

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

ORDER R5-2011-XXXX

NPDES NO. CAS0084077

MONITORING AND REPORTING PROGRAM  
FOR  
STOCKTON PORT DISTRICT  
FACILITY-WIDE STORM WATER DISCHARGES FROM  
MUNICIPAL SEPARATE STORM SEWER SYSTEM AND  
NON-STORM WATER DISCHARGES FROM THE PORT OF STOCKTON  
SAN JOAQUIN COUNTY

T  
E  
N  
T  
A  
T  
I  
V  
E

**I. MONITORING AND REPORTING PROGRAM REQUIREMENTS**

This Monitoring and Reporting Program (MRP) is issued pursuant to Water Code Section 13267. MRP Order R5-2011-XXXX is necessary to determine compliance with Order R5-2011-XXXX and to determine the effectiveness of the storm water program.

The Permittee shall not implement any changes to this MRP unless and until the Central Valley Water Board ~~or Executive Officer~~ issues a revised MRP. Attachment A shows the Port of Stockton (Port) jurisdictional limits, which are covered under this Order. To save time and money, and avoid duplication of efforts, the Permittee shall coordinate their monitoring program with local, state, and federal agencies whenever possible.

**A. Annual Work Plan:** By **1 April 2011**, the Permittee shall submit an Annual Work Plan, in printed and electronic format, that supports the development, implementation, and effectiveness of the approved Storm Water Management Plan (SWMP) and Order R5-2011-XXXX. The Annual Monitoring Plan shall be deemed to be final and enforceable under this Order as of **1 July** of each year unless determined to be unacceptable by the Executive Officer.

**B. Annual Report:** The Permittee shall submit, in both electronic and paper formats and no later than **1 September** of each year, an Annual Report documenting the progress of the Permittee's implementation of the SWMP and the requirements of Order R5-2011-XXXX. The Annual Report shall cover each fiscal year from **1 July through 30 June**. The status of compliance with permit requirements, including implementation dates for all time-specific deadlines, should be included for each program area. If permit deadlines are not met, the Permittee shall report the reasons why the requirement deadline was not met and how the requirements shall be met in

the future, including projected implementation dates. A comparison of program implementation results to performance standards established in the SWMP and Order R5-2011-XXXX shall be included for each program area. Specific requirements that must be addressed in the Annual Reports are listed below.

1. An Executive Summary discussing the effectiveness of the SWMP to reduce storm water pollution to the maximum extent practicable (MEP) and to achieve compliance with water quality objectives in receiving waters;
2. Summary of activities conducted by the Permittee;
3. Identification of best management practices (BMPs) and a discussion of their effectiveness at reducing urban runoff pollutants and flow, where applicable; and
4. Summary of the monitoring data and an assessment of each component of the MRP. To comply with Provisions C.1 and C.2 of the Order R5-2011-XXXX the Permittee shall compare receiving water and discharge data with applicable water quality objectives and/or ~~water quality~~ criteria correlated with the beneficial uses (i.e., water quality standards) of the San Joaquin Delta. The most stringent applicable adopted objective and/or criteria from the Basin Plan, California Toxics Rule (CTR), California Title 22 drinking water maximum contaminant levels (Title 22), ~~the California Department of Fish and Game pesticide objectives,~~ and/or other applicable public health, agriculture, or national water quality standards shall be used for comparison. ~~The Permittee shall also compare wet weather discharge data with the Storm water Parameter Benchmark Values and effluent limitation guidelines put forth in Part 8 of the 2008 U.S. EPA Multi-Sector Permit (MSGP) and the NPDES No. CAS000001, General Industrial Activity Storm Water Permit (General Industrial Permit). Wet weather discharge constituents not listed in the MSGP Part 8 and the General Industrial Permit shall be compared to the most stringent applicable water quality objectives and/or criteria listed above.~~

The Permittee shall additionally provide a summary of monitoring data for the discharges to assess the effectiveness of BMPs in reducing pollutants in the discharge and in assessing whether a discharge may have caused or contributed to an exceedance of water quality objectives in the receiving waters.

When monitoring data indicates that discharges are causing or contributing to exceedances of applicable water quality objectives,

~~benchmark concentration values, and/or effluent limits~~ the Permittee shall prepare a Report of Water Quality Exceedance (RWQE), identify potential sources of the problems, and recommend future monitoring and BMP implementation measures to identify and address the sources of pollution.

5. For each water quality program plan requirement, ~~(e.g., Dissolved Oxygen Plan)~~ the Annual Reports shall include the following results and information:
  - a. All physical, chemical and biological data collected in the assessment;
  - b. All graphs, charts, statistical analysis, modeling, and any other analytical analyses in support of the Permittee's evaluation of the data and conclusions derived from that analysis; and
  - c. Documentation of quality assurance and control procedures (QA/QC).
  
6. Effectiveness assessment for each program element, as defined in the SWMP, shall be conducted annually, shall be built upon each consecutive year, and shall identify any necessary modifications. The SWMP shall describe, in detail, the performance standards or goals to use to gauge the effectiveness of the storm water management program. The primary questions that must be assessed for each program element include the following:
  - a. Level 1 Outcome: Was the Program Element implemented in accordance with the Permit Provisions, SWMP Control Measures and Performance Standards?
  - b. Level 2 Outcome: Did the Program Element raise the target audience's awareness of an issue?
  - c. Level 3 Outcome: Did the Program Element change a target audience's behavior, resulting in the implementation of recommended BMPs?
  - d. Level 4 Outcome: Did the Program Element reduce the load of pollutants from the sources to the storm drain system?
  - e. Level 5 Outcome: Did the Program Element enhance or change the urban runoff and discharge quality?

- f. Level 6 Outcome: Did the Program Element enhance or change receiving water quality?
  7. A summary of any ~~Reports of Water Quality Exceedance (RWQEs)~~ that have been completed during the year, and a status update for those in progress. The summary shall include the conclusions and recommendations of completed RWQEs and the status of any additional BMP implementation pursuant to RWQEs;
  8. Pursuant to 40 CFR 122.42(c)(7), the Permittee shall identify water quality improvements in, or degradation of, urban storm water;
  9. For each monitoring component, photographs and maps of all monitoring station locations and descriptions of each location;
  10. Recommendations to improve the monitoring program, BMPs, Performance Standards, and the SWMP to address potential receiving water quality exceedances and potential pollutant sources, and to meet the MEP standard; and
  11. Provide operating data from all pump stations as an appendix in electronic format as necessary and estimate discharge volumes unless other technically defensible means to estimate urban runoff discharge volumes can be substituted.
  13. In addition to the requirements listed above, the final Annual Report of this Order's permit term shall include:
    - a. An estimate of total pollutant loads attributable to urban runoff for target pollutants at each discharge monitoring station;
    - b. An evaluation of the long-term trends in MS4 discharges and receiving water quality. Several factors need to be considered when evaluating trends, such as changes in sample collection methods, data quality differences, and changes in analytical methods.
    - c. An evaluation of significant correlations of target pollutants with other related constituents, ~~such as total suspended solids (TSS) or water quality parameters.~~
- C. Notification of Water Quality Exceedances (NWQE):** The Permittee shall notify the Central Valley Water Board, in writing, of any exceedance in receiving waters of applicable water quality objectives within **90 days** of the monitoring event from which the exceedance was detected. The Permittee

shall notify the Central Valley Water Board electronically within **48 hours** of Water Column Toxicity monitoring data in receiving waters that indicates 50% mortality.

- D. Certification:** All work plans and reports submitted to the Central Valley Water Board shall be signed and certified pursuant to federal regulations at 40 CFR 122.41-(k). Each report shall contain the following completed declaration:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted.

Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility, of a fine and imprisonment for knowing violations.

Executed on the \_\_\_ day of, 2011, at \_\_\_\_\_.

(Signature)\_\_\_\_\_ (Title)\_\_\_\_\_";

The Permittee shall mail the original of the annual report to:

CALIFORNIA REGIONAL WATER QUALITY  
CONTROL BOARD – CENTRAL VALLEY REGION  
11020 Sun Center Drive, #200  
Rancho Cordova, CA 95670

A copy of the annual report shall also be mailed to:

REGIONAL ADMINISTRATOR  
ENVIRONMENTAL PROTECTION AGENCY  
REGION 9  
75 Hawthorne Street  
San Francisco, CA 94105

T  
E  
N  
T  
A  
T  
I  
V  
E

## II. MONITORING PROGRAM

The primary objectives of the Monitoring Program include, but are not limited to:

- Assessing compliance with this Order;
- Measuring and improving the effectiveness of the SWMP;
- Assessing the chemical, physical, and biological impacts on receiving waters resulting from urban runoff;
- Characterization of urban runoff;
- Identifying sources of pollutants; and
- Assessing the overall health and evaluating long-term trends in receiving water quality.

Ultimately, the results of the monitoring requirements outlined below should be used to refine the SWMP to reduce pollutant loadings and protect and enhance the beneficial uses of the receiving waters of the ~~Stockton Port District~~. The Monitoring Program consists of the following elements:

- Baseline Monitoring
  - Urban Discharge Monitoring
  - Receiving Water Monitoring
  - Water Column Toxicity Monitoring
  - Dry Weather Field Monitoring
- Sediment Toxicity Monitoring
- Water Quality Based Programs
  - Pesticide Monitoring Plan
  - Low Dissolved Oxygen Monitoring Plan
  - Total Mercury and Methylmercury Control Program
- Special Studies
  - Retention Basin Monitoring
  - BMP Effectiveness Studies

The Permittee shall implement the Monitoring Program as follows:

### Baseline Monitoring

- A. The Permittee shall conduct water column monitoring in both urban discharge outfalls (see Section C – Urban Discharge Monitoring) and receiving waters (see Section D – Receiving Water Monitoring). Water monitoring shall take place at each receiving water and urban discharge station. The water column monitoring shall include all storm water pollutants of concern (POCs)

T  
E  
N  
T  
A  
T  
I  
V  
E

identified during the 2004-2009 baseline monitoring as identified in Table B1, ~~and Table D, and Table G~~ of this Order, unless those POCs have registered consistently as non-detectable in the last permit cycle. The frequency of monitoring shall be in accordance with Table F.

## B. Sampling Protocol

1. Samples from each urban discharge and receiving water station described in Sections C and D shall be analyzed for all constituents listed in Table B1, ~~and Table D, and Table G~~. All sample collection and analyses shall follow standard U.S. Environmental Protection Agency (U.S. EPA) protocol. The results of analysis shall be reported in the appropriate standard units. Additionally, the Permittee shall establish minimum analytical detection levels that are at or below the most stringent of the ~~Federal Storm Water Parameter Benchmark Values and effluent limitations, or the applicable~~ Water Quality Objective or Criterion ~~or the minimum levels for priority pollutants found in Appendix 4 of the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California<sup>4</sup> (State Water Resources Control Board, 2000)~~.
2. The constituents listed in Table B1 and Table D represent ~~Stockton-Port District's~~ targeted pollutants of concern (POCs). The constituents represent POCs in the ~~Port of Stockton District~~ waterways and POCs in the ~~Port of Stockton's~~ Industrial sector.
3. The Permittee shall identify storm water pollutant benchmark concentrations for each subwatershed based on specific industry activity. The Permittee shall use the standards and guidelines put forth in the US EPA 2008 Multi-Sector General Permit (MSGP) and the General Industrial Permit.

The following information shall be included in the 2010/2011 Annual Report:

- a. List of all current industry types and bulk material handling activities within each subwatershed, grouped into the MSGP's and the General Industrial Permit's industry sector-specific categories;
- b. Identify sector-specific storm water pollutant benchmark concentrations found in the MSGP Part 8 and the General

<sup>4</sup>This document is available at:  
[http://www.swrcb.ca.gov/water\\_issues/programs/state\\_implementation\\_policy/docs/final.pdf](http://www.swrcb.ca.gov/water_issues/programs/state_implementation_policy/docs/final.pdf)

Industrial Permit. Concentration values shall be adjusted to water hardness for each outfall as applicable. If more than one parameter concentration value exists in a subwatershed the most stringent value shall be used;

- c. The parameters shall be added to the current list of POCs associated with the respective subwatershed outfall (Table B) and to the receiving water monitoring list (Table D). ~~The parameters shall also be added to Table G and the minimum levels shall be consistent with those put forth in Appendix 4 of Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California.~~ Sampling techniques shall follow standard U.S. EPA protocol and the guidelines put forth in the MSGP and the General Industrial Permit; and
- d. The Permittee shall append the current monitoring database to include, at a minimum:
  - i. Date of Sample
  - ii. Constituent
  - iii. Minimum Level
  - iv. Method Detection Limit
  - v. Unit of Measure
  - vi. Test Method
  - vii. Benchmark ~~Cutoff Concentration Value~~
  - viii. Benchmark Exceedance (Y/N)
  - ix. Water Quality Objective Criterion
  - x. Water Quality Source and Reference (e.g. CA Primary MCL)
  - xi. Water Quality Objective Exceedance (Y/N)
  - xii. Waste Load Allocation
  - xiii. Flow/Tide Direction
  - xiv. Sampling Results by Station ID No.

The storm water benchmark parameters and Tables B~~1~~, ~~and D~~, ~~and 4~~ shall be updated if a new industrial or bulk material handling activity begins. If an industrial or bulk material handling activity ceases or changes, the associated testing parameters shall be screened for the following two seasons, during the first monitoring event (“first flush”). If the pollutants of concern associated with the specific terminated industrial activity ~~shows non-detect~~ are below the associated benchmark and water quality objective criterion for two consecutive years the Permittee may propose to the Executive Officer that the constituent(s) be removed from annual sampling. If the constituent is detected above the benchmark or water quality objective criterion, it must continue to be monitored.

~~The benchmark values WQOs~~ shall be used to analyze wet weather discharges only. ~~If a parameter from Table B does not have a corresponding benchmark value, the Water Quality Objectives (WQOs) shall be used to evaluate the sampling data.~~ Dry weather monitoring events shall use the WQOs to analyze all sampling data.

~~Benchmark and~~ WQO concentrations are not effluent limitations; an exceedance, therefore, is not a permit violation. ~~Benchmark and~~ WQO monitoring data shall be used to determine the overall effectiveness of control measures and assist the Permittee in identifying potential sources of problems, improve BMP implementation measures, and reduce pollutants to the MEP.

4. If a constituent listed in Table(s) B~~1~~ and/or D ~~is has~~ not been detected at the method detection limit for its respective test method in at least 9 of 12 consecutive sampling events during this ~~or the previous~~ permit term it need not be further analyzed unless the observed occurrences show concentrations greater than receiving water quality objectives. ~~The Permittee shall conduct annual confirmation sampling for non-detected constituents during the first storm event monitored every year at each station. However, if confirmation sampling shows non-detect for a constituent for two successive years, the Permittee may propose to the Executive Officer that the constituent be removed from annual sampling. If the constituent is detected, it must continue to be monitored.~~
5. ~~The Permittee shall conduct confirmation sampling for all constituents listed in Table G at each station, including those removed from annual sampling by the processes listed in B4 above, during the first storm event monitored in the first and last wet weather monitoring cycles of the permit term. If constituents previously removed from annual sampling are detected they must continue to be monitored and added to the respective Table(s) B and/or D.~~
6. Grab samples shall be used for receiving water monitoring. For monitoring of urban discharge outfalls during wet weather, the Permittee shall collect grab samples and flow-weighted composite samples in accordance with the revised sampling and analysis plan for the Port's storm water monitoring program.
7. Where possible, ~~T~~he Permittee shall collect flow data at the time of sampling for all monitoring stations sampled during a given year. Receiving water or urban discharge flow may be estimated using U.S.

EPA methods<sup>2</sup> at sites where flow measurement devices are not in place.

8. Each year<sup>3</sup>, samples shall be collected from urban discharge and receiving water monitoring sites **during three qualifying storm events<sup>4</sup> and two dry weather monitoring events<sup>5</sup>**. The Permittee shall ~~plan to monitor~~target the first storm event of the year<sup>2</sup> preceded by at least 30 days of dry weather.<sup>6</sup> The second and third storm events to be monitored shall be preceded by at least three dry weather days. The monitoring events shall be separated by at least 20 days.
9. The Permittee shall submit a revised sampling and analysis plan, as part of the SWMP, by **1 August 2011**.

**C. Urban Discharge Monitoring**

Since 1997, the Permittee has monitored eight outfalls, shown in Attachments C and D. Beginning in the 2007-2008 season, three direct discharge monitoring locations were eliminated, D7, D8, and D15, because they ~~are were~~ plugged or otherwise eliminated from the drainage system. For this permit term, samples shall be taken from representative outfalls at the following locations, D2, D4, D10, D11, ~~the~~ East Complex retention basin outfall, and the outfall of the West Complex pump station. The locations of these outfalls are shown in Attachment C and D.

Direct discharge monitoring shall include at least the following:

**Table A. Urban Discharge Monitoring Stations**

Station ID No.	Drainage Description or Location
<b><i>East Complex Runoff</i></b>	
D-2	Calaveras Cement Company / Lehigh site; drainage to a discharge pipe
D-4	Docks 2 thru 7; drainage to a discharge pipe
D-10	Dock 8 and area along Road 5 and Road C;

<sup>2</sup> NPDES Storm Water Sampling Guidance Document, U.S. EPA 833-B-92-001, July 1992

<sup>3</sup> This refers to the permit year of July 1 to June 30.

<sup>4</sup> A qualifying storm event is one that occurs during normal daylight business hours ~~(when the Port Docks are open for business), except for the first flush even if it occurs on weekends and holidays;~~ and when there is sufficient rainfall to produce a continuous discharge of storm water for an hour or more; ~~the~~ The Permittee shall target storm events with a predicted probability of ~~and~~ at least a fifty percent chance of rainfall according to the NOAA website for the zip code of 95203 (<http://forecast.weather.gov/MapClick.php?CityName=Stockton&state=CA&site=STO&lat=37.9527&lon=-121.328>)

<sup>5</sup> Dry weather monitoring ~~is only required if there is a discharge and events~~ shall be preceded by at least seven days of no rainfall; the two dry weather monitoring events shall be separated by at least 14 days of no rainfall.

<sup>6</sup> A day with a storm event too small to generate runoff (typically 0.1 inches or less) shall be considered a dry weather day.

Station ID No.	Drainage Description or Location
	drainage to a discharge pipe
D-11	Docks 9 thru 11 and area around bulk fertilizer warehouses; drainage to a discharge pipe
Retention Basin Pump Station (RB)	Southern two-thirds of property, south of Road H
<i>West Complex Runoff</i>	
West Complex Pump Station (WC)	Southwest corner of island; discharges to Burns Cutoff

The Permittee shall notify the Central Valley Water Board within 30 days if any outfalls are opened, re-opened, or eliminated from the drainage system. If additional monitoring stations are needed, they shall be established under the direction of the Executive Officer Central Valley Regional Water Board.

~~Urban discharge monitoring shall be consistent with Table G.~~

The Permittee shall analyze storm water samples collected from monitoring stations as follows:

**Table B1. Urban Discharge Station Sampling Parameters**

Station ID No.	Parameter	Sample Type
All Stations	<del>Chemical oxygen demand</del>	<del>grab and composite</del> <sup>8</sup>
	Biochemical oxygen demand	grab and composite
	Dissolved oxygen	grab
	pH	grab
	Specific conductance	grab
	Temperature	grab
	<del>Total dissolved solids</del>	<del>composite</del>
	Total suspended solids	composite
	Turbidity	composite
	Oil and Grease	composite
	Heavy metals <sup>7</sup>	composite
	Ammonia	composite
	Nitrate/Nitrite <u>as N</u>	composite
	Phosphorous	composite

<sup>7</sup> These are aluminum, antimony, arsenic, barium, beryllium, cadmium, total chromium, hexavalent chromium, cobalt, copper, lead, mercury, molybdenum, nickel, selenium, silver, thallium, vanadium, and zinc. The concentration values for cadmium, copper, lead, nickel, silver, and zinc are hardness dependent. For these parameters, the Permittee must adjust the WQO ~~and Benchmark values~~ (following standard EPA Protocol) to reflect the hardness of the receiving waters.

<sup>8</sup> Reported as event mean concentration for composites.

T  
E  
N  
T  
A  
T  
I  
V  
E

Station ID No.	Parameter	Sample Type
	Diazinon Chlorpyrifos Mercury Methylmercury <del>Dioxin</del> Furan Compounds <del>Polychlorinated Biphenyls (PCBs)</del>	composite composite grab grab composite composite grab
D-2	Same as All Stations	Same as All Stations
D-4	Same as All Stations	Same as All Stations
D-10	Same as All Stations	Same as All Stations
D-11	Sulfate <del>Sulfide</del> Sulfur	composite composite composite
<del>Retention Basin</del> <u>RB</u>	TKN Pesticides <sup>9</sup> Sulfate <del>Sulfide</del> Sulfur Total Coliform bacteria E. Coli bacteria	composite composite composite composite composite grab grab
WC	Pesticides Total Coliform bacteria E. Coli bacteria	composite grab grab

<sup>9</sup> These shall include carbamates, chlorophenoxyacid herbicides, organochlorine pesticides, organophosphorus pesticides, and triazine pesticides.

For the purpose of pollutant source identification, the Permittee shall analyze storm water samples collected from up-gradient monitoring stations (i.e., culverts, manholes, the south ditch) as follows:

**Table B2. RBI and Up-gradient Monitoring Station Sampling Parameters**

Station ID No.	Parameter	Sample Type
Retention Basin Inlet (RBI)	<del>Chemical oxygen demand</del>	<del>grab and composite</del> <sup>12</sup>
	Biochemical oxygen demand	grab and composite
	Dissolved oxygen	grab
	pH	grab
	Specific conductance	grab
	Temperature	grab
	<del>Total dissolved solids</del>	<del>composite</del>
	Total suspended solids	composite
	Turbidity	composite
	Oil and Grease	composite
	Heavy metals <sup>10</sup>	composite
	Ammonia	composite
	Nitrate/Nitrite <u>as N</u>	composite
	Phosphorous	composite
	Diazinon	composite
	Chlorpyrifos	composite
	Mercury	grab
	Methylmercury	grab
	<del>Dioxin</del>	composite
	Furan Compounds	<del>composite</del>
	<del>Polychlorinated Biphenyls (PCBs)</del>	grab
	TKN	composite
	Pesticides <sup>11</sup>	composite
	Sulfate	<del>composite</del>
	<del>Sulfide</del>	<del>composite</del>
	Sulfur	composite
Total Coliform bacteria	grab	
E. Coli bacteria	grab	

T  
E  
N  
T  
A  
T  
I  
V  
E

<sup>10</sup> These are aluminum, antimony, arsenic, barium, beryllium, cadmium, total chromium, hexavalent chromium, cobalt, copper, lead, mercury, molybdenum, nickel, selenium, silver, thallium, vanadium, and zinc. The concentration values for cadmium, copper, lead, nickel, silver, and zinc are hardness dependent. For these parameters, the Permittee must adjust the WQO and Benchmark values (following standard EPA Protocol) to reflect the hardness of the receiving waters.

<sup>11</sup> These shall include carbamates, chlorophenoxyacid herbicides, organochlorine pesticides, organophosphorus pesticides, and triazine pesticides.

<sup>12</sup> Reported as event mean concentration for composites.

T  
E  
N  
T  
A  
T  
I  
V  
E

Station ID No.	Parameter	Sample Type
Other up-gradient locations as identified in the Annual Work Plans	Parameters to be tested will be dependent on the pollutant being investigated and will be identified in the Annual Work Plan	Specified in the Annual Work Plan

**D. Receiving Water Monitoring**

All receiving water samples shall be grab samples, collected at mid-depth, in mid-stream of the receiving water, and in a manner that measures the water quality impacts of corresponding urban discharge outfalls. Receiving water monitoring shall be taken after discharges from D2, D4, D10, D11, **RBI**, RB (if discharging), and WC have occurred. Attachment B shows the approximate locations of the receiving water sampling stations. Each year, samples shall be collected **coinciding with the three qualifying storm events and two monitoring events during the dry season**<sup>13</sup> in accordance with the Port's sampling and analysis plan. Receiving water monitoring shall include at least the following:

**Table C. Receiving Water Monitoring Stations**

Station ID No.	Drainage Description or Location
<b><i>Receiving Water</i></b>	
R-1	In the San Joaquin River upstream of the East Complex retention basin discharge, and south of the Santa Fe Railroad bridge
R-2	In the DWSC downstream of the east Burns Cutoff confluence, and downstream of the East Complex outfalls but upstream of the West Complex outfall
R-3	In the DWSC turning basin, east and upstream of the Port's East Complex outfalls, and downstream of the City of Stockton's industrial discharges
R-4	In the DWSC downstream (west) of the west Burns Cutoff confluence

<sup>13</sup> Receiving water sampling and toxicity testing is only required to be done during dry weather monitoring events where a discharge is observed to be occurring. For safety reasons, receiving water monitoring is not required to be performed during dangerous weather conditions, unsafe flood conditions, before sunrise, or after sunset.

Station ID No.	Drainage Description or Location
R-5	In the Burns Cutoff downstream of the West Complex pump station

The upstream receiving locations shall be representative of what is entering each waterbody from the upstream sources (tidal stage dependant) of the Port, shown on Attachment B. The sampling and analysis plan shall require the tidal stage be identified in field notes.

T  
E  
N  
T  
A  
T  
I  
V  
E

The Discharger shall analyze storm water samples collected from monitoring stations as follows:

**Table D. Receiving Water Station Sampling Parameters**

Station ID No.	Parameter	Sample Type
R-1	<del>Chemical oxygen demand</del>	grab
	Dissolved oxygen	grab
	pH	grab
	Specific conductance	grab
	Temperature	grab
	<del>Total dissolved solids</del>	grab
	Total suspended solids	grab
	Turbidity	grab
	Biochemical oxygen demand	grab
	Nitrate/nitrite <u>as N</u>	grab
	Ammonia	grab
	TKN	grab
	Oil & grease	grab
	Phosphorus	grab
	Sulfate	grab
	<del>Sulfide</del>	grab
	Sulfur	grab
	<del>PCBs</del>	grab
	<del>Semi-volatile organic compounds</del>	grab
	<del>Volatile organic compounds</del>	grab
	Heavy metals	grab
	Pesticides	grab
	Diazinon	grab
	Chlorpyrifos	<del>grab</del>
Mercury	<del>grab</del>	
Methylmercury	<del>grab</del>	
Total Coliform bacteria	<del>grab</del>	
E. Coli bacteria	<del>grab</del>	
<del>Dioxin</del>	<del>grab</del>	
Furan Compounds		
R-2	Same as for R-1	Same as for R-1
R-3	Same as for R-1	Same as for R-1
R-4	Same as for R-1	Same as for R-1
R-5	Same as for R-1	Same as for R-1

T  
E  
N  
T  
A  
T  
I  
V  
E

#### E. East Complex Retention Basin Monitoring

The retention basin shall be monitored via grab samples collected at mid-depth from the deepest point in the basin. This monitoring shall occur prior to each outfall discharge event. If urban discharges enter the retention basin while it is discharging to the San Joaquin River, then the Permittee shall resample the basin at least daily as long as inlet discharges are occurring. Samples shall be analyzed for the ~~same parameters as those listed for the retention basin inlet~~parameters indicated on Table B1.

The Permittee shall also collect and analyze upstream and downstream monitoring of receiving water samples during discharge events from the East Complex retention basin to the San Joaquin River. ~~If urban discharges enter the retention basin while it is discharging, then the Permittee shall resample the upstream and downstream receiving water sites at least daily as long as inlet discharges are occurring.~~ Sampling and analytical protocols for this monitoring shall be the same as for the receiving water monitoring described in MRP Section II.D.

#### F. Industrial Activities Monitoring

The Permittee shall develop a Facility Water Pollution Prevention Plan (FPPP), including storm water quality monitoring plans, for the Permittee-operated industrial areas that would otherwise qualify for coverage under the General Industrial Permit. The FPPP shall be consistent with the General Industrial Permit. Qualifying industrial areas identified by the Permittee include its maintenance shop, fleet vehicle fueling area, equipment wash pad, and fertilizer warehouses.<sup>14</sup>

#### G. Monitoring during Loading and Unloading of Bulk Materials

This monitoring shall consist of water quality analysis and visual observations as follows:

1. During all bulk material loading and unloading events, the Permittee shall conduct visual observations of these activities to monitor the effectiveness of spill prevention BMPs. The Permittee shall also visually monitor ship activities to prevent, to the MEP, ship operators from discharging vessel equipment wash water and deck wash-down water in compliance with the U.S. EPA 2008 NPDES Vessel General Permit. Documentation shall include the date and time of inspection, the name and title of the inspector, the dock where material transfer occurred, the

<sup>14</sup> These areas were identified in the Port's 31 August, 2009 Proposed Storm Water Management Plan and Report of Waste Discharge

material and quantity transferred, whether or not any material was spilled, a description of efforts to cleanup any spills, and weather conditions.

2. In the event of an observed spill that reached waters of the United States, the Permittee shall collect grab samples of the appropriate water body at points upstream, downstream, and beneath the loading dock. Samples shall be collected ~~after the material transfer has begun, and~~ at a time that would best represent any water quality impacts caused by this ~~activity~~spill. The Permittee shall also (1) document the location, date and time of sampling, the material and quantity ~~transferred~~spilled, when material ~~transfer~~spill began and ended, and weather conditions; and (2) evaluate analytical results to determine the effectiveness of BMPs in controlling ~~the discharge of bulk materials~~spills into receiving waters, and any associated water quality impacts.

#### H. Water Column Toxicity Monitoring

The Permittee shall conduct short-term chronic toxicity testing at each ~~downstream~~-receiving water monitoring station (i.e. Station ID Nos. ~~R2, R4, and R5R-1 through R-5~~), the West Complex Pump Station, and the East Complex Retention Basin ~~pump station on an annual basis during two non-consecutive years during the permit term. Annual data collection allows for characterizing a range of hydrologic conditions that vary from year to year and to more fully characterize potential sources of contaminants and toxicity that may be contributing to the decline of fish populations in the Delta.~~ Short-term chronic toxicity testing shall include (1) the analysis of samples from the coinciding **three qualifying storm events, and two dry weather monitoring events (if a discharge is occurring)** from each receiving water monitoring station; and (2) analysis of at least the following two freshwater test species for each sampling event: Fathead minnow [*Pimephales promelas* (larval survival and growth test) and water flea [*Ceriodaphnia dubia* (survival and reproduction test)]. The testing shall be conducted in accordance with U.S. EPA's method 821-R-02-013 (U.S. EPA 2002, 4<sup>th</sup> Edition), or the most recent edition approved under 40 CFR 136. A minimum sample volume of 5 gallons for each test species shall be provided with a sample storage (holding time) not to exceed 36 hours.

T  
E  
N  
T  
A  
T  
I  
V  
E

Toxicity of each undiluted sample shall be compared to a laboratory control. Additionally, toxicity of downstream receiving water sample(s) shall be compared to corresponding upstream receiving water sample(s), if available. Statistically significant toxicity is defined as toxicity of downstream receiving water sample(s) relative to the upstream receiving water sample(s) and to the laboratory control, if an upstream receiving water sample is available. If an upstream location is not available (based on tidal stage), statistically significant toxicity is defined as toxicity of downstream receiving water sample(s) relative to the laboratory control. Receiving water locations denoted as "upstream" and "downstream" will be dependent on the tidal stage, and, therefore, direction of flow present at the time of discharge and sampling. Due to the nature of the tides, in some cases all receiving water locations will be influenced by Port discharges and, therefore, will be designated "downstream" locations.

If 100% mortality to *Pimephales promelas* or *Ceriodaphnia dubia* is detected within 24 hours of test initiation on samples collected at the West Complex Pump Station or East Complex Retention Basin, then a dilution series shall be initiated (0.5x steps) ranging from the undiluted sample (or the highest concentration that can be tested within the limitations of the test methods or sample type) to less than or equal to 6.25 percent of the sample. Further, if statistically significant toxicity is detected and a greater than or equal to 50% increase in *Pimephales promelas* or *Ceriodaphnia dubia* mortality, or reduction in *Ceriodaphnia dubia* reproduction compared to the laboratory upstream receiving water control is observed, then TIEs shall be conducted on the initial sample that caused toxicity.

1. Toxicity Identification Evaluations (TIE)

The Permittee shall begin a Phase I TIE immediately on all samples that cause statistically significant toxicity and greater than or equal to 50% increase in *Pimephales promelas* or *Ceriodaphnia dubia* mortality or decrease in *Ceriodaphnia dubia* reproduction compared to the upstream receiving water laboratory control. If mortality of both test species exceeds the 50% trigger, then TIEs shall be conducted using both species. ~~TIEs are required until the cause of toxicity is determined.~~ The Permittee shall indicate the qualified person(s) who shall conduct the TIE (in-house expert or outside contractor), which shall be identified via letter to the Regional Water Board concurrent with submittal of in the revised SWMP and in Annual Reports.

2. Toxicity Reduction Evaluations (TRE)

- a. A TRE shall be conducted whenever a toxicant is successfully identified through the TIE process. The TRE shall include all

reasonable steps to identify the source(s) of toxicity and discuss appropriate BMPs to eliminate the causes of toxicity. Once the source of toxicity and appropriate BMPs are identified, the Permittee shall submit ~~the a~~ TRE Corrective Action Plan as part of the Annual Report to the Executive Officer for approval. At a minimum, the TRE Corrective Action Plan shall include a discussion of the following items:

- i. A description of the investigation and evaluation techniques that would be used to identify potential causes and sources of toxicity;
  - ii. The potential sources of pollutant(s) causing toxicity;
  - iii. A list of Permittees having jurisdiction over sources of pollutant(s) causing toxicity;
  - iv. Recommended BMPs to reduce the pollutant(s) causing toxicity;
  - v. Proposed changes to the SWMP to reduce the pollutant(s) causing toxicity; and
  - vi. Suggested follow-up monitoring to demonstrate BMP effectiveness in reducing or removing the pollutant causing toxicity.
- b. The Permittee does not need to prepare a TRE Corrective Action Plan if the identified pollutant coincides with Total Maximum Daily Load (TMDL) implementation for that pollutant. If this is the case, the toxicity found shall be noted and addressed through on-going implementation of that pollutant control strategy.
  - c. Upon approval by the ~~Executive Officer~~Regional Water Board, the Permittee shall implement the recommended BMPs and take all reasonable steps necessary to eliminate toxicity, if the Permittee contributes to toxicity.
  - d. The Permittee shall develop a maximum of two TRE Corrective Action Plans per year. If applicable, the Permittee may use the same TRE Corrective Action Plan for the same toxic pollutant or pollutant class in different watersheds or basins. The TRE process shall be coordinated with TMDL development and implementation to avoid overlap.

T  
E  
N  
T  
A  
T  
I  
V  
E

~~The Permittee shall include a monitoring plan, which shall include a sampling and analysis plan, all data (electronic format), assessment of the data, conclusions, proposed BMPs to be implemented, program effectiveness, and an implementation schedule in the SWMP for approval by the Executive Officer. Subsequent information shall be included in the Annual Reports as required in this MRP Order.~~

**I. Dry Weather Field Screening**

The Permittee shall conduct dry weather screening to identify and eliminate unauthorized non-storm water discharges. If non-storm water discharges are occurring, Representative upgradient locations and outfalls having sufficient flow shall be analyzed for temperature, specific conductance (EC), turbidity, and pH (field measurements); and phenols, chlorine, total copper, and methyl blue activated substances (MBAsMBAS, i.e. detergents/ surfactants) which are required to be tested by a certified laboratory. In addition, as described in Section B, Sampling Protocol above, two dry-season discharges per year from urban discharge outfalls must be tested for the constituents listed on Table B1. The Permittee shall provide follow-up investigation to verify the presence of an illicit connection if the following action levels on Table E are exceeded:

**Table E. Dry Weather Field Screening Action Levels**

<b>Constituent</b>	<b>Units</b>	<b>Action Levels</b>
Phenols	mg/L	>0.017
Total copper	mg/L	>2
Electrical Conductivity	µmhos/cm	>700
Methyl Blue Activated Substances (MBAS)	mg/L	>0.275
Turbidity	NTU	>55

Sampling Schedule

The Baseline Monitoring Program shall implement the monitoring schedule shown in Table F:

**Table F. 2011-2016 Schedule for Baseline Monitoring Program**

Baseline Monitoring Program Element	2011/2012					2012/2013					2013/2014					2014/2015					2015/2016				
	E <sup>a</sup>	M <sup>b</sup>	L <sup>c</sup>	D1 <sup>d</sup>	D2 <sup>d</sup>				D1 <sup>d</sup>	D2 <sup>d</sup>				D1 <sup>d</sup>	D2 <sup>d</sup>				D1 <sup>d</sup>	D2 <sup>d</sup>				D1 <sup>d</sup>	D2 <sup>d</sup>
	SW 1 <sup>st</sup>	SW 2 <sup>nd</sup>	SW 3 <sup>rd</sup>			SW 1 <sup>st</sup>	S W	SW 3 <sup>rd</sup>			SW 1 <sup>st</sup>	S W	SW 3 <sup>rd</sup>			SW 1 <sup>st</sup>	S W	SW 3 <sup>rd</sup>			SW 1 <sup>st</sup>	S W	SW 3 <sup>rd</sup>		
Urban Discharge																									
Water Quality Parameters (Table B <sub>1</sub> )	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<del>Water Quality Parameters (Confirmation Sampling Table G)</del>	X																				X				
Receiving Water																									
Water Quality Parameters (Table D)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<del>Water Quality Parameters (Confirmation Sampling, Table G)</del>	X																				X				
Water Column Toxicity	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sediment Toxicity Sampling	X			X		X			X		X			X		X			X		X			X	
Dry Weather Field Screening <sup>e</sup>				X	X				X	X				X	X				X	X				X	X

Notes:

- a. SW 1<sup>st</sup> - Early season storm event, preceded by 30 days of dry weather. Target the first flush. (Capture the “first flush”)
- b. SW 2<sup>nd</sup> – At least 20 days after the previous sample. Target the Midseason storm event (Dec. – Feb.).
- c. SW 3<sup>rd</sup> – At least 20 days after the previous sample. Target the Late season storm event (Mar. – May).
- d. Dry weather events D1 and D2 (if a discharge is occurring).

- e. Field screening is conducted during two events per dry season with sampling only required if non-storm water is discharging to the receiving water or retention pond.

## J. Sediment Toxicity Monitoring

1. The Permittee shall conduct short-term sediment toxicity testing, which shall include (1) the analysis of sediment samples from **one post first flush<sup>15</sup> storm event, and one dry weather monitoring event**; and (2) analysis of at least the following freshwater sediment test species: Amphipod [*Hyalella azteca* (10-day survival and growth test)]; and (3) analysis of sediment organic carbon and grain size. The testing shall be conducted in accordance with U.S. EPA's method 600-R-99-064 (U.S. EPA 2000<sup>16</sup>). Sample sites for sediment toxicity testing shall be conducted on urban receiving water sites. Reporting limits in sediment shall conform to Table G.

If toxicity is detected in a sediment sample, the Permittee shall immediately consult with Regional Water Board staff prior to conducting additional testing. The Permittee will consult with Regional Water Board staff to determine what follow-up testing is necessary to determine the nature and cause(s) of the toxicity. ~~Follow-up actions may include further sediment toxicity testing (i.e. TIEs) and sediment chemistry testing for chlorpyrifos, diazinon, and pyrethroids—including bifenthrin, cyfluthrin, deltamethrin, esfenvalerate, lambda cyhalothrin, permethrin, tralomethrin.~~

2. The Permittee shall review and amend the Pesticide Plan component of the SWMP, if pesticides are identified as causing or contributing to receiving water impacts.

The Pesticide Plan shall address the following elements:

- a. Identification, development, implementation and assessment of BMPs to address controllable discharges of sediment-bound contaminants that may be linked to sediment toxicity to the MEP;
- b. Development and adoption of policies, procedures, and/or ordinances to implement BMPs;
- c. A time schedule for implementation and assessment.

---

<sup>15</sup> Post first flush timeframe is within two weeks of the qualifying storm event.

<sup>16</sup> U.S. EPA. 2000. Methods for measuring the toxicity and bioaccumulation of sediment-associated contaminants with freshwater invertebrates. EPA 600/R-99/064. Office of Research and Development. Washington, DC.

## K. Water Quality-Based Programs

1. Monitoring and assessment for the water quality based programs (i.e., pesticides, dissolved oxygen, and total mercury and methylmercury) for the ~~Stockton-Port-District~~ will be addressed in this Order. Any data obtained by other programs shall be incorporated, evaluated, and included in each annual report.
2. The Permittee shall submit a comprehensive analysis for the **Low Dissolved Oxygen Plan, Pesticide Plan, Total Mercury and Methylmercury Control Program** water quality based programs, and **Sediment Toxicity** program in the Annual 2016 Report. The final report shall include: summary of the project, map of sampling locations, description of activities performed, methods used, results, and conclusions. The final report shall include BMP selection and an implementation schedule for each program, as applicable.

~~The following minimum requirements shall apply to the specified programs:~~

~~**Additional Pesticide Monitoring.** Additional pesticide monitoring shall be developed to comply with the Basin Plan amendments or TMDLs developed during the Permit term and shall be proposed in the Permittee's Annual Work Plans submitted to the Central Valley Water Board.~~

~~**Additional Dissolved Oxygen Monitoring.** Additional dissolved oxygen monitoring shall be developed to comply with the Basin Plan amendments or TMDLs developed during the Permit term and will be proposed in the Permittee's Annual Work Plans submitted to the Central Valley Water Board.~~

~~**Additional Total Mercury and Methylmercury Analyses.** Additional total mercury and methylmercury monitoring shall be developed to comply with the Basin Plan amendments or TMDLs developed during the Permit term and shall be proposed in the Permittee's Annual Work Plans submitted to the Central Valley Water Board.~~

## III. SPECIAL STUDIES

### A. Retention Basin Monitoring

The Permittee shall submit a Retention Basin Monitoring Work Plan, as part of the SWMP, to reflect additional monitoring of the following constituents: pyrethroids; total mercury and methylmercury in water; pyrethroids and total mercury in sediment. The work plan is designed to perform influent, effluent, and sediment chemistry/toxicity monitoring of one retention basin serving multiple land uses. Constituents that shall continue to be sampled include:

total suspended solids (TSS), bacteria, turbidity, total dissolved solids (TDS) and organophosphate pesticides (chlorpyrifos and diazinon). Monitoring shall be designed to evaluate the effectiveness of the retention basin(s) in removing pollutants of concern and determining whether basin(s) stimulate methylmercury production. Monitoring shall be conducted during at least two wet seasons and two dry seasons within the five year period. The Permittee may propose a joint study with other Central Valley MS4 or other NPDES/WDR permittees if the Porty can demonstrate that data collected in other jurisdictions is applicable to retention basins in the Permittee's jurisdictions.

#### B. **BMP Effectiveness Study**

The Permittee shall conduct studies to evaluate the effectiveness of source or treatment control BMPs. The objective of these studies shall include the following:

- ~~1. Monitor the reduction of pollutants of concern in storm water including, but not limited to, pathogen indicators, nutrients, heavy metals, mercury and pesticides from a minimum of one BMP. Monitoring shall be continued until the effectiveness of the BMP can be determined;~~
1. Evaluate the requirements for and installation and maintenance cost of each BMP; and
2. Develop recommendations for appropriate BMPs for the reduction of pollutants of concern in storm water in the Stockton Port District.

#### IV. **STANDARD MONITORING PROVISIONS**

All monitoring activities shall meet the following requirements:

- A. Monitoring and Records [40 CFR 122.41(j)(1)]  
Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
- B. Monitoring and Records [40 CFR 122.41(j)(2)] [California Water Code §13383(a)]

The Permittee 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 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 Central Valley

Water Board or U.S. EPA at any time and shall be extended during the course of any unresolved litigation regarding this discharge.

C. Monitoring and Records [40 CFR 122.41(j)(3)]. Records of monitoring information shall include:

1. Date, location, and time of sampling or measurements;
2. Individual(s) who performed the sampling or measurements;
3. Date analyses were performed;
4. Individual(s) who performed the analyses;
5. The analytical techniques or methods used; and
6. Results of such analyses.

D. Monitoring and Records [40 CFR 122.41(j)(4)]

All sampling, sample preservation, and analyses must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in this Order.

E. Monitoring and Records [40 CFR 122.41(j)(5)]

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 two 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 both.

F. All chemical, bacteriological, and toxicity analyses shall be conducted at a laboratory certified for such analyses by an appropriate governmental regulatory agency.

G. For non-storm water 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 2005 (SIP) shall be used for all analyses, unless otherwise specified. Appendix 4 of the SIP is included as Table G. For non-storm water pollutants not contained in Appendix 4 of the SIP and for all storm water testing constituents, the test method and method detection limit (MDL) listed in Table G shall be used for all analyses, ~~and the ML for these parameters shall be lower than or equal to the lowest applicable water quality criteria from the Basin Plan and/or the SIP.~~

- H. The Monitoring Report shall specify the analytical method used, the 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 one of the following methods, as appropriate:
1. An actual numerical value for sample results greater than or equal to the ML;
  2. "Not-detected (ND)" for sample results less than the laboratory's MDL with the MDL indicated for the analytical method used; or
  3. "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, if available. This is the concentration that results from the confirmed detection of the substance by the analytical method below the ML value.
  4. 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 Permittee must submit documentation from the laboratory to the Central Valley Water Board ~~Executive Officer~~ for approval prior to raising the ML for any constituent.
- I. Monitoring Reports [40 CFR 122.41(l)(4)(ii)]
- If the Permittee monitors any pollutant more frequently than required by the permit 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 Report.
- J. Monitoring Reports [40 CFR 122.41(l)(4)(iii)]
- Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order.
- K. If no flow occurred during the reporting period, the Monitoring Report shall so state.

- L. The ~~Executive Officer or the~~ Central Valley Water Board, consistent with 40 CFR 122.41, may approve changes to the Monitoring Program, after providing the opportunity for public comment, either:
1. By petition of the Permittee or by petition of interested parties after the submittal of the Annual Report. Such petition shall be filed not later than 60 days after the Annual Report submittal date, or
  2. As deemed necessary by the Executive Officer following notice to the Permittee.

Ordered by \_\_\_\_\_

PAMELA C. CREEDON, Executive Officer

\_\_\_\_\_  
xx February 2011

Date

Attachments: Table G – List of Constituents

Attachment A – Permit Area Map

Attachment B – River Monitoring Locations Map

Attachment C – West Complex Monitoring Locations Map

Attachment D – East Complex Monitoring Locations Map

Attachment E – Definitions

Attachment F – Standard Provisions and Reporting Requirements  
(February 2004)

**TABLE G**  
**LIST OF CONSTITUENTS AND ASSOCIATED MINIMUM LEVELS (MLs)<sup>17</sup>**  
**ORDER R5-2011-XXXX**  
**STOCKTON PORT DISTRICT**  
**MUNICIPAL SEPARATE STORM SEWER SYSTEM**

CONSTITUENTS	MLs
<b>FIELD MEASUREMENTS</b>	
Date	mm/dd/yyyy
Sample Time	hr:min (regular time)
Weather	degrees F
<b>CONVENTIONAL POLLUTANTS</b>	
	<b>mg/L</b>
Oil and Grease	5
pH	0 - 14
Water Temperature	degrees C
Dissolved Oxygen	Sensitivity to 5 mg/L
Cyanide	0.005
<b>BACTERIA</b>	
Fecal coliform	<20mpn/100ml
E. coli (fresh waters)	<20mpn/100ml
<b>GENERAL</b>	
	<b>mg/L</b>
Total Petroleum Hydrocarbons	5
Total Suspended Solids	2
Total Dissolved Solids	2
Volatile Suspended Solids	2
Total Organic Carbon	1
Dissolved Organic Carbon	1
Biochemical Oxygen Demand	2
<del>Chemical Oxygen Demand</del>	<del>20-900</del>
Total Kjeldahl Nitrogen	0.1
Alkalinity	2
Total Ammonia-Nitrogen	0.1
Nitrate-Nitrite <u>as N</u>	0.1

<sup>17</sup> ~~For Priority Pollutants, the MLs represent the lowest value listed in Appendix 4 of SIP.~~ Method Detection Limit (MDLs) must be lower than or equal to the ML value. If 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 may be used instead.

<b>CONSTITUENTS</b>	<b>MLs</b>
Dissolved Phosphorus	0.05
Total Phosphorus	0.05
Total Hardness	2
MBAS	0.5
Chloride	2
Fluoride	0.1
Methyl tertiary butyl ether (MTBE)	1
Perchlorate	4 µg/L
Turbidity	0.1 NTU
Specific Conductance	1 <u>µmhos/cm</u>
Methylmercury	0.05 ng/L
<b>Pyrethroids</b>	<b>5 ng/L</b>
<b>VOLATILE SUBSTANCES</b>	<b>µg/L</b>
1,1-Dichloroethane	0.5
1,1-Dichloroethene	0.5
1,1,1-Trichloroethane	0.5
1,1,2-Trichloroethane	0.5
1,1,2,2-Tetrachloroethane	0.5
1,2-Dichlorobenzene (volatile)	0.5
1,2-Dichloroethane	0.5
1,2-Dichloropropane	0.5
1,3-Dichlorobenzene (volatile)	0.5
1,3-Dichloropropene (volatile)	0.5
1,4-Dichlorobenzene (volatile)	0.5
Acrolein	2.0
Acrylonitrile	2.0
Benzene	0.5
Bromoform	0.5
Bromomethane	1.0
Carbon Tetrachloride	0.5
Chlorobenzene	0.5
Chlorodibromo-methane	0.5
Chloroethane	0.5
Chloroform	0.5
Chloromethane	0.5
Dichlorobromo-methane	0.5
Dichloromethane	0.5
Ethylbenzene	0.5
Tetrachloroethene	0.5

<b>CONSTITUENTS</b>	<b>MLs</b>
Toluene	0.5
trans-1,2 Dichloroethylene	0.5
Trichloroethene	0.5
Vinyl Chloride	0.5
<b>SEMI-VOLATILE SUBSTANCES</b>	<b>µg/L</b>
1,2-Benzanthracene	5
1,2-Dichlorobenzene (semi-volatile)	2
1,2-Diphenylhydrazine	1
1,2,4-Trichlorobenzene	1
1,3-Dichlorobenzene (semi-volatile)	1
1,4-Dichlorobenzene (semi-volatile)	1
2-Chlorophenol	2
2,4-Dichlorophenol	1
2,4-Dimethylphenol	1
2,4-Dinitrophenol	5
2,4-Dinitrotoluene	5
2,4,6-Trichlorophenol	10
2,6-Dinitrotoluene	5
2- -Nitrophenol	10
2-Chloroethyl vinyl ether	1
2-Chloronaphthalene	10
3,3-Dichlorobenzidine	5
3,4-Benzofluoranthene	10
4-Chloro-3-methylphenol	1
4,6-Dinitro-2-methylphenol	5
4-Nitrophenol	5
4-Bromophenyl phenyl ether	5
4-Chlorophenyl phenyl ether	5
Acenaphthene	0.5
Acenaphthylene	0.2
Anthracene	2
Benzidine	5
Benzo(a) pyrene(3,4 Benzopyrene)	2
Benzo(g,h,i)perylene	0.1
Benzo(k)fluoranthene	2
bis 2-(1-Chloroethoxyl) methane	5
bis(2-chloroethyl) ether	1
bis(2-Chloroisopropyl) ether	2
bis(2-Ethylhexyl) phthalate	5

<b>CONSTITUENTS</b>	<b>MLs</b>
Butyl benzyl phthalate	10
Chrysene	5
di-n-Butyl phthalate	10
di-n-Octyl phthalate	10
Dibenzo(a,h)-anthracene	0.1
Diethyl phthalate	2
Dimethyl phthalate	2
Fluoranthene	0.05
Fluorene	0.1
Hexachloro-cyclopentadiene	5
Hexachlorobenzene	1
Hexachlorobutadiene	1
Hexachloroethane	1
Indeno(1,2,3,cd)-pyrene	0.05
Isophorone	1
N-Nitroso diphenyl amine	1
N-Nitroso-dimethyl amine	5
N-Nitroso -di n-propyl amine	5
Naphthalene	0.2
Nitrobenzene	1
Pentachlorophenol	1
Phenanthrene	0.05
Phenol	1
Pyrene	0.05
<b>METALS (Dissolved and Total)</b>	<b>µg/L</b>
Aluminum	50
Antimony	0.5
Arsenic	1
Beryllium	0.5
Cadmium	0.25
Chromium	0.5
Chromium VI	5
Copper	0.5
Cyanide	5
Iron	100
Lead	0.5
Mercury	0.5 ng/L
Nickel	1
Selenium	1

<b>CONSTITUENTS</b>	<b>MLs</b>
Silver	0.25
Thallium	1
Zinc	1
<b>PESTICIDES - PCBs</b>	<b>µg/L</b>
4,4'-DDD	0.05
4,4'-DDE	0.05
4,4'-DDT	0.01
a-Endosulfan	0.02
a-Hexachloro-cyclohexane	0.01
Aldrin	0.005
alpha-BHC	0.01
beta-BHC	0.005
delta-BHC	0.005
b-Hexachloro-cyclohexane	0.005
alpha-chlordane	0.1
Gamma-chlordane	0.1
d-Hexachloro-cyclohexane	0.005
Dieldrin	0.01
Alpha-Endosulfan	0.02
Beta-Endosulfan	0.01
Endosulfan Sulfate	0.05
Endrin	0.01
Endrin Aldehyde	0.01
Heptachlor	0.01
Heptachlor Epoxide	0.01
Lindane(g-Hexachloro-cyclohexane)	0.02
PCB 1016	0.5
PCB 1221	0.5
PCB 1232	0.5
PCB 1242	0.5
PCB 1248	0.5
PCB 1254	0.5
PCB 1260	0.5
Toxaphene	0.5
<b>ORGANOPHOSPHATE PESTICIDES</b>	<b>µg/L</b>
Chlorpyrifos	0.015
Diazinon	0.05
Malathion	0.05

CONSTITUENTS	MLs
Atrazine	2
Cyanazine	2
Prometryn	2
Simazine	2
<b>HERBICIDES</b>	<b>µg/L</b>
2,4-D	10
Glyphosate	5
2,4,5-TP-SILVEX	0.5

<b>PYRETHROID PESTICIDES IN SEDIMENT</b>	<b>Estimated Limit of Detection (ELOD) (ng/g)<sup>2</sup></b>
Bifenthrin	0.08
Cyfluthrin-1	0.20
Cyfluthrin-2	0.20
Cyfluthrin-3	0.20
Cyfluthrin-4	0.20
Cypermethrin-1	0.18
Cypermethrin-2	0.18
Cypermethrin-3	0.18
Cypermethrin-4	0.18
Deltamethrin	0.30
Esfenvalerate/Fenvalerate-1	0.05
Esfenvalerate/Fenvalerate-2	0.05
Lambda-cyhalothrin	0.10
Permethrin-1	1.50

<b>PYRETHROID PESTICIDES IN WATER<sup>3</sup></b>	<b>Estimated Limit of Detection (ELOD) (ng/L)<sup>2</sup></b>
Bifenthrin	0.10
Cyfluthrin	0.20
Cypermethrin	0.20
Deltamethrin/Tralomethrin	0.15
Esfenvalerate/Fenvalerate	0.05
Fenpropathrin	0.50

<sup>2</sup> - Source: California Department of Fish and Game, Water Pollution Control Laboratory, 2005 Nimbus Road, Rancho Cordova, CA 95670 [http://dfg.ca.gov/ospr/Science/water\\_pollution\\_control\\_lab.aspx](http://dfg.ca.gov/ospr/Science/water_pollution_control_lab.aspx)

<sup>3</sup> - Unfiltered, grab sample using glass jars

<b>PYRETHROID PESTICIDES IN WATER<sup>3</sup></b>	<b>Estimated Limit of Detection (ELOD) (ng/L)<sup>2</sup></b>
Lambda-cyhalothrin	0.20
Permethrin	1.00

<sup>3</sup> ~~Unfiltered, grab sample using glass jars~~