NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
GENERAL PERMIT FACT SHEET FOR
STORM WATER DISCHARGES
ASSOCIATED WITH INDUSTRIAL ACTIVITIES
NPDES NO. CAS000001

TABLE OF CONTENTS

FIGURES

TABLES

I. BACKGROUND

A. Purpose

The purpose of this Fact Sheet is to explain the legal requirements and technical rationale that serve as the basis for the requirements of this Order 2014-0057-DWQ (General Permit), adopted by the State Water Resources Control Board (State Water Board) on April 1, 2014. This General Permit regulates operators of facilities subject to storm water permitting (Dischargers), that discharge storm water associated with industrial activity (industrial storm water discharges). This General Permit replaces Water Quality Order 97-03-DWQ**.** This Fact Sheet does not contain any independently-enforceable requirements; the General Permit contains all of the actual requirements applicable to Dischargers. In case of any conflict between the Fact Sheet and the General Permit, the terms of the General Permit govern.

B. History

The Federal Clean Water Act (CWA)[1] prohibits discharges from point sources to waters of the United States, unless the discharges are in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. (CWA § 301(a).) In 1987, the CWA was amended to establish a framework for regulating municipal storm water discharges and discharges of storm water associated with industrial activity (industrial storm water discharges) under the NPDES program. (CWA § 402(p).) In 1990, the United States Environmental Protection Agency (U.S. EPA) promulgated regulations, commonly known as Phase I, establishing application requirements for storm water permits for specified categories of industries. (40 C.F.R. § 122.26.) In 1992, U.S. EPA revised the monitoring requirements for industrial storm water discharges. (40 C.F.R. § 122.44(i)(2), (4), (5).) In 1999, U.S. EPA adopted additional storm water regulations, known as Phase II. (64 Fed. Reg. 68722.) The Phase II regulations provide for, among other things, a conditional exclusion from NPDES permitting requirements for industrial activities that have no exposure to storm water.

Industrial storm water discharges are regulated pursuant to CWA section 402(p)(3)(A). This provision requires NPDES permits for industrial storm water discharges to implement CWA section 301, which includes requirements for Dischargers to comply with technology-based effluent limitations, and any more stringent water quality-based limitations necessary to meet water quality standards. Technology-based effluent limitations applicable to industrial activities are based on best conventional pollutant control technology (BCT) for conventional pollutants, and best available technology economically achievable (BAT) for toxic and non-conventional pollutants. (CWA § 301(b)(1)(A) and (2)(A).) To ensure compliance with water quality standards, NPDES permits may also require a Discharger to implement best management practices (BMPs). 40 Code of Federal Regulations section 122.44(k)(4) requires the use of BMPs to control or abate the discharge of pollutants when numeric effluent limitations (NELs) are infeasible. The State Water Board has concluded that it is infeasible to establish NELs for storm water discharges associated with industrial activity due to insufficient information at the time of adoption of this General Permit.

[1] Federal Water Pollution Control Act of 1970 (also referred to as the Clean Water Act or CWA), 33 U.S.C. § 1201 et seq. All further statutory references herein are to the CWA unless otherwise indicated.

On April 17, 1997, the State Water Board issued NPDES General Permit for Industrial Storm Water Discharges, Excluding Construction Activities, Water Quality Order 97-03-DWQ (previous permit). This General Permit, Order 2014-0057-DWQ rescinds the previous permit and serves as the statewide general permit for industrial storm water discharges. The State Water Board concludes that significant revisions to the previous permit requirements are necessary for implementation, consistency and objective enforcement. As discussed in this Fact Sheet, this General Permit requires Dischargers to:

- Eliminate unauthorized non-storm water discharges (NSWDs);
- Develop and implement storm water pollution prevention plans (SWPPPs) that include best management practices (BMPs);
- Implement minimum BMPs, and advanced BMPs as necessary, to achieve compliance with the effluent and receiving water limitations of this General Permit;
- Conduct monitoring, including visual observations and analytical storm water monitoring for indicator parameters;
- Compare monitoring results for monitored parameters to applicable numeric action levels (NALs) derived from the U.S. EPA 2008 Multi-Sector General Permit for Storm Water Discharges Associated with Industrial Activity (2008 MSGP) and other industrial storm water discharge monitoring data collected in California;
- Perform the appropriate Exceedance Response Actions (ERAs) when there are exceedances of the NALs; and,
- Certify and submit all permit-related compliance documents via the Storm Water Multiple Application and Report Tracking System (SMARTS). Dischargers shall certify and submit these documents which include, but are not limited to, Permit Registration Documents (PRDs) including Notices of Intent (NOIs), No Exposure Certifications (NECs), and Storm Water Pollution Prevention Plans (SWPPPs), as well as Annual Reports, Notices of Termination (NOTs), Level 1 ERA Reports, and Level 2 ERA Technical Reports.

C. Blue Ribbon Panel of Experts (Panel)

In 2005 and 2006, the State Water Board convened a Blue Ribbon Panel of Experts (Panel) to address the feasibility of NELs in California's storm water permits. Specifically, the Panel was charged with answering the following questions:

> Is it technically feasible to establish numeric effluent limitations, or some other quantifiable limit, for inclusion in storm water permits?

How would such limitations or criteria be established, and what information and data would be required? [2]

The Panel was directed to answer these questions for industrial storm water discharge general permits, construction storm water discharge general permits, and area-wide municipal storm water discharge permits. The Panel was also directed to address both technology-based and water quality based limitations and criteria.

In evaluating the establishment of numeric limitations and criteria, the Panel was directed to consider all of the following:

- The ability of the State Water Board to establish appropriate objective limitations or criteria;
- How compliance is to be determined;
- The ability of Dischargers and inspectors to monitor for compliance; and
- The technical and financial ability of Dischargers to comply with the limitations or criteria.

Following an opportunity for public comment, the Panel identified several water quality concerns, public process and program effectiveness issues. A summary of the Panel's recommendations regarding industrial storm water discharges follows:[3]

- Current data are inadequate; accordingly, the State Water Board should improve monitoring requirements to collect useful data for establishing NALs and NELs.
- Required parameters for further monitoring should be consistent with the type of industrial activity (i.e., monitor for heavy metals when there is a reasonable expectation that the industrial activity will contribute to increased heavy metals concentrations in storm water).
- Insofar as possible, the use of California data (or national data applicable to California) is preferred when setting NELs and NALs.
- Industrial facilities that do not discharge to Municipal Separate Storm Sewer Systems (MS4s) should implement BMPs for their non-industrial exposure (e.g., parking lots, roof runoff) similar to BMPs implemented by commercial facilities in MS4 jurisdictions.

[2] State Water Board Storm Water Panel of Experts, The Feasibility of Numeric Effluent Limits Applicable to Discharges of Storm Water Associated with Municipal, Industrial and Construction Activities (June 19, 2006). <http://www.waterboards.ca.gov/water_issues/programs/stormwater/docs/numeric/swpanel_final_report.pdf>. [as of February 4, 2014].

[3] See footnote 2.

- In all cases, Dischargers should implement a suite of minimum BMPs, including, but not limited to, good housekeeping practices, employee training, and preventing exposure of materials to rain.

- Standard Industrial Classification (SIC) code categories are not a satisfactory way of identifying industrial activities at any given site. The State Water Board should develop an improved method of characterizing industrial activities that will improve water quality in storm water.

- Recognizing that implementing the Panel's suggested changes is a large task, the State Water Board should set priorities for implementation of the Panel's suggested approach in order to achieve the greatest reduction of pollutants statewide.

- Recognizing that an increasing number of industries have moved industrial activities indoors to prevent storm water pollution, such facilities should be granted regulatory relief from NALs and/or NELs , but should still be required to comply with any applicable MS4 permit requirements.

- Recognizing the need for improved monitoring and reduction of pollutants in industrial storm water discharges, the State Water Board should consider the total economic impact of its requirements to not economically penalize California industries when compared to industries outside of California.

With regard to the industrial activities component of its charge, the Panel limited its focus to the question of whether sampling data can be used to derive technology-based NELs. The Panel did not address other factors or approaches that may relate to the task of determining technology- and water quality-based NELs consistent with the regulations and law. Examples of these other factors are discussed in more detail in this Fact Sheet. Additionally, in its final report the Panel did not clearly differentiate between the role of numeric and non-numeric effluent limitations, nor did it consider U.S. EPA procedures used to promulgate effluent limitation guidelines (ELGs) in 40 Code of Federal Regulations, Chapter I, Subchapter N (Subchapter N).

D. Summary of Significant Changes in this General Permit

The previous permit issued by the State Water Board on April 17, 1997, had been administratively extended since 2002 until the adoption of this General Permit. Significant revisions to the previous permit were necessary to update permit requirements consistent with recent regulatory changes pertaining to industrial storm water under the CWA. This General Permit differs from the previous permit in the following areas:

1. Minimum Best Management Practices (BMPs)

   This General Permit requires Dischargers to implement a set of minimum BMPs. Implementation of the minimum BMPs, in combination with any advanced BMPs (BMPs, collectively,) necessary to reduce or prevent pollutants in industrial storm water discharges, serve as the basis for compliance with this General Permit's

technology-based effluent limitations and water quality based receiving water limitations. Although there is great variation in industrial activities and pollutant sources between industrial sectors and, in some cases between operations within the same industrial sector, the minimum BMPs specified in this General Permit represent common practices that can be implemented by most facilities.

The previous permit did not require a minimum set of BMPs but rather allowed Dischargers to consider which non-structural BMPs should be implemented and which structural BMPs should be considered for implementation when non-structural BMPs are ineffective.

This General Permit requires Dischargers to implement minimum BMPs (which are mostly non-structural BMPs), and advanced BMPs (which are mostly structural BMPs) when implementation of the minimum BMPs do not meet the requirements of the General Permit. Advanced BMPs consists of treatment control BMPs, exposure reduction BMPs, and storm water containment and discharge reduction BMPs. BMPs that exceed the performance expectation of minimum BMPs are considered advanced BMPs. Dischargers are encouraged to utilize advanced BMPs that infiltrate or reuse storm water where feasible.

The minimum and advanced BMPs required in this General Permit are consistent with U.S. EPA's 2008 Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity (2008 MSGP), guidance developed by the California Stormwater Quality Association, and recommendations by Regional Water Quality Control Board (Regional Water Board) inspectors. Dischargers are required to evaluate BMPs being implemented and determine an appropriate interval for the implementation and inspection of these BMPs.

2. Conditional Exclusion - No Exposure Certification (NEC)

   This General Permit applies U.S. EPA Phase II regulations regarding a conditional exclusion for facilities that have no exposure of industrial activities and materials to storm water. (40 C.F.R. § 122.26(g).) (The previous permit required light industries to obtain coverage only if their activities were exposed to storm water.) This General Permit implements current U.S. EPA rules allowing any type of industry to claim a conditional exclusion. The NEC requires enrollment for coverage prior to conditionally excluding a Discharger from a majority of this General Permit's requirements.

3. Electronic Reporting Requirements

   This General Permit requires Dischargers to submit and certify all reports electronically via SMARTS. The previous permit used a paper reporting process with electronic reporting as an option.

4. Training Expectations and Roles

   This General Permit requires that Dischargers arrange to have appropriately trained personnel implementing this General Permit's requirements at each facility. In

addition, if a Discharger's facility enters Level 1 status, the Level 1 ERA Report must be prepared by a Qualified Industrial Storm Water Practitioner (QISP). All Action Plans and Technical Reports required in Level 2 status must also be prepared by a QISP.

Dischargers may appoint a staff person to complete the QISP training or may contract with an outside QISP. QISP training is tailored to persons with a high degree of technical knowledge and environmental experience. Although QISPs do not need to be California licensed professional engineers, it may be necessary to involve a California licensed professional engineer to perform certain aspects of the Technical Reports.

5. Numeric Action Levels (NALs), TMDL-Numeric Action Levels (TNALs)[4] and NAL/TNAL Exceedances

   This General Permit contains two types of NAL exceedances (instantaneous maximum and annual), and one type of TNAL exceedance (instantaneous maximum). An annual NAL exceedance occurs when the average of all sampling results within a reporting year for a single parameter (except pH) exceeds the applicable annual NAL. The annual NALs are derived from, and function similarly to, the benchmark values provided in the 2008 MSGP. Instantaneous maximum NALs target hot spots or episodic discharges of pollutants. An instantaneous maximum NAL/TNAL exceedance occurs when two or more analytical results from samples taken for any parameter within a reporting year exceed the applicable instantaneous maximum NAL/TNAL value. Instantaneous maximum NALs for Total Suspended Solids (TSS) and Oil and Grease (O&G) are based on previously gathered California industrial storm water discharge monitoring data. The instantaneous maximum NAL for pH is derived from the benchmark value provided in the 2008 MSGP. The TMDL-specific TNALs are in Attachment E TMDL Table E-2 and were derived from the TMDL-specific WLA translations.

6. Exceedance Response Actions (ERA)

   This General Permit requires Dischargers to develop and implement ERAs, when an annual NAL or instantaneous maximum NAL/TNAL exceedance occurs during a reporting year. The first time an annual NAL or instantaneous maximum NAL/TNAL exceedance occurs for any one parameter, a Discharger's status is changed from Baseline to Level 1 status, and the Discharger is required to evaluate and revise, as necessary, its BMPs (with the assistance of a QISP) and submit a report prepared by a QISP. The second time an annual NAL or instantaneous maximum NAL/TNAL exceedance occurs for the same parameter in a subsequent reporting year, the Discharger's status is changed from Level 1 to Level 2 status, and Dischargers are required to submit a Level 2 ERA Action Plan and a Level 2 ERA Technical Report. Unless the demonstration is not accepted by the State Water Board or a Regional

[4] The acronym TNAL is used for TMDL-specific numeric action levels rather than the acronym NAL to differentiate TMDL-specific requirements from the generally applicable requirements set forth in Table 2 of this General Permit's Order. TNALs are applicable only to Responsible Dischargers.

Water Board, the Discharger is not required to perform additional ERA requirements for the parameter(s) involved if the Discharger demonstrates that:

a. Additional BMPs required to eliminate NAL/TNAL exceedances are not technologically available or economically practicable and achievable; or,

b. NAL/TNAL exceedances are solely caused by non-industrial pollutant sources; or,

c. NAL/TNAL exceedances are solely attributable to pollutants from natural background sources.

Information supporting the above demonstrations must be included in QISP-prepared Level 2 ERA Technical Reports.

7. CWA section 303(d) Impairment

This General Permit requires a Discharger to monitor additional parameters if the discharge(s) from its facility contributes pollutants to receiving waters that are listed as impaired for those pollutants (CWA section 303(d) listings). This General Permit lists the receiving waters that are 303(d) listed as impaired for pollutants that are likely to be associated with industrial storm water in Appendix 3. For example, if a Discharger discharges to a water body that is listed as impaired for copper, and the discharge(s) from its facility has the potential sources of copper, the Discharger must add copper to the list of parameters to monitor in its storm water discharge.

8. Design Storm Standards for Treatment Control BMPs

This General Permit includes design storm standards for Dischargers implementing treatment control BMPs. The design storm standards include both volume- and flow-based criteria. Dischargers are not required to retrofit existing treatment control BMPs unless required to meet the technology-based effluent limitations and receiving water limitations in this General Permit.

9. Qualifying Storm Event (QSE)

This General Permit defines a QSE as a precipitation event that:

a. Produces a discharge for at least one drainage area; and,

b. Is preceded by 48 hours with no discharge from any drainage area.

The definition above differs from the definition in the previous permit, resulting in an increase number of QSEs eligible for sample collection. Therefore, most Dischargers will be able to collect the required number of samples, regardless of their facility location.

10. Sampling Protocols

This General Permit requires Dischargers to collect samples during scheduled facility operating hours from each drainage location within four hours of: (1) the start of the discharge from a QSE occurring during scheduled facility operating hours, or (2) the

start of scheduled facility operating hours if the QSE occurred in the previous twelve (12) hours. The benefits of this sampling protocol: (a) allows a more reasonable amount of time to collect samples, (b) increases the likelihood for samples collected at discharge locations to be representative of the drainage area discharge characteristics, (c) increases the number of QSEs eligible for sample collection, and, (d) reduces the likelihood of Dischargers collecting samples with short-term concentration spikes.

The previous permit required that Dischargers collect grab samples during the first hour of discharge that commenced during scheduled facility operating hours. These sample collection requirements were widely considered to be too rigid and out of step with other states' sample collection requirements. Since many storm events begin in the evening or early morning hours, numerous opportunities to collect samples were lost because Dischargers could not obtain samples during the first hour of discharge. Dischargers with facilities that have multiple discharge locations had difficulties collecting samples within such a short timeframe therefore affecting data quality.

11. Sampling Frequency

This General Permit increases the sampling frequency by requiring the Discharger to collect and analyze storm water samples from each discharge location for two (2) QSEs within the first half of each reporting year (July 1 to December 31), and two (2) QSEs within the second half of each reporting year (January 1 to June 30). The increased sampling, compared to the previous permit's two samples during the wet season, is consistent with the 2008 MSGP and other states' permit requirements and will improve compliance determination with this General Permit. The State Water Board expects that the elimination of the wet season sampling requirements will increase the number of possible QSEs eligible for monitoring.

12. Compliance Groups

To allow industrial facilities to efficiently share knowledge, skills and resources towards achieving General Permit compliance, this General Permit allows the formation of Compliance Groups and Compliance Group Leaders. Dischargers participating in a Compliance Group (Compliance Group Participants) are collectively required to sample twice a year. Compliance Group Leaders are required to be approved through the State Water Board-approved training program process, inspect each facility once within each reporting year, and prepare Level 1 and Level 2 ERA reports as necessary. The Compliance Group option is described in more detail in General Permit section XIV and in this Fact Sheet in the Section titled "Compliance Groups."

13. Discharges to Ocean Waters

This General Permit requires Dischargers with ocean-discharging outfalls subject to model monitoring provisions of the California Ocean Plan to develop and implement a monitoring plan in compliance with those provisions and any additional monitoring requirements established pursuant to Water Code section 13383. Dischargers who have not developed and implemented a monitoring program in compliance with the California Ocean Plan model monitoring provisions by July 1, 2015 or seven (7) days prior to commencing operations, whichever is later, are ineligible to obtain coverage under this General Permit.

14. Amendment to Incorporate TMDL-related Requirements, Update Analytical Testing Requirements, and Provide Compliance Options

Through Order 2018-XXXX-DWQ, the State Water Board amended this General Permit. The amendment includes: (1) The addition of TMDL-related permit requirements (Attachment E), (2) incorporation of new U.S. EPA sufficiently sensitive methods (SSM) analytical testing requirements, and (3) addition of two compliance options available to Dischargers statewide (see Attachment I).

II. TECHNICAL RATIONALE FOR REQUIREMENTS IN THIS GENERAL PERMIT

A. Receiving General Permit Coverage

1. This General Permit provides regulatory coverage for new and existing industrial storm water discharges and authorized NSWDs from:

   a. Facilities required by federal regulations to obtain an NPDES permit;

   b. Facilities designated by the Regional Water Boards to obtain an NPDES permit; and,

   c. Facilities directed by the Regional Water Boards to obtain coverage specifically under this General Permit. The Regional Water Board typically directs a Discharger to change General Permit coverage under two circumstances:

      (1) switch from an individual NPDES permit to this General Permit, or

      (2) switch from the NPDES General Permit for Storm Water Discharges Associated with Construction And Land Disturbance Activities, (Order 2009-0009-DWQ, NPDES No CAS000002 (to this General Permit for long-term construction related activities that are similar to industrial activities (e.g. concrete batch plants).

40 Code of Federal Regulations section 122.26(b)(14) defines "storm water discharge associated with industrial activity" and describes the types of facilities subject to permitting (primarily by Standard Industrial Classification (SIC) code). This General Permit provides regulatory coverage for all facilities with industrial activities described in Attachment A where the covered industrial activity is the Discharger's primary industrial activity. In some instances, a Discharger may have more than one primary industrial activity occurring at a facility.

The 1987 SIC manual uses the term "establishment" to determine the primary economic activity of a facility. The manual instructs that where distinct and separate economic activities are performed at a single location,

each activity should be treated as a separate establishment (and, therefore, separate primary activity). For example, the United States Navy (primary SIC code 9711) may conduct industrial activities subject to permitting under this General Permit, such as landfill operations (SIC code 4953), ship and boat building and repair (SIC code 3731, and flying field operations (SIC code 4581).

The SIC manual also discusses “auxiliary” functions of establishments. Auxiliary functions provide management or support services to the establishment. Examples of auxiliary functions are warehouses and storage facilities for the establishment’s own materials, maintenance and repair shops of the establishment’s own machinery, automotive repair shops or storage garages of the establishment’s own vehicles, administrative offices, research, development, field engineering support, and testing conducted for the establishment. When auxiliary functions are performed at physically separate facilities from the establishment they serve, they generally are not subject to General Permit coverage. If auxiliary functions are performed at the same physical location as the establishment, then they are subject to General Permit coverage if they are associated with industrial activities.

This clarification does not change the scope of which facilities are subject to permitting relative to the 1997 IGP. The 1997 IGP Fact Sheet had used the term “auxiliary” to describe a facility’s separate primary activities, which has caused confusion.

In 1997, the North American Industrial Classification System (NAICS) was published, replacing the SIC code system. The U.S. EPA has indicated that it intends to incorporate the NAICS codes into the federal storm water regulations but has not done so yet. The State Water Board recognizes that many Dischargers in newer industries were not included in the 1987 SIC code manual and may have difficulty determining their SIC code information. To address this transition, SMARTS has been modified to accept both SIC codes and NAICS codes, and NAICS codes are automatically translated into SIC codes. There may be instances of conflict between SIC and NAICS codes. The use of NAICS codes shall not expand or reduce the types of industries subject to this General Permit as compared to the SIC codes listed in the General Permit. State Water Board staff will work closely with the applicant to resolve these conflicts in SMARTS as they are identified. Dischargers should be aware that the use of an NAICS code which results in failure to submit any of the required PRDs under this General Permit remains a violation of the terms of this General Permit.

The facilities included in category one of Attachment A (facilities subject to Subchapter N) are subject to storm water ELGs that are incorporated into the requirements of this General Permit. Dischargers whose facilities are included in this category must examine the appropriate federal ELGs to determine the applicability of those guidelines. This General Permit contains additional requirements (Section XI.D) that apply only to facilities with storm water ELGs.

2. Types of Discharges Not Covered by this General Permit

   a. Discharges from construction and land disturbance activities that are subject to the General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit).

   b. Discharges covered by an individual or general storm water NPDES permit. Some industrial storm water discharges may be regulated by other individual or general NPDES permits issued by the State Water Board or the Regional Water Boards (Water Boards, collectively,). This General Permit shall not regulate these discharges. When the individual or general NPDES permits for such discharges expire, the Water Boards may authorize coverage under this General Permit or another general NPDES permit, or may issue a new individual NPDES permit consistent with the federal and state storm water regulations. Interested parties may request that the State Water Board or appropriate Regional Water Board issue individual or general NPDES permits for specific discharges that, in their view are not properly regulated through this General Permit. General permits may be issued for a particular industrial group or watershed area which would supersede this General Permit. To date, two Regional Water Board have issued such permits:

      i. The Lahontan Regional Water Board has adopted an NPDES permit and general Waste Discharge Requirements to regulate discharges from marinas and maintenance dredging (Regional Water Board Order R6T-2005-0015 - NPDES Permit No. CAG616003) in the Lake Tahoe Hydrologic Unit.

      ii. The Santa Ana Regional Water Board adopted the Sector Specific General Permit for Stormwater Runoff Associated with Industrial Activities from Scrap Metal Recycling Facilities within the Santa Ana Region, Order R8-2012-0012, NPDES Permit No. CAG 618001 (Scrap Metal Recycling Permit). The Scrap Metal Recycling Permit is applicable to facilities within the Santa Ana Region that are listed under Standard Industrial Classification (SIC) Code 5093 and engaged in the following types of activities: (1) automotive wrecking for scrap-wholesale (this category does not include facilities engaged in automobile dismantling for the primary purpose of selling second hard parts); (2) iron and steel scrap - wholesale; (3) junk and scrap metal - wholesale; (4) metal waste and scrap - wholesale; and (5) non-ferrous metals scrap - wholesale. Other types of facilities listed under SIC Code 5093 and engaged in waste recycling are not required to get coverage under the Scrap Metal Recycling Permit. A list of covered facilities as of February 8, 2011 was included in Attachment A of the Scrap Metal Recycling Permit.

   c. Discharges that the Regional Water Boards determine to be ineligible for coverage under this General Permit. In such cases, a Regional Water Board will require the discharges be covered by another individual or general NPDES permit. The applicability of this General Permit to such discharges is terminated when the discharge is subject to another individual or general NPDES permit.

   d. Discharges that do not enter waters of the United States. These include:

      i. Discharges to municipal separate sanitary sewer systems;

ii. Discharges to evaporation ponds, discharges to percolation ponds, and/or any other methods used to retain and prevent industrial storm water discharges from entering waters of the United States;

iii. Discharges to combined sewer systems. In California, the only major combined sewer systems are located in San Francisco and downtown Sacramento. Dischargers who believe they discharge into a combined sewer system should contact the local Regional Water Board to verify discharge location; and,

iv. Dischargers Claiming the "No Discharge" Option in the Notice of Non-Applicability (NONA) (Fact Sheet Section II.S).

e. Discharges from mining operations or oil and gas facilities composed entirely of flows that are from conveyances or systems of conveyances used for collecting and conveying precipitation runoff and do not come into contact with any overburden, raw materials, intermediate products, finished products, by-products, or waste products located at the facility. (33 U.S.C. § 1342(l)(2).)

f. Discharges from facilities on Tribal Lands regulated by U.S. EPA.

3. Obtaining General Permit Coverage (Section II of this General Permit)

The State Water Board has developed the SMARTS online database system to handle registration and reporting under this General Permit. More information regarding SMARTS and access to the database is available online at https://smarts.waterboards.ca.gov. The State Water Board has determined that all documents related to general storm water enrollment and compliance must be certified and submitted via SMARTS by Dischargers.

This General Permit requires all Dischargers to electronically certify and submit PRDs via SMARTS to obtain: (1) regulatory coverage, or (2) to certify that there are no industrial activities exposed to storm water at the facility and obtain regulatory coverage under the NEC provision of this General Permit. Facilities that were eligible to self-certify no exposure under the previous permit (see category 10 in Attachment 1 of the previous permit) are required to certify and submit via SMARTS PRDs for NOI coverage under this General Permit by or on August 14, 2015 or for NEC coverage by or on October 1, 2015. The Water Board is estimating that 10,000 – 30,000 Dischargers may be registering for NOI or NEC coverage under this General Permit. Separate registration deadlines, one for NOI coverage and one for NEC coverage, provides Dischargers better assistance from Storm Water Helpdesk and staff.

Dischargers shall electronically certify and submit the PRDs via SMARTS for each individual facility. This requirement is intended to establish a clear accounting of the name, address, and contact information for each Discharger, as well as a description of each Discharger's facility.

The Water Boards recognize that certain information pertaining to an industrial facility may be confidential. Many Stakeholders were asking for clarification on the process the Water Boards would use to manage confidential information or the process

Dischargers could use to redact such information. Dischargers may redact trade secrets information from required submittals (Section II.B.3.d). Dischargers are required to include a general description of the redacted information and the basis for the redaction. Dischargers are still required to submit complete and un-redacted versions of the information to the Water Boards within 30 days, however these versions should be clearly labeled "CONFIDENTIAL" so that the confidentiality of these documents is clear to Regional Water Board staff, even when there is a change in staff. This General Permit requires that all information provided to the Water Boards by the Discharger comply with the Homeland Security Act and other federal law that addresses security in the United States.

All Existing Dischargers who previously obtained regulatory coverage under Order 97-03-DWQ shall comply with the provisions in this General Permit by July 1, 2015. All Existing Dischargers who previously obtained regulatory coverage under Order 97-03-DWQ are required to certify and submit PRDs via SMARTS for NOI coverage on or before* August 14, 2015 or for NEC coverage on or before* October 1, 2015. All Dischargers who did not previously obtain regulatory coverage under Order 97-03-DWQ who certify and submit PRDs via SMARTS for NOI coverage on or after July 1, 2015 shall immediately comply with the provisions in this General Permit.

* [Note: The version of the Fact Sheet as adopted by the Board incorrectly said "after" rather than "before." The Fact Sheet has been corrected to accurately reflect the Permit terms.]

4. General Permit Coverage for Landfills

This General Permit covers storm water discharges from landfills, land application sites, and open dumps that receive or have received industrial waste from any facility covered by this General Permit. Industrial storm water discharges from these facilities must be covered by this General Permit unless (1) they are already covered by another NPDES permit, or (2) the Regional Water Board has determined that an NPDES permit is not required because the site has been stabilized or required closure activities have been completed.

In most cases, it is appropriate for new landfill construction or final closure to be covered by the Construction General Permit, rather than this General Permit. Questions have arisen as to what constitutes new landfill construction at an existing landfill versus the normal planned expansion of a landfill. Similarly, questions have arisen about the type of closure activities that may be subject to the Construction General Permit versus the normal closure of "cells" that occurs during continued landfill operations and are not subject to the Construction General Permit. Other questions such as whether temporary or permanent newly graded/paved roads disturbing greater than one acre at a landfill are subject to the Construction General Permit. Landfill Dischargers have asked for clarity regarding these questions. The previous permit required Dischargers to contact the Regional Water Boards to determine permit appropriateness. Site specific circumstances continue to require Dischargers to contact Regional Water Boards for final determinations.

Based upon the State Water Board's storm water program history, there are only a handful of instances where an operating landfill has been simultaneously subject to both the construction and industrial permitting requirements. Typically a landfill is

subject to the construction permitting requirements during the time the landfill is initially constructed and prior to operation. A landfill is subject to the industrial permitting requirements during landfill operations, and subject to the construction permitting requirements during final landfill closure activities.

Once a landfill begins operations, continued expansion or closure of incremental landfill cells is authorized under the industrial permitting requirements since these are normal aspects of landfill operations. These expansion/closure activities occur within a limited timeframe (often taking less than 90 days from beginning to end) and are not separately subject to additional local approval (e.g., a new building permit). Any construction or demolition of temporary non-impervious roads directly related to landfill operations are subject to the industrial permitting requirements.

Construction or closure of a separate section of the landfill that is either subject to additional permitting by the local authorities and/or lasts more than 90 days requires coverage under the Construction General Permit. Construction of permanent facility structures such as buildings and impervious parking lots or roads that disturb greater than one acre are also subject to the Construction General Permit. (Permanent facility structures are defined as any structural improvements designed to remain until the landfill is closed.)

Site specific circumstances such as proximity to nearby waterways, extent of activities, pollutants of concern, and other considerations can impact any decision as to whether a particular activity is to be regulated under this General Permit or the Construction General Permit. Regional Water Boards will continue to exercise their discretion as necessary to protect the beneficial uses of the receiving water(s).

5. General Permit Coverage for Small Municipal Separate Storm Sewer Systems (MS4s)

   Section 1068 of the Intermodal Surface Transportation Efficiency Act of 1991 exempted municipal agencies serving populations of less than 100,000 from Phase I permit requirements other than sanitary landfills, power plants, and airports facilities. U.S. EPA's Phase II regulations eliminated the above exemption as of March 10, 2003. All facilities in Attachment A of this General Permit that are operated by a small municipal agency are subject to NPDES storm water permitting requirements and this General Permit.

6. Changes to General Permit Coverage

   Dischargers who no longer operate a facility required to be covered under this General Permit (either NOI or NEC coverage) are required to electronically certify and submit via SMARTS a Notice of Termination (NOT). An NOT is required when there is a change in ownership of the industrial activities subject to permitting or when industrial activities subject to permitting are permanently discontinued by the Discharger at the site. When terminating NOI coverage, Dischargers may only submit an NOT once all exposure of industrial materials and equipment have been eliminated. Dischargers may not submit NOTs for temporary or seasonal facility closures. The General Permit requires Dischargers to implement appropriate BMPs

to reduce or prevent pollutants in storm water discharges during the temporary facility closure.

This General Permit allows Dischargers to change General Permit coverage, as appropriate, from NOI coverage to NEC coverage or from NEC coverage to NOI coverage.

B. Discharge Prohibitions

This General Permit covers industrial storm water discharges and authorized NSWDs from industrial facilities and prohibits any discharge of materials other than storm water and authorized NSWDs (Section III and Section IV of this General Permit). It is a violation of this General Permit to discharge hazardous substances in storm water in excess of the reportable quantities established in 40 Code of Federal Regulations sections 117.3 and 302.4.

The State Water Board is authorized, under Water Code section 13377, to issue NPDES permits which apply and ensure compliance with all applicable provisions of the CWA, and any more stringent limitations necessary to implement water quality control plans, protect beneficial uses, and prevent nuisance.

C. Non-Storm Water Discharges (NSWDs)

Unauthorized NSWDs can be generated from various pollutant sources. Depending upon their quantity and location where generated, unauthorized NSWDs can discharge to the storm drain system during dry weather as well as during a storm event (~~comingled~~commingled with storm water discharge). These NSWDs can consist of, but are not limited to; (1) waters generated by the rinsing or washing of vehicles, equipment, buildings, or pavement, or (2) fluid, particulate or solid materials that have spilled, leaked, or been disposed of improperly.

Some NSWDs are not directly related to industrial activities and normally discharge minimal pollutants when properly managed. Section IV of this General Permit provides a limited list of NSWDs that are authorized if Dischargers implement BMPs to prevent contact with industrial materials prior to discharge. The list in Section IV is similar to the list provided in the 2008 MSGP but does not include pavement and external building surfaces washing without detergents. These two items are not included because the Discharger is responsible to reduce or prevent pollutants in storm water discharges from paved areas and buildings associated with industrial activities. Since industrial materials and non-industrial material likely co-exist, the washing of paved areas and external building surfaces may result in discharges of pollutants associated with industrial activities. In addition, washing activities generally occur during dry-weather periods when receiving water flows are lower than wet-weather periods. Wash waters are likely to discharge in higher concentrations than would occur if these pollutants were naturally discharged during a storm event. The discharge of high concentration wash water during a time of dry-weather flows is inconsistent with the goal of protecting receiving waters. These discharges are, therefore, considered unauthorized NSWDs. Similar to the 2008 MSGP, firefighting related discharges are not subject to this General Permit.

A major required element of the SWPPP is the identification and measures for elimination of unauthorized NSWDs. Unauthorized NSWDs can contribute a significant pollutant load to receiving waters. Measures to control spills, leakage, and dumping can often be addressed through BMPs. This General Permit's BMP requirements for NSWDs remain essentially unchanged from the previous permit other than the increased frequency of required visual observations from quarterly to monthly. See Section XI.A.1 of this General Permit.

D. Effluent Limitations

1. Technology-Based and Water Quality-Based Effluent Limitations

   CWA Section 301(b)(1)(C) requires that discharges from existing facilities must, at a minimum, comply with technology-based effluent limitations based on the technological capability of Dischargers to control pollutants in their discharges. Discharges must also comply with any more stringent water quality-based limitations necessary to meet water quality standards in accordance with CWA Section 301(b)(1)(C). Water quality-based limitations are discussed in Section E of this Fact Sheet titled "Receiving Water Limitations." Both technology-based effluent limitations and water quality-based limitations are implemented through NPDES permits. (CWA sections 301(a) and (b).)

2. Types of Technology-Based Effluent Limitations

   All NPDES permits are required to contain technology-based effluent limitations (TBELs). (40 C.F.R. §§122.44(a)(1) and 125.3.) TBELs may consist of effluent limitations guidelines (ELGs) established by U.S. EPA through regulation, or may be developed using best professional judgment on a case-by-case basis.
   The CWA sets forth standards for TBELs based on the type of pollutant or the type of facility/source involved. The CWA establishes two levels of pollution control for existing sources. For the first level, existing sources that discharge pollutants directly to receiving waters were initially subject to effluent limitations based on the "best practicable control technology currently available" (BPT). (33 U.S.C. § 1314(b)(1)(B).) BPT applies to all pollutants. For the second level, existing sources that discharge conventional pollutants are subject to effluent limitations based on the "best conventional pollutant control technology" (BCT). (33 U.S.C. §1314(b)(4)(A); see also 40 C.F.R. §401.16 (list of conventional pollutants).) Also for the second level, other existing sources that discharge toxic pollutants or "nonconventional" pollutants ("nonconventional" pollutants are pollutants that are neither "toxic" nor "conventional") are subject to effluent limitations based on "best available technology economically achievable" (BAT). (33 U.S.C. §1311(b)(2)(A); see also 40 C.F.R. §401.15 (list of toxic pollutants).) The factors to be considered in establishing the levels of these control technologies are specified in section 304(b) of the CWA and in U.S. EPA's regulations at 40 C.F.R. §125.3.

   When establishing ELGs for an industrial category, U.S. EPA evaluates a wide variety of technical factors to determine BPT, BCT, and BAT. U.S. EPA considers the specific factors of an industry such as pollutant sources, industrial processes, and the size and scale of operations. U.S. EPA evaluates the specific treatment,

structural, and operational source control BMPs available to reduce or prevent pollutants in the discharges. The costs of implementing BMPs to address these factors are weighed against their effectiveness and ability to protect water quality. Factors such as industry economic viability, economies of scale, and retrofit costs are also considered.

To date, U.S. EPA has: (1) not promulgated storm water ELGs for most industrial categories, (2) not established NELs within all ELGs that have been promulgated, and (3) exempted certain types of facilities within an industrial category from complying with established ELGs. The feedlot category (40 Code of Federal Regulations part 412) provides an example of several of these points. In that instance, U.S. EPA did not establish numeric effluent limitations but instead: (1) established a narrative effluent limitation requiring retention of all feedlot-related runoff from a 25-year, 24-hour storm, and (2) limited application of the ELG to feedlots with a minimum number of animals. U.S. EPA also recently promulgated ELGs for the "Construction and Development (C&D)" industry, which included, among many other limitations, conditional numeric effluent limitations. Though the NELs in these ELGs were later stayed by U.S. EPA, the ELGs exempted construction sites of less than 30 acres from complying with the established numeric effluent limitations.

40 Code of Federal Regulations, Chapter I, Subchapter N ("Subchapter N"), includes over 40 separate industrial categories where the U.S. EPA has established ELGs for new and existing industrial wastewater discharges to surface waters, discharges to publicly owned treatment works (pre-treatment standards), and storm water discharges to surface waters. Generally, U.S. EPA has focused its efforts on the development of ELGs for larger industries and those industries with the greatest potential to pollute. In total, the 40 categories for which ELGs have been established (not including construction) represent less than 10 percent of the types of facilities subject to this General Permit. Additionally, most ELGs focus on industrial process wastewater discharges and pre-treatment standards, and only 11 of the 40 categories establish numeric or narrative ELGs for industrial storm water discharges. Those that do include ELGs for industrial storm water discharges generally address storm water discharges that are generated from direct contact with primary pollutant sources at the subject facilities, and not the totality of the industrial storm water discharge from the facility, as the term "storm water discharge associated with industrial activity" for this General Order is defined in the CWA. (40 C.F.R. § 122.26(b)(14).) Where U.S. EPA has not issued effluent limitation guidelines for an industry, the State Water Board is required to establish effluent limitations for NPDES permits on a case-by-case basis based on best professional judgment (BPJ). (33 U.S.C. § 1342(a)(1); 40 C.F.R. § 125.3(c)(2).) In this General Permit, most of the TBELs are based on BPJ decision-making because no ELG applies.

The TBELs in this General Permit represent the BPT (for conventional, toxic, and non-conventional pollutants), BCT (for conventional pollutants), and BAT (for toxic pollutants and non-conventional pollutants) levels of control for the applicable pollutants. If U.S. EPA has not promulgated ELGs for an industry, or if a Discharger is discharging a pollutant not covered by the otherwise applicable ELG, the State Water Board is required to establish effluent limitations in NPDES permit limitations

based on best professional judgment. (33 U.S.C. § 1342(a)(1); 40 C.F.R. 125.3(c).) This General Permit includes TBELS established on best professional judgment and limitations based on storm water-specific ELGs listed in Attachment F of this General Permit, where applicable.

3. Authority to Include Non-Numeric Technology-Based Limits in NPDES Permits

   TBELs in this General Permit are based on best professional judgment and are non-numeric ("narrative") technology-based effluent limitations expressed as requirements for implementation of effective BMPs. Federal regulations provide that permits must include BMPs to control or abate the discharge of pollutants when where "[n]umeric effluent limitations are infeasible." 40 C.F.R. 122.44(k)(3).

   Since 1977, courts have recognized that there are circumstances when numeric effluent limitations are infeasible and have held that EPA may issue permits with conditions (e.g., BMPs) designed to reduce the level of effluent discharges to acceptable levels. Natural Res. Def. Council, Inc. v. Costle, 568 F.2d 1369 (D.C.Cir.1977).

   U.S. EPA has also interpreted the CWA to allow BMPs to take the place of numeric effluent limitations under certain circumstances. 40 C.F.R. §122.44(k), titled "Establishing limitations, standards, and other permit conditions (applicable to State NPDES programs ...)," provides that permits may include BMPs to control or abate the discharge of pollutants when: (1) "[a]uthorized under section 402(p) of the CWA for the control of stormwater discharges"; or (2) "[n]umeric effluent limitations are infeasible." 40 C.F.R. § 122.44(k).

   In 2006, The U.S. Court of Appeals for the Sixth Circuit held that the CWA does not require U.S. EPA to set numeric limits where such limits are infeasible. (Citizens Coal Council v. United States Environmental Protection Agency, 447 F.3d 879, 895-96 (6th Cir. 2006)). The Citizens Coal court cited to the statement in Waterkeeper Alliance, Inc. v. EPA, 399 F.3d 486, 502 (2d Cir. 2005) that "site-specific BMPs are effluent limitations under the CWA" in concluding that "the EPA's inclusion of numeric and non-numeric limitations in the guideline for the coal remining subcategory was a reasonable exercise of its authority under the CWA." (447 F.3d at 896.) Additionally, the Citizen's Coal court cited to Natural Res. Def. Council, Inc. v. EPA, 673 F.2d 400, 403 (D.C.Cir.1982) noting that "section 502(11) [of the CWA] defines 'effluent limitation' as 'any restriction' on the amounts of pollutants discharged, not just a numerical restriction." NPDES permit writers have substantial discretion to impose non-quantitative permit requirements pursuant to section 402(a)(1)), especially when the use of numeric limits is infeasible. (NRDC v. EPA, 822 F.2d 104, 122-24 (D.C. Cir. 1987); 40 C.F.R. 122.44(k)(3).)

4. Decision to Include Non-Numeric Technology-Based Effluent Limits in This General Permit

   It is infeasible for the State Water Board to develop numeric effluent limitations using the best professional judgment approach due to lack of sufficient information. Previous versions of this General Permit required Dischargers to sample their

industrial storm water discharges and report the results to the Regional Water Boards. Dischargers were not required to submit this data online into a statewide database; as a result, much of this data is not available for analysis. Moreover, much of the data that are available for analysis are not of sufficient quality to make conclusions or perform basic statistical tests.

The Blue Ribbon Panel of Experts, State Water Board staff, and many stakeholders evaluated the available storm water data set and concluded that the information provides limited value due to the limited pool of industrial facilities submitting data, poor overall data quality, and extreme variance within the dataset, as described below.

The poor quality of the existing data set is attributable a number of factors. For example, the previous permits have required Dischargers to sample during the first hour of discharge from two storm events a year. This sampling schedule was designed to catch what was considered to represent the higher end of storm water discharge concentrations for most parameters. The results from this type of sampling were thought to be an indicator of whether or not additional BMPs would be necessary. The sampling schedule was not designed, however, to estimate pollutant discharge loading, or to characterize the impact of the discharge on the receiving water. Doing so would normally require the use of more advanced sampling protocols such as flow meters, continuous automatic sampling devices, certified/trained sampling personnel, and other facility-specific considerations.

Furthermore, there is currently no data which details the relationship between the BMPs implemented at each facility and the facility's sampling results. The SWPPPs required by the previous permits were not submitted to the Water Boards, but were kept onsite by Dischargers. Due to the limited availability of quality sampling data and "level of effort" information contained in SWPPPs, the State Water Board is unable to exercise best professional judgment to make the connection between effluent quality (sampling results) and the level of effort, costs, and performance of the various technologies that is needed in order to express the TBELs in this General Permit numerically, as NELs.

Some stakeholders have suggested that separating the data sets by industry type would lead to more reliable data with which to develop NELs. Advocates of this approach suggest that the variability of the data may be caused in part by the mixing of data from different industrial categories. The State Water Board believes that the variation is primarily due to storm intensity, duration, time of year, soil saturation or some other factors. It is necessary to collect information related to those factors and BMPs implemented in order to evaluate the variability attributable to those factors. There is currently too large of an information gap to begin the process of developing NELs for all industrial sectors not currently subject to ELGs.

The State Water Board has proposed NELs in past drafts of this General Permit. In comments, many stakeholders have highlighted the difficulty of developing statewide NELs that are applicable to all industry sectors, or even NELs that cover any specific industry sectors. For example, stakeholders have commented that:

a. Background/ambient conditions in some hydrogeologic zones may contribute pollutant loadings that would significantly contribute to, if not exceed, the NEL values;

b. Some advanced treatment technologies have flow/volume limitations as well as economy of scale issues for smaller facilities;

c. Treatment technologies that require that sheet flows be captured and conveyed via discrete channels or basins may not only result in significant retrofit costs, but may conflict with local ordinances that prohibit such practices, as they can cause damage or erosion to down gradient property owners, or cause other environmental problems;

d. There is insufficient regulatory guidance and procedures to allow permit writers to properly specify monitoring frequency and sampling protocols (e.g., instantaneous maximum, 1-day average, 3-day average, etc.), and for Dischargers to obtain representative samples to compare to NELs for the purpose of strict compliance; and,

e. NELs must be developed with consideration of what is economically achievable for each industrial sector. These stakeholders point out that the U.S. EPA goes to great lengths evaluating the various BMP technologies available for a particular pollutant, the costs and efficiency of each BMP, and the applicability of the BMPs to the industry as a whole or to a limited number of industrial sites based upon the size of the facility, the quantity of material, and other considerations.

The State Water Board does not have the information (including monitoring data, industry specific information, BMP performance analyses, water quality information, monitoring guidelines, and information on costs and overall effectiveness of control technologies) necessary to promulgate NELs at the time of adoption of this General Permit. Therefore, it is infeasible to include NELs in this statewide General Permit.

Many of the new requirements in this General Permit have been designed to address the shortcomings of previous permits and the existing storm water data set. Under this General Permit, sampling results must be certified and submitted into SMARTS by Dischargers, along with SWPPPs which outline the technologies and BMPs used to control pollutants at each facility. The ERA process will also collect information on costs and the engineering aspects of the various control technologies employed by each facility. Previous permit versions did not have a mechanism for receiving this site specific information electronically, and only a small percentage of Dischargers submitted their Annual Reports via SMARTS. This General Permit will make this information more accessible, allowing the Water Boards to evaluate the relationship between BMPs and the ability of facilities to meet the NALs set forth in this General Permit. Finally, the new Qualified Industrial Storm Water Practitioner (QISP) training requirements of this General Permit have been designed in part to improve the quality of the data submitted.

5. Narrative Technology-Based Effluent Limitations (TBELs) and Best Management Practices (BMPs)

The primary TBEL in this General Permit requires Dischargers to "implement BMPs that comply with the BAT/BCT requirements of this General Permit to reduce or prevent discharges of pollutants in their storm water discharge in a manner that reflects best industry practice considering technological availability and economic practicability and achievability." (Section V.A of this General Permit). This TBEL is a restatement of the BAT/BCT standard, as articulated by U.S. EPA in the 2008 MSGP and accompanying Fact Sheet. In order to comply with this TBEL, Dischargers must implement BMPs that meet or exceed the BAT/BCT technology-based standard. The requirement to "reduce or prevent" is equivalent to the requirement in the federal regulations that BMPs be used in lieu of NELs to "control or abate" the discharge of pollutants. (40 C.F.R. § 122.44(k).)

BMPs are defined as the "scheduling of activities, prohibitions of practices, maintenance procedures, and other management practices to reduce or prevent the discharge of pollutants… includ[ing] treatment requirements, operating procedures, and practices to control site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage." (40 C.F.R. § 122.2.)

This General Permit (Sections X.H.1 and X.H.2) requires all Dischargers to implement minimum BMPs, as well as any advanced BMPs that are necessary to adequately reduce or prevent pollutants in discharges consistent with the TBELs. The minimum BMPs specified in this General Permit represent common practices that can be implemented by most facilities. This General Permit generally does not mandate the specific mode of design, installation or implementation for the minimum BMPs at a Discharger's facility. It is up to the Discharger, in the first instance, to determine what must be done to meet the applicable effluent limits. For example, Section X.H.1.a.vi of this General Permit requires Dischargers to contain all stored non-solid industrial materials that can be transported or dispersed via wind or contact with storm water. How this is achieved will vary by facility: for some facilities, all activities may be moved indoors, while for others this will not be feasible. However, even for the latter, many activities may be moved indoors, others may be contained using tarps or a containment system, while still other activities may be limited to times when exposure to precipitation is not likely. Each of these control measures is acceptable and appropriate depending upon the facility-specific circumstances.

BMPs can be actions (including processes, procedures, schedules of activities, prohibitions on practices and other management practices), or structural or installed devices to reduce or prevent water pollution. (40 C.F.R. § 122.2.) They can be just about anything that is effective at preventing pollutants from entering the environment, and for meeting applicable limits of this General Permit. In this General Permit, Dischargers are required to select, design, install, and implement facility-specific control measures to meet these limits. Many industrial facilities already have such control measures in place for product loss prevention, accident and fire prevention, worker health and safety or to comply with other environmental regulations. Dischargers must tailor the BMPs detailed in this General Permit to their facilities, as well as improve upon them as necessary to meet permit limits. The examples detailed in this Fact Sheet emphasize prevention over treatment. However, sometimes more traditional end-of-pipe treatment may be necessary, particularly

where a facility might otherwise cause or contribute to an exceedance of water quality standards.

This General Permit requires Dischargers to implement BMPs "to the extent feasible." Consistent with the control level requirements of the CWA, for the purposes of this General Permit, the requirement to implement BMPs "to the extent feasible" means to reduce and/or prevent discharges of pollutants using BMPs that represent BAT and BPT in light of best industry practice. [45] In other words, Dischargers are required to select, design, install and implement BMPs that reduce or prevent discharges of pollutants in their storm water discharge in a manner that reflects best industry practice considering their technological availability and economic practicability and achievability.

To determine technological availability and economic practicability and achievability, Dischargers need to consider what control measures are considered "best" for their industry, and then select and design control measures for their site that are viable in terms of cost and technology. The State Water Board believes that for many facilities minimization of pollutants in storm water discharges can be achieved without using highly engineered, complex treatment systems. The BMPs included in this General Permit emphasize effective "low-tech" controls, such as regular cleaning of outdoor areas where industrial activities may take place, proper maintenance of equipment, diversion of storm water around areas where pollutants may be picked up, and effective advanced planning and training (e.g., for spill prevention and response).

E. Receiving Water Limitations and Water Quality Standards

1. Pursuant to CWA section 301(b)(1)(C) and Water Code section 13377, this General Permit requires compliance with receiving water limitations based on water quality standards. The primary receiving water limitation requires that industrial storm water discharges not cause or contribute to an exceedance of applicable water quality standards. Implementation of the BMPs as required by the technology-based effluent limitation in Section V of this General Permit will typically result in compliance with the receiving water limitations. The discussion of BMPs in this General Permit generally focuses on requiring implementation of BMPs to the extent necessary to achieve compliance with the technology-based effluent limitations, because the technology-based limitations apply similarly to all facilities. In addition, however, this General Permit also makes it clear that, if any individual facility's storm water discharge causes or contributes to an exceedance of a water quality standard, that Discharger must implement additional BMPs or other control measures that are tailored to that facility in order to attain compliance with the receiving water limitation. A Discharger that is notified by a Regional Water Board or who determines the discharge is causing or contributing to an exceedance of a water quality standard must comply

[45] Because toxic and nonconventional pollutants are controlled in the first step by BPT and in the second step by BAT, and the second level of control is "increasingly stringent" (EPA v. National Crushed Stone, 449 U.S. 64, 69 (1980), for simplicity of discussion, the rest of this discussion will focus on BAT. Similarly, because the BAT levels of control in this General Permit are expressed as BMPs and pollution prevention measures, they will also control conventional pollutants. Therefore this discussion will focus on BAT rather than BCT or BPT for conventional pollutants.

with the Water Quality Based Corrective Actions found in Section XX.B of this General Permit.

Water Quality Based Corrective Actions are different from the Level 1 and Level 2 ERAs that result from effluent-based monitoring. It is possible for a Discharger to be engaged in Level 1 or Level 2 ERAs for one or more pollutants and simultaneously be required to perform Water Quality Based Corrective Actions for one or more other pollutants.

Failure to comply with these additional Water Quality Based Corrective Action requirements is a violation of this General Permit. If additional operational source control measures do not adequately reduce the pollutants, Dischargers must implement additional measures such as the construction of treatment systems and/or overhead coverage. Overhead coverage is any structure or temporary shelter that prevents the vertical contact of precipitation with industrial materials or activities. If the Regional Water Board determines that the Discharger's selected BMPs are inadequate, the Regional Water Board may require implementation of additional BMPs and/or may take enforcement against Dischargers for failure to comply with this General Permit.

2. Compliance Options

a. Background

Existing landscapes have altered the hydrologic characteristics of coastal and non-coastal waters through the impervious nature of buildings, parking lots, roads, and sidewalks which carry pollutants quickly (increased flow peaks that are unnatural) to the receiving waters and raise temperatures of the landscape, which in turn could cause degradation of water resources. Hydromodification can cause excessive erosion and/or sedimentation rates, causing excessive turbidity, channel aggradation and/or degradation.[6] The State Water Board is providing the Compliance Options in this General Permit to incentivize storm water capture and use in a concerted effort to retrofit the existing "impervious" urban landscape with green infrastructure to restore storm water infiltration capacity previously lost in developed areas. Storm water infiltration operations in developed areas provides multiple benefits, including: (1) improved groundwater recharge from treated industrial storm water, (2) restoration of lost watershed processes such as base flow to creeks, and (3) reduced pollutant loads discharged to surface waters.[7]

This General Permit incorporates ambitious, rigorous, and transparent Compliance Options (See Attachment I) providing Dischargers optional methods of compliance that:

[6] Statewide Storm Water Construction General Permit 2009-0009-DWQ amended by 2010-0014-DWQ & 2012-0006-DWQ CGP. Hydromodification definition in Appendix 5. <http://www.waterboards.ca.gov/water_issues/programs/stormwater/docs/constpermits/wqo_2009_0009_app_5.pdf>. [as of September 15, 2017].

[7] State Water Resources Control Board. STORMS Strategy. <http://www.waterboards.ca.gov/water_issues/programs/stormwater/storms/obj1_proj1c.shtml>. [as of September 15, 2017].

- Implement watershed-based approaches, addressing multiple contaminants and reducing the amount of pollutants entering surface waters.

- Demonstrate the State Water Board's intent to encourage the use of green infrastructure and low impact development to manage storm water and enhance the health of the watershed.

- Further support multi-benefit regional projects that capture, infiltrate, and reuse storm water and support a sustainable local water supply.

The Off-Site Compliance Option in this General Permit allows for collaboration between industrial facility owners and local jurisdictions for implementation of watershed-based BMPs in accordance with a Regional Water Board-approved watershed management plan and affiliated approved time schedules.

The On-Site and Off-Site Compliance Options require concrete and detailed structural and non-structural storm water controls that capture storm water from the 85th percentile 24-hour storm event. If a Discharger selects to comply with this General Permit through one of the Compliance Options, the Discharger is required to monitor the results and continue to ensure BMP performance for protection of the receiving surface and ground water(s). Dischargers are required to comply with the Compliance Options requirements unless the Regional Water Board states otherwise. Dischargers are required to submit the required BMP information in Attachment I for the On-Site BMP design and the Off-Site agreements. Dischargers are required to comply with applicable local requirements for the On-Site BMPs and although the Water Boards may review the BMP information submitted by the Discharger, this does not equate to pre-approval or approval in lieu of applicable local approvals required for the BMP(s).

Compliance with the requirements of either Compliance Option in Attachment I: (1) is compliance with Section V.A of this General Permit, and (2) deems the Discharger in compliance with Sections III.C, V.C, and VI of this General Permit. The specific General Permit provisions listed in Attachment I, Section II.I and III.G are not required if the Discharger is complying with either Compliance Option.

Compliance with a Compliance Option does not necessarily constitute compliance with water quality standards and other water quality-based requirements for all time, regardless of actual results. The State Water Board anticipates that implementation of either Compliance Option will bring drainage areas most and, in many cases, all the way to achievement of water quality standards. Where there is still a gap in required water quality improvement, we expect the appropriate Regional Water Board or its designee to require appropriate actions, consistent with the provisions of this General Permit, to close that gap with additional control measures in order for the Discharger to be considered in compliance with the water quality standards and other water

quality-based requirements. In some instances, it may be appropriate for the appropriate Regional Water Board to issue a time schedule order governing the implementation of further control measures.

b. Authority

The Clean Water Act requires NPDES permits to include technology-based effluent limitations and any more stringent limitations necessary to meet water quality standards. Industrial storm water NPDES permits must: (1) require compliance with technology-based standards, (2) prohibit unauthorized NSWDs, (3) require reduction of pollutants in the storm water discharge to the standard of BPT/BAT/BCT in all cases, and (4) include additional limitations necessary to meet water quality standards.

Under the Porter-Cologne Act, waste discharge requirements must implement applicable water quality control plans, which include the beneficial uses to be protected for a given water body and the water quality objectives reasonably required for that protection. The Porter-Cologne Act anticipates that all storm water waste discharge requirements will implement the water quality control plans. When implementing requirements under the Porter-Cologne Act that are not compelled by federal law, the State Water Resources Control Board and Regional Water Quality Control Boards (collectively, "Water Boards") have some flexibility to consider other factors, such as economics, when establishing the appropriate requirements.

The 2015 MSGP requires Dischargers to implement and document corrective actions (Part 4.1 and 4.4 of the 2015 MSGP) when it is determined a discharge is not meeting applicable water quality standards. This General Permit's effluent limitations are based upon the U.S. EPA's MSGP and allows a Discharger to complete Exceedance Response Actions when NALs are not met and Water Quality Based corrective actions when a discharge does not meet applicable water quality standards. This iterative process provides a pathway to comply with receiving water limitations, but does not provide a safe harbor for industrial discharges.[8]

The State Water Board is providing Dischargers an optional monitoring and assessment program for compliance with TMDLs and receiving water limitations to: (1) evaluate progress toward attaining water quality standards from storm water sources, (2) evaluate the ability to adapt compliance strategies over time in subsequent General Permit reissuances, and (3) measures the effectiveness of these Compliance Options. The Compliance Options in this General Permit require the Discharger to:

[8] U.S. EPA. NPDES Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity (MSGP), PDF Pg. 26. <https://www.epa.gov/sites/production/files/2015-10/documents/msgp2015_finalpermit.pdf> [as of September 15, 2017].

- Sample, monitor, and report (in SMARTS)[9] all BMPs discharge when implementing the On-Site Compliance Option in Attachment I;

- Comply with Section II.D.5 and IV of Attachment I for infiltrated industrial storm water and sources of authorized non-storm water (listed in Section IV of this General Permit); and/or,

- Enter into agreements with local jurisdictions to utilize off-site BMPs for compliance with specific General Permit requirements described in Attachment I.

c. Enforcement

This General Permit requires compliance with receiving water limitations. Dischargers may be deemed in compliance with those limitations through compliance with the On-Site Compliance Option or the Off-Site Compliance Option. The Off-Site Compliance Option requires that the Discharger enter into an agreement with the local jurisdiction, and receive the appropriate approvals from the applicable Regional Water Board.

Discharge monitoring results and information required in the On-Site Compliance Option are not to be used to determine compliance with this General Permit and applicable receiving water limitations because compliance is achieved through implementation of the On-Site Compliance Option. The Water Boards will use the discharge monitoring results and information to evaluate whether this Compliance Option is adequate to protect beneficial uses and to assist the State Water Board in making decisions regarding future reissuances of this General Permit. Additionally, the Regional Water Boards may use this information to prioritize the verification of a Discharger's compliance with the On-Site Compliance Option provisions, but are not to consider discharges as General Permit violations once the BMPs are operational.

d. Compliance Schedules

The applicable Regional Water Board may issue a Time Schedule Order to a Discharger selecting to proceed with the On-Site Compliance Option, with a time schedule for compliance with permit requirements.

Under the On-Site Compliance Option, the State Water Board authorizes Dischargers to install on-site control measures (BMPs) and provides an implementation schedule in Attachment I.

[9] This information is not to be used for enforcement of WQS or permit compliance but to provide feedback on the effectiveness of this compliance option to the Water Boards.

Under the Off-Site Compliance Option, the State Water Board authorizes Dischargers to participate in agreements with local jurisdictions for watershed-based BMP projects.

Many of the state-adopted and the U.S. EPA-established TMDLs do not contain an implementation plan or complete schedule for achievement of the waste load allocations sourced from industrial storm water discharges. This General Permit imposes requirements implementing these waste load allocations as of the Effective Date of the TMDL Requirements.

If a Responsible Discharger chooses to comply with applicable TMDLs through implementing the requirements in Attachment E rather than through implementation of a Compliance Option in Attachment I, the applicable compliance schedules have been included in the TMDL Compliance Table in Attachment E (Table E-2). TMDLs with final implementation dates that have already passed shall be in effect and require compliance upon the effective date of the TMDL Requirements.

3. Time Schedule Orders

Where a Discharger believes that additional time to comply with the final water quality-based effluent limitations and/or receiving water limitations in a TMDL is necessary, a Discharger may within 45 days of the effective date of the TMDL requirements, or no less than 90 days prior to the final compliance deadline if after adoption of this General Permit amendment, request a time schedule order pursuant to California Water Code section 13300 for the Regional Water Board's consideration.

4. Anti-Backsliding

The Compliance Options in this General Permit are designed to achieve the same level, and at times a reduced level, of pollutant discharge to the receiving waters compared to the traditional permit compliance route. The compliance options, however, are distinctly different approaches to compliance with the receiving water limitations, and therefore not easily comparable for purposes of regulatory anti-backsliding requirements in federal law.

The TMDL-specific requirements within this General Permit impose either the same General Permit requirements, or more stringent General Permit requirements through numeric effluent limitations or more stringent TMDL-related numeric action levels. Therefore, implementation of TMDL-related requirements does not pose any backsliding within this General Permit.

5. Anti-Degradation

The inclusion of TMDL-related requirements in this General Permit will not cause additional degradation of waters of the state. This General Permit requires compliance with water quality standards through implementation of best practicable treatment or control in the form of BPT/BAT/BCT; this General Permit does not authorize an increase in waste discharges to waters of the state from the previous permit.

Attachment I of this General Permit authorizes discharges to groundwater in some circumstances. Among other requirements, discharges to groundwater are not permitted to cause or contribute to the exceedance of a water quality objective in the groundwater. Additionally, implementation of the On-Site Compliance Option requires either that all influent entering an infiltration BMP meet applicable MCLs for pollutants associated with industrial activities or that monitoring devices are used to ensure that discharges to groundwater comply with those MCLs. To the extent that a discharge to groundwater is in compliance with Attachment I and applicable MCLs causes degradation of groundwater quality, it is consistent with State Water Board Resolution No. 68-16 (the state antidegradation policy).[10] The discharges authorized in Attachment I will not result in water quality less than that prescribed in the relevant water quality control policies, ensuring that a pollution or nuisance will not occur. The discharge will maintain water quality consistent with the maximum benefit to the people of California by maintaining water quality suitable for use as drinking water while also recharging depleted groundwater storage. Where groundwater quality is higher than that prescribed in the relevant water quality control policies, dilution of discharges that meet MCLs will ensure that the water, although degraded, remains higher quality than those policies require. Lastly, the requirements constitute the best practicable treatment or control necessary to achieve these ends, and requiring treatment beyond MCLs for these discharges is unwarranted.

6. On-Site Compliance Option - Compliance Storm Standards

Discharge reduction/volume based BMPs have multiple benefits such as groundwater recharge, flood control, or supporting the local water supply system through the use of storm water instead of potable water for certain processes (e.g., irrigation). Modeling results for the On-Site Compliance Option in this General Permit align with the “requirements and assumptions” of the TMDLs for industrial storm water. This General Permit provides options for compliance with all applicable receiving water limitations statewide, not solely for TMDL-related permit requirements.

Although not specifically stated in the TMDLs, volume-based BMPs sized appropriately remove a significant portion of pollutants from discharging to the receiving waters. This General Permit sets a compliance storm standard (statewide at the daily volume of the 85th percentile 24-hour storm event as defined in Attachment I Section II.D) for industrial storm water discharges and authorized NSWDs. The compliance storm standard further formalizes the design storm standard in Section

[10] State Water Board Resolution No. 68-16, Statement of Policy with Respect to Maintaining High Quality Waters in California.

X.H for new flow or volume-based treatment BMPs, but sets a more stringent storm-sizing standard. This compliance storm standard requirement to capture, infiltrate, and/or use storm water for a specific daily storm volume instead of discharging provides an incentive (Compliance with Section II of Attachment I) for timely implementation of effective control measures because compliance with the Section II of Attachment I (On-Site Compliance Option) equates to compliance with Section V.A of this General Permit and deems the Discharger in compliance with Sections III.C, V.C, and VI of this General Permit. Implementation also excuses Dischargers from implementing a range of General Permit requirements specified in Attachment I.

Industrial facilities complying with the On-Site Compliance Option are also required to comply with this General Permit, other than the sections outlined in Section II of Attachment I. The State Water Board has defined a timeline to the installation of the BMP(s) for Dischargers opting to pursue the On-Site Compliance Option.

Dischargers have traditionally implemented BMPs to comply with the effluent limitations of this General Permit. BMPs will be used for the implementation of TMDLs, regardless of the effluent standard even if the On-Site or Off-Site Compliance Options are not selected by the Discharger for TMDL compliance. This means that if a Discharger chooses not to use the Compliance Options as a method of compliance with this General Permit and instead implements BMP(s) to aid in meeting applicable NALS, TNALS, or NELS, the BMP(s) will not be required to meet the design and performance standards defined in Attachment I.

7. On-Site Compliance Option Modeling

Capture of industrial storm water is anticipated to be an effective path to water quality improvement. In addition to preventing pollutants from reaching the receiving water except during high precipitation events (which also generally results in significant dilution in the receiving water), the storm water capture approach provides beneficial recharge of groundwater, increased water supply, reduced hydromodification effects, and creation of additional green space to support recreation and habitat.[11][12]

This General Permit sets a statewide compliance storm standard at the 85th percentile 24-hour storm event (daily volume) for Dischargers that choose to implement the On-Site Compliance Option. Discharges from BMP(s) implemented for the purposes of compliance with the On-Site Compliance Option smaller or equal to the 85th percentile 24-hour storm event (daily volume) are prohibited and a violation of this General Permit.

[11] State Water Resources Control Board. Order WQ 2015-0075. Pg. 42. <http://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/la_ms4/2015/SWRCB_wqo2015_0075.pdf>. [as of September 15, 2017].

[12] Los Angeles Regional Water Quality Control Board. Los Angeles River Metals TMDL. June 2005. <https://www.waterboards.ca.gov/losangeles/board_decisions/basin_plan_amendments/technical_documents/2005-006/05_0831/05_0831_FinalStaffReport.pdf>. (Los Angeles River Metals TMDL Staff Report). [as of July 17, 2017].

To arrive at this compliance storm standard, the State Water Board used a continuous simulation model (model)[13] to evaluate the pollutant removal efficiency associated with the use of the 85th percentile 24-hour storm event for BMP sizing for the Los Angeles River and Tributaries Metals TMDLs (Los Angeles River Metals TMDLs).[14] The analysis focused on the Los Angeles River because it has established stringent wet-weather[15] mass-based WLAs for metals (specifically, cadmium, copper, lead, and zinc) and is the receiving water for a significant number of industrial dischargers under this General Permit.

FIGURE E.1: Los Angeles River Total Recoverable Metal TMDL WLAs

Individual General Construction or Industrial Permittees WLAs (total recoverable metals):

Metal	Waste Load Allocation (g/day/acre)
Cadmium	$WER^{1} \times 7.6\times10^{-12} \times$ daily volume(L) $- 4.8\times10^{-6}$
Copper	$WER^{2} \times 4.2\times10^{-11} \times$ daily volume (L) $- 2.6\times10^{-5}$
Lead	$WER^{1} \times 2.3\times10^{-10} \times$ daily volume (L) -8.7×10^{-5}
Zinc	$WER^{1} \times 3.9\times10^{-10} \times$ daily volume (L) $- 2.2\times10^{-4}$

[1] WER(s) have a default value of 1.0 unless site-specific WER(s) are approved.
[2] The WER for this constituent is 3.97.

The mass-based WLA for total zinc listed in the Los Angeles River Metals TMDLs was the focus of the model because it is a common pollutant in industrial areas and is often a challenging parameter for compliance with the IGP NALs due to the varied effectiveness of treatment on removing zinc. Zinc does not sorb readily to soil particles and large fractions may be in the dissolved state (non-particulate). Dissolved zinc is difficult to treat and some of the most effective BMP(s) are volume reduction or zinc-specific filtration[16]. The daily storm volume was estimated using the regression analysis of storm flows versus rainfall for LA River identified in the Los Angeles River Metals TMDLs (Figure E 2).

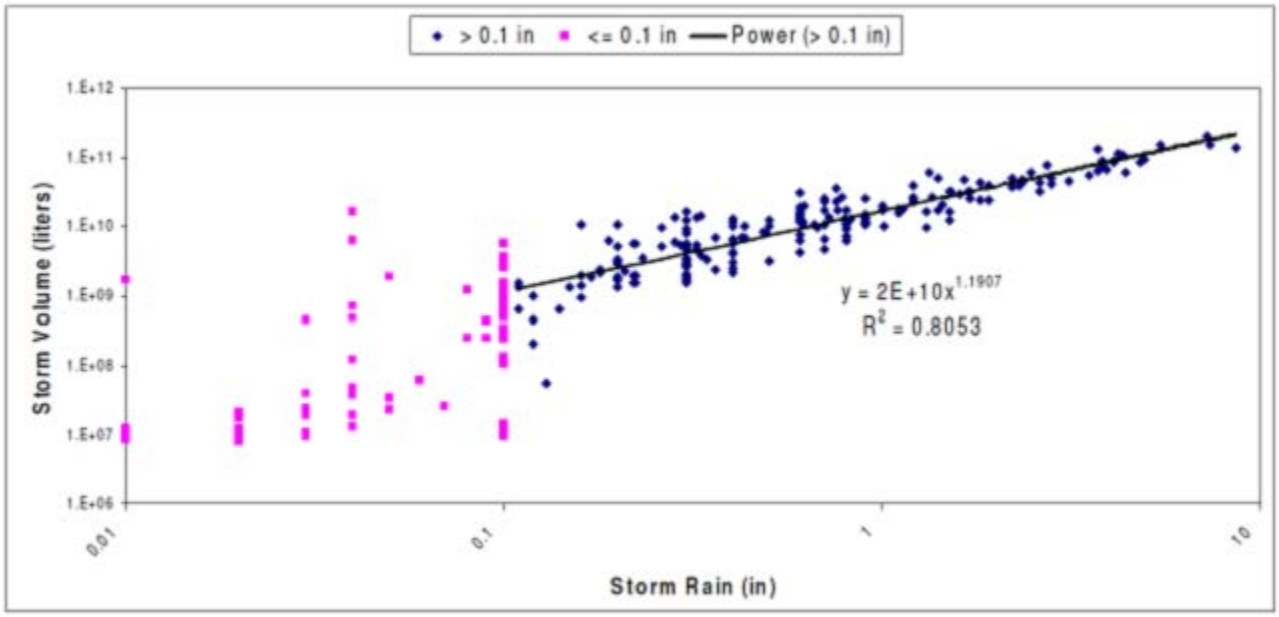
[13] TMDL Alternative Model [Microsoft Excel Spreadsheet], GSI Environmental (March 31, 2017).

[14] Los Angeles River Metals TMDL Staff Report

[15] The wet-weather condition is defined to be any day when the maximum daily flow measured at the Wardlow station is equal to or greater than 500 cubic feet per second or 1.2×10^{9} liters per day which is equivalent to 0.1 inch rain intensity based on the regression analysis identified in the Total Maximum Daily Loads for Metals Los Angeles River and Tributaries.

[16] Summarized from: McWayne, Eric. Stormwater Pollutant Chemistry, Monitoring, and BMP Effectiveness. UC Davis Extension. September 2016 course.

FIGURE E.2: Regression Analysis of Storm Flows vs Rainfall



[17]

The model simulates a range of daily rainfall intensities (0.1 to 2.8 inches) from 1996 to 2017, obtained from a local rain gauging station (AL314 LA River at Wardlow) to calculate mass loading of metals from industrial dischargers. The calculated mass loading was compared with mass-based WLAs in applicable TMDLs. The analysis assumed a hypothetical site implementing a BMP with a capacity to capture and use, infiltrate, and/or evapotranspire runoff volumes generated by an 85th percentile 24-hour storm event (0.87 inch at Wardlow). The analysis also assumed that the BMP will completely dewater and its capacity be fully available within 24 hours should back-to-back rainfall events occur. The model calculated the total zinc mass loading for each rain event where the volume of total runoff exceeds the runoff volume capacity of the BMP resulting in discharge. The model calculated the runoff volumes using Rational Method assuming a conservative runoff coefficient for impervious surface conditions of 0.90.[18]

The total zinc mass loading calculation used the BMP discharge runoff volume and the geometric mean of concentration in storm water sample results for industrial Dischargers within the Los Angeles Regional Water Quality Control Board (Los Angeles Regional Water Board) boundary. Outliers were excluded in the calculation of the geometric mean concentration which represents under 1% of the storm water sample results. The use of geometric mean concentration throughout the entire storm event is conservative because in most cases pollutant concentrations in storm water will likely be reduced at the tail end of larger rain events that exceed the 85th

[17] California Regional Water Quality Control Board Los Angeles Region, Total Maximum Daily Loads for Metals Los Angeles River and Tributaries - Staff Report (June 2, 2005).

[18] Gupta, R. S. Hydrology and Hydraulic Systems. 2nd ed. Long Grove, IL: Waveland, 2001. Print.

percentile 24-hour storm event as a result of pollutant wash-off. This same process was used to calculate the geometric mean for cadmium, copper, and lead.

TABLE E.1: Los Angeles River Metals TMDL Modeled Compliance Rate

Los Angeles River Metals TMDL Parameter Wet-Weather Concentrations and Mass-Based Compliance Rate			
Parameter	**Industrial Geomean (ug/L)** *(2015-2017 SMARTS data for Los Angeles Regional Water Board)*	**Modeled Mass-Based Compliance Rate (historical storm record at Wardlow Station)**	**Concentration Limit TMDL (ug/L)**
Cadmium	1.4	100%	3.1
Copper	24.6	100%	67.49
Lead	8	100%	94
Zinc	223	96%	159

The model demonstrated that the mass-based WLA for total zinc was not exceeded for any 24-hour historical rain event equal to or less than 1.46 inches. Only 4% of the historical rain events exceeded 1.46 inches (11 out of 311 rain events over 0.1 inches) at Wardlow station. This indicates that use of the 85th percentile 24-hour storm event for BMP sizing will result in TMDL compliance for up to 96% of the historical rainfall record and higher than 96% in a given reporting year since during some reporting years a discharge may not occur at the industrial facility. The same modeling methodology was repeated to evaluate pollutant removal efficiency of the BMP for cadmium, copper, and lead. The model demonstrated no mass-based WLA exceedances for these three metals in this TMDL.[19]

The State Water Board recognizes that not all sites have infiltration rates that allow for completely dewatering within a 24-hour period. Sites with lower infiltration rates can achieve similar reductions in loads through increasing the size of the infiltration system and/or increasing the volume of storage prior to infiltration. Storage devices such as underground tanks, aboveground vertical tanks and cisterns may be utilized for sites where infiltration is not viable.

This model used equations specific to the Los Angeles River Metals TMDLs to calculate the mass-based WLA, so the model is not directly repeatable for each TMDL listed in Attachment E. However, some aspects are applicable statewide including other TMDL watersheds. Below is the justification for applying the model findings and this compliance standard beyond Los Angeles:

- The State Water Board recognizes that storm sizes vary between locations (the 85th percentile storm sizes below range from 0.61 to 1.16 inch throughout the

[19] The maximum total mass loadings were 49%, 39%, and 9% lower than the mass-based WLAs for cadmium, copper, and lead, respectively.

state) and capture, use, and infiltration BMPs should be sized accordingly.[20] The BMP may have a different sizing and cost depending on the location in California and the corresponding 85th percentile storm size. However, the pollutant volume/load reduction modeling estimates done for Los Angeles River are proportionate to a BMP at any industrial facility location statewide.

TABLE E.2: 85th Percentile 24-Hour Storms

Region	Rain Gauge Location	85th Percentile 24-hour Storm Intensity (I >= 0.1 inch/day)
1	Santa Rosa	1.16
2	San Jose	0.61
3	Salinas	0.66
4	Los Angeles	.87 or 1.11[18]
5F	Fresno	0.67
5R	Redding	1.06
5S	Sacramento	0.80
6A	Victorville	0.65
6B	Truckee	1.05
7	Indio	0.64
8	Ontario	0.94
9	San Diego	0.78

- The Los Angeles Regional Water Board has a significant number of industrial facilities across all SIC codes, sizes, and located in urban and non-urban areas etc. This appropriately represents the variability of industry and industrial pollutants statewide.

- This General Permit already set the design storm standard for new treatment controls at the 85th percentile or another similar standard, setting precedent for this approach, however it did not include an incentive for reducing discharge for an industrial facility, nor did it explicitly require no discharge of the 85th percentile daily storm volume. This approach provides a more stringent standard with an incentive for reducing runoff and the installation of multi-benefit BMPs.

Area-weighted Concentrations

The State Water Board ran the model described above using area-weighted average concentrations of storm water samples (i.e., effluent samples from qualifying storm events) and industrial activity areas for a group of facilities with specific SIC codes representing the largest percentage of facilities with Notice of Intent General Permit coverage within the Los Angeles River Watershed sampling for zinc and copper. The SIC codes used in the copper concentration calculations

[20] This depends on the station used. The two stations (1256Z South Gate Transfer Station and Wardlow) looked at for the 85th percentile storm in Los Angeles had 1.1 and .87 respectively.

were 5093 – Scrap and Waste Materials, 5015 – Used Motor Vehicle Parts, and 3471 – Electroplating, Plating, Polishing, Anodizing, and Coloring. For zinc, the concentration calculations included the SIC codes 5093, 3471, and 3499 – Fabricated Metal Products. These SIC codes represent over 40% of the total number of facilities sampling for copper or zinc within the Los Angeles River Watershed. The calculated area-weighted average concentrations were 164.88 ug/L for copper and 406.09 ug/L for zinc. The model demonstrated that the mass-based WLAs for both zinc and copper were not exceeded for any 24-hour historical rain event equal to or less than 1.1 inches at Wardlow Station (25 out of 311 rain events were over 0.1 inches). The results indicate TMDL compliance for up to 92% of the historical rainfall record.

Storm Water Management Model (SWMM) Analysis by Geosyntec

The State Water Board assessed the results of a long-term continuous simulation model[21] to evaluate various compliance scenarios with the 2005 Los Angeles River Metals TMDL[22] for copper, including both the concentration-based numeric target and the mass-based WLAs, for a hypothetical 20-acre industrial site. The 2005 Los Angeles River Metal TMDL for copper uses a lower Water-Effect Ratio (WER) compared to the 2015 Los Angeles River Metal TMDL WER (1.0 vs. 3.97).

$$Wet - weather\ Numeric\ Target\ for\ Copper = 17\ ug/L$$
$$Wet - Weather\ WLA\ for\ Copper = 4.2x10^{-11} \times daily\ storm\ volume\ (L) - 2.6x10^{-5}$$

The long-term continuous simulation model was developed using the U.S. EPA Storm Water Management Model (SWMM) and historical (from 2005 to 2017) precipitation data from the Burbank Airport rain gauge. The model focused on compliance scenarios using different methods in calculating the 85th percentile 24-hour runoff volume (compliance storm standard) and different drawdown times[23] (i.e., 24 hours and 48 hours). The BMP volume calculation methods include determining the maximized capture runoff volume for the industrial site using the formula recommended in the Water Environment Federation's Manual of Practice (WEF)[24] and setting the BMP volume to exactly the 85th percentile 24-hour storm runoff volume (Straight Calc). The Straight Calc method resulted in a larger BMP than the WEF method. The Straight Calc method reflects the compliance storm standard runoff volume calculation method described in Attachment I.

The analysis used copper to compare the compliance rates based on the different compliance scenarios. The total copper concentration used is 28.5 ug/L, which is the geometric mean of storm water samples within the Los Angeles River

[21] Continuous simulation modeling of rainfall-runoff hydrology (including dynamic soil moisture tracking), Geosyntec (March 2, 2018).

[22] Los Angeles River Metals TMDL Staff Report

[23] The time to drain from full to empty when no inflows are occurring, and calculated as the maximum water depth divided by the drain rate (e.g., measured percolation rate or allowed sewer discharge rate).

[24] Water Environment Federation (WEF). Manual of Practice No. 23/ ASCE Manual of Practice No. 87, cited in chapter 5 (1998 Edition) and Cited in Chapter 3 (2012 Edition) .

watershed[25]. The analysis compared the geometric mean concentration for total copper with the TMDL numeric target, so that every discharge was conservatively counted as an exceedance. The analysis also compared the discharge loading with the copper WLA. The analysis resulted in 83% to 95% of historical wet days meeting the numeric target and 93% to 99% of historical wet days meeting the copper WLA. The BMP sized using the Straight Calc method with a drawdown time of 24 hours resulted in more frequent compliance (i.e., 95% for TMDL numeric target and 96% for WLA) than the other compliance scenarios.

A similar BMP sized to the 95th percentile 24-hour storm (using Straight Calc) draining in 24 hours resulted in 100% of historical wet days meeting both the numeric target and copper WLA. However, the 95th percentile-based sizing resulted in almost twice (1.8 times) the 85th percentile-based sizing.
The same modeling methodology was repeated to evaluate compliance percentages of other TMDL metals for the BMP sized to the 85th percentile 24-hour storm (using Straight Calc) draining in 24 hours. The geometric means were calculated for cadmium, lead, and zinc concentrations using storm water samples from industrial dischargers within the Los Angeles Region. The analysis resulted in over 99% of historical wet days meeting the WLAs and over 100% of historical wet days meeting the numeric targets for cadmium, lead, and zinc.

TABLE E.3: Los Angeles River Metal Geometric Means

Los Angeles River Metal	Los Angeles Region Geometric Mean Concentration (ug/L)
Cadmium	2.50
Lead	10.1
Zinc	142

TABLE E.4: Los Angeles River Metal Wet-Weather Industrial WLA

Metal	Wet-Weather Numeric Target (ug/L)	Wet-Weather WLA for Industrial Permittee (g/day/acre)
Cadmium	3.1	$7.6x10^{-12} \times daily\ storm\ volume\ (L) - 4.8x10^{-6}$
Lead	62	$1.5x10^{-10} \times daily\ storm\ volume\ (L) - 1.04x10^{-5}$
Zinc	159	$3.9x10^{-10} \times daily\ storm\ volume\ (L) - 2.2x10^{-4}$

8. Protection of Groundwater and Source Waters; Infiltration BMPs

Infiltration of storm water is encouraged to reverse some of the impacts of hydromodification and to restore watershed processes. Infiltration such as rain gardens and tree trenches provides additional benefits to air quality, carbon sequestration, habitat, and an increased aesthetic value. Soil provides natural storm water treatment.

Storm water from industrial facilities and areas already infiltrates into the soil/vadose zone and then sometimes into the groundwater, however, this General Permit is setting new general groundwater protection standards for

[25] The total copper concentration geometric mean value was obtained by Geosyntec from GSI, Inc.

infiltration BMPs if installed for the Compliance Options described in Attachment I Section IV and specific requirements for On-Site BMPs in Attachment I Section II. Storm water traveling across an industrial facility into an infiltration BMP can pick up various pollutants and deliver them to the subsurface. The fate and transport of these pollutants into soil, the vadose zone and then possibly the groundwater depends on the type and amount of pollutant present, the volume of infiltration, the type of infiltration BMP, and subsurface conditions.[26] A concern with the infiltration of raw industrial storm water runoff is the potential of transporting pollutants through soil and into the groundwater which could have beneficial uses, such as Municipal and Domestic Supply (MUN) for drinking water supply. Many pollutants are attenuated in storm water BMPs, in soil or the vadose zone, or in groundwater but some pollutants are poorly attenuated. State Water Board staff developed a list of high-priority constituents found in storm water that present a potential threat to groundwater's attainment of beneficial uses.[27] The Discharger pursuing a Compliance Option is required to certify in the SWPPP the presence or absence of these additional constituents when there is an identified potential threat to groundwater's attainment of beneficial use(s). Dischargers must consider monitoring for additional constituents when identified, as specified in Attachment I Section IV and Table B. Constituents in Table B are known to impact drinking water supplies and although they may not be an industrial pollutant source at the facility, they may be ubiquitous in the environment where the facility is located and therefore have the potential of being present in storm water entering infiltration BMPs.

In general, particulate pollutants such as sediment and pollutants that primarily bind to particulates (such as metals) are easily removed by the filtration process within the infiltration BMPs. Soluble contaminants have a greater potential to be carried for some distance and may eventually reach the groundwater table. The greatest concern are mobile toxic organics (e.g., gasoline or solvents), highly concentrated nitrates, viruses (larger sized organisms), and salts. Whenever feasible, these contaminants should be removed from the storm water prior to infiltration. To accomplish this, an appropriate pretreatment technique is needed and this General Permit sets pretreatment requirements prior to the infiltration of industrial storm water and authorized non-storm water (explained below). Any runoff containing toxic materials that will not bind to soils, be easily removed, or are in excess that cannot infiltrate, should be diverted away from the infiltration BMP(s) to another treatment device.[28] This General Permit requires the installation of a "shutoff mechanism" prior to the On-Site BMP(s) operation and located to divert spills, process water, wastewater, materials in toxic concentrations, unauthorized non-storm water etc. from entering the infiltration

[26] State of Minnesota. Minnesota Stormwater Manual, Pollutant fate and transport in stormwater infiltration. <https://stormwater.pca.state.mn.us/index.php?title=Pollutant_fate_and_transport_in_stormwater_infiltration_systems>. (Minnesota Stormwater Manual). [as of June 5, 2018].

[27] Some of the resources used include the California State Water Resources Control Board's AB 2222 Final January 2013 Report to the Legislature: Communities That Rely on a Contaminated Groundwater Source for Drinking Water <https://www.waterboards.ca.gov/gama/ab2222/docs/ab2222.pdf>. [as of May 29, 2018] and the California State Water Resources Control Board's 2013 Recycled Water Policy. <https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2013/rs2013_0003.pdf>. [as of May 29, 2018].

[28] Minnesota Stormwater Manual

BMP(s). If the BMP design or drainage makes the implementation of a "shutoff mechanism" infeasible, the Discharger is required to implement appropriate spill prevention and training to prevent unauthorized discharges into the BMP(s).

This General Permit requires minimum source control BMPs and the Discharger to implement appropriate pretreatment controls to meet MCLs as determined by a California licensed professional engineer prior to installing and operating infiltration BMPs for compliance with the On-Site Compliance Option in Attachment I. Pretreatment should be designed to protect the natural function of the soil to treat the storm water before it reaches the groundwater, ensure the life of the infiltration BMP (e.g., prevent/reduce biofouling or siltation), and prevent the addition or migration of pollutants in groundwater that cause or contribute to the exceedance of a water quality objective.

Dischargers may also decide to implement groundwater/soil monitoring instead of evaluating and implementing pretreatment controls to meet MCLs for infiltration BMP(s) other than storm water capture and infiltration dry wells. Dischargers would be required to install monitoring devices to evaluate the pollutant concentrations from the infiltration of industrial storm water and authorized NSWDs into soil/groundwater. This data shall be provided to the Water Boards via SMARTS. The Regional Water Boards Executive Officer or the State Water Board's Executive Director may authorized the discontinuation of this monitoring if it is determined the BMP(s) pose no threat to groundwater.

A Discharger implementing a storm water capture and infiltration dry well is required to meet certain pretreatment criteria in Table A of Attachment I for primary MCLs[29] and specific secondary MCLs.

Storm water capture and infiltration dry wells for storm water discharges and authorized non-storm water listed in General Permit Section IV:[30] The U.S. EPA states that Class V wells are wells used to inject non-hazardous fluids into or above underground sources of drinking water. Storm water capture and infiltration dry wells (storm water drainage wells) are considered Class V wells. The Discharger must register under the U.S. EPA Underground Injection Control Program as operating a Class V well if storm water is disposed of via storm water capture and infiltration dry wells or another BMP with a direct discharge to groundwater.[31]

[29] State Water Resources Control Board. Maximum Contaminant Levels and Regulatory Dates for Drinking Water U.S. EPA vs California Last Updated July 2014. <https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/documents/dwdocuments/MCLsEPAvsDWP-2014-07-01.pdf>. [as of September 15, 2017].

[30] U.S. EPA. Class V Wells for Injection of Non-Hazardous Fluids into or Above Underground Sources of Drinking Water. https://www.epa.gov/uic/class-v-wells-injection-non-hazardous-fluids-or-above-underground-sources-drinking-water. [as of September 15, 2017].

[31] More registration information can be found here: http://www.epa.gov/sites/production/files/2015-10/documents/7520-16_508c.pdf.

9. Reporting Requirements

The reporting requirements for the implementation of a Compliance Option, as provided in this General Permit, will provide the Water Boards with information regarding BMP performance, groundwater quality protection, and further potential requirements to consider during future reissuances of this General Permit. Electronic reporting for the Compliance Options include information regarding BMP performance, monitoring and sampling results, and pretreatment controls, and is compatible with the compliance reporting requirements adopted in 2014 for this General Permit.

10. Future Reissuances of This General Permit

This General Permit requires the monitoring and reporting of BMP discharges that occur during storm events greater than the 85th percentile 24-hour compliance storm. The Water Boards will evaluate this information and data submitted by the Dischargers to develop and consider further storm water management and capture requirements in future reissuances of this General Permit.[32]

11. Off-Site Compliance Option

Multi-benefit projects are crucial and viable solutions in many cases to achieving water quality standards, compliance with this General Permit, and watershed health restoration. Phase I and II MS4 NPDES permits set statewide post-construction standards (many aimed at the 85th percentile 24-hour event) and alternative compliance pathways to meet receiving water limitations that allow for multi-benefit projects[33] to fix water quality issues in a watershed. Including these options for effluent limitation compliance in this General Permit allows Dischargers to collaborate with other regulated permittees meet these limitations.

By passing Proposition 1 (Assembly Bill 1471, Rendon), the State of California recognized the need for funding and collaboration for restoring the supply and health of California's water system. Proposition 1 authorized $7.545 billion in general obligation bonds (including groundwater management and storm water) to assist with this effort and $200 million of the bonds were granted towards multi-benefit projects (which include storm water) and implemented through the Water Code section 79747.[34]

Attachment I of this General Permit includes the option for Dischargers to enter into agreements with local jurisdictions to design, implement, and operate off-site

[32] State Water Resources Control Board. Order WQ 2015-0075, PDF Pg. 44-45. <http://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/la_ms4/2015/SWRCB_wqo2015_0075.pdf>. [as of September 15, 2017].

[33] Multi-benefit storm water management projects which may include, but shall not be limited to, green infrastructure, rainwater and storm water capture projects and storm water treatment facilities. State Water Resources Control Board. Storm Water Grant Program (SWGP); Prop 1. <http://www.waterboards.ca.gov/water_issues/programs/grants_loans/swgp/prop1/>. (Prop 1 Multi-benefit storm water management projects). [as of September 15, 2017].

[34] Prop 1 Multi-benefit storm water management projects.

BMP(s) for compliance with Sections V.A and deemed compliance with Sections III.C, , V.C, and VI of this General Permit. Compliance with these General Permit provisions will only be deemed after the BMP(s) have been implemented and are operational per the requirements in Section III of Attachment I. The agreements with the local jurisdictions are required to be approved by the applicable Regional Water Board.

12. Participation in the Off-Site Compliance Option

The State Water Board expects that these local agreements will outline the requirements on-site for the industrial facility prior to approving any agreement involving the industrial facility. Agreements with industrial Dischargers for off-site BMPs are expected to be well-defined, transparent, and be as stringent as the effluent limitations and receiving water standards in this General Permit. An industrial Discharger willing to pursue significant undertakings beyond the iterative BAT/BCT process in this General Permit for compliance by entering into agreements for the implementation and operation of Off-Site BMPs meeting the requirements in Attachment I, shall be deemed in compliance once the BMP is implemented and operational. The expectation is to have agreements include an agreement date, location of off-site BMPs, monitoring and implementation agreements, funding, and a process for termination of the agreement.

Industrial facilities participating in the Off-Site Compliance Option are also required to comply with this General Permit (such as the implementation of minimum BMPs), other than the sections outlined in Section III.E of Attachment I. If at any time the participation in the agreement is terminated, the Discharger is required to comply with Sections III.C, V.A, V.C, VI of this General Permit. Off-Site Compliance Option agreements with the local jurisdictions may also require Dischargers to implement provisions from which Dischargers are otherwise exempt pursuant to Attachment I Section III.G.

This General Permit also allows Dischargers to enter into agreements with one another when approved by the appropriate Regional Water Board and the conditions in Attachment I Section III.E are met. The intent of the State Water Board in allowing these agreements is to provide flexibility and collaboration between regulated entities who can provide the proper oversight of a shared BMP located Off-Site. If at any time the participation in the agreement is terminated or it is determined to be out of compliance with Attachment I of this General Permit, the Discharger(s) are required to comply with Sections III.C, V.A, V.C, VI of this General Permit.

13. Reporting Requirements

Dischargers are required to report information to the Water Boards about their participation in a local agreement using SMARTS. These requirements are in Section III.I of Attachment I. The information provided is to verify: 1) current participation in the agreement, 2) schedule of actions in the agreement, and 3) progress towards achieving compliance with receiving water limitations.

F. Total Maximum Daily Loads

1. Introduction

~~F.~~ Total Maximum Daily Loads (TMDLs)~~TMDLs~~ are regulatory tools that provide the maximum amount of a pollutant from potential ~~source~~sources in the watershed that a water body can receive while attaining water quality standards. A TMDL is defined as the sum of the allowable loads of a single pollutant from all contributing point sources (the waste load allocations) and non-point sources (load allocations), plus the contribution from background sources. (40 C.F.R. § 130.2, subd. (i).) Discharges covered by this General Permit are considered to be point source discharges, and therefore must comply with effluent limitations that are "consistent with the assumptions and requirements of any available waste load allocation (WLA) for the discharge prepared by the State and approved by U.S. EPA pursuant to 40 Code of Federal Regulations section 130.7." (40 C.F.R. § 122.44, subd. (d)(1)(vii).) In addition, Water Code section 13263, subdivision (a), requires that waste discharge requirements implement relevant water quality control plans. Many TMDLs in existing water quality control plans include both ~~waste load allocations~~WLA and implementation requirements. Attachment E of this General Permit lists the watersheds with U.S. EPA-approved and U.S. EPA-established TMDLs that include TMDL requirements for Dischargers covered by this General Permit.

~~NPDES regulated storm water discharges (which include industrial storm water) must be addressed by waste load allocations in TMDLs. (40 C.F.R. § 130.2(h).) NPDES permits must contain effluent limits and conditions consistent with the requirements and assumptions of the waste load allocations in TMDLs. (40 C.F.R. § 122.44(d)(1)(vii)(B).) To date, the relevant waste load allocations assigned to industrial storm water discharges are not directly translatable to effluent limitations. Many of the TMDLs lack sufficient facility specific information, discharge characterization data, implementation requirements, and compliance monitoring requirements. Accordingly, an analysis of each TMDL applicable to industrial storm water discharges must to be performed to determine if it is appropriate to translate the waste load allocation into a numeric effluent limit, or if the effluent limit is to be expressed narratively using a BMP approach. U.S. EPA recognizes that because storm water discharges are highly variable in frequency and duration and are not easily characterized, it is often not feasible or appropriate to establish numeric limits. Variability and the lack of data available make it difficult to determine with precision or certainty actual and projected loadings for individual Dischargers or groups of Dischargers.~~

~~Regardless of whether the effluent limit is to be numeric or narrative, the existing waste load allocations must be carefully analyzed, and in many cases translated, to determine the appropriate effluent limitations. Issues of interpretation exist with all of the waste load allocations applicable to Dischargers, and these issues vary based on the TMDL. Below is an example of one of the simpler issues:~~

2. Public Process for Incorporation

~~**FIGURE 1: Example Waste Load Allocations Proposed Translation: Ballona Creek Estuary – Toxic Pollutants**~~

Metals per Acre Waste Load Allocations for Individual General Construction or Industrial Storm Water Permittees (grams/year/acre)				
Cadmium	Copper	Lead	Silver	Zinc
0.1	3	4	0.1	13

Metals per Acre Waste Load Allocations for Individual General Construction or Industrial Storm Water Permittees (milligrams/year/acre)			
Chlordane	DDTs	Total Polychlorinated biphenyl (PCBs)	Total Polycyclic aromatic hydrocarbons (PAHs)
0.04	0.14	2	350

In order for the above waste load allocations to effectively be implemented as effluent limits under the General Permit, the Water Boards must (1) identify which discharges the waste load allocations apply to, (2) identify the acreages of the individual facilities, (3) convert the waste load allocations from grams/year/acre (or milligrams/year/acre) to grams/year (or milligrams/year) based on the acreage at each identified facility, (4) assign the effluent limits to the identified Dischargers, (5) determine appropriate monitoring to assess compliance with the effluent limits, and (6) develop a tracking mechanism for each identified facility and their individual effluent limits. A similar stepwise process is necessary for each TMDL with waste load allocations assigned to industrial storm water discharges. For TMDLs where effluent limits will be expressed as BMPs, analysis must to be performed to determine the appropriate BMPs and the corresponding effectiveness to comply with the assigned waste load allocations.

Some waste load allocations are already expressed as concentration based numbers. It may appear simple to incorporate these values into this General Permit as effluent limits, but the questions still remain regarding how to determine compliance. The monitoring requirements in this General Permit are not designed to measure compliance with a numeric effluent limit or to measure the effect of a discharge on a receiving water body. (See the discussion on monitoring requirements in Fact Sheet Section II.J.) This General Permit requires sampling of four (4) storm events a year, with certain limitations as to when a discharge may be sampled. This method of monitoring may not appropriately serve as TMDL compliance sampling since grab samples are only representative of the particular moment in time when the sample was taken. Since storm water is highly variable, four grab samples per year may not provide sufficient confidence that the effluent limit is being met. An alternative monitoring scheme may be necessary to determine the facility's impact on the receiving water and to determine compliance with any assigned effluent limits. Questions concerning whether sampling results should be grab samples, composite samples, flow weighted averaged over all drainage areas, etc. cannot be determined for each concentration based TMDL without a more thorough analysis.

Additionally, monitoring and assessment requirements must be developed for all of the TMDLs to determine compliance with or progress towards meeting TMDL requirements. The proposed monitoring requirements in this General Permit are not designed to assess pollutant loading or determine compliance with TMDL specific effluent limits.

The State Water Board adopted this General Permit on April 1, 2014, and it became effective on July 1, 2015. The 2014 reissued General Permit contained Attachment E,

which listed TMDLs adopted by the Regional Water Boards and U.S. EPA that identified industrial storm water as a source. The State Water Board did not adopt any TMDL implementation requirements into the April 1, 2014 adopted General Permit. Attachment E of this General Permit lists thirty six (36) TMDLs for impaired water bodies within the San Francisco Bay, Los Angeles, Santa Ana, and San Diego Regional Water Boards to be addressed in this General Permit.

~~Due to the large number and variety of discharges subject to a wide range of TMDLs statewide, to prevent a severe delay in the adoption of this General Permit,~~

The State Water Board amended Order 2014-0057-DWQ by adopting Order [201X-XXXX-DWQ] on [DATE] to incorporate TMDL-specific permit requirements for the TMDLs listed in Attachment E~~ will be proposed by the Regional Water Boards. Since the waste load allocations and/or implementation requirements apply to multiple discharges in the region(s) the TMDL were developed, the development of TMDL-specific permit requirements is best coordinated at the Regional Water Board level. The development of TMDL-specific permit requirements is subject to notice and a public comment period prior to incorporation into this General Permit.~~ .

Regional Water Board staff, with the assistance of State Water Board staff, ~~will develop~~developed and ~~submit~~submitted the proposed TMDL-specific permit requirements for each of the TMDLs listed in Attachment E~~ by July 1, 2016.~~[5] . After conducting a 30-day public comment period~~, the Regional Water Boards will propose~~ during March and April 2016, the Regional Water Boards provided proposed TMDL-specific permit requirements to the State Water Board for adoption into this General Permit~~. The Regional Water Boards may also include~~, but the Regional Water Boards did not take any adoption action regarding the proposed TMDL-specific ~~monitoring requirements for inclusion in this General Permit, or may issue Regional Water Board orders pursuant to Water Code section 13383 requiring TMDL-specific monitoring. The Regional Water Boards or their Executive Officers may complete these tasks, and the proposed TMDL-specific permit requirements shall have no force or effect until adopted, with or without modification, by the State Water Board. Unless directed to do so by the Regional Water Board, Dischargers are not required to take any additional actions to comply with the TMDLs listed in Attachment E until the State Water Board reopens this General Permit and includes TMDL-specific permit requirements. This approach is consistent with the 2008 MSGP. TMDL-specific permit requirements are not limited by the BAT/BCT technology based standards~~permit requirements for this General Permit.

The Regional Water Boards ~~will submit~~submitted to the State Water Board the following information for each of the TMDLs listed in Attachment E:

- Proposed TMDL-specific permit requirements, including~~ any applicable~~:
    - Applicable effluent limitations~~, implementation~~;

[5] ~~Due to the workload associated with the implementation of this General Permit (e.g., training program development, NEC outreach, electronic enrollment and reporting via SMARTS) it is believed that two years in necessary for Staff to complete a comprehensive analysis and stakeholder process for TMDLS applicable to Dischargers under this General Permit.~~

- Implementation timelines~~, additional~~;
- Additional monitoring ~~requirements,~~ and reporting requirements; and, ~~an explanation of how an exceedance of an effluent limitation or a violation of the TMDL will be determined, and required deliverables~~
- Compliance determination language regarding compliance with numeric action levels, TMDL-specific effluent limitations and reporting requirements consistent with the applicable TMDL(s)~~;~~.

- ~~An explanation of how~~Information regarding the proposed TMDL-specific permit requirements, timelines, and deliverables ~~are consistent~~consistency with the assumptions and requirements of applicable ~~waste load allocation~~WLA(s) to implement the TMDL(s);

- ~~Where a BMP-based approach is proposed, an explanation of how the proposed BMPs will be sufficient to implement~~Information regarding the proposed implementation of BMPs (as applicable) to comply with applicable ~~waste load allocations~~WLAs; and,

- Where concentration-based monitoring is required, ~~an explanation of how the required monitoring, reporting and calculation methodology for an exceedance of an effluent limitation or a violation of the TMDL(s) will be sufficient to demonstrate compliance with the TMDL(s).~~ information regarding the required determination of compliance for numeric effluent limitations through concentration-based compliance monitoring, corresponding calculation methodology, and reporting.The State Water Board used the above information from the Regional Water Boards to complete the amendment to this General Permit and used the following process to further evaluate and translate each TMDL in Attachment E:

~~Upon receipt of the information described above, the State Water Board will conduct a public comment period and reopen this General Permit to populate Attachment E, the Fact Sheet, and other provisions as necessary in order to incorporate these TMDL-specific permit requirements into this General Permit. Attachment E may also be reopened during the term of this General Permit to add additional TMDLs and corresponding implementation requirements.~~

- Step 1: Determined whether the TMDL applies to industrial storm water discharges and authorized NSWDs regulated by this General Permit (discharges regulated by this General Permit);
- Step 2: Identified the specific TMDL requirements that are applicable to discharges regulated by this General Permit;
- Step 3: Translated the TMDL requirements into TMDL-specific numeric action levels or numeric effluent limitations;
- Step 4: Determined a compliance schedule that corresponds with the compliance date of the TMDL;

- Step 5: Developed monitoring and reporting requirements to determine compliance with waste load allocations;
- Step 6: Identified the existing permit requirements applicable to each constituent identified in the TMDLs, and evaluated if additional TMDL-specific requirements were required to implement the TMDL for discharges regulated by this General Permit; and,
- Step 7: Provided explanation regarding how the State Water Board translated the TMDL into specific requirements.

A draft of these TMDL Requirements was released for public review and comment on December 15, 2017. Many of the comments received in response to the draft encouraged the State Water Board to review specific TMDL WLAs and reconsider the requirements proposed for inclusion in this General Permit to implement those WLAs. Other comments called for a general reevaluation of the TMDL WLAs to ensure that the requirements proposed for inclusion in this General Permit are consistent with the requirements and assumptions of the WLAs. Following review of the public comments, further consideration of the TMDLs, and, in some cases, discussions with the appropriate regional water boards, some of the proposed TMDL implementation requirements were changed.

3. Applicability

Responsible Dischargers are Dischargers with Notice of Intent (NOI) coverage under this General Permit who discharge storm water associated with industrial activities and Authorized NSWDs either directly or through a municipal separate storm sewer system (MS4) directly to impaired water bodies identified in a U.S. EPA approved TMDL with an assigned waste load allocation (WLA) to industrial storm water sources.

To comply with the TMDL-specific permit requirements, Responsible Dischargers must either: 1) comply with applicable TMDL-specific permit requirements in Attachment E, as well as all other applicable provisions of this General Permit, or, 2) comply with one of the Compliance Options set forth in Attachment I, as well as all other applicable provisions of this General Permit.

Each TMDL-specific permit requirement listed in Attachment E (Table E-2 for TMDL-related Permit Requirements), provides the specific translation and required actions for Responsible Dischargers as discussed in Section 6 below. In Section 6 and the Table E-2, the specified watershed, water body, or water body and additional tributaries are clearly stated to ensure Responsible Dischargers know which Table E-2 TMDL requirement applies depending on the receiving water body to which they discharge.

This General Permit's NALs, found in Table 2, shall continue to apply in addition to the TMDL-specific permit requirements in Table E-2. The measurement of compliance with the TMDL-specific requirements, whether TNALs or NELs, differs from the measurement of compliance with most of this General Permit's NALs. The

TNALs and NELs are assigned as instantaneous maximums rather than the annual averages assigned to most NALs. As such, the TNAL and NEL values of a pollutant cannot be directly compared to the NAL value for the same pollutant. Storm water discharges are intermittent in nature and many of the Attachment E TMDL WLAs are translated to instantaneous maximum TNALs or NELS for protection against acute impacts to beneficial uses in the receiving waters.

The following are examples to assist Responsible Dischargers in determining which water bodies are subject to the TMDLs in Table E-2:

- Watershed example: If the "Impaired Water Body/ Watershed" column states "Napa River Watershed," the TMDL and its requirements are applicable to Dischargers discharging directly or through an MS4 discharging directly into water bodies within the Napa River Watershed.

- River and tributaries example: If the "Impaired Water Body/ Watershed" column states "Los Angeles River and Tributaries," this TMDL and its requirements are applicable to the Dischargers discharging directly or through an MS4 discharging directly into the Los Angeles River or into a tributary of the Los Angeles River.

- Lagoon example: If the "Impaired Water Body/ Watershed" column states "Colorado Lagoon," this TMDL and its requirements are applicable to Dischargers discharging directly or through an MS4 discharging directly into the Colorado Lagoon.

TMDL-specific permit requirements do not apply to Dischargers with No-Exposure Certification (NEC) coverage or a facility that is complying with the Notice of Non-Applicability (NONA) criteria.

4. General Permit Summary

The following requirements, applicable to Dischargers enrolled under this General Permit, were considered in determining the necessity of additional TMDL-specific permit implementation for applicable to Responsible Dischargers:

- *Storm Water Pollution Prevention Plan (SWPPP): This General Permit requires Dischargers to identify and list all the industrial materials handled at the facility (Section X.F.), list all potential sources of pollutants that could be discharged from their industrial facility (Section X.G), and describe the Best Management Practices (BMPs) that will be implemented to control their discharges (Section X.H). This General Permit requires Responsible Dischargers to revise their SWPPP whenever a significant change in monitoring or sampling (Section X.B.) occurs.*

- *Non-Storm Water Discharges (NSWDs): The only NSWDs authorized by this General Permit are listed in Section IV. NSWDs not listed in Section IV are considered unauthorized, and the discharge is prohibited (Section I.C.27) unless regulated by a separate NPDES permit.*

- *Visual Observations: Monthly visual observations shall be conducted in accordance with Section XI.A of this General Permit. Dischargers are required to conduct monthly visual observations which include: 1) monitoring of authorized NSWDs, 2) identification and elimination of unauthorized NSWDs, 3) identification of potential industrial pollutant sources, and 4) necessary BMP maintenance and implementation.*

- *Sampling and Analysis: Dischargers must sample for all industrial pollutants (with the potential to discharge to a waters of the United States) identified in their SWPPP in accordance with Section XI.B of this General Permit. Dischargers are required to collect and analyze storm water samples from two Qualified Storm Event (QSEs) within the first half of each reporting year (July 1 to December 31), and two (2) QSEs within the second half of each reporting year (January 1 to June 30) per discharge location. The Discharger shall perform sampling analysis and reporting in accordance with the requirements of this General Permit and shall compare the sampling results to the applicable limits set forth in Table 2.*

  When this General Permit's requirements are not sufficient to implement the TMDL, additional monitoring and sampling requirements are set forth in Attachment E's TMDL Compliance Table (Table E-2).

5. TMDL General Applicability

   This section contains additional supporting information that is applicable to all thirty-six (36) TMDLs listed in Attachment E for implementation.

   a. Waste Load Allocation Translation

      NPDES-regulated storm water discharges (which include industrial storm water) must be addressed by WLAs in TMDLs. (40 C.F.R. § 130.2(h).) NPDES permits must contain effluent limits and conditions consistent with the requirements and assumptions of the WLAs in TMDLs. (40 C.F.R. § 122.44(d)(1)(vii)(B).) In addition, Water Code section 13263 requires that waste discharge requirements implement any relevant Water Quality Control Plans. (Wat. Code, § 13263, subd. (a).) The existing WLAs were analyzed and translated into BMP-based or numeric water quality-based effluent limitations. TMDL-specific WLA interpretations are necessary due to the wide variation of requirements in the TMDLs approved by the U.S. EPA.

      When this General Permit was developed for adoption in 2014, the State Water Board was unable to appropriately incorporate TMDL WLAs as effluent limitations without substantially delaying the adoption of this General Permit. The TMDL WLAs vary greatly in form and substance, and significant investments of staff time and resources were required to appropriately translate these WLAs into effluent limitations and other requirements. As stated in the 2014 version of this General Permit's Fact Sheet, "an analysis of each TMDL applicable to industrial storm water discharges must . . . be performed to determine if it is appropriate to translate the waste load allocation into a numeric effluent limit, or if the effluent limit is to be expressed narratively using a BMP approach." The State Water

Board recognized the problems posed by the variability in storm water discharge frequency and duration, and it committed to "carefully analyz[ing]" the TMDL WLAs to "determine the appropriate effluent limitations." To do this, the State Water Board deferred setting effluent limitations per 40 Code of Federal Regulations section 122.44(d)(1). The State and Regional Water Board staff worked together and with stakeholders to develop the amendment to this General Permit which translated the requirements of each TMDL in Attachment E to corresponding General Permit effluent limitations and other requirements in a way that was consistent with the requirements and assumptions of each TMDL's WLA.

There are three general categories of translations for the thirty-six (36) TMDLs addressed in this General Permit:

i. Compliance with this General Permit

Compliance with the existing requirements that apply to all Discharges regulated by this General Permit is consistent with the requirements and assumptions of the WLA and any other TMDL requirements if the applicable TMDL:

1. Does not assign a WLA specific to industrial storm water discharges,

2. Specifies trash control measures to comply with the WLA that are implementable through this General Permit, or

3. Contains dry-weight sediment discharge requirements.

This General Permit contains instantaneous maximum and annual NALs that require the implementation of BMPs to control discharges of sediment. Compliance with these NALs will keep sediment discharge levels well below the levels needed to obtain sampling results for the constituents addressed by the WLAs focused on dry-weight sediment concentrations. This is explained in more detail in section II.F.6.f.

ii. TMDL Numeric Actions Levels (TNALs)

Compliance with TNALs is consistent with the requirements and assumptions of the WLA and any other TMDL requirements if the applicable TMDL contains:

1. Currently effective interim WLAs,

An interim WLA is incorporated as a TNAL in Table E-2 where a final NEL is assigned but the compliance date has not passed. The interim WLA will no longer apply upon the compliance date of the final NEL.

2. Final WLAs with compliance dates that have not passed, but no interim WLAs, or;

A final WLA that is not yet effective is assigned as a TNAL when there is no interim WLA in the TMDL. The requirements in Table E-2 for the TMDL may change upon the final WLA's compliance date.

3. Concentration-based WLAs with a compliance location established in the receiving water body (rather than at the point of discharge from the industrial facility).

   A concentration-based WLA that is collectively assigned to multiple Responsible Dischargers to be met at the receiving water body is translated into a TNAL because this General Permit's monitoring requirements are designed to evaluate facility-specific discharges, rather than to assess the contributions of all industrial dischargers as a whole. Dischargers permitted under this General Permit are not required to assess, and it would be infeasible to assess, the receiving water body for compliance with a WLA with which multiple dischargers must comply. Waste load allocations assigned to the receiving water allow for variable levels of pollutant contributions from Responsible Dischargers. A TNAL appropriately accounts for this by not defining a TNAL exceedance as a per se violation of this General Permit, though Responsible Dischargers are still required to comply with this General Permit's ERAs and prohibition on causing or contributing to an exceedance of water quality standards in the receiving water.

iii. Numeric Effluent Limitations (NELs)

Compliance with NELs is consistent with the requirements and assumptions of the WLA and any other TMDL requirements if the applicable TMDL contains:

1. Concentration-based WLAs specifically assigned to industrial storm water discharges at the point of discharge, or

2. Mass-based WLAs with concentration-based numeric targets.

   This General Permit aims to regulate industrial storm water discharges efficiently throughout the State. Direct application of the mass-based WLAs applicable to industrial storm water discharges would require facility-specific calculations for each storm event to determine the target value of each applicable TMDL constituent, resulting in a unique and floating target. Such requirements would be impractical, costly, and not aligned with the existing monitoring requirements in this General Permit.

   The State Water Board has determined that the monitoring requirements in this General Permit are sufficient to determine compliance with TMDL-related discharge requirements. This General Permit requires sampling of four (4) qualified storm events (QSE) a year per discharge location. The use of this General Permit's instantaneous maximum exceedance approach, which defines an exceedance as 2 (two) or more measurements

of sample values within a Reporting Year above the levels set in Attachment E, and the option of using composite or flow-weighted measurements per discharge location, will mitigate concerns that the inherent variability of storm water discharges will result in sampling unrepresentative of a facility's discharge.

b. Regional Water Board Authority

The Regional Water Boards may require further TMDL-specific compliance monitoring in addition to the requirements in this General Permit, or may issue an order pursuant to Water Code section 13267 or section 13383 requiring the Responsible Discharger to conduct and report TMDL-specific monitoring results.

The Regional Water Boards may require Responsible Dischargers to implement additional actions to reduce the discharge of industrial pollutants related to the TMDLs, based on but not limited to, monitoring data, visual observations, information provided by the Responsible Discharger, or site-specific inspections and/or investigations.

Regional Water Boards have the authority to determine whether Responsible Dischargers are in full compliance with the TMDL-specific requirements of this General Permit based on submitted SWPPPs and sampling information submitted via SMARTS. The Regional Water Board may require the Responsible Discharger to obtain a QISP to evaluate a Responsible Discharger's facility and SWPPP if a Responsible Discharger is identified as non-compliant with the TMDL-specific requirements in this General Permit.

c. Water Effect Ratio

A Water Effect Ratio (WER) is a factor that is used in federal regulations for Water Quality Criteria (WQC) to adjust the federal aquatic life criteria to site-specific water column conditions. The WER will convert the WQC for a pollutant into a site-specific objective based on the observed toxicity of the receiving water. The WER is used to derive site-specific criteria that maintain the level of protection of aquatic life intended by the "Guidelines for deriving numerical national WQC" (U.S. EPA 1985). The site-specific acute and chronic U.S. EPA criteria are calculated by multiplying the U.S. EPA's ambient WQC values by a pollutant-specific and water body-specific WER[35]. A default WER of 1 is used for all WQC as it is the most protective assumption that the toxicity in the dilution water used in toxicity tests is the same as the toxicity in dilution water of the receiving waters. If the WER exceeds 1, the receiving water toxic effects of the pollutant being tested is reduced. Conversely, if the WER is less than 1, then the toxic effects of the pollutant in the receiving water increases. A site-specific WER provides more accuracy to the toxicity of the subject pollutant in the ambient receiving waters. A

[35] Los Angeles Regional Water Quality Control Board. Los Angeles River Copper Water-Effect Ration (WER) Study. June 2008. Pg. 1. <http://www.waterboards.ca.gov/losangeles/board_decisions/basin_plan_amendments/technical_documents/77_New/Attachment%20A%20-%20FINAL%20LA%20River%20Cu%20WER%20Report%20-%206-3-08.pdf>. [as of June 5, 2018].

Regional Water Board may apply a site-specific WER to adjust water quality criterion through an NPDES permitting action. The State Water Board Executive Director has the authority to incorporate a reanalyzed Regional Water Board-adopted WER into this General Permit.

d. Exceedance Response Actions (ERAs) Implementation for TMDL Numeric Action Levels (TNALs)

Exceedance Response Action (ERA) requirements are applicable to TNAL exceedances, as specified in Section XII in this General Permit. A TNAL exceedance is not a violation of this General Permit.

Section XII. Exceedance Response Actions of this General Permit contains specific requirements for Responsible Dischargers that have exceeded their TNAL and have triggered the ERA process. The requirements are the same as those applicable to NAL exceedances. Section XII also provides that, on the effective date of the TMDL Requirements, Responsible Dischargers that have Baseline, Level 1, or Level 2 status for an NAL shall have the same status for any applicable TNAL addressing the same pollutant as the NAL. Responsible Dischargers shall update their Level 1 ERA Reports or the Level 2 Action Plans and the Level 2 ERA Technical Reports as necessary to implement address applicable TNALs. Following this initial pairing of TNAL and NAL statuses, the TNALs and NALs will operate separately.

e. Numeric Effluent Limitation (NEL) Implementation

An NEL exceedance is an instantaneous maximum exceedance, as defined in Attachment C. In the instance where NEL exceedances occur, Section XX.B. Water Quality Based Corrective Actions, as defined in this General Permit, apply to Responsible Dischargers. NELs are effluent limitations as defined by Water Code section 13385.1, subdivision (d). As a result, mandatory minimum penalties may apply following NEL exceedances, as defined in this General Permit. The circumstances in which mandatory minimum penalties are required to be assessed are detailed in Water Code section 13385, subdivisions (h) and (i), while the circumstances in which mandatory minimum penalties are not required to be assessed are detailed in subdivisions (j), (k), and (*l*) of that section.
If a Responsible Discharger is required to conduct both ERAs for NAL exceedances and Water Quality Based Corrective Actions for NEL exceedances, the Responsible Discharger, where possible, may conduct a site assessment or submit documentation that satisfies both requirements. If a Responsible Discharger is submitting one document that meets the requirements of Water Quality Based Corrective Actions and Exceedance Response Actions, the document should expressly state that it is meant to fulfill both requirements.

f. Discharges to Water Bodies with a Clean Water Act Section 303(d) Impairment

This General Permit (Section X.G.2.a.ix) requires a Discharger to identify any additional industrial pollutants or parameters that may be discharged to a ~~waterbody~~surface water body with a Clean Water Act (CWA) section 303(d)

impairment identified in Appendix 3 ~~as~~that is likely to be associated with industrial storm water. Dischargers may need to implement additional monitoring for any applicable pollutants/parameters (Section XI.B.6.e). Appendix 3 of this General Permit ~~includes the water bodies with 303(d) impairments or~~lists the CWA section 303(d) impaired water bodies per the State Water Board 2010 Integrated CWA Section 303(d) List / Section 305(b) Report, and corresponding TMDLs for impairment-pollutants ~~that are likely to be~~potentially associated with industrial storm water in black font, and ~~those that are not likely to be~~for impairment-pollutants not typically associated with industrial storm water in red font. This determination is based on ~~the pollutant or pollutants that are causing each impairment, and the State Water Board's general experience regarding the types of~~best professional judgement regarding pollutants ~~that are~~ typically found on industrial sites and in industrial storm water discharges. The list of ~~waterbodies~~water bodies is from the ~~State~~ Water Boards statewide 2010 Integrated ~~CWA Section 303(d) List / Section 305(b)~~ Report.

Some of the TMDLs for impaired water bodies ~~with 303(d) impairments or TMDLs~~ listed in Appendix 3 of this General Permit are not applicable to Dischargers covered under this General Permit. Appendix 3 indicates ~~these water bodies~~the TMDLs that are not applicable, and the TMDL-specific pollutants that Responsible Dischargers are not required to include in their pollutant source assessment (unless directed to do so by the Regional Water Board).

New Dischargers (as defined in Attachment C) applying for NOI coverage under this General Permit that will be discharging to an impaired water body with a 303(d) listed impairment are ineligible for coverage unless the Discharger submits data and/or information, prepared by a QISP, demonstrating that the facility will not cause or contribute to the impairment. Section VII.B of this General Permit describes the three different options New Dischargers have for making this determination. This General Permit requires a QISP to assist the New Discharger with this determination because individuals making this determination will need expertise in industrial storm water pollutant sources, BMPs, and a thorough understanding of complying with U.S. EPA's storm water regulations, and requirements of this General Permit~~'s requirements. Not requiring New Dischargers~~. The requirement to have a QISP ~~assist in this demonstration would possibly lead to~~prepare site demonstrations and determinations minimizes costly retrofits, permit violation penalties, or closure of a new facility ~~that has not demonstrated that the facility will not cause or contribute to the impairment.~~ whose discharges are not causing or contributing to a receiving water impairment.

6. TMDL-Specific Requirements

Table E-2 contains TMDL-specific requirements for each TMDL. Since many of the TMDLs translate the same pollutants in the same manner, this Fact Sheet addresses TMDLs by pollutant. However, Table E-2 is organized by Regional Water Board jurisdiction and watershed, allowing the Responsible Dischargers to easily identify their applicable requirements.

a. Chloride TMDLs

The Santa Clara River Chloride TMDL is the only chloride TMDL applicable to Responsible Dischargers. Exceeding levels of chloride can impair a water body's beneficial uses associated with agricultural uses for irrigation of chloride-sensitive crops and groundwater recharge.

i. Santa Clara River Chloride TMDL[36]

The U.S. EPA adopted the Santa Clara River Chloride TMDL on June 18, 2003, to address the chloride impairment of Santa Clara River, Reach 3.

- Source Analysis

The Santa Clara River Chloride TMDL identifies permitted storm water dischargers as point sources. The U.S. EPA's analysis of available flow and loading data concludes that chloride concentrations in Reach 3 were higher during periods of lower flows. The critical low-flow period identified in the Santa Clara River Chloride TMDL is the summer of 1991, when drought conditions were present.

The Santa Clara River Chloride TMDL identifies two major point sources that discharge to Reach 3: 1) the Fillmore Water Reclamation Plant and 2) the Santa Paula Water Reclamation Plant, which jointly contribute approximately 80 percent of the chloride load under low-flow conditions. Minor discharge sources (which include industrial storm water discharges) represent an estimated 6 percent of chloride loads under low-flow conditions and the estimated chloride concentrations for the minor discharge sources was less than 80 mg/L.[37]

- WLA Translation

The Santa Clara River Chloride TMDL assigns a concentration-based WLA to Responsible Dischargers at the facility's industrial discharge locations(s) for dry-weather discharges into Santa Clara River Reach 3. NSWDs are only authorized in this General Permit if Section IV conditions are met to control the discharge of pollutants from the facility. Section III.B prohibits all NSWDs not authorized under Section IV; therefore, all unauthorized NSWDs must be either eliminated or have regulatory coverage under a separate NPDES permit. Authorized NSWDs, as defined in this General Permit, are authorized because these discharges are assumed to not commingle with storm water associated with industrial activity. The Los Angeles Regional Water Board may impose additional requirements on NSWDs if deemed necessary per a site-specific analysis.

- Compliance Actions and Schedule

[36] U.S. EPA. Total Maximum Daily Load for Chloride in the Santa Clara River, Reach 3 (June 2003) <http://www.waterboards.ca.gov/losangeles/water_issues/programs/tmdl/Established/Santa%20Clara%20River%20Reach%203%20Chloride%20TMDL/final%20SCR%20R3%20Cl%20TMDL.pdf> [as of June 5, 2018].

[37] Total Maximum Daily Load for Chloride in the Santa Clara River, Reach 3, p. 12-13. <

Compliance with this General Permit equates to compliance with this TMDL and no additional requirements are incorporated into this General Permit to implement the Santa Clara River Chloride TMDL unless the Responsible Discharger is required to implement additional requirements by the Los Angeles Regional Water Board.

b. Nutrient TMDLs

Five nutrient TMDLs apply to industrial storm water discharges. Excessive nutrient loads (including ammonia) and phosphorus can cause eutrophic effects and lead to algae blooms and algal biomass impacting beneficial uses including recreation and wildlife. Eutrophication occurs when the algal growth decays and causes fluctuations in dissolved oxygen and pH.

i. Rainbow Creek Watershed TMDL[38]

The Rainbow Creek Watershed TMDL addresses the impairment of Rainbow Creek due to nitrogen and phosphorus. This TMDL does not identify industrial storm water discharges as a source of the impairment. Therefore, TMDL-related requirements for the Rainbow Creek Watershed TMDL are not applicable to Dischargers enrolled under this General Permit.[39] There are no additional requirements and Dischargers shall comply with this General Permit.

ii. Los Angeles Area Lakes TMDL[40]

The U.S EPA adopted the Los Angeles Area Lakes TMDL on March 26, 2012, to address the impairment of Peck Road Park Lake, Echo Park, Legg Lakes, and Puddingstone Reservoir due to nitrogen and phosphorus. Peck Road Park Lake, Echo Park Lake, and Legg Lakes are located in the Los Angeles River watershed and Puddingstone Reservoir is located in the San Gabriel River watershed.

- Source Analysis

  Nutrient loads into Peck Road Park Lake, Echo Park, Legg Lakes, and Puddingstone Reservoir originate from a variety of sources, including

[38] San Diego Regional Water Quality Control Board, Total Maximum Daily Loads (TMDLs) for Total Nitrogen and Total Phosphorus in the Rainbow Creek Watershed (February 2005) <http://www.waterboards.ca.gov/sandiego/water_issues/programs/tmdls/docs/rainbowcreek/final_docs/rctmdlfinalbpa032206.pdf> [as of June 5, 2018].

[39] Total Maximum Daily Loads (TMDLs) for Total Nitrogen and Total Phosphorus in the Rainbow Creek Watershed, p. 26.

[40] Los Angeles Regional Water Quality Control Board, Los Angeles Area Lakes Total Maximum Daily Loads for Nitrogen, Phosphorus, Mercury, Trash, Organochlorine Pesticides and PCBs (March 2012) <http://www.waterboards.ca.gov/losangeles/water_issues/programs/tmdl/Established/Lakes/LALakesTMDLsEntireDocument.pdf>. [as of June 5, 2018].

discharges from storm drain outlets containing industrial storm water from facilities within the watershed.

- WLA Translation

The Los Angeles Area Lakes TMDL assigns concentration-based WLAs for nitrogen and phosphorus to Responsible Dischargers at the facility's industrial discharge location(s) for discharges into Peck Road Park Lake, Echo Park, Legg Lakes, and Puddingstone Reservoir.[41] The WLA for nitrogen and phosphorus differ depending on the receiving waters. The WLAs assigned to Responsible Dischargers for nitrogen and phosphorus are translated to instantaneous maximum NELs as shown in Table F.1-F.4 below.

TABLE F.1: Peck Road Park Lake Nutrients WLA Translation

Pollutant	WLA (mg/L)	Total Instantaneous Maximum NEL (mg/L)
Phosphorus	0.37	0.37
Nitrogen	3.61	3.61

TABLE F.2: Echo Park Lake Nutrients WLA Translation

Pollutant	WLA (mg/L)	Total Instantaneous Maximum NEL (mg/L)
Phosphorous	0.16	0.16
Nitrogen	1.33	1.33

TABLE F.3: Legg Lakes Nutrients WLA Translation

Pollutant	WLA (mg/L)	Total Instantaneous Maximum NEL (mg/L)
Phosphorous	0.64	0.64
Nitrogen	1.8	1.8

TABLE F.4: Puddingstone Reservoir Nutrients WLA Translation

Pollutant	WLA (mg/L)	Total Instantaneous Maximum NEL (mg/L)
Phosphorous	0.40	0.40

[41] Los Angeles Area Lakes Total Maximum Daily Loads for Nitrogen, Phosphorus, Mercury, Trash, Organochlorine Pesticides and PCBs, pp. 4-18, 9-18, 10-17.

Nitrogen	2.0	2.0

- Compliance Actions and Schedule

  Responsible Dischargers shall comply with the requirements of this General Permit. Responsible Dischargers shall compare all sampling and analytical results for all individual or Qualified Combined Samples of the facility's industrial storm water discharges to the receiving water body reaches and the respective instantaneous maximum NELs listed in Table E-2.

  The Los Angeles Regional Water Board has not adopted an Implementation Plan or a compliance schedule for the Los Angeles Area Lakes TMDL. Therefore, Responsible Dischargers are required to comply with the Los Angeles Area Lakes TMDL-related requirements for nitrogen and phosphorus in this General Permit upon the Effective Date of the TMDL Requirements.

iii. Los Angeles River Nitrogen TMDL[42]

The Los Angeles Regional Water Board adopted the Los Angeles River Nitrogen TMDL on December 6, 2012, to address impairment of the Los Angeles River due to nitrogen compounds (ammonia, nitrite, and nitrate) and related effects (algae, pH, odor, and scum).

- Source Analysis

  The Los Angeles River Nitrogen TMDL lists urban runoff as a point source which includes storm water runoff from industrial sites and other urban runoff sources such as construction, municipal and the California Department of Transportation[43].

- WLA Translations

  The Los Angeles River Nitrogen TMDL assigns a concentration-based WLA for ammonia to Responsible Dischargers as one-hour averages and thirty-day averages to be met at the facility's industrial discharge location(s) for discharges into the Los Angeles River above LA-Glendale Water Reclamation Plant, Los Angeles River below LA-Glendale Water Reclamation Plant, or to tributaries discharging into the Los Angeles River above or below the LA-Glendale Water Reclamation Plant.[44] Because storm water is an intermittent discharge, only the acute one-hour average is appropriate to apply to Responsible Dischargers. One-hour average

[42] Los Angeles Regional Water Quality Control Board, Los Angeles River Nitrogen Compounds and Related Effects TMDL (August 2014) <https://www.waterboards.ca.gov/losangeles/water_issues/programs/tmdl/docs/R12-010_RB_BPA.pdf> [as June 5, 2018] (Los Angeles River Nitrogen Compounds and Related Effects TMDL).

[43] Los Angeles River Nitrogen Compounds and Related Effects TMDL, p. 1.

[44] Los Angeles River Nitrogen Compounds and Related Effects TMDL, pp. 3-7.

WLAs are applied to three different reaches of the Los Angeles River and are translated to instantaneous maximum NELs shown in Tables F.5-F.7 below.

TABLE F.5: Los Angeles River above LA-Glendale WRP WLA Translation

Pollutant	WLA (mg/L)	Total Instantaneous Maximum NEL (mg/L)
Ammonia	4.7	4.7

TABLE F.6: Los Angeles River below LA-Glendale WRP WLA Translation

Pollutant	WLA (mg/L)	Total Instantaneous Maximum NEL (mg/L)
Ammonia	8.7	8.7

TABLE F.7: Los Angeles River Tributaries WLA Translation

Pollutant	WLA (mg/L)	Total Instantaneous Maximum NEL (mg/L)
Ammonia	10.1	10.1

The Los Angeles River Nitrogen TMDL assigns a concentration-based WLA for nitrate-nitrogen, nitrite-nitrogen, and nitrate-nitrogen plus nitrite-nitrogen as thirty-day averages to Responsible Dischargers for discharges into all reaches and tributaries of the Los Angeles River. The WLAs are translated to instantaneous maximum NELs as shown below:

- Nitrate-nitrogen Instantaneous Maximum NEL: 8.0 mg/L
- Nitrite-nitrogen Instantaneous Maximum NEL: 1.0 mg/L
- Nitrate-nitrogen plus nitrite-nitrogen Instantaneous Maximum NEL: 8.0 mg/L

- Compliance Actions and Schedule

Responsible Dischargers shall comply with the requirements of this General Permit. Responsible Dischargers shall compare all sampling and analytical results for all individual or Qualified Combined Samples of the facility's industrial storm water discharges to the receiving water body reaches and the respective instantaneous maximum NELs listed in Table E-2.

The Los Angeles River Nitrogen TMDL's final compliance deadline for NEL compliance was March 23, 2004. Since this compliance deadline has passed, the WLAs shall be met upon the Effective Date of the TMDL Requirements.

iv. Santa Clara River Nitrogen TMDL[45]

The Los Angeles Regional Water Board adopted the Santa Clara River Nutrients TMDL on August 7, 2003, to address the Nitrogen Compound (total ammonia as nitrogen, nitrate+nitrite as nitrogen) impairment of Santa Clara River Reach 3 and Reach 7.

- Source Analysis

  Storm water sources are a point source of ammonia, nitrite, and nitrate to the Santa Clara River relative to publicly owned wastewater treatment facilities.[46]

- WLA Translations

  The Santa Clara River Nitrogen TMDL assigns a concentration-based WLA for Nitrogen Compounds to Responsible Dischargers at the facility's industrial discharge location(s) for discharges into Santa Clara River Reach 3 and Reach 7.[47] Ammonia as nitrogen WLAs are established to address both acute effects (one-hour average concentration) and chronic effects (30-day average concentration) on aquatic life for both Reaches 3 and 7. Only the acute ammonia as nitrogen WLAs will be translated since acute effects are more relevant to storm water discharges than chronic. The ammonia as nitrogen (one-hour average) is assigned to Responsible Dischargers and translated to instantaneous maximum NELs as shown in Tables F.8 and F.9 below.

TABLE F.8: Santa Clara River Reach 3 WLA Translation

Pollutant	WLA (mg/L)	Total Instantaneous Maximum NEL (mg/L)
Ammonia as nitrogen (one-hour average)	4.2	4.2

TABLE F.9: Santa Clara River Reach 7 WLA Translation

Pollutant	WLA (mg/L)	Total Instantaneous

[45] Los Angeles Regional Water Quality Control Board, Santa Clara River Nitrogen Compounds Total Maximum Daily Load (August 2003) <https://www.waterboards.ca.gov/losangeles/water_issues/programs/tmdl/docs/2003-011_RB_BPA.pdf> [as of June 5, 2018] (Santa Clara River Nitrogen Compounds TMDL).

[46] Santa Clara River Nitrogen Compounds TMDL, p. 2.

[47] Santa Clara River Nitrogen Compounds TMDL, pp. 3-4.

		Maximum NEL (mg/L)
Ammonia as nitrogen (one-hour average)	5.2	5.2

- Compliance Actions and Schedule

  Responsible Dischargers shall comply with the requirements of this General Permit. Responsible Dischargers shall compare all sampling and analytical results for all individual or Qualified Combined Samples of the facility's industrial storm water discharges to the receiving water body reaches and the respective instantaneous maximum NELS listed in Table E-2.

  The Santa Clara River Nutrients TMDL applies the WLAs to Responsible Dischargers upon the effective date of the TMDL. Since this compliance deadline has passed, the WLAs shall be met upon the Effective Date of the TMDL Requirements.

v. Machado Lake Nutrient TMDL[48]

The Los Angeles Regional Water Board adopted the Machado Lake Nutrient TMDL on May 1, 2008, to address the impairment of Machado Lake due to eutrophication, algae, ammonia, and odors.

- Source Analysis

  Storm Water discharges from the MS4, the California Department of Transportation, and the general construction and industrial permittees have been identified as the point sources.[49]

- WLA Translations

  The Machado Lake Nutrient TMDL assigns a concentration-based WLA to Responsible Dischargers for total phosphorus and total nitrogen at the facility's industrial discharge location(s) for discharges into Machado Lake.[50] The WLAs are translated to instantaneous maximum NELs as shown in Table F.10 below.

TABLE F.10: Machado Lake Nutrient WLAs

Pollutant	**WLA (mg/L) Monthly Average**	**Instantaneous Maximum NEL (mg/L)**

[48] Los Angeles Regional Water Quality Control Board, Total Maximum Daily Load (TMDL) for Eutrophic, Algae, Ammonia, and Odors (Nutrient) in Machado Lake (May 2008) <https://www.waterboards.ca.gov/losangeles/water_issues/programs/tmdl/docs/2008-006_RB_BPA.pdf> [as of June 5, 2018] (Machado Lake Nutrients TMDL).

[49] Machado Lake Nutrients TMDL, p. 3.

[50] Machado Lake Nutrients TMDL, pp. 3-5.

Total Phosphorus	0.1	0.1
Total Nitrogen	1.0	1.0

- Compliance Actions and Schedule

  Responsible Dischargers shall comply with the requirements of this General Permit. Responsible Dischargers shall compare all sampling and analytical results for all individual or Qualified Combined Samples of the facility's industrial storm water discharges to the receiving water body reaches and the respective instantaneous maximum NELs listed in Table E-2.

  The Machado Lake Nutrient TMDL's compliance deadline for NEL compliance was September 11, 2018. Since this compliance deadline has passed, the WLAs shall be met upon the Effective Date of the TMDL Requirements.

c. Trash TMDLs

Two trash TMDLs are translated for this General Permit. Trash and plastic pellets are harmful and contain chemicals that are toxic to wildlife. Plastic pellets in waterways can inhibit the growth of aquatic vegetation, decreasing spawning areas and habitats for fish and other organisms. Trash impairments from intentional and unintentional litter causes water quality problems including loss of habitat, direct harm to wildlife, and health impacts to people. The requirements set forth in these TMDLs apply to industrial storm water discharges into the watersheds of these water bodies as defined in Section II.F.3 above.

i. Santa Monica Bay Debris TMDL[51]

The Los Angeles Regional Water Board adopted the Santa Monica Bay Debris TMDL on November 4, 2010, to address the impairment of Santa Monica Bay due to plastic pellets and trash.

- Source Analysis

  The majority of the land-based debris is discharged to the marine environment through storm drains. Debris discharged from storm drains typically include litter, garbage transportation, commercial establishment and public venue debris, and construction debris. The main source of plastic pellets are accidental spills from industry that import, manufacture, process, transport, store, recycle, or otherwise handle plastic pellets.[52]

[51] Los Angeles Regional Water Quality Control Board, Santa Monica Bay Nearshore and Offshore Debris TMDL (November 2010) <https://www.waterboards.ca.gov/losangeles/water_issues/programs/tmdl/docs/R10-010_RB_BPA.pdf> [as of June 5, 2018] (Santa Monica Bay Nearshore and Offshore Debris TMDL).

[52] Santa Monica Bay Nearshore and Offshore Debris TMDL, pp. 3-4.

- WLA Translation

  The Santa Monica Bay Debris TMDL assigns a WLA of zero plastic pellets to Responsible Dischargers at the facility's industrial discharge location(s) for discharges into Santa Monica Bay.[53] Foreseeable methods of compliance with the plastic pellet WLA includes implementation of BMPs such as appropriate containment systems, sealed containers, vacuum devices for cleaning, and inspection and cleaning at the operational areas and outlets of water discharge.[54] A debris WLA was not assigned to Responsible Dischargers.

  This General Permit currently has requirements in Section XVIII. Special Requirements – Plastic Materials, containing implementation procedures and BMP requirements for facilities that handle plastic materials, including plastic pellets.

- Compliance Actions and Schedule

  Responsible Dischargers shall comply with the requirements of this General Permit. Responsible Dischargers shall implement Section XVIII of this General Permit if such facility claims to handle Plastic Materials as defined by this General Permit.

ii. Los Angeles Area Lakes TMDL for Trash[55]

The U.S. EPA adopted Los Angeles Area Lakes TMDL for Trash on March 26, 2012, to address the trash impairment of two of the nine assessed lakes, Peck Road Park Lake and Echo Park Lake.

- Source Analysis

  Industrial facilities north of Peck Road Park are separated from the lake with a chain link fence. A buildup of plastic bags, tires, and industrial scrap were observed and appeared to have not been cleaned up for a long period of time due to the steepness of the area.

  The major sources of trash discharged into Echo Park Lake are from storm drains, wind action, and direct disposal. Storm drains carry trash throughout the watershed and deposit it into different sections of the lake.[56]

[53] Santa Monica Bay Nearshore and Offshore Debris TMDL, pp. 6-7.

[54] Santa Monica Bay Nearshore and Offshore Debris TMDL, p. 53.

[55] Los Angeles Regional Water Quality Control Board , Los Angeles Area Lakes Total Maximum Daily Loads for Nitrogen, Phosphorus, Mercury, Trash, Organochlorine Pesticides and PCBs <http://www.waterboards.ca.gov/losangeles/water_issues/programs/tmdl/Established/Lakes/LALakesTMDLsEntireDocument.pdf> [as of June 5, 2018] (Los Angeles Area Lakes TMDLs for Nitrogen, Phosphorus, Mercury, Trash, Organochlorine Pesticides and PCBs).

[56]. Los Angeles Area Lakes Total Maximum Daily Loads for Nitrogen, Phosphorus, Mercury, Trash, Organochlorine Pesticides and PCBs, pp. 4-76, 6-56.

- WLA Translation

  The Los Angeles Area Lakes TMDL for Trash assigned a WLA of zero trash to Responsible Dischargers at the facility's industrial discharge location(s) for discharges into Peck Road Park Lake and Echo Park Lake.[57] The TMDL states that the WLA may be complied with via full capture systems, partial capture systems, nonstructural BMPs, or any other lawful method which meets the target of zero trash in or on the water and on the shoreline.[58]

- Compliance Actions and Schedule

  Responsible Dischargers shall comply with the requirements of this General Permit. Responsible Dischargers shall additionally implement any minimum or advanced BMPs, including the BMPs referenced by the TMDL to comply with the Trash WLA.

d. Sediment

Three sediment TMDLs are translated for this General Permit. Sediment is particulate organic and inorganic matter that is mobilized by erosion due to wind, precipitation, or anthropogenic causes and is carried by water. Sediment in varying concentrations naturally occurs in runoff from all locations in the watershed. Human activities result in concentrated flow, with intensified velocities or volumes, which has the capability to magnify erosion rates resulting in rill erosion, gully erosion, and channel incision. Reducing erosion by utilizing BMPs that stabilize loose soil sources and/or retaining storm water onsite will decrease the sediment discharges. The requirements set forth in these TMDLs apply to industrial storm water discharges into the watersheds of these water bodies as defined in Section II.F.3 above.

i. Los Peñasquitos Lagoon Sediment TMDL[59]

The San Diego Regional Water Quality Control Board (San Diego Regional Water Board) adopted the Los Peñasquitos Lagoon Sediment TMDL on June 13, 2012, to address the impairment of Los Peñasquitos Lagoon due to sediment.

[57] Los Angeles Area Lakes TMDLs for Nitrogen, Phosphorus, Mercury, Trash, Organochlorine Pesticides and PCBs pp. 4-80, 6-59.

[58] Los Angeles Area Lakes TMDLs for Nitrogen, Phosphorus, Mercury, Trash, Organochlorine Pesticides and PCBs, p. 4-84

[59] San Diego Regional Water Quality Control Board, Total Maximum Daily Load For Sedimentation in Los Peñasquitos Lagoon (June 2012) <http://www.waterboards.ca.gov/sandiego/board_decisions/adopted_orders/2012/R9-2012-0033_Attach_A.pdf> [as of June 5, 2018] (Los Peñasquitos Sediment TMDL).

- Source Analysis

  The watershed sources of sediment consist of point and non-point source discharges in the watershed draining into Los Peñasquitos Lagoon. The watershed sources of sediment are due to past historical activities that have resulted in an accumulation of sediment. The Los Peñasquitos Lagoon Sediment TMDL identifies industrial storm water discharges as contributing to sediment supply to the Lagoon.[60] According to the Los Peñasquitos Lagoon TMDL staff report, the potential contribution of pollutant loadings from industrial and construction storm water is low because non-storm water discharges are prohibited or authorized under strict permit circumstances.[61]

- WLA Translations

  The Los Peñasquitos Lagoon TMDL assigns a WLA of 2,580 tons/year to the combined responsible parties (Resolution No. R9-2012-033) for discharges into the Los Peñasquitos Lagoon Watershed.[62] Responsible parties include: Phase I Municipal Separate Storm Sewer Systems (MS4s) co-permittees (the County of San Diego, City of San Diego, City of Del Mar, and City of Poway), Phase II MS4 permittees, the California Department of Transportation, general construction and industrial storm water NPDES permittees.

  The Phase I MS4 co-permittees and the California Department of Transportation are responsible for assuming the lead role in coordinating and carrying out the necessary actions, compliance monitoring requirements, and successful implementation of the adaptive management framework required as part of this TMDL. Responsible Dischargers shall cooperate with all responsible parties to reduce their collective sediment load.

  Responsible Dischargers are required to monitor sediment discharges from their facilities to demonstrate progress towards compliance with final WLAs.[63] Monitoring flow rates for industrial storm water discharges is not required for all Dischargers in this General Permit and is specific to Responsible Dischargers located in the Los Peñasquitos Lagoon Watershed to assess the correlation between flow and sediment deposition in this water body.

- Compliance Actions and Schedule

[60] Los Peñasquitos Sediment TMDL, p. 4.
[61] Los Peñasquitos Sediment TMDL, p. 38.
[62] Los Peñasquitos Sediment TMDL. p. 5.
[63] Los Peñasquitos Sediment TMDL, pp. A-8, A-9.

Responsible Dischargers shall comply with the requirements of this General Permit and are required to provide an estimate of a representative flow rate from their industrial facility for one Qualifying Storm Event (QSE) each reporting year. Monitoring flow rate values should be consistent with the monitoring, calculation and reporting methods and framework used by the Phase I MS4 co-permittees. The Responsible Discharger shall submit the representative flow estimate as a PDF attachment to the Annual Report required under section X.V.I of this General Permit.

Compliance actions will be required upon the Effective Date of the TMDL Requirements. The final compliance deadline for the Los Peñasquitos Lagoon TMDL is July 14, 2034. Future reissuances of this General Permit may incorporate additional or revised compliance requirements or interim targets to progress towards the required final compliance by July 14, 2034.

ii. Napa River Sediment TMDL[64]

The San Francisco Regional Water Quality Control Board (San Francisco Regional Water Board) adopted the Napa River Sediment TMDL on September 15, 2009, to address the sediment impairment of the Napa River Watershed.

The Napa River TMDL does not assign Responsible Dischargers a percent reduction of sediment loads into the Napa River Watershed. The Napa River TMDL and Habitat Enhancement Plan implementation actions require Responsible Dischargers to comply with this General Permit. Therefore, compliance with this General Permit is consistent with the requirements and assumptions of this TMDL's WLA(s). No additional requirements are incorporated into this General Permit to implement the Napa River Sediment TMDL.

iii. Sonoma Creek Sediment TMDL[65]

The San Francisco Regional Water Board adopted the Sonoma Creek Sediment TMDL on December 12, 2012, to address the sediment impairment of the Sonoma Creek Watershed.

[64] San Francisco Bay Regional Water Quality Control Board. Napa River Sediment Total Maximum Daily Load and Habitat Enhancement Plan (September 2009) <http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/TMDLs/napasediment/NapaSedBPA090909.pdf>.. [as of June 5, 2018].

[65] San Francisco Bay Regional Water Quality Control Board, Total Maximum Daily Load for Sediment in Sonoma Creek (December 2008) <http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/TMDLs/napasediment/NapaSedBPA090909.pdf> [as of June 5, 2018].

The Sonoma Creek Sediment TMDL does not assign Responsible Dischargers a percent reduction of sediment loads into the Sonoma Creek Watershed. The Sonoma Creek Sediment TMDL requires Responsible Dischargers to comply with this General Permit. Therefore, compliance with this General Permit is consistent with the requirements and assumptions of this TMDL's WLA(s). No additional requirements are incorporated into this General Permit to implement the Sonoma Creek Sediment TMDL.

e. Salts TMDLs

The Calleguas Creek Salts TMDL is the only salt (boron, chloride, sulfate, and/or total dissolved solids [TDS]) TMDL applicable to Responsible Dischargers. Salt discharges impact beneficial uses mostly in dry-weather where high concentrations of salts in agriculture supply water can damage crops, affect plant growth, degrade drinking water, and damage industrial equipment. Most salts do not naturally degrade, and can accumulate in groundwater for decades.

i. Calleguas Creek Salt TMDL[66]

The Los Angeles Regional Water Board adopted the Calleguas Creek Salt TMDL to address the impairment of the Calleguas Creek Watershed, which includes eleven (11) reaches, due to boron, chloride, sulfate, and total dissolved solids (salts). The eleven reaches comprising the Calleguas Creek Watershed include: Reach 3, Reach 4, Reach 6, Reach 7, Reach 8, Reach 9 A and 9B, Reach 10, Reach 11, Reach 12, and Reach 13.

- Source Analysis

  Sources of salts in the watershed include water supply, water softeners that discharge to publicly owned treatment work (POTWs), POTW treatment chemicals, pesticides and fertilizers, and indoor water use (chemicals, cleansers, food, etc.). Dry weather discharges of salts are sourced from groundwater pumping, groundwater exfiltration, POTWs, dry weather urban and agricultural runoff. The Calleguas Creek Salts TMDL does not include wet-weather WLAs because wet weather flows transport a large mass of salts at low concentrations.[67]

- WLA Translation

[66] Los Angeles Regional Water Quality Control Board, Total Maximum Daily Load for Boron, Chloride, Sulfate, and DS (Salts) in the Calleguas Creek Watershed (October 2007) <https://www.waterboards.ca.gov/losangeles/water_issues/programs/tmdl/docs/2007-016_RB_BPA.pdf> [as of June 5, 2018] (Calleguas Creek Salts TMDL).

[67] Calleguas Creek Salts TMDL, pp. 3-4.

The Calleguas Creek Salts TMDL assigns a WLA for dry-weather discharges to Responsible Dischargers at the facility's industrial discharge location(s) for discharges into the Calleguas Creek.[68] NSWDs are only authorized in this General Permit if Section IV conditions are met to control the discharge of pollutants from the facility. Section III.B prohibits all NSWDs not authorized under Section IV; therefore, all unauthorized NSWDs must be either eliminated or have regulatory coverage under a separate NPDES permit. Authorized NSWDs, as defined in this General Permit, are authorized because these discharges do not commingle with storm water associated with industrial activity. The Los Angeles Regional Water Board may impose additional requirements on authorized NSWDs if deemed necessary per a site-specific analysis.

- Compliance Actions and Schedule

  Compliance with this General Permit is consistent with the requirements and assumptions of this TMDL's WLA(s). No additional requirements are incorporated into this General Permit to implement the Calleguas Creek Salts TMDL unless the Responsible Discharger is required to implement additional requirements by the Los Angeles Regional Water Board.

f. Organochlorine Pesticide, Polycyclic aromatic hydrocarbon (PAH), PCB, and Metals TMDLs

Six organochlorine (OC) pesticides (OC pesticides), PAHs, and PCB TMDLs in Attachment E are applicable to Responsible Dischargers. Each TMDL below identifies the specific grouping of OC pesticides associated with that TMDL, which can contain any of the following pollutants: DDT, diazinon, dieldrin, chlordane, toxaphene. The use of these pollutants has been banned for many years because of potential human health and environmental harm, however, the physio-chemical properties of the pollutants allow them to persist in the environment, bioaccumulate through the food web, and pose risks to aquatic life, wildlife, and human health.

OC pesticides, PAHs,, PCBs, and metals have an affinity for organic matter and will partition from water and sorb to organic substances such as sediment, and easily transport via storm water and authorized NSWDs to settle in the receiving water bed.

Most of the TMDLs addressed in this section have receiving water sediment numeric targets translated to dry-weight sediment concentration WLAs to be met by Responsible Dischargers at the discharge point.

[68] Calleguas Creek Salts TMDL, pp. 7-8.

The sediment targets address receiving water bed toxicity. Because these TMDLs associate receiving water bed toxicity targets to discharges of OC pesticides, PAHs, PCBs, and metals bound to sediment particulates, these TMDLs are addressed by implementing sediment control measures so that sediment-bound particulates do not leave an industrial facility's property and settle in the receiving water bed via storm water discharges and authorized NSWDs.

This General Permit limits the discharge of sediment with annual and instantaneous maximum NALS for TSS in Table 2 of this General Permit. The samples that would be needed to determine whether a facility's discharge was in compliance with the pollutant concentrations and loads assigned in the TMDL would require significantly more sediment volume than the current NAL allows. For the pollutant concentrations to be measured, a sufficient volume of storm water must be collected to obtain suitable quantities of Total Suspended Solids (TSS) to analyze the filtered bulk sediment. These methods require from 30 grams (30,000 milligrams) of suspended solids or up to 100 grams (100,000 milligrams) to accommodate for potential re-analysis or for quality control.[69] A Monitoring and Reporting Plan reviewed a number of studies that directly measured the concentration of contaminants associated with suspended solids and found that there are no standardized procedures for quantifying pollutant load associated with suspended sediment.[70] The quantity of bulk sediment required is well above the 100 mg/L annual NAL and the 400 mg/L instantaneous maximum NAL. Since these WLAs are assigned to be met in the receiving water and are intended to control sediment pollutant loading into the impaired water, compliance with this General Permit's TSS annual and instantaneous maximum NAL is is sufficient for compliance with the WLAs. This General Permit requires reducing the discharge of sediment by complying with the minimum BMP requirements and any advanced BMPs as required. BMPs that prevent erosion and sedimentation can be particularly effective since the OC pesticides, PAHs, and PCBs addressed by the following TMDLs preferentially bind to sediment. Therefore, BMPs that eliminate exposure of sediment to storm water discharges and authorized NSWDs to pollutant sources, retain storm water onsite, and/or treat storm water prior to discharge from the industrial facility can be used to control these pollutants.

State Water Board staff analyzed the 2015 to 2018 TSS storm water effluent sample data submitted into SMARTS by industrial facilities with NOI coverage resulting from QSEs for the following Los Angeles Regional Water Board TMDL Watersheds:

1. Ballona Creek Estuary Toxics

[69] E-mail from Debby Wilson, TestAmerica Laboratories, to Rebecca Greenwood, State Water Resources Control Board (April 25, 2018) [conveying information from Director of Technical Services Eric Redman, TestAmerica Laboratories].

[70] County of Los Angeles Department of Public Works. Machado Lake Multipollutant TMDL Monitoring and Reporting Program (MRP) for the Unincorporated Areas of Los Angeles County Within the Machado Lake Watershed (September 12, 2011) <https://www.waterboards.ca.gov/losangeles/board_decisions/basin_plan_amendments/technical_documents/64_New/Monitoring%20&%20Reporting%20Program%20Plan/County%20of%20Los%20Angeles_final%20MRP.pdf> [as of June 5, 2018].

2. Marina del Rey
3. LA/LB Harbor (Dominguez Channel Estuary, Consolidated Slip, and Fish Harbor)
4. Colorado Lagoon
5. LA Lakes
6. Machado Lakes
7. Oxnard Drain 3
8. Santa Monica Bay DDTs

None of these TSS sample results analyzed by State Water Board staff were reported in high enough quantities (at least 30,000 mg) to measure the receiving water sediment numeric targets translated to dry-weight sediment concentrations WLAs specified for the TMDLs addressed in this section.

TABLE F.11: Facility Exceedance Counts per Reporting Year

Reporting Year	No. of Facilities with Annual TSS NAL Exceedance[71]	No. of Facilities with Instantaneous TSS NAL Exceedance[72]	No. of Facilities with TSS Sampling Data
2015 – 2016	53	11	278
2016 – 2017	28	5	312
2017 – 2018	22	2	195

TABLE F.12: Facilities with Annual TSS NAL Exceedances

Reporting Year	No. of Facilities with TSS Concentration from 100 to 200 mg/L	No. of Facilities with TSS Concentration from 200 to 500 mg/L	No. of Facilities with TSS Concentration >500 mg/L (highest detected measurement in mg/L)
2015 – 2016	28	18	7 (6210)
2016 – 2017	17	9	2 (1468)
2017 – 2018	14	6	2 (2448)

TABLE F.13: TSS Samples with Instantaneous Maximum NAL Exceedances

Reporting Year	Number of Samples with TSS Concentration >= 400 mg/L	Total Number of Samples

[71] Annual Exceedance – the average TSS sampling concentration is greater than or equal to 100 mg/L per reporting year.

[72] Instantaneous Exceedance – at least two TSS sampling concentrations are greater than or equal to 400 mg/L per reporting year.

	(highest detected measurement in mg/L)	
2015 – 2016	47 (12,000)	1240
2016 – 2017	21 (8,350)	1604
2017 – 2018	12 (5,910)	669
Total	80	3513

TABLE F.14: Summary of TSS Sample Concentrations

Reporting Year	No. of Samples with TSS Concentration from 400 to 500 mg/L	No. of Samples with TSS Concentration from 500 to 1000 mg/L	No. of Samples with TSS Concentration > 1000 mg/L
2015 – 2016	12	24	11
2016 – 2017	7	11	3
2017 – 2018	4	5	3

TABLE F.15: 2015-2018 Industrial Facility[73] TSS Monitoring Results Over 1,000 mg/L

Reporting Year	Total Suspended Solids (TSS) Result	Units	Analytical Method	Method Detection Limit	Reporting Limit
2015-2016	12000	mg/L	A2540D	50	100
2015-2016	4270	mg/L	A2540D	16.7	33.3
2015-2016	1900	mg/L	A2540D	5	5
2015-2016	1880	mg/L	A2540D	0.829	10
2015-2016	1450	mg/L	A2540D	10	
2015-2016	1380	mg/L	A2540D	2.5	100
2015-2016	1200	mg/L	A2540D	0.1	0.1
2015-2016	1200	mg/L	A2540D	10	20
2015-2016	1120	mg/L	A2540D	0.5	
2015-2016	1060	mg/L	A2540D	8.3	
2015-2016	1020	mg/L	A2540D	0.829	1
2016-2017	8350	mg/L	A2540D	50	100
2016-2017	3700	mg/L	A2540D	5	5
2016-2017	2320	mg/L	A2540D	25	50
2017-2018	5910	mg/L	A2540D	2.5	208
2017-2018	3440	mg/L	A2540D	2.5	125
2017-2018	1560	mg/L	A2540D	2.5	192

[73] The seventeen (17) results in Table F.15 are from 9 different industrial facilities located within the eight (8) Los Angeles Regional Water Board TMDL watersheds listed above.

i. Chollas Creek Diazinon TMDL[74]

The San Diego Regional Water Board adopted the Chollas Creek Diazinon TMDL on August 14, 2002, to address the impairment of the Chollas Creek Watershed due to diazinon. The Chollas Creek Diazinon TMDL identifies urban storm water flows as a significant source of diazinon. This analysis did not include a separate WLA assigned to industrial storm water discharges.

- Compliance Actions and Schedule

  Compliance with this General Permit is consistent with the requirements and assumptions of this TMDL's WLA(s). No additional requirements are incorporated into this General Permit to implement the Chollas Creek Diazinon TMDL.

ii. Santa Monica Bay Dichlorodiphenyltrichloroethane (DDTs) and Polychlorinated Biphenyls (PCBs) TMDL[75]

The U.S. EPA adopted the Santa Monica Bay DDTs and PCBs TMDL on March 26, 2012, to address the impairment for Santa Monica Bay due to DDTs and PCBs. Santa Monica Bay, as defined in this TMDL, is Point Dume to Point Vicente and the Palos Verdes shelf from Point Vicente to Point Fermin.

- Source Analysis

  DDTs are organochlorine insecticides widely used in the past on agricultural crops and to control disease-carrying insects. The United States banned the use of DDTs in 1972, except for public health emergencies involving insect diseases and control of body lice. PCBs are mixtures of up to 209 individual chlorinated compounds (known as congeners). In 1976, the manufacturing of PCBs was prohibited because of evidence that they build up in the environment and can cause harmful health effects.[76]

- WLA Translation

[74] San Diego Regional Water Quality Control Board, Chollas Creek Diazinon Total Maximum Daily Load (August 2002) <https://www.waterboards.ca.gov/sandiego/water_issues/programs/tmdls/docs/chollascreekdiazinon/2002_0123atta081402.pdf> [as of June 13, 2018].

[75] Los Angeles Regional Water Quality Control Board, Santa Monica Bay Total Maximum Daily Loads for DDTs and PCBs (March 2012) <http://www.waterboards.ca.gov/losangeles/water_issues/programs/tmdl/Established/SantaMonica/FinalSantaMonicaBayDDTPCBsTMDL.pdf> [as of June 5, 2018].

[76] Santa Monica Bay Total Maximum Daily Loads for DDTs and PCBs, p. 25.

The Santa Monica Bay DDTs and PCBs TMDL assigns mass-based WLAs of 0.01 g/yr for DDT and 0.04 g/yr for PCBs to be met at the facility's industrial discharge location(s) for discharges into Santa Monica Bay.[77] The WLA is based on the aggregate area represented by individual permittees covered under this General Permit, which is 0.00025% of the total area.

Directly implementing the DDT and PCBs WLAs would be impractical, costly, and not aligned with the monitoring requirements in this General Permit. Responsible Dischargers would normally have been assigned to meet the concentration-based sediment numeric targets of the Santa Monica Bay DDTs and PCBs TMDL. However, as mentioned in the introduction of this section, this TMDL associates receiving water bed toxicity targets to discharges of OC pesticides, PAHs, PCBs, and/or metals bound to sediment particulates. Therefore, this TMDL is addressed by complying with this General Permit's Table 2 TSS NAL requirements by implementing sediment control measures to prevent sediment-bound particulates from settling into the receiving water bed.

TABLE F.16: Santa Monica (Point Vicente to Point Dume) WLA

Pollutant	WLA g/yr
Total DDT	0.01
Total PCBs	0.04

- Compliance Actions and Schedule

  Compliance with this General Permit is consistent with the requirements and assumptions of this TMDL's WLA(s). No additional requirements are incorporated into this General Permit to implement the Santa Monica Bay DDTs and PCBs TMDL.

iii. Oxnard Drain 3 TMDL[78]

The U.S. EPA adopted the Oxnard Drain 3 TMDL on October 6, 2001, to address the impairment of the Oxnard Drain 3 due to bifenthrin, chlorpyrifos,

[77] Santa Monica Bay Total Maximum Daily Loads for DDTs and PCBs, pp. 25, 51.

[78] Los Angeles Regional Water Quality Control Board, Total Maximum Daily Load for Pesticides, PCBs, and Sediment Toxicity in Oxnard Drain 3 (October 2011) <http://www.waterboards.ca.gov/losangeles/water_issues/programs/tmdl/Established/Oxnard%20Drain%20No.%203%20Pesticides%20PCBs%20and%20Sediment%20Toxicity%20TMDL/oxnard-drain-3-tmdl-10-2011.pdf> [as of June 5, 2018].

OC pesticides (chlordane, DDT, dieldrin, and toxaphene), PCBs, and sediment toxicity (OC pesticides, PCBs, and sediment toxicity).[79]

- Source Analysis

  The Oxnard Drain 3 TMDL identifies many historic and current loadings of pollutants into Oxnard Drain 3 including facilities that would be covered under this General Permit. The U.S. EPA has cancelled the manufacturing or use of all the pollutants considered OC pesticides and PCBs that are listed as causes of impairment in Oxnard Drain 3. However, the past use of these chemicals was so widespread and unrestricted loads of these chemicals are still present from waste and storage facilities and old equipment that used or contained the contaminants.[80] The sources of OC pesticides are historical sediments that are currently in Oxnard Drain 3 or could potentially be transported there from other sediments in the watershed. Bifenthrin and chlorpyrifos are currently being applied to urban structures, landscaping, and agricultural crops discharged via storm water and irrigation runoff.[81]

- WLA Translation

  The Oxnard Drain 3 TMDL assigns a concentration-based WLA to industrial storm water discharges for 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, bifenthrin, chlorpyrifos, dieldrin, total chlordane, total PCBs, total suspended sediments, and toxaphene expressed as water, bed sediment and suspended sediment concentrations in ug/kg to be met at the facility's industrial discharge location(s) for discharges into the Oxnard Drain 3.[82] OC pesticides and PCBs have an affinity for organic matter and will partition from water to organic substances such as sediment, benthic organisms, and fish[83], so the sediment allocations are applied.

  Directly implementing the WLAs are impractical, costly, and not aligned with the monitoring requirements in this General Permit. As mentioned in the introduction of this section, this TMDL associates receiving water bed toxicity targets to discharges of OC pesticides, PAHs, PCBs, and/or metals bound to sediment particulates. Therefore, this TMDL is addressed by complying with this General Permit's Table 2 TSS NAL requirements by implementing sediment control measures to prevent sediment-bound particulates from settling into the receiving water bed.

TABLE F.17: Oxnard Drain 3 WLA

[79] Oxnard Drain 3 is located near Oxnard, CA in the Calleguas Creek watershed. Oxnard Drain 3 has also been called Rio de Santa Clara, Arnold Road Drain, L Street Drain, and occasionally confused with Oxnard Drain 1. Almost all of Oxnard Drain 3 lies within the Point Mugu Naval Air Base.

[80] Total Maximum Daily Loads for Pesticides, PCBs, and Sediment Toxicity in Oxnard Drain 3, p. 26.

[81] Total Maximum Daily Loads for Pesticides, PCBs, and Sediment Toxicity in Oxnard Drain 3, p. 29.

[82] Total Maximum Daily Loads for Pesticides, PCBs, and Sediment Toxicity in Oxnard Drain 3, p. 40.

[83] Total Maximum Daily Loads for Pesticides, PCBs, and Sediment Toxicity in Oxnard Drain 3, p. 12.

Pollutant	WLA of Suspended Sediment-Associated Contaminants ug/kg dry weight
4,4'-DDD	2.0
4,4'-DDE	2.2
4,4'-DDT	0.3
Bifenthrin	-
Chlordane, Total	3.3
Chlorpyrifos	-
Dieldrin	4.3
PCBs, Total	180
Sediment Toxicity	-
Toxaphene	360

- Compliance Actions and Schedule

  Compliance with this General Permit is consistent with the requirements and assumptions of this TMDL's WLA(s). No additional requirements are incorporated into this General Permit to implement the Oxnard Drain 3 TMDL.

iv. Colorado Lagoon TMDL[84]

The Los Angeles Regional Water Board adopted the Colorado Lagoon TMDL on October 1, 2009, to address the impairment of Colorado Lagoon due to lead and zinc, OC pesticides (chlordane, DDT, and dieldrin), PAHs, PCBs, and sediment toxicity.

- Source Analysis

  The Colorado Lagoon watershed is approximately 1,172 acres and divided into five sub-basins that discharge storm water and urban dry weather runoff to the Colorado Lagoon. Contaminated sediments accumulate in the lagoon and in aquatic organisms that are exposed to these toxic pollutants. The TMDL identified many historic and current loadings of pollutants into Colorado Lagoon including facilities that would be covered under this General Permit.[85]

- WLA Translation

[84] Total Maximum Daily Load for Organochlorine (OC) Pesticides, Polychlorinated Biphenyls (PCBs), Sediment Toxicity, Polycyclic Aromatic Hydrocarbons (PAHs), and Metals for Colorado Lagoon (October 2009) <https://www.waterboards.ca.gov/losangeles/water_issues/programs/tmdl/docs/R09-005_RB_BPA.pdf> [as of June 5, 2018] (Colorado Lagoon Toxics TMDL).

[85] Colorado Lagoon Toxics TMDL, p. 3

The Colorado Lagoon TMDL assigns concentration-based WLAs for lead, zinc, OC pesticides, PAHs, PCBs, and sediment toxicity to be met at the facility's industrial discharge location(s) for discharges into the Colorado Lagoon.[86]

Directly implementing the WLAs would be impractical, costly, and not aligned with the monitoring requirements in this General Permit. As mentioned in the introduction of this section, this TMDL associates receiving water bed toxicity targets to discharges of OC pesticides, PAHs, PCBs, and/or metals bound to sediment particulates. Therefore, this TMDL is addressed by complying with this General Permit's Table 2 TSS NAL requirements by implementing sediment control measures to prevent sediment-bound particulates from settling into the receiving water bed.

TABLE F.18: Colorado Lagoon WLA

Pollutant	**WLA Suspended Sediment-Associated Contaminants ug/kg dry weight**
Chlordane	0.5
DDTs*	1.58
Dieldrin	0.02
Lead	46,700.00
PAHs**	4,022.00
PCBs	22.70
Zinc	150,000.00

* Measured as the sum of DDT, DDE, and DDD.
** Sum of acenaphthylene, anthracene, benz(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(g,h,i)perylene, benzo(a)pyrene, chrysene, dibenz(a,h)anthracene, fluorene, indeno(l ,2,3-c,d)pyrene, phenanthrene, and pyrene

- Compliance Actions and Schedule

  Compliance with this General Permit is consistent with the requirements and assumptions of this TMDL's WLA(s). No additional requirements are

[86] Colorado Lagoon Toxics TMDL, p. 5.

incorporated into this General Permit to implement the Colorado Lagoon TMDL.

v. Los Angeles Area Lakes TMDL[87]

The U.S. EPA adopted the Los Angeles Area Lakes TMDL on March 26, 2012, to address the impairment in three of the nine assessed lakes in the Los Angeles Region due to OC pesticides (chlordane, dieldrin, DDT) and PCB. The three identified lakes for OC pesticides and PCBs impairments are Peck Road Park Lake, Echo Park Lake, and Puddingstone Reservoir. Peck Road Park Lake and Echo Park Lake are located in the Los Angeles River watershed. Puddingstone Reservoir is located in the San Gabriel River watershed.

- Source Analysis

  The manufacturing and use of OC pesticides and PCBs are currently banned and no additional allowances for new sources of discharges are expected in the Los Angeles Area Lakes TMDL.[88] Source control BMPs and pollutant removal are the most suitable courses of action to reduce OC pesticides and PCBs. The TMDL identified many historic and current loadings of pollutants into Peck Road Park Lake, Echo Park Lake, and Puddingstone Reservoir including facilities that would be covered under this General Permit.

- WLA Translation

  The Los Angeles Area Lakes TMDL assigns a concentration-based WLA for suspended sediment for OC pesticides and PCBs to be met at the facility's industrial discharge location(s) for discharges into Peck Road Park Lake, Echo Park Lake, and Puddingstone Reservoir.[89]

  Directly implementing the WLAs would be impractical, costly, and not aligned with the monitoring requirements in this General Permit. As mentioned in the introduction of this section this TMDL associates receiving water bed toxicity targets to discharges of OC pesticides, PAHs, PCBs, and/or metals bound to sediment particulates. Therefore, this TMDL is addressed by complying with this General Permit's Table 2 TSS NAL requirements by implementing sediment control measures to prevent sediment-bound particulates from settling into the receiving water bed.

[87] U.S. EPA, Los Angeles Area Lakes Total Maximum Daily Loads for Nitrogen, Phosphorus, Mercury, Trash, Organochlorine Pesticides and PCBs, EPA Region IX, (March 2012) <http://www.waterboards.ca.gov/losangeles/water_issues/programs/tmdl/Established/Lakes/LALakesTMDLsEntireDocument.pdf>. [as of June 5, 2018].

[88] Los Angeles Area Lakes Total Maximum Daily Loads for Nitrogen, Phosphorus, Mercury, Trash, Organochlorine Pesticides and PCBs, p. 10-84.

[89] Los Angeles Area Lakes Total Maximum Daily Loads for Nitrogen, Phosphorus, Mercury, Trash, Organochlorine Pesticides and PCBs, p. ES-2.

TABLE F.19: Peck Road Park Lake Toxics WLA

Pollutant	WLA Suspended Sediment-Associated Contaminants ug/kg dry weight
Chlordane	1.73
Dieldrin	0.43
Total DDTs	5.28
Total PCBs	1.29

TABLE F.20: Echo Park Lake Toxics WLA

Pollutant	WLA Suspended Sediment-Associated Contaminants ug/kg dry weight
Chlordane	2.10
Dieldrin	0.80
Total PCBs	1.77

TABLE F.21: Puddingstone Reservoir Toxics WLA

Pollutant	WLA Suspended Sediment-Associated Contaminants ug/kg dry weight
Chlordane	0.75
Dieldrin	0.22
Total DDTs	3.94
Total PCBs	0.59

- Compliance Actions and Schedule

  Compliance with this General Permit is consistent with the requirements and assumptions of this TMDL's WLA(s). No additional requirements are incorporated into this General Permit to implement the Los Angeles Lakes TMDL.

vi. Machado Lake Toxics TMDL[90]

The Los Angeles Regional Water Board adopted the Machado Lake Toxics TMDL on September 2, 2010, to address the impairment of Machado Lake

[90] Total Maximum Daily Load for Pesticides and PCBs for Machado Lake (September 2010) < https://www.waterboards.ca.gov/losangeles/water_issues/programs/tmdl/docs/R10-008_RB_RSL.pdf f> [as of June 14, 2018] (Machado Lake Toxics TMDL).

due to chemical group A (Chem A), OC pesticides (chlordane, DDT, dieldrin) and PCBs.

- Source Analysis

  The TMDL identified many historic and current loadings of pollutants into Machado Lake including facilities that would be covered under this General Permit. The point sources of OC pesticides and PCBs into Machado Lake are storm water and urban runoff discharges from the municipal separate storm sewer system (MS4), the California Department of Transportation, and general construction and industrial dischargers. Storm water and urban runoff discharges to Machado Lake occur through the Wilmington Drain, Project 77, and Project 510 subdrainage systems.

  OC pesticides are no longer legally sold or used, but remain ubiquitous in the environment, bound to fine-grained particles. The chemicals are transported to new locations when these particles become waterborne. The more recent small discharges of OC pesticides and PCBs to Machado Lake most likely come from the erosion of pollutant-laden sediment further up in the watershed. Urban runoff and rainfall higher in the watershed mobilize the particles, which are then washed into storm drains and channels that discharge to the lake. The estimated contributions of OC pesticides and PCBs from point sources is much smaller than the estimated contribution from internal lake sediments. However, a WLA is assigned to ongoing point source discharges to the lake.[91]

- WLA Translation

  The Machado Lake Toxics TMDL assigns a suspended sediment concentration-based WLA for OC pesticides and PCBs to be met at the facility's industrial discharge location(s) for discharges into Machado Lake.[92]

  Directly implementing the WLAs would be impractical, costly, and not aligned with the monitoring requirements in this General Permit. As mentioned in the introduction of this section, this TMDL associates receiving water bed toxicity targets to discharges of OC pesticides, PAHs, PCBs, and/or metals bound to sediment particulates. Therefore, this TMDL is addressed by complying with this General Permit's Table 2 TSS NAL requirements by implementing sediment control measures to prevent sediment-bound particulates from settling into the receiving water bed.

TABLE F.22: Machado Lake Toxics WLA

Pollutant	WLA of Suspended Sediment-Associated Contaminants

[91] Machado Lake Toxics TMDL, p. 3.

[92] Machado Lake Toxics TMDL, pp. 3-4.

	ug/kg dry weight
Chlordane	3.24
DDD (all congeners)	4.88
DDE (all congeners)	3.16
DDT (all congeners)	4.16
Dieldrin	1.9
Total DDTs	5.28
Total PCBs	59.8

- Compliance Actions and Schedule

  Compliance with this General Permit is consistent with the requirements and assumptions of this TMDL's WLA(s). No additional requirements are incorporated into this General Permit to implement the Los Angeles Lakes TMDL.

g. Bacteria TMDLs

Eight Indicator Bacteria TMDLs are translated for this General Permit. Each TMDL addresses one or more of the following bacteria pollutants: Enterococcus, Escherichia coli (E. Coli), Fecal Coliform, and Total Coliform. These pollutants are referred to as Indicator Bacteria for the purposes of this Fact Sheet.

The following sampling time-periods were set forth in all Indicator Bacteria TMDLs:

- Summer dry-weather (April 1 to October 31),
- Winter dry-weather (November 1 to March 31), and
- Wet-weather days (defined as days of 0.1 inch of rain or more plus three days following the rain event)

The summer dry-weather and winter dry-weather sampling periods defined the TMDL do not apply to Responsible Dischargers, because sampling in this General Permit is required during storm events, regardless of whether the storm events occur in summer or winter. Section F.4. General Permit Summary of the Fact Sheet summarizes the sampling and analysis requirements of this General Permit and defines when storm water samples are to be collected as referenced from Section XI.B of this General Permit. Therefore, Responsible Dischargers, like all Dischargers covered under this General Permit shall conduct sampling during the defined sampling period in this General Permit.

i. Baby Beach in Dana Point Harbor and Shelter Island Shoreline Park TMDL;[93] and Project 1 - Twenty Beaches and Creeks Indicator Bacteria in the San Diego Region[94]

The TMDLs for Baby Beach in Dana Point Harbor and Shelter Island Shoreline Park in San Diego Bay (Baby Beach and Shelter Island Indicator Bacteria TMDL) and Project I – Twenty Beaches and Creeks in the San Diego Region (Twenty Beaches and Creeks Bacteria TMDL) were listed as impaired due to Indicator Bacteria. However, neither TMDL assigned Indicator Bacteria WLAs to Responsible Dischargers. Compliance with this General Permit equates to compliance with these TMDLs. No additional requirements are incorporated into this General Permit to implement the Baby Beach and Shelter Island Indicator Bacteria TMDL and the Twenty Beaches and Creeks Bacteria TMDL.

ii. Harbor Beaches of Ventura County TMDL,[95] Santa Clara River TMDL,[96] Long Beach City Beaches and the Los Angeles River Estuary TMDL,[97] Ballona Creek, Ballona Estuary, and Sepulveda Channel TMDL,[98] Marina del Rey Harbor Mothers' Beach and Back Basins TMDL,[99] and Los Angeles Harbor (Inner Cabrillo Beach and Main Ship Channel) TMDL[100].

The indicator bacteria TMDLs described in this section all have indicator bacteria WLAs assigned to regulate industrial storm water discharges or discharges from the industrial and transportation land uses. The TMDLs expressly state that these sources are not expected to be a significant source

[93] San Diego Regional Water Quality Control Board, Total Maximum Daily Loads for Indicator Bacteria, Baby Beach in Dana Point Harbor and Shelter Island Shoreline Park in San Diego Bay (June 2008) <http://www.waterboards.ca.gov/sandiego/board_decisions/adopted_orders/2008/R9-2008-0027.pdf> [as of June 13, 2018].

[94] San Diego Regional Water Quality Control Board, Total Maximum Daily Loads for Indicator Bacteria, Project I – Twenty Beaches and Creeks in the San Diego Region (including Tecolote Creek) (February 2010) <http://www.waterboards.ca.gov/sandiego/water_issues/programs/tmdls/docs/bacteria/updates_022410/2010-0210_BactiI_Resolution&BPA_FINAL.pdf> [as of June 13, 2018].

[95] Los Angeles Regional Water Quality Control Board, Harbor Beaches of Ventura County (Kiddie Beach and Hobie Beach) Bacteria TMDL (October 2007) <https://www.waterboards.ca.gov/losangeles/board_decisions/basin_plan_amendments/technical_documents/2007-017/07_1023/03%20Revised%20Staff%20Report%20HBVC%2023Oct07.pdf> [as of June 13, 2018].

[96] Los Angeles Regional Water Quality Control Board, TMDL for Indicator Bacteria in the Santa Clara River Estuary and Reaches 3, 5, 6, and 7 (October 2011) <https://www.waterboards.ca.gov/losangeles/water_issues/programs/tmdl/docs/R10-006_RB_BPA.pdf> [as of June 13, 2018].

[97] U.S. EPA, Long Beach City Beaches and Los Angeles River Estuary Total Maximum Daily Loads for Indicator Bacteria (March 2012) <https://www.waterboards.ca.gov/losangeles/water_issues/programs/tmdl/Established/Longbeach/finalTMDLs-LongBeachCityBeaches-LARiverEstuaryBacteria.pdf> [as of June 13, 2018].

[98] Los Angeles Regional Water Quality Control Board, Total Maximum Daily Load for Bacterial Indicator Densities in Ballona Creek, Ballona Estuary, and Sepulveda Channel (June 2012) <https://www.waterboards.ca.gov/losangeles/water_issues/programs/tmdl/docs/R12-008_RB_BPA.pdf> [as of June 13, 2018].

[99] Los Angeles Regional Water Quality Control Board, Marina del Rey Harbor Mothers' Beach and Back Basin Bacteria TMDL (April 2006) <https://www.waterboards.ca.gov/losangeles/board_decisions/basin_plan_amendments/technical_documents/2003-012/03_0609/MdR%20TMDL%20Staff%20Report%20060903.pdf> [as of June 13, 2018].

[100] Los Angeles Regional Water Quality Control Board, Los Angeles Harbor Bacteria TMDL (Inner Cabrillo Beach and Main Ship Channel (July 2004) <https://www.waterboards.ca.gov/losangeles/water_issues/programs/tmdl/docs/R12-007_RB_BPA3.pdf> [as of June 5, 2018].

of bacteria to the impaired water bodies.[101,102,103,104,105] The WLAs were translated to instantaneous maximum TNALs since Responsible Dischargers were generally described to be an insignificant source of the Indicator Bacteria loading.

- WLA Translation

  The Indicator Bacteria TMDLs define the WLA in two different ways:

  1.) The TMDLs for the Harbor Beaches of Ventura County, Santa Clara River, the Long Beach City Beaches, and Los Angeles River Estuary assigned a WLA of zero (0) allowable exceedance days of the Bacteria water quality objectives (WQO) for all three time periods listed above in Section II.F.2;[106] and,

  2.) The TMDLs for the Ballona Creek, Ballona Estuary, and Sepulveda Channel Bacteria, Marina del Rey Harbor Mother's Beach and Back Basins, and the Los Angeles Harbor (including Inner Cabrillo Beach and Main Ship Channel) assigned a WLA to industrial storm water dischargers equal to the Bacteria WQOs.

  The two WLA definitions will be translated similarly and require Responsible Dischargers to meet and not exceed the Bacteria WQOs.

  This General Permit defines TNAL exceedances instantaneous maximum when two or more single samples are exceeded within a reporting year. The Bacteria WQOs are assigned as either a single sample limit or a rolling 30-day geometric mean limit. The Indicator Bacteria WLA of "to meet and not exceed the Bacteria WQOs" gives discretion to assign the single sample limit or the rolling 30-day geometric mean limit from the WLA.

  Single sample limits of the Bacteria WQOs are selected to be the target because compliance with the 30-day geometric mean is currently beyond the scope of the monitoring and sampling requirements of this General Permit. Because storm water is an episodic discharge, industries are not expected to be a significant source of Indicator Bacteria, and the compliance location for the WLAs for each Indicator Bacteria TMDL is the beach adjacent to the receiving water rather than the facility's industrial discharge location(s), the single sample limits of

[101] Los Angeles Harbor Bacteria TMDL (Inner Cabrillo Beach and Main Ship Channel, p. 5.

[102] Marina del Rey Harbor Mothers' Beach and Back Basin Bacteria TMDL, p. 5.

[103] Total Maximum Daily Load for Bacterial Indicator Densities in Ballona Creek, Ballona Estuary, and Sepulveda Channel, p. 6.

[104] Long Beach City Beaches and Los Angeles River Estuary Total Maximum Daily Loads for Indicator Bacteria. (2012), p. 28.

[105] Harbor Beaches of Ventura County (Kiddie Beach and Hobie Beach) Bacteria TMDL, p. 3.

[106] The TMDLs that use the exceedance day structure assigned less exceedance days to categories of dischargers that were expected to exceed the TMDL standard the least. By assigning zero (0) allowable exceedance days to industrial dischargers, the TMDL is indicating that industrial dischargers are not major sources of the impairment.

the Bacteria WQOs are translated to an instantaneous maximum TNAL and attainment is required at the Responsible Discharger's industrial discharge location(s).

Below are the assigned single sample instantaneous maximum limits for each Respective TMDL:

- Harbor Beaches of Ventura County: Enterococcus density of 104/100mL, fecal coliform density of 400/100 mL, and total coliform density of 10,000/100 mL or 1,000/100 mL (if the ratio of fecal-to-total coliform exceeds 0.1) assigned to Kiddie and Hobie Beaches.
- Santa Clara River: Enterococcus density of 104/100mL, fecal coliform density of 400/100 mL, and total coliform density of 10,000/100 mL assigned to Santa Clara River Estuary. E. coli density of 235/100 mL assigned to Santa Clara River Reaches 3, 4, 5, 6, and 7.
- The Long Beach City Beaches and Los Angeles River Estuary: Enterococcus density of 104/100mL, fecal coliform density of 400/100 mL, and total coliform density of 10,000/100 mL or 1,000/100 mL (if the ratio of fecal-to-total coliform exceeds 0.1) assigned to Long Beach City Beaches or Los Angeles River Estuary.
- Ballona Creek, Ballona Estuary, and Sepulveda Channel Bacteria: Fecal coliform density of 4000/100 mL assigned to Ballona Creek Reach 1 and E. coli density of 576/100 mL assigned to Ballona Creek Reach 2. Enterococcus density of 104/100 mL, Fecal coliform density of 400/100 mL, and total coliform density of 10,000/100 mL or 1,000/100 mL (if the ratio of fecal-to-total coliform exceeds 0.1) assigned to Ballona Estuary. E. coli density of 235/100 mL assigned to Sepulveda Channel.
- Marina del Rey Harbor Mother's Beach and Back Basins: Enterococcus density of 104/100mL, fecal coliform density of 400/100 mL, and total coliform density of 10,000/100 mL or 1,000/100 mL (if the ratio of fecal-to-total coliform exceeds 0.1) assigned to Marina del Rey Harbor Mothers' Beach or back basins (Bains D, E, and F).
- Los Angeles Harbor (including Inner Cabrillo Beach and Main Ship Channel): Enterococcus density of 104/100mL, fecal coliform density of 400/100 mL, and total coliform density of 10,000/100 mL or 1,000/100 mL (if the ratio of fecal-to-total coliform exceeds 0.1) assigned to Los Angeles Harbor (Inner Cabrillo Beach and Main Ship Channel).

- Compliance Actions and Schedule

  Responsible Dischargers shall comply with the requirements of this General Permit. Responsible Dischargers shall compare all sampling and analytical results for all individual or Qualified Combined Samples of the

facility's industrial storm water discharges to the receiving water body reaches and the respective instantaneous maximum TNAL(s) listed in Table E-2.

Responsible Dischargers are required to comply with the Santa Clara River, the Long Beach City Beaches and Los Angeles River Estuary, Marina del Rey Harbor Mother's Beach and Back Basins, and the Los Angeles Harbor Indicator Bacteria TMDL requirements upon the Effective Date of the TMDL Requirements.

Responsible Dischargers are required to comply with the Harbor Beaches of Ventura County Bacteria TMDL by December 18, 2018 and Ballona Creek, Ballona Estuary and the Sepulveda Channel Bacteria TMDL by July 15, 2021. There are no interim targets for either of this TMDLs assigned to Responsible Dischargers..

h. Metals TMDLs

Twelve (12) metals TMDLs are translated for this General Permit. Each metals TMDL addresses water body impairments due to specific type(s) of metal(s). The applicable WLAs for Responsible Dischargers were assigned in one of the following ways:

- A fixed concentration-based WLA as a solution of effluent, where a concentration-based WLA is assigned directly to Responsible Dischargers at the point of discharge;
- A fixed concentration-based WLA as dry-weight sediment, where a concentration-based WLA is assigned directly to Responsible Dischargers at the point of discharge;
- A hardness-based floating concentration WLA, where the WLA is hardness dependent on receiving water;
- A WLA that assigned both a mass-based WLA and a concentration-based WLA; or,
- A mass-based WLA appointed to Responsible Dischargers.

i. Walker Creek Mercury TMDL[107]

The San Francisco Bay Regional Water Quality Control Board designated Walker Creek and Soulajule Reservoir as impaired due to discharges of

[107] San Francisco Bay Regional Water Quality Control Board,Total Maximum Daily Load and Implementation Plan for Mercury in the Walker Creek Watershed (January 2007) <http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/TMDLs/walkermercury/r2-2007-0010.pdf> [as of June 14, 2018].

mercury from the inactive Gambonini Mine. The U.S. EPA designated the Gambonini Mine a Superfund site[108] and the cleanup efforts of the Gabonini Mine site was overseen by the U.S. EPA and the San Francisco Bay Regional Water Quality Control Board.

The San Francisco Bay Regional Water Quality Control Board adopted Resolution R2-2012-0040 declaring that the Gambonini Mine was cleaned up.[109] The U.S. EPA completed a review of Resolution R2-2012-0040 on July 3, 2012, and declared the TMDL complete and no further action was required.[110]

No additional requirements are incorporated into this General Permit to implement the Walker Creek Mercury TMDL.

ii. Shelter Island Yacht Basin Copper TMDL

The San Diego Regional Water Board adopted the Shelter Island Yacht Basin (SIYB) Copper TMDL (SIYB Copper TMDL) to address the impairment of the SIYB due to dissolved copper.

- Source Analysis

  There are ten (10) recreational marinas and yacht clubs with facilities in the SIYB that are potential sources of the copper loads. These facilities include the anchorage, fuel dock, various boat maintenance activities (i.e. painting), and other industrial activities that involve storage or use of materials containing copper. The primary source of dissolved copper in the SIYB are anti-fouling paints present on the hulls of boats moored in the SIYB marina and hull maintenance activities. Insignificant copper contributions from urban runoff into the SIYB include brake pads, tires, water pipe leaching, architectural structures, and other industrial sources and activities.[111, 112]

- WLA Translation

[108] U.S. EPA, Superfund Site: Gambonini Mercury Mine <https://cumulis.epa.gov/supercpad/cursites/csitinfo.cfm?id=0905389> [as of June 14, 2018].

[109] San Francisco Bay Regional Water Quality Control Board, A Total Maximum Daily Load and An Implementation Plan for Mercury in Tomales Bay, Exhibit A, p. 1 (May 2012) <https://www.waterboards.ca.gov/sanfranciscobay/board_decisions/adopted_orders/2012/R2-2012-0040.pdf> [as of June 14, 2018].

[110] Letter from Water Division Acting Director Nancy Woo, U.S. EPA, to Bruce H. Wolfe (July 3, 2012), at <http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/TMDLs/TB_Mercury/USEPA_Tomales_Bay_TMDL_Apprvl_Ltr_070312.pdf> [as of June 5, 2018].

[111] San Diego Regional Water Quality Control Board. Total Maximum Daily Load for Dissolved Copper in Shelter Island Yacht Basin, San Diego Bay (February 2005) Finding 7 <https://www.waterboards.ca.gov/sandiego/water_issues/programs/watershed/docs/swu/shelter_island/techrpt020905.pdf> [as of June 5, 2018].

[112] Total Maximum Daily Load for Dissolved Copper in Shelter Island Yacht Basin, San Diego Bay, pp. A-3. 22.

The SIYB Copper TMDL identified the following responsible parties for point source discharges of copper into the SIYB: Municipal Separate Storm Sewer System (MS4s), industrial facilities regulated by this General Permit (SIYB marina owners and operators), owners of boats moored in the SIYB, and SIYB underwater hull cleaners.

Responsible Dischargers (which includes SIYB marina owners and operators) were not directly assigned a WLA since the TMDL defined them as a part of urban runoff, which contributes to 1% of the load. The SIYB Copper TMDL does not require a reduction in current copper loads from urban runoff because urban runoff is a relatively insignificant source of copper contributing to the impairment.[113] The municipality has the responsibility of addressing urban runoff in its MS4 permit. No additional requirements are to be incorporated into this General Permit.

- Compliance Actions and Schedule

  No additional requirements are incorporated into this General Permit to implement the SIYB Copper TMDL.

iii. Los Angeles Area Lakes TMDL

The U.S. EPA adopted Los Angeles Area Lakes TMDL on March 26, 2012, to address the impairment of Puddingstone Reservoir due to mercury.[114]

- Source Analysis

  The majority of mercury and methylmercury loading is attributed to atmospheric deposition of pollutants to the lake surface. The point sources of mercury into Puddingstone Reservoir are storm water and urban runoff discharges, including discharges from industrial facilities in the northern subwatershed. Upland areas deliver pollutant loads in the water column or the sediment via tributaries and storm drains. Irrigation of the surrounding parklands may also contribute to the pollutant load.[115] Table 10-11 of the Los Angeles Area Lakes TMDL summarizes the existing total annual mercury load from industrial facility discharges as 2.41 g/year; which is 3.38 percent of the total load.[116]

[113] Total Maximum Daily Load for Dissolved Copper in Shelter Island Yacht Basin, San Diego Bay, Table 4-12, p. 4.

[114] Los Angeles Area Lakes Total Maximum Daily Loads for Nitrogen, Phosphorus, Mercury, Trash, Organochlorine Pesticides and PCBs, p. 10-1.

[115] Los Angeles Area Lakes Total Maximum Daily Loads for Nitrogen, Phosphorus, Mercury, Trash, Organochlorine Pesticides and PCBs, p. 10-24.

[116] Los Angeles Area Lakes Total Maximum Daily Loads for Nitrogen, Phosphorus, Mercury, Trash, Organochlorine Pesticides and PCBs, p. 10-25.

- WLA Translation

  The Los Angeles Area Lakes TMDL assigns concentration-based WLAs for total mercury of 4.0 ng/L to be met at the facility's industrial discharge location(s) for discharges into Puddingstone Reservoir. In addition, an in-lake water column dissolved methylmercury target of 0.081 ng/L to be met in the receiving water.[117]

  The WLA assigned to Responsible Dischargers for mercury and methylmercury is translated to an instantaneous maximum NEL because the TMDL specifies compliance at the point of discharge.[118] Both WLAs are converted to mg/L to be consistent with the units in this General Permit as shown in Table F.23.

TABLE F.23: Puddingstone Reservoir Mercury WLA Translation

Pollutant	WLA (ng/L)	Instantaneous Maximum NEL (mg/L)
Total Mercury	4.0	4×10^{-6}
Dissolved Methylmercury	0.081	0.081×10^{-8}

- Compliance Actions and Schedule

  Responsible Dischargers shall comply with the requirements of this General Permit. Responsible Dischargers shall compare all sampling and analytical results for all individual or Qualified Combined Samples of the facility's industrial storm water discharges to the receiving water body reaches and the respective instantaneous maximum NELS listed in Table E-2.

  The Los Angeles Regional Water Board has not yet developed an Implementation Plan or schedule in their Basin Plan for the Los Angeles Area Lakes TMDL. Therefore, Responsible Dischargers are required to comply with the TMDL upon the Effective Date the TMDL Requirements.

iv. Los Angeles and Long Beach Harbors Waters TMDL[119]

[117] Los Angeles Area Lakes Total Maximum Daily Loads for Nitrogen, Phosphorus, Mercury, Trash, Organochlorine Pesticides and PCBs, p. 10-29.

[118] Los Angeles Area Lakes Total Maximum Daily Loads for Nitrogen, Phosphorus, Mercury, Trash, Organochlorine Pesticides and PCBs, p. 10-29.

[119] Los Angeles Regional Water Quality Control Board. Total Maximum Daily Load for Toxic Pollutants in Dominguez Channel and Greater Los Angeles and Los Beach Harbor Waters (May 2011) <https://www.waterboards.ca.gov/losangeles/water_issues/programs/tmdl/docs/R11-008_RB_BPA.pdf> [as of June 5, 2018] (Dominguez Channel and Greater Los Angeles and Los Beach Harbor Waters Toxics TMDL).

The Los Angeles Regional Water Board adopted the Los Angeles and Long Beach Harbor Waters TMDL on September 2, 2010, to address the impairment and affected benthic communities of the Dominguez Channel, Greater Los Angeles, and Long Beach Harbor Waters due to cadmium, certain PAH compounds, chlordane, chromium, copper, DDT, dieldrin, lead, mercury, PCBs, toxaphene, toxicity, and zinc.[120]

The introduction to Section II.F.6.f. of this Fact Sheet explains the nature of OC pesticides and how these pollutants interact in the environment.

- Source Analysis

  Chromium, copper, lead, mercury, PAHs, and zinc are currently deposited into the watershed via urban runoff and then washed into storm drains and channels that discharge to the Dominguez Channel and Greater Harbor Waters. OC pesticides (Chlordane, DDT, dieldrin) and PCBs are legacy pollutants and remain present in the environment. Urban runoff and rainfall mobilize OC pesticides and PCBs bound to fine-grained particles, which are then washed into storm drains and channels that discharge to the Dominguez Channel and Greater Harbor Waters. Storm water runoff from manufacturing, military facilities, fish processing plants, wastewater treatment plants, oil production facilities in the watershed, and shipbuilding or repair yards in both the Port of Los Angeles and Port of Long Beach (Ports) have historically discharged untreated or partially treated wastes into the Greater Harbor Waters. In addition, storm water runoff from the Ports, commercial vessels (ocean going vessels and harbor craft), recreational vessels, and the re-suspension of contaminated sediments via natural processes and/or anthropogenic activities (including (ship) propeller wash within the Ports) also contributes to transport of pollutants within the Greater Harbor Waters.[121]

- WLA Translation

  1.) Dominguez Channel and Torrance Lateral Interim Allocations

  The Los Angeles and Long Beach Harbor Waters TMDL assigns an interim concentration-based WLA for copper, lead, and zinc to Responsible Dischargers to be met at the facility's industrial discharge location(s) for discharges into the Dominguez Channel or Torrance Lateral. The interim concentration-based WLA will be translated to an instantaneous maximum TNAL as an interim target for Responsible Dischargers until the final WLAs apply. The compliance deadline of the interim WLAs are upon effective date of the TMDL and therefore, apply at this time. The Interim TNALs are shown in Table F.24 below.

[120] Dominguez Channel and Greater Los Angeles and Los Beach Harbor Waters Toxics TMDL, p. 2.
[121] Dominguez Channel and Greater Los Angeles and Los Beach Harbor Waters Toxics TMDL, p. 6.

TABLE F.24: Dominguez Channel and Torrance Lateral Interim WLA Translations

Pollutant	WLA (ug/L)	Total Instantaneous Maximum TNAL (mg/L)
Copper	207.51	0.20751
Lead	122.88	0.12288
Zinc	898.87	0.89887

2.) Dominguez Channel and Torrance Lateral Final Allocations

The Los Angeles and Long Beach Harbor Waters TMDL assigns a concentration-based final WLA of copper, lead, and zinc to Responsible Dischargers to be met at the point of discharge for all discharges into the Dominguez Channel (above Vermont Avenue).[122] The final WLA assigned are listed in Table F.25 below.

Exxon Mobil Torrance Refinery and "all other dischargers" are assigned a concentration-based WLA of copper, lead, and zinc equal to the sediment targets to be met at the facility's industrial discharge location(s) for discharges into the Torrance Lateral. It is assumed that Responsible Dischargers are included in the "all other dischargers" definition.

The concentration-based WLA will be translated to an instantaneous maximum NEL. However, the NEL is not immediately effective because the compliance deadline for attaining the WLA for dischargers into Dominguez Channel and Torrance Lateral is outside of this General Permit's term. The instantaneous maximum NELs for discharges into the Dominguez Channel and the Torrance Lateral are shown in Table F.25 below.

TABLE F.25: Dominguez Channel and Torrance Lateral Final WLA Translations

Pollutant	WLA (ug/L)	Total Instantaneous Maximum NEL (mg/L)
Copper	9.7*	0.0097
Lead	42.7*	0.0427
Zinc	69.7*	0.697

*Hardness used = 50 mg/L. Recalculated concentration-based allocations using ambient hardness at the time of sampling are considered consistent with the assumptions and requirements of these WLAs. In addition to the waste load allocations above, samples collected during flow conditions less than the 90th percentile of annual flow rates must demonstrate that the acute and chronic hardness dependent water quality criteria provided in the CTR are achieved.

[122] Dominguez Channel and Greater Los Angeles and Los Beach Harbor Waters Toxics TMDL, pp. 11-12.

3.) Dominguez Channel Estuary and Greater Harbor Waters Interim Allocation

Interim sediment allocations are assigned to Responsible Dischargers for discharges into the Dominguez Channel Estuary and Greater Harbor Waters.

Directly implementing the interim sediment targets would be impractical, costly, and not aligned with the monitoring requirements in this General Permit. Responsible Dischargers would normally have been assigned to meet the concentration-based sediment numeric targets of the Los Angeles and Long Beach Harbors Waters TMDL. However, as mentioned in the introduction of this section, this TMDL associates receiving water bed toxicity targets to discharges of OC pesticides, PAHs, PCBs, and/or metals bound to sediment particulates. Therefore, this TMDL interim allocation for discharges into Dominguez Channel Estuary and Greater Harbor Waters is addressed by complying with this General Permit's Table 2 TSS NAL requirements by implementing sediment control measures to prevent sediment-bound particulates from settling into the receiving water bed.

4.) Dominguez Channel Estuary and Greater Harbor Waters Final Allocations

The Los Angeles and Long Beach Harbor Waters TMDL assigns a concentration-based final WLA of a grouping of metals and organics (identified in Table F.26 and F.27 below) to be met in the water column for discharges to Dominguez Channel Estuary and the Greater Harbor Waters.[123] Greater Harbor Waters include Inner and Outer Harbor, Main Channel, Consolidated Slip, Southwest Slip, Fish Harbor, Cabrillo Marina, Inner Cabrillo Beach, Los Angeles River Estuary, and San Pedro Bay. The concentration-based WLAs are translated to instantaneous maximum TNALs because the WLAs are assigned to be met at the receiving waters and not at the point of discharge. The assigned WLAs of copper, lead, and zinc are based on the Criteria Chronic Concentration, and is inappropriate to assign to storm water discharges. Therefore, the California Toxics Rule (CTR) Criterion Maximum (acute) Concentration is applied to Responsible Dischargers. The units are converted from ug/L to mg/L to be consistent with the reporting units in Table 2 of this General Permit. However, the TNAL is not immediately effective because the compliance deadline for attaining the WLA for dischargers into Dominguez Channel Estuary and Greater Harbor Waters is outside of this General Permit's term. The instantaneous maximum TNALs assigned to Responsible Dischargers are shown in Table F.26 and F.27 below.

TABLE F.26: Dominguez Channel Estuary Final WLA Translations

[123] Dominguez Channel and Greater Los Angeles and Los Beach Harbor Waters Toxics TMDL, p. 13.

Pollutant	WLA (ug/L)	Dissolved Salt Water Criterion Maximum Concentration (ug/L)	Total Salt Water Criterion Maximum Concentration (ug/L)	Total Instantaneous Maximum TNAL (mg/L)
4,4' DDT	0.00059			$5.9 X10^{-7}$
Chlordane	0.00059			$5.9 X10^{-7}$
Dieldrin	0.00014			$1.4 X10^{-7}$
Copper	3.73	4.8	5.8**	0.0058
Lead	8.53	210	221**	0.221
PAHs*	0.049[124]			0.000049
PCBs	0.00017			$1.7 X10^{-7}$
Zinc	85.6	90	95**	0.095

* CTR human health criteria were not established for total PAHs. Therefore, the CTR criterion for individual PAHs of 0.049 µg/L is applied individually to benzo(a)anthracene, benzo(a)pyrene, and chrysene. The CTR criterion for Pyrene of 11,000 µg/L is assigned as an individual WLA to Pyrene. Other PAH compounds in the CTR shall be screened as part of the TMDL monitoring.

**Values were rounded to match Criterion significant figures.

TABLE F.27: Greater Harbor Water Final WLA Translations

Pollutant	WLA (ug/L)	Dissolved Salt Water Criterion Maximum Concentration (ug/L)	Total Salt Water Criterion Maximum Concentration (ug/L)	Instantaneous Maximum TNAL (mg/L)
4,4' DDT	0.00059			$5.9 X10^{-7}$
Copper	3.73	4.8	5.8**	0.0058
Lead	8.53	210	221**	0.221
PCBs	0.00017			$1.7 X10^{-7}$

[124] CTR human health criteria were not established for total PAHs. Therefore, the CTR criterion for individual PAHs of 0.049 µg/L is applied individually to benzo(a)anthracene, benzo(a)pyrene, and chrysene. The CTR criterion for Pyrene of 11,000 µg/L is assigned as an individual WLA to Pyrene. Other PAH compounds in the CTR shall be screened as part of the TMDL monitoring.

Zinc	85.6	90	95**	0.095

**Values were rounded to match Criterion significant figures

5.) Dominguez Channel Estuary, Consolidated Slip and Fish Harbor Allocation

The Los Angeles and Long Beach Harbor Waters TMDL assigns a concentration-based final WLA of cadmium, chromium, and mercury to be met at the point of discharge for mercury discharges into Consolidated Slip and Fish Harbor, cadmium discharges into Dominguez Channel Estuary and Consolidated Slip, and chromium discharges into Consolidated Slip.[125] These requirements are in addition to the interim and final WLAs assigned to Dominguez Channel Estuary and Greater Harbor Waters.

Directly implementing the WLAs in Table F.28 below would be impractical, costly, and not aligned with the monitoring requirements in this General Permit. As mentioned in the introduction of Section II.F.6.f. of this Fact Sheet, this TMDL associates receiving water bed toxicity targets to discharges of OC pesticides, PAHs, PCBs, and/or metals bound to sediment particulates. Therefore, this TMDL is addressed by complying with this General Permit's Table 2 TSS NAL requirements by implementing sediment control measures to prevent sediment-bound particulates from settling into the receiving water bed. Compliance with this General Permit is consistent with the requirements and assumptions of this portion of the TMDL's WLA(s) related to discharges into Dominguez Channel Estuary, Consolidated Slip and Fish Harbor.

TABLE F.28: Dominguez Channel Estuary, Consolidated Slip and Fish Harbor WLA

Pollutant	**WLA Suspended Sediment-Associated Contaminants (mg/kg)**
Cadmium*	1.2
Chromium**	81
Mercury***	0.15

* Applies to Dominguez Channel Estuary and Consolidated Slip
** Applies to Consolidated Slip
*** Applies to Consolidated Slip and Fish Harbor

- Compliance Actions and Schedule

Responsible Dischargers shall comply with the requirements of this General Permit. Responsible Dischargers shall compare all sampling and analytical results for all individual or Qualified Combined Samples of the facility's industrial storm water discharges to the receiving water body

[125] Dominguez Channel and Greater Los Angeles and Los Beach Harbor Waters Toxics TMDL, p. 17.

reaches and the respective instantaneous maximum TNAL(s) or NELs listed in Compliance Table E-2.

The TMDL's final compliance deadline is May 5, 2032. Therefore, the Dominguez Channel and Torrance Lateral Interim Allocation, Dominguez Channel Estuary and Greater Harbor Water Interim Allocations, and Dominguez Channel Estuary, Consolidated Slip and Fish Harbor Allocations are applied at this time. Allocations with a May 5, 2032 compliance deadline are not applied at this time. Future reissuances of this General Permit may incorporate additional or revised compliance requirements or interim targets to progress towards the required final compliance , when an instantaneous maximum NEL applies.

v. San Gabriel River Metals and Selenium TMDL[126]

The U.S. EPA adopted the San Gabriel River Metals and Selenium TMDL on March 26, 2007, to address the impairment of the San Gabriel River, estuary, and tributaries due to copper, lead, selenium, and zinc. A TMDL was not developed for the elevated levels of selenium in Reach 6 during dry weather conditions because the sources of selenium appear to be related to natural levels of selenium in the soils.

- Source Analysis

  The U.S. EPA adopted this TMDL in 2007 and there were 804 industrial storm water dischargers enrolled under this General Permit within the San Gabriel River Watershed (596 within the jurisdiction of the Los Angeles Regional Water Board and 208 within the jurisdiction of the Santa Ana Regional Water Quality Control Board [Santa Ana Regional Water Board]). The U.S. EPA determined that industrial discharges were a source of metals to the impaired water bodies. The potential for metal loading via storm water runoff from these sites is high, especially at metal plating, transit, and recycling facilities. Industrial sites typically have greater than 70 percent impervious cover and on-site sources of metals, which may explain the higher pollutant loadings observed in the study. In addition, industrial land use areas were found to contribute substantially higher fluxes of Total Suspended Solids (TSS) relative to many other land uses. During dry weather, the potential contribution of metal loadings from Responsible Dischargers is low.[127]

- WLA Translations

[126] U.S. EPA, Total Maximum Daily Loads for Metals and Selenium San Gabriel River and Impaired Tributaries (March 2007) <http://www.waterboards.ca.gov/losangeles/water_issues/programs/tmdl/Established/San%20Gabriel%20River%20Metals%20TMDL/final_sangabriel_metalstmdl_3-27-07.pdf> [as of June 5, 2018] (San Gabriel River Metals and Selenium TMDL).

[127] San Gabriel River Metals and Selenium TMDL, p. 20.

The San Gabriel River Metals and Selenium TMDL assigns a mass-based WLA for copper, lead, and zinc in kg/d to be met at the facility's industrial discharge location(s) for discharges into the San Gabriel River Reach 2 or its tributaries, or Coyote Creek or its tributaries.[128]

Directly implementing the copper, lead, and zinc WLAs would result in a unique mass load for each Responsible Discharger dependent on the sampling event. Requiring Responsible Dischargers to calculate the facility specific mass load of a pollutant(s) would be impractical, costly, and not aligned with the monitoring requirements in this General Permit. The San Gabriel River Metals and Selenium TMDL requires the WLAs be incorporated into this General Permit as wet-weather permit limitations expressed as event mean concentrations. "Permit limitations" are defined as " a water-quality based effluent limitation or a receiving water limitation."[129] Therefore, it is consistent with the requirements and assumption of the WLAs to apply the San Gabriel River Metals and Selenium TMDL Numeric Targets as concentration-based effluent limitations.

The units are converted from ug/L to mg/L to be consistent with the reporting units in Table 2 of this General Permit. The assigned instantaneous maximum NELs are shown in Table F.29 and F.30 below.

The 2017 draft of these TMDL requirements proposed a translation of these WLAs into TNALs. Based on discussions with the regional board during the public comment period and further review by State Water Board staff, those TNALs were replaced with NELs for the following reasons: The TMDL contains a numeric concentration target and the TMDL staff report identified a concentration-based permit requirement as an appropriate way to implement the WLA.

TABLE F.29: San Gabriel River Reach 2 WLA Translation

Pollutant	WLA (kg/d)	Numeric Targets (ug/L)	Total Instantaneous Maximum NELs (mg/L)
Lead	2.3	166	0.166

TABLE F.30: Coyote Creek WLA Translation

Pollutant	WLA (kg/d)	Numeric Targets (ug/L)	Total Instantaneous Maximum NELs (mg/L)
Copper	0.356	27	0.027
Lead	1.40	106	0.106

[128] San Gabriel River Metals and Selenium TMDL, p. 37.

[129] Los Angeles Regional Water Quality Control Board, San Gabriel River TMDL Implementation Plan, (June 2013) pp. 3-4 <https://www.waterboards.ca.gov/losangeles/water_issues/programs/tmdl/docs/R13-004_RB_BPA.pdf> [as of June 5, 2018].

Zinc	2.1	158	0.158

Responsible Dischargers are assigned a concentration-based WLA for dry-weather discharges. NSWDs are only authorized in this General Permit if Section IV conditions are met to control the discharge of pollutants from the facility. Section III.B prohibits all NSWDs not authorized under Section IV; therefore, all unauthorized NSWDs must be either eliminated or have regulatory coverage under a separate NPDES permit. Authorized NSWDs, as defined in this General Permit, are authorized because these discharges are assumed to not commingle with storm water associated with industrial activity. The Los Angeles Regional Water Board may impose additional requirements on authorized NSWDs if deemed necessary per a site-specific analysis.

- Compliance Actions and Schedule

  Responsible Dischargers shall comply with the requirements of this General Permit. Responsible Dischargers shall compare all sampling and analytical results for all individual or Qualified Combined Samples of the facility's industrial storm water discharges to the receiving water body reaches and the respective instantaneous maximum NEL(s) listed in Table E-2.

  The TMDL's final compliance deadline was September 30, 2017. Since this compliance deadline has passed, the WLAs shall be met upon the Effective Date of the TMDL Requirements.

vi. Los Cerritos Channel TMDL[130]

The U.S. EPA adopted the Los Cerritos Metals TMDL on March 17, 2010, to address the impairment of Los Cerritos Channel due to copper, lead, and zinc.

- Source Analysis

  About 9.1 percent of the watershed is identified as industrial land use. The U.S. EPA adopted this TMDL in 2010 and there were thirty-three (33) industrial storm water dischargers enrolled under this General Permit in the Los Cerritos Channel Watershed. Industrial sites typically have greater than 70 percent impervious cover and on-site sources of metals, which may explain the higher pollutant loadings observed in the study. In addition, industrial land use sites were found to contribute substantially higher fluxes of Total Suspended Solids (TSS) relative to many other land

[130] Los Angeles Regional Water Quality Control Board, Los Cerritos Channel Total Maximum Daily Loads for Metals (March 2010) <http://www.waterboards.ca.gov/losangeles/water_issues/programs/tmdl/Established/Los%20Cerritos%20Channel%20Metals%20TMDL/03-18-10LosCerritosChannel-metalsTMDLs.pdf> [as of June 5, 2018] (Los Cerritos Channel Metals TMDL).

uses. The highest flux levels of lead were associated with agriculture, high density residential, and recreational land use sites. The highest EMCs for lead were associated with high density residential and industrial land use sites. Car brake pads are identified as a potential source for half of the copper loads deposited into the watershed via urban storm water runoff.[131]

- WLA Translation

  The Los Cerritos Channel TMDL assigns a mass-based WLA for copper in dry weather and copper, lead, and zinc in wet weather per acre of the industrial facility in grams/day/acre to be met at the facility's industrial discharge location(s) for discharges into Los Cerritos Channel[132]. Daily storm volume flows are required to calculate the WLA for each metal.

  Directly implementing the copper, lead, and zinc WLAs would result in a unique mass load for each Responsible Discharger dependent on the daily storm water flows and the facility's industrial acreage. Requiring Responsible Dischargers to calculate the facility specific mass load of a pollutant(s) would be impractical, costly, and not aligned with the monitoring requirements in this General Permit. The Los Cerritos Channel TMDL requires the WLAs be incorporated into this General Permit as wet-weather permit limitations expressed as event mean concentrations. "Permit limitations" are defined as "a water-quality based effluent limitation or a receiving water limitation."[133] Therefore, it is consistent with the requirements and assumption of the WLAs to apply the Los Cerritos Channel TMDL Numeric Targets as concentration-based effluent limitations.

  The units are converted from ug/L to mg/L to be consistent with the reporting units in Table 2 of this General Permit. The assigned instantaneous maximum NELs are and shown in Table F.31 below.

  The 2017 draft of these TMDL requirements proposed a translation of these WLAs into TNALs. Based on discussions with the regional board during the public comment period and further review by State Water Board staff, those TNALs were replaced with NELs for the following reasons: The TMDL contains a numeric concentration target and the TMDL staff report identified a concentration-based permit requirement as an appropriate way to implement the WLA.

TABLE F.31: Los Cerritos Channel WLA Translation

[131] Los Cerritos Channel Metals TMDL, pp. 4, 6, and 18.

[132] Los Cerritos Metals TMDL, p. 34.

[133] Los Angeles Regional Water Quality Control Board, Los Cerritos Channel TMDL Implementation Plan, pp. 3-4. <https://www.waterboards.ca.gov/losangeles/water_issues/programs/tmdl/docs/R13-004_RB_BPA.pdf> [as of June 5, 2018].

Pollutant	WLA [134] (grams/day/acre)	Numeric Targets (ug/L)	Total Instantaneous Maximum NELs (mg/L)
Copper	0.497 x 10^{-3} x daily volume (L)	9.8	0.0098
Lead	.835 x 10^{-3} x daily volume (L)	55.8	0.0558
Zinc	4.860 x 10^{-3} daily volume(L)	95.6	0.0956

Responsible Dischargers are assigned a copper concentration-based WLA for dry-weather discharges. NSWDs are only authorized in this General Permit if Section IV conditions are met to control the discharge of pollutants from the facility. Section III.B prohibits all NSWDs not authorized under Section IV; therefore, all unauthorized NSWDs must be either eliminated or have regulatory coverage under a separate NPDES permit. Authorized NSWDs, as defined in this General Permit, are authorized because these discharges are assumed to not commingle with storm water associated with industrial activity. The Los Angeles Regional Water Board may impose additional requirements on authorized NSWDs if deemed necessary per a site-specific analysis.

- Compliance Actions and Schedule

  Responsible Dischargers shall comply with the requirements of this General Permit. Responsible Dischargers shall compare all sampling and analytical results for all individual or Qualified Combined Samples of the facility's industrial storm water discharges to the receiving water body reaches and the respective instantaneous maximum NEL(s) listed in Table E-2.

  The TMDL's final compliance deadline was September 30, 2017. Since this compliance deadline has passed, the WLAs shall be met upon the Effective Date of the TMDL Requirements.

vii. Los Angeles River Metals TMDL[135]

The Los Angeles Regional Water Board adopted the Los Angeles River Metals TMDL on April 9, 2015, to address the impairment of the Los Angeles River

[134] There is a typo in Table 6-9 of the TMDL that has been addressed here. The WLA value for each pollutant should be divided by a factor of one million. (Letter from NPDES Permits Section Manager David Smith, United States Environmental Protection Agency, to Jeanine Townsend (Feb. 13, 2018), at p. 2. at <https://www.waterboards.ca.gov/water_issues/programs/stormwater/docs/comments_igp_amend_20180214/david_smith.pdf>. [as of June 5, 2018].)

[135] Los Angeles Regional Water Quality Control Board, Los Angeles Rivers and Tributaries Metals TMDL (April 2015) <https://www.waterboards.ca.gov/losangeles/board_decisions/basin_plan_amendments/technical_documents/112_new/LARMetals2015Revision_Ch7BPA_adoptedbyRBon040915_clean.pdf> [as of June 5, 2018] (Los Angeles River Metals TMDL).

and all upstream reaches and tributaries due to cadmium, copper, lead, selenium, and zinc.

- Source Analysis

  Dry weather loading from storm drains contribute a large percentage of the loading because of low flows but high concentration of dissolved metals. During wet weather most metals loadings are in the particulate form where storm water flows contribute a large percentage of cadmium, copper, lead, and zinc loading. At the time the TMDL was adopted, selenium levels were being assessed to determine if current levels are natural in this watershed.[136]

- WLA Translation

  The Los Angeles River Metals TMDL assigns a mass-based WLA for cadmium, copper, lead, and zinc based on the acreage of the facility in grams/day/acre to be met at the facility's industrial discharge location(s) for discharges into the Los Angeles River or tributaries (Los Angeles River Watershed).[137] In addition, daily storm volume flows are required to calculate the WLA for each metal.

  Directly implementing the copper, lead, and zinc WLAs would result in a unique mass load for each Responsible Discharger dependent on the daily storm water flows and the facility's industrial acreage. Requiring Responsible Dischargers to calculate the facility specific mass load of a pollutant(s) would be impractical, costly, and not aligned with the monitoring requirements in this General Permit. The Los Angeles River Metals TMDL Staff Report allows for compliance to be assessed based on concertation. Additionally, the TMDL Staff Report states, "The wet-weather mass-based waste load allocation for the general construction and industrial storm water permittees (Table 6-12) will be incorporated into watershed specific general permits. Concentration based permit conditions may be set to achieve the mass-based waste load allocations. These concentration-based conditions would be equal to the concentration-based waste load allocations assigned to the other NPDES permits.[138] Therefore, it is consistent with the requirements and assumptions of the WLA to apply the Los Angeles River Metals TMDL Numeric Targets as concentration-based effluent limitations.[139]

  The numeric targets are translated to instantaneous maximum NELs because it is consistent with the requirements and assumptions of the Los

[136] Los Angeles River Metals TMDL, p. 4.

[137] Los Angeles River Metals TMDL, p. 13.

[138] Los Angeles Regional Water Quality Control Board. Los Angeles River and Tributaries Metals Staff Report (June 2005), p..61. <https://www.waterboards.ca.gov/losangeles/board_decisions/basin_plan_amendments/technical_documents/2005-006/05_0831/05_0831_FinalStaffReport.pdf> [as of June 5, 2018].

[139] The concentration-based WLA assigned to other NPDES permits are the Numeric Targets.

Angeles River Metals TMDL to apply the Numeric Targets as permit limitation. The units are converted from ug/L to mg/L to be consistent with the reporting units in Table 2 of this General Permit. The assigned instantaneous maximum NELs are shown in Table F.32 below and the WER of 3.97 is used for copper.

The 2017 draft of these TMDL requirements proposed a translation of these WLAs into TNALs. Based on discussions with the regional board during the public comment period and further review by State Water Board staff, those TNALs were replaced with NELs for the following reasons: The TMDL contains a numeric concentration target and the TMDL staff report identified a concentration-based permit requirement as an appropriate way to implement the WLA.

TABLE F.32: Los Angeles River WLA Translation

Pollutant	WLA (grams/day/acre)	Numeric Targets (ug/L)	Total Instantaneous Maximum NELs (mg/L)
Cadmium	WER x (7.6×10^{-12}) x daily volume (L) – (4.8×10^{-6})	WER X 3.1	0.0031
Copper	WER x (4.2×10^{-11}) x daily volume (L) – (2.6×10^{-5})	WER* X 17	0.06749
Lead	WER x (2.3×10^{-10}) x daily volume (L) – (8.7×10^{-5})	WER X 94	0.094
Zinc	WER x (3.9×10^{-10}) x daily volume (L) – (2.2×10^{-4})	WER X 159	0.159

* The WER for this constituent is 3.97

Responsible Dischargers are assigned a concentration-based WLA for dry-weather discharges. NSWDs are only authorized in this General Permit if Section IV conditions are met to control the discharge of pollutants from the facility. Section III.B prohibits all NSWDs not authorized under Section IV; therefore, all unauthorized NSWDs must be either eliminated or have regulatory coverage under a separate NPDES permit. Authorized NSWDs, as defined in this General Permit, are authorized because these discharges are assumed to not commingle with storm water associated with industrial activity. The Los Angeles Regional Water Board may impose additional requirements on NSWDs if deemed necessary per a site-specific analysis.

- Compliance Actions and Schedule

Responsible Dischargers shall comply with the requirements of this General Permit. Responsible Dischargers shall compare all sampling and analytical results for all individual or Qualified Combined Samples of the

facility's industrial storm water discharges to the receiving water body reaches and the respective instantaneous maximum NEL(s) listed in Table E-2.

The TMDL's final compliance deadline was January 11, 2016. Since this compliance deadline has passed, the WLAs shall be met upon the Effective Date of the TMDL Requirements.

viii. Calleguas Creek Metals and Selenium TMDL[140]

The Los Angeles Regional Water Board adopted the Calleguas Creek Watershed Metals and Selenium TMDL on October 13, 2016, to address the impairment of Calleguas Creek, Mugu Lagoon, and Revolon Slough due to copper, mercury, nickel, and selenium.

- Source Analysis

Metals and selenium are deposited into the watershed via urban runoff, agricultural runoff, groundwater seepage, and POTW effluent. Higher loads were deposited during wet weather for all constituents due to the association between metals and particulate matter. The source analysis indicates that naturally occurring metals and selenium are all a contributing source of loading. Calleguas Creek Watershed Metals and Selenium TMDL identifies special studies to be performed to assess the extent of naturally occurring metals and selenium that exist in the soil.[141]

- WLA Translation

1.) Calleguas Creek Watershed Interim Allocation

Calleguas Creek Watershed Metals and Selenium TMDL assigns an interim concentration-based WLA for copper to "Permitted Stormwater Dischargers (PSDs)" to be met at the facility's industrial discharge location(s) for discharges into Calleguas Creek and Revolon Slough. Responsible Dischargers are identified as a PSD as clarified in the Implementation Plan section of the TMDL and in footnote 2 in the Implementation Schedule. The interim wet daily maximum concentration-based WLA will be translated to an instantaneous maximum TNAL as an interim target for Responsible Dischargers until the final WLAs apply. The compliance deadline of the interim WLAs are

[140] Los Angeles Regional Water Quality Control Board, Total Maximum Daily Load for Metals and Selenium in the Calleguas Creek, its Tributaries, and Mugu Lagoon (October 2016) <https://www.waterboards.ca.gov/losangeles/water_issues/programs/tmdl/docs/R16-007_RB_BPA.pdf> [as of June 5, 2018] (Calleguas Creek Metals and Selenium TMDL).

[141] Calleguas Creek Metals and Selenium TMDL, p. 4.

upon effective date of the TMDL. The Interim TNALs are shown in Table F.33 and F.34 below.

TABLE F.33: Calleguas and Conejo Creek Interim WLA Translations

Pollutant	WLA (ug/L)	Total Instantaneous Maximum TNALs (mg/L)
Copper	204	2.04

TABLE F.34: Revolon Slough Interim WLA Translations

Pollutant	WLA (ug/L)	Total Instantaneous Maximum TNALs (mg/L)
Copper	204	2.04

2.) Calleguas Creek Watershed Final Allocation

Calleguas Creek Watershed Metals and Selenium TMDL assigns a final mass-based WLA for copper, nickel, and selenium in pounds per day to "Permitted Stormwater Dischargers (PSDs)" to be met in the water column of Calleguas Creek or Revolon Slough.[142] Responsible Dischargers are identified as a PSD as clarified in the Implementation Plan section of the TMDL and in footnote 2 in the Implementation Schedule. The WLAs for each metal are shown in Table F.35 and F.36 below.

TABLE F.35: Calleguas Creek WLA

Pollutant	WLA (lbs/d)
Copper*	(0.00054*Q^2*0.032*Q - 0.17)*WER - 0.06
Nickel**	0.014*Q^2+0.82*Q
Selenium**	(a)

*The approved site-specific WER of 1.51 for Mugu Lagoon is used to calculate the assigned WLAs for discharges to Calleguas and Conejo Creek to ensure the downstream standard is achieved. Permitted storm water dischargers may apply a WER of up to 3.69 for discharges to upstream reaches, with the exception of Reaches 4 and 5, to calculate the assigned WLAs. If a WER of greater than 1.51 is applied, permitted storm water dischargers shall be required to provide detailed quantitative analysis to demonstrate that the WLAs as modified by the WER are protective of downstream reaches. No site specific WER for Revolon Slough was approved so default WER value of 1 is applied. Regardless of the final WERs, total copper loading shall not exceed current loading.

**Current loads do not exceed loading capacity during wet weather. Sum of all loads cannot exceed loads presented in the table Q: Daily storm volume (cfs). (a) Selenium allocations have not been developed for this reach as it is not on the 303(d) list.

TABLE F.36: Revolon Slough WLA

Pollutant	WLA (lbs/d)
Copper*	(0.0002*Q2+0.0005*Q)*WER
Nickel**	0.027*Q^2+0.47*Q
Selenium**	0.027*Q^2+0.47*Q

[142] Calleguas Creek Metals and Selenium TMDL, pp. 7, 8, and 18.

*The approved site-specific WER of 1.51 for Mugu Lagoon is used to calculate the assigned WLAs for discharges to Calleguas and Conejo Creek to ensure the downstream standard is achieved. Permitted storm water dischargers may apply a WER of up to 3.69 for discharges to upstream reaches, with the exception of Reaches 4 and 5, to calculate the assigned WLAs. If a WER of greater than 1.51 is applied, permitted storm water dischargers shall be required to provide detailed quantitative analysis to demonstrate that the WLAs as modified by the WER are protective of downstream reaches. No site specific WER for Revolon Slough was approved so default WER value of 1 is applied. Regardless of the final WERs, total copper loading shall not exceed current loading.

**Current loads do not exceed loading capacity during wet weather. Sum of all loads cannot exceed loads presented in the table Q: Daily storm volume (cfs).

Directly implementing the copper, nickel, and selenium WLAs would result in a unique mass load for each Responsible Discharger dependent on the sampling events and daily storm water flows from the facility's industrial areas. Requiring Responsible Dischargers to calculate the facility specific mass load of a pollutant(s) would be impractical, costly, and not aligned with the monitoring requirements in this General Permit. The Calleguas Creek Metals and Selenium TMDL allows for compliance to be assessed as a concentration in the form of a group concentration-based WLA.[143]The Staff Report states, "a group concentration-based WLA has been developed for all permitted stormwater discharges, including municipal separate storm sewer systems (MS4s), Caltrans, general industrial and construction stormwater permits, and Naval Air Weapons Station Point Mugu."[144] "USEPA regulation allows allocations for NPDES regulated stormwater discharges from multiple point sources to be expressed as a single categorical WLA when the data and information are insufficient to assign each source or outfall individual WLAs (40 CFR 130). The grouped allocation will apply to all NPDES-regulated municipal stormwater discharges in the CCW."[145] Therefore, it is consistent with the requirements and assumption of the WLA to apply the Calleguas Creek Metals and Selenium TMDL Numeric Targets as concentration-based effluent limitations.

Responsible Dischargers shall comply with the concentration-based numeric targets of the Calleguas Creek Watershed Metals and Selenium TMDL, which includes discharges into Reach 1, Reach 2, Reach 3, Reach 4, Reach 5, Reach 6, Reach 7, Reach 8, Reach 9A and 9B, Reach 10, Reach 11, Reach 12, and Reach 13. The WER of 1.51 is applied to copper for dischargers into Mugo Lagoon (Reach 1) and a WER of 3.69 is applied to copper for dischargers into Calleguas Creek, below Potrero Road (Reach 2). The wet-weather numeric

[143] Calleguas Creek Metals and Selenium TMDL, p. 17.

[144] Calleguas Creek Metals and Selenium TMDL, p. 17.

[145] The Calleguas Creek Metals and Selenium TMDL Draft Final Technical Report (March 2006), p. 174 < https://www.waterboards.ca.gov/losangeles/board_decisions/basin_plan_amendments/technical_documents/2006-012/06%20TMDL%20Technical%20%20Report%2003%2029%2006.pdf> [as of June 18, 2018].

targets of the Calleguas Creek Watershed Metals and Selenium TMDL are shown in Table F.37 below.

TABLE F.37: Calleguas Creek Numeric Targets

Reach	Total Copper (ug/L)	Total Nickel (ug/L)	Total Selenium* (ug/L)
Mugu Lagoon (Reach 1)	8.76	74	--
Calleguas Creek, below Potrero Rd. (Reach 2)	21.4	74	--
Calleguas Creek, between Potrero Rd. and Somis Rd. (Reach 3)	27.4	859	--
Revolon Slough (Reach 4) and Beardsley Wash (Reach 5)	5.8	75	290
Arroyo Las Posas (Reach 6), Arroyo Simi (Reach 7), and Tapo Canyon Creek (Reach 8)	31.0	958	--
Conejo Creek (Reaches 9A & 9B), Arroyo Conejo (Reach 10), Arroyo Santa Rosa (Reach 11), North Fork Arroyo Conejo (Reach 12), and South Fork Arroyo Conejo (Reach 13)	43.3	1296	--

*The selenium WLA equivalents are only applicable to Industrial Storm Water General Permittees whose authorized non-storm water discharges and/or storm water discharges associated with industrial activities discharge to Revolon Slough or Beardsley Wash either directly, via a municipal separate storm sewer system (MS4), or into an upstream reach or tributary.

The units are converted from ug/L to mg/L to be consistent with the reporting units in Table 2 of this General Permit. The assigned instantaneous maximum NELs are show in Table F.38 below.

The 2017 draft of these TMDL requirements proposed a translation of these WLAs into TNALs. Based on discussions with the regional board during the public comment period and further review by State Water Board staff, those TNALs were replaced with NELs for the following reasons: The TMDL contains a numeric concentration target and the TMDL staff report identified a concentration-based permit requirement as an appropriate way to implement the WLA.

TABLE F.38: Calleguas Creek WLA Translation

Reach	Total Copper Instantaneous Maximum NEL (mg/L)	Total Nickel Instantaneous Maximum NEL (mg/L)	Total Selenium[a] Instantaneous Maximum NEL (mg/L)
Mugu Lagoon (Reach 1)	0.00876	0.074	--
Calleguas Creek, below Potrero Rd. (Reach 2)	0.0214	0.074	--
Calleguas Creek, between Potrero Rd. and Somis Rd. (Reach 3)	0.0274	0.859	--
Revolon Slough (Reach 4) and Beardsley Wash (Reach 5)	0.0058	0.075	0.290

Arroyo Las Posas (Reach 6), Arroyo Simi (Reach 7), and Tapo Canyon Creek (Reach 8)	0.031	0.958	--
Conejo Creek (Reaches 9A & 9B), Arroyo Conejo (Reach 10), Arroyo Santa Rosa (Reach 11), North Fork Arroyo Conejo (Reach 12), and South Fork Arroyo Conejo (Reach 13)	0.0433	1.29	--

Calleguas Creek Watershed Metals and Selenium TMDL assigns a mass-based WLA for mercury in suspended sediment (lbs/year) to Responsible Dischargers to be met in Calleguas Creek and in Revlon Slough. The WLA for mercury is shown in Table F.39 below.

TABLE F.39: Calleguas Creek and Revolon Slough Mercury WLA

Flow Range	Calleguas Creek Mercury WLA		Revolon Slough Mercury WLA	
	Interim (lb/yr)	Final (lb/yr)	Interim (lb/yr)	Final (lb/yr)
0-15,000 MGY	3.3	0.4	1.7	0.1
15,000-25,000 MGY	10.5	1.6	4	0.7
Above 25,000 MGY	64.6	9.3	10.2	1.8

The mass-based mercury WLA is assigned at the receiving waters and is dependent on receiving water flow. Directly implementing the mercury WLAs would result in a unique mass load for each Responsible Discharger that would be impractical, costly, and not aligned with the monitoring requirements in this General Permit. As mentioned in the introduction of Section II.F.6.f of this Fact Sheet, this TMDL associates receiving water bed toxicity targets to discharges of OC pesticides, PAHs, PCBs, and/or metals bound to sediment particulates, as such, a suspended sediment load is assigned. This TMDL is addressed by complying with this General Permit's Table 2 TSS NAL requirements by implementing sediment control measures to prevent sediment-bound particulates from settling into the receiving water bed. Compliance with this General Permit is consistent with the requirements and assumptions of this portion of the TMDL's WLAs related to discharges into Calleguas Creek and/or Revolon Slough.

Responsible Dischargers are assigned a concentration-based WLA for dry-weather discharges. NSWDs are only authorized in this General Permit if Section IV conditions are met to control the discharge of pollutants from the facility. Section III.B prohibits all NSWDs not authorized under Section IV; therefore, all unauthorized NSWDs must be either eliminated or have regulatory coverage under a separate NPDES permit. Authorized NSWDs, as defined in this General Permit, are authorized because these discharges are assumed to not

commingle with storm water associated with industrial activity. The Los Angeles Regional Water Board may impose additional requirements on NSWDs if deemed necessary per a site-specific analysis.

- Compliance Action and Schedule

  Responsible Dischargers shall comply with the requirements of this General Permit. Responsible Dischargers shall compare all sampling and analytical results for all individual or Qualified Combined Samples of the facility's industrial storm water discharges to the receiving water body reaches and the respective instantaneous maximum interim TNAL(s) listed in Table E-2.

  The TMDL's final compliance deadline is March 27, 2022. Since interim WLAs have been assigned, these interim WLAs shall be expressed as TNALs and shall apply in the interim until the final WLAs apply as NELs. Future reissuances of this General Permit may incorporate additional or revised compliance requirements or interim targets to progress towards the required final compliance, when an instantaneous maximum NEL applies.

ix. Marina del Rey Harbor Toxics TMDL[146]

The Los Angeles Regional Water Board adopted the Marina del Rey Harbor Toxics TMDL on February 6, 2014, to address the impairment of Marina del Rey Harbor due to chlordane, copper, DDT, dieldrin, fish consumption advisory, lead, PCBs, sediment toxicity, and zinc. During the development of this TMDL, data review indicated that 1) dieldrin is no longer a cause of impairment and 2) there is a dissolved copper impairment in the water column and sediment.

Section F.6.f explains the nature of OC pesticides and how these pollutants interact in the environment.

- Source Analysis

  Urban storm water has been recognized as a substantial source of metals. Metals are typically associated with fine particles in storm water runoff and have the potential to accumulate in sediments and become toxic. Copper-based anti-fouling paints are recognized as substantial sources of dissolved copper to the water column. The contribution from passive leaching to the water column impairments was modeled and shown to contribute 94 percent of the copper loading from anti-fouling hull paint and the remaining 6 percent of the impaired results from hull cleaning activities. The majority of organic constituents in storm water are also associated with particulates. Direct deposition of airborne particles to the water surface

[146] Los Angeles Regional Water Quality Control Board, Marina del Rey Harbor Toxic Pollutants TMDL (February 2014) <https://www.waterboards.ca.gov/losangeles/water_issues/programs/tmdl/docs/R14-004_RB_BPA.pdf> [as of June 5, 2018].

may be a minor source responsible for contributing metals and organic pollutants to the Marina del Rey Harbor[147].

- WLA Translation

  The Marina del Rey Harbor Toxics TMDL assigns a mass-based WLA for chlordane, copper, total DDTs, Dichlorodiphenyldichloroethylene (p,p'DDE), lead, total PCBs, and zinc based on the acreage of the facility's industrial area in grams/year/acre or mg/yr/acre to be met at the facility's industrial discharge location(s) for discharges into the Marina del Rey Harbor.

  Directly implementing the chlordane, copper, p,p'DDE, lead, total DDTs, total PCBs, and zinc WLAs would result in a unique mass load for each Responsible Discharger dependent on the facility's industrial acreage. Requiring Responsible Dischargers to calculate the facility specific mass load of a pollutant(s) would be impractical, costly, and not aligned with the monitoring requirements in this General Permit. Responsible Dischargers would normally have been assigned to meet the concentration-based numeric targets of the Marina del Rey Harbor Toxics TMDL. However, as mentioned in the introduction of Section II.F.6.f of this Fact Sheet, this TMDL associates receiving water bed toxicity targets to discharges of OC pesticides, PAHs, PCBs, and/or metals bound to sediment particulates, as such, a suspended sediment load is assigned. This TMDL is addressed by complying with this General Permit's Table 2 TSS NAL requirements by implementing sediment control measures to prevent sediment-bound particulates from settling into the receiving water bed.

  100 percent of the copper loadings into the Marina del Rey Harbor comes from the leaching of antifouling hull paint and from hull cleaning operations. Therefore, the copper numeric target will not be assigned to Responsible Dischargers and compliance with this WLA shall be through compliance with this General Permit and the existing copper NAL for facilities with industrial sources of copper with the potential to discharge to waters of the United States.

TABLE F.40: Marina del Rey Harbor Metal WLA

Pollutant	WLA (g/yr/ac)
Copper	1.9
Lead	2.6
Zinc	8.5

TABLE F.41: Marina del Rey Harbor OC Pesticides WLA

[147] Marina del Rey Harbor Toxic Pollutants TMDL, pp. 3-4.

Pollutant	WLA (mg/yr/ac)
Chlordane	0.03
p,p' - DDE	0.12
Total DDTs	0.09
Total PCBs	1.3

- Compliance Action and Schedule:

  Compliance with this General Permit is consistent with the requirements and assumptions of this TMDL's WLA(s). No additional requirements are incorporated into this General Permit to implement the Marina del Rey Harbor Toxics TMDL.

x. Ballona Creek Estuary Toxics TMDL[148]

The Los Angeles Regional Water Board adopted the Ballona Creek Estuary Toxics TMDL on July 7, 2005, to address the impairment of the Ballona Creek and Ballona Creek Estuary (Ballona Watershed) due to cadmium, chlordane, copper, DDT, lead, PCBs, PAHs, silver, toxicity in sediment, and zinc. The Ballona Creek Estuary Toxics TMDL does not include a PAH TMDL because recent data does not show PAH levels exceeding the numeric targets.[149]

Section F.6.f explains the nature of OC pesticides and how these pollutants interact in the environment.

- Source Analysis

  The Ballona Creek Estuary Toxics TMDL identifies urban storm water as a significant source of metals and the most prevalent metals in urban storm water are consistently associated with suspended solids[150].

- WLA Translations

  Ballona Creek Estuary Toxics TMDL assigns a mass-based WLA for cadmium, copper, lead, silver, and zinc in sediment in g/yr/acre to be met at the facility's industrial discharge location(s) for discharges into the

[148] Los Angeles Regional Water Quality Control Board, Ballona Creek Estuary Toxic Pollutants TMDL (December 2013) <https://www.waterboards.ca.gov/losangeles/water_issues/programs/tmdl/docs/Ballona%20Toxics/R13-010T_RB_BPA.pdf> [as of June 5, 2018].

[149] Ballona Creek Estuary Toxic Pollutants TMDL, p. 2.

[150] Ballona Creek Estuary Toxic Pollutants TMDL, p. 3.

Ballona Watershed.[151,152] The WLAs for each metal are shown in Table F.42 below.

Directly implementing the cadmium, copper, lead, silver, and zinc WLAs would result in a unique mass load for each Responsible Discharger dependent on the facility's industrial acreage. Requiring Responsible Dischargers to calculate the facility specific mass load of a pollutant(s) would be impractical, costly, and not aligned with the monitoring requirements in this General Permit. Responsible Dischargers would normally have been assigned to meet the concentration-based numeric targets of the Ballona Creek Estuary Toxics TMDL. However, as mentioned in the introduction of this section, this TMDL associates receiving water bed toxicity targets to discharges of OC pesticides, PAHs, PCBs, and/or metals bound to sediment particulates. Therefore, this TMDL is addressed by complying with this General Permit's Table 2 TSS NAL requirements by implementing sediment control measures to prevent sediment-bound particulates from settling into the receiving water bed.

TABLE F.42: Ballona Creek Metal WLA

Pollutant	**WLA (g/yr/ac)**
Cadmium	0.1
Copper	3
Lead	4
Silver	0.1
Zinc	13

TABLE F.43: Ballona Creek Organic WLA

Pollutant	**WLA (mg/yr/ac)**
Chlordane	0.1
DDTs	3
Total PCBs	4

The Ballona Creek Estuary Toxics TMDL assigns a mass-based WLA for chlordane, DDTs, and total PCBs in mg/yr/ac at the facility's industrial discharge location(s) for discharges into the Ballona Watershed.[153]

[151] Ballona Creek Estuary Toxic Pollutants TMDL, p. 7.
[152] Ballona Creek Estuary Toxic Pollutants TMDL, p. 5.
[153] Ballona Creek Estuary Toxic Pollutants TMDL, pp. 5-6.

Directly implementing the DDT and PCB WLAs would result in a unique mass load for each Responsible Discharger dependent on the facility's industrial acreage. Requiring Responsible Dischargers to calculate the facility specific mass load of a pollutant(s) would be impractical, costly, and not aligned with the monitoring requirements in this General Permit. Responsible Dischargers would normally have been assigned to meet the concentration-based numeric targets of the Ballona Creek Estuary Toxics TMDL. However, as mentioned in the introduction of Section II.F.6.f of this Fat Sheet, this TMDL associates receiving water bed toxicity targets to discharges of OC pesticides, PAHs, PCBs, and/or metals bound to sediment particulates. Therefore, this TMDL is addressed by complying with this General Permit's Table 2 TSS NAL requirements by implementing sediment control measures to prevent sediment-bound particulates from settling into the receiving water bed.

- Compliance Action and Schedule

  Compliance with this General Permit is consistent with the requirements and assumptions of this TMDL's WLA(s). No additional requirements are incorporated into this General Permit to implement the Ballona Creek Estuary Toxics TMDL.

xi. Ballona Creek Metals TMDL[154]

The Los Angeles Regional Water Board adopted the Ballona Creek Metals TMDL on December 5, 2013, to address the impairment of Ballona Creek and Sepulveda Canyon Channel due to copper, lead, selenium, toxicity, and zinc. The Ballona Metals TMDL does not include a selenium TMDL because recent data did not show selenium levels exceeding the numeric targets.[155]

- Source Analyses

  Storm drains convey a large percentage of dissolved metal loadings during dry weather. During wet weather, most of the metal loadings in Ballona Creek are in particulate form and are associated with storm water flows.[156]

- WLA Translation

  The Ballona Creek Metals TMDL assigns a mass-based WLA for copper, lead, and zinc based on the acreage of the facility in grams/day/acre to be met at the facility's industrial discharge location(s) for discharges into

[154] Los Angeles Regional Water Quality Control Board, Ballona Creek Metals TMDL (December 2013) <https://www.waterboards.ca.gov/losangeles/water_issues/programs/tmdl/docs/Ballona%20Metals/R13-010M_RB_BPA.pdf> [as of June 5, 2018].

[155] Ballona Creek Metals TMDL, p. 2.

[156] Ballona Creek Metals TMDL, pp. 3-4.

Ballona Creek or Sepulveda Channel. In addition, daily storm volume flows are required to calculate the WLA for each metal. The WLAs for each metal are shown in Table F.44 below[157].

Directly implementing the copper, lead, and zinc WLAs would result in a unique mass load for each Responsible Discharger dependent on the daily storm water flows and the facility's industrial acreage. Requiring Responsible Dischargers to calculate the facility specific mass load of a pollutant(s) would be impractical, costly, and not aligned with the monitoring requirements in this General Permit. The Ballona Creek Metals TMDL allows for compliance to be assessed based on concentration and/or load allocation.[158] Additionally, the TMDL Staff Report states, "The wet-weather mass-based waste load allocations for the general construction and industrial storm water permittees (Table 6-12) will be incorporated into watershed specific general permits. Concentration-based permit conditions may be set to achieve the mass-based waste load allocations. These concentration-based conditions would be equal to the concentration-based waste load allocations assigned to the other NPDES permits as described in Section 6.4.3 and Table 3-3."[159] Therefore, it is consistent with the requirements and assumption of the WLA to apply the Ballona Creek Metals and Selenium TMDL Numeric Targets as concentration-based effluent limitations.[160]

The units are converted from ug/L to mg/L to be consistent with the reporting units in Table 2 of this General Permit. The assigned instantaneous maximum NELs are shown in Table F.44 below.

The 2017 draft of these TMDL requirements proposed a translation of these WLAs into TNALs. Based on discussions with the regional board during the public comment period and further review by State Water Board staff, those TNALs were replaced with NELs for the following reasons: The TMDL contains a numeric concentration target and the TMDL staff report identified a concentration-based permit requirement as an appropriate way to implement the WLA.

TABLE F.44: Ballona Creek and Sepulveda Channel WLA Translation

Pollutant	WLA (g/day/acre)	Numeric Target (ug/L)	Total Instantaneous Maximum NEL (mg/L)
Copper	1.673 x 10-10 x Daily storm volume (L)	13.70	0.0137

[157] Ballona Creek Metals TMDL, p. 4.

[158] Ballona Creek Metals TMDL, p. 12.

[159] Los Angeles Regional Water Quality Control Board, Ballona Creek Metals TMDL Staff Report (July 2005) <https://www.waterboards.ca.gov/losangeles/board_decisions/basin_plan_amendments/technical_documents/2005-007/05_0831/StaffReport.pdf> [as of June 5, 2018].

[160] The concentration-based WLA assigned to other NPDES permits are the Numeric Targets.

Lead	9.369x 10-10 x Daily storm volume (L)	76.75	0.07675
Zinc	1.279 x 10-9 x Daily storm volume (L)	104.77	0.10477

Responsible Dischargers are assigned a concentration-based WLA for dry-weather discharges. NSWDs are only authorized in this General Permit if Section IV conditions are met to control the discharge of pollutants from the facility. Section III.B prohibits all NSWDs not authorized under Section IV; therefore, all unauthorized NSWDs must be either eliminated or have regulatory coverage under a separate NPDES permit. Authorized NSWDs, as defined in this General Permit, are authorized because these discharges are assumed to not commingle with storm water associated with industrial activity. The Los Angeles Regional Water Board may impose additional requirements on NSWDs if deemed necessary per a site-specific analysis.

- Compliance Action and Schedule

  Responsible Dischargers shall comply with the requirements of this General Permit. Responsible Dischargers shall compare all sampling and analytical results for all individual or Qualified Combined Samples of the facility's industrial storm water discharges to the receiving water body reaches and the respective instantaneous maximum NEL(s) listed in Table E-2.

  The TMDL's final compliance deadline was January 11, 2016. Since this compliance deadline has passed, the WLAs shall be met by the upon the Effective Date of the TMDL Requirements.

xii. San Diego Creek and Newport Bay Toxics TMDL[161]

The U.S. EPA adopted the San Diego Creek and Newport Bay Toxics TMDL on June 14, 2002, to address the impairments of San Diego Creek and Newport Bay due to cadmium, chlordane, chlorpyrifos, chromium, copper, DDT, diazinon, dieldrin, lead, mercury, PCBs, selenium, toxaphene, and zinc.[162]

Section F.6.f explains the nature of OC pesticides and how these pollutants interact in the environment.

[161] U.S. EPA, Total Maximum Daily Loads For Toxic Pollutants San Diego Creek and Newport Bay (June 2002) <http://www.waterboards.ca.gov/santaana/water_issues/programs/tmdl/docs/sd_crk_nb_toxics_tmdl/summary0602.pdf> (San Diego Creek and Newport Bay Toxics TMDL) [as of June 5, 2018].

[162] San Diego Creek and Newport Bay Toxics TMDL, p. 3.

- Source Analysis:

  Urban road runoff is the largest contributor due to cadmium from tires, copper from brakes and tires, lead from brakes, tires, fuels, and oils, and zinc from tires, brakes, and auto frames.[163] Secondary contributions come from contaminated sediments, atmospheric deposition from unknown sources, and antifouling paints from recreational boats.[164] The largest sources of most dissolved metals (except copper) for the Upper and Lower Newport Bay are estimated to be freshwater-borne loads from San Diego Creek.[165] The most significant estimated source for dissolved copper in Lower Bay, Rhine Channel and, to some extent, Upper Bay is sourced from copper anti-fouling paint leaching from recreational boats and underwater hull cleaning.[166]

  The mercury and chromium contaminated sediments in the Rhine Channel are likely associated with historic discharges from industrial facilities around the channel.[167]

- WLA Translation

  The San Diego Creek and Newport Bay Toxics TMDL assigns a WLA for cadmium, chromium, copper, lead, mercury, and zinc to Responsible Dischargers to be met at the facility's industrial discharge location(s) for discharges into Newport Bay or the San Diego Creek and its tributaries. The following list shows the water body and the associated pollutants with assigned WLAs:[168]

  1.) San Diego Creek: cadmium, copper, lead, and zinc

  2.) Upper Newport Bay: cadmium, copper, lead, and zinc

  3.) Lower Newport Bay: copper, lead, and zinc

  4.) Rhine Channel area of Lower Newport Bay: chromium, copper, lead, mercury, and zinc

- San Diego Creek WLA Translation

  The San Diego Toxics TMDL assigns WLAs for cadmium, copper, lead, and zinc to the category "Other NPDES permittees" which includes

[163] San Diego Creek and Newport Bay Toxics TMDL, p. 13.
[164] San Diego Creek and Newport Bay Toxics TMDL, p. 13.
[165] San Diego Creek and Newport Bay Toxics TMDL, p. 44.
[166] San Diego Creek and Newport Bay Toxics TMDL, p. 44.
[167] San Diego Creek and Newport Bay Toxics TMDL, p. 65.
[168] San Diego Creek and Newport Bay Toxics TMDL, p. 4.

Responsible Dischargers in addition to seven other NPDES permits.[169] The WLAs are assigned to Responsible Dischargers to be met at the facility's industrial discharge location(s) for discharges into San Diego Creek and its tributaries including the Santa Ana-Delhi Channel, Big Canyon Channel, East Costa Mesa Channel, and other tributaries into San Diego Creek (San Diego Creek Watershed).[170] The WLA is hardness dependent, meaning the receiving water body hardness must be known to calculate the WLA.

Receiving water body hardness is dependent on receiving water body flow. The U.S. EPA calculated the hardness-dependent criteria for cadmium, copper, lead, and zinc as shown in Table 5-2 of the San Diego Toxics TMDL[171] with the following CTR equation:

$$CMC = WER \times (Acute\ Conversion\ Factor) \times (\exp\{m_A[\ln(hardness)]+b_A\})$$

Hardness is defined as the concentration of calcium carbonate ($CaCO_3$) in the water column and has the units of milligram per liter (mg/L). Freshwater aquatic life criteria for certain metals are expressed as a function of hardness because hardness and/or water quality characteristics that are usually correlated with hardness can reduce or increase the toxicity of some metals. The site-specific hardness is used to calculate the metal numeric targets.

Only one hardness value is selected to be representative of the receiving water body instead of requiring Responsible Dischargers to sample for receiving water body hardness in concurrence with taking a discharge sample to calculate the metal criteria. This is consistent with the approach taken in many hardness-dependent TMDLs of assigning a hardness value based on existing data. The U.S. EPA and the Santa Ana Regional Water Board staff evaluated daily flow records of the San Diego Creek for 19 years.[172] The San Diego Creek and Newport Bay TMDL developed multiple receiving water hardness values based on flow, and did not assign one hardness value to be representative of the San Diego Creek water body. Therefore, a hardness of 197 is the average hardness calculated for large flows and is selected as the typical hardness value associated with a storm event flow at San Diego Creek. Table 5-2 of the San Diego Toxics TMDL shows how the California Toxics Rule (CTR) equation was used to calculate the acute concentration criteria at a hardness of 197 mg/L.

[169] San Diego Creek and Newport Bay Toxics TMDL, p. 18.
[170] San Diego Creek and Newport Bay Toxics TMDL, p. 47.
[171] San Diego Creek and Newport Bay Toxics TMDL, p. 42.
[172] San Diego Creek and Newport Bay Toxics TMDL, pp. 3-4.

TABLE F.45: San Diego Creek Watershed WLA Translation

parameter	CTR equation	Total Criteria in ug/L based on a hardness of 197 mg/L	Total Criteria in mg/L	Total Instantaneous Maximum mg/L NEL
Cd	(EXP(1.128*LN(Hardness)-3.6867))	9.706092742	0.0097	0.0097
Cu	(EXP(0.9422*LN(Hardness)-1.7))	26.5182865	0.027	0.027
Pb	(EXP(1.273*LN(Hardness)-1.460))	193.5466070	0.194	0.194
Zn	(EXP(0.8473*LN(Hardness)+0.884))	212.8225073	0.21	0.21

*values are rounded to reflect the significant figures of each respective pollutant found in Table 2 of this General Permit

An average hardness of San Diego Creek was selected to calculate the criteria for translating each pollutant into a NEL in the San Diego Toxics TMDL because it is not feasible or practical to require Responsible Dischargers to collect the ambient hardness of the receiving water body in concurrence with each monitoring sample. Therefore, Responsible Dischargers are assigned an instantaneous maximum NEL for cadmium, copper, lead, and zinc for discharges to the San Diego Creek Watershed.. The monitoring requirements of this General Permit are at each facility's individual industrial discharge location(s).

The 2017 draft of these TMDL requirements proposed a translation of these WLAs into TNALs. Based on discussions with the regional board during the public comment period and further review by State Water Board staff, those TNALs were replaced with NELs for the following reasons: The TMDL contains a numeric concentration target and the TMDL staff report identified a concentration-based permit requirement as an appropriate way to implement the WLA.

- Upper Newport Bay, Lower Newport Bay and Bay Segments, and Rhine Channel WLA Translation

  The mass-based WLAs for dissolved cadmium, copper, lead, and zinc are assigned to be met in the receiving water of Upper Newport Bay. The mass-based WLAs for dissolved copper, lead, and zinc are assigned to be met in the receiving water of Lower Newport Bay and the Rhine Channel. Responsible Dischargers are assigned concentration-based WLAs for copper, lead, and zinc for discharges into Upper Newport Bay, Lower Newport Bay and Bay Segments (e.g. Costa Mesa Channel and Santa Ana Delhi Channel), and the Rhine Channel. A concentration-based WLA for cadmium is assigned to Responsible Dischargers for discharges into Upper Newport Bay.[173] The acute concentration values are assigned instead of the mass-based WLAs because they are more applicable due to the variable frequency and intensity of storm water events and flows and because the concentration WLAs are applied to direct discharges into Upper Newport Bay, Lower Newport Bay and Bay Segments, and the Rhine Channel.

[173] San Diego Creek and Newport Bay Toxics TMDL, p. 49.

The dissolved metals concentration-based WLAs are translated into total concentrations and the units are converted from ug/L to mg/L to be consistent with the reporting units in Table 2 of this General Permit. The concentration-based WLAs are translated into an instantaneous maximum NEL for cadmium, copper, lead, and zinc because the WLAs are directly assigned to Responsible Dischargers. The NELs are shown in Table F.46 below.

TABLE F.46: Upper Newport Bay*, Lower Newport Bay and Bay Segments, and Rhine Channel WLA Translation

Parameter	Dissolved saltwater acute TMDLs and allocations (ug/L)	CTR Conversion Factor for salt water acute criteria	Total saltwater acute TMDLs and allocations (mg/L) NEL
Cadmium*	42	0.994	0.042**
Copper	4.8	0.83	0.00578**
Lead	210	0.951	0.221**
Zinc	90	0.946	0.095**

*applies to Upper Newport Bay only
**values are rounded to reflect the significant figures of each respective pollutant found in Table 2 of this General Permit

A WLA of 0 (zero) lbs/year was assigned to boatyards.[174] At the time the San Diego Creek and Newport Bay TMDL was adopted, there was a permit that covered boatyards. It has since sunsetted. As a result, the boatyards are now covered by this General Permit. All boatyards identified as Responsible Dischargers in the San Diego Creek and Newport Bay TMDL assigned an instantaneous maximum NEL of 0 lbs/year for discharges of dissolved cadmium, copper, lead, and zinc into Upper Newport Bay, Lower Newport Bay and Bay Segments and the Rhine Channel.

- Rhine Channel area of Lower Newport Bay WLA Translation

  Mass-based WLAs for mercury and chromium are assigned to Responsible Dischargers for discharges to the Rhine Channel area of Lower Newport Bay. The San Diego Creek and Newport Bay Toxics TMDL identifies the sources of the mercury impairment of the Rhine Channel area of Lower Newport Bay to likely be the existing sediments in the receiving water bed, and the probable sources of chromium to be heavily contaminated sediments existing in the Rhine channel.

  Requiring Responsible Dischargers to calculate the facility specific mass load of a pollutant(s) would be impractical, costly, and not aligned with the monitoring requirements in this General Permit. Responsible Dischargers would normally have been assigned to meet the concentration-based sediment numeric targets of the San Diego Creek and Newport Bay Toxics

[174] San Diego Creek and Newport Bay Toxics TMDL, Table 5-7a, p. 49.

TMDL. However, as mentioned in the introduction of Section II.F.6.f of this Fact Sheet, this TMDL associates receiving water bed toxicity targets to discharges of OC pesticides, PAHs, PCBs, and/or metals bound to sediment particulates. Therefore, this TMDL is addressed by complying with this General Permit's Table 2 TSS NAL requirements by implementing sediment control measures to prevent sediment-bound particulates from settling into the receiving water bed.

- Compliance Actions and Schedule

1) Compliance with San Diego Creek Watershed, Upper Newport Bay, Lower Newport Bay and Bay Segments, and Rhine Channel:

Responsible Dischargers shall comply with the requirements of this General Permit. Responsible Dischargers shall compare all sampling and analytical results for all individual or Qualified Combined Samples of the facility's industrial storm water discharges to the receiving water body reaches and the respective NELs listed in Table E-2.

The Santa Ana Regional Water Board has not adopted an Implementation Plan for the San Diego Creek and Newport Bay Toxics TMDL. Therefore, Responsible Dischargers are required to comply with instantaneous maximum NELs for discharges into San Diego Creek Watershed, Upper Newport Bay, Lower Newport Bay and Bay Segments, and the Rhine channel upon the Effective Date of the TMDL Requirements.

2) Compliance with Rhine Channel area of Lower Newport Bay:

Compliance with this General Permit is consistent with the requirements and assumptions of this TMDL's WLA(s). No additional requirements are incorporated into this General Permit to implement the San Diego Creek and Newport Bay Toxics TMDL.

xiii. Chollas Creek Metals TMDL[175]

The San Diego Regional Water Board adopted the Chollas Creek Metals TMDL on June 13, 2007, to address the impairment of Chollas Creek due to dissolved copper, lead, and zinc.

- Source Analysis

[175] San Diego Regional Water Quality Control Board,Total Maximum Daily Loads for Dissolved Copper, Lead, and Zinc in Chollas Creek, Tributary to San Diego Bay (May 2007) <http://www.waterboards.ca.gov/sandiego/water_issues/programs/tmdls/docs/chollascreekmetals/update060407/appndx_a.pdf> [as of June 5, 2018].

The major urban runoff contributors of copper, lead, and zinc into Chollas Creek include freeways, commercial, and industrial land uses.[176] The Chollas Creek Metals TMDL technical report identifies industries as a significant source of metals.[177]

- WLA Translation

  The Chollas Creek Metals TMDL assigns a WLAs for dissolved copper, lead, and zinc to Responsible Dischargers to be met at the facility's industrial discharge location(s) for all discharges into Chollas Creek.

  The WLAs for dissolved copper, lead, and zinc are concentration-based and set equal to 90 percent of the numeric targets, which is the CTR acute criteria. The CTR acute criteria calculation requires receiving water body hardness, which results in a floating target that would differ at each discharge sample because the receiving water body hardness is dependent on receiving water body flow.

TABLE F.47: Chollas Creek Metals WLAs

Metal	90 Percent of Total Metal Concentration (µg/l) Numeric Targets
Dissolved Copper	$(0.90) \times (0.96) \times e^{[0.9422 \times \ln(\text{hardness}) - 1.700]} \times \text{WER}^a$
Dissolved Lead	$(0.90) \times [1.46203 - 0.145712 \times \ln(\text{hardness})] \times e^{[1.273 \times \ln(\text{hardness}) - 1.460]} \times \text{WER}$
Dissolved Zinc	$(0.90) \times (0.978) \times e^{[0.8473 \times \ln(\text{hardness}) + 0.884]} \times \text{WER}^a$

[a] Site-specific WER for dissolved copper is 6.998 and for dissolved zinc is 1.711

Hardness is defined as the concentration of calcium carbonate ($CaCO_3$) in the water column and has the units of milligram per liter (mg/L). Freshwater aquatic life criteria for certain metals are expressed as a function of hardness because hardness and/or water quality characteristics that are usually correlated with hardness can reduce or increase the toxicities of some metals.

[176] Total Maximum Daily Loads for Dissolved Copper, Lead, and Zinc in Chollas Creek, Tributary to San Diego Bay, p. 3.

[177] Total Maximum Daily Loads for Dissolved Copper, Lead, and Zinc in Chollas Creek, Tributary to San Diego Bay Technical Report, p. 33 <http://www.waterboards.ca.gov/sandiego/water_issues/programs/tmdls/docs/chollascreekmetals/update011509/Technical_Report.pdf> [as of June 5, 2018].

Known site-specific hardness data is used to calculate the WLA instead of requiring Responsible Dischargers to calculate their metal limit by sampling the receiving water body hardness in concurrence with taking a discharge sample. This is consistent with the approach taken in many hardness-dependent TMDLs of assigning a hardness value based on existing data. Hardness data for Chollas Creek was obtained by Regional Board TMDL staff from California Integrated Water Quality System (CIWQS). Data analysis was conducted on hardness results from wet-weather sampling events from the Chollas Creek TMDL watershed with sample dates ranging from 1994 to 2017. All results obtained were marked as a part of the Chollas Creek TMDL project, however not all stations had specific location information. Statistics run on the data set produced a geomean of 94.07. Table F.48 below show how the CTR equation was used to calculate the acute concentration criteria at a hardness of 94.07 mg/L.

TABLE F.48: Chollas Creek Metals WLA Translation

parameter	CTR equation	Water Effect Ratio	Total Criteria in ug/L based on a hardness of 94.07 mg/L	90% of Criteria as the WLA in ug/L	Total Instantaneous Maximum mg/L NEL
Cu	6.998*(EXP(0.9422*LN(Hardness)-1.7))	6.998	92.4823777	83.23413993	0.083
Pb	(EXP(1.273*LN(Hardness)-1.460))	1	75.5324136	67.97917227	0.068
Zn	1.711*(EXP(0.8473*LN(Hardness)+0.884))	1.711	194.6576544	175.191889	0.175

*values are rounded to reflect the significant figures of each respective pollutant found in Table 2 of this General Permit

A geomean hardness of Chollas Creek was selected to calculate the criteria for translating each pollutant into a TNAL in the Chollas Creek Metals TMDL because it is not feasible or practical to require Responsible Dischargers to collect the ambient hardness of the receiving water body in concurrence with each monitoring sample. Therefore, Responsible Dischargers are assigned an instantaneous maximum NEL for copper, lead, and zinc for discharges to Chollas Creek. The monitoring requirements of this General Permit are at each facility's individual industrial discharge location(s).

The 2017 draft of these TMDL requirements proposed a translation of these WLAs into TNALs. Based on discussions with the regional board during the public comment period and further review by State Water Board staff, those TNALs were replaced with NELs for the following reasons: The TMDL contains a numeric concentration target and the TMDL staff report identified a concentration-based permit requirement as an appropriate way to implement the WLA.

- Compliance Action and Schedule

  Responsible Dischargers shall comply with the requirements of this General Permit. Responsible Dischargers shall compare all sampling and analytical results for all individual or Qualified Combined Samples of the facility's industrial storm water discharges to the receiving water body

reaches and the respective instantaneous maximum NEL(s) listed in Table E-2.

The TMDL's final compliance deadline is June 13, 2027. As an interim target, Responsible Dischargers shall apply the NEL value as TNALs up until the compliance date of June 13, 2027. Future reissuances of this General Permit may incorporate additional or revised compliance requirements or interim targets to progress towards the required final compliance, when an instantaneous maximum NEL applies.

7. TMDL Implementation Costs

In 2012, the State Water Board released an analysis of the Compliance Costs for this General Permit[178] and an update of this analysis in 2013.[179] These reports analyzed the cost of compliance with this General Permit as compared to its previous iteration, released in 1997. The Report analyzed a five-year period with estimates dependent on predicted NAL exceedance rates. The analysis assumed that seventy (70) percent of all industrial facilities would remain in Baseline status for the 5-year term, twenty (20) percent would only have Level 1 NAL exceedances, and an additional ten (10) percent would have Level 1 and Level 2 NAL exceedances. The cost of compliance with this General Permit was approximated to be $1.74 billion for all facilities over a five-year period compared to the $1.57 billion for facilities complying with the previous permit, which is an increase of approximately $170 million for statewide compliance with this General Permit over a five-year period.[180] The State Water Board, in incorporating TMDL requirements into this General Permit, worked to utilize as much of this General Permit's existing requirements as possible in order to minimize additional incremental costs.

This General Permit's TMDL-specific requirements provide a consistent implementation approach for TMDLs with similar waste load allocations for industrial facilities, which provides a streamlined process for TMDL compliance. Responsible Dischargers implement applicable TMDLs through compliance with 1) this General Permit 2) TMDL-specific TNALs, and/or 3) TMDL-specific NELs. This consistency provides time- and cost-efficiencies for Responsible Dischargers in achieving compliance with applicable TMDL requirements. The discussion below is to provide 1) overview of TMDL implementation where the State Water Board has provided cost-efficiencies, 2) general information on TMDL pollutant categories and estimated compliance costs for the TMDL requirements by Responsible Dischargers, 3) examples of appropriate existing BMPs, and 4) general cost (high, medium, low) for potential TMDL-pollutant BMP categories.

[178] Analysis of the Compliance Costs for the IGP (July 16, 2012), available at: <https://www.waterboards.ca.gov/water_issues/programs/stormwater/historical.shtml#ind> [as of June 15, 2018]..

[179] 2013 Update of Report on the Compliance Costs for the Final (2013) Draft Industrial General Permit (IGP) (September 6, 2013, available at: <https://www.waterboards.ca.gov/water_issues/programs/stormwater/docs/industrial/igp_cost2013.pdf> [as of June 15, 2018].

[180] 2013 Update of Report of the Compliance Costs for the Final (2013) Draft Industrial General Permit (IGP). September 6, 2013. <https://www.waterboards.ca.gov/water_issues/programs/stormwater/docs/industrial_permitdocs/strikeout/cost_an_fnl.pdf> [as July 30, 2018].

a. Using the Existing General Permit Implementation Framework

Costs are site-specific and vary depending on multiple factors. This general information is provided to frame the cost considerations for TMDL implementation. This General Permit incorporates requirements for Responsible Dischargers to comply with applicable TMDLs. The incorporation of TMDL requirements into this General Permit allows the use of its existing monitoring and reporting framework to avoid incurring additional costs associated with TMDL implementation (e.g, additional and separate reports for TNAL exceedances, unique monitoring and sampling requirements specific to TMDLs, etc.). Fifty-eight (58) of the TMDL WLAs have been translated to TNALs, which are implemented consistently with this General Permit's framework for NAL compliance. As such, Responsible Dischargers will follow the ERA process of this General Permit and perform the required actions for TNAL exceedances as they would for NAL exceedances. At Level 2, a Responsible Discharger, as with NALs, may, when appropriate, perform a natural background source demonstration, a non-industrial pollutant source demonstration, or an industrial activity BMP demonstration. In addition, forty (40) of the TMDL WLAs have been translated to a requirement to comply with this General Permit, without imposition of additional TNALs, NELs, or other requirements, further avoiding additional costs associated with TMDL implementation.

b. Availability of Implementation Tools

The State Water Board recognizes the need to provide Responsible Dischargers tools and information to navigate the applicability of TMDL requirements, determine the spatial location of the requirements, and provide support for compliance analyses. In an effort to reduce the cost to Responsible Dischargers of complying with the TMDL requirements, state-developed tools to assist in the implementation of and compliance with the TMDL requirements are free and publicly available. These include a set of flowcharts tools and a GIS-based TMDL applicability map.

c. Compliance Options

Discharger with coverage under this General Permit may take advantage of the On-Site or Off-Site Compliance Options in Attachment I, which, in exchange for compliance with Section V.A of this General Permit and deemed compliance with Sections III.C, V.C, and VI, require implementation of BMP(s) for capture and use, infiltration, and/or evapotranspiration of authorized NSWDs and storm water associated with industrial activities produced up to and during the 85th percentile 24-hour precipitation event. These options provide Responsible Dischargers additional compliance strategies that may be a more cost-effective method for achieving compliance with this General Permit.

d. TMDL pollutant Categories

The TMDL pollutant categories are:

a. Sediment, Bacteria
b. Bacteria, Chloride and salts
c. Nutrients, Debris, plastics, and trash
d. Metals
e. Debris, plastics, and trash, Nutrients
f. Synthetic organics and Toxics, Sediment
g. Chloride and salts, Synthetic organics and Toxics

Attachment E, Table E-2 of this General Permit lists all TMDLs applicable to Responsible Dischargers. For each TMDL, Table E-2 cross-references one or more of the pollutant categories above.

i. Sediment[181, 182]

Excess sediment delivery to stream channels can be a pollutant and is associated with several natural processes as well as anthropogenic sources. Sediment can transport other pollutants that attach to it, including nutrients, trace metals, and hydrocarbons. Sediment is the primary component of total suspended solids (TSS) the most common sediment water quality analytical parameter used in this General Permit. The anthropogenic industrial sources include, but are not limited to, track in and out from earth moving equipment, unpaved access road-related erosion (e.g., construction and maintenance of paved and unpaved roadways), dust, and soil/earth disturbing activities at these facilities (e.g. mines, landfills, renovations). Responsible Dischargers are required to comply with the existing requirements of this General Permit, including the TSS NAL, for compliance with the sediment TMDLs incorporated into this General Permit. As a result, compliance with these TMDLs is not expected to result in any additional costs. An analysis of industrial storm water analytical results from the 2016-2017 reporting year statewide revealed that 17% of the industrial stormwater samples reported were monitoring results for sediment parameters, showing a higher percentage of the number of samples.

ii. Bacteria[183, 184]

Sources of bacteria and viruses in watersheds include, but are not limited to, animal excrement (from storm water infrastructure and animals) and sanitary sewer overflows of human excrement. Major contributors from industrial areas

[181] California Stormwater Quality Association (CASQA) Industrial and Commercial Best Management Practice Online Handbook. September 2014, page 1-6 Table 1-3. <https://www.casqa.org/sites/default/files/casqa-handbook-industrial/full_handbook_2014.pdf>. [as of July 19, 2018]. (CASQA Industrial and Commercial BMP Handbook).

[182] State Water Resources Control Board, California State Water Resources Control Board Order 2012-0011-DWQ As Amended by Order WQ 2014-0006-Exec, Order WQ 2014-0077-DWQ, and Order WQ 2015-0036-Exec, NPDES No. CAS000003 statewide storm water permit waste discharge requirements (WDRs) for state of California Department of Transportation. Adopted September 19, 2012. Trash TMDL Pollutant Category, page 36-38. <https://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2012/wq2012_0011_dwq_conformed_signed.pdf>. [as of July 19, 2018]. (Caltrans 2012 NPDES MS4 stormwater permit).

[183] CASQA Industrial and Commercial BMP Handbook, section 1-6 Table 1-3.

[184] Caltrans 2012 NPDES MS4 stormwater permit, page 118-119.

may include wild or tamed animals on the premises, food manufacturing, concentrated animal feeding operations, waste handling, and contaminants in erodible materials. There is not enough Discharger sampling data to analyze the percentage of compliance for the bacteria TNAL/NELs, potentially because many industrial facilities are not point sources for bacteria from industrial activities. This Fact Sheet contains supportive information referenced from the bacteria TMDLs that Dischargers are not a significant source of bacteria and therefore would meet the WLA and the translated limits. An analysis of industrial stormwater analytical results from the 2016-2017 reporting year statewide revealed that less than 1% of industrial storm water samples reported were monitoring results for bacteria parameters, showing this is not a commonly identified constituent in facility pollutant source assessments. Several bacteria TMDLs in Attachment E have no additional implementation requirements, and compliance with these TMDLs is not expected to result in additional costs. For bacteria TMDLs with additional requirements, Responsible Dischargers are expected to achieve the bacteria limitations in this General Permit at little-to-no additional cost in most circumstances.

iii. Nutrients[185, 186]

Nutrients (e.g., ammonia, nitrogen, and phosphorous), which are commonly used in the manufacturing of plant fertilizers, are often found in storm water. The sources of nutrients from industrial areas are commonly from equipment washing, exposure of materials to storm water, and facility maintenance. The percentage of compliance with the nutrient TNAL/NELs is analyzed through existing Discharger sampling data in watersheds with nutrient TMDLs addressed in this General Permit's TMDL requirements. One hundred and eighty-eight (188) of two hundred and eight (208) active facilities within the nutrient TMDL watersheds have sampling data that demonstrates a lack of exceedances of the TNAL/NEL limitations (a rate of 90%). The compliance cost impact for implementation of the nutrient TMDLs is expected to be medium to low since additional BMPs may be required for controlling the specific nutrient concentrations from industrial facilities and an analysis of industrial stormwater analytical results from the 2016-2017 reporting year statewide revealed that 8% of industrial storm water samples were monitoring results for nutrient parameters showing this is not a commonly identified constituent in facility pollutant source assessments.

iv. Metals[187, 188]

Metals (e.g., aluminum, cadmium, chromium, copper, lead, mercury, nickel, selenium, and zinc) are commonly found in industrial storm water. Many of the artificial surfaces of the urban environment (e.g., galvanized metal, paint, automobiles, or preserved wood as well as tires and vehicle breaks) contain

[185] CASQA Industrial and Commercial BMP Handbook, section 1-6 Table 1-3.

[186] Caltrans 2012 NPDES MS4 stormwater permit, page 36-37.

[187] CASQA Industrial and Commercial BMP Handbook, section 1-6 Table 1-3.

[188] Caltrans 2012 NPDES MS4 stormwater permit, page 36-37 and 77-78.

metals, which enter storm water as the surfaces corrode, flake, dissolve, decay, or leach. Sources of metals from industrial areas include, but are not limited to, vehicle and equipment maintenance and washing, exposure of industrial materials to storm water, outdoor industrial activities, exposure and discharge of erodible materials, including but not limited to, the aerial deposition of dust or the exposure prior and during storm events. The expected percentage of compliance with the metal TNAL/NELs was analyzed through existing Discharger sampling data in watersheds with metal TMDLs addressed in this General Permit. Seven hundred and twelve (712) facilities have sampling data that demonstrates compliance with the TNAL/NEL limitations out of one thousand, five hundred, and six (1,506) active facilities within the metal TMDL watersheds. This is a compliance rate of 47% with the TMDL TNAL/NELs. The specific list of metal sampling data analyzed included: cadmium, copper, lead, mercury, methylmercury, nickel, selenium, and zinc. Dischargers are not currently implementing BMPs designed to meet the TMDL-required metal levels. It is expected that the rate will increase as Responsible Dischargers implement BMPs designed to meet the TMDL requirements. The compliance cost impact for the metals TMDL implementation is expected to be high since additional BMPs may be required for controlling metal discharges from industrial facilities and many watersheds containing industrial facilities are subject to metal TMDL requirements. An analysis of industrial stormwater analytical results from the 2016-2017 reporting year statewide revealed that 28% of industrial storm water samples reported were monitoring results for metal parameters showing this is a commonly identified constituent in facility pollutant source assessments.

v. Debris, Plastics, and Trash[189,190]

Gross pollutants (e.g., debris, floatables, plastics, and trash) are produced throughout urban environments, including industrial areas. Sources of debris, plastics, and trash in industrial areas include, but are not limited to, manufacturing (including by-products), facility staff, maintenance areas, shipping and receiving, material use and handling, and waste handling and disposal. These pollutants can disperse from indoor and outdoor areas via wind, track-out, and/or cleaning operations. Responsible Dischargers are required to comply with the existing requirements of this General Permit (e.g., control of trash in industrial areas and compliance with applicable requirements in Section XVIII for plastic materials) for compliance with the trash TMDLs requirements. The compliance cost impact for the Debris, Plastics, and Trash TMDL implementation statewide is expected to be low since the number of watersheds with these requirements are low, however additional BMPs (minimum and/or advanced) may be required for Responsible Dischargers in watersheds with Debris, Plastics, and Trash TMDL requirements, which are expected to result in a cost increase if current BMPs are inadequate to prevent the discharge of these gross pollutants.

[189] CASQA Industrial and Commercial BMP Handbook, section 1-6 Table 1-3.

[190] Caltrans 2012 NPDES MS4 stormwater permit, page 108-111.

vi. Organics and Toxics[191,192]

Synthetic organic compounds (e.g., adhesives, cleaners, herbicides, polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), pesticides, sealants, solvents, etc.) found in storm water may be low in concentration but still toxic to aquatic life. Sources of synthetic organic compounds in industrial areas include, but are not limited to, exposure of the compounds to storm water during use and/or storage, improper disposal, and accidental release into storm drains or off-site. Sediment in storm water is associated with these compounds because they often adhere to fine sediment particles. There is no Discharger sampling data available to analyze the percentage of compliance for the OC pesticides, PAHs, and PCB TNAL/NELs. For many of these TMDLs, this General Permit requires that Responsible Dischargers address the waste load allocations by complying with the existing requirements of this General Permit, including the TSS NAL. Some of the waste load allocations were translated into TNALs or NELs. No Discharger sampling data is available for these constituents. The compliance cost impact for implementation of the organics and toxics TMDLs is expected to be medium since additional BMPs may be required for specific constituents, but the constituents are not sampled by most industrial facilities. An analysis of industrial stormwater analytical results from the 2016-2017 reporting year statewide revealed that 7.6% of industrial facilities reported monitoring results for organic or toxic parameters, showing this is not a commonly identified constituent in the facility pollutant source assessments.

vii. Chloride and Salts[193]

Salts, such as calcium chloride (CaCl), chloride, sodium chloride (NaCl), and magnesium chloride (MgCl), can originate in industrial areas from road de-icing activities, manufacturing processes, material storage and handling, and from nutrient sources (e.g. fertilizers). The only chloride TMDL currently addressed by this General Permit requires compliance with this General Permit's requirements rather than additional TNALs or NELs. As a result,no additional costs are expected. An analysis of industrial stormwater analytical results from the 2016-2017 reporting year statewide revealed that 2% of industrial storm water samples reported were monitoring results for chloride or salt-related parameters, showing this is not a commonly identified constituent in facility pollutant source assessments.

e. Storm Water BMP Selection

[191] CASQA Industrial and Commercial BMP Handbook, section 1-6 Table 1-3.

[192] Caltrans 2012 NPDES MS4 stormwater permit, page 77-78.

[193] State of Minnesota Pollution Control Agency. Industrial Stormwater Best Management Practices Guidebook, Version 1.1. April 2015 <https://www.pca.state.mn.us/sites/default/files/wq-strm3-26.pdf>. [as of July 19, 2018]. (Minnesota 2015 Industrial Stormwater BMP Handbook).

This General Permit provides Dischargers flexibility in selecting the facility-specific BMPs necessary to achieve compliance. This flexibility is also provided to Responsible Dischargers in selecting, installing, and maintaining the appropriate BMPs for facility-specific situations to meet applicable TMDL requirements, including BMP combinations (often referred to as "treatment trains") of: 1) non-structural BMPs (such as facility sweeping and staff training), 2) structural source control BMPs (physical, structural, or mechanical devices or BMPs intended to prevent pollutants from entering storm water) such as erosion control practices, maintenance of storm water facilities (e.g. pumping oil-water separators, cleaning out sediment traps, etc.), construction of roofs over storage and working areas, and direction of equipment wash water and similar discharges to the sanitary sewer or other end-use systems, and/or 3) structural treatment BMPs which include flow or volume based treatment BMPs. Structural source control and treatment BMPs usually include a capital investment but are cost-effective compared to removing pollutants after they have entered storm water and been discharged into a receiving water body.

Storm water BMP categories for the TMDL pollutant types in Sections X.X.4.a-X.X.4.g above are, in general, physical, chemical, hydraulic, and, biological. Selection of the BMPs appropriate for a facility must be determined based on facility-specific factors. No single BMP can achieve the required pollutant reductions for every given situation and pollutant and each BMP approach has pros and cons. The Responsible Discharger should consider the cost-benefit[194] when selecting storm water BMPs. Some factors include, but are not limited to, upfront cost, maintenance-cost, pollutant removal efficiency per area/treatment unit, local permitting, site hydrology and geology, safety, space, and staffing and monitoring needs for implementing the BMP. There are many ways to calculate the upfront and maintenance cost of BMPs that consider, for example, BMP sizing, the annual cost for maintenance and/or the annual maintenance hours required.[195]

TABLE F.49: U.S. EPA BMP Cost Estimation[196]

[194] State of Hawaii Department of Transportation Highways Division. Storm Water Permanent Best Management Practices Manual, page 7-2 Table 1. February 2007. <http://hidot.hawaii.gov/wp-content/uploads/2015/05/Appx-E.1-Permanent-BMP-Manual-Feb-2007.pdf>. [as of July 19, 2018]. (State of Hawaii BMP Manual).

[195] U.S. EPA. Methodology for developing cost estimates for Opti-Tool Memorandum, page 8. February 20, 2016. <https://www3.epa.gov/region1/npdes/stormwater/ma/green-infrastructure-stormwater-bmp-cost-estimation.pdf>. [as of July 19, 2018]. (U.S. EPA BMP Cost Estimation Memorandum).

[196] U.S. EPA BMP Cost Estimation Memorandum, page 8.

Table 3: Maintenance Costs ($) and Hours per year for select BMPs – From UNHSC

BMP	Maintenance Cost ($) per year	Annual Maintenance Hours
Bioretention	$1,890.00	20.7
Chamber System	Not Assessed	Not Assessed
Detention Pond	$2,380.00	24.0
Gravel Wetland	$2,138.33	21.7
Porous Asphalt	$1,080.00	6.0
Pervious Concrete	$1,080.00	6.0
Retention Pond	$3,060.00	28.0
Sand Filter	$2,807.50	28.5

*Note: initial costs based on cost of maintenance per year per acre of IC treated

f. Common Storm Water BMP Categories

The following categories describe in general the most common currently-available types of Storm Water BMPs, their effectiveness for TMDL pollutant categories, and some general cost comparisons.

The cost comparisons for 6.a-b are based on 1) staff experience in administering this General Permit for the non-structural and structural source control BMPs (minimum BMPs in Section X.H of this General Permit), and 2) the California Stormwater Quality Association Industrial and Commercial BMP Handbook[197] for appropriateness of minimum BMPs to control pollutants. The cost for non-structural controls, which includes good housekeeping, preventative maintenance, spill and leak prevention and response, erosion and sediment controls, employee training programs, and quality assurance and record keeping, is lower than the costs for other BMPs. For example, these costs consist of staff time for training or conducting routine minimum BMP activities and minimal costs for certain materials such as spill kits or for materials for retaining records. Costs for source control BMPs were estimated generally as being low, medium, or high, dependent on a variety of factors.

The cost comparisons and information in Table XX for 6.c-i are based on general conclusions from research conducted by the California Stormwater Quality Association, U.S. EPA, U.S. Department of Transportation, State of Hawaii Department of Transportation Highways Division, State of Minnesota Pollution Control Agency, and the Water Environment and Reuse Foundation. State Water Board staff reviewed these sources on 1) the selection of BMPs for general categories of pollutants and performance of pollutant removal, 2) the provided upfront costs for a BMP category from a range of low, medium, and high, and 3) the provided maintenance costs for a BMP category from a range of low, medium, and high. More specific information on methodology and estimates is available from these sources, which are cited below.

i. **Non-Structural BMPs** which include, but are not limited to, facility sweeping, staff training and education, dumpster and waste management, and proper

[197] CASQA Industrial and Commercial BMP Handbook

handling and spill response for industrial materials.[198] These BMPs can significantly reduce pollutant concentrations in all categories [a-g] and can range from low to medium upfront costs depending on the staffing and size of facility. In general, operation and maintenance costs are low.

ii. **Source control BMPs,** which include minimizing or eliminating exposure of a pollutant source, can significantly reduce pollutant concentrations in all categories [a-g]. Upfront costs can range from low (e.g., moving materials or activities indoors) to high (if, for example, the facility must move or build extra covered areas/structures). In general, the operation and maintenance costs are low for exposure minimization and elimination BMPs.

iii. **Bioretention BMPs[199]** are soil and plant-based filtration devices that reduce runoff velocity and remove pollutants over time through a variety of processes . Bioretention can significant reduce pollutant concentrations for categories [a], [c], [d] (varies for dissolved metals), [f], and [g].[200] Usually, costs are medium[201] per area treated, with low to medium maintenance requirements and cost[202].

iv. **Media or Treatment Filtration BMPs**[203] include either active or passive processes. In passive processes, water flows through treatment media or surface by gravity. In active processes, storm water flows through media via a pump or similar mechanized system. The media are usually a custom or proprietary blend from the manufacturer and/or vendor (e.g., flocculants, coagulants, carbon, sand, organics). Active systems are chambered and may include pretreatment features to enhance the treatment process. Media filtration can significantly reduce pollutant concentrations for categories [a-g][204] (other than **b**) depending on the specific treatment media. The costs vary significantly depending on the pollutant(s) required for treatment, the size of the system, and the system design. Upfront costs are generally medium to

[198] U.S. Department of Transportation, Federal Highway Administration. Stormwater Best Management Practices in an Ultra-Urban Setting: Selection and Monitoring. Section 6.5 Table 57. Relative Rankings of Cost Elements and Effective Life of BMP Options. <https://www.environment.fhwa.dot.gov/Env_topics/water/ultraurban_bmp_rpt/uubmp6p4.aspx>. [as of July 19, 2018]. (U.S. DOT BMP Selection and Monitoring).

[199] California Stormwater Quality Association (CASQA) Industrial and Commercial Best Management Practice Online Handbook. September 2014, page 1-6 Table 1-3. <https://www.casqa.org/sites/default/files/casqa-handbook-industrial/full_handbook_2014.pdf>. [as of July 19, 2018]. (CASQA Industrial and Commercial BMP Handbook).

[200] Water Environment and Reuse Foundation (WERF). International Stormwater BMP Database 2016 Summary Statistics Final Report, section 2.3. 2017. <http://www.bmpdatabase.org/Docs/03-SW-1COh%20BMP%20Database%202016%20Summary%20Stats.pdf>. [as of July 19, 2018]. (WERF International Stormwater BMP Database 2016 Summary Report).

[201] State of Hawaii BMP Manual, page 7-2 Table 1,

[202] U.S. DOT BMP Selection and Monitoring, section 6.5 Table 57; State of Hawaii BMP Manual, page 7-2 Table 1; U.S. EPA BMP Cost Estimation Memorandum, page 8.

[203] CASQA Industrial and Commercial BMP Handbook, TC-40 Media Filter.

[204] WERF International Stormwater BMP Database 2016 Summary Report.

high per area treated with medium to high maintenance requirements and cost.[205]

v. **Retention BMPs** (retention wet pond or extended detention wet pond)[206] are constructed basins that have a permanent pool of water most of the year which settle out pollutants and can use plant life to biologically remove pollutants. Retention can significantly reduce pollutant concentrations for all categories but [c] and effectiveness for category [d] is variable depending on the metal and whether the metal is dissolved.[207] The upfront and maintenance requirements and costs are tied to proper sizing and design of the system and vary from medium to low.[208]

vi. **Detention BMPs** (Dry extended detention ponds, dry ponds, extended detention basins, detention ponds, extended detention ponds)[209] are basins with designed outlets to achieve a required storm water draw down time (e.g. 24, 48, or 72 hours). To provide water quality treatment storm water runoff from a water quality design storm is detained for some minimum time (e.g., 48 hours) to allow particles and associated pollutants to settle. These basins have a temporary wet pool dependent on the infiltration rate of the subsoil. Detention can significantly reduce pollutant concentrations for all categories except for [g], and detention's effectiveness for category [d] is variable depending on the metal and whether the metal is dissolved.[210] The upfront and maintenance requirements and costs are tied to proper sizing and design of the system and vary from medium to low.[211]

vii. **Wetland BMPs** (constructed wetlands)[212] are constructed basins with a permanent pool of water for most of the year and are shallower with more vegetation than wet ponds. Storm water is stored in the shallow pools of vegetation. Pollutant removal is achieved through microbial transformation, plant uptake, settling, and adsorption. Pretreatment is suggested to reduce the needed annual maintenance by reducing the amount of sediment and other solids entering the BMP. Wetlands can significantly reduce pollutant concentrations for all categories except for [b] and [c].[213] The upfront costs are

[205] State of Hawaii BMP Manual, page 7-2 Table 1; U.S. DOT BMP Selection and Monitoring, section 6.5 Table 57; U.S. EPA BMP Cost Estimation Memorandum, page 8.
[206] CASQA Industrial and Commercial BMP Handbook, TC-20 Wet Pond.
[207] WERF International Stormwater BMP Database 2016 Summary Report.
[208] State of Hawaii BMP Manual, page 7-2 Table 1; U.S. DOT BMP Selection and Monitoring, section 6.5 Table 57; U.S. EPA BMP Cost Estimation Memorandum, page 8.
[209] CASQA Industrial and Commercial BMP Handbook, TC-22 Extended Detention Basins.
[210] WERF International Stormwater BMP Database 2016 Summary Report.
[211] State of Hawaii BMP Manual, page 7-2 Table 1; U.S. DOT BMP Selection and Monitoring, section 6.5 Table 57; U.S. EPA BMP Cost Estimation Memorandum, page 8.
[212] CASQA Industrial and Commercial BMP Handbook, TC-21 Constructed Wetlands.
[213] WERF International Stormwater BMP Database 2016 Summary Report.

medium to high and the operation and maintenance costs and requirements are medium.[214]

viii. **Infiltration BMPs** (volume reduction)[215] are trenches or basins which store stormwater in the void space between the media (e.g., rock, stones, soil media) and infiltrates/exfiltrates through the bottom and sides into the ground. Infiltration reduces stormwater discharge volume and pollutant loadings to surface waters and can recharge groundwater aquifers or be used for other appropriate purposes and provide cost-savings by offsetting the use of potable water (e.g., cooling towers and equipment cleaning water). Pretreatment is necessary to limit the amount of gross pollutants, oil & grease, and sediment to the system to ensure the system functions properly. Infiltration can significantly reduce pollutant concentrations for all categories except for [f], and in all cases fate and transport of pollutants to groundwater should be evaluated for impacts to drinking water beneficial uses (e.g. salts, solvents). The upfront and maintenance costs and requirements are tied to proper sizing and design of the system and are medium.[216] Some upfront and maintenance costs and requirements may be higher for this if an infiltration BMP is installed for compliance with a Compliance Option, due to Attachment I's large sizing requirement and the necessary pretreatment. Dependent on an analysis of the facility-specific costs and the benefits provided in Attachment I, this may be a possibly viable compliance strategy.

ix. **Vegetated Swale BMPs** (bioswales, biofiltration swales, landscaped swales, grass swales/strips)[217] are natural or manmade open and shallow channels covered in vegetation. Vegetated swale BMPs slow down storm water runoff and provide treatment through vegetative filtration into underlying soils/soil matrices. Vegetated swale BMPs can significantly reduce pollutant concentrations for categories but [d], [e], and [f]. Effectives for category [d] depends on the metal and whether the metal is dissolved[218] and is often used as a pretreatment strategy in a "treatment train." The upfront and maintenance costs and requirements are medium to low.[219]

[214] State of Hawaii BMP Manual, page 7-2 Table 1; U.S. DOT BMP Selection and Monitoring, section 6.5 Table 57; U.S. EPA BMP Cost Estimation Memorandum, page 8.

[215] CASQA Industrial and Commercial BMP Handbook, TC-10 Infiltration Trench and TC-11 Infiltration Basin.

[216] State of Hawaii BMP Manual, page 7-2 Table 1; U.S. DOT BMP Selection and Monitoring, section 6.5 Table 57; U.S. EPA BMP Cost Estimation Memorandum, page 8.

[217] CASQA Industrial and Commercial BMP Handbook, TC-30 Vegetated Swale.

[218] WERF International Stormwater BMP Database 2016 Summary Report.

[219] State of Hawaii BMP Manual, page 7-2 Table 1; U.S. DOT BMP Selection and Monitoring, section 6.5 Table 57; U.S. EPA BMP Cost Estimation Memorandum, page 8.

TABLE F.50: Effective BMP Examples for TMDL Pollutant Categories[220]

	Non-Structural and Exposure Minimization	Bioretention	Media Filtration	Retention Basins/Ponds	Detention Basins	Wetland Basins	Infiltration/Volume Reduction	Vegetated Strips/Swales[221]
a. Bacteria	X	X	X	X	X	X	X*	
b. Chloride, Salts***	X			X	X		X	
c. Debris, Plastics, and Trash**	X	X	X		X		X	
d. Metals	X	X	X	X	X	X	X	X
e. Nutrients	X		X	X	X	X	X	X
f. Sediment	X	X	X	X	X	X		X
g. Synthetic organics and Toxics*	X	X	X	X		X	X*	

* From CASQA TC-10 and TC-11 not evaluated in the WERF International Stormwater BMP Database 2017 Summary

** Not evaluated in the WERF International Stormwater BMP Database 2017 Summary, and is based upon this General Permit's plastic material requirements in section XVIII, Caltrans 2012 NPDES MS4 stormwater permit, and the Phase I and II permittee Storm Water Trash Implementation Program's Certified Multi-Benefit Treatment Systems Complying With Trash Full Capture System Requirements. <https://www.waterboards.ca.gov/water_issues/programs/stormwater/docs/trash_implementation/mbtscoversheet_revised_09mar18b.pdf>. [as of July 19, 2018].

*** Not evaluated in the WERF International Stormwater BMP Database 2017 Summary, and is based upon guidance from the Minnesota 2015 Industrial Stormwater BMP Handbook.

G. Discharges Subject to the California Ocean Plan

1. Discharges to Ocean Waters

   On October 16, 2012 the State Water Board amended the California Ocean Plan (California Ocean Plan) to require industrial storm water Dischargers with outfalls discharging to ocean waters to comply with the California Ocean Plan's model monitoring provisions. The amended California Ocean Plan requires industrial storm

[220] WERF International Stormwater BMP Database 2016 Summary Report. Also see Table XX footnotes

[221] CASQA Industrial and Commercial BMP Handbook, TC-30 Vegetated Swale

water dischargers with outfalls discharging to ocean waters to comply with the California Ocean Plan's model monitoring provisions. These provisions require Dischargers to: (a) monitor runoff for specific parameters at all outfalls from two storm events per year, and collect at least one representative receiving water sample per year, (b) conduct specified toxicity monitoring at certain types of outfalls at a minimum of once per year, and (c) conduct marine sediment monitoring for toxicity under specific circumstances (California Ocean Plan, Appendix III). The California Ocean Plan provides conditions under which some of the above monitoring provisions may be waived by the Water Boards.

This General Permit requires dischargers with outfalls that discharge to ocean waters to comply with the California Ocean Plan's model monitoring provisions and any additional monitoring requirements established pursuant to Water Code section 13383. Dischargers who have not developed and implemented a monitoring program in compliance with the California Ocean Plan's model monitoring provisions by July 1, 2015 or seven (7) days prior to commencing operations, whichever is later, are ineligible to obtain coverage under this General Permit.

2. Areas of Special Biological Significance (ASBS) Exception

The State Water Board adopted the California Ocean Plan (California Ocean Plan) in 1972, and has subsequently amended the Plan. The California Ocean Plan prohibits the discharge of waste to designated ASBS. ASBS are ocean areas designated by the State Water Board as requiring special protection through the maintenance of natural water quality. The California Ocean Plan states that the State Water Board may grant an exception to California Ocean Plan provisions where the State Water Board determines that the exception will not compromise protection of ocean waters for beneficial uses and the public interest will be served.

On March 20, 2012, the State Water Board adopted Resolution 2012-0012 (ASBS Exception), which grants an exception to the California Ocean Plan prohibition on discharges to ASBS for a limited number of industrial storm water Discharger applicants. The ASBS Exception contains "Special Protections" to maintain natural water quality and protect the beneficial uses of the ASBS. In order to legally discharge into an ASBS, these Dischargers must comply with the terms of the ASBS Exception and obtain coverage under this General Permit. This General Permit incorporates the terms of the ASBS Exception and includes the applicable monitoring requirements for all Dischargers discharging to an ASBS under the ASBS Exception.

H. Training Qualifications

This General Permit and the previous permit both require Dischargers to ensure that personnel responsible for permit compliance have an acceptable level of knowledge. Stakeholders have observed that the previous permit did not adequately specify how to comply with various elements of the permit, such as selecting discharge locations representative of the facility storm water discharge and evaluating potential pollutant sources, nor did it provide a clearly outlined Discharger training program. Guidance that is available from outside sources can be complicated to understand or costly to obtain, which can result in many Dischargers developing and implementing deficient SWPPPs

and conducting inadequate monitoring activities. Some Dischargers under the previous permit had the resources to hire professional environmental staff or environmental consultants to assist in compliance. Even in those cases, however, there was little certainty that Dischargers received training regarding implementation of the various BMPs being implemented and required monitoring activities under the previous permit. Through this General Permit, the State Water Board seeks to improve compliance and monitoring data quality, and expand each Discharger's understanding of this General Permit's requirements.

This General Permit establishes the Qualified Industrial Storm Water Practitioner (QISP) role. A QISP is someone who has completed a State Water Board sponsored or approved QISP training course and has registered in SMARTS. A QISP is required to implement certain General Permit requirements at the facility once it has entered Level 1 status in the ERA process as described in Section XII of this General Permit. In some instances it may be advisable for a facility employee to take the training, or for a facility to hire a QISP prior to entering Level 1 status as the training will contain information on the new permit requirements and how to perform certain tasks such as selecting discharge locations representative of the facility storm water discharge, evaluating potential pollutant sources, and identifying inadequate SWPPP elements.

Some industry stakeholders have claimed that their staff is already adequately trained. These employees may continue to perform the basic permit functions (e.g. prepare SWPPPs, perform monitoring requirements, and prepare Annual Reports) without receiving any additional training if the facility's sampling and analysis results do not exceed the NALs. This requirement is structured in a manner to reduce the costs of compliance for facilities that may not negatively impact receiving water quality.

California licensed professional civil, industrial, chemical, and mechanical engineers and geologists have licenses that have professional overlap with the topics of this General Permit. The California Department of Consumer Affairs, Board for Professional Engineers, Land Surveyors and Geologists (CBPELSG) provides the licensure and regulation of professional civil, industrial, chemical, and mechanical engineers and professional geologists in California. The State Water Board is developing a specialized self-guided State Water Board-sponsored registration and training program specifically for these CPBELSG licensed engineers and geologists in good standing with CBPELSG. The CBPELSG has staff and resources dedicated to investigate and take appropriate enforcement actions in instances where a licensed professional engineer or geologist is alleged to be noncompliant with CBPELSG's laws and regulations. Actions that result in noncompliance with this General Permit may constitute a potential violation of the CBPELSG requirements and may subject a licensee to investigation by the CBPELSG.

A QISP may represent one or more facilities but must be able to perform the functions required by this General Permit at all times. It is advisable that this individual be limited to a specific geographic region due to the difficulty of performing the needed tasks before, during, and after qualifying storm events may be difficult or impossible if extensive travel is required. Dischargers are required to ensure that the designated QISP has completed the appropriate QISP training course.

This General Permit contains a mechanism that allows for the Water Boards' Executive Director or Executive Officer to rescind the registration of any QISPs who are found to be inadequately performing their duties as a QISP will no longer be able to do so. A QISP may ask the State Water Board to review any decision to revoke his or her QISP registration. Table 1 of this Fact Sheet below describes the different roles that the QISP and California licensed professional engineers have in this General Permit.

TABLE 1: Role-Specific Permit Requirements

Qualifications	Task
QISP	Assist New Dischargers determine coverage eligibility for Discharges to an impaired water body, Level 1 ERA Evaluation and report, Level 2 ERA Action Plan, and Technical Report, and the Level 2 ERA extension
California licensed professional engineer	Inactive Mining Operation Certification, SWPPPs for inactive mining, and annual re-certification of Inactive Mining Operation Certification, NONA Technical Reports, and Subchapter N calculations

I. Storm Water Pollution Prevention Plan (SWPPP)

1. General

This General Permit requires that all Dischargers develop, implement, and retain onsite a site-specific SWPPP. The SWPPP requirements generally follow U.S. EPA's five-phase approach to developing SWPPPs, which has been adapted to reflect the requirements of this General Permit in Figure 2 of this Fact Sheet. This approach provides the flexibility necessary to establish appropriate BMPs for different industrial activities and pollutant sources. This General Permit requires a Discharger to include in its SWPPP (Section X of this General Permit) a site map, authorized NSWDs at the facility, and an identification and assessment of potential pollutants sources resulting from exposure of industrial activities to storm water.

This General Permit requires that Dischargers clearly describe the BMPs that are being implemented in the SWPPP. In addition to providing descriptions, Dischargers must also describe who is responsible for the BMPs, where the BMPs will be installed, how often and when the BMPs will be implemented, and identify any pollutants of concern. Table 2 of this Fact Sheet provides an example of how a Discharger could assess potential pollution sources and provide a corresponding BMPs summary.

This General Permit requires that Dischargers select an appropriate facility inspection frequency beyond the required monthly inspections if necessary, and to determine if SWPPP revisions are necessary to address any physical or operational changes at the facility or make changes to the existing BMPs (Section X.H.4.a.vii and Section XI.A.4 of this General Permit). Facilities that are subject to multi-phased physical expansion or significant seasonal operational changes may require more frequent SWPPP updates and facility inspections. Facilities with very stable operations may require fewer SWPPP updates and facility inspections.

Failure to develop or implement an adequate SWPPP, or update or revise an existing SWPPP as required, is a violation of this General Permit. Failure to maintain the SWPPP on-site and have it available for inspection is also a violation of this General Permit.

Dischargers are required to assess potential pollutants with General Permit Section X.G. This Includes the assessment of industrial pollutants related to receiving waters with 303(d) listed impairments identified in Appendix 3 or approved TMDLs that may be causing or contributing to an exceedance of a water quality standard in the receiving waters. Dischargers that have conducted a complete pollutant source assessment and identified all industrial pollutants at the facility per General Permit Section X.G., are not required to re-assess industrial areas or materials for TMDLs compliance, however a re-analysis may be necessary where the initial assessment was incomplete. An example of this is provided by the environmental justice stakeholders where many Dischargers are not considering generated emission particulates as a source as part of the industrial pollutant source assessment. Dischargers with these sources or with other environmental permits identifying pollutants with the potential to be released into the environment (e.g., air quality permits) may need to conduct a reassessment of the pollutant sources at the facility if not already assessed.

Although clarifications have been made to the pollutant source assessment requirements in this General Permit to respond to stakeholder concerns about source assessments for TMDL implementation, Dischargers with these potential air emission particulate pollutant sources were always required to include them in the facility pollutant source assessment (The definition in Section X.G.C. for dust and particulate generating activities describes all industrial activities that generate a significant amount of dust or particulate that may be deposited within the facility boundaries). If these particulate pollutants are exposed to storm water with the potential to discharge, the Discharger would be required to add these parameters to their monitoring implementation plan.

Dischargers are also required to submit their SWPPPs and any SWPPP revisions via SMARTS; accordingly, BMP revisions made in response to observed compliance problems will be included in the revised SWPPP electronically submitted via SMARTS. Not all SWPPP revisions are significant and it is up to the Dischargers to distinguish between revisions that are significant and those that are not significant. If no changes are made at all to the SWPPP, the Discharger is not required to resubmit the SWPPP on any specific frequency.

- Significant SWPPP Revisions: Dischargers are required to certify and submit via SMARTS their SWPPP within 30 days of the significant revision(s). While it is not easy to draw a line generally between revisions that are significant and those that are not significant, Dischargers are not required to certify and submit via SMARTS any SWPPP revisions that are comprised of only typographical fixes or minor clarifications.

- All Other SWPPP Revisions: Dischargers are required to submit revisions to the SWPPP that are determined to not be significant every three (3) months in the reporting year.

FIGURE ~~2~~1: Five Phases for Developing and Implementing an Industrial Storm Water Pollution Prevention Plan (SWPPP)

PLANNING AND ORGANIZATION

*Form Pollution Prevention Team

*Review other facility plans

ASSESSMENT

*Develop a site map

*Identify potential pollutant sources

*Inventory of materials and chemicals

*List significant spills and leaks

*Identify Non-Storm Water Discharges

*Assess pollutant risk

Best Management Practice (BMP) IDENTIFICATION

*Identify minimum required BMPs

*Identify any advanced BMPs

IMPLEMENTATION

*Train employees for the Pollution Prevention Team

*Implement BMPs

*Collect and review records

EVALUATION / MONITORING

*Conduct annual facility evaluation (Annual Evaluation)

*Review monitoring information

*Evaluate BMPs

*Review and revise SWPPP

TABLE 2: Example - Assessment of Potential Industrial Pollution Sources and Corresponding BMPs Summary

Area	Activity	Pollutant Source	Industrial Pollutant	BMPs
Vehicle and Equipment Fueling	Fueling	Spills and leaks during delivery	Fuel oil	-Use spill and overflow protection
		Spills caused by topping off fuel tanks	Fuel oil	-Train employees on proper fueling, cleanup, and spill response techniques
		Hosing or washing down fuel area	Fuel oil	-Use dry cleanup methods rather than hosing down area -Implement proper spill prevention control program
		Leaking storage tanks	Fuel oil	-Inspect fueling areas regularly to detect problems
		Rainfall running off fueling area, and rainfall running onto and off fueling area	Fuel oil	-Minimize run-on of storm water into the fueling area, cover fueling area

2. Minimum and Advanced BMPs

Section V of this General Permit requires the Discharger to comply with technology-based effluent limitations (TBELs). In this General Permit, TBELs rely on implementation of BMPs for Dischargers to reduce and prevent pollutants in their discharge. The BMP effluent limitations have been integrated into the Section X.H of this General Permit and are divided into two categories – minimum BMPs which are generally non-structural BMPs that all Dischargers must implement to the extent feasible, and advanced BMPs which are generally structural BMPs that must be implemented if the minimum BMPs are inadequate to achieve compliance with the TBELs. Section X of this General Permit includes both substantive control requirements in the form of the BMPs listed in Section X.H, as well as various reporting and recordkeeping requirements. The requirement to implement BMPs "to the extent feasible" allows Dischargers flexibility when implementing BMPs, by not requiring the implementation of BMPs that are

not technologically available and economically practicable and achievable in light of best industry practices.

The 2008 MSGP requires Dischargers to comply with 12 non-numeric technology-based effluent limits in Section 2.1.2 of the permit through the implementation of "control measures." This requirement is an expansion of the general considerations outlined in the MSGP adopted in 2000. The control measures specified by the U.S. EPA in the 2008 MSGP are as follows (in order as listed in the 2008 MSGP):

1. Minimize Exposure
2. Good Housekeeping
3. Maintenance
4. Spill Prevention and Response Procedures
5. Erosion and Sediment Controls
6. Management of Runoff
7. Salt Storage Piles or Piles Containing Salt
8. Sector Specific Non-Numeric Effluent Limits
9. Employee Training
10. Non-Storm Water Discharges (NSWDs)
11. Waste, Garbage and Floatable Debris
12. Dust Generation and Vehicle Tracking of Industrial Materials

This General Permit addresses eleven of the above twelve control measures from the 2008 MSGP Section 2.1.2 Non-Numeric Technology-Based Effluent Limits (BPT/BAT/BCT). Eleven of the control measures are addressed as minimum BMPs that the State Water Board has determined to be most applicable to California's Dischargers. Two of those eleven control measures (1- Minimize Exposure, 6 – Management of Runoff) are also identified as advanced BMPs (Section X.H.2 of this General Permit). This General Permit is not a sector-specific permit and therefore does not contain limitations to address control measure number 8 (Sector Specific Non-Numeric Effluent Limits).

The non-structural elements of the control measure to minimize exposure are addressed in the minimum BMP Section X.H.1 of this General Permit while structural control elements are addressed in the advanced BMP Section X.H.2 of this General Permit. The on-site diversion elements of the control measure to minimize exposure are addressed as minimum BMPs.

The runoff reduction elements of the control measure to minimize exposure are included as advanced BMPs. Advanced BMPs that are required to be implemented when a Discharger has implemented the minimum BMPs to the extent feasible and they are not adequate to comply with the TBELs. The advanced BMP categories are: (1) exposure minimization BMPs, (2) storm water containment and discharge reduction BMPs, (3) treatment control BMPs, and (4) additional advanced BMPs

needed to meet the effluent limitations of this General Permit. Advanced BMPs are generally structural control measures and can include any BMPs that exceed the minimum BMPs. The control measure for Non-Storm Water Discharges (NSWDs) is addressed in both the discharge prohibitions (Section III) and authorized non-storm water discharges (Section IV) of this General Permit and essentially represents a minimum BMP.

This General Permit encourages Dischargers to utilize BMPs that infiltrate or reuse storm water where feasible. The State Water Board expects that these types of BMPs will not be appropriate for all industrial facilities, but recognizes the many possible benefits (e.g. increased aquifer recharge, reduces flooding, improvements to water quality) associated with the infiltration and reuse of storm water. Encouraging the use of storm water infiltration and reuse BMPs is consistent with the statewide approach to managing storm water with lower impact methods.

The BMPs in this General Permit that coincide with the control measures in the 2008 MSGP are as follows (in order as listed in the 2008 MSGP):

a. Minimization of Exposure to Storm Water

Section 2.1.2.1 of the 2008 MSGP requires Dischargers to minimize the exposure of industrial materials and areas of industrial activity to rain, snow, snowmelt, and runoff. The 2008 MSGP mixes both structural and nonstructural BMPs and specifies particular BMPs to consider when minimizing exposure such as grading/berming areas to minimize runoff, locating materials indoors, spill clean up, contain vehicle fluid leaks or drain fluids before storing vehicles on-site, secondary containment of materials, conduct cleaning activities undercover, indoors or in bermed areas, and drain all wash water to a proper collection system.

This General Permit requires the evaluation of BMPs in the potential pollutant source assessment in the SWPPP (Section X.G.2). When the minimum BMPs are not adequate to comply with the TBELs, Dischargers are required to implement advanced BMPs (Section X.H.2.a). These advanced BMPs may include additional exposure minimization BMPs (Section X.H.2.b.1).

b. Good Housekeeping

Section 2.1.2.2 of the 2008 MSGP requires that Dischargers keep all exposed areas that may be a potential source of pollutants clean and orderly. This General Permit (Section X.H.1.a) seeks to define “clean and orderly” by specifying a required set of nine (9) minimum good housekeeping BMPs, which include: observations of outdoor/exposed areas, BMPs for controlling material tracking, BMPs for dust generated from industrial materials or activities, BMPs for rinse/wash water activities, covering stored industrial materials/waste, containing all stored non-solid industrial materials, preventing discharge of rinse/wash waters/industrial materials, prevent non-industrial area discharges from contact with industrial areas of the facility, and prevent authorized NSWDs from non-industrial areas from contact with industrial areas of the facility.

c. Preventative Maintenance

Section 2.1.2.3 of the 2008 MSGP requires that Dischargers regularly inspect, test, maintain, and repair all industrial equipment to prevent leaks, spills and releases of pollutants that may be exposed to storm water discharged to receiving waters. This General Permit (Section X.H.1.b) incorporates this concept by requiring four (4) nonstructural BMPs which include: identification and inspection of equipment, observations of potential leaks in identified equipment, an equipment maintenance schedule, and equipment maintenance procedures.

d. Spill and Leak Prevention and Response

Section 2.1.2.4 of the 2008 MSGP requires that Dischargers minimize the potential for leaks, spills and other releases that may be exposed to storm water. Dischargers are also required to develop a spill response plan which includes procedures such as labeling of containers that are susceptible to a spill or a leakage, establishing containment measures for such industrial materials, procedures for stopping leaks/spills, and provisions for notification of the appropriate personnel about any occurrence. This General Permit (Section X.H.1.c) requires implementation of four (4) BMPs to address spills. These BMPs include: developing a set of spill response procedures to minimize spills/leaks, develop procedures to minimize the discharge of industrial materials generated through spill/leaks, identifying/describing the equipment needed and where it will be located at the facility, and identify/training appropriate spill response personnel.

e. Erosion and Sediment Controls

Section 2.1.2.5 of the 2008 MSGP requires the use of structural and/or non-structural control measures to stabilize exposed areas and contain runoff. Also required is the use of a flow velocity dissipation device(s) in outfall channels where necessary to reduce erosion and/or settle out pollutants. This General Permit (Section X.H.1.e) requires the implementation of (5) BMPs to prevent erosion and sediment discharges. The erosion and sediment control BMPs include: implementing effective wind erosion controls, providing for effective stabilization of erodible areas prior to a forecasted storm event, site entrance stabilization/prevent material tracking offsite and implement perimeter controls, diversion of run-on and storm water generated from within the facility away from all erodible materials, and ensuring compliance with the design storm standards in Section X.H.6. U.S. EPA has developed online resources for erosion and sediment controls.[~~6~~222]

[~~6~~222] U.S. EPA. 2008 MSGP. <http://cfpub.epa.gov/npdes/stormwater/msgp.cfm> [as of February 4, 2014].
U.S. EPA. National Menu of BMPs. <http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm>. [as of February 4, 2014].
U.S. EPA. National Management Measures to Control Nonpoint Source Pollution from Urban Areas <http://water.epa.gov/polwaste/nps/urban/index.cfm>. [as of February 4, 2014].

f. Management of Runoff

Section 2.1.2.6 of the 2008 MSGP requires the diversion, infiltration, reuse, containment, or otherwise reduction of storm water runoff, to minimize pollutants in discharges. This General Permit (Sections X.H.1.a.viii, X.H.1.d.iv., and X.H.1.e.iv) requires Dischargers to divert run-on from non-industrial sources and manage storm water generated within the facility away from industrial materials and erodible surfaces. Runoff reduction is required as an advanced BMP when minimum BMPs are not adequate to comply with the TBELs. The 2008 MSGP encouraged Dischargers to consult with EPA's internet-based resources relating to runoff management.[~~7~~223]

g. Salt Storage Piles or Piles Containing Salt

Section 2.1.2.7 of the 2008 MSGP requires salt storage piles/piles containing salt that may be discharged to be enclosed or covered and to use BMPs when the salt is being used. This General Permit does not have a minimum BMP specifically for salt storage, however it does require all stockpiled/stored industrial materials be managed in a way to reduce or prevent industrial storm water discharges of the stored/stockpiled pollutants. The good housekeeping (Section X.H.1.a) and material handling and waste management (Section X.H.1.d) minimum BMPs in this General Permit require that all materials readily mobilized by storm water be covered, the minimization of handling of industrial materials or wastes that can be readily mobilized by contact with storm water during a storm event, and the diversion of run-on from stock piled materials.

h. Sector Specific Non-Numeric Effluent Limits

Section 2.1.2.8 of the 2008 MSGP requires Dischargers to achieve any additional non-numeric limits stipulated in the relevant sector-specific section(s) of Part 8 of the 2008 MSGP. This General Permit is not a sector-specific permit and does not contain sector-specific non-numeric effluent limitations like the 2008 MSGP. While this General Permit does not specify sector-specific BMPs, Dischargers are required to select and implement BMPs for their specific facility to reduce or prevent industrial storm water discharges of pollutants to comply with the technology-based effluent limitations. In addition, sectors with applicable ELGs must comply with those ELGs.

i. Employee Training Program

Section 2.1.2.9 of the 2008 MSGP requires all employees engaged in industrial activities or the handling of industrial materials that may affect storm water to obtain training covering implementation of this General

[~~7~~223] U.S. EPA. Sector-Specific Industrial Stormwater Fact Sheet Series <www.epa.gov/npdes/stormwater/msgp>. [as of February 4, 2014].
U.S. EPA. National Menu of Stormwater BMPs <www.epa.gov/npdes/stormwater/menuofbmps> [as of February 4, 2014].
U.S. EPA. National Management Measures to Control Nonpoint Source Pollution from Urban Areas (and any similar State or Tribal publications) <www.epa.gov/owow/nps/urbanmm/index.html>. [as of February 4, 2014].

Permit. This General Permit (Section X.D.1 and X.H.1.f) requires a facility to establish a Pollution Prevention Team (team members, collectively) responsible for implementing permit requirements such as the SWPPP, monitoring requirements, or BMPs.

The five (5) minimum training BMPs include: ensuring that all team members are properly trained, preparing the proper training materials and manuals, identifying which individuals needs to be trained, providing a training schedule, and maintaining documentation on the training courses and which individuals received the training.

This General Permit also requires a QISP to be assigned to each facility that reaches Level 1 status. One purpose of a QISP is to have an individual available who can provide compliance assistance with these training requirements. The QISP is responsible for training the appropriate team members. Appropriate team members are any team members involved in implementing this General Permit for drainage areas causing NAL/TNAL exceedances, and any other team members identified by the QISP that need additional training to implement this General Permit.

j. NSWDs

Section 2.1.2.10 of the 2008 MSGP requires that unauthorized NSWDs are eliminated (Part 1.2.3 of the 2008 MSGP lists the NSWDs authorized by the 2008 MSGP). The good housekeeping minimum BMP (Section X.H.1.a.ix of this General Permit) requires that contact between authorized NSWDs and industrial areas of the facility be minimized. This General Permit (Section IV) also includes separate requirements for authorized NSWDs and (Section III) prohibits unauthorized NSWDs.

k. Material Handling and Waste Management

Section 2.1.2.11 of the 2008 MSGP requires that Dischargers ensure waste, garbage, and floatable debris are not discharged into receiving waters. The 2008 MSGP identifies keeping areas clean and intercepting such materials as ways to minimize such discharges. This General Permit (Section X.H.1.d) requires Dischargers to implement six (6) general BMPs that address material handling and waste management. These BMPs include: preventing or minimizing handling of waste or materials during a storm event that could potentially result in a discharge, containing industrial materials susceptible to being dispersed by the wind, covering industrial waste disposal containers when not in use to contain industrial materials, diversion of run-on and storm water generated from within the facility away from all stock piled materials, cleaning and managing spills of such wastes or materials (in accordance with Section X.H.1.e of this General Permit), and conducting observations of outdoor areas and equipment that may come into contact with such materials or waste and become contaminated.

l. Waste, Garbage and Floatable Debris

Section 2.1.2.11 of the 2008 MSGP requires that waste, garbage, and floatable debris are not discharged to receiving waters by keeping exposed areas free of such materials or by intercepting them before they are discharged. Material handling and waste management BMPs are included in Section X.H.1.d of this General Permit. Dischargers are required to: prevent handling of waste materials during a storm event that could result in a discharge, contain waste disposal containers when not in use, clean and manage spills from waste, and observe outdoor areas and equipment that may come into contact with waste and become contaminated.

m. Dust Generation and Vehicle Tracking of Industrial Materials

Section 2.1.2.12 of the 2008 MSGP requires that generation of dust and off-site tracking of raw, final, or waste materials is minimized. This General Permit does not require minimization of dust generation and vehicle tracking of industrial materials as a minimum BMP directly. Dust generation and vehicle tracking of industrial materials BMPs are included in Section X.H.1.a ("good housekeeping") of this General Permit where Dischargers must prevent dust generation from industrial materials or activities and contain all stored non-solid industrial materials that can be transported or dispersed via wind or come in contact with storm water, and Section X.H.1.d. ("material handling and waste management") of this General Permit, which requires Dischargers to contain non-solid industrial materials or wastes that can be dispersed via wind erosion or come into contact with storm water during handling.

n. Quality Assurance and Record Keeping

Section 2.1.2 of the 2008 MSGP does not directly designate record keeping as a control measure. This General Permit (Section X.H.1.g) includes quality assurance and record keeping as a minimum BMP and requires Dischargers to implement three (3) general BMPs. These BMPs include: developing and implementing procedures to ensure that all elements of the SWPPP are implemented, develop a method of tracking and recording the implementation of all BMPs identified in the SWPPP, and a requirement to keep and maintain those records. This ensures that management procedures are designed and permit requirements are implemented by appropriate staff.

o. Implementation of BMPs in the SWPPP

Like the previous permit, this General Permit does not assign Dischargers a schedule to implement BMPs. Instead, this General Permit requires Dischargers to select the appropriate schedule to implement the minimum BMPs. In addition, this General Permit requires Dischargers to identify, as necessary, any BMPs that should be implemented prior to precipitation events. Although Dischargers are required to maintain internal procedures to ensure the BMPs are implemented according to schedule or prior to precipitation events, Dischargers are only required to certify in the Annual Report whether they complied with the BMP implementation requirements.

Dischargers are required to implement an effective suite of BMPs that meet the technology and water-quality based limitations of this General Permit. Based upon Regional Water Board staff inspections, there is significant variation between Dischargers' interpretations of what BMPs were necessary to comply with the previous permit. This General Permit establishes a new requirement that Dischargers must implement, to the extent feasible, specific minimum BMPs to reduce or prevent the presence of pollutants in their industrial storm water discharge. In addition, due to the wide variety of facilities conducting numerous and differing industrial activities throughout the state, this General Permit retains the requirement from the previous permit that Dischargers establish and implement additional BMPs beyond the minimum. Implementation of this General Permit's minimum BMPs, together with any necessary advanced BMPs, will result in compliance with the effluent limitations of this General Permit (Section V.A). All Dischargers must evaluate their facilities and determine the best practices within their industry considering technological availability and economic practicability and achievability to implement these minimum BMPs and any advanced BMPs.

The State Water Board has selected minimum BMPs that are generally applicable at all facilities. The minimum BMPs are consistent with the types of BMPs normally found in properly developed SWPPPs and, in most cases, should represent a significant portion of the effort required for a Discharger to achieve compliance. Due to the diverse industries covered by this General Permit, the development of a more comprehensive list of minimum BMPs is not currently feasible. The selection, applicability, and effectiveness of a given BMP is often related to industrial activity type and to facility-specific facts and circumstances. Advanced BMPs must be selected and implemented by Dischargers, based on the type of industry and facility-specific conditions, to the extent necessary to comply with the technology-based effluent limitation requirements of this General Permit.

Failure to implement all of the minimum BMPs to the extent feasible is a violation of this General Permit. (Section X.H.1.) Dischargers must justify any determination that it is infeasible to implement a minimum BMP in the SWPPP (Section X.H.4.b). Failure to implement advanced BMPs necessary to achieve compliance with either the technology or water quality standards requirements in this General Permit is a violation of this General Permit.

p. Temporary Suspension of Industrial Activities

The exception for inactive and unstaffed sites in section 6.2.1.3 of the 2008 MSGP does not require a Discharger with a facility that is inactive and unstaffed with no industrial materials or activities exposed to storm water (in accordance with the substantive requirements in 40 Code of Federal Regulations section 122.26(g)) to complete benchmark monitoring. The Discharger is required to sign and certify a statement in the SWPPP verifying that the site is inactive and unstaffed. If circumstances change and industrial materials or activities become exposed to storm water or the facility becomes active and/or staffed, this exception no longer applies and the Discharger is required to begin complying

immediately with the applicable benchmark monitoring requirements under part 6.2 of the 2008 MSGP.

This General Permit allows Dischargers to temporarily suspend monitoring at facilities where industrial activities have been suspended in accordance with Section X.H.3. This is only intended for Dischargers with facilities where it is infeasible to comply with this General Permit's monitoring while activities are suspended (e.g. remote, unstaffed, or inaccessible facilities during the time of such a suspension). Dischargers are required to update the facility's SWPPP with the BMPs being used to stabilize the site and submit the suspension dates and a justification for the suspension of monitoring via SMARTS.

3. Design Storm Standards for Treatment Control BMPs

It is the State Water Board's intent to minimize the regulatory uncertainty and costs concerning treatment control BMPs in order to encourage the implementation of treatment control BMPs when appropriate. Section X.H.6 of this General Permit specifies a design storm standard for use when treatment controls BMPs are installed. There is both a volume-based and flow-based design storm standard in this General Permit. Both are based on the 85th percentile 24-hour storm event. Without a design storm standard, Dischargers have installed treatment controls using a wide variety of designs that were sometimes either unnecessarily stringent/expensive, or deficient in complying with the requirements of the relevant permit. Some Dischargers have been hesitant to consider treatment options because of the uncertainty concerning acceptable treatment design. The design storm standards are generally expected to:

- Be consistent with the effluent limitations of this General Permit;
- Be protective of water quality;
- Be achievable for most pollutants and their associated treatment technologies; and,
- Reduce the costs associated with treating industrial storm water discharges beyond the levels necessary to achieve compliance with this General Permit.

In lieu of complying with the design storm standards for treatment control BMPs, Dischargers may certify and submit a Level 2 ERA Technical Report, including an Industrial Activity BMPs Demonstration (Section XII.D.2.a of this General Permit). The Level 2 ERA Technical Report requirement is based upon NAL/TNAL exceedances. Under this option, a Discharger with Level 2 status must either implement BMPs to eliminate future NAL/TNAL exceedances, or justify what BMPs must be implemented to comply with this General Permit even if the BMPs will not eliminate future exceedances of NALs/TNALs. Dischargers who implement treatment control BMPs that vary from the design storm standards in Section X.H.6 must include an analysis showing that their treatment control BMPs comply with this General Permit's effluent limitations in the Industrial Activity BMP Demonstration.

This General Permit does not require Dischargers to retrofit existing treatment controls that do not meet the design storm standard, unless the Discharger determines that the existing treatment controls are not adequate to comply with this General Permit. In addition, once TMDL-specific implementation requirements are added to this General Permit, those Dischargers subject to TMDLs may need to add new or retrofitted treatment control BMPs to meet the TMDL implementation requirements.

To arrive at these design storm standards, the State Water Board has relied heavily on previous Water Board decisions concerning treatment efficacy for municipalities, published documents, stakeholder comments, and reasonableness. In 2000, the State Water Board issued State Water Board Order WQ 2000-11, which upheld Los Angeles Regional Water Board's permit requirements which mandated that all new development and redevelopment exceeding certain size criteria design treatment BMPs based on a specific storm volume: the 85th percentile 24-hour storm event. This design storm standard was based on research demonstrating that the standard represents the maximized treatment volume cut-off at the point of diminishing returns for rainfall/runoff frequency. [8]224 On the basis of this equation, the maximized runoff volume for 85 percent treatment of annual runoff volumes in California can range from 0.08 to 0.86 inch depending on the imperviousness of the watershed area and the mean amount of rainfall. This design storm standard is referred to as the Standard Urban Storm Water Mitigation Plan's volumetric criterion and there are multiple acceptable methods of calculating this volume. For more information, see the California Stormwater Best Management Practices Handbook.[9]225

The San Diego Regional Water Board first established both volumetric and flow-based design storm criteria for NPDES MS4 permits. It is generally accepted by civil engineers doing hydrology work to use twice the peak hourly flow of a specific storm event to use as the basis for flow-based design of BMPs. This General Permit therefore establishes the flow-based design storm standard to be twice the peak hourly flow of the 85th percentile 24-hour storm event.

The primary objective of specifying a design storm standard is to properly size BMPs to, at a minimum, effectively treat the first flush of run-off from all storm events. The economic impacts of treating all storm water from a facility versus the minimal environmental benefit of complete treatment justify the design storm approach. It is unrealistic to require each facility to do a cost benefit analysis of their treatment structures. To simplify the requirements for design, the State Water Board reviewed

[8]224 California Regional Water Quality Control Board Los Angeles Region, Standard Urban Storm Water Mitigation Plans and Numerical Design Standards for Best Management Practices - Staff Report and Record of Decision (Jan. 18, 2000) <http://www.swrcb.ca.gov/rwqcb4/water_issues/programs/stormwater/susmp/susmp_final_staff_report.pdf>. [as of February 4, 2014].

[9]225 California Stormwater Quality Association, Stormwater Best Management Practice New Development and Redevelopment Handbook (2003) <http://www.casqa.org/>. [as of February 4, 2014].

research from the City of Portland[10][226] and the City of San Jose[11][227] to determine the volume of each rain event compared to the amount of events that occur for that volume. The results of their findings show an inflection point that is typically found at approximately the 80 to 85 percentile of recorded storm events.
Dischargers should be aware of the potential unintended public health concerns associated with treatment control BMPs. Extensive monitoring studies conducted by the California Department of Public Health (CDPH) have documented that mosquitoes opportunistically breed in structural BMPs, particularly those that hold standing water for over 96 hours. BMPs that produce mosquitoes create potential public health concerns and increase the burden on local vector control agencies that are mandated to inspect for and abate mosquitoes and other vectors within their jurisdictional boundaries. These unintended consequences can be lessened when BMPs incorporate design, construction, and maintenance principles developed specifically to minimize standing water available to mosquitoes[12][228] while having negligible effects on the capacity of the structures to provide water quality improvements. The California Health and Safety Code prohibits landowners from knowingly providing habitat for or allowing the production of mosquitoes and other vectors, and gives local vector control agencies broad inspection and abatement powers.[13][229]

Dischargers who install any type of volume-based treatment device are encouraged to consider the BMPs in the California Department of Public Health's guidance manual published July 2012, "Best Management Practices for Mosquito Control in California" at http://www.cdph.ca.gov/HealthInfo/discond/Documents/BMPforMosquitoControl07-12.pdf.

4. Monitoring Implementation Plan

Dischargers are required to prepare and implement a Monitoring Implementation Plan (Section X.I of this General Permit). The Monitoring Implementation Plan requirements are designed to assist the Discharger in developing a comprehensive plan for the monitoring requirements in this General Permit and to assess their monitoring program. The Monitoring Implementation Plan includes a description of visual observation procedures and locations, as well as sampling procedures, locations, and methods. The Monitoring Implementation Plan shall be included in the SWPPP.

[10][226] City of Portland Oregon. Portland Stormwater Management Manual Appendix E.1: Pollution Reduction Methodology E.1-1 (August 1, 2008). <http://www.portlandoregon.gov/bes/article/202909>. [as of February 4, 2014].

[11][227] California Stormwater Quality Association (CASQA). CASQA BMP Handbook (January 2003) New Development and Redevelopment (Errata 9-04) <http://www.casqa.org/>. [as of February 4, 2014].

[12][228] California Department of Public Health. (2012). Best Management Practices for Mosquito Control in California. < http://www.westnile.ca.gov/resources.php>. [as of February 4, 2014]

[13][229] California Health & Safety Code, Division 3, Section 2060 and following.

J. Monitoring and Reporting Requirements

1. General Monitoring Provisions

This General Permit requires Dischargers to develop and implement a facility-specific monitoring program. Monitoring is defined as visual observations, sampling and analysis. The monitoring data will be used to determine:

a. Whether BMPs addressing pollutants in industrial storm water discharges and authorized NSWDs are effective for compliance with the effluent and receiving water limitations of this General Permit,

b. The presence of pollutants in industrial storm water discharges and authorized NSWDs (and their sources) that may trigger the implementation of additional BMPs and/or SWPPP revisions; and,

c. The effectiveness of BMPs in reducing or preventing pollutants in industrial storm water discharges and authorized NSWDs.

Effluent sampling and analysis information may be useful to Dischargers when evaluating the need for improved BMPs. The monitoring requirements in this General Permit recognize the 2008 MSGP approach to visual observations as an effective monitoring method for evaluating the effectiveness of BMPs at most facilities. Section 6.2 of the 2008 MSGP limits its monitoring sampling requirements to certain industrial categories. Similar to the previous permit, this General Permit requires all Dischargers to sample unless they have obtained NEC coverage or have an inactive mining operation(s) certified as allowed under this General Permit Section XIII.

This General Permit defines a Qualifying Storm Event (QSE) to provide clarity to Dischargers of when sampling is required. The previous permit (Section B.5.a) specified that sampling was required within the first hour of discharge, however, this General Permit requires Dischargers to sample within four hours of the start of Discharge. Many Dischargers were not able to get samples of their discharge locations within one (1) hour under the previous permit so this general permit has expanded the timeframe allowed to provide enough time to sample all discharge locations. The previous permit required three working dry days before sampling and this General Permit defines this period as 48 hours, this timeframe was decreased to provide more opportunities for Dischargers to obtain samples. This General Permit does not specify a volume for sampling due to the complexity of using rain gauges and the limited access of rain gauge station data.

Dischargers are only required to obtain samples required during scheduled facility operating hours and when sampling conditions are safe in accordance with Section XI.C.6.a.ii of this General Permit. If a storm event occurs during unscheduled facility operating hours (e.g. during the weekend or night) and during the 12 hours preceding the scheduled facility operating hours, the Dischargers is still responsible for obtaining samples at discharge locations that are still producing a discharge at

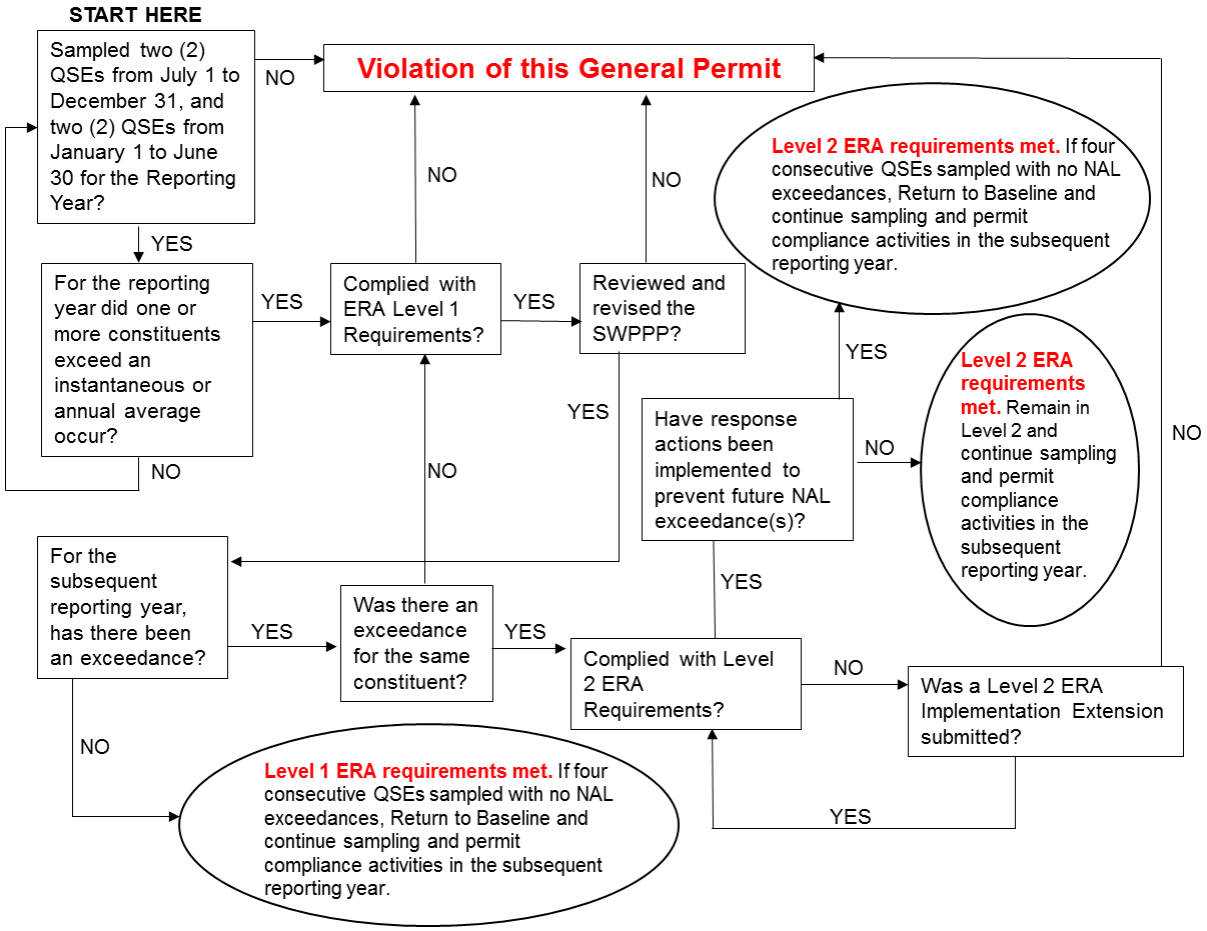
the start of facility operations. Under the previous permit, many Dischargers were unable to obtain samples due to rainfall beginning at night.

The State Water Board recognizes that it may not be feasible for all facilities to obtain four QSEs in a reporting year because there may not be enough qualifying storm events to do so. Therefore, a Discharger that is unable to collect and analyze storm water samples from two QSEs in each half of a reporting year due to a lack of QSEs is not in violation of Section XI.B.2. Dischargers that miss four QSEs during a reporting year due to the fact that four QSEs did not occur are not required to make up these sampling events in subsequent reporting years.

The State Water Board recognizes that each facility has unique physical characteristics, industrial activities, and/or variations in BMP implementation and performance which warrants the requirement that each facility demonstrate its compliance. Figure 3 of this Fact Sheet provides a summary of all the monitoring-related requirements of this General Permit. This General Permit's monitoring requirements include sampling and analysis requirements for specific indicator parameters that indicate the presence of pollutants in industrial storm water discharges. The "indicator parameters" are oil and grease (for petroleum hydrocarbons), total suspended solids (for sediment and sediment bound pollutants) and pH (for acidic and alkaline pollutants). Additionally, Dischargers are required to evaluate their facilities and analyze samples for additional facility-specific parameters. These monitoring program requirements are designed to provide useful, cost-effective, timely, and easily obtained information to assist Dischargers as they identify their facility's pollutant sources and implement corrective actions and revise BMPs as necessary (Section XI.A.4 of this General Permit).

This General Permit requires a combination of visual observations and analytical monitoring. Visual observations provide Dischargers with immediate information indicating the presence of many pollutants and their sources. Dischargers must implement timely actions and revise BMPs as necessary (Section XI.A.4) when the visual observations indicate pollutant sources have not been adequately addressed in the SWPPP. Analytical monitoring provides an additional indication of the presence and concentrations of pollutants in storm water discharge. Dischargers are required to evaluate potential pollutant sources and corresponding BMPs and revise the SWPPP appropriately when specific types of NAL/TNAL exceedances occur as described below.

FIGURE ~~3~~2: Compliance Determination Flowchart



2. Visual Observations

There are two major changes to the visual observation requirements in this General Permit compared to the previous permit, which include:

a. Monthly Visual Observations

The previous permit required separate quarterly visual observations for unauthorized and authorized non-storm water discharges. It did not require periodic visual observations of the facility to determine whether all potential pollutant sources were being adequately controlled with BMPs. Prior drafts of this General Permit proposed the addition of pre-storm inspections. This was met with great resistance by Dischargers because of the complexity and burden of determining when a QSE would occur. Many of these Dischargers recommended that monthly BMP and non-storm water discharge visual observations should replace the proposed pre-storm inspections. This General Permit merges all visual observations into a single monthly visual observation.

b. Sampling Event Visual Observations

The previous permit required monthly storm water visual observations. This required Dischargers to conduct visual observations for QSEs that were not being sampled since only two QSEs were required to be sampled in the previous permit. As discussed below, the sampling requirement has been increased to four QSEs within each reporting year with two QSEs required in each half of the reporting year. We expect that this will result in more samples being collected and analyzed, since most of California experiences, on average, at least two QSEs per half year. This General Permit streamlines the storm water visual observation requirement by linking the visual observations to the time of sampling.

3. Sampling and Analysis

   a. General

      As part of the process for developing previous drafts of this General Permit, the State Water Board considered comments from numerous stakeholders concerning sampling and analysis. Sampling and analysis issues were the most dominant of all issues raised in the comments.

      The State Water Board received stakeholder comments that fall into three primary categories concerning this General Permit's sampling and analysis approach:

      i. Comments supporting an intensive water quality sampling and analysis approach (with the goal of producing more accurate discharge-characterizing and pollutant concentration data) as the primary method of determining compliance with effluent limitations and receiving water limitations. Since this approach requires large amounts of high quality data to accurately quantify the characteristics of the discharges, it is referred to as the quantitative monitoring approach. Stakeholders supporting the quantitative approach generally also support the use of stringent NELs to evaluate compliance with this General Permit;

      ii. Comments supporting only visual observations as the primary method of determining compliance: These stakeholders generally assert that storm water sampling is an incomplete and not very cost effective means of determining water quality impacts on the receiving waters; and,

      iii. Comments supporting a combination of visual observations and cost-effective water quality sampling and analysis approach (sampling and analysis that would produce data indicating the presence of pollutants) to determine compliance (similar to the previous permit's approach). Since this approach uses more qualitative information to describe the quality and characteristics of the discharges, it is referred to as the qualitative monitoring approach.

      Within each of the three categories, there are various recommendations and rationales as to the exact monitoring frequencies, procedures and methods, required to implement the approach. Stakeholders in favor of the quantitative monitoring approach commented that it is the only reliable and meaningful method of assuring that: (1) BMPs are effective in reducing or preventing pollutants in storm water discharge in compliance with BAT/BCT, and (2) the discharge is not

causing or contributing to an exceedance of a water quality standards. The stakeholders state that visual observations are not effective in measuring pollutant concentrations nor is it effective in determining the presence of colorless and/or odorless pollutants. The stakeholders state that qualitative monitoring (and the use of indicator parameters) will not provide results useful for calculating pollutant loading nor will it accurately characterize the discharge.

Stakeholders in favor of requiring only visual observations state that sampling and analysis is unnecessary because (1) the previous permit did not include NELs so the usefulness of sampling and analysis data is limited, (2) a significant majority of Dischargers should be able to develop appropriate BMPs without sampling and analysis data, (3) most pollutant sources and pollutants can be detected and mitigated through visual observations, (4) the costs associated with quantitative monitoring are excessive and disproportionate to any benefits, (5) U.S. EPA's storm water regulations do not require sampling, (6) The 2008 MSGP relies heavily on visual observations and requires only a limited number of specific industries to conduct sampling and analysis, and (7) the majority of Dischargers are small businesses and do not have sufficient training or understanding to perform accurate sampling and analysis.

Stakeholders in favor of requiring both visual observations and a cost-effective qualitative monitoring program state that (1) both are within the means and understanding of most Dischargers, and (2) monitoring results are useful for evaluating a Discharger's compliance without unnecessarily increasing the burden on the Discharger and without subjecting Dischargers to non-technical enforcement actions.

The State Water Board finds that it is feasible for the majority of Dischargers to develop appropriate BMPs without having to perform large amounts of quantitative monitoring, which can be very costly. In the absence of implementing NELs, the State Water Board has determined that the infeasibility and costs associated with developing quantitative monitoring programs at each of thousands industrial facilities currently permitted would outweigh the limited benefits. The primary difficulty associated with requiring intensive quantitative monitoring lies with the cost and the difficulty of accurately sampling industrial storm water discharges.

Stakeholders that support quantitative monitoring believe the data is necessary to determine pollutant loading, concentration, or contribution to water quality violations. In order to derive data necessary to support those goals, however, the data must be of high quality, meaning it must be accurate, precise and have an intact chain of custody. Many industrial facilities do not have well-defined storm water conveyance systems for sample collection. Storm water frequently discharges from multiple locations through sheet flow into nearby streets and adjoining properties. Sample collection from a portion of the sheet flow is an inexact measurement since not all of the flow is sampled. Requiring every Discharger to construct well-defined storm water conveyances may cost anywhere from thousands to hundreds of thousands of dollars per facility depending on the size and nature of each industrial facility. At many facilities, the

construction of such conveyances may also violate local building codes, create safety hazards, cause flooding, or increase erosion. In addition, eliminating sheet flow at some facilities could result in increased pollutant concentrations.

The State Water Board has considered the complexity and costs associated with quantitative monitoring. Unlike continuous point source discharges (e.g., publicly owned treatment works), storm water discharges are variable in intensity and duration. The concentration of pollutants discharged at any one time is dependent on many complex variables. The largest concentration of pollutants would be expected to discharge earlier in the storm event and taper off as discharges continue. Therefore, effective quantitative monitoring of storm water discharges would require that storm water discharges be collected and sampled until most or all of the pollutants have been discharged. Multiple samples would need to be collected over many hours. To determine the pollutant mass loading, the storm water discharge flow must also be measured each time a sample is collected.

For a quantitative monitoring approach to yield useful pollutant loading information, the installation of automatic sampling devices and flow meters at each discharge location would usually be necessary. In addition, qualified individuals would be needed to conduct the monitoring procedures, and to handle and maintain flow meters and automatic samplers are needed. A significant majority of storm water Dischargers under this General Permit do not possess the skills to manage such an effort. Dischargers will bear the cost of employing and/or training on-site staff to do this work, or the cost of contracting with environmental consultants and acquiring the required flow meters and automatic samplers. The cost to Dischargers to conduct quantitative monitoring varies depending on the number of outfalls, the number of storms, the length of each storm, the amount of staff training, and other variables.

To address these concerns, this General Permit includes a number of new items that bridge the gap between the previous permit's qualitative monitoring and the quantitative approach recommended by many commenters. This General Permit includes a requirement for all Dischargers to designate a QISP when they enter Level 1 status due to NAL/TNAL exceedances. The QISP is required to be trained to: (1) more accurately identify discharge locations representative of the facility storm water discharge (2) select and implement appropriate sampling procedures (3) evaluate and develop additional BMPs to reduce or prevent pollutants in the industrial storm water discharges.

Dischargers that fail to develop and implement an adequate Monitoring Implementation Plan that includes both visual observations and sampling and analysis, are in violation of this General Permit. Dischargers that fail to comply with Level 1 status and Level 2 status ERA requirements, triggered by NAL/TNAL exceedances, are in violation of this General Permit.

Water Code section 13383.5 requires that the State Water Board include (1) standardized methods for collection of storm water samples, (2) standardized methods for analysis of storm water samples, (3) a requirement that every sample

analysis be completed by a State certified laboratory or in the field in accordance with Quality Assurance and Quality Control (QA/QC) protocols, (4) a standardized reporting format, (5) standardized sampling and analysis programs for QA/QC, and (6) minimum detection limits. The monitoring requirements in this General Permit (Section XI), as supplemented by SMARTS, address these requirements.

Under the previous permit, many Dischargers did not developed adequate sample collection and handling procedures, decreasing the quality of analytical results. In addition, Dischargers often selected inappropriate test methods, method detection limits, or reporting units. This General Permit requires all Dischargers to identify discharge locations that are representative of industrial storm water discharges and develop and implement reasonable sampling procedures to ensure that samples are not mishandled or contaminated.

It is infeasible for the State Water Board to provide a single comprehensive set of sample collection and handling procedures/instructions due to the wide variation in storm water conveyance and collection systems in use at facilities around the state. As an alternative, Attachment H of this General Permit provides minimum storm water sample collection and handling instructions that pertain to all facilities. Dischargers are required to develop facility-specific sample collection and handling procedures based upon these minimum requirements. Table 2 in this General Permit provides the minimum test methods that shall be used for a variety of common pollutants. Dischargers must be aware that use of more sensitive test methods (e.g., U.S. EPA Method 1631 for Mercury) may be necessary if they discharge to an impaired water body or are otherwise required to do so by the Regional Water Board. This General Permit allows Dischargers to propose an analytical test method for any parameter or pollutant that does not have an analytical test method specified in Table 2 or in SMARTS. Dischargers may also propose analytical test methods with substantially similar or more stringent method detection limits than existing approved analytical test methods. Upon approval, SMARTS will be updated over time to add additional acceptable analytical test methods.

The previous permit allowed Dischargers to reduce sampling analysis requirements for substantially similar drainage areas by either (1) combining samples for an unspecified maximum number of substantially similar drainage areas, or (2) sampling a reduced number of substantially similar drainage areas. The State Water Board provided this procedure to reduce analytical costs. The complexity associated with determining substantially similar drainage areas has led Dischargers to produce various, and sometimes questionable, analytical schemes. In addition, the previous permit did not establish a maximum number of samples that could be combined.

To standardize sample collection and analysis as required by Water Code section 13383.5, while continuing to offer a reduced analytic cost option, these requirements have been revised. Section XI.B.4 of this General Permit requires Dischargers to collect samples from all discharge locations regardless of whether the discharges are substantially similar or not. Dischargers may analyze each sample collected, or may analyze a combined sample consisting of equal

volumes, collected from as many as four (4) substantially similar discharge locations. A minimum of one combined sample shall be analyzed for every one (1) to four (4) discharge locations, and the samples shall be combined in the lab in accordance with Section XI.C.5 of this General Permit.

Representative sampling is only allowed for sheet flow discharges or discharges from drainage areas with multiple discharge locations. Dischargers shall select the appropriate location(s) to be sampled and intervals necessary to obtain samples representative of storm water associated with industrial activities generated within the corresponding drainage area. Dischargers are not required to sample discharge locations that have no exposure of industrial activities or materials as defined in Section XVII of this General Permit within the corresponding drainage area. However, Dischargers are required to conduct the monthly visual observations regardless of the selected locations to be sampled.

This General Permit defines a QSE as a precipitation event that produces a discharge from any drainage area that is preceded by 48 consecutive hours without a discharge from any drainage area. The previous permit did not include a QSE definition; instead, it utilized a different approach to defining the storm events that were required to be sampled. Under the previous permit, eligible storm events were storm events that occurred after three consecutive working days of dry weather. The three consecutive working days of dry weather definition in the previous permit led Dischargers to miss many opportunities to sample. Some Dischargers were unable to collect samples from two storm events in certain years under the previous definition. To resolve this difficulty, this General Permit increases the sampling requirements to four (4) QSEs per year, while decreasing the number of days without a discharge, resulting in additional opportunities for Dischargers to sample. Additionally, by eliminating the previous permit's reference to "dry weather," this General Permit allows some precipitation to occur between QSEs so long as there is no discharge from any drainage area. This change will result in more QSE sampling opportunities.

To improve clarity and consistency, the definitions contained in other storm water permits were considered with the goal of developing a standard definition for 'dry weather' for this General Permit. The 2008 MSGP sets a "measurable storm event" as one that produces at least 0.1 inches of precipitation and results in an actual discharge after 72 hours (three days) of dry weather. The State of Washington defines a "qualifying storm event" as a storm with at least 0.1 inches of precipitation preceded by at least 24 hours of no measurable precipitation, mirroring the definition found in the previous MSGP (2000 version). The State of Oregon requires that samples be taken in the first 12 hours of discharge and no less than 14 days apart. Review of other permits concludes that there is not a single commonly used approach to triggering sampling in industrial general permits. Therefore an enforceable sampling trigger is included in this General permit that requires Dischargers to sample four storm events within each reporting year.

b. Effluent Water Quality Sampling and Analysis Parameters

Dischargers are required to sample and analyze their effluent for certain parameters. "Parameter" is a term used in laboratory analysis circles to represent a distinct, reportable measure of a particular type. For example, ammonia, hexavalent chromium, total nitrogen and chemical oxygen demand are all parameters that a laboratory can analyze storm water effluent for and report a quantity back. A parameter is also an indicator of pollution. In this General Permit, pH, total suspended solids and chemical oxygen demand are examples of indicator parameters. They are not direct measures of a water quality problem or condition of pollution but can be used to indicate a problem or condition of pollution. Indicator parameters can also be used to indicate practices and/or the presence of materials at a facility to bring forth information for compliance evaluation processes, like annual report review and inspection. For example, chemical oxygen demand concentrations can indicate the presence of dissolved organic compounds, like residual food from collected recycling materials.

Minimum parameter-specific monitoring is required for Dischargers, regardless of whether additional facility-specific parameters are selected. This General Permit requires some parameters to be analyzed and reported for the duration of permit coverage to develop comparable sampling data over time and over many storm events and to demonstrate compliance. The Regional Water Boards may use such data to evaluate individual facility compliance and assess the differences between various industries. Accordingly, the parameters selected correspond to a broad range of industrial facilities, are inexpensive to sample and analyze, and have sampling and analysis methods which are easy to understand and implement. Some analytical methods for field measurements of some parameters, such as pH, may be performed using relatively inexpensive field instruments and provides an immediate alert to possible pollutant sources.

The following three selected minimum parameters are considered indicator parameters, regardless of facility type. These parameters typically provide indication and/or the correlation of whether other pollutants are present in storm water discharge. These parameters were selected for the following reasons:

i. pH is a numeric measurement of the hydrogen-ion concentration. Many industrial facilities handle materials that can affect pH. A sample is considered to have a neutral pH if it has a value of 7. At values less than 7, water is considered acidic; above 7 it is considered alkaline or basic. Pure rain water in California typically has a pH value of approximately 7.

ii. Total Suspended Solids (TSS) is an indicator of the un-dissolved solids that are present in storm water discharge. Sources of TSS include sediment from erosion, and dirt from impervious (i.e., paved) areas. Many pollutants adhere to sediment particles; therefore, reducing sediment will reduce the amount of these pollutants in storm water discharge.

iii. Oil and Grease (O&G) is a measure of the amount of O&G present in storm water discharge. At very low concentrations, O&G can cause sheen on the surface of water. O&G can adversely affect aquatic life, create unsightly

floating material, and make water undrinkable. Sources of O&G include, but are not limited to, maintenance shops, vehicles, machines and roadways.

The previous permit allowed Dischargers to analyze samples for either O&G or Total Organic Carbon (TOC). This General Permit requires all Dischargers analyze samples for O&G since almost all Dischargers with outdoor activities operate equipment and vehicles can potentially generate insoluble oils and greases. Dischargers with water soluble-based organic oils may be required to also test for TOC. The TOC and O&G tests are not synonymous, duplicative or interchangeable.

This General Permit removes the requirement to analyze for specific conductance as part of the minimum analytic parameters. Specific conductance is not required by U.S. EPA for any industry type. Additionally, stakeholder comments indicate that there are many non-industrial sources that may cause high specific conductance and interfere with the efficacy of the test. For example, salty air deposition that occurs at facilities in coastal areas may raise the specific conductance in water over 500 micro-ohms per centimeter (µhos/cm). Dischargers are not prevented from performing a specific conductance test as a screening tool if it is useful to detect a particular pollutant of concern as required (e.g. salinity).

U.S. EPA has finalized minor amendments to its CWA regulations to codify that under the NPDES program, where U.S. EPA has promulgated or otherwise approved analytical methods under 40 Code of Federal Regulations Part 136, or 40 Code of Federal Regulations Chapter I, subchapters N and O, dischargers must use “sufficiently sensitive” analytical test methods. The purpose of this rulemaking is to clarify that NPDES applicants and permittees must use U.S. EPA approved analytical methods that are capable of detecting and measuring the pollutants at, or below, the applicable water quality criteria or permit limits. U.S. EPA modified existing NPDES application, compliance monitoring, and analytical methods regulations.

Some of the approved analytical test methods have greater sensitivities and lower minimum levels or method detection limits than other approved methods for the same pollutant. Many metals and toxic compounds (for example, mercury) have an array of U.S. EPA-approved methods, including some methods that have greater sensitivities and lower minimum levels than the others.

U.S. EPA and State permitting authorities use data from the permittees to determine whether pollutants are present in a discharge and to quantify the levels of all detected pollutants. These pollutant data are then used to determine whether technology- or water quality-based effluent limits are needed in the facility’s NPDES permit. It is critical, therefore, that dischargers provide data that have been measured at levels that will be meaningful to the decision-making process. The same holds true for monitoring and reporting relative to permit limits established for regulated parameters.

For the purposes of sufficiently sensitive test method implementation, a method is sufficiently sensitive when:

- The method minimum level (ML) is at or below the level of the effluent limitation established in the permit for the measured pollutant or pollutant parameter, and either (a) the method ML is at or below the level of the applicable water quality criterion for the measured pollutant or pollutant parameter, or (b) the method ML is above the applicable water quality criterion but the amount of the pollutant or pollutant parameter in a facility's discharge is high enough that the method detects and quantifies the level of the pollutant or pollutant parameter in the discharge; or

- The method has the lowest ML of the analytical methods approved under 40 C.F.R. part 136 or required under 40 C.F.R. chapter 1, subchapter N, for the measured pollutant or pollutant parameter.

In the case of pollutants or pollutant parameters for which there are no approved methods under 40 C.F.R. part 136 or otherwise required under 40 C.F.R. chapter 1, subchapter N, monitoring must be conducted according to a test procedure specified in this General Permit or by the Regional Water Board. (40 C.F.R. §§ 122.21(e)(3), 122.41(j)(4), 122.44(i)(1)(iv).)

This General Permit requires Dischargers subject to Subchapter N ELGs for pH to analyze for pH using approved test methods in accordance with 40 Code of Federal Regulations part 136. These federal regulations specify that analysis of pH must take place within 15 minutes of sample collection. All other Dischargers may screen for pH using wide range litmus pH paper or other equivalent pH test kits within 15 minutes of sample collection. If in any reporting year a Discharger has two or more pH results outside of the range of 6.0 – 9.0 pH units, that Discharger is required to comply with the approved test methods in 40 Code of Federal Regulations part 136 in subsequent reporting years.

For almost all Dischargers, obtaining laboratory analysis within 15 minutes is logistically impossible. For many Dischargers, maintaining a calibrated pH meter is difficult, labor intensive, and error prone. Screening for pH will limit the number of additional Dischargers required to comply with 40 Code of Federal Regulations part 136 methods to those that have pH measures outside the range of 6.0-9.0 pH units. The use of wide range litmus pH paper or other equivalent pH test kits is not as accurate as a calibrated pH meter, however litmus paper is allowed in the 2008 MSGP, and when used properly it can provide an accurate screening measure to determine if further more-accurate pH sampling is necessary to determine compliance.

Review of available monitoring data shows that storm water discharges from most types of industrial facilities comply with the pH range of 6.0 to 9.0 pH units. There are specific types of industries, like cement or concrete manufacturers that have shown a trend of higher pH values very close to 9.0 pH units. Rather than require all industries as a whole to monitor with the more costly 40 Code of Federal Regulations part 136 methods, this General Permit establishes a triggering

mechanism for these more advanced pH test methods. The Regional Water Boards retain their authority to require more accurate test methods. Once a Discharger triggers the requirement to use the more accurate testing methods in 40 Code of Federal Regulations part 136, the Discharger may not revert back to screening for pH for the duration of coverage under this General Permit.

In the early 1990s, U.S. EPA, through its group application program, evaluated nationwide monitoring data and developed the listed parameters and SIC associations shown in Table 1 of this General Permit. The 2008 MSGP requires that Dischargers analyze storm water effluent for the listed parameters under certain conditions. In addition to the parameters in Table 1 of this General Permit, Dischargers are required to select additional facility-specific analytical parameters to be monitored, based upon the types of materials that are both exposed to and mobilized by contact with storm water. Dischargers must, at a minimum, understand how to identify industrial materials that are handled outdoors and which of those materials can easily dissolve or be otherwise transported via storm water.

The Regional Water Boards have the authority to revise the monitoring requirements for an individual facility or group of facilities based on site-specific factors including geographic location, industry type, and potential to pollute. For example, the Los Angeles Regional Water Board required all dismantlers (SIC Code 5015) within their jurisdiction to monitor for copper and zinc instead of aluminum and iron during the term of the previous permit. SMARTS will be programmed to incorporate any monitoring revisions required by the Regional Water Boards. Dischargers will receive email notification of the monitoring requirement revision and their SMARTS analytical reporting input screen will display the corresponding revisions. Dischargers may add, but not otherwise modify, the sampling parameters on their SMARTS input screen.

Dischargers are also required to identify pollutants that may cause or contribute to an existing exceedance of any applicable water quality standards for the receiving water. This General Permit requires Dischargers to control its discharge as necessary to meet the receiving water limitations, and to select additional monitoring parameters that are representative of industrial materials handled at the facility (regardless of the degree of storm water contact or relative mobility) that may be related to pollutants causing a water body to be impaired.

4. Methods and Exceptions

   a. Storm Water Discharge Locations

      Dischargers are required to visually observe and collect samples of industrial storm water discharges from each drainage area at all discharge locations. These samples must be representative of the storm water discharge leaving each drainage area. This is a change from the previous permit which allowed a Discharger to reduce the number of discharge locations sampled if two or more discharge locations were substantially similar.

Dischargers are required to identify, when practicable, alternate discharge locations if: (1) the facility's industrial drainage areas are affected by storm water run-on from surrounding areas that cannot be controlled, or (2) discharge locations are difficult to observe or sample (e.g. submerged discharge outlets, dangerous discharge location accessibility).

b. Representative Sampling Reduction

Some stakeholders have indicated that there are unique circumstances where sampling a subset of representative discharge locations fully characterizes the full set of storm water discharges. Stakeholders provided examples related to drainage areas with multiple discharge locations where sampling only a subset of these discharge locations produces results that are representative of the drainage areas' storm water discharges. In such situations, this General Permit allows Dischargers to reduce the number of discharge locations. For each drainage area with multiple discharge locations (e.g. roofs with multiple downspouts, loading/unloading areas with multiple storm drain inlets), the Discharger may reduce the number of discharge locations to be sampled if the conditions in Section XI.C.4 of this General Permit are met.

c. Qualified Combined Samples

Dischargers may combine samples from up to four (4) discharge locations if the industrial activities within each drainage area and each drainage area's physical characteristics (i.e. grade, surface materials) are substantially similar.

Dischargers are required to provide documentation in the Monitoring Implementation Plan supporting that the above conditions have been evaluated and fulfilled. A Discharger may combine samples from more than four (4) discharge locations only with approval from the appropriate Regional Water Board.

d. Sample Collection and Visual Observation Exceptions

Dischargers are not required to collect samples or conduct visual observations during dangerous weather conditions such as flooding or electrical storms, or outside of scheduled facility operating hours. A Discharger is not precluded from conducting sample collection activities or visual observations outside of scheduled facility operating hours.

In the event that a Discharger is unable to collect the required samples or conduct visual observations due to the above exceptions, the Discharger must include an explanation of the conditions obstructing safe monitoring in its Annual Report. If access to a discharge location is dangerous on a routine basis, a Discharger must choose an alternative discharge location in accordance with General Permit Section XI.C.3.

e. Sampling Frequency Reduction

Facilities that do not have NAL/TNAL exceedances for four (4) consecutive QSEs are unlikely to pose a significant threat to water quality. If the storm water from these facilities is also in full compliance with this General Permit, the Discharger is eligible for a reduction in sampling frequency. The Sampling Frequency Reduction allows a Discharger to decrease its monitoring from four (4) samples within each reporting year to one (1) QSE within the first half of each reporting year (July 1 to December 31) and one (1) QSE within the second half of each reporting year (January 1 to June 30). If a Discharger has a subsequent NAL/TNAL exceedance after the Sampling Frequency Reduction, it must comply with the original sampling requirements of this General Permit. Only Dischargers that have baseline status or that have satisfied the Level 1 requirements are eligible for this sampling and analysis reduction.

A Discharger requesting to reduce its sampling frequency shall certify and submit a Sampling Frequency Reduction certification via SMARTS. The Sampling Frequency Reduction certification shall include documentation that the General Permit conditions for the Sampling Frequency Reduction have been satisfied.

Dischargers participating in a Compliance Group and certifying a Sampling Frequency Reduction are only required to collect and analyze storm water samples from one (1) QSE within each reporting year. These Dischargers must receive year-round compliance assistance from their Compliance Group Leader and must comply with all requirements of this General Permit.

5. Facilities Subject to Federal Storm Water Effluent Limitation Guidelines (ELGs)

Federal regulations at Subchapter N establish ELGs for industrial storm water discharges from facilities in eleven industrial sectors. For these facilities, compliance with the ELGs constitutes compliance with the technology standard of BPT, BAT, BCT, or New Source Performance Standards provided in the ELG for the specified pollutants, and compliance with the technology-based requirements in this General Permit for the specified pollutant.

K. Exceedance Response Actions (ERAs)

1. General

The previous permit did not incorporate the benchmarks from any of the MSGPs or NALs for Dischargers to evaluate sampling results. Unlike the requirements for industrial storm water discharges that cause or contribute to an exceedance of a water quality standards, the previous permit did not provide definitions, procedures or guidelines to assess sampling results. Many Regional Water Boards have formally or informally notified Dischargers that exceedances of the MSGP benchmarks should be used to determine whether additional BMPs are necessary. However, there was considerable confusion as to the extent to which a Discharger would be expected to implement actions in response to exceedances of these values, and the timelines that had to be met to prevent an enforcement action. The lack of specificity with regards to what constituted an exceedance, and what actions are required in response to an

exceedance, have been identified as a problem by the Water Boards, industry and environmental stakeholders.

This General Permit contains two (2) types of NALs. Annual NALs function similarly to, and are based upon, the values provided in the 2008 MSGP. Instantaneous maximum NALs/TNALs target hot spots or episodic discharges of pollutants and are established based on California industrial storm water discharge monitoring data. When a Discharger exceeds an NAL/TNAL it is required to perform ERAs. The ERAs are divided into two levels of responses and can generally be differentiated by the number of years in which a facility's discharge exceeds an NAL/TNAL trigger. These two levels are explained further in Section XII of this General Permit. This ERA process provides Dischargers with an adaptive management-based process to develop and implement cost-effective BMPs that are protective of water quality and compliant with this General Permit. This process is also designed to provide Dischargers with a more defined pathway towards full compliance.

The ERA requirements in this General Permit were developed using best professional judgment and Water Board experience with the shortcomings of the previous permit's compliance procedures. Public comments received during State Water Board hearings on the 2002, 2005, 2011, 2012 and 2013 draft permits, and NPDES industrial storm water discharge permits from other states with well-defined ERA requirements were also considered by the State Water Board.

The State Water Board presumes that one single NAL/TNAL exceedance for a particular parameter is not a clear indicator that a facility's discharge is out of compliance with the technology-based effluent limitations or receiving water limitations. This presumption recognizes the highly variable nature of storm water discharge and the limited value of a single quarterly grab sample to represent the quality of a facility's storm water discharge for an entire storm event and all other non-sampled storm events. With this presumption, the State Water Board is addressing costly monitoring requirements that do not bring forth valuable compliance and/or water quality information.

2. NALs and NAL/TNAL Exceedances

   a. This General Permit contains two types of NAL exceedances as follows:

      Annual NAL exceedance - the Discharger is required to calculate the average annual concentration for each parameter using the results of all sampling and analytical results for the entire facility for the reporting year (i.e., all "effluent" data), and compare the annual average concentration to the corresponding Annual NAL values in Table 2 of this General Permit. An annual NAL exceedance occurs when the annual average of all the sampling results for a parameter taken within a reporting year exceeds the annual NAL value for that parameter listed in Table 2 of this General Permit.

      For the purposes of calculating the annual average concentration for each parameter, this General Permit considers any sufficiently sensitive sampling result that are a "non-detect" or less than the method detection limit as a zero (0) value. The reason to use zero (0) values instead of the detected but not

quantifiable value (minimum level or reporting limit) for sufficiently sensitive analysis is that these values are very low and are unlikely to contribute to an NAL exceedance. There are statistical methods to include low values when calculations are for numeric criteria and limitations, however, the NALs in this General Permit are approximate values used to provide feedback to the Discharger on site performance, and are not numeric criteria or limitations. Therefore, it is not necessary to include these insignificant values in the calculations for the NALs. For Dischargers using composite sampling or flow measurement in accordance with standard practices, the average concentrations shall be calculated in accordance with the U.S. EPA Guidance Manual for the Monitoring and Reporting Requirements of the NPDES Multi-Sector Storm Water General Permit.[14230]

i. Instantaneous maximum NAL exceedance - the Discharger is required to compare all sampling and analytical results from each distinct sample (individual or combined) to the corresponding instantaneous maximum NAL values in Table 2 of this General Permit. An instantaneous maximum NAL exceedance occurs when two or more analytical results from samples taken for any parameter within a reporting year exceed the instantaneous maximum NAL value (for TSS and O&G), or are outside of the instantaneous maximum NAL range (for pH). An instantaneous maximum TNAL exceedance occurs when two or more analytical results from samples taken for any parameter within a reporting year exceed the applicable instantaneous maximum TNAL value.

b. Instantaneous maximum NAL analysis

In its June 19, 2006 report, the Blue Ribbon Panel of Experts (Panel) made several specific recommendations for how to set numeric limitations in future industrial storm water general permit(s). For sites not subject to TMDLs, the Panel suggested that the numeric values be based upon industry types or categories, with the recognition that each industry has its own specific water quality issues and financial viability. Furthermore, the Panel concluded:

> To establish Numeric Limits for industrial sites requires a reliable database, describing current emissions by industry types or categories, and performance of existing BMPs. The current industrial permit has not produced such a database for most industrial categories because of inconsistencies in monitoring or compliance with monitoring requirements. The Board needs to reexamine the existing data sources, collect new data as required and for additional water quality parameters (the current permit requires only pH, conductivity, total suspended solids, and either total organic carbon or oil and grease) to establish practical and achievable Numeric Limits.

[14230] U.S. EPA. NPDES Storm Water Sampling Guidance Document. Web. July 1992. <http://www.epa.gov/npdes/pubs/owm0093.pdf>. [as of February 4, 2014].

The Panel suggested an alternative method that would allow the use of the existing Water Board dataset to establish action levels, referred to as the "ranked percentile" method. The Panel recommended:

> The ranked percentile approach (also a statistical approach) relies on the average cumulative distribution of water quality data for each constituent developed from many water quality samples taken for many events at many locations. The Action Level would then be defined as those concentrations that consistently exceed some percentage of all water quality events (i.e. the 90th percentile). In this case, action would be required at those locations that were consistently in the outer limit (i.e. uppermost 10th percentile) of the distribution of observed effluent qualities from urban runoff.

After performing various data analysis exercises with the Water Board dataset, State Water Board staff concluded that the Water Board dataset is not adequate to calculate instantaneous NAL values using the Panel's recommended method for all of parameters that have annual NAL values based on the U.S. EPA benchmarks. Additionally, public comments on the January 2011 draft of this General Permit suggest that it is problematic to calculate NAL values based on the existing data. Therefore, the Water Board dataset was not used to calculate instantaneous NAL values for all parameters.

However, since all Dischargers regulated under the previous permit were required to sample for TSS and O&G/TOC, State Water Board staff found that the existing dataset for these parameters is of sufficient quality to calculate instantaneous NAL values. State Water Board staff also found that this data was less prone to what appear to be data input errors. The final dataset used to calculate the instantaneous NALs in this General Permit had outlier values that were eliminated from the dataset by using approved test method detection limits ranges. The methods and corresponding method detection limit ranges used to screen outliers are as follows:

- O&G - EPA 413.1 Applicable Range: 5-1,000 mg/L
- O&G - EPA 1664 Applicable Range: 5-1,000 mg/L
- TSS - EPA 160.2 Applicable Range: 4-20,000 mg/L

The intent of the instantaneous maximum NAL is to identify specific drainage areas of concern or episodic sources of pollution in industrial storm water that may indicate inadequate storm water controls and/or water quality impacts. In the effort to add instantaneous NAL exceedances to the ERA process, the State Water Board explored different options for the development of an appropriate value (i.e. percentile approach, benchmarks times a multiplier, confidence intervals). The California Stormwater Quality Association's comments on the previous draft permit included a proposed method for calculating NAL values using a percentile approach. The State Water Board researched and evaluated this methodology and determined it is the most appropriate way to directly

compare available electronic sampling data from Dischargers regulated under the previous permit. This percentile approach was used to establish the instantaneous maximum NALs in this General Permit, for discharges to directly compare with sampling results and identify drainage areas of water quality concern.
The percentile approach is a non-parametric approach identified in many statistical textbooks for determining highly suspect values. Highly suspect values are defined as values that exceed the limits of the outer fences of a box plot. Upper limits of the outer fence are calculated by adding three times the inter-quartile range (25th to 75th percentiles) to the upper-end of the inter-quartile range (the 75th percentile). The California Stormwater Quality Association calculated an NAL value of 401 mg/L for TSS using the percentile approach using the Water Board dataset. The State Water Board performed the same analysis with the same Water Board dataset and calculated a slightly different value of 396 mg/L; therefore, the instantaneous maximum NAL value for TSS of 400 mg/L was established. Appling the percentile approach to the existing O&G data results in the instantaneous maximum NAL value for O&G of 25 mg/L.

The State Water Board compared existing sampling data to the instantaneous maximum NAL values and concluded that seven (7) percent of the total samples exceeded the highly suspected value for TSS and 7.8 percent of the total samples exceeded the highly suspected value for O&G. These results suggest that the instantaneous maximum NAL values are adequate to identify drainage areas of concern statewide since they are not regularly exceeded. Using best professional judgment, the State Water Board concludes that an exceedance of these values twice within a reporting year is unlikely to be the result of storm event variability or random BMP implementation problems, and the use of the percentile approach is therefore appropriate.

Due to issues with the ranges of concentrations and the logarithmic nature of pH, statistical methods cannot be applied to pH in the same ways as other parameters. Review of storm water sampling data by the State Water Board and other stakeholders has shown that pH is not typically a parameter of concern for most industrial facilities. Accordingly, a range of pH limits established in Regional Water Board Basin Plans is implemented in this General Permit for the instantaneous maximum NAL values. Most Basin Plans set a water quality objective of 6.0 - 9.0 pH units for water bodies, an exceedance outside the range of 6.0 - 9.0 pH units is consistent with the water quality concerns for pH among Regional Water Boards. An industrial facility with proper BMP implementation is expected to have industrial storm water discharges within the range of 6.0 - 9.0 pH units.

High concentrations of TSS and O&G, or pH values outside the range of 6.0 – 9.0 pH units, in a discharge may be an indicator of potential BMP implementation or receiving water quality concerns with other pollutants with parameters that do not have an instantaneous maximum NAL value. The State Water Board may consider instantaneous maximum NAL values for other parameters in a subsequent reissuance of this General Permit, based on data collected during this General Permit term.

The percentile approach is considered by many stakeholders to be the best method to evaluate BMP performance and general effluent quality in a community or population where the vast majority of the industrial facilities are implementing sufficient pollutant control measures. The Water Board's current dataset does not provide a way of evaluating actual BMP implementation at each facility when analyzing the data; therefore the monitoring information reported during the previous permit term cannot be linked to compliance with technology-based standards. The State Water Board intends to use data collected during this General Permit term to evaluate the percentile approach, improve the quality of collected data for other parameters, and further develop an understanding of how reported data relates to implemented BMP-control technologies.

Under this General Permit, a Discharger enters Level 1 status and must fulfill the Level 1 status ERA requirements following its first occurrence of any NAL/TNAL exceedance. Level 2 status ERA requirements follow the second occurrence of an NAL/TNAL exceedance for the same parameter in a subsequent reporting year. This ERA process provides Dischargers with an adaptive management-based process to develop and implement cost-effective BMPs that are protective of water quality and compliant with this General Permit. This General Permit's ERA process is designed to have a well-defined compliance end-point. It is not a violation of this General Permit to exceed the NAL/TNAL values; it is a violation of the permit, however, to fail to comply with the Level 1 status and Level 2 status ERA requirements in the event of NAL/TNAL exceedances.

The State Water Board acknowledges that storm water discharge concentrations are often highly variable and dependent upon numerous circumstances such as storm size, the time elapsed since the last storm, seasonal activities, and the time of sample collection. Since there are potential enforcement consequences for failure to comply with this General Permit's ERA process, the State Water Board's intention is to use NAL/TNAL exceedances to solely require Dischargers with recurring annual NAL exceedances or drainage areas that produce recurring instantaneous maximum NAL/TNAL exceedances to be subject to the follow-up ERA requirements.

If ~~NALs~~NAL/TNAL exceedances do not occur, the State Water Board generally expects that the Discharger has implemented sufficient BMPs to control storm water pollution. When NAL/TNAL exceedances do occur, however, the potential that the Discharger may not have implemented appropriate and/or sufficient BMPs increases, and the Discharger is required to implement escalating levels of ERAs. If NAL/TNAL exceedances occur, this General Permit requires Dischargers to evaluate and potentially install additional BMPs, or re-evaluate and improve existing BMPs to be in compliance with this General Permit.

3. Baseline Status

   At the beginning of a Discharger's NOI coverage under this General Permit, the Discharger has Baseline status. A Discharger demonstrating compliance with all

NALs/TNALs will remain at Baseline status and is not required to complete Level 1 status and Level 2 status ERA requirements.

If a Discharger has returned to Baseline status (from Level 2 status) and additional NAL/TNAL exceedances occur, the Discharger goes ~~into Level 1 status, then potentially Level 2 status. Dischargers do not go~~ directly into Level ~~2 status from Baseline status.~~2.

4. Level 1 Status

Regardless of when an NAL/TNAL exceedance occurs during Baseline status, a Discharger's status changes from Baseline status to Level 1 status on July 1 of the subsequent reporting year. By October 1 following the commencement of Level 1 status, the Discharger is required to appoint a QISP to assist with the completion of the Level 1 Evaluation. The Level 1 Evaluation must include a review of the facility's SWPPP for compliance with the effluent and receiving water limitations of this General Permit, an evaluation of the industrial pollutant sources at the facility that are or may be related to the NAL/TNAL exceedance(s), and identification of any additional BMPs that will eliminate future exceedances. When conducting the Level 1 Evaluation, a Discharger must ensure that all potential pollutant sources that could be causing or contributing to the NAL/TNAL exceedance(s) are fully characterized, that the current BMPs are adequately described, that employees responsible for implementing BMPs are appropriately trained, and that internal procedures are in place to track that BMPs are being implemented as designed in the SWPPP. A Discharger is additionally required to evaluate the need for additional BMPs. Level 1 ERAs are designed to provide the Discharger the opportunity to improve existing BMPs or add additional BMPs to comply with the requirements of this General Permit.

By January 1 following commencement of Level 1 status, a Discharger is required to certify and submit via SMARTS a Level 1 ERA Report prepared by a QISP. The Level 1 ERA Report must contain a summary of the Level 1 Evaluation, all new or revised BMPs added to the SWPPP.

In most cases, the State Water Board believes that Level 1 status BMPs will be operationally related rather than structural and, therefore can be implemented without delay. Recognizing that a Discharger should not be penalized for sampling results obtained before implementing BMPs, sampling results for parameters and their corresponding drainage areas that caused the NAL/TNAL exceedance up to October 1 or the date the BMPs were implemented, whichever is sooner, will not be used for calculating NAL/TNAL exceedances. Although this General Permit allows up to January 1 to implement Level 1 status BMPs, the State Board has chosen an interim date of October 1 to encourage more timely Level 1 BMP implementation. Dischargers who implement Level 1 BMPs after October 1 may risk obtaining subsequent sampling results that may cause them to go into Level 2 status.

5. Level 2 Status

Level 2 ERAs are required during any subsequent reporting year in which the same parameter(s) has an NAL/TNAL exceedance (annual average or instantaneous

maximum), if this occurs, a Discharger's status changes from Level 1 status to Level 2 status on July 1 of the subsequent reporting year. Dischargers with Level 2 status must further evaluate BMP options for their facility. Dischargers may have to implement additional BMPs, which may include physical, structural, or mechanical devices that are intended to prevent pollutants from contacting storm water. Examples of such controls include, but are not limited to:

- Enclosing and/or covering outdoor pollutant sources within a building or under a roofed or tarped outdoor area.

- Physically separating the pollutant sources from contact with run-on of uncontaminated storm water.

- Devices that direct contaminated storm water to appropriate treatment BMPs (e.g., discharge to sanitary sewer as allowed by local sewer authority).

- Treatment BMPs including, but not limited to, detention ponds, oil/water separators, sand filters, sediment removal controls, and constructed wetlands.

Dischargers may select the most cost-effective BMPs to control the discharge of pollutants in industrial storm water discharges. Where appropriate, BMPs can be designed and targeted for various pollutant sources (e.g., providing overhead coverage for one potential pollutant while discharging to a detention basin for another source may be the most cost-effective solution).

a. Level 2 ERA Action Plans

The State Water Board acknowledges that there may be circumstances that make it difficult, if not impossible, for a Discharger to immediately implement additional BMPs. For example, it may take time to get a contract for construction in place, obtain necessary building permits, and design and construct the BMPs. Dischargers may also suspect that pollutants are from a non-industrial or natural background source and need time to study their site. A Discharger is required to certify and submit an Action Plan prepared by a QISP via SMARTS by January 1 following the reporting year in which the NAL/TNAL exceedance that resulted in the Discharger entering Level 2 occurred. The Level 2 ERA Action Plan requires a Discharger to propose actions necessary to complete the Level 2 ERA Technical Report, the demonstrations the Discharger has selected, and propose a time frame for implementation.

If a Discharger changes the QISP assisting with the Level 2 ERA requirements this General Permit requires the Discharger to update the QISP information via SMARTS. Current information on individuals assisting Dischargers with compliance of this General Permit provides the Water Boards with the necessary contact information if there are questions on the submitted documents, and for possible verification of a QISP's certification.

Dischargers are required to address each Level 2 NAL/TNAL exceedance in an Action Plan. The State Water Board recognizes that Dischargers with Level 2 status may have multiple parameters or facility areas that have Level 2 NAL/TNAL exceedances and the timing of the exceedances may make it very difficult to address all Level 2 NAL/TNAL exceedances in one Action Plan. When Level 2 ERA exceedances occur in subsequent reporting years, after an Action Plan is certified and submitted, a Discharger will need to develop an Action Plan for this new Level 2 NAL/TNAL exceedance. This General Permit defines new Level 2 NAL/TNAL exceedances as an exceedance for a new parameter in any drainage area at the facility, or an exceedance for the same parameter being addressed in an existing Action Plan, but where the exceedance occurred in a different drainage area than identified in the existing Action Plan.

b. Level 2 ERA Technical Reports

The Level 2 ERA Technical Report contains three different options that require a Discharger to submit demonstrations showing the cause of the NAL/TNAL exceedance(s). This General Permit requires a Discharger to appoint a QISP to prepare the Level 2 ERA Technical Reports. The State Water Board acknowledges that there may be cases where a combination of the demonstrations may be appropriate; therefore a Discharger may combine any of the following three demonstration options in their Level 2 ERA Technical Report when appropriate. A Discharger is only required to annually update its Level 2 ERA Technical Report when necessary as defined in Section XII.D.3.c of this General Permit, and is not required to annually re-certify and re-submit the entire Level 2 ERA Technical Report. If there are no changes prompting an update of the Level 2 ERA Technical Report, as specified in Section XII.D.3.c of this General Permit, the Discharger will provide this certification in the Annual Report that there have been no changes warranting re-submittal of the Level 2 ERA Technical Report.

i. Industrial Activity BMPs Demonstration

The Industrial Activity BMPs Demonstration is for the following:

- Dischargers who decided to implement additional BMPs that are expected to eliminate future NAL/TNAL exceedance(s) and that have been implemented in order to achieve compliance with the technology-based effluent limitations of this General Permit, and

- Dischargers who decided to implement additional BMPs that may not eliminate future NAL/TNAL exceedance(s) and that have been implemented in order to achieve compliance with the technology-based effluent limitations of this General Permit.

When preparing the Industrial Activity BMPs Demonstration, the QISP shall identify and evaluate all individual pollutant source(s) associated with industrial activity that are or may be related to an NAL/TNAL exceedance and all

designed, information on the drainage areas associated with the Level 2 NAL/TNAL exceedances, and installed BMPs that are implemented to reduce or prevent pollutants in industrial storm water discharges in compliance with this General Permit.

If an Industrial Activity BMPs Demonstration is submitted as the Level 2 ERA Technical Report and the Discharger is able to show reductions in pollutant concentrations below the NALs/TNALs for four (4) subsequent consecutive QSEs, the Discharger returns to Baseline Status. A Discharger that submits an Industrial Activity BMPs Demonstration but has not installed additional BMPs that are expected to eliminate future NAL/TNAL exceedance(s) will remain with Level 2 status but is not subject to additional ERAs unless directed by the Regional Water Board.

ii. Non-Industrial Pollutant Source Demonstration

A Non-Industrial Pollutant Source Demonstration is for a Discharger to demonstrate that the pollutants causing the NAL/TNAL exceedances are not related to industrial activities conducted at the facility, and additional BMPs at the facility will not contribute to the reduction of pollutant concentrations.

Dischargers including the Non-Industrial Pollutant Demonstration in their Level 2 ERA Technical Report shall have a QISP determine that the sources of non-industrial pollutants in storm water discharges are not from industrial activity or natural background sources within the facility.

Sources of non-industrial pollutants that are discharged separately and are not ~~comingled~~commingled with storm water associated with industrial activity are not considered subject to this General Permit's requirements. When pollutants from non-industrial sources are ~~comingled~~commingled with storm water associated with industrial activity, the Discharger is responsible for all the pollutants in the combined discharge unless the technical report clearly demonstrates that the NAL/TNAL exceedances due to the combined discharge are solely attributable to the non-industrial sources. The pollutant may also be present due to industrial activities, in which case the Discharger must demonstrate that the pollutant contribution from the industrial activities by itself does not result in an NAL/TNAL exceedance. In most cases, the Non-Industrial Pollutant Source Demonstration will contain sampling data and analysis distinguishing the pollutants from non-industrial sources from the pollutants generated by industrial activity.

Once the Level 2 ERA Technical Report, including this demonstration is certified and submitted via SMARTS, the Discharger has satisfied all the requirements necessary for that pollutant for ERA purposes. A Discharger that submits a Non-Industrial Pollutant Demonstration remains with Level 2 status but is not subject to additional ERAs unless directed by the Regional Water Board.

iii. Natural Background Pollutant Source Demonstration

The benchmark monitoring schedule in section 6.2.1.2 of the 2008 MSGP allows a Discharger to determine that the exceedance of the benchmark is attributable solely to the presence of that pollutant in the natural background. A Discharger making this determination is not required to perform corrective action or additional benchmark monitoring providing that the other 2008 MSGP requirements are met. The 2008 MSGP Fact Sheet requires Dischargers to include in the following in the SWPPP: 1) map(s) showing the reference site location, facility, available land cover information, reference site and test site elevation, available geology and soil information for reference and test sites, photographs showing site vegetation, site reconnaissance survey data and records. This General Permit requires this information to be included in the Natural Background Pollutant Source Demonstration in Section XII.D.2.c.

The Natural Background Pollutant Source Demonstration in this General Permit is for a Discharger that can demonstrate that pollutants causing the NAL/TNAL exceedances are not related to industrial activities conducted at the facility, and are solely attributable to the presence of those pollutants in natural background. The pollutant may also be present due to industrial activities, in which case the Discharger must demonstrate that the pollutant contribution from the industrial activities by itself does not result in an NAL/TNAL exceedance. Natural background pollutants include those substances that are naturally occurring in soils or groundwater that have not been disturbed by industrial activities. Natural background pollutants do not include legacy pollutants from earlier activity on a site, or pollutants in run-on from neighboring sources which are not naturally occurring. Dischargers are not required to reduce concentrations for pollutants in the effluent caused by natural background sources if these pollutants concentrations are not increased by industrial activity.

The 2008 MSGP Fact Sheet states that the background concentration of a pollutant in runoff from a non-human impacted reference site in the same watershed must be determined by evaluation of ambient monitoring data or by using information from a peer-reviewed publication or a local, state, or federal government publication specific to runoff or storm water in the immediate region. Studies that are in other geographic areas, or are clearly based on different topographies or soils, are not sufficient to meet this requirement. When such data is not available, and there are no known sources of the pollutant, the background concentration should be assumed to be zero. In cases where historic monitoring data from a site are used for generating a natural background concentration, and the site is no longer accessible or able to meet reference site acceptability criteria, the Discharger must submit documentation (e.g., historic land use maps) indicating the site did meet reference site criteria (such as indicating the absence of human activity) during the time data collection occurred.

Once the Level 2 ERA Technical Report, including a Natural Background Demonstration meeting the conditions in Section XII.D.2.c of this General Permit is certified and submitted via SMARTS, the Discharger is no longer

responsible for the identified background parameters(s) in the corresponding drainage area(s). A Discharger that submits this type of demonstration will remain with Level 2 status but is not subject to additional ERAs unless directed by the Regional Water Board.

c. Level 2 ERA Implementation Extension

The State Water Board recognizes that there may be circumstances that make implementation of all necessary actions required in the Level 2 ERAs by the permitted due dates infeasible. In such circumstances a Discharger may request additional time by submitting a Level 2 ERA Implementation Extension. The Level 2 ERA Implementation Extension will automatically allow Dischargers up to an additional six (6) months to complete the tasks identified in the Level 2 ERA Action Plans while remaining in compliance with this General Permit. The Level 2 ERA Implementation Extension is subject to Regional Water Board review. If additional time is needed beyond the initial six (6) month extension, a second Level 2 ERA Implementation Extension may be submitted but is not effective unless it is approved by the Water Board.

L. Inactive Mining Operations

Inactive mining sites may need coverage under this General Permit. Inactive mining operations are mining sites, or portions of sites, where mineral mining and/or dressing occurred in the past with an identifiable Discharger (owner or operator), but are no longer actively operating. Inactive mining sites do not include sites where mining claims are being maintained prior to disturbances associated with the extraction, beneficiation, or processing of mined materials. A Discharger has the option to certify and submit via SMARTS that its inactive mining operations meet the conditions for an Inactive Mining Operation Certification in Section XIII of this General Permit. The Discharger must have a SWPPP for an inactive mine signed (wet signature with license number) by a California licensed professional engineer. The Inactive Mining Operation Certification in this General Permit is in lieu of performing certain identified permit requirements. This General Permit requires an annual inspection of an inactive mining site and an annual re-certification of the SWPPP. Any significant updates to the SWPPP shall be signed (wet signature and license number) by a California license professional engineer. The Discharger must certify and submit via SMARTS any significantly revised SWPPP within 30 days of the revision(s)

M. Compliance Groups and Compliance Group Leaders

Group Monitoring, as defined in the previous permit, has been eliminated in this General Permit and replaced with a new compliance option called Compliance Groups. The Compliance Group option differs from Group Monitoring as it requires (1) all Dischargers participating in a Compliance Group (Compliance Group Participants) sample two QSEs each year, (2) the Compliance Group Leader to inspect each Participant's facility within each reporting year, (3) the Compliance Group Leader must complete a State Water Board sponsored or approved training program for Compliance Group Leaders, and (4) the Compliance Group Leader to prepare Consolidated Level 1 ERA Reports, and individual Level 2 ERA Action Plans and Technical Reports. The Compliance Group

option is similar to Group Monitoring as it retains a mechanism that allows Dischargers of the same industry type to comply with this General Permit through shared resources in a cost saving manner.

This General Permit emphasizes sampling and analysis as a means to evaluate BMP performance and overall compliance, and the significantly reduced sampling requirements previously afforded to Group Monitoring Participants (two samples within a five-year period) does not provide the necessary information to achieve these goals. However, a moderate reduction in sampling requirements is included as an incentive for Compliance Group Participants while concurrently requiring sufficient individual facility sampling data to determine compliance. A Compliance Group Leader is required to provide the necessary sampling training and guidance to the Compliance Group Participants. This additional training requirement will increase sampling data quality that will offset the reduced sampling frequency for Compliance Groups.

Participation in Compliance Groups will provide additional cost savings for Dischargers in the preparation of the Consolidated Level 1 ERA Reports, and for Compliance Group Leader assistance in preparing the Level 2 ERA Action Plans and the individual Level 2 ERA Technical Reports. It is likely that many of the pollutant sources causing NAL/TNAL exceedances, and the corresponding BMP cost evaluation and selection, when appropriate, will overlap for groups of facilities in a similar industry type. When these overlaps occur, a Compliance Group Leader should be able to more efficiently evaluate the pollutant sources and BMP options, and prepare the necessary reports.

The State Water Board believes that it is necessary for Compliance Group Leaders to have a higher level of industrial storm water compliance and training experience than the expectations of a QISP. Many stakeholder comments on this General Permit suggested various certifications to provide this higher level of experience; however, the State Water Board believes a process similar to the Trainer of Record process for the Construction General Permit training program will develop Compliance Group Leaders with the appropriate level of experience to fulfill the necessary qualifications.

The intent of the Compliance Groups is to have only one or a small number of Compliance Groups per industrial sector. The process for becoming a QISP trainer and/or a Compliance Group Leader is purposely similar to the Construction General Permit trainer of record process for consistency within storm water regulatory leaders. The formal process to qualify to conduct trainings for QISPs and/or to be a Compliance Group Leader will include the submittal of a statement of qualifications for review, a review fee, completion of an exam and training specific to this role. For more information see the Construction General Permit trainer of record process: http://www.casqa.org/TrainingandEducation/ConstructionGeneralPermitTrainingQSDQSPToR/tabid/205/Default.aspx

After the initial Compliance Group registration, Compliance Group Leaders are required to submit and maintain their list of Compliance Group Participants via SMARTS. There are no additional administrative documents required. The previous permit required group leaders to provide annual group evaluation reports and a letter of intent to continue group monitoring. The State Water Board found these items to be resource intensive and placed an unnecessary administrative burden on group leaders. The

Compliance Group requirements in this General Permit reduces the administrative burden on both the Compliance Group Leaders and Water Board staff.

The State Water Board's intent for the effluent data, BMP selection, cost, and performance information, and other industry specific information provided in Compliance Group reports is for evaluation of sector-specific permitting approaches and the use of NALs in the next reissuance of this General Permit.

N. Annual Evaluation

Federal regulations require NPDES industrial storm water Dischargers to evaluate their facility and SWPPP annually. Typically this requires an inspection of the facility to ensure: (1) the SWPPP site map is up to date, (2) control of all potential pollutant sources is included in the SWPPP, and (3) sampling data and visual observation records are used to evaluate if the proper BMPs are being implemented. As Dischargers are required to conduct monthly visual observation that partially overlap with the actions required by the annual evaluation requirements, Dischargers may perform the annual evaluation inspection concurrent with a monthly visual observation.

O. Annual Report

All Dischargers shall certify and submit via SMARTS an Annual Report no later than July 15 following each reporting year. The reporting requirements for this General Permit's Annual Report are streamlined in comparison to the previous permit. The Annual Report now consists of two primary parts: (1) a compliance checklist indicating which permit requirements were completed and which were not (e.g., a Discharger who completes the required sampling of four QSEs during the reporting year, versus a Discharger who is only able to sample two QSEs during the reporting year), and (2) an explanation for items on the compliance checklist that were determined incomplete by the Discharger. Unlike the previous permit, the Annual Report does not require Dischargers to provide the details of each visual observation (such as name of observer, time of observation, observation summary, corrective actions, etc.) or provide the details of the Annual Comprehensive Site Evaluation. Dischargers, however, continue to be required to retain those records and have them available upon request. The Annual Report is further simplified through the immediate electronic reporting via SMARTS of sampling data and copies of the original laboratory reports instead of such information being included in the Annual Report.

P. Conditional Exclusion - No Exposure Certification (NEC) Requirements

This General Permit's conditional exclusion requirements are similar to the requirements provided in 40 C.F.R. section 122.26(g)(3). Clarifications were added in this General Permit, however, to the types of "storm resistant shelters" and the periods when "temporary shelters" may be used in order to avert regulatory confusion. California does not have operating coal power plants, which are a major contributor to acid rain elsewhere in the United States. California does have nonpoint sources or atmospheric deposition that may locally impact the pH of the rain water, however this is not categorized as acid rain as referred to by the U.S. EPA for the NEC coverage

requirements. The No Exposure Guidance Document[~~15~~231] developed by the U.S. EPA mentions acid rain as a potential source of contaminants to consider for NEC coverage. The acid rain leachate language was not included in this General Permit's Appendix 2 to clarify that Dischargers may qualify for NEC coverage, even if the facility has metal buildings or structures.

The Discharger shall certify and submit complete PRDs for NEC coverage via SMARTS. Based upon the State Water Board's experience with reissuing and implementing the 2009 Construction General Permit, the transition for existing Dischargers to register under this new General Permit is staff resource intensive. The State Water Board staff is available to assist Dischargers requiring assistance with enrolling under this General Permit, both for NOI coverage and NEC coverage. The State Water Board has also experienced that more time is needed for its staff to assist Dischargers registering for NEC coverage. To provide better customer service to all Dischargers, three months have been added to the NEC coverage PRD submittal schedule for new and existing Dischargers (Section II.B.4 of this General Permit, extending the NEC coverage registration date to October 1, 2015.

Dischargers must annually inspect their facility to ensure continued compliance with NEC requirements, and annually re-certify and submit an NEC via SMARTS. Based on its regulatory experience, the State Water Board has determined that a five-year NEC re-certification period is inadequate. A significant percentage of facilities may revise, expand, or relocate their operations in any given year. Furthermore, a significant percentage of facilities experience turnover of staff knowledgeable of the NEC requirements and limitations. Accordingly, the State Water Board believes that annual NEC evaluation and re-certification requirements are appropriate to continually assure adequate program compliance.

Q. Special Requirements - Plastic Materials

Water Code section 13367 requires the Water Boards to implement measures that control discharges of preproduction plastic from point and nonpoint sources. The State Water Board intends to use this General Permit to regulate discharges of preproduction plastics from areas of facilities that are subject to this General Permit. A Regional Water Board may designate facilities, or areas of facilities, that are not otherwise subject to this General Permit, pursuant to Section XIX.F. For example, a Regional Water Board may designate Plastic Materials handling areas of a transportation facility that are not associated with vehicle maintenance as requiring coverage under this General Permit.

Preproduction plastics used by the plastic manufacturing industry are small in size and have the potential to mobilize in storm water. Preproduction plastic washed into storm water drains can move to waters of the United States where it contributes to the growing problem of plastic debris in inland and coastal waters. Water Code section 13367 outlines five mandatory BMPs that are required for all facilities that handle preproduction plastic. These mandatory BMPs are included in this General Permit.

[~~15~~231] U.S. EPA. Guidance Manual for Conditional Exclusion from Storm Water Permitting Based On "No Exposure" of Industrial Activities to Storm Water. Web. June 2000. < http://www.epa.gov/npdes/pubs/noxguide.pdf>. [as of January 31, 2014].

The State Water Board has received comments regarding the Water Code requirements for Plastics Facilities to install a containment system for on-site storm drain locations that meet 1mm capture and 1-year 1-hour storm flow requirement standards. As a result, this General Permit includes the option under Water Code section 13367 that allows a plastics facility to propose an alternative BMP or suite of BMPs that can meet the same performance and flow requirements as a 1mm capture and 1-year 1-hour storm flow containment system standards. These alternative BMPs are to be submitted to the Regional Water Board for approval. This alternative is intended to allow the facility to develop BMPs that focus on pollution prevention measures that can perform as well as, or better than, the containment system otherwise required by the statute.

The State Water Board also includes two additional containment system alternatives in this General Permit that are considered to be equivalent to, or better than, the 1mm capture and 1-year 1-hour storm flow requirements:

- An alternative allowing plastic facilities to implement a suite of eight BMPs addressing the majority of potential sources of plastic discharges. This suite of BMPs is based on industry and U.S. EPA recommendations and Water Board experience with storm water inspections, violations, and enforcement cases throughout California.

- An alternative allowing a facility to operate in a manner such that all preproduction plastic materials are used indoors and pose no potential threat for discharge off-site. The facility is required to notify the Regional Water Board of the intent to seek this exemption and of any changes to the facility or operations that may disqualify the facility for the exemption. The exemption may be revoked by the Regional Water Board at any time.

Plastics facilities may use preproduction plastic materials that are less than 1mm in size, or produce materials, byproducts, or waste that is smaller than 1mm in size. These small size materials will pass through the 1mm capture containment system required by Water Code section 13367. Plastics facilities with sub-1mm materials must design a containment system to capture the smallest size material onsite with a 1-year 1-hour storm flow requirement, or propose alternative BMPs for Regional Water Board approval that meet the same requirements.

The remaining BMPs required by Water Code section 13367 are consistent with recommendations for handling and clean-up of preproduction plastics in the American Chemistry Council publication, *Operation Clean Sweep* and U.S. EPA's publication *Plastic Pellets in the Aquatic Environment: Sources and Recommendations*. The State Water Board believes that the entire approach in this General Permit for plastic materials is consistent with Water Code section 13367.

R. Regional Water Board Authorities

The Regional Water Boards retain discretionary authority over many issues that may arise from industrial discharges within their respective regions. This General Permit emphasizes the authority of the Regional Water Boards over specific requirements of this General Permit that do not meet region-specific water quality protection regulatory needs.

S. Special Conditions: Requirements for Dischargers Claiming the "No Discharge" Option in the Notice of Non-Applicability

1. General

Entities that operate facilities generating storm water associated with industrial activities that is not discharged to waters of the United States are not required to obtain General Permit coverage. Entities that have contacted the Water Boards to inquire what is necessary to avoid permit coverage have received inconsistent guidance. This has resulted in regulatory inconsistency and uncertainty as to whether they are in compliance if their industry operates without General Permit coverage. Depending upon how each Regional Water Board handles "No Discharge" claims, some facilities with advanced containment design may be required to obtain General Permit coverage while other facilities with less advanced containment design may be allowed to operate without General Permit coverage. Some stakeholders have complained that this type of regulatory inconsistency puts some facilities at an economically-competitive disadvantage given the costs associated with permit compliance.

U.S. EPA regulations do not provide a design standard, definition, or guidance as to what constitutes "No Discharge." Unlike Conditional Exclusion requirements, U.S. EPA regulations do not require an entity to submit technical justification or certification that a facility does not discharge to waters of the United States (U.S.). Therefore entities have previously been allowed to self-determine that their facility does not discharge to water of the U.S. when using any containment design standard. The State Water Board does not have available information showing that most entities have adequately performed hydraulic calculations to determine the frequency of discharge corresponding to their containment controls or have had these hydraulic calculations reviewed or completed by a California licensed professional engineer. Although U.S. EPA makes clear that an unpermitted discharge to waters of the U.S. is a violation of the CWA, this leaves regulatory agencies with the very difficult task of knowing when any given facility discharges in order to carry-out enforcement actions.

In 1998, the Water Code was amended to require entities who are requested by the Water Boards to obtain General Permit coverage, but that have a valid reason to not obtain General Permit coverage, to submit a Notice of Non-Applicability (NONA). (Wat. Code, § 13399.30, subd. (a)(2)). The NONA covers multiple reasons why an entity is not required to be permitted including (1) facility closure, (2) not the legal owner, (3) incorrect SIC code, (4) eligibility for the Conditional Exclusion (No Exposure Certification), and (5) the facility not discharging to water of the U.S. ("No Discharge"). The previous permit contained definitions, requirements, and guidance that entities may reference to determine whether they are eligible to select any of the first four NONA reasons for not obtaining General Permit coverage. However, neither the previous permit nor the Water Code provide definitions, requirements, and guidance for entities to determine whether they are eligible to indicate "No Discharge" on the NONA as a reason for not obtaining General Permit coverage.

This General Permit addresses and resolves the issues discussed above by establishing consistent, statewide eligibility requirements in Section XX.C for entities submitting NONAs indicating "No Discharge." When requested by the Water Boards to obtain General Permit coverage, entities must meet these "No Discharge" eligibility requirements or obtain General Permit coverage. The Water Boards retain enforcement authority if a facility subsequently discharges.

2. "No Discharge" Eligibility Requirements

   The entity must certify submit in SMARTS a NONA Technical Report signed (wet signature and license number) by a California licensed professional engineer that contains the analysis and details of the containment design supporting the "No Discharge" eligibility determination. Because containment design will require hydraulic calculations, soil permeability analysis, soil stability calculations, appropriate safety factor consideration, and the application of other general engineering principles, state law requires the technical report to be signed (wet signature and license number) by a California licensed professional engineer.

   The State Water Board has selected a containment design target that, as properly applied will result in few, if any, discharges. The facility must either be:

   a. Engineered and constructed to contain all storm water associated with industrial activities from discharging to waters of the United States. (The determination of what is a water of the United States can be complicated, and in certain circumstances, a discharge to groundwater that has a direct hydrologic connection to waters of the United States may constitute a discharge to a water of the United States.) Dischargers must base their information upon maximum historic precipitation event data (or series of events) from the nearest rain gauges as provided by the National Oceanic and Atmospheric Administration's (NOAA) website, or other nearby precipitation data available from other government agencies. At a minimum, Dischargers must ensure that the containment design addresses maximum 1-hour, 24-hour, weekly, monthly, and annual precipitation data for the duration of the exclusion.

      Design storm events are generally specified as a one-time expected hydraulic failure over a reoccurrence of years for a specified storm event. For example, if a design storm standard is a 100 year 24-hour event, then a facility's containment system designed to contain the maximum volume of water would be expected to fall in 24 hours once every 100 years. Design standards vary dependent upon the regulatory program and the level of protection needed. Since California has considerable variations in climate/topography/soil conditions across the state, the "No Discharge" NONA eligibility requirements have been created so that each facility's containment design can incorporate unique site specific circumstances to meet the requirement that discharges will not occur based upon past historical precipitation data. Facilities that are not designed to not meet the "No Discharge" eligibility requirements must obtain General Permit coverage.

   b. Located in basins or other physical locations that are not hydrologically connected to waters of the United States.

The State Water Board considered allowing Entities to review United States Army Corp of Engineer maps to determine, without a California licensed professional engineer, whether their facility location is within a basin and/or other physical location that is not hydrologically connected to waters of the United States. The State Water Board believes that this determination can be difficult in some cases, or is likely to be performed incorrectly. In addition, there may be areas of the state that are not hydrologically connected to waters of the United States, but are not on United States Army Corps of Engineer maps. Therefore, all "No Discharge" Technical Reports must be signed (wet signature and license number) by a California licensed professional engineer.

3. Additional Considerations

The "No Discharge" determination does not cover storm water containment systems that transfer industrial pollutants to groundwater. Entities must determine whether designs that incorporate infiltration may discharge to and contaminate groundwater. If there is a threat to groundwater, Entities must contact the Regional Water Boards prior to construction of infiltration design elements.

Entities that have not eliminated all discharges that are subject to General Permit coverage (NOI Coverage or NEC Coverage) are ineligible to submit NONAs indicating "No Discharge."