

**California Regional Water Quality Control Board
San Diego Region**

ADDITIONAL

DRAFT UPDATES & ERRATA

**to the
AUGUST 12, 2009 PUBLIC RELEASE DRAFT**

of the

**Waste Discharge Requirements for Discharges of Runoff from
the Municipal Separate Storm Sewer Systems (MS4s)
Draining the Watershed of the County of Orange, the
Incorporated Cities of Orange County, and the Orange County
Flood Control District within the San Diego Region**

**Tentative Order No. R9-2009-0002
NPDES NO. CAS0108740**

***ADDITIONAL ERRATA & UPDATES AS OF
16 December 2009***

This document represents additional tentative updates and errata to the August 12, 2009 release of Tentative Order No. R9-2009-0002. These updates and errata are in addition to those provided to the Regional Board at the November 18, 2009 meeting as Supporting Document No. 2. The errata represent minor clarifications and reference mistakes identified by Staff on the August 12, 2009 public release of draft Tentative Order No. R9-2009-0002. The updates include changes made at the Board's direction from the November 18, 2009 meeting.

Permit Errata

Pg. 38, Section F.1.d.(7) references "watershed equivalent BMP(s) consistent with Section F.1.c.(8)" should reference Section F.1.d.(11).

Permit Changes

Pg. 17, Finding E.12:

12. This Order requires each Copermittee to effectively prohibit all types of unauthorized discharges of non-storm water into its MS4. However, historically pollutants have been identified as present in dry weather non-storm water discharges from the MS4s through 303(d) listings, monitoring conducted by the Copermittees under Order No. R9-2002-0001, and there are others expected to be present in dry weather non-storm water discharges because of the nature of these discharges. This Order includes action levels ~~WQBELs~~ for pollutants in non-storm water, dry weather, discharges from the MS4 designed to ~~WQBELs included in this Order have been established for pollutants~~ ensure that the requirement to effectively prohibit all types of unauthorized discharges of non-storm water in the MS4 is being complied with, which have ~~Action levels in the Order are based upon the reasonable potential to cause or contribute to an excursion of~~ numeric or narrative water quality objectives and criteria as defined in the Basin Plan, the Water Quality Control Plan for Ocean Waters of California (Ocean Plan), and the State Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Policy or SIP). An exceedance of an action level requires specified responsive action by the Copermittees. This Order describes what actions the Copermittees must take when an exceedance of an action level is observed. Exceedances of non-storm water action levels do not alone constitute a violation of this Order but could indicate non-compliance with the requirement to effectively prohibit all types of unauthorized non-storm water discharges into the MS4 or other prohibitions established in this Order. Failure to undertake required source investigation and elimination action following an exceedance of an non-storm water action level (NAL or action level) is a violation of this Order. The Regional Board recognizes that use of action levels will not necessarily

~~result in detection of all unauthorized sources of non-storm water discharges because there may be some discharges in which pollutants do not exceed established action levels. However, establishing NALs at levels appropriate to protect water quality standards is expected to lead to the identification of significant sources of pollutants in dry weather non-storm water discharges. This is consistent with existing Regional Board requirements in Orders for other non-storm water discharges throughout the region, including those which discharge into and from the MS4. NPDES regulations require that all permit limitations be expressed, unless impracticable, as both average monthly limitations (AMEL) and maximum daily limitations (MDEL) for all discharges other than privately owned treatment works (40 CFR 122.45(d)).~~

Pg. 22 – Section C:

C. NON-STORM WATER DRY WEATHER ACTION LEVELS NUMERIC EFFLUENT LIMITATIONS

~~1. Section C of this Order incorporates numeric effluent limitations (NELs) to assure non-storm water dry weather discharges from the Copermittee's MS4s into receiving waters are not causing, threatening to cause or contributing to a condition of pollution or nuisance and to protect designated Beneficial Uses. Compliance with numeric limitations does not excuse compliance with the non-storm water discharge prohibition in Section B.1. Compliance with NELs provides an assessment of the effectiveness of the prohibition of non-storm water discharges and of the appropriateness of exempted non-storm water discharges.⁴ Compliance with Section C of this Order requires that an exceedance of an NEL must result in one of the following outcomes:~~

- ~~a. Copermittees investigate the source of the exceedance and determine that it is natural (non-anthropogencially influenced) in origin and conveyance. The findings are to be conveyed to the Regional Board for review and acceptance.~~
- ~~b. Copermittees investigate the source of the exceedance and determine that the source is an illicit discharge or connection. The Copermittees are to eliminate the discharge to their MS4 and report the findings, including any enforcement action(s) taken, to the Regional Board. Those seeking to continue such a discharge must become subject to a separate NPDES permit.~~
- ~~a. Copermittees investigate the source of the exceedance and determine that the source is an exempted non-storm water discharge. The Copermittees~~

⁴ ~~If the Copermittee can show that the exceedance of the NEL was caused by the intentional act of a third party, in violation of Copermittee ordinances, the Copermittee may not be subject to Mandatory Minimum Penalties in accordance with CWC §13385 (j)(1)(B).~~

~~shall investigate the appropriateness of the discharge continuing to be exempt and report the findings to the Regional Board.~~

1. Each Copermittee, beginning no later than the ~~3rd~~ one year following adoption of this Order, shall ~~begin implement~~ the non-storm water dry weather ~~action level~~numeric (NAL) effluent monitoring as described in Attachment E of this Order.
2. In response to an exceedance of a NAL, each Copermittee must investigate and identify the source of the exceedance in a timely manner. Following the source investigation and identification, the Copermittees must submit an action report dependant on the source of the pollutant exceedance as follows:
 - a. If the Copermittee identifies the source of the exceedance as natural (non-anthropogenically influenced) in origin and conveyance; then the Copermittee shall report their findings and documentation of their source investigation to the Regional Board within fourteen days of the source identification.
 - b. If the Copermittee identifies the source of the exceedance as an illicit discharge or connection, then the Copermittees must eliminate the discharge to their MS4 and report the findings, including any enforcement action(s) taken, and documentation of the source investigation to the Regional Board within fourteen days of the source identification. If the Copermittee is unable to eliminate the source of discharge within fourteen days, then the Copermittee must submit, as part of their action report, their plan and timeframe to eliminate the source of the exceedance. Those dischargers seeking to continue such a discharge must become subject to a separate NPDES permit prior to continuing any such discharge.
 - c. If the Copermittee identifies the source of the exceedance as an exempted category of non-storm water discharge, then the Copermittees must subsequently address through prevention or prohibition that category of discharge as an illicit discharge. The Copermittee must submit their findings including a description of the steps taken to address the category of discharge, to the Regional Board with the next subsequent annual report. Such description shall include relevant updates to or new ordinances, orders, or other legal means of addressing the category of discharge. The Copermittees must also submit a summary of their findings with the Report of Waste Discharge.
 - d. If the Copermittee identifies the source of the exceedance as a non-storm water discharge in violation or potential violation of an existing separate NPDES permit (e.g. the groundwater dewatering permit), then the Copermittee must report, within three business days, the findings to the Regional Board including all pertinent information regarding the discharger

and discharge characteristics.

- e. If the Copermittee is unable to identify the source of the exceedance after taking and documenting reasonable steps to do so, then the Copermittee must identify the pollutant as a high priority pollutant of concern in the tributary subwatershed, perform additional focused sampling and update their programs within a year to reflect this priority. The Copermittee's annual report shall include these updates to their program including, where applicable, updates to their watershed workplans (Section G.2), retrofitting consideration (Section F.3.d) and program effectiveness work plans (Section J.4).
- f. If any Copermittee identifies a significant number of exceedances of NALs that prevent them from adequately conducting source investigations in a timely manner, then the Copermittees may submit a prioritization plan and timeline that identifies the timeframe and planned actions to investigate and report their findings on all of the exceedances.

~~4. Each Copermittee shall implement all measures to comply (as described in C.1) with the numeric limitations in Section C of this Order. This Permit does not regulate natural sources and conveyances of constituents listed in Table 4. To be relieved of the requirements to meet NELs and to continue monitoring a station, the Copermittee must demonstrate that the likely and expected cause of the NEL exceedance is not anthropogenic in nature.~~

3. An exceedance of an NAL does not alone constitute a violation of the provisions of this Order, but an exceedance of an NAL may indicate lack of compliance with the requirement that Copermittees effectively prohibit all types of unauthorized non-storm water discharges into the MS4 or other prohibitions set forth in Sections A and B of this Order. Failure to timely implement required actions specified in this Order following an exceedance of an NAL constitutes a violation of this Order. However, neither compliance with NALs nor compliance with required actions following observed exceedances, excuses any non-compliance with the requirement to effectively prohibit all types of unauthorized non-storm water discharges into the MS4s or any non-compliance with the prohibitions in Sections A and B of this Order. During any annual reporting period in which one or more exceedances of NALs have been documented the Copermittee must submit with their next scheduled annual report, a report describing whether and how the observed exceedances did or did not result in a discharge from the MS4 that caused, or threatened to cause or contribute to a condition of pollution, contamination, or nuisance in the receiving water.

4. Monitoring of effluent will occur at the end-of-pipe prior to discharge into the

receiving waters, with a focus on Major Outfalls, as defined in 40 CFR 122.26(B 5-6) and Attachment E of this Order. The Copermitees must develop their monitoring plans to sample a representative percentage of major outfalls and identified stations within each hydrologic subarea. At a minimum outfalls that exceed any NEALs once during any year must be monitored in the subsequent year. Any station that does not exceed an NEAL for 3 years may be replaced with a different station.

6.5. Each Copermitee shall monitor for ~~and attain~~ the non-storm water dry weather action levels numeric limitations, which are incorporated into this Order as follows:

- a. Action levels for D discharges to inland surface waters: ~~Non-storm water discharges from the MS4 to inland surface waters shall not contain pollutants in excess of the following effluent limitations:~~

Table 4.a.1: General Constituents

Parameter	Units	AMAEAL	MDEAL	Instantaneous Maximum	Basis
Fecal Coliform	MPN/100 ml	200 ^A 400 ^B	-		BPO
Enterococci	MPN/100 ml	33	-	104 ^C	BPO/OP
Turbidity	NTU	-	20		BPO
pH	Units	Within limit of 6.5 to 8.5 at all times			BPO
Dissolved Oxygen	mg/L	Not less than 5.0 in WARM waters and not less than 6.0 in COLD waters			BPO
Total Nitrogen	mg/L	-	1.0	See MDEL	BPO
Total Phosphorus	mg/L	-	0.1	See MDEL	BPO
Methylene Blue Active Substances	mg/L	-	0.5	See MDEL	BPO

A – Based on a minimum of not less than five samples for any 30-day period

B – During any 30 day period

C – This Value has been set to Ocean Plan Criteria for Designated Beach Areas

BPO – Basin Plan Objective

OP – Ocean Plan

MDEAL – Maximum Daily Effluent Limitation Action Level AMAEAL – Average Monthly Effluent Limitation Action Level

Table 4.a.2: Priority Pollutants

Parameter	Units	Freshwater (CTR)		Saltwater (CTR)	
		AMAEAL	MDEAL	AMAEAL	MDEAL
Cadmium	ug/L	*	*	16	8
Copper	ug/L	*	*	5.8	2.9
Chromium III	ug/L	*	*	-	-
Chromium VI (hexavalent)	ug/L	16	8.1	83	41

Lead	ug/L	*	*	14	2.9
Nickel	ug/L	*	*	14	6.8
Silver	ug/L	*	*	2.2	1.1
Zinc	ug/L	*	*	95	47

CTR – California Toxic Rule

* - Effluent Limitations/Action Levels developed on a case-by-case basis (see below)

The Effluent Limitations NALs for Cadmium, Copper, Chromium (III), Lead, Nickel, Silver and Zinc will be developed on a case-by-case basis because the freshwater criteria are based on site-specific water quality data (receiving water hardness). For these priority pollutants, the following equations (40 CFR 131.38.b.2) will be required:

Cadmium (Total Recoverable)	=	$\exp(0.7852[\ln(\text{hardness})] - 2.715)$
Chromium III (Total Recoverable)	=	$\exp(0.8190[\ln(\text{hardness})] + .6848)$
Copper (Total Recoverable)	=	$\exp(0.8545[\ln(\text{hardness})] - 1.702)$
Lead (Total Recoverable)	=	$\exp(1.273[\ln(\text{hardness})] - 4.705)$
Nickel (Total Recoverable)	=	$\exp(.8460[\ln(\text{hardness})] + 0.0584)$
Silver (Total Recoverable)	=	$\exp(1.72[\ln(\text{hardness})] - 6.52)$
Zinc (Total Recoverable)	=	$\exp(0.8473[\ln(\text{hardness})] + 0.884)$

- b. Action levels for D discharges to bays, harbors and lagoons/estuaries: ~~Non-storm water discharges from the MS4 to Dana Point Harbor and to saline lagoons/estuaries shall not contain pollutants in excess of the following effluent limitations:~~

Table 4.b: General Constituents

Parameter	Units	AMEAL	MDEAL	Instantaneous Maximum	Basis
Total Coliform	MPN/100 ml	1,000	-	10,000	BPO
Fecal Coliform	MPN/100 ml	200 ^A , 400 ^B	-		BPO
Enterococci	MPN/100 ml	35	-	104 ^C	BPO
Turbidity	NTU	75	-	225	OP
pH	Units	Within limit of 6.0 to 9.0 at all times			OP
Priority Pollutants	ug/L	See limitations in Table 4.a.2			

A – Based on a minimum of not less than five samples for any 30-day period

B – During any 30 day period

C – Designated Beach Areas

OP – California Ocean Plan 2005

BPO – Basin Plan Objective

MDEAL – Maximum Daily Effluent Limitation/Action Level AMEAL – Average Monthly Effluent Limitation/Action Level

- c. Action levels for D discharges to the surf zone: ~~Non-storm water discharges from the MS4 to the surf zone shall not contain pollutants in excess of the following effluent limitations:~~

Table 4.c: General Constituents

Parameter	Units	AMEAL	MDEAL	Instantaneous Maximum	Basis
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Total Coliform	MPN/100 ml	1,000	-	10,000 1,000 ^A	OP
Fecal Coliform	MPN/100 ml	200 ^B	-	400	OP
Enterococci	MPN/100 ml	35	-	104 ^C	OP

A – Total coliform density shall not exceed 1,000 per 100 ml when the ratio of fecal/total coliform exceeds 0.1

B – During any 30 day period

C – Designated Beach Areas

OP – California Ocean Plan 2005

Pg. 71, Section F.4.e. Illicit Discharge Detection and Elimination; Investigation/Inspection and Follow-Up:

Each Copermittee must implement procedures to investigate and inspect portions of the MS4 that, based on the results of field screening, analytical monitoring, or other appropriate information, indicate a reasonable potential of containing illicit discharges, illicit connections, or other sources of pollutants in non-storm water.

(1) Develop response criteria for data: Each Copermittee must develop, update, and use numeric criteria action levels (or other actions level criteria where appropriate) to determine when follow-up investigations will be performed in response to water quality monitoring. The criteria must include non-storm water action levels~~numeric effluent limitations~~ (see Section C) and a consideration of 303(d)-listed waterbodies and environmentally sensitive areas (ESAs) as defined in Attachment C.

Attachment E: Monitoring and Reporting

Pg. 12, C. Non-Storm Water Dry Weather ~~Effluent Limitations~~Action Levels

Each Copermittee must collaborate with the other Copermittees to conduct, and report on a year-round watershed based Dry Weather Non-storm Water MS4 Discharge Monitoring Program. The monitoring program implementation, analysis, assessment, and reporting must be conducted on a watershed basis for each of the hydrologic units. The monitoring program must be designed to assess compliance with ~~numeric effluent limitations~~non-storm water dry weather action levels in section C of this Order, adopted dry weather Total Maximum Daily Loads Waste Load Allocations and assessment of the contribution of dry weather flows to 303(d) listed impairments. The monitoring program must include the following components;

Each Copermittee’s program must be designed to determine levels of pollutants in effluent discharges from the MS4 into receiving waters. Each Copermittee must conduct the following dry weather field screening and analytical monitoring tasks:

a. Dry Weather Non-storm Water Effluent Analytical Monitoring Stations

- (1) Stations must be major outfalls. Major outfalls chosen must include outfalls discharging to inland surface waters; to bays, harbors and lagoons/estuaries; and to the surf zone. Other outfall points (or any other point of access such as manholes) identified by the Copermittees as potential high risk sources of polluted effluent or as identified under Section C.3.e shall be sampled.
- (2) Each Copermittee must clearly identify each dry weather effluent analytical monitoring station on its MS4 Map as either a separate GIS layer or a map overlay hereafter referred to as a Dry Weather Non-storm Water Effluent Analytical Stations Map.

b. Develop Dry Weather Non-storm Water Effluent Analytical Monitoring Procedures

Each Copermittee must develop and/or update written procedures for effluent 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:

- (1) Determining Sampling Frequency: Effluent analytical monitoring must be conducted at major outfalls and identified stations. The Copermittees must sample a representative number of major outfalls and identified stations. The sampling must be done to assess compliance with dry weather non-storm water numeric effluent limitationsaction levels pursuant to section C of this Order. All monitoring conducted must be preceded by a minimum of 72 hours of dry weather.
- (2) If ponded MS4 discharge is observed at a monitoring station, make observations and collect at least one (1) grab sample. If flow is evident a 1 hour composite sample may be taken. Record flow estimation (i.e., width of water surface, approximate depth of water, approximate flow velocity, flow rate).
- (3) Effluent samples shall undergo analytical laboratory analysis for constituents in: *Table 1. Analytical Testing for Mass Loading, Urban Stream Bioassessment, and Ambient Coastal Receiving*

Waters Stations and for those constituents with effluent limitations action levels under Section C of this Order. Effluent samples must also undergo analysis for Chloride, Sulfate and Total Dissolved Solids.

- (4) If the station is dry (no flowing or ponded MS4 discharge), make and record all applicable observations.
- (5) Develop and/or update criteria for dry weather non-storm water effluent analytical monitoring:
 - (a) Criteria must include numeric limitations action levels in Section C of this Order.
 - (b) Criteria must include evaluation of LC₅₀ levels for toxicity to appropriate test organisms
- (6) Develop and/or update procedures for source identification follow up investigations in the event of exceedance of dry weather non-storm water effluent analytical monitoring result criteria. These procedures must be consistent with procedures required in section F.4.d and F.4.e. of this Order.
- (7) Develop and/or update procedures to eliminate detected illicit discharges and connections. These procedures must be consistent with the non-storm water dry weather action levels in section C and with each Copermittees' Illicit Discharge and Elimination component of its Jurisdictional Runoff Management Plan as discussed in section F.4 and F.4.e. of this Order.

c. Conduct Dry Weather Non-storm Water Effluent Analytical Monitoring

The Copermittees must commence implementation of dry weather effluent analytical monitoring under the requirements of this Order no later than ~~the 3rd~~ one year following adoption of this Order. If monitoring indicates an illicit connection or illegal discharge, conduct the follow-up investigation and elimination activities as described in submitted dry weather field screening and analytical monitoring procedures and found in sections C, F.4.d and F.4.e of Order No. R9-2009-0002.

Until the dry weather non-storm water effluent analytical monitoring program is implemented under the requirements of this Order, each Copermittee must continue to implement dry weather field screening and analytical monitoring as it was most recently implemented pursuant to Order No. 2002-01, ~~with the addition of~~

the following:

~~(1)The Copermittees must choose a subset of major outfalls and identified stations that discharge to the surf zone. Non-storm water effluent from these stations must be sampled in years 1 and 2 following adoption of this Order. Analysis of samples must include Indicator Bacteria, Turbidity, pH, and Metals (see Table 1). Sampling may be done in conjunction with Ambient Coastal Receiving Waters Monitoring. A discharge to a surf zone occurs when the non-storm water discharge point from the MS4 discharges:~~

~~(a)Directly into the ocean in a wave induced area subject to long shore conditions; or~~

~~(b)Across a primarily sandy substrate beach and subsequently directly into a wave induced area subject to long shore conditions;~~

Attachment F – Source Data

Page 1 and 9,

II. NON-STORM WATER ~~NUMERIC EFFLUENT LIMITATIONS~~ACTION LEVELS

Tentative Order Fact Sheet

Page 20, Discussion on Finding A.1:

As a means for achieving those water quality objectives, Porter-Cologne (section 13243) further authorizes the Regional Water Quality Control Boards to establish waste discharge requirements (WDRs) to prohibit waste discharges in certain conditions or areas. Since 1990, the San Diego Regional Board has issued area-wide MS4 NPDES permits. The Order will renew Order No. R9-2002-01 to comply with the CWA and attain water quality objectives in the Basin Plan by limiting the contributions of pollutants conveyed by storm water and by including numeric action levels for dry weather non-storm water discharges designed to ensure that the Copermittees comply with the requirement to effectively prohibit all types of unauthorized non-storm water discharges into their MS4s requiring compliance with non-storm water effluent limitations. Further discussions of the legal authority associated with the prohibitions and directives of the Order are provided in section VII this document.

Page 45, Discussion on Finding C.14:

As explained in the discussion of Finding C.15., below, the Copermittees' reliance on BMPs for the past 19 years has not resulted in compliance with

applicable water quality standards. The Regional Board has evaluated (in accordance with 40 CFR 122.44(d)(1)) past and existing controls (BMPs), non-storm water effluent monitoring results, the sensitivity of the species in receiving waters (e.g. endangered species), and the potential for effluent dilution, and has determined that existing BMPs to control pollutants in storm water discharges are not sufficient to protect water quality standards in receiving waters and the existing requirement that Copermitttees effectively prohibit all types of unauthorized non-storm water discharges into the MS4 historically results in the discharge of pollutants to the receiving waters. as non-storm water discharges from the MS4 continue to cause, have the reasonable potential to cause, or contribute to excursions above applicable water quality criteria. Thus, numeric effluent limitations action levels for non-storm water, dry weather, discharges from the MS4 and required actions following observed exceedances of numeric action levels have been established. ~~in accordance with federal regulations under 40 CFR 122.44 to control the discharge of pollutants to protect water quality standards.~~ For further discussion regarding the development of action levelsnumeric limitations please see Finding E.12 and discussion.

Numeric effluent limitsDry weather action levels are applicable to non-storm water discharges of effluent from the MS4 system. Non-storm water effluent discharges from the MS4 are those which occur during dry weather conditions. These ~~limitations-action levels~~ are not applied to storm water discharges, as defined within the Order. Storm water discharges regulated by the Order are required to meet the ~~the~~ MEP standard and related iterative process and ~~are not subject to the numeric effluent limitations applied to non-storm water discharges~~ have separate action levels.

~~Numeric effluent limits~~Dry weather action levels are applicable to non-storm water discharges from the MS4 system into receiving waters. ~~It is infeasible and inappropriate to apply numeric effluent limitations to non-storm water discharges into the MS4 unless such discharges are covered under a separate NPDES permit.~~ Non-storm water discharges are already required to be prohibited unless specifically exempted or covered under a separate NPDES permit. ~~Effluent limitations~~Dry weather action levels apply to non-storm water discharges of effluent from a point source into receiving waters. The MS4 is not a receiving water. Should a discharger wish to discharge a non-exempt category to the MS4 system, such discharges require a separate NPDES permit pursuant to sections 402 and 301 of the CWA. It is also infeasible to monitor and sample every discharge into the MS4, as such discharges are diffuse by nature and may vary spatially and temporally.

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Finding E.12 ~~This Order requires each Copermittee to effectively prohibit all types of unauthorized discharges of non-storm water into its MS4. However, historically pollutants have been identified as present in dry weather non-storm water discharges from the MS4s through 303(d) listings, monitoring conducted by the Copermittees under Order No. R9-2002-0001, and there are others expected to be present in dry weather non-storm water discharges because of the nature of these discharges. This Order includes action levels ~~WQBELs~~ for pollutants in non-storm water, ~~dry weather~~, discharges from the MS4 ~~designed to~~. ~~WQBELs included in this Order have been established for pollutants which have ensure that the requirement to effectively prohibit all types of unauthorized discharges of non-storm water in the MS4 is being complied with. Action levels in the Order are based upon the reasonable potential to cause or contribute to an excursion of~~ numeric or narrative water quality objectives and criteria as defined in the Basin Plan, the Water Quality Control Plan for Ocean Waters of California (Ocean Plan), and the State Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Policy or SIP). An exceedance of an action level requires specified responsive action by the Copermittees. This Order describes what actions the Copermittees must take when an exceedance of an action level is observed. Exceedances of non-storm water action levels do not alone constitute a violation of this Order but could indicate non-compliance with the requirement to effectively prohibit all types of unauthorized non-storm water discharges into the MS4 or other prohibitions established in this Order. Failure to undertake required source investigation and elimination action following an exceedance of an non-storm water action level (NAL or action level) is a violation of this Order. The Regional Board recognizes that use of action levels will not necessarily result in detection of all unauthorized sources of non-storm water discharges because there may be some discharges in which pollutants do not exceed established action levels. However, establishing NALs at levels appropriate to protect water quality standards is expected to lead to the identification of significant sources of pollutants in dry weather non-storm water discharges. This is consistent with existing Regional Board requirements in Orders for other non-storm water discharges throughout the region, including those which discharge into and from the MS4. NPDES regulations require that all permit limitations be expressed, unless impracticable, as both average monthly limitations (AMEL) and maximum daily limitations (MDEL) for all discharges other than privately owned treatment works (40 CFR 122.45(d)).~~

Discussion of Finding E.12. ~~Similar Orders addressing non-storm water discharges, including discharges that are into and from MS4 systems, have been issued containing receiving water and/or effluent limitations. These include General Orders for discharges from a variety of sources into a wide range of receiving waters. Orders include, but are not limited to, Order No. R9-2002-0020, R9-2008-0002, 2006-008 DWQ, 2004-0009 DWQ, and 2004-0008 DWQ. This~~

Order includes the existing requirement that Copermittees effectively prohibit all types of unauthorized non-storm water discharges in the MS4s. It also includes the following prohibition set forth in the Basin Plan: “The discharge of waste to waters of the state in a manner causing, or threatening to cause a condition of pollution, contamination or nuisance as defined in California Water Code section 13050 is prohibited.” (Prohibition A.1.) As discussed in the Order’s Findings on discharge characteristics, e.g., C.2., C.4., C.6., C.7., C.9., C.14., and C.15., the Copermittee’s reliance on BMPs for the past 19 years has not resulted in compliance with applicable water quality standards or compliance with the requirement to effectively prohibit all types of unauthorized discharges of non-storm water in the MS4. The Regional Board has evaluated (in accordance with 40 CFR 122.44(d)(1)) past and existing control (BMPs), non-storm water effluent monitoring results, the sensitivity of the species in receiving waters (e.g. endangered species), and the potential for effluent dilution and has determined that existing BMPs to control pollutants in storm water discharges are not sufficient to protect water quality standards in receiving waters and the existing requirement that Copermittees effectively prohibit all types of unauthorized non-storm water discharges into the MS4 historically results in the discharge of pollutants to the receiving waters.

Therefore it is appropriate to establish dry weather non-storm water action levels based upon established water quality standards to measure pollutants levels in the discharge of dry weather non-storm water that could indicate non-compliance with the requirement to effectively prohibit all types of unauthorized non-storm water discharges into the MS4 and/or that these discharges are causing, or threatening to cause, a condition of pollution, contamination or nuisance in the receiving waters. NALs are not numeric effluent limitations. While not alone a violation of this Order an exceedance of an NAL requires the Copermittees to initiate a series of source investigation and elimination actions to address the exceedance. Results from the NAL monitoring are to be used in developing the Copermittees annual work plans. Failure to undertake required source investigation and elimination action following an exceedance of an NAL is a violation of this Order. Please see further discussion in the directives section C6 of the fact sheet.

A purpose of monitoring, required under this and previous Orders, as stated in the Monitoring and Reporting Program is to “detect and eliminate illicit discharges and illicit connections to the MS4” and to answer the following core management questions:

1. Are conditions in receiving waters protective, or likely to be protective, of beneficial uses?
2. What is the extent and magnitude of the current or potential receiving water problems?
3. What is the relative MS4 discharge contribution to the receiving water problem(s)?

4. What are the sources of MS4 discharge that contribute to receiving water problem(s)?
5. Are conditions in receiving waters getting better or worse?

For the past 4 permit cycles (19 years), Copermitees have utilized their IC/ID program to identify and eliminate non-storm water discharges that are sources of pollutants to the MS4. The Copermitees are also subject to the requirement to effectively prohibit all types of unauthorized discharges of non-storm water into the MS4s. Historically, discharges of unauthorized non-storm water do occur, resulting in the discharge of pollutants to the receiving waters. NALs have been included in this Order to ensure that the Copermitees comply with the requirement to effectively prohibit all types of unauthorized non-storm water discharges that are a source of pollutants in the receiving waters.

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C. Non Storm Water Dry Weather ~~Numeric Effluent Limitations~~ Action Levels

The following legal authority applies to Section C:

Broad Legal Authority: CWA section 402, 402(p)(3)(B)(ii), CWC §13377, 40 CFR 122.26(d)(2)(i)(B, C, E, and F), and 40 CFR 122.26(d)(2)(iv).

Specific Legal Authority:

The Clean Water Act section 402(p)(3)(B)(ii) provides that MS4 permits “shall include a requirement to effectively prohibit non-storm water discharges into the storm sewers.”

Federal NPDES regulations 40 CFR 122.26(d)(2)(iv)(B) provides that the proposed management program “shall be based on a description of a program, including a schedule, to detect and remove (or require the discharger to the municipal storm sewer to obtain a separate NPDES permit for) illicit discharges and improper disposal into the storm sewer.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B)(1) provides that the Copermitee include in its proposed management program “a program, including inspections, to implement and enforce an ordinance, orders or similar means to prevent illicit discharges to the municipal storm sewer system; this program description shall address all types of illicit discharges, however the [listed exempt] category of non-storm water discharges or flows shall be addressed where such discharges are identified by the municipality as sources of pollutants to waters of the United States.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B)(2) provides that the Copermittee include in its proposed management program “a description of procedures to conduct on-going field screening activities during the life of the permit, including areas or locations that will be evaluated by such field screens.”

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B)(3) provides that the Copermittee include in its proposed management program “procedures to be followed to investigate portions of the separate storm sewer system that, based on the results of the field screen, or other appropriate information, indicate a reasonable potential of containing illicit discharges or other sources of non-storm water.”

Section C ~~has been added to~~ establish es non-storm water dry weather numeric effluent limitationsaction levels (see also Finding C.14, Finding E.12 and the Discussion for those sections).

Non-exempted, non-storm water discharges are to be effectively prohibited from entering the MS4 or become subject to another NPDES permit (see Federal Register, Vol. 55, No. 222, pg. 47995). Conveyances which continue to accept non-exempt, non-storm water discharges do not meet the definition of MS4 and are not subject to section 402(p)(3)(B) of the CWA unless the discharges are issued separate NPDES permits. Instead, conveyances that continue to accept non-exempt, non-storm water discharges that do not have a separate NPDES permit are subject to sections 301 and 402 of the CWA (see Federal Register, Vol. 55, No. 222, pg. 48037).

~~Language has been added to t~~The Order requireesing the sampling of a representative percentage of major outfalls and other identified stations within each hydrologic subarea. While it is important to assess all major outfall discharges from the MS4 into receiving waters, to date the Copermittees have implemented a dry-weather monitoring program that has identified major outfalls that are representative of each hydrologic subarea and have randomly sampled other major outfalls. Thus, it is expected that the Copermittees will utilize past dry weather monitoring in the selection and annual sampling of a representative percentage of major outfalls in accordance with the requirements under Section C.4.

Background and Rationale for Requirements

The Regional Board developed the requirements for dry weather non-storm water numeric effluent limitationsaction levels based upon an evaluation of existing controls, monitoring and reporting programs (effluent and receiving water), special studies, and based upon Findings C.1 C.3, C.4, C.6, C.7 and C.14.

Technology Based Effluent Limitations (TBELs)

~~Permits shall include applicable TBELs and standards (40 CFR 122.44(a)). This Order does not include TBELs for non-storm water discharges from the MS4 because USEPA to date has not promulgated effluent limitation guidelines for non-storm water discharges from an MS4. Furthermore, the Regional Board does not find that TBELs can be developed, at this time, utilizing Best Professional Judgment (BPJ) in a manner that will fully protect water quality standards. Thus, TBELs are not adequate to protect the Beneficial Uses of receiving waters and Water Quality Based Effluent Limitations must be developed.~~

~~Water Quality Based Effluent Limitations (WQBELs)~~

~~1) Permits shall include WQBELs to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water (40 CFR 122.44(d)). Where numeric water quality criteria have not been established, WQBELs may be established using USEPA CWA section 304(a) criteria guidance, proposed State criteria or a State policy interpreting narrative criteria supplemented with other relevant information, or an indicator parameter (40 CFR 122.24(d)).~~

~~2) All applicable provisions of sections 301 and 302 of the CWA must be met for NPDES permits for discharges to surface waters. As specified in the SIP, the Regional Board shall conduct an analysis for each priority pollutant with applicable criterion or objective to determine if a water quality-based effluent limitation is required.~~

Water Quality Control Plan

Section 303(C) of the Clean Water Act requires the state to establish Water Quality Standards (WQS). WQS define the water quality goals of a waterbody, or part thereof, by designating their use or uses to be made of the water and by setting criteria necessary to protect those uses.

The Regional Board's Water Quality Control Plan for the San Diego Basin (Basin Plan) designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the Basin Plan. The Basin Plan was adopted by the Regional Board on September 08, 1994, and was subsequently approved by the State Board on December 13, 1994. Subsequent revisions to the Basin Plan have also been adopted by the Regional Board and State Board.

State Board Resolution No. 88-63 establishes state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal and domestic supplies. Requirements of this Order do not include effluent limitations reflecting municipal and domestic supply use as all waters within the County of Orange under this Order are specifically exempted from municipal and domestic supply as a Beneficial Use.

The State Board adopted the Water Quality Control Plan for Ocean Waters of California (Ocean Plan) in 2005, it was approved by USEPA, and became effective on February 14, 2006. The Ocean Plan establishes Water Quality Objectives, general requirements for management of waste discharged to the ocean, effluent quality requirements, discharge provisions, and general provisions. Limitations derived from the Ocean Plan have been included in this Order to protect the Beneficial Uses of enclosed bays and estuaries because their Beneficial Uses are similar

National Toxics Rule (NTR) and California Toxics Rule (CTR)

The USEPA adopted the NTR on December 22, 1992, which was amended on May 04, 1995, and November 09, 1999. The CTR was adopted by USEPA on May 18, 2000, and amended on February 13, 2001. These rules include water quality criteria for priority pollutants and are applicable to non-storm water discharges from the MS4. Criteria for 126 priority pollutants are established by the CTR. USEPA promulgated this rule to fill a gap in California water quality standards that was created in 1994 when a California court overturned the State's water quality control plans containing criteria for priority toxic pollutants. The federal criteria are legally applicable in the State of California for inland surface waters, enclosed bays and estuaries for all purposes and programs under the CWA.

State Implementation Policy (SIP)

~~On March 2, 2000, the State Board adopted the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Policy or SIP). The SIP became effective on April 28, 2000, with respect to the priority pollutant criteria promulgated for California by USEPA through the NTR and to the priority pollutant objectives established by the Regional Boards in their Basin Plans, with the exception of the provision on alternative test procedures for individual discharges that have been approved by the USEPA Regional Administrator. The alternative test procedures provision became effective on May 22, 2000. The SIP includes procedures for determining the need for WQBELs and for calculating WQBELs. The SIP also requires dischargers to submit sufficient data to make the determination, and if necessary to calculate the WQBELs. The State Board adopted amendments to the SIP on February 04, 2005, that became effective on July 13, 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives, and provisions for chronic toxicity control. Requirements of this Order implement the SIP.~~

Compliance Schedule

~~Current discharges enrolled in Order No. R9-2002-001 (NPDES No. CAS0108740) shall comply with Order No. R9-2009-0002 upon Order adoption.~~

Antidegradation Policy

Section 131.12 of 40 CFR requires that the State water quality standards include an antidegradation policy consistent with the federal policy. The State Board established California's antidegradation policy in State Board Resolution No. 68-16. Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing quality of waters be maintained unless degradation is justified based on specific findings. The Regional Boards' Basin Plans implement, and incorporate by reference, both the State and federal antidegradation policies. Permitted non-storm water discharges from the MS4 are consistent with the antidegradation provision of 40 CFR section 131.12 and State Board Resolution No. 68-16.

Anti-Backsliding

~~Sections 402(o)(2) and 303(d)(4) of the CWA and federal regulation of 40 CFR 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a re-issued permit to be as stringent as those in the previous permit, with some exceptions where limitations may be relaxed. All effluent limitations in this Order are at least as stringent as the effluent limitations in the previous Order.~~

Monitoring and Reporting

~~40 CFR~~ Section 122.48 ~~and 40 CFR~~ requires that all NPDES permits specify requirements for recording and reporting monitoring results. Sections 13267 and 13383 of CWC authorize the Regional Boards to require technical and monitoring reports. The Monitoring and Reporting Program establishes monitoring and reporting requirements to implement state and federal regulations. The Monitoring and Reporting Program can be found as Attachment E of the Order.

Dilution or Mixing Zones

In order to protect the Beneficial Uses of receiving waters from pollutants as a result of non-storm water MS4 discharges, this Order does not provide for a mixing zone or a zone of initial dilution except when the discharge is to the surf zone.

The San Diego Region has predominately intermittent and ephemeral rivers and streams (Inland Surface Waters) which vary in flow volume and duration at spatial and temporal scales. Therefore, it is assumed that any non-storm water discharge from the MS4 into the receiving water is likely to be of a quantity and duration that does not allow for dilution or mixing. For ephemeral systems, non-storm water discharges from the MS4 are likely to be the only surface flows present within the receiving water during the dry season.

MS4 discharge points to bays, estuaries and lagoons are not designed to achieve maximum initial dilution and dispersion of non-storm water discharges. Thus, initial dilution factors for non-storm water discharges from the MS4 into bays, estuaries, and lagoons are conservatively assumed to equal zero.

It is appropriate to base numeric action levels for dry weather non-storm water discharges on these considerations.

California Ocean Plan

A discharge to a surf zone occurs when the non-storm water discharge point from the MS4 discharges:

- a) Directly into the ocean in a wave induced area subject to long-shore conditions; or
- b) Across a primarily sandy substrate beach and subsequently directly into a wave induced area subject to long-shore conditions;

Establishment of ~~Effluent Limitations~~Action levels

~~As specified in 40 CFR 122.44(d)(1)(i), permits are required to include WQBELs for pollutants that are or may be discharged at levels that cause, have reasonable potential to cause, or contribute to an excursion above any state water quality standard. The process for determining reasonable potential and calculating WQBELs when necessary is intended to protect the designated uses of the receiving water as specified in the Basin Plan, achieve applicable water quality objectives and criteria contained in State plans and policies, and meet water quality criteria in the CTR and NTR. Action levels in the Order are based upon numeric or narrative water quality objectives and criteria as defined in the Basin Plan, the Water Quality Control Plan for Ocean Waters of California (Ocean Plan), and the State Policy for Implementation of Toxic Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Policy or SIP). The Regional Board recognizes that use of action levels will not necessarily result in detection of all unauthorized sources of non-storm water discharges because there may be some discharges in which pollutants do not exceed established action levels.~~

In June of 2006, the California Water Board's Blue Ribbon Storm Water Panel released it's report titled 'The Feasibility of Numerical Effluent Limits Applicable to Discharges of Storm Water Associated with Municipal, Industrial and Construction Activities.' The report only examined numerical limits as applied to storm water and not non-storm water. In the recommendations, the Blue Ribbon panel proposed storm water action levels which are computed using statistical based population approaches. For example, Section D of the Permit uses a recommended statistical approach to develop storm water action levels. The Blue Ribbon panel did not examine the efficacy of action levels or recommendations for development of action levels for non-storm water discharges.

For discharges to inland surface waters, effluent limitationsaction levels are based on the EPA water quality criteria for the protection of aquatic species, the EPA water quality criteria for the protection of human health, water quality criteria and objectives in the applicable State plans, effluent concentration

available using best available technology, and 40 CFR 131.38. Since the assumed initial dilution factor for the discharge is zero and a mixing zone is not allowed, a non-storm water discharge from the MS4 could not cause an excursion from numeric receiving water quality objectives if the discharge is in compliance with the effluent limitations action levels contained in the Order. Likewise, discharges in compliance with action levels to the surf zone cannot cause excursions from water quality objectives.

Reasonable Potential Analysis

~~As specified in 40 CFR 122.44(d)(1)(i), permits are required to include WQBELs for pollutants that are or may be discharged at levels that cause, have reasonable potential to cause, or contribute to an excursion above any state water quality standard. For conventional pollutants reasonable potential is evaluated on a pollutant by pollutant basis using established TMDLs, 303(d) listings for impaired waterbodies, pollutant presence through monitoring and/or an evaluation of if a pollutant is otherwise expected to be present in the discharge. For priority pollutants, reasonable potential was evaluated according to SIP procedure~~

~~Section 303(d)(1)(A) of the CWA requires that "Each state must identify those waters within its boundaries for which the effluent limitations...are not stringent enough to implement any water quality standard (WQS) applicable to such waters." The CWA also requires states to establish a priority ranking of impaired waterbodies known as Water Quality Limited Segments and to establish Total Maximum Daily Loads (TMDLs) for such waters. This priority list of impaired waterbodies is called the Section 303(d) List. Water Quality Limited Segments within the jurisdiction of this Order have been identified due to exceedances of Indicator Bacteria, Phosphorus, Toxicity and Turbidity criteria whose source includes or is likely to include non-storm water discharges from the MS4 (see Table 2a, Findings C.7 E.10, E.11 and discussion).~~

Dry weather monitoring of non-storm water MS4 effluent conducted under the previous Order (R9-2002-001), which relies on BMPs as controls to protect water quality standards, has identified ~~discharges of pollutants that have caused, have the reasonable potential to cause or contribute to an excursion above state water quality standards~~ are found in non-storm water discharges. Monitoring of pH, Dissolved Oxygen, Phosphorus, Nitrate, Turbidity and Methylene Blue Active Substances (MBAS) in non-storm water MS4 discharges has shown that the effluent exceeds state water quality criteria. It is appropriate to establish numeric the effluent exceeds state water quality criteria_ action levels for these pollutants to ensure that the Copermitees are complying with the requirement to effectively prohibit all types of unauthorized non-storm water discharges into the MS4s, to protect the Beneficial Uses of receiving waters. Thus, these exceedances have established that water quality based effluent limitations must be developed.

Water Quality Limited Segments on the current 303(d) list (2006) within the jurisdiction of this Order have been identified due to exceedances of Sulfate, Chloride and Total Dissolved Solids criteria from a source which is currently unknown (see Table 2a). These pollutants are not monitored for under the current non-storm water MS4 effluent monitoring program. ~~The Regional Board has determined that the current listing of these pollutants, which are otherwise expected to be present in non-storm water discharges from the MS4 from a variety of sources, does not establish the reasonable potential that non-storm water discharges from the MS4 may be causing or contributing to exceedances of water quality standards for Sulfates, Chlorides and Total Dissolved Solids due to the unknown concentration and loading of MS4 discharges. However, While this Order does not establish a numeric action level for these constituents at this time,~~ this Order now requires non-storm water MS4 discharge monitoring to include monitoring for Sulfates, Chlorides and Total Dissolved Solids.

~~As specified in the SIP, the Regional Board shall conduct an analysis for each priority pollutant with applicable criterion or objective to determine if a water quality-based effluent limitation is required.~~ Priority pollutants analyzed included Cadmium, Copper, Chromium, Lead, Nickel, Silver and Zinc. These priority pollutants are likely to be present in non-storm water MS4 discharges (see Finding C.3) and dissolved metal effluent monitoring is available from the previous Order. The most stringent applicable water quality criteria have been identified for these seven metals and, excluding Chromium (VI), and all are dependent on receiving water hardness. The conversion factors for Cadmium and Lead are also water hardness dependent (40 CFR 131.38(b)(2)). These levels are established as the action levels for these constituents.

While effluent monitoring is available from the previous Order, the monitoring was done for dissolved concentrations and lacked a measurement of receiving water hardness. Due to the multiple point source discharges of non-storm water from the MS4, a discharge may enter a receiving water whose hardness will vary temporally. In addition, hardness may vary spatially within and among receiving waters.

However, other information is available to determine the appropriateness of an action level ~~WQBEL is required. Existing data and receiving water conditions have been reviewed to determine whether a non-storm water discharges may cause, have the reasonable potential to cause, or contribute to an excursion above priority pollutant criteria and objectives.~~ Existing effluent monitoring concentrations absent of receiving water data, no dilution credit or mixing zone allowance, current 303(d) listings of receiving waters for other pollutants, receiving water monitoring data, and the classification of waters as critical habitat for endangered and species of concern, provide evidence that WQBELs are required ~~NALs are appropriate~~ for these priority pollutants at this time in order to ensure that the Copermittees comply with the requirement to effectively prohibit

~~all types of unauthorized non-storm water discharges into the MS4s. in order to protect beneficial uses (see below).~~

Existing effluent data (see attachment F), absent receiving water hardness, provides evidence that ~~it is appropriate to include NALs a discharge may cause, have the reasonable potential to cause, or contribute to an excursion above priority pollutant criteria and objectives at based on~~ a conservative hardness level. Absent receiving water hardness, all analyzed metals, are discharged at concentrations which may be in exceedance of CTR criteria depending on receiving water hardness. Chromium effluent data that is available is in the form of total Chromium. However, per the SIP, Chromium criteria are for Chromium III and Chromium VI. Therefore, the total Chromium measurement is inadequate, but can be used as an estimate of Chromium III and VI concentrations.

As discussed, inland surface waters, enclosed bays, and estuaries have conservatively been allotted a mixing zone and dilution credit of zero. As such, any discharge of these priority pollutants is likely to impact the receiving water, regardless of the quantity or rate of discharge.

As discussed in Finding C.7 and discussion, multiple receiving waters within the County of Orange are 303(d) listed for a number of pollutants, including toxicity. The 303(d) listing of a waterbody as impaired provides evidence that the receiving water(s) are already experiencing negative impacts. These water quality limited segments are more susceptible to degradation from the synergistic addition of more pollutants, even from upstream discharges. ~~It is therefore appropriate to include numeric action levels designed to ensure that the Copermittees are complying with the requirement to effectively prohibit all types of unauthorized discharges of non-storm water into the MS4s. Any discharges, including of non-storm water from the MS4, must be done in accordance with State Board Resolution No. 68-16.~~

Copermittees have monitor~~ed~~ing the receiving waters for MS4 discharges pursuant to requirements under Order R9-2002-0002. Dry weather receiving water data indicates poor conditions within waters receiving non-storm water MS4 discharges. Urban stream bioassessment conducted under the Order (2002-2008) has documented all non-reference sites as consistently having poor or very poor Index of Biotic Integrity (IBI) scores, in part due to receiving water toxicity².

Receiving waters within the jurisdiction of this Order are classified as critical habitat, including being designated with the RARE beneficial use, for endangered, threatened and species of concern including, but not limited to, *O. mykiss irideus*, *E. newberryi*, *A. marmorata pallida* and *G. orcutti*.

² 2006-07 and 2007-08 Unified Annual Progress Reports.

~~The Regional Board evaluated For discharges to the surf zone, the Regional Board followed the reasonable potential analysis per the California Ocean Plan, Appendix VI and in accordance with 40 CFR 122.44(d). Indicator bacteria, pH, turbidity (NTU), and metals were analyzed for the purpose of determining the levels of these constituents inif the non-storm water discharges from the MS4 causes, has the reasonable potential to cause, or contributes to an excursion above water quality criteria.~~

The Regional Board has determined that there is not sufficient information at this time to develop ~~WQBELs action levels~~ for pH, turbidity and metals. While non-storm water MS4 effluent data is available, the data collected is for discharges to inland surface waters, enclosed bays and estuaries. Preliminary receiving water data and limited non-storm water MS4 discharge data collected under the Ambient Coastal Receiving Water Monitoring indicates some exceedances of criteria for metals in the discharge, and toxicity in receiving waters³. However, the Regional Board ~~contends~~ believes the level of data available is insufficient, and is requiring additional monitoring of pH, turbidity and metals in non-storm water MS4 discharges to ocean waters (discharges to the surf zone).

Water Quality Limited Segments on the current 303(d) list (2006) for the Pacific Ocean shoreline within the jurisdiction of this Order have been identified due to exceedances of Indicator Bacteria criteria whose known source includes non-storm water discharges from the MS4. These 303(d) listed segments support extensive REC-1 beneficial uses and are located within State Marine Reserves and Conservation Areas. The listing of receiving waters as 303(d) listed for bacteria supports ~~the inclusion of a reasonable potential assessment and provides evidence that WQBELs action levels to ensure that the Copermittees are complying with the requirement to effectively prohibit all types of unauthorized non-storm water discharges into the MS4. are required to protect beneficial uses.~~ In addition, no dilution credit or mixing zone allowance ~~is shall be~~ included ~~in developing numeric action levels~~ for the discharge of a pollutant to waters which are 303(d) as impaired for that pollutant.

~~Water Quality Based Effluent Limitations Dry Weather Non-Storm Water Action Levels~~ Calculations for Discharges to Inland Surface Waters, Enclosed Bays, and Estuaries

~~On the basis of the foregoing discussion, T~~the Average Monthly Effluent and Maximum Daily Effluent ~~WQBELs~~NALS were calculated with the following considerations and assumptions:

No dilution credit is considered for the discharge. Therefore, the discharge must comply with the Water Quality Objective at the point of discharge.

³ 2007-08 Unified Annual Progress Report.

For WQBELs-NALs based on CTR, implementation was done using the procedure list as outlined in the SIP (see below example).

WQBEL-NAL CTR/SIP Calculation – Zinc Example:

Criteria for Priority Toxic Pollutants in the State of California is described in the CTR table listed in 40 CFR 131.38.

A		B Freshwater		C Saltwater		D Human Health (10 ⁻⁶ risk for carcinogens) For consumption of:	
# Compound	CAS Number	Criterion Maximum Conc. ^d B1	Criterion Continuous Conc. ^d B2	Criterion Maximum Conc. ^d C1	Criterion Continuous Conc. ^d C2	Water & Organisms (µg/L) D1	Organisms Only (µg/L) D2
1. Antimony	7440360					14 a,s	4300 a,t
2. Arsenic ^b	7440382	340 i,m,w	150 i,m,w	69 i,m	36 i,m		
3. Beryllium	7440417					n	n
4. Cadmium ^b	7440439	4.3 e,i,m,w,x	2.2 e,i,m,w	42 i,m	9.3 i,m	n	n
5a. Chromium (III)	16065831	550 e,i,m,o	180 e,i,m,o			n	n
5b. Chromium (VI) ^b	18540299	16 i,m,w	11 i,m,w	1100 i,m	50 i,m	n	n
6. Copper ^b	7440508	13 e,i,m,w,x	9.0 e,i,m,w	4.8 i,m	3.1 i,m	1300	
7. Lead ^b	7439921	65 e,i,m	2.5 e,i,m	210 i,m	8.1 i,m	n	n
8. Mercury ^b	7439976	[Reserved]	[Reserved]	[Reserved]	[Reserved]	0.050 a	0.051 a
9. Nickel ^b	7440020	470 e,i,m,w	52 e,i,m,w	74 i,m	8.2 i,m	610 a	4600 a
10. Selenium ^b	7782492	[Reserved] p	5.0 q	290 i,m	71 i,m	n	n
11. Silver ^b	7440224	3.4 e,i,m		1.9 i,m			
12. Thallium	7440280					1.7 a,s	6.3 a,t
13. Zinc ^b	7440666	120 e,i,m,w,x	120 e,i,m,w	90 i,m	81 i,m		

Saltwater criterion maximum concentration (CMC) = 90 ug/L

Saltwater criterion continuous concentration (CCC) = 81 ug/L

These criteria are expressed in terms of the dissolved fraction of the metal in the water column. [See footnote “m” to Table in paragraph (b)(1) of 40 CFR 131.38].

40 CFR 122.45(c) requires that this Order include effluent limitations as total recoverable concentration; therefore it is appropriate to include action levels also as total recoverable concentration.

The SIP requires that if it is necessary to express a dissolved metal value as a total recoverable and a site-specific translator has not yet been developed, the Regional Board shall use the applicable conversion factor from 40 CFR 131.38.

The term “Conversion Factor” (CF) represents the recommended conversion factor for converting a metal criterion expressed as the total recoverable fraction

in the water column to a criterion expressed as the dissolved fraction in the water column.

Total recoverable concentration * CF = Dissolved concentration criterion

or

Total recoverable concentration = Dissolved concentration criterion/ CF

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Metal	Conversion factor (CF) for freshwater acute criteria	CF for freshwater chronic criteria	CF for saltwater acute criteria	CF for saltwater chronic criteria
Silver	0.85	(d)	0.85	(d)
Thallium	(d)	(d)	(d)	(d)
Zinc	0.978	0.986	0.946	0.946

CF for Zinc = .946, so the total recoverable concentrations for zinc:
 90 ug/L dissolved (CMC)/ 0.946 (CF) = 95 ug/L total recoverable CMC
 81 ug/L dissolved (CCC) / 0.946 (CF) = 86 ug/L total recoverable CCC

Effluent Variability multiplier and Coefficient of Variation (CV)

For each concentration based on an aquatic life criterion, the long-term average (LTA) is calculated by multiplying the concentration with a factor that adjusts for effluent variability. The multiplier can be found in Table 1 of the SIP. Since this Order does not have existing data to properly conduct a variability analysis in accordance with the SIP, the CV has been set equal to 0.6 per SIP requirements. The current effluent data is limited due to the small number of representative outfalls sampled, the lack of outfalls discharging to representative waterbodies within the Region, and the targeted nature of the sampling design.

Based upon a CV of 0.6, Table 1 of the SIP requires an effluent variability as follows:

Acute Multiplier = 0.321
 Chronic Multiplier = 0.527

The long-term average (LTA) is calculated by multiplying the total recoverable concentrations for zinc with the acute and chronic multipliers:

LTA Acute = 95 ug/L * 0.321 = 30.5
 LTA Chronic = 86 ug/L * 0.527 = 45.3

The MDA~~E~~L and AME~~E~~L will be based on the most limiting of the acute and chronic LTA, in the case for copper the most limiting LTA is the acute of 30.5 ug/L

WQBELs-NALs are calculated by multiplying the most limiting LTA with a multiplier that adjusts for the averaging periods and exceedance frequencies of

the criteria and the effluent limitations. The multiplier can be found in Table 2 of the SIP. Since this Order has insufficient data, the CV has been set to 0.6 and since sampling frequency is four times a month or less, n has been set equal to 4 per the SIP.

Table 2. Long-Term Average (LTA) Multipliers for Calculating Effluent Limitations

Coefficient of Variation	MDEL Multiplier	AMEL Multiplier			MDEL/AMEL Multiplier		
	99 th Percentile Occurrence Probability	95 th Percentile Occurrence Probability			MDEL = 99 th Percentile AMEL = 95 th Percentile Occurrence Probability		
(CV)		n = 4	n = 8	n = 30	n = 4	n = 8	n = 30
0.1	1.25	1.08	1.06	1.03	1.16	1.18	1.22
0.2	1.55	1.17	1.12	1.06	1.33	1.39	1.46
0.3	1.90	1.26	1.18	1.09	1.50	1.60	1.74
0.4	2.27	1.36	1.25	1.12	1.67	1.82	2.02
0.5	2.68	1.45	1.31	1.16	1.84	2.04	2.32
0.6	3.11	1.55	1.38	1.19	2.01	2.25	2.62

Therefore, from Table 2 of the SIP, the LTA multipliers will be as follows:

MDA~~E~~L Multiplier = 3.11

AMA~~E~~L Multiplier = 1.55

The MDA~~E~~L and AMA~~E~~L limits are calculated by multiplying the LTA with an LTA multiplier for each limit:

MDA~~E~~L = 30.5 ug/L * 3.11 = 95 ug/L

AMA~~E~~L = 30.5 ug/L * 1.55 = 47 ug/L

Water Quality Based Effluent Limitations Dry Weather Non-Storm Water Action Levels Calculations for Discharges to the Surf Zone

Based on the foregoing discussion, ~~T~~he Average Monthly ~~E~~ffluent and Maximum Daily ~~E~~ffluent ~~W~~QBELs ~~N~~ALs were calculated with the following considerations and assumptions:

No dilution credit is considered for the discharge. Therefore, the discharge must comply with the Water Quality Objective at the point of discharge.

Whole Effluent Toxicity (WET) Testing Requirements

A WET limit is required if a discharge causes, has a reasonable potential to cause, or contributes to an exceedance of applicable water quality standards,

including numeric and narrative. Since these types of discharges are prohibited under this Order, WET limits are not applicable.

Discussion of AMAELs, MDEALs and Instantaneous Maximums

~~NPDES regulations require that all permit limitations be expressed, unless impracticable, as both average monthly limits (AMEL) and maximum daily limits (MDEL) for all discharges other than privately owned treatment works (40 CFR 122.45(d)).~~ Where practical, effluent limitations action levels in this Order have been expressed as both AMAELs and MDALs. Certain effluent limitations action levels may not practicably be expressed as AMEALs and MDALs due to specific BPO language, sampling requirements and/or a lack of Criteria. Based upon the likely sampling frequency of the Copermittees, the frequency of sampling will occur such that grab samples are taken once per sampling day. This single sample would then be subject to MDEALs and Instantaneous Maximum levels/limitations. In this case, the more conservative limitation-action level would apply. In addition, it is expected that some effluent monitoring will occur less than or equal to once per month. In this scenario, the MDAL, AMAEL and Instantaneous Maximum limitations/levels would need to be met based upon one sample, unless sampling did not occur. For some BPOs, AMEALs have been excluded and only MDEALs/Instantaneous Maximums set to prevent redundancy in action level/effluent limitations.

Compliance with Effluent Limitations Action levels (Priority Pollutants)

Compliance with effluent limitations action levels shall be determined as follows ~~(pursuant to 40 CFR 131.38)~~:

~~(4)~~ Dischargers shall be deemed out of compliance this Order with an effluent limitation if the Copermittee failed to take the prescribed action in response to a concentration of the priority pollutant in the monitoring sample that is greater than the effluent limitation action level and greater than or equal to the reported Minimum Level (exceedance of an action level). Regardless of the Copermittee's actions in response to an exceedance, they are still subject to the prohibitions found in Sections A and B of the Order.

When determining compliance to take an action in response to with the AMAELs and more than one sample result is available in a month, the discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of DNQ or ND. In those cases, the discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:

(1) The data set shall be ranked from low to high, reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.

(2) The median value of the data set shall be determined. If the data set has an

odd number of data points then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of those points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.

Page 155, Section F.4.e. Illicit Discharge Detection and Elimination (Investigations)

The Copermittees currently use action levels to facilitate the determination of when source investigation studies are warranted based on data from the dry-weather monitoring program. One set of criteria is based on regional averages of constituent concentrations that were developed based on randomly selected storm drains. Another set of criteria is based on trends at a particular station. These are reasonable criteria if decision-makers are properly trained and action levels set by the County are in compliance with ~~numeric effluent limitations~~dry weather non-storm water action levels as required in Section C. The ability of the local managers to interpret dry-weather monitoring data collected by the County has greatly improved in the last two years, and continued training is required in section F.4.i.

Page 178, Section T. Attachment E – Receiving Waters and MS4 Discharge Monitoring and Reporting Program

Considering the benefits described above, the Receiving Waters Monitoring and Reporting Program (MRP) has been designed to determine impacts to receiving water quality and beneficial uses from storm water runoff and to use the results to refine the Copermittees' storm water runoff management programs for the reduction of storm water pollutant loadings to the MEP. For non-storm water discharges, monitoring has been designed for the identification of prohibited illicit discharges and to determine ~~appropriate compliance with numeric effluent limitations~~actions to take in response to dry weather non-storm water action levels. Additionally, the results from dry weather non-storm water monitoring can be used to evaluate exempted non-storm water discharges as a source or conveyance of pollutants. The primary goals of the MRP include:

Page 186,

Dry Weather Non-storm Water ~~Effluent Limitations~~Action Levels

Section II.C of the MRP describes the monitoring to be conducted by the Copermittees to determine compliance with dry weather non-storm water ~~numeric effluent limitations~~action levels.

Section II.B.3 has been changed by removal of the Dry Weather Field Screening and Analytical Monitoring and subsequent replacement with section II.C for Dry Weather Non-Storm Water ~~Numeric Effluent Limitations~~Action Level Monitoring.

This change is required to assess compliance with ~~numeric limitations~~action levels for non-storm water discharges from the MS4 into receiving waters. The required sampling frequency has been changed to allow Copermittees to sample a representative number of discharge points and the sampling methodology has been changed to grab sampling. This is expected to allow Copermittees to maintain a cost-neutral dry weather monitoring program that is similar to their existing IC/ID monitoring program.

Page 189, U. Attachment F – Source Data

Attachment F contains data utilized for the development of Storm Water Action Levels and Non-storm Water ~~Numeric Effluent Limitations~~Action Levels.

TENTATIVE