> yr
1 R1.epa.trinity.sed	R	Trinity River	Sedimentation	Road Construction	12 20 2001	2000 of 3000 covered in this TMDL	See rows below
1	Cr	Horse Linto Creek	Sedimentation	Road Construction	12 20 2001	64	528
1	Cr	Mill creek and Tish Tang	Sedimentation	Road Construction	12 20 2001	39	210
1	Cr	Willow Creek	Sedimentation	Road Construction	12 20 2001	43	94
1	Cr	Campbell Creek and Supply Creek	Sedimentation	Road Construction	12 20 2001	11	1961
1	Cr	Lower Mainstem and Coon Creek	Sedimentation	Road Construction	12 20 2001	32	63
1	R	Reference	Sedimentation	Road	12 20 2001	434	24



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		Subwatershed <sup>1</sup>								
1	Cr	Canyon Creek	Sedimentation	Construction	12 20 2001	64				326
1	R	Upper Tributaries <sup>2</sup>	Sedimentation	Road Construction	12 20 2001	72				67
1	R	Middle Tributaries <sup>3</sup>	Sedimentation	Road Construction	12 20 2001	54				53
1	R	Lower Tributaries <sup>4</sup>	Sedimentation	Road Construction	12 20 2001	96				55
1	Cr	Weaver and Rush Creeks	Sedimentation	Road Construction	12 20 2001	72				169
1	Cr	Deadwood Creek Hoadley Gulch Poker Bar	Sedimentation	Road Construction	12 20 2001	47				68
1	L	Lewiston Lake	Sedimentation	Road Construction	12 20 2001	25				49
1	Cr	Grassvalley Creek	Sedimentation	Road Construction	12 20 2001	37				44
1	Cr	Indian Creek	Sedimentation	Road Construction	12 20 2001	34				81
1	Cr	Reading and Browns Creek	Sedimentation	Road Construction	12 20 2001	104				66
1	Cr	Reference Subwatersheds <sup>5</sup>	Sedimentation	Road Construction	12 20 2001	235				281
1	L, Cr	Westside tributaries <sup>6</sup>	Sedimentation	Road Construction	12 20 2001	93				105
1	R, Cr, G	Upper trinity <sup>7</sup>	Sedimentation	Road Construction	12 20 2001	161				690
1	R, Cr, G	East Fork Tributaries <sup>8</sup>	Sedimentation	Road Construction	12 20 2001	115				65

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1	R, L	Eastside Tributaries <sup>9</sup>	Sedimentation	Road Construction	12 20 2001	89	60
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- 1 New River, Big French, Manzanita, North Fork, East Fork, North Fork
- 2 Dutch, Soldier, Oregon gulch, Conner Creek
- 3 Big Bar, Prairie Creek, Little French Creek
- 4 Swede, Italian, Canadian, Cedar Flat, Mill, McDonald, Hennessy, Quimby, Hawkins, Sharber
- 5 Stuarts Fork, Swift Creek, Coffee Creek
- 6 Stuart Arm, Stoney Creek, Mule Creek, East Fork, Stuart Fork, West Side Trinity Lake, Hatchet Creek, Buckeye Creek,
- 7 Upper Trinity River, Tangle Blue, Sunflower, Graves, Bear Upper Trinity Mainstream, Ramshorn Creek, Ripple Creek, Minnehaha Creek, Snowslide Gulch, Scorpion Creek
- 8 East Fork Trinity, Cedar Creek, Squirrel Gulch
- 9 East Side Tributaries, Trinity Lake

Q Region	Type	Name	Pollutant Stressor	Potential Sources	TMDL Completion Date	Watershed Acres mi <sup>2</sup>	WLA tons mi <sup>2</sup> yr
1 R1.epa.trinity.so.sed	R, Cr	South Fork Trinity River and Hayfork Creek	Sedimentation	Road Construction	12 1998	Not given, 19 miles long	33 (road total)

R Region	Type	Name	Pollutant Stressor	Potential Sources	TMDL Completion Date	Watershed Acres mi <sup>2</sup>	WLA tons mi <sup>2</sup> yr
1 R1.epa.vanduzen.sed	R, Cr	Van Duzen River and Yager Creek	Sedimentation	Various	12 16 1999	429	1353 total allocation
1		Upper Basin	Sedimentation	Road Construction			7
1		Middle Basin	Sedimentation	Road Construction			22
1		Lower Basin	Sedimentation	Road Construction			20

S Region	Type	Name	Pollutant Stressor	Potential	TMDL	Watershed	WLA tons mi <sup>2</sup>
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			Sources	Completion Date	Acres mi <sup>2</sup>	yr
6 R6.blackwood.sed	Cr	Blackwood Creek (Placer County)	Various	9 2007	11	17272 total

T Region	Type	Name	Pollutant Stressor	Potential Sources	TMDL Completion Date	Watershed Acres mi <sup>2</sup>	WLA tons mi <sup>2</sup> yr
6 R6.SquawCk.sed	R	Squaw Creek (Placer County)	Sedimentation /controllable sources	Various – basin plan amendment	4 13 2006	8.2	10,900

Adopted TMDLs for Construction Sediment Sources

Region	Type	Name	Pollutant Stressor	Potential Sources	TMDL Completion Date	Watershed Area mi <sup>2</sup>	Waste load Allocation tons mi <sup>2</sup> yr
8	R	Newport Bay San Diego Creek Watershed	Sedimentation	Construction Land Development	1999	2.24 (1432 acres)	125,000 tons per Year (no more than 13,000 tons per year from construction sites)

## APPENDIX 5: Glossary

### **Active Areas of Construction**

All areas subject to land surface disturbance activities related to the project including, but not limited to, project staging areas, immediate access areas and storage areas. All previously active areas are still considered active areas until final stabilization is complete. [The construction activity Phases used in this General Permit are the Preliminary Phase, Grading and Land Development Phase, Streets and Utilities Phase, and the Vertical Construction Phase.]

### **Active Treatment System (ATS)**

A treatment system that employs chemical coagulation, chemical flocculation, or electrocoagulation to aid in the reduction of turbidity caused by fine suspended sediment.

### **Acute Toxicity Test**

A chemical stimulus severe enough to rapidly induce a negative effect; in aquatic toxicity tests, an effect observed within 96 hours or less is considered acute.

### **Air Deposition**

Airborne particulates from construction activities.

### **Approved Signatory**

A person who has been authorized by the Legally Responsible Person to sign, certify, and electronically submit Permit Registration Documents, Notices of Termination, and any other documents, reports, or information required by the General Permit, the State or Regional Water Board, or U.S. EPA. The Approved Signatory must be one of the following:

1. For a corporation or limited liability company: a responsible corporate officer. For the purpose of this section, a responsible corporate officer means: (a) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation or limited liability company; or (b) the manager of the facility if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;
2. For a partnership or sole proprietorship: a general partner or the proprietor, respectively;
3. For a municipality, State, Federal, or other public agency: a principal executive officer, ranking elected official, city manager, council president, or any other authorized public employee with managerial responsibility over the

construction or land disturbance project (including, but not limited to, project manager, project superintendent, or resident engineer);

4. For the military: any military officer or Department of Defense civilian, acting in an equivalent capacity to a military officer, who has been designated;
5. For a public university: an authorized university official;
6. For an individual: the individual, because the individual acts as both the Legally Responsible Person and the Approved Signatory; or
7. For any type of entity not listed above (e.g. trusts, estates, receivers): an authorized person with managerial authority over the construction or land disturbance project.

### **Beneficial Uses**

As defined in the California Water Code, beneficial uses of the waters of the state that may be protected against quality degradation include, but are not limited to, domestic, municipal, agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves.

### **Best Available Technology Economically Achievable (BAT)**

As defined by USEPA, BAT is a technology-based standard established by the Clean Water Act (CWA) as the most appropriate means available on a national basis for controlling the direct discharge of toxic and nonconventional pollutants to navigable waters. The BAT effluent limitations guidelines, in general, represent the best existing performance of treatment technologies that are economically achievable within an industrial point source category or subcategory.

### **Best Conventional Pollutant Control Technology (BCT)**

As defined by USEPA, BCT is a technology-based standard for the discharge from existing industrial point sources of conventional pollutants including biochemical oxygen demand (BOD), total suspended sediment (TSS), fecal coliform, pH, oil and grease.

### **Best Professional Judgment (BPJ)**

The method used by permit writers to develop technology-based NPDES permit conditions on a case-by-case basis using all reasonably available and relevant data.

### **Best Management Practices (BMPs)**

BMPs are scheduling of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants. BMPs also include treatment requirements, operating procedures,

and practices to control site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

**Chain of Custody (COC)**

Form used to track sample handling as samples progress from sample collection to the analytical laboratory. The COC is then used to track the resulting analytical data from the laboratory to the client. COC forms can be obtained from an analytical laboratory upon request.

**Coagulation**

The clumping of particles in a discharge to settle out impurities, often induced by chemicals such as lime, alum, and iron salts.

**Common Plan of Development**

Generally a contiguous area where multiple, distinct construction activities may be taking place at different times under one plan. A plan is generally defined as any piece of documentation or physical demarcation that indicates that construction activities may occur on a common plot. Such documentation could consist of a tract map, parcel map, demolition plans, grading plans or contract documents. Any of these documents could delineate the boundaries of a common plan area. However, broad planning documents, such as land use master plans, conceptual master plans, or broad-based CEQA or NEPA documents that identify potential projects for an agency or facility are not considered common plans of development.

**Daily Average Discharge**

The discharge of a pollutant measured during any 24-hour period that reasonably represents a calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the daily discharge is calculated as the total mass of the pollutant discharged during the day. For pollutants with limitations expressed in other units of measurement (e.g., concentration) the daily discharge is calculated as the average measurement of the pollutant throughout the day (40 CFR 122.2). In the case of pH, the pH must first be converted from a log scale.

**Debris**

Litter, rubble, discarded refuse, and remains of destroyed inorganic anthropogenic waste.

**Direct Discharge**

A discharge that is routed directly to waters of the United States by means of a pipe, channel, or ditch (including a municipal storm sewer system), or through surface runoff.

**Discharger**

The Legally Responsible Person (see definition) or entity subject to this General Permit.

**Dose Rate (for ATS)**

In exposure assessment, dose (e.g. of a chemical) per time unit (e.g. mg/day), sometimes also called dosage.

**Drainage Area**

The area of land that drains water, sediment, pollutants, and dissolved materials to a common outlet.

**Effluent**

Any discharge of water by a discharger either to the receiving water or beyond the property boundary controlled by the discharger.

**Effluent Limitation**

Any numeric or narrative restriction imposed on quantities, discharge rates, and concentrations of pollutants which are discharged from point sources into waters of the United States, the waters of the contiguous zone, or the ocean.

**Erosion**

The process, by which soil particles are detached and transported by the actions of wind, water, or gravity.

**Erosion Control BMPs**

Vegetation, such as grasses and wildflowers, and other materials, such as straw, fiber, stabilizing emulsion, protective blankets, etc., placed to stabilize areas of disturbed soils, reduce loss of soil due to the action of water or wind, and prevent water pollution.

**Field Measurements**

Testing procedures performed in the field with portable field-testing kits or meters.

**Final Stabilization**

All soil disturbing activities at each individual parcel within the site have been completed in a manner consistent with the requirements in this General Permit.

**First Order Stream**

Stream with no tributaries.

**Flocculants**

Substances that interact with suspended particles and bind them together to form flocs.

**Good Housekeeping BMPs**

BMPs designed to reduce or eliminate the addition of pollutants to construction site runoff through analysis of pollutant sources, implementation of proper handling/disposal practices, employee education, and other actions.

**Grading Phase (part of the Grading and Land Development Phase)**

Includes reconfiguring the topography and slope including; alluvium removals; canyon cleanouts; rock undercuts; keyway excavations; land form grading; and stockpiling of select material for capping operations.

**Hydromodification**

Hydromodification is the alteration of the hydrologic characteristics of coastal and non-coastal waters, which in turn could cause degradation of water resources. Hydromodification can cause excessive erosion and/or sedimentation rates, causing excessive turbidity, channel aggradation and/or degradation.

**Identified Organisms**

Organisms within a sub-sample that is specifically identified and counted.

**Inactive Areas of Construction**

Areas of construction activity that are not active and those that have been active and are not scheduled to be re-disturbed for at least 14 days.

**Index Period**

The period of time during which bioassessment samples must be collected to produce results suitable for assessing the biological integrity of streams and rivers. Instream communities naturally vary over the course of a year, and sampling during the index period ensures that samples are collected during a time frame when communities are stable so that year-to-year consistency is obtained. The index period approach provides a cost-effective alternative to year-round sampling. Furthermore, sampling within the appropriate index period will yield results that are comparable to the assessment thresholds or criteria for a given region, which are established for the same index period. Because index periods differ for different parts of the state, it is essential to know the index period for your area.

**K Factor**

The soil erodibility factor used in the Revised Universal Soil Loss Equation (RUSLE). It represents the combination of detachability of the soil, runoff potential of the soil, and the transportability of the sediment eroded from the soil.

**Legally Responsible Person**

The Legally Responsible Person (LRP) will typically be the project proponent. The categories of persons or entities that are eligible to serve as the LRP are set forth below. For any construction or land disturbance project where multiple persons or entities are eligible to serve as the LRP, those persons or entities



shall select a single LRP. In exceptional circumstances, a person or entity that qualifies as the LRP may provide written authorization to another person or entity to serve as the LRP. In such a circumstance, the person or entity that provides the authorization retains all responsibility for compliance with the General Permit. Except as provided in category 2(d), a contractor who does not satisfy the requirements of any of the categories below is not qualified to be an LRP.

The following persons or entities may serve as an LRP:

1. A person, company, agency, or other entity that possesses a real property interest (including, but not limited to, fee simple ownership, easement, leasehold, or other rights of way) in the land upon which the construction or land disturbance activities will occur for the regulated site.
2. In addition to the above, the following persons or entities may also serve as an LRP:
  - a. For linear underground/overhead projects, the utility company, municipality, or other public or private company or agency that owns or operates the LUP;
  - b. For land controlled by an estate or similar entity, the person who has day-to-day control over the land (including, but not limited to, a bankruptcy trustee, receiver, or conservator);
  - c. For pollution investigation and remediation projects, any potentially responsible party that has received permission to conduct the project from the holder of a real property interest in the land; or
  - d. For U.S. Army Corp of Engineers projects, the U.S. Army Corps of Engineers may provide written authorization to its bonded contractor to serve as the LRP, provided, however, that the U.S. Army Corps of Engineers is also responsible for compliance with the general permit, as authorized by the Clean Water Act or the Federal Facilities Compliance Act.

#### **Likely Precipitation Event**

Any weather pattern that is forecasted to have a 50% or greater chance of producing precipitation in the project area. The discharger shall obtain likely precipitation forecast information from the National Weather Service Forecast Office (e.g., by entering the zip code of the project's location at <http://www.srh.noaa.gov/forecast>).

#### **Maximum Allowable Threshold Concentration (MATC)**

The allowable concentration of residual, or dissolved, coagulant/flocculant in effluent. The MATC shall be coagulant/flocculant-specific, and based on toxicity

testing conducted by an independent, third-party laboratory. A typical MATC would be:

The MATC is equal to the geometric mean of the NOEC (No Observed Effect Concentration) and LOEC (Lowest Observed Effect Concentration) Acute and Chronic toxicity results for most sensitive species determined for the specific coagulant. The most sensitive species test shall be used to determine the MATC.

### **Natural Channel Evolution**

The physical trend in channel adjustments following a disturbance that causes the river to have more energy and degrade or aggrade more sediment. Channels have been observed to pass through 5 to 9 evolution types. Once they pass through the suite of evolution stages, they will rest in a new state of equilibrium.

### **Non-Storm Water Discharges**

Discharges are discharges that do not originate from precipitation events. They can include, but are not limited to, discharges of process water, air conditioner condensate, non-contact cooling water, vehicle wash water, sanitary wastes, concrete washout water, paint wash water, irrigation water, or pipe testing water.

### **Non-Visible Pollutants**

Pollutants associated with a specific site or activity that can have a negative impact on water quality, but cannot be seen through observation (ex: chlorine). Such pollutants being discharged are not authorized.

### **Numeric Action Level (NAL)**

Level is used as a warning to evaluate if best management practices are effective and take necessary corrective actions. Not an effluent limit.

### **Original Sample Material**

The material (i.e., macroinvertebrates, organic material, gravel, etc.) remaining after the subsample has been removed for identification.

### **pH**

Unit universally used to express the intensity of the acid or alkaline condition of a water sample. The pH of natural waters tends to range between 6 and 9, with neutral being 7. Extremes of pH can have deleterious effects on aquatic systems.

### **Post-Construction BMPs**

Structural and non-structural controls which detain, retain, or filter the release of pollutants to receiving waters after final stabilization is attained.