



268 Bush #4313, San Francisco, CA 94104
(415) 652-5479 www.cacoastkeeper.org



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June 26, 2012

Charles Hoppin, Chair and Board Members
State Water Resources Control Board
1001 I Street

Sacramento, CA 95814

Sent via electronic mail to: commentletters@waterboards.ca.gov

RE: Comments on the Second Revised Tentative Order – Caltrans MS4 Permit (NPDES Permit No. CAS000003)

Dear Chair Hoppin and Board Members:

The California Coastkeeper Alliance (CCKA) represents 12 Waterkeeper groups spanning the coast from the Oregon border to San Diego. CCKA has significant interest in the development, adoption, implementation and enforcement of this Draft Permit, and has been part of this permit reissuance process since its inception. On behalf of CCKA, we submit these comments on the latest Draft Statewide National Pollutant Discharge Elimination System (NPDES) Permit for the Discharge of Storm Water Runoff from the California Department of Transportation's (Caltrans) Municipal Separate Storm Sewer System (MS4) dated April 27, 2012 (Revised Draft Permit or Permit).

By Caltrans's own admission in its comments on the Draft Tentative Order (January 7, 2011): "there will be unavoidable exceedances of narrative water quality standards."¹ Sampling conducted by Caltrans pursuant to the previous iteration of the Permit demonstrates comprehensive non-compliance with Water Quality Standards, pollution of areas of special biological significance (ASBS) waters, and a failure of the iterative process to protect California's waters and comply with State and Federal Law. Despite this, Board Staff revised the Draft Permit to require "the Department to implement a storm water program designed to achieve compliance with water quality standards, over time through an iterative approach,"² and stated that "[t]he Water Quality Orders and the Tentative Order permit the Department to achieve compliance through the progressive implementation of BMPs through the iterative process."³ The repetition of this failed program is inconsistent with programs in Caltrans's Los Angeles and San Diego Districts, with MS4 Permits in place now for other municipalities, and

¹ California State Water Resource Control Board, CALIFORNIA DEPARTMENT OF TRANSPORTATION MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) PERMIT COMMENT RESPONSE REPORT, C5, p. 7, available at http://www.waterboards.ca.gov/water_issues/programs/stormwater/docs/caltrans/draftentord_rev0412/final_response_comments.pdf.

² California State Water Resource Control Board, NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM STATEWIDE STORM WATER PERMIT WASTE DISCHARGE REQUIREMENTS FOR STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION (Draft), p. 10 (April 27, 2012), available at http://www.waterboards.ca.gov/water_issues/programs/stormwater/docs/caltrans/draftentord_rev0412/tentorder_pubhrrng_prd.pdf.

³ *Supra* note 1, at C4, p. 14.

with the MEP requirement of the Clean Water Act (CWA). As such the current draft Permit is illegal and must be revised.

The Revised Draft Permit reflects a dramatic retreat from previous iterations of the Caltrans MS4 Permit. Additionally, many of the concerns outlined in our March and September 2011 letters remain unaddressed. We believe that the Revised Draft Permit fails to meet the law in addressing the significant, known discharges from Caltrans's MS4 into the waters of the state, and needs to be modified accordingly based on the recommendations provided below. In particular, we urge the Board to:

- adopt numeric effluent limitations and other standards that require pollution reduction to the maximum extent practicable;
- strengthen Stormwater Management Plan requirements for project planning and design;
- strengthen monitoring and discharge characterization requirements;
- revise the ASBS provisions to ensure the permit's consistency with the California Ocean Plan ASBS Special Protections;
- incorporate existing, applicable waste load allocations; and
- revise the Caltrans Permit to address pollutants from agriculture.

I. THE PERMIT FAILS TO MEET THE MEP STANDARD

The description of maximum extent practicable in the Revised Draft Permit as a “minimum required performance standard”⁴ is inconsistent with the plain language of the Clean Water Act (CWA). MEP is the *maximum* pollutant reduction practicable. Describing MEP as the “cumulative effect of implementing, evaluating, and making corresponding changes”⁵ to BMPs provides no guidance on an actual standard. Courts have made it clear that “the phrase ‘to the maximum extent practicable’ does not permit unbridled discretion. It imposes a clear duty on the agency to fulfill the statutory command to the extent that it is feasible or possible.”⁶ The Revised Draft Permit fails to provide this clear direction and evidence of the federal mandate. The Revised Draft Permit must clearly delineate and demonstrate the federally mandated minimum effort, or “floor,” below which a permit may not be approved by EPA or by the responsible state agency. The significance of this requirement has been recognized in a variety of jurisdictions.⁷ The State Water Board should likewise recognize the significance of the MEP requirement and revise its definition accordingly.

A. The Permit Fails Implement Measures Already In Place or Required in Caltrans Districts 7 and 11.

Despite this, the Draft Permit fails to require programs that meet the MEP standard. Under the mandate of the District Court resulting from citizen enforcement, the Los Angeles and San Diego Caltrans Districts have implemented effective programs that have made significant, if faltering, progress. Those programs, having been successfully implemented, now define MEP for Caltrans storm water pollution control. Yet the requirements of the Draft Permit fall substantially below the standards already met by Caltrans in two of its most urbanized Districts. For example, the Draft Permit fails to require:

⁴ *Supra* note 2, at Appendix VIII.

⁵ *Id.*

⁶ *Defenders of Wildlife v. Babbitt* (D.D.C. 2001) 130 F.Supp.2d 121, 131 (internal citations omitted); *Friends of Boundary Waters Wilderness v. Thomas* (8th Cir. 1995) 53 F.3d 881, 885 (“feasible” means “physically possible”).

⁷ *North Carolina Wildlife Fed. Central Piedmont Group of the NC Sierra Club v. N.C. Division of Water Quality*. (N.C.O.A.H. October 13, 2006) 2006 WL 3890348, Conclusions of Law 21-22 (internal citations omitted).

- 1) Studies, on a designated schedule, by highway corridor, of opportunities and potential locations for the full range of available stormwater BMPs. In the course of those studies, especially consider infiltration according to an assessment procedure developed in the District 7 litigation follow up.⁸
- 2) Quantitative treatment target for specification of BMPs by watershed, as defined by the Regional Water Quality Control Boards. Credits toward the target are a function of BMP performance capabilities, as documented in the Stormwater Retrofit Pilot Study.⁹
- 3) Installation of identified BMPs on a designated schedule.
- 4) Maintenance of permanent BMPs according to the Maintenance Indicator Document developed during the Stormwater Retrofit Pilot Study.¹⁰
- 5) Self-inspection of maintenance stations to quantify the number of failed versus properly selected, installed, and maintained station BMPs.
- 6) For both facility and highway maintenance, quantitative success targets for each BMP group (e.g., vehicle maintenance BMPs, fueling BMPs, waste management BMPs, etc.). This provision provides a performance standard to quantifiable measure the effectiveness of implemented BMPs.
- 7) Contracts for independent maintenance station inspections to denote critical, major, minor, or no deficiencies.¹¹
- 8) For both facility and highway maintenance, quantitative targets to minimize critical and major deficiencies and maximize no or minor ones.¹²
- 9) Annual identification of sources of sediment in the operating highway rights of way.
- 10) Annual prioritization of sources to address and a set monetary allocation to repair those areas to prevent or minimize sediment delivery into the storm drain system.
- 11) Ongoing maintenance of remediated sediment-source areas.¹³
- 12) Removal of a specified volume of solids collected in drain inlets, with credit granted toward the target for solids removed from pump houses and permanent stormwater management BMPs.¹⁴

⁸ See California Department of Transportation, Infiltration Basin Site Selection Study (June 2003), available at http://www.dot.ca.gov/hq/env/stormwater/special/newsetup/_pdfs/new_technology/CTSW-RT-03-025/IFB_Final_Report.pdf.

⁹ E.g., in each District 7 watershed, reduce the quantity of stormwater generated, up to the 85th percentile rainfall event, and discharged without treatment by 20 percent, compared with the quantity so released when the permanent injunction was issued by the court, 12/14/94.

¹⁰ See California Department of Transportation, BMP Retrofit Pilot Program (January 10, 2001), available at http://www.dot.ca.gov/hq/env/stormwater/special/newsetup/_pdfs/new_technology/CTSW-RT-01-050/AppendixD/MID/MID-15.pdf.

¹¹ This program was eventually canceled when maintenance stations performance improved and remained at that general level, based on self-inspections and annual inspections by the plaintiff's technical representative, a situation unlikely to be duplicated in Caltrans districts that were not sued.

¹² *Id.*

¹³ This provision represents a more specific version of the Draft Permit's requirements at page 47.

- 13) Self-inspection of construction sites to quantify the number of failed versus properly selected, installed, and maintained construction BMPs.
- 14) Contract for independent construction site inspections to denote critical, major, minor, or no deficiencies.

B. The Permit Sacrifices 85 Percent of Receiving Waters Without Any Meaningful Rationale.

The Board recognizes in the Revised Draft Permit that, “BMP development is a dynamic process, and the menu of BMPs contained in a Storm Water Management Plan (SWMP) may require changes over time as experience is gained and/or the state of the science and art progresses.”¹⁵ However, the Draft Permit only requires that, where Tier 2 monitoring shows violations of water quality standards, “[c]orrective actions shall be implemented at the top 15 percent of sites (rounded up) on the Tier 2 priority list”¹⁶ This constitutes an arbitrary cap on when and where Caltrans is required to reduce pollutant discharges, regardless of whether additional reductions are practicable. In addition, this provision does not contain a time frame so it is unclear whether the intent of the permit to solely require site upgrades at 15 percent of Tier 2 monitoring locations per year, on a rolling basis, or in total, under the life of the permit. This arbitrary sacrifice is inconsistent with MEP.

While Staff justifies its 15 percent compliance cap based on costs savings, the Revised Draft Permit fails to meaningfully account for the cost of compliance when rendering its determination as to what improvements will constitute MEP. The Permit states that “[t]he State Water Board has considered the costs of complying with this Order and whether the required BMPs meet the minimum “maximum extent practicable” standard required by federal law.”¹⁷

However, no evidence in the administrative record shows *how* the Board considered the costs of this permit. The only cost data in the record shows Caltrans’s operating expenses for prior years. This information does not reveal the practicability for further improvements, as it fails to: (1) quantify any costs of such improvements, (2) offset any savings that may be realized by such improvements, and (3) compare such costs and savings to potential funding sources. It is not enough to simply acknowledge that costs exist.

Moreover, the Board inaccurately attributes additive costs to this Draft Permit, when in fact such costs either pre-exist, or are derived from other regulations. For example, the Draft Permit finds that “[a]dditional costs will also be incurred in correcting non-compliant discharges.” Such non-compliant discharges have been occurring for years under the existing permit, and should have been remedied long ago—such obligations are not new under this Draft Permit.

C. Staff Comments Suggest that the Iterative Process Shields Dischargers from the WQS Compliance Requirement.

In response to the admission from Caltrans that discharges fail to comply with WQS now, violating existing permit requirements, staff seems to suggest that Caltrans would not be in violation of the Permit despite documented exceedances so long as the “iterative process” has been started. This

¹⁴ This provision is a variation on the Draft Permit’s requirement at page 49 to remove all debris when the collection zone reaches 50 percent of capacity and represents an improvement over historical practices.

¹⁵ *Supra* note 2, at 7.

¹⁶ *Supra* note 2, at 33.

¹⁷ *Supra* note 2, at 16.

interpretation of the Permit language is inconsistent with the interpretation of State Superior Courts, State Courts of Appeal, and the Federal District Court and the 9th Circuit Court of Appeals. Further, to the extent staff now interprets the iterative process language as creating a safe harbor, this Orwellian effort to skirt the reality of Caltrans's discharges of pollutants is inconsistent with the existing implementation of MS4 Permits in at least Los Angeles County, San Diego County, and Ventura County, and therefore fails to achieve the MEP standard.

California Coastkeeper Alliance requests that staff clarify its position as to the "safe harbor" created by the iterative process, and to the extent that staff does intend to shield WQS exceedances, that this illegal proposal be rejected.

D. The Permit Backslides and Fails to Meet the MEP Standard.

The Board states in the Revised Draft Permit that because "numerous advances in storm water regulation and management and the size of the Department's MS4, the Order does not require the Department to fully incorporate and implement all advances in a single permit term, but takes an incremental approach that allows for prioritization of efforts for the most effective use of the increased, but nevertheless limited, Department funds."¹⁸ This backsliding from existing requirements for Caltrans to meet MEP and receiving water quality standards is wholly unsupported by any cost analysis, unjustified, contrary to the spirit and letter of the CWA, and violates the CWA's anti-backsliding provision—it must be deleted.

Lastly, staff's response to comments rejects the use of integrated pest management (IPM) practices required under other permitting regimes that would help to reduce pesticide impacts from Caltrans's operations, asserting that such IPM techniques constitute best available technology (BAT) under the CWA, which staff asserts equates to a higher pollution control standard than MEP.¹⁹ However, this response to comments fails to actually consider whether the specific IPM standards recommended would in fact help reduce pesticide impacts from Caltrans's operations to the MEP. Instead, staff takes the inappropriate position that MEP *always* constitutes a weaker standard than BAT/best control technology (BCT). However, the Board has not supported this argument with any facts or law. In any event, the proposed pollution prevention controls presented in comments, and relied upon in California's statewide general permits, are entirely practicable, and provide for a greater pollution reduction than the pesticide management provisions proposed in the Draft Permit.

II. **NUMERIC EFFLUENT LIMITATIONS ARE FEASIBLE AND REQUIRED IN THE REVISED DRAFT PERMIT**

The State Water Board has recognized that "the BMP solution to storm water problems has been inadequate, based on 15+ years of experience with construction, industrial, and Phase 1 MS4 storm water permits."²⁰ Numeric effluent limitations (NELs) in the Draft Permit can facilitate more effective permit implementation for both dischargers and Board staff by providing a clear and simple method for evaluating compliance with the permit. NELs will improve enforcement efficiency by reducing time spent reviewing stormwater pollution prevention plans and conducting site visits to assess whether BMPs achieve the pollutant reductions required.

NELs are the most effective method available to the Board to ensure that the permits will meet

¹⁸ *Supra* note 2, at 16.

¹⁹ *Supra* note 1, at L2.

²⁰ State Water Board, Draft Construction Permit, Fact Sheet at 19 of 40 (March 2007) (emphasis added), *available at* http://www.swrcb.ca.gov/water_issues/programs/stormwater/docs/constpermits/factsheet070302.pdf.

the dual requirements of the CWA to force technology-based solutions to reduce pollutants and to ensure that water quality standards are met. The level of restriction and degree of water quality protection afforded by narrative effluent limitations and numeric effluent limitations is intended to be the same under the CWA. However, the precision, clarity, and enforceability of an NEL is greater than that of a narrative effluent limitation. NELs provide a simple and transparent regulatory scheme that dischargers can readily comply with and that regulators can easily enforce when necessary. Dischargers will still have the quantitative information to help determine what additional steps are necessary to achieve compliance.

The CWA requires NELs unless they are infeasible.²¹ EPA guidance on NELs in a 2010 memo stated that “where the NPDES authority determines that MS4 discharges . . . have the reasonable potential to cause or contribute to water quality standards excursions, permits for MS4s . . . should contain numeric effluent limitations where feasible to do so . . . as these types of effluent limitations create objective and accountable means for controlling stormwater discharges.”²²

In the Board’s response to comments on NELs, it states “the permitting authority’s decision as to how to express water quality based effluent limitations (WQBELs), i.e. as numeric effluent limitations or BMPs, would be based on an analysis of the specific facts and circumstances surrounding the permit.” Based on audits,²³ the EPA has determined numerous Caltrans violations²⁴ of known discharges from its MS4 operations into waters of the state.²⁵ Monitoring conducted by San Francisco Baykeeper found that Caltrans MS4 discharges exceeded water quality standards for copper, lead and zinc.²⁶ Discharges from Caltrans outfalls have the reasonable potential to cause or contribute to water quality standards excursions. Therefore, the Board must take action to establish NELs for Caltrans’s discharges. At a minimum, NELs must be established for Caltrans’s discharges into impaired waters with established Total Maximum Daily Loads (TMDL), unless doing so is infeasible.²⁷ There is no evidence in the record demonstrating the Board conducted any specific analyses to evaluate appropriate NELs for Caltrans’s discharges, or to evaluate their feasibility.

The Board must develop NELs applicable to Caltrans’s discharges. Absent NELs, the Permit cannot implement the waste load allocations set forth in TMDLs as required by the Clean Water Act.

²¹ *Citizens Coal Council v. EPA*, 447 F.3d 879, 897 (6th Cir. 2006).

²² U.S. Environmental Protection Agency, Revisions to the November 22, 2002 Memorandum “Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on Those WLAs”, 2 (Nov. 2010), available at http://www.epa.gov/npdes/pubs/establishingtmdlwla_revision.pdf.

²³ See California Department of Transportation, Municipal Separate Storm Sewer System (MS4) Compliance Audit (Feb. 26, 2010), available at <http://www.epa.gov/region9/water/npdes/ms4audits.html#caleval>.

²⁴ *In the Matter of State of California, Dep’t of Transportation*, “Findings of Violation and Order for Compliance,” Docket No. CWA-2009-2011-0001 (U.S. EPA Region 9, Oct. 26, 2010), available at <http://www.epa.gov/region9/water/npdes/ms4audits.html#caleval>.

²⁵ In this audit, U.S. EPA found multiple ongoing violations of the Caltrans Permit across all aspects of the Permit and all Districts evaluated. The resulting U.S. EPA Order attempts to correct these deficiencies; EPA’s instructions should be carefully considered and incorporated into the current Draft Permit as appropriate.

²⁶ San Francisco Baykeeper, Stormwater Samples, taken Oct. 24, 2010, analyzed by Curtis & Tompkins. All sites discharge to San Francisco Bay.

²⁷ Memorandum from James Hanlon, U.S. EPA Office of Wastewater Management and Denise Keehner, U.S. EPA Office of Wetlands, Oceans and Watersheds to Water Management Division Directors, Regions 1-10, “Revisions to the November 22, 2002 Memorandum ‘Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on Those WLAs,’” p. 3 (Nov, 12, 2010) (EPA Memo).

And without NELs, the Draft Permit lacks the precision, clarity, and enforceability necessary to achieve the goals of the CWA or the mandate of the Board to protect the quality of the State's waters.

III. THE BOARD MUST STRENGTHEN STORMWATER MANAGEMENT PLAN REQUIREMENTS FOR PROJECT PLANNING AND DESIGN

In order to meet MEP, the Revised Draft Permit must strengthen the project planning and design requirements. However, to streamline both the required SWMP revisions mandated by the Draft Permit and the necessary public participation requirements in approving the SWMP, we recommend that the Board require Caltrans to undertake the activities described below.

A. The Revised Draft Permit Must Contain a Clear Numeric Low Impact Development Standard.

While we support the prioritization of infiltration, harvest and re-use, and evapotranspiration BMPs for post-construction requirements, the Revised Draft Permit contains vague language for post-construction requirements that is a step backwards from previous versions of the Permit. The Permit should clearly state that BMPs shall be designed to infiltrate, harvest and re-use, or evapotranspire the *entire* storm water runoff volume from the 85th percentile 24-hour storm event. This numeric standard was more clearly stated in the August 18, 2011, version of the Caltrans Permit. Mandating a certain volume of onsite stormwater retention prevents all pollution in that volume of retained stormwater from being discharged to receiving waters. This requirement is consistent with other MS4 permits, ordinances, and regulations around the country. For example, the Regional Water Quality Control Boards for the Los Angeles, Santa Ana, and San Diego Regions have all recently adopted MS4 permits that effectively require new and redevelopment projects to retain onsite the 85th percentile storm through use of low impact development (LID) practices that infiltrate, harvest and reuse, or evapotranspire stormwater runoff unless technically infeasible to do so.

B. Infiltration, Capture and Reuse Systems Should be Prioritized Over Flow-Through Low Impact Development Features and Conventional Treatment Devices.

We do not support flow-through treatment systems or conventional volume-based or flow-based storm water treatment devices as alternatives to traditional LID practices (infiltration, reuse or evapotranspiration). Placing these technologies and systems on the same footing as infiltration, capture, and reuse systems does not ensure the Draft Permit meets the CWA requirements that it "require controls to reduce the discharge of pollutants to the maximum extent practicable."²⁸ These other systems do not provide the same water quality and water supply benefits of LID approaches.²⁹ Retaining the 85th percentile storm runoff volume onsite would prevent 100 percent of the runoff from the 85th percentile storm, and therefore, 100 percent of the pollutants in that runoff, from ever reaching receiving waters. Thus, the flow-through and treatment device options on-site should be eliminated.

C. Alternative Compliance Requirements Should be Strengthened.

In addition to the extremely weak on-site requirements, the Draft Permit creates a vague, inadequate "off-ramp" if the on-site requirements cannot be met. Specifically, the Draft Permit states that if on-site requirements are infeasible, Caltrans shall prepare a proposal for alternative compliance.³⁰ While we agree that an "off-ramp" for infeasibility is appropriate, the Revised Permit is not clear on how

²⁸ 33 U.S.C. § 402 (p)(3)(B)(iii).

²⁹ U.S. Environmental Protection Agency, Reducing Stormwater Costs through Low Impact Development (LID) Strategies and Practices, at iii (December 2007).

³⁰ *Supra* note 2, at Sec. E.2.d.2.c., p. 39.

infeasibility is demonstrated. The Permit must outline how infeasibility will be demonstrated.³¹ To utilize alternative compliance measures, Caltrans must demonstrate that compliance with the applicable post-construction requirements would be technically infeasible by submitting a site-specific hydrologic and/or design analysis conducted and endorsed by a registered professional engineer, geologist, architect, and/or landscape architect. This will ensure that stormwater will be kept onsite to the maximum extent.

The request for a “proposal for alternative compliance” is also far too vague. The requisite criteria for and goals of these proposals is unclear. The goal of an alternative compliance program should be to attain the same water quality and hydrologic benefit that would be gained from the primary program. We urge the Board to employ a specified program that calls for offsite treatment in the same watershed with an appropriate multiplier of *twice the amount*, if on-site infeasibility is sufficiently demonstrated. Using a multiplier will incentivize creativity to retain the water onsite. There is also precedent for setting such a multiplier in the Ventura County MS4 Permit.

D. Crucial Project Planning and Design Acreage thresholds Must be Retained.

The Draft Permit significantly increases the threshold for projects subject to post-construction treatment from the last permit proposal. Specifically, the thresholds are increased for highway projects from 5,000 square feet of new impervious surface to one acre. The rationale for this major change is unclear. How many fewer projects are now estimated to fall under the post-construction requirements? The Board should reduce the threshold so that more post-construction projects are included and more water quality benefits result.

IV. THE BOARD MUST STRENGTHEN MONITORING AND DISCHARGE CHARACTERIZATION REQUIREMENTS

Caltrans’s jurisdiction covers more than 50,000 miles of highways and freeway lanes throughout the state. The Draft Permit states “[d]ischarges of storm water and non-storm water from Department properties, facilities, and activities have been shown to contribute pollutants to waters of the United States. As such, these discharges may be causing or threatening to cause violations of water quality objectives...”³² The significant reduction in monitoring requirements from the previous Draft Permit inhibits the ability of Caltrans to accurately capture the impacts of its discharges into waters of the state. The Draft Permit fails to require timely monitoring throughout most of Caltrans’s system, including hundreds of locations already known to have caused or contributed to exceedances of water quality standards.

A 2000-2003 Caltrans characterization study generated over 60,000 data points from over 180 monitoring sites.³³ Results were compared with California Toxics Rule (CTR)³⁴ objectives and other relevant receiving water quality objectives. Copper, lead, and zinc were estimated to exceed the CTR objectives for dissolved and total fractions in greater than 50 percent of samples.³⁵ Diazinon and chlorpyrifos were also found to exceed the California Department of Fish and Game recommended

³¹ See *Environmental Defense Center, Inc. v. United States EPA*, 344 F.3d 832, 854 (9th Cir. 2003).

³² *Supra* note 2, at 8.

³³ California Department of Transportation. Storm Water Monitoring & Data Management, Discharge Characterization Study Report: CTSW-RT-03-065.51.42, p. 27.

³⁴ U.S. Environmental Protection Agency (USEPA). (2000b). Water Quality Standards; Establishments of Numerical Criteria for Priority Toxic Pollutants for the State of California; Rule. California Toxics Rule. Federal Register, 40 CFR Part 131, 65 (97).

³⁵ California Department of Transportation, Storm Water Monitoring & Data Management, Discharge Characterization Study Report: CTSW-RT-03-065.51.42, p. 27.

chronic criteria in a majority of samples.”³⁶ Sample data from the characterization study is shown in Attachment 1.

Without more comprehensive monitoring, it will be impossible to determine the extent to which Caltrans’s stormwater discharges satisfy the Draft Permit discharge prohibitions.³⁷ This is at odds with the CWA requirement that the monitoring program provide information to determine whether Caltrans is in compliance with the Permit.

A. “Tiered” Monitoring Requirements Do Not Ensure Compliance.

The division between “Tier 1” and “Tier 2” monitoring sites does not ensure that Caltrans will attain compliance with all provisions of the Draft permit. Recently, the Ninth Circuit Court of Appeals reaffirmed that “all NPDES permits must include monitoring provisions ensuring that permit conditions are satisfied.”³⁸ Analyzing the MS4 permit for the County of Los Angeles, the Ninth Circuit concluded that a critical component to an effective monitoring program is collecting contemporaneous data at both the outfall and in the receiving water.³⁹

The Draft Permit requires no new monitoring. Tier 1 monitoring consists of ASBS and TMDL locations, but the Board acknowledges that “[m]onitoring in these locations *must be conducted pursuant to the applicable requirements of the ASBS Special Protections or TMDL.*”⁴⁰ Hence, Tier 1 monitoring poses no additive requirement of this permit since monitoring is already required pursuant to other mandates. Moreover, the Draft Permit includes no additive monitoring requirements for Tier 2 locations, stating “[m]onitoring under Tier 2 need not be initiated until there are less than 100 sites actively monitored under Tier 1,”⁴¹ an unpredictable eventuality that may never occur. Caltrans’s historic data already shows likely exceedances of water quality standards at most Tier 2 locations. The Draft Permit’s monitoring regime ensures that Caltrans will operate in violation of applicable water quality standards for an indefinite period, with no feedback to adjust its operations to protect water quality, and no simple and effective means for public or agency oversight or enforcement.

The Tier 2 monitoring is also illegal as proposed because it does not ensure that data collected can be used to evaluate Caltrans’s compliance with the Draft Permit. Unlike Tier 1 monitoring requirements, the Draft Permit contains no procedural or substantive guidance on how Tier 2 monitoring shall be conducted (i.e., that samples must be taken during the first seasonal rain, during a specified storm event, from outfalls of specified diameter, etc.). Absent details about the type of monitoring that must be done, and when and where it must occur, the monitoring program cannot satisfy the legal requirement that the “monitoring provisions ensur[e] that permit conditions are satisfied.”⁴²

While sampling at each of Caltrans’s outfalls may be overly burdensome, at a minimum the Draft Permit must require monitoring and sampling of representative discharges throughout the system – not just to areas where the receiving waters are particularly sensitive. Therefore, in addition to the current sites proposed in Tier 1 and 2, the Board should require Caltrans to sample a mandatory number of identified Tier 2 sites and develop a randomized system that will result in Caltrans’ sampling at least an

³⁶ *Id.*

³⁷ *Supra* note 2, at Sec. C., pp. 19-21.

³⁸ *NRDC v. County of L.A.*, 636 F.3d 1235, 1244, 1250 (9th Cir. 2011).

³⁹ *Id.* at 1250.

⁴⁰ FACT SHEET FOR NPDES PERMIT and WASTE DISCHARGE REQUIREMENTS for State of California, Department of Transportation, NPDES Permit No. CAS000003 (emphasis added) (“Caltrans Permit, Fact Sheet”).

⁴¹ *Supra* note 2, at Sec. C.1., p. 27.

⁴² *NRDC v. County of L.A.*, 636 F.3d 1235, 1244, 1250 (9th Cir. 2011).

additional 10-15 percent of its outfalls each wet season.

B. Water Quality Monitoring Must Include “First Flush” Measurements for All Sites.

The Draft Permit contains provisions requiring sampling during storm events for Tier 1 monitoring sites.⁴³ However, “first flush” measurements have been removed from the Draft Permit. In the Draft Revised Order (August 18, 2011)⁴⁴, Caltrans was required to conform to monitoring that:

Shall be sufficient to characterize seasonal trends. A minimum of three wet weather, including first flush measurements, and two dry weather samples are required at sites discharging both storm water and non-storm water. A minimum of three wet weather samples are required at sites discharging only storm water, including first flush measurements.

The first flush measurement provision should be included in the final permit to observe trends over time, especially when there are noted exceedances during first flush storm events, to inform actions needed to control pollution and potential enforcement actions. This requirement is in recognition that the highest pollution levels are usually found during first flush storm events. This requirement is also consistent with the monitoring provisions from other statewide stormwater permits.⁴⁵

V. THE BOARD MUST REVISE THE ASBS PROVISIONS TO ENSURE THE PERMIT’S CONSISTENCY WITH THE CALIFORNIA OCEAN PLAN ASBS SPECIAL PROTECTIONS

When issuing waste discharge requirements, such as the Caltrans MS4 Permit, the Board is required to “implement any relevant water quality control plans that have been adopted.”⁴⁶ The Special Protections for Areas of Special Biological Significance, Governing Point Source Discharges of Storm Water and Nonpoint source Waste Discharges, Attachment B to the California Ocean Plan (ASBS Policy) were adopted by the Board as an amendment to the California Ocean Plan. Consequently, the Draft Permit’s requirements must be consistent with the language of the ASBS Policy.⁴⁷ As outlined below, the Revised Draft Permit is inconsistent with the ASBS Policy and must be revised accordingly.

First, the Draft Permit should clearly state that the exceptions to the general prohibition on non-stormwater discharges into and from the MS4 listed in Non-Storm Water Discharge Prohibition B.2 do not apply to Caltrans’s discharges into the ASBS, and the only exceptions to the non-storm water prohibition for discharges into the ASBS are those in Non-Storm Water Discharge Prohibition B.4. Second, to ensure consistency with the ASBS Special Protections, the second paragraph in Non-Storm Water Discharge Prohibition B.4 must be removed. This paragraph currently provides an option for allowing non-stormwater discharges to a segment of the Caltrans MS4 with a direct discharge to an ASBS if the respective Regional Board finds that the discharge does not alter natural ocean water quality.⁴⁸ The

⁴³ *Supra* note 2, at Sec. E.2.c.2., pp. 26-29.

⁴⁴ California State Water Resource Control Board, NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM STATEWIDE STORM WATER PERMIT WASTE DISCHARGE REQUIREMENTS FOR STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION (Draft), 25 (August 18, 2011), *available at*: http://www.waterboards.ca.gov/water_issues/programs/stormwater/docs/caltrans/tentorder_publwkshp_merged.pdf.

⁴⁵ NPDES GENERAL PERMIT NO. CAS000001, Waste Discharge Requirements (WDRS) For Discharges Of Storm Water Associated With Industrial Activities Excluding Construction Activities, Sec. (B)(5)(a) specifies.... "Facility operators shall collect storm water samples during the first hour of discharge from (1) the first storm event of the wet season, and (2) at least one other storm event in the wet season.

⁴⁶ California Water Code § 13263.

⁴⁷ California Water Code § 13263(a).

⁴⁸ *Supra* note 2, at Sec. B., p. 20.

ASBS Special Protections, however, do not provide the Regional Boards with authority to override the limitations on non-storm water discharges. In addition, the ASBS Special Protections do not differentiate between direct and indirect discharges for purposes of the non-storm water discharge prohibition. In fact, under the ASBS Special Protections, all conditionally exempted non-storm water discharges, regardless of whether they are to or from segments with direct or indirect discharge to an ASBS, are prohibited from altering the natural water quality in an ASBS.⁴⁹

Third, Section E.c.2. of the Draft Permit (Water Quality Monitoring) must be revised because it is inconsistent with the requirements of the ASBS Special Protections. Contrary to the requirements of the ASBS Special Protections, Section E.c.2. provides that only receiving water sampling and reference sampling locations are subject to State and Regional Board approval, and inexplicably excludes outfall sampling sites from the Regional Boards' purview. We recognize that Attachment III to the Draft Permit includes a list of priority discharge outfalls that must be monitored. However, this list is not exhaustive and the State Board and Regional Boards are required to approve any additional sampling site locations and oversee Caltrans's monitoring program.⁵⁰ Furthermore, the analytical chemistry methods mandated by the ASBS Special Protections are similarly missing from the Draft Permit, and must added.⁵¹

Fourth, the Draft Permit's determination of compliance with ASBS Special Protections is also inconsistent with the language of the ASBS Special Protections and the goals of the CWA—it should be deleted. As written, the Draft Permit appears to place sole authority for determining Caltrans's compliance with the ASBS Special Protections with the Board's Executive Director or his designee.⁵² It further provides that if the Executive Director, or its designee, makes such a determination, Caltrans may stop active monitoring of the site or discharge found to be in compliance by the Executive Director.⁵³ Apart from being vague and unjustifiably broad, this provision is contrary to the ASBS Special Protections. The ASBS Special Protections contain objective requirements and deadlines that can be easily monitored to ascertain compliance, including the State Board, Regional Boards and citizen groups. The ASBS Special Protections do not provide for only one person to unilaterally conclude a discharge is in compliance. The Draft Permit cannot and should not deviate from this transparent accountability scheme set forth in the ASBS Special Protections. It also should be revised to avoid confusion regarding the broad enforcement for NPDES Permit violations envisioned by the CWA.⁵⁴

Finally, the ASBS Special Protections requires dischargers, such as Caltrans, to submit a written ASBS Compliance Plan within one year from the effective date of the Special Protections Policy.⁵⁵ Instead of adhering to this clear directive, the Draft Permit extends the deadline to September 20, 2013, for a *draft* ASBS Compliance Plan, which is not envisioned by the ASBS Special Protections, and then to September 20, 2014, for a final ASBS Compliance Plan. Thus, Caltrans is not required to have a plan to comply with the ASBS Special Protections for two years. Allowing Caltrans two years to prepare an ASBS Compliance Plan is illegal.

VI. THE BOARD MUST INCORPORATE EXISTING, APPLICABLE WASTE LOAD ALLOCATIONS

When developing water quality-based effluent limitations for NPDES permits, such as the effluent limits in the Draft Permit, the permitting authority is required to ensure that “effluent limits ...

⁴⁹ ASBS Special Protections, Sec. A.1.e., p. 2.

⁵⁰ See ASBS Special Protections (Part IV. Monitoring Requirements), p. 3.

⁵¹ See *Id.*

⁵² *Supra* note 2, at Sec. E., p. 33.

⁵³ *Id.*

⁵⁴ See 33 U.S.C. § 1365 (d).

⁵⁵ See ASBS Special Protections, p. 5.

are consistent with the assumptions and requirements of any available wasteload allocation for the discharge”⁵⁶ The Draft Permit is inconsistent with existing, applicable waste load allocations (WLAs) established by TMDLs in violation of federal regulations.

There are at least 68 TMDLs that establish WLAs applicable to Caltrans.⁵⁷ Caltrans’s deadlines for compliance with final and interim WLAs established by these TMDLs have expired.⁵⁸ Unfortunately, the Draft Permit fails to incorporate these WLAs as water quality-based effluent limitations into the Draft Permit, and defers incorporation for a later date.⁵⁹ This deferment is illegal, as it is inconsistent with the assumptions and requirements of the available WLAs.⁶⁰

For example, the Draft Permit is inconsistent with the requirements and assumptions of the WLAs established by the Los Angeles River Revised Metals TMDL because the draft permit fails to incorporate, and require Caltrans’s immediate compliance with these WLAs.⁶¹ While the Draft Permit states that “[w]here complete implementation requirements have not been specified in the TMDLs ... it is necessary that specific requirements and clear deliverables be developed...”,⁶² there is no question that (1) the Los Angeles River Revised Metals TMDL WLAs are applicable to Caltrans, (2) Caltrans must achieve immediate compliance with the WLAs, and (3) the TMDL already includes complete implementation requirements.

First, the TMDL sets forth specific wet and dry weather allocations for Caltrans’s MS4 discharges.⁶³ Second, Caltrans is required to meet these WLAs immediately, as compliance with California Toxics Rule based criteria was due more than two years ago.⁶⁴ Finally, the implementation section of the Los Angeles River Revised Metals TMDL explicitly contemplates that re-issuance of the Caltrans MS4 Permit will implement the TMDL by incorporating the WLAs as permit terms.⁶⁵ In fact, Caltrans has begun to implement the TMDL by submitting draft implementation plans to the Los Angeles County Regional Water Quality Control Board. Despite the clear assumptions and requirements of the Los Angeles River Revised Metals TMDL WLAs, the Draft Permit illegally defers incorporation of the existing WLAs as permit terms. No supporting authority is cited, and the Draft Permit provides no explanation of why such deferment is consistent with the Los Angeles River Revised Metals TMDL WLAs.

While the Draft Permit provides that “TMDL-specific permit requirements ... will be incorporated

⁵⁶ 40 C.F.R. § 122.44(d)(1)(vii)(B).

⁵⁷ See Caltrans Permit, Fact Sheet at 23-25; see also Caltrans Permit, Attach. IV.

⁵⁸ For example, the final or interim compliance deadlines for meeting WLAs applicable to Caltrans have passed for the following TMDLs: (1) Malibu Creek and Lagoon Bacteria TMDL, (2) Santa Monica Bay Beaches Dry Weather Bacteria TMDL, (3) Santa Monica Bay Beaches Wet Weather Bacteria TMDL, (4) San Gabriel River Metals TMDL, (5) Ballona Creek and Wetland Trash TMDL, (6) Calleguas Creek Nitrogen Compounds and Related Effects TMDL, and (7) Los Angeles River Trash TMDL.

⁵⁹ The draft permit defers incorporation of the WLAs established by all 68 applicable TMDLs, except the WLAs established for sediments and nutrients for Lake Tahoe. See Caltrans Permit, Fact Sheet at 26. No basis for the distinction made between the Lake Tahoe TMDLs and the remaining 66 TMDLs is provided. See also Caltrans Permit at 56.

⁶⁰ See 40 C.F.R. § 122.44(d)(1)(vii)(B).

⁶¹ See *supra* note 2, at 56; Caltrans Permit, Fact Sheet at 23-25; see also Caltrans Permit, Attach. IV.

⁶² Caltrans Permit, Fact Sheet at 26.

⁶³ See Los Angeles River Revised Metals TMDL at 7, 8, and 10.

⁶⁴ See State Water Resources Control Board Memo dated September 15, 2006 Re: CTR Compliance Schedules (“the effect of the CTR’s sunset provision was to ‘limit the longest time period for compliance to ten years after the effective date of the CTR,’ which is May 18, 2010”); see also Inland Surface Water Plan at 19.

⁶⁵ See Los Angeles River Revised Metals TMDL at 11.

into Attachment IV through a reopener”,⁶⁶ failing to comply with federal regulations when the permit is re-issued is not a legal basis for modifying the permit at a later date. NPDES permits “may only be modified ... for the reasons specified in [section] 122.62 or [section] 122.64” of the Code of Federal Regulations.⁶⁷ Reopening the Permit after it is re-issued to incorporate pre-existing WLAs with which Caltrans is currently required to comply does not fall within one of the federally articulated reasons for modifying an NPDES permit.⁶⁸

Given that there are 68 TMDLs that establish WLAs applicable to Caltrans’s MS4 discharges, to comply with the CWA the re-issued Caltrans Permit must incorporate these WLAs as permit terms. To the extent incorporation of these existing WLAs is deferred beyond the date of re-issuance of the Caltrans Permit, the permit is illegal.

VII. THE BOARD MUST REVISE THE CALTRANS PERMIT TO ADDRESS POLLUTANTS FROM AGRICULTURAL RETURN FLOWS

CCKA’s March 14, 2011 comment letter on the Draft Permit noted that federal regulations mandate that MS4 permits “shall include a requirement to effectively prohibit non-stormwater discharges into the storm sewers.”⁶⁹ We explained that agricultural runoff is non-stormwater that is a significant source of pollutants to the Caltrans MS4, and as a result the Permit must contain the requirements to ensure that agricultural runoff is effectively prohibited. In response to this comment, the Board proposes to modify the Draft Permit to read that “agricultural irrigation return flows are not a non-stormwater discharge that must be either prohibited or conditionally exempted in an MS4 permit.”⁷⁰

The Board concludes that because the CWA exempts agricultural return flows from the NPDES permit program, “it is unlikely that they were intended to be treated as ‘illicit discharges’ under the federal MS4 regulations.”⁷¹ The Board also argues that the preamble to EPA’s Phase 1 regulations refers to conditionally exempted non-stormwater discharges as “seemingly innocuous flows characteristic of human existence in urban environments”, and thus it is not possible that agricultural return flows are “irrigation flows,” which are only exempted if they are not a significant source of pollutants to the MS4.⁷² The Board further argues that unless the agricultural return flow has co-mingled with a point source discharge prior to entering the MS4, it is not an illicit discharge that must be effectively prohibited.⁷³

The Board rationale is inconsistent with federal law, which requires MS4 permits to contain provisions to effectively prohibit non-exempted non-stormwater discharges to the MS4. Our March 14, 2011 comment letter explained that irrigation flows are only exempted if they are not a significant source of pollutants to the MS4.⁷⁴ The evidence before the Board demonstrates that agricultural return flows are a significant source of pollutants to MS4s throughout the State, including Caltrans’s MS4.⁷⁵ The San Diego Regional Board acknowledges this, and specifically requires the effective prohibition of agricultural return flows in the San Diego Regionwide MS4 Permit.⁷⁶ The legal documentation supporting the San Diego Regional Board’s decision concludes that federal law requires that when

⁶⁶ *Supra* note 2, at 56.

⁶⁷ 40 C.F.R. § 124.5.

⁶⁸ *See* 40 C.F.R. §§ 122.62, 122.64.

⁶⁹ 33 U.S.C. § 1342(p)(3)(B)(ii) (emphasis added).

⁷⁰ *Supra* note 1, at 1.

⁷¹ *Supra* note 1, at 1.

⁷² *Supra* note 1, at 1.

⁷³ *Supra* note 1, at 1.

⁷⁴ March 14 Comment Letter at 4 and fn10.

⁷⁵ March 14 Comment Letter at 4-8.

⁷⁶ March 14 Comment Letter at 7.

agricultural return flows are a significant source of pollutants to the MS4, they must be effectively prohibited.⁷⁷ In sum, the law requires the Draft Permit to require Caltrans to effectively prohibit the discharge of return flows from irrigated agriculture to its MS4.

The Board's decision to not require Caltrans to effectively prohibit agricultural return flows from its MS4 results in Caltrans assuming all responsibility for the pollutants in those flows. The law is clear that once pollutants enter Caltrans's MS4, they become Caltrans's legal responsibility.⁷⁸ Therefore, the Draft Permit shifts responsibility for controlling the pollutants in agricultural runoff from the private sector - the agriculture industry - to the State of California - Caltrans. This subsidy is not only contrary to federal law—it is an irrational policy choice.

The Board's justification for exempting agricultural return flows is contrary to law and not supported by the evidence. The Board argues that agricultural return flows are exempt from regulation when discharged directly to waters of the United States; and therefore, completely immune to regulation in all circumstances.⁷⁹ To the contrary, agricultural return flows are subject to regulation through implementation of TMDLs, as well as through plans to address sources of pollution not directly regulated by the NPDES permitting program.⁸⁰ Furthermore, no matter the original source of the pollutants, when discharged from Caltrans's MS4 they are a point source discharge subject to regulation— and Caltrans is responsible for ensuring they do not violate the Permit.⁸¹

Second, the Board's practical argument that agricultural return flows passing through the MS4 are not subject to the NPDES permit program because they do not mix with illicit discharges or other water in the MS4 is not supported by evidence. The law only excludes discharges composed *entirely* of agricultural return flows from the NPDES permitting program.⁸² The Board assumes without evidentiary support that the only non-stormwater that would be in the Caltrans MS4 when agricultural return flows enter it would be conditionally-exempt non-stormwater.⁸³ In reality, water flowing in Caltrans MS4 will undoubtedly include illicit discharges. Further, there are pollutants within Caltrans MS4 that will be picked up and discharged along with any non-stormwater, including the agricultural return flows. Clearly, water discharging from Caltrans MS4 is never comprised entirely of agricultural return flows.

Further, to the extent the pollutants from agricultural return flows mix with and are subsequently discharged with storm water, Caltrans is now responsible for ensuring the discharge of these pollutants

⁷⁷ See Memorandum from Catherine George Hagan, Senior Staff Counsel, San Diego Regional Water Quality Control Board to Chair Wright and SD RWQCB Members, "*Regulatory Authority for Imposing Numeric Effluent Limits on Dry Weather, Non-Storm Water Discharges, in Municipal Storm Water Permits*," p. 4 (Nov. 5, 2009).

⁷⁸ *S. Fla. Water Mgmt. Dist. v. Miccosukee Tribe of Indians*, 541 U.S. 95, 105, 124 S. Ct. 1537, 158 L. Ed. 2d 264 (2004) ("[A] point source need not be the original source of the pollutant; it need only convey the pollutant to navigable waters"); *Natural Resources Defense Council, Inc. v. County of Los Angeles*, 673 F.3d 880, 900 (9th Cir. Cal. 2011) ("the Clean Water Act does not distinguish between those who add and those who convey what is added by others—the Act is indifferent to the originator of water pollution."); *Comm. To Save Mokelumne River v. E. Bay Mun. Util. Dist.*, 13 F.3d 305, 308 (9th Cir. 1993) (defendant responsible for pollutants it collected and conveyed to waters of the United States); *N. Plains Res. Council v. Fid. Exploration & Dev. Co.*, 325 F.3d 1155, 1158, 1162 (9th Cir. 2003); *W. Va. Highlands Conservancy, Inc. v. Huffman*, 625 F.3d 159, 167 (4th Cir. 2010)); see also 40 C.F.R. § 122.26(b)(1) (permittee is responsible for discharges "for which it is the operator").

⁷⁹ *Supra* note 1, at 1.

⁸⁰ See *Pronsolino v. Natri*, 291 F.3d 1123, 1127-1129 (9th Cir. Cal. 2002); see also 33 U.S.C. §§ 1288 and 1313(d).

⁸¹ See e.g., *Natural Resources Defense Council, Inc. v. County of Los Angeles*, 673 F.3d 880, 900 (9th Cir. Cal. 2011).

⁸² See 33 U.S.C. § 1342(l)(1); see also Response to Comments at 1 (acknowledging same).

⁸³ See *supra* note 1, at 1.

complies with the terms of the Permit.⁸⁴ Notably, Caltrans must ensure these pollutants do not cause or contribute to a violation of water quality standards. A requirement that Caltrans effectively prohibit agricultural return flows would help ensure that Caltrans can meet its obligations under the permit.

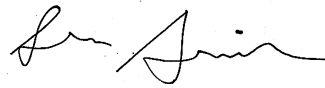
Rather than creating an impetus for Caltrans to require agricultural dischargers to take responsibility for their discharges, the Board is providing cover for agricultural dischargers to pollute the State's waters without consequence.

Caltrans is capable of reducing polluted stormwater discharges into the waters of the state, as required by law. However, findings from the EPA⁸⁵, studies commissioned by Caltrans⁸⁶, and Caltrans's own monitoring data⁸⁷ show that Caltrans continues to violate water quality standards. We urge the Board to craft a Caltrans Permit that effectively reduces polluted stormwater flows as described herein.

Sincerely,



Michael Murphy, Executive Director



Sara Aminzadeh, Policy Director

⁸⁴ Caltrans is also responsible for the pollutants that enter its MS4 with storm water runoff from agricultural fields that drain to its MS4. As a practical matter, ensuring that Caltrans effectively prohibit agricultural return flows would also assist Caltrans in addressing pollutants that enter its MS4 with agricultural storm water runoff.

⁸⁵ In the Matter of State of California, Dep't of Transportation, "Findings of Violation and Order for Compliance," Docket No. CWA-2009-2011-0001 (U.S. EPA Region 9, Oct. 26, 2010), see <http://www.epa.gov/region9/water/npdes/ms4audits.html#caleval>.

⁸⁶ California Department of Transportation. (2005). Toxicity of storm water from Caltrans facilities: John Muir Institute of the Environment–University of California, Davis.

⁸⁷ California Department of Transportation. (2003). Caltrans storm water monitoring & data management: Discharge characterization study report, CTSW-RT-03-065.51.42.

Attachment 1

Statewide Characterization Studies Data, Monitoring Years 2000/01-2002/03¹

Parameter (units in µg/L)	Max detected	Median	Mean	EPA Benchmark	CTR Freshwater	CTR Saltwater
Arsenic, dissolved	20	0.7	1		340	69
Cadium, total	30	0.44	0.73	15.9		42
Copper, dissolved	130	10.2	14.9		13	4.8
Copper, total	270	21.1	33.5	63.6		3.1
Mercury, total	160	26	36.7	2400		
Nickel, dissolved	40	3.4	4.9		470	74
Lead, dissolved	480	1.2	7.6		65	210
Zinc, dissolved	1017	40.4	68.8		120	90
Zinc, total	1680	111.2	187.1	117	120	90

Notes: “**XX**” indicates parameter exceeds EPA Benchmark or CTR water quality standards.

¹ California Department of Transportation. Storm Water Monitoring & Data Management, Discharge Characterization Study Report: CTSW-RT-03-065.51.42, p. 27.