STATE OF CALIFORNIA

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

MONITORING PROGRAM - No. CI 7388
FOR
ORDER R4-2010-0108
NPDES PERMIT NO. CAS004002
WASTE DISCHARGE REQUIREMENTS

MUNICIPAL SEPARATE STORM SEWER SYSTEM DISCHARGES WITHIN THE VENTURA COUNTY WATERSHED PROTECTION DISTRICT, COUNTY OF VENTURA AND THE INCORPORATED CITIES THEREIN.

July 8, 2010

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MONITORING PROGRAM

1. The primary objectives of the Monitoring Program include, but are not limited to:
   (a) Assessing the chemical, physical, and biological impacts of municipal storm water sewer system discharges on receiving waters.
   (b) Assessing the overall health and evaluating long-term trends in receiving water quality.
   (c) Assessing compliance with TMDL targets and water quality objectives.
   (d) Characterization of the quality of storm water discharges.
   (e) Identifying sources of pollutants.
   (f) Measuring and improving the effectiveness of measures implemented under this Order.

2. The results of the monitoring requirements outlined below shall be used to refine BMPs for the reduction of pollutant loading and the protection and enhancement of the beneficial uses of the receiving waters in Ventura County.

3. The Permittees shall implement the Monitoring Program as follows:

CORE MONITORING

A. Mass Emissions

I. The Principal Permittee shall monitor mass emissions to accomplish the following objectives:
   i. Estimate the mass emissions from the MS4 to the watershed.
   ii. Assess trends in the mass emissions over time.
   iii. Determine if the MS4 is contributing to exceedances of water quality objectives by comparing results to applicable water quality objectives in the Water Quality Control Plan Los Angeles Region (Basin Plan) and the California Toxics Rule (CTR).

1. The Principal Permittee shall monitor mass emissions from the following 3 mass emission stations:
   (a) ME-VR2 for Ventura River
   (b) ME-SCR for Santa Clara River
   (c) ME-CC for Calleguas Creek

2. The Principal Permittee shall monitor the 3 mass emission stations on an annual basis as per A.3. below.

3. The Principal Permittee shall monitor each mass emission station each year as follows:
   (a) The first storm event of the wet season that produces a 20% or greater increase in base stream flow, and 2 additional storm events; all storm events shall be separated by 7 days of dry weather (less than 0.1 inch of rainfall) from the previously measurable storm event (0.25 inches of rain).
   (b) A total of 4 monitoring events (3 wet-weather storm events, 1 dry-weather) per mass emission station.

4. Samples for mass emission monitoring may be taken with the same type of automatic sampler used under Order 00-108. Sampling shall be in accordance with USEPA "NPDES Storm Water Sampling Guidance Document, EPA 833-8-92-001, July 1992" or other protocol approved by the Executive Officer.

5. Samplers shall be set to monitor storms that produce a 20% or greater increase in base stream flow.

6. Samples shall be flow-weighted composites, collected during the first 24 hours or for the duration of the storm if it is less than 24 hours.

7. Samples shall be collected from the discharge resulting from a storm event that is 0.25 inches or greater, samples may be analyzed if a predicted storm event produces between 0.15 and 0.24 inches of rain.

8. The flow-weighted composite sample for a storm water discharge shall be taken with a continuous sampler, or it shall be taken as a combination of a minimum of 3 sample aliquots, taken in each hour of discharge for the first 24 hours of the discharge or for the entire discharge if the storm event is less than 24 hours, with each aliquot being separated by a minimum of 15 minutes within each hour of discharge, unless the Regional Water Board Executive Officer approves an alternate protocol.

9. Flow may be estimated using U.S. EPA methods at sites where flow measurement devices are not in place.

10. Grab samples shall be taken <u>only</u> for pathogen indicators, oil & grease, cyanide, and volatile organics. Field measurements shall be taken for pH, temperature, and DO.

11. Each mass emission shall analyze for all of the Pollutants of Concern (POC) in its specific watershed listed in Attachment "B" (Calleguas Creek Watershed, Santa Clara River Watershed, and Ventura River Watershed Pollutants of Concern).

12. Each mass emission station shall screen for all constituents listed in Attachment "G" (Storm Water Monitoring Program's Constituents with Associated Minimum Levels), during the first storm event of the wet season for each year sampled. If a constituent is not detected at the Method Detection Limit (MDL) for its respective test method it need not be further analyzed unless the observed occurrence shows concentrations greater than the state water quality objective, and/ or the California Toxics Rule (CTR) for chronic criteria. If a constituent is detected exceeding a Basin Plan objective, and/ or CTR criteria then the constituent shall be analyzed for the remainder of the Order, at the mass emission station where it was detected.

13. At a minimum, a sufficient sample volume must be collected to perform all of the required biological and chemical tests.

14. When monitoring can not be performed to comply with the requirements of this Order due to circumstances beyond the Permittee's control, then within two working days the following shall be submitted to the Regional Water Board Executive Officer:
    (a) Statement of situation.
    (b) Explanation of circumstance(s) with documentation.
    (c) Statement of corrective action for the future.

15. Monitoring results submitted to the Regional Water Board shall include:
    (a) Rain totals and hydrographs for monitoring events in both narrative and graphic formats.
    (b) A narrative description of the date and duration of the storm event(s) sampled, rainfall estimates of the storm event which generated the sampled discharge and the duration between the storm event sampled and the end of the previous measurable storm event.
    (c) All applicable Standard Monitoring Provisions listed in part "K".

16. Results of monitoring from each mass emission station conducted in accordance with the Standard Operating Procedure submitted under Standard Provision 14 of this Attachment shall be sent electronically to the Regional Water Board's Storm Water site at MS4stormwaterRB4@waterboards.ca.gov, no later than 90 days from sample collection date, highlighting exceedances (Pollutants of Concern, POC) to the Basin Plan objectives for all test results, and the CTR for acute criteria with corresponding sampling dates per mass emission station. The sample data transmitted shall be in the most recent update of the Southern California Municipal Storm Water Monitoring Coalition's (SMC) Standardized Data Transfer Formats (SDTFs).

17. A summary of the annual mass emission monitoring results highlighting exceedances (POC) of the Basin Plan objectives and the CTR for acute criteria, with corresponding sampling dates per mass emission station, shall be included with the Annual Storm Water Report.

B. Major Outfalls

I. The Principal Permittee shall monitor major storm drain outfalls to accomplish the following objectives:
   i. Estimate the annual pollutant load of the cumulative discharges to waters of the State.
   ii. Estimate the event mean concentration of the cumulative discharges to waters of the State.
   iii. Assess trends in the major outfalls over time.
   iv. Estimate the annual pollutant load of discharges to Waters of the U.S.
   v. Estimate the event mean concentration of discharges to Waters of the U.S.
   vi. Assess trends in the major outfalls over time.
   vii. Determine if the MS4 is contributing to exceedences of water quality objectives in the Water Quality Control Plan Los Angeles Region (Basin Plan), and the California Toxics Rule (CTR).

1. The Principal Permittee shall monitor:
   (a) End-of-pipe of major outfalls, identified in Attachment I, transporting representative discharges from each Permittee's Municipal drainage area to:
      (1) Major outfalls listed in Attachment "I" (Storm Water Monitoring Program's Major Outfall Stations).
   (b) The first storm event of the wet season that produces at least 0.25 inches of rain, and 2 additional storm events per year, all storm events shall be separated by 7 days of dry weather (less than 0.1 inch) from the previously measurable storm event (0.25 inches).
   (c) A total of 4 monitoring events (3 wet-weather storm events, 1 dry-weather) shall be sampled per identified major outfall.
   (d) In the first year after permit adoption, 4 major outfall stations shall be monitored. Thereafter, all major outfall stations listed in Attachment "I" are to be monitored annually according to the schedule above.

2. If an identified monitoring site is found to be unworkable due to immitigable factors the sampling location may be relocated upon Executive Officer's approval of another location. Best professional judgment shall be used to balance the site selection rationale and criteria to determine the most appropriate site. Due to limited potential locations of urban outfalls to be monitored, there may be no sites that satisfy all criteria and rationale. Sites will be selected to satisfy the following criteria:

(a) Maximize urban runoff contribution;
(b) Greater than 60% of catchment shall be Permittee's MS4;
(c) Attempt shall be made to avoid outfalls that contain discharge from extra-jurisdictional areas (e.g. agriculture land and other NPDES discharges).
(d) Drainage area should contain representative land uses in a ratio of use as similar as reasonably possible to that found in the Permittee's jurisdiction.
(e) Drainage areas with a higher percentage of the Permittee's MS4 are preferred;
(f) Ability to accurately measure flow
(g) Safety of monitoring personnel is the highest priority. Specific location of sampling collection may be upstream of the actual outfall if field safety or accurate flow measurement require it.

3. Samples shall be collected from the discharge resulting from a storm event that is 0.25 inches or greater, samples may be analyzed if a predicted storm event produces between 0.15 inches and 0.24 inches of rain.

4. Samples shall be collected during the first 24 hours of storm water discharge or for the entire storm water discharge if it is less than 24 hours.

5. Samples shall be flow-weighted composites and can be collected automatically or manually (see subparts A.7 and A.8) in accordance with U.S. EPA protocol or other procedure approved by the Executive Officer.

6. Grab samples shall be taken <u>only</u> for pathogen indicators, oil & grease, cyanide, and volatile organics. Field measurements shall be taken for pH, temperature, and DO.

7. Major outfall samples taken within a subwatershed shall be analyzed for the biological and chemical parameters listed in the preceding subpart B.6.

8. Each major outfall station shall screen for all constituents listed in Attachment "G" (Storm Water Monitoring Program's Constituents with Associated Minimum Levels) twice per wet season, per year, (1st storm event of the wet season and one other storm event of the wet season). If a constituent is not detected at the Method Detection Limit (MDL) for its respective test method it need not be further analyzed unless the observed occurrence shows concentrations greater than the state water quality objective, and/ or the California Toxics Rule (CTR) acute criteria. If a constituent is detected exceeding a Basin Plan objective, and/or chronic CTR criteria then the constituent shall be sampled for the remainder of the Order, at the major outfall station where it was detected.

9. At a minimum, a sufficient sample volume must be collected to perform all of the required biological and chemical tests. Sampling shall be in accordance with USEPA "NPDES Storm Water Sampling Guidance Document, EPA 833-8-92-001, July 1992" or other protocol approved by the Executive Officer.

10. When monitoring can not be performed to comply with the requirements of this Order due to circumstances beyond the Permittee's control, then within 2 working days the following shall be submitted to the Regional Water Board Executive Officer:
    (a) Statement of situation
    (b) Explanation of circumstance(s) with documentation
    (c) Statement of corrective action for the future

11. Monitoring results submitted to the Regional Water Board shall include:
    (a) Rain totals and hydrographs for monitoring events in both narrative and graphic formats.
    (b) A narrative description of the date and duration of the storm event(s) sampled, rainfall estimates of the storm event which generated the sampled discharge and the duration between the storm event sampled and the end of the previous measurable storm event.
    (c) All applicable Standard Monitoring Provisions listed in part "K".

12. Results of monitoring from each major outfall station conducted in accordance with the Standard Operating Procedure submitted under Standard Provision 14 of this Attachment shall be sent electronically to the Regional Water Board's Storm Water Site at MS4stormwaterRB4@waterboards.ca.gov, no later than 90 days from sample collection date, highlighting exceedances to the Basin Plan objectives for all test results, and the CTR for acute criteria with corresponding sampling dates per major outfall station. The sample data transmitted shall be in the most recent update of the Southern California Municipal Storm Water Monitoring Coalition's (SMC) Standardized Data Transfer Formats (SDTFs).

13. A summary of the annual major outfall monitoring results, highlighting exceedences (pollutants of concern POC) to the Basin Plan objectives, and the CTR for acute criteria with corresponding sampling dates per major outfall station, shall be included with the Annual Storm Water Report.

C. Dry Weather Analytical Monitoring

I. The Principal Permittee shall develop and implement a monitoring program to characterize pollutant discharges from representative MS4 outfalls in each municipality and in the unincorporated County area during dry weather. This monitoring program shall be implemented within each jurisdiction and shall begin within the 2010-2011 monitoring year.

1. Dry weather analytical monitoring shall include:
   (a) Analytical monitoring, field measurements and observations at selected stations.
   (b) Reports of analytical data in a SWAMP comparable format.

2. Selection of Dry Weather Analytical Monitoring stations: Based upon a review program data, the storm drain system and land uses, the Co-Permittees shall select dry weather analytical monitoring stations within their jurisdiction. At least 5 dry weather analytical monitoring stations need to be identified per Co-Permittee. The dry weather analytical monitoring stations shall be established using the following guidelines and criteria:
   (a) Stations should be located downstream of municipal land uses where illegal or illicit activity may occur;
   (b) Stations shall be located at accessible downstream locations within the storm drain system of each municipality or at major outfalls;
   (c) Hydrological conditions, total drainage area of the site, traffic density, age of the structures or buildings in the area, history of the area, and land use types shall be considered in locating stations;
   (d) Each Co-Permittee shall determine a primary station and at least 4 alternate stations to be sampled in case primary stations do not have flow in dry weather. The dry weather monitoring may utilize the same outfalls as those used for wet weather monitoring, if such outfalls are found to discharge during dry weather.
   (e) Fact sheets of general information such as site descriptions (i.e., conveyance type, dominant watershed land uses) shall be created.

3. The Principal and Co-Permittees shall develop and/or update written procedures for dry weather analytical monitoring (these procedures must be consistent with 40 CFR part 136), including field observations, monitoring, and analyses to be conducted. At a minimum, the procedures must meet the following guidelines and criteria:
   (a) Dry weather analytical monitoring shall be conducted at each identified station at least once between May 1st and September 30th of each year.
   (b) If flow or ponded runoff is observed at a dry weather analytical monitoring station and there has been at least seventy-two (72) hours of dry weather, make observations and collect at least one (1) grab sample.
   (c) Record general information such as site descriptions (i.e., conveyance type, dominant watershed land uses), flow estimation (i.e., width of water surface, approximate depth of water, approximate flow velocity, flow rate), and visual observations (i.e., odor, color, clarity, floatables, deposits/stains, vegetation condition, structural condition, and biology).

4. At a minimum, collect samples for analytical laboratory analysis of the following constituents:
   (a) Total Hardness
   (b) Total Organic Carbon or Oil and Grease
   (c) Lead (Dissolved)
   (d) Zinc (Dissolved)
   (e) Copper (Dissolved)
   (f) Total Coliform bacteria
   (g) E. Coli bacteria

5. Other required field observations include:
   (a) Flow Estimation
   (b) Temperature
   (c) pH
   (d) Odor
   (e) Color
   (f) Turbidity
   (g) Floatables (foam, oil sheen)
   (h) Staining
   (i) Algal growth

6. If the station is dry (no flowing or ponded runoff), make and record all applicable observations and select another station from the list of alternate stations for monitoring.

7. Visually assess the presence of trash in receiving waters and urban runoff. Assessments of trash shall provide information on the spatial extent and amount of trash present, as well as the nature of the types of trash present.

8. Develop and/or update procedures for source identification follow up investigations in the event elevated levels are found. These procedures shall be consistent with procedures required in IC/ID section.

D. Aquatic Toxicity Monitoring

I. The objective of aquatic toxicity monitoring is to evaluate if storm water (wet weather) discharges are causing or contributing to chronic toxic impacts on aquatic life by the following:
   i. Toxicity testing at mass emission and major outfall stations to assess impacts on the marine and freshwater environments.

1. The Principal Permittee shall collect and analyze mass emission and major outfall samples for toxicity to evaluate the extent and causes of toxicity in receiving waters. Permittees shall utilize documents such as: Ventura County's

Technical Guidance Manual for Storm Water Quality Control Measures and U.S. EPA's National Management Measures to Control Nonpoint Source Pollution from Urban Areas to implement measures to eliminate or reduce sources of toxicity in storm water.

2. Toxicity samples may be flow-weighted composite samples or grab samples for both wet and dry event sampling (see subparts A.7 and A.8).

3. Volume of sample shall be determined by specific test methods to be used. At a minimum it is suggested to collect 5 gallons for baseline testing, and an additional 5 gallons for TIE studies. Sufficient sample volume shall be collected to perform the required toxicity tests.

4. All toxicity tests shall be conducted as soon as possible following sample collection. The 36-hour sample holding time for test initiation shall be targeted. However, no more than 72 hours shall elapse before initial use of a sample.

5. When toxicity tests can not be performed to comply with the requirements of this Order due to circumstances beyond the Permittee's control, then the following shall be submitted to the Regional Water Board Executive Officer within 2 working days:
   (a) Statement of situation
   (b) Explanation of circumstance(s) with documentation
   (c) Statement of corrective action for the future

6. The Principal Permittee shall conduct critical life stage chronic toxicity tests on undiluted samples in accordance with:
   (a) U.S. EPA's Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to *West Coast* Marine and Estuarine Organisms, (EPA/600/R-95/136, 1995) for all mass emission stations, and for major outfalls discharging to marine and estuarine environments, <u>or</u>
   (b) U.S. EPA's Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, October 2002 (EPA/821/R-02/013, 2002) or current version for major outfalls discharging to freshwater environments.

7. The Principal Permittee shall analyze samples for chronic toxicity according to the schedule below:
   (a) During the first year of the Order, 2 storm events shall be monitored at each mass emission and major outfall station. The first storm event of the wet season that produces at least 0.25 inches of rain, and 1 additional storm event. All storm events shall be separated by 7 days of dry weather (less than 0.1 inch of rain) from the previously measurable storm event.

(1) During the first year of the Order, all 3 test species shall be used for their respective chronic toxicity test method for the 2 storm events monitored, to determine the most sensitive test species for each monitoring station (see subparts D.8 and D.9 below).

(b) During the next 4 years of the Order, the first storm event of the wet season that produces at least 0.25 inches of rain shall be monitored for each mass emission and major outfall station. .

(1) During the next 4 years of the Order, the most sensitive test species determined from the first year of testing at each mass emission and major outfall station shall be used for its respective chronic toxicity test method (see subpart D.6).

8. Marine and Estuarine Species and Test Methods.

(a) Marine and estuarine species and short-term test methods for estimating the chronic toxicity of NPDES effluents shall be used and are found in the first edition of *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms* (EPA/600/R-95/136, 1995) and applicable water quality standards; also see 40 CFR Parts 122.41(j)(4) and 122.44(d)(1)(iv).

(1) The Permittee shall conduct:

(A) A static renewal toxicity test with the topsmelt, *Atherinops affinis* (Larval Survival and Growth Test Method 1006.01)

(B) A static non-renewal toxicity test with the giant kelp *Macrocystis pyrifera* (Germination and Growth Test Method 1009.0); <u>and</u>

(C) A static non-renewal toxicity test with the purple sea urchin, *Strongylocentrotus purpuratus*, (Fertilization Test Method 1008.0)

(b) In no case shall the preceding toxicity test species be substituted with another organism unless written authorization from the Regional Water Board Executive Officer is received.

9. Freshwater Species and Test Methods.

(a) Species and short-term test methods for estimating the chronic toxicity of NPDES effluent shall be used and are found in the fourth edition of *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms* (EPA/821/R-02/013, 2002; Table IA, 40 CFR Part 136).

(1) The Permittee shall conduct

(A) A static renewal toxicity test with the fathead minnow, *Pimephales promelas* (Larval Survival and Growth Test Method 1000.0[1])

[1] Daily observations for mortality make it possible to calculate acute toxicity for desired exposure periods (i.e., 7-day LC50, 96-hour LC50, etc.).

(B) A static renewal toxicity test with the daphnid, *Ceriodaphnia dubia* (Survival and Reproduction Test Method 1002.0[1]); and

(C) A static renewal toxicity test with the green alga, *Selenastrum capricornutum* (also named *Raphidocelis subcapitata*) (Growth Test Method 1003.0)

(b) In no case shall the preceding toxicity test species be substituted with another organism unless written authorization from the Regional Water Board Executive Officer is received.

10. The test endpoint data is analyzed using a standard t-test approach. Statistical analysis methods shall be consistent with U.S. EPA test method manuals.

11. If significant toxicity is found then according to paragraph 10.2.6.2 of the U.S. EPA freshwater test methods manual, all chronic toxicity test results from the multi-concentration tests required by this Order must be reviewed and reported according to U.S. EPA guidance on the evaluation of concentration-response relationships found in *Method Guidance and Recommendations for Whole Effluent Toxicity (WET) Testing (40 CFR 136)* (EPA/821/B-00-004, 2000).

12. Toxic samples shall be immediately subjected to Toxicity Identification Evaluation (TIE) procedures to identify the toxic chemical(s) if toxicity is demonstrated by the standard t-test.

13. A TIE is to be performed to identify the causes of toxicity using the same species and test method and, as guidance, U.S. EPA test method manuals: *Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I* (EPA/600/6-91/005F, 1992); *Methods for Aquatic Toxicity Identification Evaluations, Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity* (EPA/600/R-92/080, 1993); *Methods for Aquatic Toxicity Identification Evaluations, Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity* (EPA/600/R-92/081, 1993); and *Marine Toxicity Identification Evaluation (TIE): Phase I Guidance Document* (EPA/600/R-96-054, 1996).

14. The Principal Permittee shall complete chronic Phase I (Toxicity Characterization Procedures) TIEs for all sites showing significant toxicity. For the purpose of triggering TIE (Toxicity Characterization Procedures), significant toxicity is defined as at least 50% mortality. The 50% mortality threshold is consistent with the approach recommended in guidance published by USEPA for conducting TIEs (USEPA, 1996), which recommends a minimum threshold of 50% mortality because the probability of completing a successful TIE decreases rapidly for samples with less than this level of toxicity.

(a) The TIE shall be conducted on test species, demonstrating the most sensitive toxicity response at a sampling station. However, a TIE(s) may be conducted on an additional test species with the caveat that once the toxicant(s) has been identified then the most sensitive test species triggering the TIE event needs to be tested additionally to verify that the toxicant has been identified and addressed.

15. A TIE Prioritization Metric may be utilized to rank sites for TIEs.[2]

16. Toxicity Reduction Evaluation (TRE) when toxicity is identified
    (a) When the same pollutant or class of pollutants is identified through 2 consecutive TIE evaluations, a TRE shall be performed for that identified toxic pollutant.
    (b) The TRE development shall be performed by a neutral third party (retained by the Permittees), in consultation with the Regional Water Board staff.
    (c) The TRE shall include all reasonable steps to identify the source(s) of toxicity and discuss appropriate BMPs to eliminate the causes of toxicity. No later than 30 days after the source of toxicity and appropriate BMPs are identified, the Permittees shall submit the TRE Corrective Action Plan to the Regional Water Board Executive Officer for approval. At a minimum, the Plan shall include a discussion of the following items:
        (1) The potential sources of pollutant(s) causing toxicity.
        (2) A list of municipalities and agencies that may have jurisdiction over sources of pollutant(s) causing toxicity.
        (3) Recommended BMPs to reduce the pollutant(s) causing toxicity.
        (4) Proposed post construction control measures to reduce the pollutant(s) causing toxicity.
        (5) Follow-up monitoring to demonstrate that toxicity has been removed.
    (d) The TRE process shall be coordinated with TMDL development and implementation (i.e., If a TMDL for 4,4'-DDD is being implemented when a TRE for 4,4'-DDD is required, the efforts shall be coordinated to avoid overlap).

17. Results of Toxicity monitoring conducted in accordance with the Standard Operating Procedure under Standard Provision 14 of this Attachment shall be sent to the Regional Board's Storm Water Site at MS4stormwaterRB4@waterboards.ca.gov, no later than 90 days from sample collection date for the initial toxicity test and no more than 30 days from completion of each aspect of the analysis for TIEs/TREs. The sample data transmitted shall be in the most recent update of the Southern California Municipal Storm Water Monitoring Coalition's (SMC) Standardized Data Transfer Formats (SDTFs).

[2] Appendix 5. SMC Model Monitoring Program.

18. The Annual Storm Water Report shall include:
    (a) A full laboratory report for all toxicity testing.
    (b) A summary of the years' mass emission and major outfall monitoring station's toxicity test results reported according to the test methods manual chapter on report preparation and test review.
    (c) The dates of sample collection and initiation of each toxicity test.
    (d) All results for effluent parameters monitored concurrently with the toxicity test(s).
    (e) TIE Phase testing (Phase I, Phase II, and Phase III) that has been or is in the process of being conducted per monitoring station.
    (f) The development, implementation, and results for each TRE Corrective Action Plan in the Annual Storm Water Report, beginning the year following the identification of each pollutant or pollutant class causing toxicity.

19. When the SMC Standardized Toxicity Testing Guidance is completed, the Regional Water Board Executive Officer may direct Permittees to replace the current toxicity program with the standardized guidance procedure.

SPECIAL STUDIES

E. Pyrethroid Insecticides Study

I. The Principal Permittee shall perform a Pyrethroid Insecticides study to accomplish the following objectives:
    i. Establish baseline data for major watersheds
    ii. Evaluate whether Pyrethroid Insecticide concentrations are at or approaching levels known to be toxic to sediment-dwelling aquatic organisms.
    iii. Determine if Pyrethroids discovered are from urban sources.
    iv. Assess any trends over the permit term.

1. The Permittees shall incorporate monitoring for Pyrethroid Insecticides within the Calleguas Creek, Santa Clara River and Ventura River Watersheds according to the following:
    (a) No later than the second year of this Order, monitoring shall begin.
    (b) Quality Assurance Project Plan (QAPP) to be submitted to the Regional Board for approval 12 months prior to beginning monitoring.
    (c) In selecting sites to conduct monitoring for Pyrethroid Insecticides, Permittees shall review existing monitoring programs in the watersheds by other public and private entities, watershed coalitions, and citizen volunteers, so as to complement and not duplicate efforts.
    (d) Establish at least 2 stations along the mainstems of each major watershed river that are influenced by urban discharges.

(e) The study shall be repeated every third year following the year monitoring begins.

2. The Principal Permittee shall monitor Pyrethroid Insecticides stations according to the following:
   (a) The Principal Permittee shall monitor 1 sampling event per station per monitoring year.
      (1) Monitoring shall occur after sediment has settled within the waterbody, and safe access can be assured.
   (b) Sufficient sediment is to be collected at each station in a pre-cleaned glass jar by skimming the upper 1 cm of the sediment column with a steel scoop, and held on ice until returned to the laboratory.
   (c) Sediment shall be homogenized in the laboratory by hand mixing, then held at 4 °C (toxicity samples) or -20 °C (chemistry samples).
   (d) All samples taken shall be analyzed for the following Pyrethroids:
      (1) biefenthrin
      (2) cyfluthrin
      (3) cypermethrin
      (4) deltamethrin
      (5) esfenvalerate
      (6) lambda-cyhalothrin
      (7) permethrin
      (8) tralomethrin (if laboratory is capable of analyzing for it)
   (e) Detection limits for all Pyrethroids shall be as close to 1ng/g (dry weight) as reasonably achievable.
   (f) Each sediment sample is to measure the following:
      (1) total organic carbon (TOC).

3. All samples shall be tested for toxicity to 7 to 10 day old ***Hyalella azteca*** according to standard U.S. EPA testing methods.[3]
   (a) Use of the approach described in *Aquatic Toxicity Due to Residential Use of Pyrethroid Insecticides*[4] for toxicity testing shall be used.

4. Analysis by a laboratory that has performed sediment toxicity testing for Pyrethroid Insecticides is preferred.

5. Monitoring results from each station shall be sent electronically to the Regional Board's Storm Water Site at MS4stormwaterRB4@waterboards.ca.gov, no later than 90 days from sample collection date. The sample data transmitted shall be

[3] *U.S. EPA. Methods for Measuring the Toxicity and Bioaccumulation of Sediment-Associated Contaminants with Freshwater Invertebrates*; EPA Publication 600/R-99/064; U.S. Environmental Protection Agency: Washington, DC, 2000; 192 pp.
[4] *Aquatic Toxicity Due to Residential Use of Pyrethroid Insecticides*; Weston, D.P.; Holmes, R.W.; You, J.; Lydy, M.J. Environ. Sci. Technol.; (Article); 2005; 39(24); 9780 pp.

in the most recent update of the Southern California Municipal Storm Water Monitoring Coalition's (SMC) Standardized Data Transfer Formats (SDTFs).

6. If toxicity is attributed to Pyrethroids then consultation with staff at U.S. EPA, the California Department of Pesticide Regulations and the California Stormwater Quality Association's (CASQA) pesticides committee (UP3 Project web site), shall be required to obtain relevant information to use in developing the recommendations to mitigate Pyrethroids in the Final Report.

7. Final Report for the Pyrethroid Insecticides study shall contain the following:
   (a) Executive summary
   (b) Methods
   (c) Results (including map depicting monitoring stations)
   (d) Discussion
   (e) Recommendations to mitigate Pyrethroids

8. The Final Report shall be completed and submitted to the Executive Officer of the Regional Water Board no later than 8 months after completion of the study.

9. The Pyrethroid Insecticides Study requirement may be satisfied by another tributary monitoring program within the Watershed performing a sediment Pyrethroid Insecticides Study that is monitoring to assess pyrethroid concentrations and sediment toxicity, so as to complement other ongoing programs.

F. Hydromodification Control Study

1. The Principal Permittee shall conduct or participate in special studies to develop tools to predict and mitigate the adverse impacts of Hydromodification, and to comply with hydromodification control criteria. This can be achieved by the following:
   (a) Develop a mapping and classification system for streams based on their susceptibility to the effects of hydromodification.
   (b) Establish protocols for ongoing monitoring to assess the effects of hydromodification.
   (c) Develop dynamic models to assess the effects of hydromodification on stream condition.
   (d) Develop a series of tools that managers can easily apply to make recommendations or set requirements relative to hydromodification for new development and redevelopment.

2. The Principal Permittee may satisfy this requirement by participating in the 'Development of Tools for Hydromodification Assessment and Management' Project undertaken by the SMC and coordinated by the SCCWRP.

3. The Principal Permittee shall continue to partner with the SMC and collect data or sponsor its collection for the Ventura County sites to reduce statistical uncertainty and/ or improve model predictability.

4. The Principal Permittee shall submit a letter to the Regional Water Board Executive Officer stating how they will satisfy this requirement, no later than 2 months after Order adoption date.

G. Low Impact Development

1. The Principal Permittee shall conduct or participate in a special study to assess the effectiveness of low impact development techniques in semi-arid climate regimes such as in Southern California.

2. The Principal Permittee may satisfy this requirement by participating in the SMC project titled "Quantifying the Effectiveness of Site Design/ Low Impact Development Best Management Practice in Southern California".

3. The Principal Permittee shall submit a letter to the Regional Water Board Executive Officer stating how they are satisfying this requirement, no later than 2 months after deciding to either conduct or participate in special study.

H. Southern California Bight Project

1. The Principal Permittee and Permittees shall participate with other government organizations regulating discharges in southern California in the collaboration to conduct a regional monitoring survey (Southern California Bight Project (SCBP)), which was started in 2008 and to be continued in successive years. The survey's primary objective is to assess the spatial extent and magnitude of ecological disturbances on the mainland continental shelf of the SCB and to describe relative conditions among different regions of the SCBP.

2. The Principal Permittee shall participate on the Steering Committee for the bight-wide monitoring project, and assist with the estuary and nearshore sampling effort requirement of the proposed monitoring project for Ventura County as defined in the SCBP plan.

I. Bioassessment

1. The Principal Permittee consents to participate in the following regional water quality program for watershed management and planning:
   (a) SMC Regional Monitoring Program
      (1) Southern California Regional Bioassessment
         (A) Level of effort per watershed per year
            (i) Probabilistic sites per watershed
               (I) Ventura River - Six
               (II) Santa Clara River - Three
               (III) Calleguas Creek - Six
            (ii) Integrator sites per watershed
               (A) Ventura River - One
               (B) Santa Clara River - One
               (C) Calleguas Creek – One
   (b) Ventura County Bioassessment: Permittees shall conduct bioassessment at one fixed site in each of the watersheds above on an annual basis. Southern California Regional Bioassessment protocols shall be used to conduct the Ventura County Bioassessment program.

J. Volunteer Monitoring Programs

1. The Permittees shall provide limited assistance if requested in the development and implementation of volunteer monitoring programs in the Ventura watersheds. These include, but are not limited to the following:
   (a) Ventura River - (Ventura Stream Team)
   (b) Santa Clara River - (Santa Clara River Stream Team)
   (c) Calleguas Creek - (Calleguas Creek Watershed Quality Monitoring Program)
   (d) Malibu Creek - (Malibu Creek Watershed Quality Monitoring Program)

K. Standard Monitoring Provisions

I. All monitoring activities shall meet the following requirements.

1. Monitoring and Records [40 CFR 122.41(j)(1)]
   (a) Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

2. Monitoring and Records [40 CFR 122.41(j)(2)] [CWC §13383(a)]
   (a) The Principal Permittee and Permittees shall retain records of all monitoring information, including all calibration and maintenance of monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the Report of Waste Discharge (ROWD) and application for this Order, for a period of at least five (5) years from the date

of the sample, measurement, report, or application. This period may be extended by request of the Regional Water Board or U.S. EPA at any time and shall be extended during the course of any unresolved litigation regarding this discharge.

3. Monitoring and Records [40 CFR 122.21(j)(3)]
   (a) Records of monitoring information shall include:
      (1) The date, time of sampling or measurements; exact place, weather conditions, and rain fall amount.
      (2) The individual(s) who performed the sampling or measurements.
      (3) The date(s) analyses were performed.
      (4) The individual(s) who performed the analyses.
      (5) The analytical techniques or methods used.
      (6) The results of such analyses.
      (7) The data sheets showing toxicity test results.

4. Monitoring and Records [40 CFR 122.21(j)(4)]
   (a) All sampling, sample preservation, and analyses must be conducted according to test procedures under 40 CFR Part 136, unless other test procedures have been specified in this Order. If a particular Minimum Level (ML) is not attainable in accordance with procedures set forth in 40 CFR 136, the lowest quantifiable concentration of the lowest calibration standard analyzed by a specific analytical procedure may be used instead.

5. Monitoring and Records [40 CFR 122.21(j)(5)]
   (a)The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this Order shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than four years, or both.

6. All chemical, bacteriological, and toxicity analyses shall be conducted at a laboratory:
   (a) Certified for such analyses by an appropriate governmental regulatory agency.
   (b) Participated in 'Intercalibration Studies' for storm water pollutant analysis conducted by the SMC. [5]

[5] The 'Intercalibration Studies' are conducted periodically by the SMC to establish a consensus based approach for achieving minimal levels of comparability among different testing laboratories for storm water samples to minimize analytical procedure bias. Stormwater Monitoring Coalition Laboratory Document, Technical Report 420 (2004) and subsequent revisions and augmentations.

(c) Which performs laboratory analyses consistent with the storm water monitoring guidelines as specified in, the *Stormwater Monitoring Coalition Laboratory Guidance Document,* 2nd Edition R. Gossettt and K. Schiff (2007), and its revisions.

7. For priority toxic pollutants that are identified in the CTR (65 *Fed. Reg.* 31682), the MLs published in Appendix 4 of the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays and Estuaries of California* (SIP) shall be used for all analyses, unless otherwise specified. The MLs from the SIP are incorporated into Attachment "G".

8. The Monitoring Report shall specify the analytical method used, the Method Detection Level (MDL) and the ML for each pollutant. For the purpose of reporting compliance with numerical limitations, performance goals, and receiving water limitations, analytical data shall be reported with 1 of the following methods, as appropriate:
   (a) An actual numerical value for sample results greater than or equal to the ML.
   (b) "Not-detected (ND)" for sample results less than the laboratory's MDL with the MDL indicated for the analytical method used.
   (c) "Detected, but Not Quantified (DNQ)" if results are greater than or equal to the laboratory's MDL but less than the ML. The estimated chemical concentration of the sample shall also be reported. This is the concentration that results from the confirmed detection of the substance by the analytical method below the ML value.

9. For priority toxic pollutants, if the Permittee can demonstrate that a particular ML is not attainable, in accordance with procedures set forth in 40 CFR 136, the lowest quantifiable concentration of the lowest calibration standard analyzed by a specific analytical procedure (assuming that all the method specified sample weights, volumes, and processing steps have been followed) may be used instead of the ML listed in Appendix 4 of the SIP. The Principal Permittee must submit documentation from the laboratory to the Regional Water Board Executive Officer for approval prior to raising the ML for any constituent.

10. Monitoring Reports [40 CFR 122.41(I)(4)(ii)]
   (a) If the Principal Permittee monitors any pollutant more frequently than required by the Order using test procedures approved under 40 CFR part 136, unless otherwise specified in the Order, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the Annual Monitoring Reports.

11. Monitoring Reports [40 CFR 122.41(I)(4)(iii)]
    (a) Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order.

12. If no flow occurred during the reporting period, then the Monitoring Report shall, so state.

13. The Regional Water Board Executive Officer or the Regional Board, consistent with 40 CFR 122.41, may approve changes to the Monitoring Program, after providing the opportunity for public comment, either:
    (a) By petition of the Principal Permittee or by petition of interested parties after submittal of the Monitoring Report. Such petition shall be filed not later than 60 days after the Monitoring Report submittal date, or
    (b) As deemed necessary by the Regional Water Board Executive Officer following notice to the Principal Permittee.

14. The Principal Permittee must provide a copy of the Standard Operation Procedures (SOPs) for the Monitoring Program No. CI 7388 to the Regional Water Board upon request. The SOP will consist of five elements: Title page, Table of Contents, Procedures, Quality Assurance/ Quality Control (QA/ QC), and References. Briefly describe the purpose of the work or process, including any regulatory information or standards that are appropriate to the SOP process, and the scope to indicate what is covered. Denote what sequential procedures should be followed, divided into significant sections; e.g., possible interferences, equipment needed personnel qualifications, and safety considerations. Describe QA/ QC activities, and list any cited or significant references.

L. Total Maximum Daily Load (TMDL) Monitoring

1. TMDL monitoring is to determine compliance with the TMDL Waste Load Allocations (WLAs) and numeric targets for the MS4 Permittees that have been adopted by the Regional Water Board and have been approved by the Office of Administrative Law and the U.S. EPA.

2. TMDL monitoring is in accordance with approved TMDLs as discussed in part 5 of the permit. TMDL monitoring for specific watersheds is in accordance with the agreed upon monitoring plans submitted by stakeholders, including MS4 Permittees.

M. Beach Water Quality Monitoring

If funding from state and federal sources is not available for beach water quality monitoring the Principal Permittee shall conduct weekly year-round beach water quality sampling and analysis at a maximum of ten sites in accordance with the procedures and locations used in AB 411 monitoring and listed below:

1. Rincon Beach – 25 yards south of the creek mouth*
2. Oil Piers Beach – south of the drain, bottom of the wood staircase
3. Faria County Park – south of the drain at the north end of the park*
4. Solimar Beach – south (end of east gate access road)*
5. Emma Wood State Beach – 50 yards south of first drain
6. Oxnard Beach – at J Street drain
7. Surfer's Point at Seaside – end of the access path via wooden gate
8. Promenade Park – Figueroa Street
9. Surfer's Knoll – beach adjacent to the parking lot*
10. San Buenaventura Beach – south of drain at San Jon Road

* Not associated with MS4 discharges.

Ordered by:

Samuel Unger

Samuel Unger, P.E.
Interim Executive Officer

Date: July 8, 2010