

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER R5-2013-0153-01

NPDES NO. CA0083399

WASTE DISCHARGE REQUIREMENTS

CITY OF BAKERSFIELD
AND
COUNTY OF KERN
STORM WATER DISCHARGES FROM
MUNICIPAL SEPARATE STORM SEWER SYSTEM
KERN COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Central Valley Water Board) finds that:

1. The City of Bakersfield and the County of Kern, hereafter jointly referred to as Permittees, submitted a Report of Waste Discharge (ROWD) on 12 March 2007, requesting renewal of waste discharge requirements, National Pollutant Discharge Elimination System (NPDES) Permit CA0083399, area-wide municipal separate storm sewer system (MS4) permit, to discharge storm water runoff from storm drains within their jurisdictions. The ROWD included a Storm Water Management Program, dated 2006 (SWMP). The SWMP is required as part of the application pursuant to 40 CFR 122.26(2)(d)(iv) and is an integral and enforceable component of the MS4 permit.
2. Prior to issuance of this Order, the Permittees were covered under the NPDES area-wide MS4 permit, Waste Discharge Requirements (WDR) Order 5-01-130 (NPDES Permit No. CA0083399), adopted on 14 June 2001.
3. The City of Bakersfield (hereafter City) is defined as a medium municipality (population greater than 100,000) in the 40 Code of Federal Regulations (CFR) section 122.26 (b)(4). As such, the City must obtain an NPDES municipal storm water permit for the area under its jurisdiction.
4. The County of Kern (hereafter County) contains urbanized areas and areas of potential growth, which are enclosed within the limits of the City or surround the City. Due to the proximity of the County's urbanized areas to the City, the physical interconnections to the City's storm sewer system, and the locations of the discharges relative to the City's system, the County is designated as part of the medium MS4 in accordance with 40 CFR 122.26(b)(4)(iii). The urbanized areas of the County that are enclosed within the City, the urbanized areas which surround the City, and the urbanized areas within the City of Bakersfield are hereafter referred to as the **Bakersfield Urbanized Area** and subject to the permit requirements. Attachment A shows the permit coverage area.

5. The **Bakersfield Urbanized Area** is defined by the Census 2010 Urban Area map and covers 138.44 square miles (88,576 acres).
6. The Permittees have jurisdiction over and/or maintenance responsibilities for a storm drainage system in the Bakersfield Urbanized Area. The system includes approximately 2 to 3 miles of major storm drain open channels and approximately 40 miles of major closed conduit conveyances. Approximately 80% of the Bakersfield Urbanized Area discharges storm water to terminal basins. Urban storm water runoff from the remaining 20% of the Bakersfield Urbanized area drains to the Kern River, East Side Canal, Carrier Canal, Stine Canal, and Kern Island Canal. The East Side Canal, Stine Canal, and the Kern Island Canal are owned and operated by the Kern Delta Water District. The Carrier Canal is jointly owned by the City of Bakersfield and the Kern Delta Water District, and operated by the City of Bakersfield. The Kern River and distribution canals are considered to be waters of the United States (waters of the U.S.). Drainage watersheds that drain to water of the U.S. are shown on Attachment B and described on Attachment C. No formal analysis has been done to show the Stine and Kern Island Canals are not hydraulically connected to waters of the U.S., or that water in the canals cannot be diverted back into a water of the U.S. Nonetheless, pursuant to Water Code (WC) section 13050, these two canals are waters of the State. If future analysis finds these canals are not waters of the U.S., discharge to them shall be regulated in a manner similar to discharges to waters of the U.S., but under authority of the WC as discharges to waters of the State.
7. The Permittees' land use authority allows urban developments that may generate pollutants and runoff that could impair receiving water quality and beneficial uses. The Permittees are, therefore, responsible for considering potential storm water impacts when making planning decisions in order to fulfill the Clean Water Act (CWA) requirement to reduce the discharge of pollutants in municipal storm water to the maximum extent practicable (MEP) from new development and redevelopment activities. In addition, the Permittees must exercise their legal authority to ensure that the increased pollutant loads and flows do not impact the beneficial uses of the receiving waters.
8. This Order is not intended to prohibit the inspection for or abatement of vectors by the California Department of Public Health or local vector control agencies in accordance with California Health and Safety Code § 2270 *et seq.* and §116110 *et seq.* Certain Treatment Control Best Management Practices (BMPs) if not properly designed, operated, or maintained may create habitats for vectors (e.g. mosquitos and rodents). This Order expects that the Permittees will closely cooperate and collaborate with local vector control agencies and the California Department of Public Health for the implementation, operation, and maintenance of Treatment Control BMPs in order to minimize the risk to public health from vector borne diseases.
9. There are portions of the City and County that are mainly agricultural, rural, and open space lands. It is not the intent of the federal storm water regulations to regulate storm water discharges from land uses of these types. Therefore, these areas are exempt

from the requirements of this Order unless they are a point source discharge to the Permittees' conveyance system. Discharges from these sources may be subject to TMDL allocations and control programs.

10. When natural vegetated pervious ground cover is converted to impervious surfaces such as paved highways, streets, rooftops, and parking lots, the natural absorption and infiltration abilities of the land are lost. Therefore, runoff leaving a developed urban area is typically greater in runoff volume, velocity, and peak flow rate than pre-development runoff from the same area. Runoff durations can also increase as a result of flood control and other efforts to control peak flow rates. Increased volume, velocity, rate, and duration of runoff can greatly accelerate the erosion of downstream natural channels. Significant declines in the biological integrity and physical habitat of streams and other receiving waters have been found to occur with as little as a 10% conversion from natural to impervious surfaces. The increased runoff characteristics from new development must be controlled to protect against increased erosion of channel beds and banks, sediment pollutant generation, or other impacts to beneficial uses and stream habitat due to increased erosive force. The Permittees have incorporated water quality and watershed protection principles into their planning procedures and policies, such as development of drainage standards that effectively requires new development and significant redevelopment projects in areas without existing storm drain systems to drain to terminal sumps, eliminating storm water discharges and the associated pollutants from entering surface waters.
11. Urban development creates new pollution sources as human population density increases and brings with it proportionately higher levels of car emissions, car maintenance wastes, municipal sewage, pesticides, household hazardous wastes, pet wastes, trash, etc., which can either be washed or directly dumped into the MS4. As a result, the runoff leaving the developed urban area may be significantly greater in pollutant load than the pre-development runoff from the same area.
12. Although dependent on several factors, the risks typically associated with properly managed infiltration of runoff (especially from residential land use areas) are not significant. The risks associated with infiltration can be managed by many techniques, including (1) designing landscape drainage features that promote infiltration of runoff, but do not "inject" runoff (injection bypasses the natural processes of filtering and transformations that occur in the soil); (2) taking reasonable steps to prevent the illegal disposal of wastes; (3) protecting footings and foundations; and (4) ensuring that each drainage feature is adequately maintained in perpetuity.

DISCHARGE CHARACTERISTICS

13. The quality and quantity of MS4 discharges vary considerably because of the effects of hydrology, geology, land use, season, and sequence and duration of precipitation events. Urban storm water runoff may contain pollutants that may lower the quality of receiving waters and adversely impact beneficial uses of the Kern River, East Side

Canal, Carrier Canal, Stine Canal, and Kern Island Canal.

14. Pollutants that may be contained in storm water include, but are not limited to, certain heavy metals; sediments; petroleum hydrocarbons from sources such as used motor oil; microbial pathogens; pesticides; sources of acute and chronic aquatic toxicity; and nutrients that cause or contribute to the depletion of dissolved oxygen and/or toxic conditions in the receiving water. Excessive flow rates of storm water may cause or contribute to downstream erosion and/or excessive sediment discharge and deposition in stream channels.
15. The discharge of wash waters and polluted storm water from industries and businesses is an environmental threat and can also adversely impact public health and safety. The pollutants of concern in such wash waters include food waste, oil and grease, and toxic chemicals. Other storm water/industrial waste programs in California have reported similar observations and have identified illicit discharges from automotive and food service facilities as a major cause of water quality problems.
16. Certain pollutants present in storm water and/or urban runoff may be derived from extraneous sources that Permittees have no or limited jurisdiction over. Examples of such pollutants and their respective sources are: polynuclear aromatic hydrocarbons which are products of internal combustion engine operation; nitrates; bis (2-ethylhexyl) phthalate; pesticides; metals and mercury from wet and dry atmospheric deposition; lead from fuels; copper from brake pad wear; zinc from tire wear; bacteria from natural sources including wildlife; dioxins as products of combustion; and natural-occurring minerals from local geology. However, the implementation of the measures set forth in this Order is intended to reduce the entry of these pollutants into storm water and their discharge to receiving waters to the MEP.
17. The City and County have identified 62 outfalls within their jurisdictions that discharge to the Kern River or one of the canals. The Permittees began monitoring of their storm water discharge as part of their original permit application in 1992/93. Since adoption of their initial permit in June 1994, the Permittees have implemented a storm water monitoring plan that includes wet weather, dry weather, and receiving water monitoring. This data has been reported in the Permittees' annual reports.
18. Central Valley Water Board staff analyzed the data submitted by the Permittees in the Annual Storm Water Pollutant Load Estimation reports submitted from 2006 to 2012 and determined that concentrations of copper and zinc in their storm water discharge may be at levels that require additional management activities and observation to ensure they do not negatively impact water quality. Specifically, the Permittees are required to develop a plan to document how discharges of copper and zinc will be reduced in storm water discharge to surface waters.
19. As measured at the Meadows Field weather station, the Bakersfield area receives an average of less than 6 inches of precipitation per year. The maximum probable precipitation from a 5-year, 24-hour storm event is 1.34 inches. The maximum

probable precipitation from a 100-year, 24-hour storm event is 2.94 inches. The 85th percentile average 24-hour storm event is 0.33 inches.

20. Estimates by the Permittees show that during an average year, the MS4 retains ninety percent of the urban runoff from the permit area in storm water retention basins located through the permit area. The remaining 10% is discharged either directly to a receiving water or is detained in a storm water detention basin and then discharged.

STATUTORY AND REGULATORY CONSIDERATIONS

21. The CWA authorizes the U.S. Environmental Protection Agency (U.S. EPA) to permit a state to serve as the NPDES permitting authority in lieu of the U.S. EPA. The State of California has in-lieu authority for the NPDES program. The Porter-Cologne Water Quality Control Act or Water Code (WC) authorizes the State Water Resources Control Board (State Water Board), through the Regional Water Boards, to regulate and control the discharge of pollutants into waters of the State. On 22 September 1989, the State Water Board entered into a memorandum of agreement with the U.S. EPA to administer the NPDES Program governing discharges to waters of the U.S.
22. This Order does not constitute an unfunded local government mandate subject to subvention under Article XIII B, Section (6) of the California Constitution for several reasons, including, but not limited to, the following. First, this Order implements federally mandated requirements under federal Clean Water Act section 402, subdivision (p)(3)(B). (33 U.S.C. § 1342(p)(3)(B).) This includes federal requirements to effectively prohibit non-storm water discharges, to reduce the discharge of pollutants to the maximum extent practicable, and to include such other provisions as the Administrator or the State determines appropriate for the control of such pollutants. Federal cases have held these provisions require the development of permits and permit provisions on a case-by-case basis to satisfy federal requirements. (Natural Resources Defense Council, Inc. v. U.S. EPA (9th Cir. 1992) 966 F.2d 1292, 1308, fn. 17.) The authority exercised under this Order is not reserved state authority under the Clean Water Act's savings clause (cf. Burbank v. State Water Resources Control Bd. (2005) 35 Cal.4th 613, 627-628 [relying on 33 U.S.C. § 1370, which allows a state to develop requirements which are not "less stringent" than federal requirements]), but instead, is part of a federal mandate to develop pollutant reduction requirements for municipal separate storm sewer systems. To this extent, it is entirely federal authority that forms the legal basis to establish the permit provisions. (See, City of Rancho Cucamonga v. Regional Water Quality Control Bd.-Santa Ana Region (2006) 135 Cal.App.4th 1377, 1389; Building Industry Ass'n of San Diego County v. State Water Resources Control Bd. (2004) 124 Cal.App.4th 866, 882-883.)

Second, the local agency permittees' obligations under this Order are similar to, and in many respects less stringent than, the obligations of non-governmental dischargers who are issued NPDES permits for storm water discharges. With a few inapplicable exceptions, the Clean Water Act regulates the discharge of pollutants from point sources (33 U.S.C. § 1342) and the Porter-Cologne Water Quality Control Act

regulates the discharge of waste (Wat. Code, § 13263), both without regard to the source of the pollutant or waste. As a result, the “costs incurred by local agencies” to protect water quality reflect an overarching regulatory scheme that places similar requirements on governmental and nongovernmental dischargers. (See *County of Los Angeles v. State of California* (1987) 43 Cal.3d 46, 57-58 [finding comprehensive workers compensation scheme did not create a cost for local agencies that was subject to state subvention].)

The Clean Water Act and the Porter-Cologne Water Quality Control Act largely regulate storm water with an even hand, but to the extent there is any relaxation of this even-handed regulation, it is in favor of the local agencies. Except for municipal separate storm sewer systems, the Clean Water Act requires point source dischargers, including discharges of storm water associated with industrial or construction activity, to comply strictly with water quality standards. (33 U.S.C. § 1311(b)(1)(C), *Defenders of Wildlife v. Browner* (1999) 191 F.3d 1159, 1164-1165 [noting that industrial storm water discharges must strictly comply with water quality standards].) As discussed in prior State Water Board decisions, this Order does not require strict compliance with water quality standards. (State Water Board Order WQ 2001-15, p. 7.) The Order, therefore, regulates the discharge of waste in municipal storm water more leniently than the discharge of waste from non-governmental sources.

Third, the local agency permittees have the authority to levy service charges, fees, or assessments sufficient to pay for compliance with this Order. The fact sheet demonstrates that numerous activities contribute to the pollutant loading in the municipal separate storm sewer system. Local agencies can levy service charges, fees, or assessments on these activities, independent of real property ownership. (See, e.g., *Apartment Ass’n of Los Angeles County, Inc. v. City of Los Angeles* (2001) 24 Cal.4th 830, 842 [upholding inspection fees associated with renting property].) The ability of a local agency to defray the cost of a program without raising taxes indicates that a program does not entail a cost subject to subvention. (*County of Fresno v. State of California* (1991) 53 Cal.3d 482, 487-488.)

Fourth, the permittees have requested permit coverage in lieu of compliance with the complete prohibition against the discharge of pollutants contained in federal Clean Water Act section 301, subdivision (a) (33 U.S.C. § 1311(a)) and in lieu of numeric restrictions on their discharges. To the extent, the local agencies have voluntarily availed themselves of the permit, the program is not a state mandate. (*Accord County of San Diego v. State of California* (1997) 15 Cal.4th 68, 107-108.) Likewise, the permittees have voluntarily sought a program-based municipal storm water permit in lieu of a numeric limits approach. (See *City of Abilene v. U.S. EPA* (5th Cir. 2003) 325 F.3d 657, 662-663 [noting that municipalities can choose between a management permit or a permit with numeric limits].) The local agencies’ voluntary decision to file a report of waste discharge proposing a program-based permit is a voluntary decision not subject to subvention. (See *Environmental Defense Center v. U.S. EPA* (9th Cir. 2003) 344 F.3d 832, 845-848.)

Fifth, the local agencies' responsibility for preventing discharges of waste that can create conditions of pollution or nuisance from conveyances that are within their ownership or control under state law predates the enactment of Article XIII B, Section (6) of the California Constitution.

23. The Water Quality Act of 1987 added Section 402(p) to the Clean Water Act (CWA 33 U.S.C. § 1251-1387). This section requires the U.S. EPA to establish regulations setting forth NPDES requirements for storm water discharges in two phases:
- The U.S. EPA Phase I storm water regulations were directed at MS4s serving a population of 100,000 or more, including interconnected systems and storm water discharges associated with industrial activities, including construction activities. The Phase I Final Rule was published on November 16, 1990 (55 *Fed. Reg.* 47990).
 - The U.S. EPA Phase II storm water regulations are directed at storm water discharges not covered in Phase I, including small MS4s (serving a population of less than 100,000), small construction projects (one to five acres), municipal facilities with delayed coverage under the Intermodal Surface Transportation Efficiency Act of 1991, and other discharges for which the U.S. EPA Administrator or the State determines that the storm water discharge contributes to a violation of a water quality standard, or is a significant contributor of pollutants to waters of the U.S. The Phase II Final Rule was published on December 8, 1999 (64 *Fed. Reg.* 68722).
24. This Order specifies requirements necessary for the Permittees to reduce the discharge of pollutants in urban runoff to the maximum extent practicable (MEP).¹ On 11 February 1993, the State Board's Office of Chief Counsel (OCC) issued a memorandum interpreting the meaning of MEP to include effectiveness, regulatory compliance, public acceptance, technical feasibility, and cost. The burden is on the municipality to demonstrate compliance with MEP by showing that a BMP is not technically feasible in the locality or that BMPs costs would exceed any benefit to be derived. However, since MEP is a dynamic performance standard which evolves over time as urban runoff management knowledge increases, the Permittees' storm water programs must continually be assessed and modified to incorporate improved programs, control measures, best management practices, etc., in order to achieve the evolving MEP standard. This continual assessment, revision, and improvement of storm water management program implementation is expected to ultimately achieve compliance with water quality standards.

¹ The technology-based standard established by Congress in CWA section 402(p)(3)(B)(iii) that operators of MS4s must meet. Technology based standards establish the level of pollutant reductions that dischargers must achieve; typically by treatment or by a combination of source control and treatment control BMPs. MEP generally emphasizes pollution prevention and source control BMPs primarily in combination with treatment methods serving as a backup. MEP considers economics and is generally, but not necessarily, less stringent than BAT.

25. This Order is intended to develop, achieve, and implement a timely, comprehensive, cost-effective storm water pollution control program to reduce the discharge of pollutants in storm water to the MEP from the permitted areas in the Bakersfield Urbanized Area subject to the Permittees' jurisdiction.
26. Section 402(p)(3)(B)(ii) of the CWA requires that NPDES permits effectively prohibit non-storm water discharges into MS4s. Federal regulation 40 CFR 122.26(d)(2)(iv)(B)(1) requires control programs to prevent illicit discharges to MS4s and allows certain categories of non-storm water discharges to MS4s provided that the Permittees eliminate such discharges once they are identified as sources of pollutants to waters of the U.S.
27. The Permittees have adopted their own respective storm water ordinances. These ordinances provide the Permittees the authority to protect and enhance the water quality of watercourses, water bodies, and wetlands in the Bakersfield Urbanized Area in a manner pursuant to and consistent with the CWA and the Porter-Cologne Water Quality Control Act.
28. Federal regulations 40 CFR 122.26(d)(2)(iv)(A) and 40 CFR 122.26(d)(2)(iv)(C) require that MS4 permittees implement a program to monitor and control pollutants in discharges to the municipal system from industrial and commercial facilities that contribute a substantial pollutant load to the MS4. Federal regulations require that permittees establish priorities and procedures for inspection of industrial facilities and priority commercial establishments. This Order, consistent with the U.S. EPA policy, specifies minimum expectations between the Central Valley Water Board and the Permittees for the inspection of industrial facilities and priority commercial establishments to control pollutants in storm water discharges (58 Fed. Reg. 61157).
29. The State Water Board has issued two statewide general NPDES permits for storm water discharges: one for storm water from industrial sites [NPDES Permit CAS000001, Order 97-03-DWQ, Waste Discharge Requirements for Discharges of Storm Water Associated with Industrial Activity (Industrial General Permit)] and the other for storm water from construction sites [NPDES Permit CAS000002, No. 2010-0014-DWQ, General Permit for Storm Water Discharges Associated with Construction and Land Disturbing Activities (Construction General Permit)]. The current Industrial General Permit is expired and its replacement is undergoing public review. The current Construction General Permit became effective on 1 July 2010. In addition, the Central Valley Water Board has issued General Permit R5-2013-0074 for dewatering and other low threat discharges, which authorizes such discharges to the MS4s owned and operated by Permittees. This Order requires the Permittees to conduct compliance inspections at industrial and construction sites that discharge to their MS4s. Many of these sites are currently covered under State NPDES General Permits.
30. U.S. EPA conducted a comprehensive program evaluation of the SWMP in November of 2002, an audit of the construction component of the City of Bakersfield's SWMP in November of 2009, and an audit of the illicit discharge control and construction site

planning elements of the SWMP in August of 2012. From the November 2002 evaluation, the auditors found that both the City and the County were not ensuring that private and public construction projects were in compliance with local ordinances and the State Construction General Permit per WDR Order 5-01-130, Provisions D.20, D.21, and D.22. The auditors found the City and the County were not implementing BMPs at municipal facilities and not conducting inspections at industrial facilities. In the November 2009 audit, the auditors found the City was not inspecting private construction projects, not requiring the submittal of Storm Water Pollution Prevention Plans (SWPPP) or reviewing SWPPPs for private projects, not able to provide an inventory of active construction projects, and not issuing any enforcement actions against noncompliant project sites. Furthermore, the City was not adequately conducting and documenting inspections of public projects. The City's lack of construction program implementation did not adequately ensure compliance with the City's local ordinances, the Construction General Permit, or WDR Order 5-01-130. The August 2012 audit found the City and the County were not facilitating public reporting or fully implementing the storm drain stenciling program, as required by WDR Order 5-01-130, Provision D.26 and SWMP Part 9; the City did not have written protocols for dry weather field screening and sampling, as required by Provision D.8 and SWMP Part 11; and the City and County were not ensuring compliance with the Construction General Permit.

31. In response to the 2002 U.S. EPA program evaluation the Permittees submitted an updated SWMP in 2003. The SWMP proposed updates to the procedures the Permittees are using to implement BMPs at municipal facilities, investigate illicit discharges, track inspections, and train inspectors. In response to the 2009 audit, the City of Bakersfield implemented additional practices to comply with WDR Order 5-01-130, Provision D.22. Construction Inspection and Engineering staff attended storm water compliance training and obtained certification as Qualified SWPPP Developers and Practitioners. In response to the 2012 audit, the Permittees have developed a phone hotline and website link to allow the public to report potential storm water issues and this Order requires the Permittees to submit a revised SWMP that will address the additional deficiencies from the 2012 audit.
32. When industrial or construction site discharges occur in violation of local permits and ordinances, the Central Valley Water Board in most cases refers first to the municipality where the discharge occurs for appropriate actions. If the municipality has demonstrated a good faith effort to educate and enforce but remains unsuccessful, the Central Valley Water Board may assist the municipality and conduct a cooperative investigation and/or enforcement effort including enforcement of the applicable statewide General Permit. If the municipality has not demonstrated a good faith enforcement effort, the Central Valley Water Board may initiate enforcement action against both the industrial or construction discharger under the statewide General Permits, as well as against the authorizing municipal Permittee for violations of this Order. Each Permittee must also provide the first level of investigation and mitigation

against illegal discharges from other land uses it has authorized, such as commercial and residential developments.

33. This Order includes requirements to ensure discharges shall not cause or contribute to exceedences of water quality standards that would cause or create a condition of nuisance, pollution, or water quality impairment in receiving waters. These requirements must be addressed through the effective implementation of Best Management Practices (BMPs) to reduce pollutants in storm water.
34. Federal, state, regional, or local entities within the Permittees' boundaries, not currently named in this Order, operate storm drain facilities and/or discharge storm water to the storm drains covered by this Order. The Permittees may lack legal jurisdiction over these entities under applicable state and federal authorities. Consequently, the Central Valley Water Board recognizes that the Permittees should not be held responsible for such facilities and/or discharges. Caltrans is currently designated as such an entity. On 19 September 2012, the State Water Board issued a separate statewide NPDES storm water permit to Caltrans (NPDES Permit CAS000003, Order 2012-0011-DWQ). The Permittees will work cooperatively with Caltrans for the purpose of maintaining mutually beneficial storm water management program coordination, cooperation and communication. The State and the Central Valley Water Board may consider issuing separate NPDES storm water permits to other federal, state, or regional entities operating and discharging within the Permittees' boundaries that may not be subject to direct regulation by the Permittees.
35. The Central Valley Water Board adopted the *Water Quality Control Plan for the Tulare Lake Basin, Second Edition, revised January 2004*, (hereafter Basin Plan). The Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve water quality objectives for all waters of the Basin. This Order implements the Basin Plan.
36. The beneficial uses of the Kern River below the Kern River Powerhouse No. 1, as designated in the Basin Plan, are municipal and domestic supply; agricultural supply; industrial service supply; industrial process supply; hydropower generation; groundwater recharge; water contact recreation; non-contact water recreation; warm freshwater habitat; wildlife habitat; and rare, threatened, or endangered species habitat.
37. Man-made conveyances such as the East Side Canal, Carrier Canal, Stine Canal, and Kern Island Canal do not have specifically designated beneficial uses in in the Tulare Lake Basin Plan. State Water Board Resolution No. 88-63 establishes that all waters, with certain exceptions, shall be considered suitable or potentially suitable for municipal or domestic supply. In addition, the canals, as tributaries to navigable waters, are themselves waters of the U.S. and the quality of water in the canals must be maintained to meet the federal Clean Water Act threshold of "swimmable and fishable." The existing uses of the canals include agricultural supply and groundwater recharge. The beneficial uses of water in the canals are, therefore, municipal and

domestic supply, agricultural supply, groundwater recharge, water contact recreation, non-contact water recreation, and warm freshwater habitat.

38. The beneficial uses of the underlying groundwater beneath the Bakersfield Urbanized Area, as identified in the Basin Plan, are municipal and domestic supply; agricultural supply; industrial service supply; industrial process supply; water contact recreation; non-contact water recreation; and wildlife habitat.
39. Congress has determined that it is not feasible at this time to establish numeric effluent limits for pollutants in storm water discharges from MS4s [Clean Water Act (CWA)² Section 402(p)(3)(B)(iii)³]. In addition, the California Superior Court ruled; “Water quality-based effluent limitations are not required for municipal storm water discharges [33 USC §1342(p)(3)(B)] and [40 CFR §122.44(k)(3)]. For municipal storm water discharges, the Permits must contain best management practices (BMPs), which reduce pollutants to the maximum extent practicable [33 USC §1342(p)(3)(B)]. These Permits do contain these through the Storm Water Management Plan which is incorporated into the Permits by reference.” (San Francisco Baykeeper vs. Regional Water Quality Control Board, San Francisco Bay Region, Case No. 500527, 14 November 2003). Therefore, the effluent limitations in this Order are narrative, and include the requirement to reduce pollutants in storm water discharges to the MEP. In lieu of numeric effluent limitations, this Order requires the implementation of BMPs identified in the Permittees’ SWMP to control and abate the discharge of pollutants in storm water discharges. Implementation of BMPs, compliance with long-term performance standards in accordance with the Permittees’ SWMP and its schedules, and an established maintenance program with enforcement procedures constitutes compliance with the MEP standard.
40. 40 CFR 122.26(d)(2)(iv)(B)(1)⁴ lists several non-storm water flows that are not required to be prohibited unless such discharges are specifically identified by the Phase I MS4

² The U.S. Environmental Protection Agency (EPA) published the regulation entitled “National Pollutant Discharge Elimination System - Regulations for Revision of the Water Pollution Control Program Addressing Storm Water Discharges” (Federal Register, Volume 64, Number 235, pages 68722-68852) on December 8, 1999 as required by Section 402(p) of the Clean Water Act (CWA).

³ CWA Section 402(p)(3)(B)(iii): “...controls to reduce pollutants to the maximum extent practicable, including management practices, control techniques, and system, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants.”

⁴ 40 CFR 122.26(d)(2)(iv)(B)(1) A description of a program, including inspections, to implement and enforce an ordinance, orders or similar means to prevent illicit discharges to the municipal separate storm sewer system; this program description shall address all types of illicit discharges, however the following category of non-storm water discharges or flows shall be addressed where such discharges are identified by the municipality as sources of pollutants to waters of the United States: water line flushing, landscape irrigation, diverted stream flows, rising ground waters, uncontaminated ground water infiltration (as defined at 40 CFR 35.2005(20)) to separate storm sewers, uncontaminated pumped ground water, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation water, springs, water from crawl space pumps, footing drains, lawn watering, individual residential car washing, flows from riparian habitats and wetlands, de-chlorinated swimming pool discharges, and street wash water (program descriptions shall address discharges or flows from fire fighting only where such discharges or flows are identified as significant sources of pollutants to waters of the United States).

Permittees as sources of pollutants to waters of the U.S.

41. The State Water Board convened a Storm Water Panel (Blue Ribbon Panel) of experts to address the issue of numeric effluent limits⁵. The study also concluded that it is not feasible at this time to set enforceable numeric effluent criteria for storm water and non-storm water discharges from MS4s.
42. The U.S. EPA published an 'Interim Permitting Approach for Water Quality-Based Effluent Limitations in Storm Water Permits' on August 26, 1996 (61 Fed. Reg. 43761). This policy discusses the appropriate kinds of water quality-based effluent limitations to be included in NPDES storm water permits to provide for the attainment of water quality standards.
43. On 12 March 2001, the U.S. Court of Appeals ruled that it is necessary to obtain an NPDES permit for application of aquatic pesticides to waterways [Headwaters, Inc. vs. Talent Irrigation District, 243 F.3d. 526 (Ninth Cir., 2001)]. The U.S. EPA issued a Final Rule on 17 October 2006, that exempts the application of a pesticide to or over, including near, waters of the U.S. if conducted consistent with all relevant requirements under the Federal Insecticide and Fungicide Rodenticide Act (FIFRA), from an NPDES permit under the Clean Water Act in the following two circumstances: (a) the application of pesticides directly to waters of the U.S. in order to control pests,⁶ and (b) the application of pesticides to control pests that are present over waters of the U.S., including near such waters,⁷ that results in a portion of the pesticides being deposited to waters of the U.S. (40 CFR 122.3(h)). On 7 January 2009, the Sixth Circuit Court of Appeals vacated U.S. EPA's Final Rule and granted a two-year stay of the effect of the decision until 9 April 2011 in order to provide agencies time to develop, propose, and issue NPDES general permits for pesticide applications covered by the ruling. Subsequently, U.S. EPA was granted an extension of the stay until 31 October 2011. The State Water Board has adopted and is adopting NPDES general permits for various types of pesticide applications.
44. On 17 June 1999, the State Water Board adopted Order WQ 99-05 (SBO 99-05), a precedent setting-decision, which identifies acceptable receiving water limitations language to be included in municipal storm water permits issued by the State and the regional water Boards. The receiving water limitations included herein are consistent with the State Water Board Order, U.S. EPA policy, and the U.S. Court of Appeals decision in *Defenders of Wildlife v. Browner* (Ninth Cir., 1999). The State Water

⁵ Recommendations of the Blue Ribbon Panel were finalized as *The Feasibility of Numeric Effluent Limits Applicable to Discharges of Storm Water Associated with Municipal, Industrial and Construction Activities*, dated 19 June 2006.

⁶ Water Quality Order No. 2004-0008-DWQ, Statewide General National Pollutant Discharge Elimination System Permit for Discharges of Aquatic Pesticides to Surface Waters of the United States for Victor Control, General Permit No. CAG990004

⁷ Water Quality Order No. 2004-0008-DWQ, Statewide General National Pollutant Discharge Elimination System Permit for Discharges of Aquatic Pesticides for Aquatic Weed Control in Waters of the United States, General Permit No. CAG990005

Board's OCC has determined that the federal court decision did not conflict with SBO 99-05 (memorandum dated October 14, 1999).

45. Federal regulation 40 CFR 122.42(c)(7) requires the Permittees to submit an annual report that identifies water quality improvements or degradation.
46. The action to adopt an NPDES permit is exempt from the provisions of Chapter 3 of the California Environmental Quality Act (Public Resources Code, Section 21100, et. seq.) in accordance with Section 13389 of the Water Code.
47. This Order serves as an NPDES permit, pursuant to Section 402 of the CWA, and amendments thereto, and shall take effect 50 days from the date of hearing, provided that U.S. EPA has no objections.
48. This Order does not authorize any take of endangered species. To ensure that endangered species issues have been raised to the responsible agencies, the Central Valley Water Board notified the U.S. Fish and Wildlife Service, National Marine Fisheries Service, and the California Department of Fish and Wildlife of Central Valley Water Board's consideration of this Order.

STORM WATER MANAGEMENT PROGRAM

49. The 12 March 2007 Report of Waste Discharge (ROWD) included a draft revised SWMP dated 2006, a template for a construction storm water pollution prevention plan (SWPPP), and a model SWPPP for Industrial Activities. The ROWD also included information for the Order reapplication, including proposed changes to the SWMP and monitoring programs.
50. Federal regulations at 40 CFR 122.26(d)(2)(iv) require the Permittees to submit a SWMP to reduce the discharge of pollutants in storm water to the MEP, and to effectively prohibit non-storm water discharges into municipal storm drain systems within the Permittees' jurisdictions during the 5-year duration of the permit. During the third term permit period, the Permittees shall continue to demonstrate substantial compliance with their respective SWMP and this Order through the information and data supplied in the Annual Reports. The SWMP shall remain in effect, as an integral and enforceable component of this Order, until revised and approved by the Central Valley Water Board. If there are conflicts between the SWMP and this Order, then the Order supercedes the SWMP.
51. This Order requires evaluation of water quality impacts of storm water discharges from industrial and construction sites, existing urbanized areas, and new developments. This Order also requires implementation and evaluation of the SWMP and related programs to reduce the discharge of pollutants in storm water runoff to MEP and to improve water quality and protect beneficial uses.

52. Implementation of the SWMP shall result in:
- a. Identification and control those pollutants in urban runoff that pose significant threats to the waters of the State and waters of the U.S. and their beneficial uses;
 - b. Compliance with the federal regulations to eliminate or control to the MEP the discharge of pollutants from urban runoff associated with the storm drain system;
 - c. Achievement of water quality standards;
 - d. Development of a cost-effective program which focuses on pollution prevention of urban storm water;
 - e. Implementation of effective alternative solutions where prevention is not a practical solution for a significant problem; and
 - f. Coordination of control measures with other agencies.
53. The draft revised SWMP (dated June 2006) submitted in the ROWD largely followed requirements in 40 CFR 122.26 and contained the following program elements:
- a. Maintenance of Structural Controls
 - b. Master Plan to Develop, Implement, and Enforce Controls for New Development and Significant Redevelopment
 - c. Operation and Maintenance of Roads, Streets, and Highways
 - d. Assessment of Existing and Proposed Flood Management Projects
 - e. Controls for Landfills and Other Treatment, Storage or Disposal Facilities
 - f. Controls for Pesticides, Herbicides, and Fertilizer
 - g. Illicit Discharge Controls
 - h. Spill Prevention, Containment, and Response Procedures
 - i. Illegal Dumping Controls
 - j. Leaking Sanitary Sewage Controls
 - k. Storm Drain System Inspections and Control Measures
 - l. Monitoring Program for Industrial Activities
 - m. Site Planning Procedures
 - n. Structural and Non-Structural BMPs
 - o. Identifying Site Inspection Priorities and Enforcing Control Measures
 - p. Education and Training for Construction Site Operators
54. Since the publication of the storm water Phase II regulations in 1999, most municipal storm water programs have been organized to follow the six minimum control measures (e.g., public education, public involvement, illicit discharge detection and elimination, construction, post-construction, and municipal maintenance). Phase I municipal storm water programs include control measures for industrial and commercial facilities, program management, and monitoring/evaluation. The Permittees' proposed June 2006 SWMP addresses many of these measures; however, it does not address program management and does not fully address measures such as public education, post-construction, and industrial and commercial facilities. To ensure all major control measures are addressed and to provide consistency with other

municipal storm water programs (including guidance from the California Stormwater Quality Association), the Permittees' SWMP will be revised to include the following:

- a. Program Management
 - i. Legal Authority
 - ii. Fiscal Analysis

- b. Core Program
 - i. Construction
 - ii. Industrial and Commercial
 - iii. Municipal Operations
 - iv. Illicit Connections/Illicit Discharges
 - v. Public Outreach
 - vi. Planning and Land Development (Development Standards)
 - vii. Monitoring Program
 - viii. Water Quality Based Program
 - ix. Program Effectiveness Assessment and Reporting

55. The Permittees are required to submit a revised SWMP by **< 9 months after the adoption of the third term permit>**. The existing SWMP fulfills the Central Valley Water Board's permit application requirements subject to the condition that it will be improved and revised in accordance with the provisions of this Order. The revised SWMP will describe the framework for management of storm water discharges during the term of this Order. The revised SWMP will also describe the goals and objectives; legal authorities; source identification process; funding sources; fiscal analysis; assessment controls; BMPs evaluation and improvement process effectiveness assessment strategy; and monitoring plan of the Permittees' storm water management program. The revised SWMP will include program elements and control measures that each Permittee will implement to reduce the discharge of pollutants in storm water to the MEP, and to effectively prohibit non-storm water discharges into MS4s and watercourses within each Permittees' jurisdiction. The various components of the revised SWMP, taken as a whole rather than individually, are expected to reduce pollutants in storm water and urban runoff to the MEP.
56. The Permittees' revised SWMP will contain control measures that identify the specific BMPs that each Permittee will implement to reduce the discharge of pollutants from their respective MS4s to the MEP. The SWMP will also include measurable goals for each Control Measure to establish the level of effort required to comply with this Order and the federal MEP standard and an implementation schedule to identify when certain activities must be completed. Each BMP control program will also identify effectiveness assessments that the Permittees will utilize to ensure the program is meeting the desired objectives and that the resources expended are providing commensurate benefits and are protective of water quality.
57. On 15 August 2012, the Permittees submitted to the Central Valley Water Board a City-County Agreement No. 12-105 (Agreement) written to formalize the partnership

between Kern County and the City of Bakersfield in the control of pollutants from one portion of the shared MS4 to another portion of the storm sewer system. This Agreement met the requirements under WDR Order 5-01-130, Provision D.9. This Agreement expires on 1 July 2018. This Order requires the Permittees to provide an evaluation report regarding whether the current Agreement contains sufficient enforcement tools and accurately reflects the actual working relationships between the Permittees and to update the Agreement, as necessary, to ensure implementation of the SWMP and Monitoring Programs.

58. The State Water Board established California's antidegradation policy in State Water Board Resolution 68-16. Resolution 68-16 incorporates the federal antidegradation policy (40 CFR 131.12) where the federal policy applies under federal law. The proposed discharge complies with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution 68-16. Resolution 68-16 requires in part:
 - a. High quality waters be maintained until it has been demonstrated that any change will be consistent with maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial use of such water and will not result in water quality less than that prescribed in the policies; and
 - b. Any activity, which produces or may produce a waste or increased volume or concentration of waste, and which discharges or proposes to discharge to existing high quality waters will be required to meet waste discharge requirements which will result in the best practicable treatment or control of the discharge necessary to assure that (a) a pollution or nuisance will not occur and (b) the highest water quality consistent with maximum benefit to the people of the State will be maintained.
59. Storm water runoff can include such pollutants as sediment, fertilizers/nutrients, pathogens, hydrocarbons, and metals. Beginning in 1994, the Permittees have conducted dry weather and wet weather receiving water monitoring to determine the current effect of storm water and non-storm water discharges from the Bakersfield Urbanized Area on Kern River water quality. Receiving water monitoring results are included in the Fact Sheet. As shown by the monitoring results, there is no significant difference between the upstream and downstream concentration levels for the sampled constituents, indicating minimal impact to Kern River water quality from the MS4 storm water discharge.
60. There is a need in the Bakersfield Metropolitan Area to accommodate growth. The Central Valley Water Board does not have the jurisdiction to control growth in the region, but is required to assure that the receiving waters are adequately protected as a result of any increased urban discharges due to growth. The Bakersfield Urban Area has continued to develop since adoption of the previous permit. The proposed Order allows the expansion of service necessary to accommodate housing and economic expansion in the area and is considered to be a benefit to the people of the State.

61. The Permittees' development standards require that all new development within the Bakersfield Urban Area that cannot be served by the existing storm sewer system include retention basins to contain and infiltrate runoff from the development. Any development or redevelopment in areas currently served by the existing storm sewer system requires installation of detention basins sized so runoff from the newly developed area does not exceed the capacity of the drainage system. Detention basins allow for sediment to settle and minimize sediment and pollutants entering waters of the U.S. The development standards ensure any increase in discharge that results from continued urban development will result in minimal degradation of waters of the State and navigable waters of the United States. The development standards for new development and re-development, along with the other requirements in this Order represent best practicable treatment or control.
62. As demonstrated by receiving water monitoring described in Finding 59, discharge of storm water to the Kern River does not adversely change the surface water quality and does not unreasonably threaten present and future anticipated beneficial uses or results in water quality that exceeds water quality objectives set forth in the Basin Plan.
63. Economic prosperity of valley communities is of maximum benefit to the people of the State. As described in Finding 60, the proposed Order allows the expansion of service necessary to accommodate housing and economic expansion in the area
64. This Order requires continued monitoring to evaluate potential surface water impacts from the discharge and to confirm that the best practicable treatment or control measures are sufficiently protective of present and future anticipated beneficial uses.
65. The discharge and potential for surface water degradation allowed in this Order are consistent with the Antidegradation Policy since: (a) the Order requires best practicable treatment or control measures to minimize degradation; (b) the minimal degradation allowed by this Order will not unreasonably affect present and anticipated beneficial uses of surface waters, or result in water quality less than water quality objectives; and (c) the limited degradation is of maximum benefit to the people of the State.

DEVELOPMENT STANDARDS

66. On 5 October 2000, the State Water Board adopted Order WQ 2000-11, a precedent setting decision concerning the use of Standard Urban Storm Water Mitigation Plans (SUSMP) in municipal storm water permits for new developments and significant redevelopments. The State Water Board recognized that the decision includes significant legal or policy determinations that are likely to recur (Gov. Code §11425.60). Due to the precedent setting nature of Order WQ 2000-11, the Central Valley Water Board's MS4 permits must be consistent with applicable portions of the State Water Board's decision and include SUSMP.
67. Since the 1980, the Permittees have required new and redevelopment projects in areas not served by existing storm sewers to contain and infiltrate storm water runoff in

detention basins. Kern County requires basins be sized to retain the Intermediate Storm Design Discharge 5-day storm event, which is equivalent to the 10-year, 24-hour storm times a factor of 1.44. The City of Bakersfield requires basins to retain a 100-year, 24-hour storm event, draining by percolation or evaporation within 7 days.

68. Several of the MS4 permits for areas around the State that are on their second and third terms contain or have given consideration to Standard Urban Storm Water Mitigation Plans (SUSMPs) for specific categories of new development and redevelopment. In general, the SUSMPs require that 85% of the runoff from the subject sites be infiltrated or treated and recommend or require other BMPs. The State Water Board has found that the provisions in the SUSMPs constitute MEP. As summarized in the Fact Sheet, the MS4 captures approximately 90% of the runoff from all urban land uses, providing a substantially broader coverage than that created by the SUSMPs. Additionally, many of the BMPs included in the SUSMPs are already addressed in the Discharger's SWMP.
69. The Permittees submitted to the Central Valley Water Board a technical report comparing the new development and redevelopment requirements in the existing SWMP with the Development Standards (SUSMP) effective at that time. This report met the requirements under WDR Order 5-01-030, Provision D.4., and demonstrated that the existing new development and redevelopment requirements met the requirements of the SUSMP applicable at that time.
70. Federal regulation 40 CFR 131.10(a) prohibits states from designating waste transport or waste assimilation as a use for any water of the United States. Authorizing the construction of a storm water/urban runoff treatment facility in a jurisdictional water body would be tantamount to accepting waste assimilation as an appropriate use for that water body. Furthermore, the construction and operation of a pollution control facility in a water body can impact the physical, chemical, and biological integrity as well as the beneficial uses of the water body. Therefore, storm water treatment and/or mitigation in accordance with Development Standards and any other requirements of this Order must occur prior to the discharge of storm water into a water of the United States.
71. Low Impact Development (LID) is a storm water management strategy concerned with maintaining or restoring the natural hydrologic functions of a site to achieve natural resource protection objectives and fulfill environmental regulatory requirements. LID employs a variety of natural and built features that reduce the rate of runoff, filter out its pollutants, and facilitate the infiltration of water into the ground. By reducing water pollution and increasing groundwater recharge, LID helps to improve the quality of receiving surface waters and stabilize the flow rates of nearby streams. Therefore, LID design concepts should be promoted for new developments and significant redevelopments.
72. Hydromodification is the alteration of the natural flow of water, and often takes the form of channelizing former stream or riverbeds. When development projects that modify

hydrology are carried out without protecting soil and water resources, a variety of problems can result, including: excess sediment flowing into our watersheds; downstream erosion; disruption of natural drainage; irregular stream flows; and elevated water temperatures. Due to the flat topography associated with the Bakersfield Urbanized Area, low annual rainfall, and the Permittees use of regional detention/retention basins, discharges from the MS4 do not cause hydromodification issues in the receiving waters.

73. Studies indicate that facilities with paved surfaces subject to frequent motor vehicle traffic (such as parking lots and fast food restaurants), or facilities that perform vehicle repair, maintenance, or fueling (automotive service facilities) are potential sources of pollutants of concern in storm water. [References: Pitt et al., Urban Storm Water Toxic Pollutants: Assessment, Sources, and Treatability, Water Environment Res., 67, 260 (1995); Results of Retail Gas Outlet and Commercial Parking Lot Storm Water Runoff Study, Western States Petroleum Association and American Petroleum Institute, (1994); Action Plan Demonstration Project, Demonstration of Gasoline Fueling Station Best Management Practices, Final Report, County of Sacramento (1993); Source Characterization, R. Pitt, In Innovative Urban Wet-Weather Flow Management Systems (2000) Technomic Press, Field, R et al. editors; Characteristics of Parking Lot Runoff Produced by Simulated Rainfall, , L.L. Tiefenthaler et al. Technical Report 343, Southern California Coastal Water Research Project (2001)]
74. Retail Gasoline Outlets (RGOs) are significant sources of pollutants in urban runoff. RGOs are points of convergence for motor vehicles for automotive related services such as repair, refueling, tire inflation, and radiator fill-up and consequently produce significantly higher loadings of hydrocarbons and trace metals (including copper and zinc) than other urban areas. To meet MEP, source control, and treatment control BMPs are needed at RGOs that meet the following criteria: (a) 5,000 square feet or more. Due to the potential threat to storm water quality from RGOs, Development Standards for RGOs are included in this Order.
75. Each Permittee is individually responsible for adopting and enforcing local ordinances necessary to implement effective BMPs to prevent or reduce pollutants in storm water, and for providing funds for capital, operation, and maintenance expenditures necessary to implement such BMPs for the storm drain system that it owns and/or operates. Enforcement actions concerning this Order will, whenever necessary, be pursued only against the individual Permittee responsible for specific violations of this Order.

IMPAIRED WATER BODIES

76. Section 303(d)(1)(A) of the CWA requires that "Each state shall identify those waters within its boundaries for which the effluent limitations...are not stringent enough to implement any water quality standard (WQS) applicable to such waters." The CWA also requires states to establish a priority ranking of impaired waterbodies known as Water Quality Limited Segments and to establish Total Maximum Daily Loads (TMDLs)

for such waters. This priority list of impaired waterbodies is called the Section 303(d) List.

77. CWA Section 303(d) and 40 CFR 130.7 require states to list water quality-impaired water bodies and pollutants of concern, and develop Total Maximum Daily Loads (TMDLs). A TMDL is a quantitative assessment of the total pollutant load that can be discharged from all sources each day while still meeting water quality objectives. The Central Valley Water Board is currently in the process of developing TMDLs for listed water bodies within the Region. Prior to TMDL's being adopted and approved, Permittees must implement actions and/or assessments to address their contribution to the water quality impairments. Once the Central Valley Water Board and U.S. EPA approve TMDLs, this Order may be reopened to incorporate provisions consistent with waste load allocations established under the TMDLs.
78. The Central Valley Water Board has not identified any impaired waterbodies nor established TMDLs for the Kern River and distribution canals that receive discharges from the Permittees.
79. The Water Code allows the Central Valley Water Board to require dischargers submit technical and monitoring reports where the burden of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. The Central Valley Water Board may require the monitoring and technical reports that are identified as necessary in the Findings above specifically in this Order or in a separate Order under authority of the Water Code.

PUBLIC PROCESS

80. The Central Valley Water Board has notified the Permittees and interested parties of its intent to prescribe waste discharge requirements for this discharge. These parties have been given an opportunity to address the Central Valley Water Board at a public hearing and an opportunity to submit their written views and recommendations to the Central Valley Water Board.
81. The Central Valley Water Board has considered the information in the attached Fact Sheet in developing the Findings of this Order. The attached Fact Sheet is part of this Order.
82. The Central Valley Water Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED that WDR Order 5-01-130 is rescinded, and that the Permittees, their agents, successors and assigns, in order to meet the provisions contained in Division 7 of the Water Code and regulations adopted thereunder, and the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, shall comply with the following:

A. Discharge Prohibitions – Storm Water Discharges

1. Discharges from the MS4 in a manner causing, or threatening to cause, a condition of pollution, contamination, or nuisance as defined in Section 13050 of the Water Code are prohibited.
2. Discharges from the MS4 which cause or contribute to exceedance of water quality standards (designated beneficial uses in the Basin Plan and the water quality objectives developed to protect those uses) for surface water or groundwater, are prohibited.
3. Discharges from the MS4 containing pollutants, which have not been reduced to the MEP, are prohibited.

B. Discharge Prohibitions – Non-Storm Water Discharges

1. Each Permittee shall have and implement the legal authority necessary to effectively prohibit all types of non-storm water discharges into its MS4 unless such discharges are either authorized by a separate NPDES permit; or not prohibited in accordance with this Order.
2. Pursuant to 40 CFR 122.26(d)(2)(iv)(B)(1), the following categories of non-storm water discharges need only be prohibited from entering the MS4 if such categories of discharges are identified by the Permittees as a source of pollutants to waters of the U.S.:
 - a. Diverted stream flows;
 - b. Rising groundwater;
 - c. Uncontaminated groundwater infiltration as defined by 40 CFR 35.2005(b)(20);
 - d. Uncontaminated pumped groundwater;
 - e. Foundation drains;
 - f. Springs;
 - g. Water from crawl space pumps;
 - h. Footing drains;
 - i. Air conditioning condensation;
 - j. Flows from riparian habitats and wetlands;
 - k. Water line and hydrant flushing;
 - l. Landscape irrigation;
 - m. Discharges from potable water sources other than water main breaks;
 - n. Irrigation water;
 - o. Individual residential car washing;
 - p. De-chlorinated swimming pool discharges;
 - q. Lawn watering; and
 - r. Street wash water.

3. When a non-storm water discharge category above is identified as a source of pollutants to waters of the U.S., the Permittees shall either:
 - a. Prohibit the discharge category from entering its MS4s; or
 - b. Not prohibit the discharge category and implement, or require the responsible party(ies) to implement, BMPs which will reduce pollutants to the MEP; and
 - c. Submit the following information to the Central Valley Water Board as part of the Annual Report:
 - i. The non-storm water discharge category listed above that the Permittee elects not to prohibit; and
 - ii. The BMPs for each discharge category listed above that the Permittee will implement, or require the responsible party(ies) to implement, to prevent or reduce pollutants to the MEP.
4. Emergency fire-fighting flows (i.e., flows necessary for the protection of life or property) do not require immediate implementation of BMPs and are not prohibited. However, each Permittee should coordinate with other agencies to develop a response plan to minimize the impact of fire-fighting flows to the environment. BMPs must be implemented to reduce pollutants from non-emergency fire-fighting flows (i.e., flows from controlled or practice blazes) identified by the Permittees to be significant sources of pollutants to waters of the State. The response plan and BMPs shall be updated as needed and incorporated into the SWMP.
5. Each Permittee shall examine all dry weather analytical monitoring results collected in accordance with the Monitoring and Reporting Program of this Order to identify water quality problems that may be the result of any non-storm water discharge, including any non-prohibited discharge category(ies). Follow-up investigations shall be conducted as necessary to identify and control any non-storm water discharges that are sources of pollutants. Non-prohibited discharges listed above containing pollutants that cannot be reduced to the MEP by the implementation of BMPs shall be prohibited on a categorical or case-by-case basis.

C. Receiving Water Limitations

1. Receiving water limitations are site-specific interpretations of water quality standards from applicable water quality control plans. As such they are required as part of the permit. However, a receiving water condition not in conformance with the limitation is not necessarily a violation of this Order. The Central Valley Water Board may require an investigation to determine cause and culpability prior

to asserting a violation has occurred. Discharges from MS4s shall not cause the following in receiving waters:

- a. Concentrations of dissolved oxygen to fall below 5.0 mg/l.
- b. Oils, greases, waxes, or other materials to form a visible film or coating on the water surface or on the stream bottom.
- c. Oils, greases, waxes, floating material (liquids, solids, foams, and scums) or suspended material to create a nuisance or adversely affect beneficial uses.
- d. Aesthetically undesirable discoloration.
- e. Fungi, slimes, or other objectionable growths.
- f. Waters shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses. Increases in turbidity attributable to controllable water quality factors shall not exceed the following limits:
 - i. Where natural turbidity is between 0 and 5 NTUs, increases shall not exceed 1 NTU.
 - ii. Where natural turbidity is between 5 and 50 NTUs, increases shall not exceed 20 percent.
 - iii. Where natural turbidity is equal to or between 50 and 100 NTUs, increases shall not exceed 10 NTUs.
 - iv. Where natural turbidity is greater than 100 NTUs, increases shall not exceed 10 percent.
- g. The normal ambient pH to fall below 6.5, exceed 8.3, or change by more than 0.3 units from normal ambient pH.
- h. Deposition of material that causes nuisance or adversely affects beneficial uses.
- i. Taste or odor-producing substances to impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin or to cause nuisance or adversely affect beneficial uses.
- j. Radionuclides to be present in concentrations that exceed maximum contaminant levels specified in the California Code of Regulations, Title 22; that harm human, plant, animal or aquatic life; or that result in the accumulation of Radionuclides in the food web to an extent that presents a hazard to human, plant, animal, or aquatic life.

- k. Aquatic communities and populations, including vertebrate, invertebrate, and plant species, to be degraded.
 - l. Toxic pollutants to be present in the water column, sediments, or biota in concentrations that adversely affect beneficial uses; that produce detrimental response in human, plant, animal, or aquatic life; or that bio accumulate in aquatic resources at levels which are harmful to human health.
 - m. Pathogen/Bacteria concentrations to be present that exceed criteria or threaten public health. The fecal coliform concentration, based on a minimum of not less than five samples for any 30-day period, to exceed a geometric mean of 200 MPN/100 mL, nor more than ten percent of the total number of fecal coliform samples taken during any 30-day period to exceed 400 MPN/100 mL.
 - n. Violation of any applicable water quality standard for receiving waters adopted by the Central Valley Water Board or the State Water Board pursuant to the CWA and regulations adopted there under.
2. The discharge shall not cause or contribute to an exceedance of any applicable water quality standards.
 3. The Permittees shall comply with Discharge Prohibition A.2 and Receiving Water Limitations C.1 and C.2 through timely implementation of control measures and other actions to reduce pollutants in the discharges in accordance with the SWMP and other requirements of this Order, including any modifications. The SWMP shall be designed to achieve compliance with Receiving Water Limitations C.1 and C.2. If exceedance(s) of water quality objectives or water quality standards (collectively, WQS) persist notwithstanding implementation of the SWMP and other requirements of this Order, the Permittees shall assure compliance with Discharge Prohibition A.2 and Receiving Water Limitations C.1 and C.2 by complying with the following procedure:
 - a. Upon a determination by either the Permittees or Central Valley Water Board that discharges are causing or contributing to an exceedance of an applicable WQS, the Permittees shall promptly notify and thereafter submit a report to the Executive Officer that describes BMPs that are currently being implemented and additional BMPs that will be implemented to prevent or reduce any pollutants that are causing or contributing to the exceedance of WQS. This Report of Water Quality Exceedance (RWQE) shall be incorporated in the Annual Report unless the Central Valley Water Board directs an earlier submittal. The RWQE shall include proposed revisions to the SWMP and an implementation schedule containing milestones and performance standards for new or improved BMPs, if applicable. The RWQE shall also include a monitoring program and the rationale for new or improved BMPs, including a discussion of expected pollutant reductions and how implementation of

additional BMPs will prevent future exceedance of WQSs. The Central Valley Water Board may require modifications to the RWQE.

- b. The Permittees shall submit any modifications to the RWQE required by the Central Valley Water Board within **30 days** of receipt of all data from analytical laboratories.
- c. Within **30 days** following approval of the RWQE by the Executive Officer, the Permittees shall revise the SWMP and monitoring program to incorporate the approved modified BMPs that have been and will be implemented, implementation schedule, and any additional monitoring required.
- d. The Permittees shall implement the revised SWMP and monitoring program in accordance with the approved schedule.

If the Permittees have complied with the procedures set forth above and are implementing the revised SWMP, the Permittees do not have to repeat the same procedure for continuing or recurring exceedances of the same receiving water limitations unless directed by the Executive Officer to develop additional BMPs.

D. Provisions

1. Within its geographic jurisdiction, each Permittee shall:
 - a. Comply with the requirements of this Order, the SWMP, and any modifications to the SWMP;
 - b. Coordinate among its internal departments and agencies, as appropriate, to facilitate the implementation of the requirements of the SWMP applicable to such Permittee in an efficient and cost effective manner;
 - c. Participate in intra-agency coordination (e.g. Public Works, Planning, Building, Fire Department, Code Enforcement, Public Health) necessary to successfully implement the provisions of this Order and the SWMP.
 - d. As part of the Annual Report and Annual Work Plan, the Permittees shall jointly prepare an annual fiscal analysis identifying the expenditures made during the Annual Report reporting period and projecting the planned future expenditures for the storm water management program. The analysis shall include a summary that identifies the storm water budget for both the previous year and estimates expenditures for the upcoming year using estimated percentages and written explanations where necessary, for the specific categories noted below:
 - i. Program Management (administrative costs)
 - ii. SWMP Development
 - a) Construction Program

- b) Commercial and Industrial Program
 - c) Municipal Operations and Facilities Program
 - Maintenance of Structural BMPs and Treatment Control BMPs
 - d) Illicit Discharge and Detection Elimination Program
 - e) Public Involvement and Education Program
 - f) Planning and Land Development Program
-
- iii. Monitoring Program
 - iv. Water Quality Based Programs
 - v. Training
 - vi. Other Services and Expenses
 - vii. Performance and Effectiveness Evaluations

STORM WATER MANAGEMENT PROGRAM

2. The SWMP is required as part of the application pursuant to 40 CFR 122.26(2)(d)(iv); therefore, it is an integral and enforceable component of this Order.

By **(nine months after the Order is adopted)** the Permittees shall modify the SWMP to address the requirements of this Order, including but not limited to the Provisions below, and submit a revised SWMP for public review and comment, and Central Valley Water Board approval. New or revised BMPs may be based upon special studies or other activities conducted by the Permittees, literature review, or special studies conducted by other programs or dischargers. The SWMP shall contain the rationale for any new or revised BMPs and may include a discussion of baseline conditions, expected reductions in mass loading, and methods to be used to verify that BMPs have been successfully implemented. The SWMP shall include an implementation schedule containing identifiable milestones, detailed performance standards, and a compliance monitoring and reporting program.

The performance standards shall be used as assessment tools to gauge the success of the program in achieving measurable benefits and improving water quality. The Permittees shall incorporate newly developed or updated BMPs and assessment tools/performance standards into applicable annual revisions to the SWMP and adhere to implementation of the new/revised BMPs. The approved SWMP shall serve as the framework for identification, assignment, and implementation of BMPs. Each Permittee shall implement or require implementation of BMPs in the approved SWMP to ensure that pollutant discharges from its MS4s are prevented or reduced to the MEP.

Each Permittee shall implement a SWMP that contains the following components:

- a. Program Management
 - i. Annual Work Plan
 - ii. Annual Reporting
 - iii. Departmental Coordination
 - iv. Training
 - v. Legal Authority
 - vi. Fiscal Analysis

- b. Core Programs
 - i. Construction Program
 - ii. Commercial and Industrial Program
 - iii. Municipal Operations Program
 - iv. Illicit Connection and Detection Program
 - v. Public Involvement and Education Program (Public Outreach)
 - vi. Planning and Land Development Program
 - vii. Storm Water Quality Monitoring Program
 - viii. Program Effectiveness Assessment and Reporting Program

PROGRAM MANAGEMENT

3. The Program Management component of the SWMP shall involve ensuring that all elements of the SWMP are implemented on schedule and all requirements of this Order are complied with.

SWMP Implementation: Each Permittee shall continue implementation of their current SWMP until such time that the SWMP has been modified to be consistent with this Order and approved by the Central Valley Water Board. Once approved, the Permittees shall implement the modified SWMP consistent with the schedule specified within this Order. The SWMP, with modifications, revisions, or amendments as may be approved by the Executive Officer or Central Valley Water Board, is an enforceable component of this Order.

SWMP Modification: The Permittees' SWMP may need to be modified, revised, or amended from time to time to respond to a change in conditions and to incorporate more effective approaches to pollutant control. Provisions of this Order require review and/or revision of the certain components of the Permittees' SWMP. Proposed SWMP revisions will be part of the annual review process and incorporated in the Annual Report. In addition, the Permittees shall revise their SWMP to comply with regional or watershed-specific requirements, and/or waste load allocations developed and approved pursuant to the process for the designation and implementation of TMDLs for impaired water bodies, and/or amendments to the Basin Plan when the amendments become effective. A 30-day public notice and

comment period shall apply to all proposed significant revisions to the SWMP. Significant SWMP revisions shall be brought before the Central Valley Water Board for review and approval. Minor SWMP revisions may be approved by the Executive Officer.

- a. **Annual Work Plan:** The Permittees shall submit an Annual Work Plan as part of the Annual Report. The Annual Work Plan shall describe in detail the SWMP's and the Permittees' proposed activities for the upcoming reporting year.
- b. **Annual Report:** The Permittees shall submit an Annual Report by **1 September** of each year beginning with the 2013-2014 reporting period. The Annual Report shall document the status of the SWMP's and the Permittees' activities during the previous fiscal year, including the results of a qualitative and quantitative field level assessment of activities implemented by the Dischargers, and the performance of tasks contained in the SWMP. The Annual Report shall include a compilation of deliverables and milestones completed during the previous 12-month period, as described in the SWMP and Annual Work Plan. Per 40 CFR 122.42(c), the Annual Report shall include a program effectiveness assessment and recommended modifications for each Program Element/Control Measure. Each Annual Report shall build upon the previous year's efforts. In each Annual Report, the Permittees may propose pertinent updates, improvements, or revisions to the SWMP, which shall be complied with under this Order.
- c. **City-County Agreement:** The Permittees shall collaborate with each other to address common issues, promote consistency between SWMP and Monitoring Programs, and to plan and coordinate activities required under this Order.
 - i. The Permittees shall review their existing City-County Agreement (Agreement) to ensure that it provides for a management structure that includes the items below and submit a letter stating the existing agreement is adequate, or submit an updated agreement that is adequate, to the Central Valley Water Board no later than **< six months after adoption of the Order >**.

The Agreement should address the following:

- a) Designation of Joint Responsibilities;
- b) Decision making;
- c) Information management of data and reports, including the requirements under this Order; and

- d) Any and all other collaborative arrangements for compliance with this Order.
- ii. The Permittees shall jointly develop and/or update the standardized format(s) for all reports required under this Order (e.g., annual reports, monitoring reports, fiscal analysis reports, and program effectiveness reports, etc.). The standardized reporting format(s) shall be used by all Permittees and shall include protocols for electronic reporting, specifically data reporting.
- d. **Departmental Coordination:** The Permittees shall identify all departments within the Permittees' jurisdiction that conduct storm water pollution prevention related activities and their roles and responsibilities under this Order. The Annual report shall include an up-to-date organizational chart specifying these departments and key personnel responsible for issuance of enforcement actions.
- e. **Training:** The Permittees are required to evaluate the existing training protocols and submit in the updated SWMP a summary of how the protocols shall be changed to meet the requirements of this permit.
- f. **Legal Authority:** The Permittees shall review, revise, maintain, and enforce adequate legal authority to control pollutant discharges from their MS4s through ordinance, statute, permit, contract, or similar means.
 - i. This legal authority must, at a minimum, authorize the Permittees to:
 - a) Control the contribution of pollutants in discharges of runoff associated with industrial and construction activity to the MS4. This requirement applies both to industrial and construction sites, which have coverage under the statewide general industrial or construction general storm water permits, as well as to those sites that do not require permit coverage;
 - b) Effectively prohibit identified illegal discharges (e.g., discharges of wash water from gas stations, mobile businesses, parking lots, storage areas containing equipment, discharges of pool water containing chlorine or bromine, discharges of sediment, pet waste, vegetation, food related wastes, toxic materials, pesticides, construction debris, etc.);
 - c) Prohibit and eliminate illicit connections to the MS4;
 - d) Prohibit the discharge of spills, dumping, or disposal of materials other than storm water to its MS4;

- e) Use enforcement mechanisms to require compliance with the Permittees storm water ordinances, permits, contracts, or orders;
 - f) Control the contribution of pollutants from one portion of the shared MS4 to another portion of the storm sewer system through interagency agreements among the Permittees (and other owners of the storm sewer system such as Caltrans);
 - g) Carry out all inspections, surveillance, and monitoring necessary to determine compliance and noncompliance with local ordinances and permits, including the prohibition on illicit discharges to the MS4;
 - h) Require the use of BMPs to prevent or reduce the discharge of pollutants from MS4 to the MEP; and
 - i) Require that Treatment Control BMPs be properly operated and maintained to prevent the breeding of vectors.
- ii. Each Permittee shall amend its existing ordinances as needed, to enforce all the requirements of this Order within **one year** after adoption of the SWMP. The ordinance(s) shall contain implementable and progressive enforcement procedures.
- iii. Each Permittee shall provide to the Executive Officer by **(18 months after adoption of this Order)** a statement certified by its chief legal counsel that it has adequate legal authority to implement and enforce each of the requirements contained in 40 CFR 122.26(d)(2)(i)(A-F) and this Order, including any modifications thereto in effect when the certified statement is provided. This statement shall be included in Permittees' revised SWMP(s), which shall describe the following:
- a) All urban runoff related ordinances adopted by the Permittees and appropriate citations thereof and the reasons they are enforceable;
 - b) The Permittees' Progressive Enforcement Policy and how it will be effectively implemented;
 - c) The local administrative and legal procedures available to mandate compliance with urban runoff related ordinances and, therefore, with the conditions of this Order;
 - d) Descriptions of how these ordinances are implemented and how enforcement actions under these ordinances may be appealed; and
 - e) A description of whether the municipality can issue administrative

orders and injunctions or if it must go through the court system for enforcement actions.

- g. **Fiscal Analysis:** Each Permittee shall secure the resources necessary to meet the requirements of this Order and shall prepare an annual fiscal summary as part of the SWMP Annual Report. This summary shall, for each fiscal year covered by this Order, identify the expenditures necessary to accomplish the activities of the SWMP. Such summary shall include a description of the source(s) of funds that are proposed to meet the necessary expenditures, including legal restrictions on the use of such funds.

SWMP CORE PROGRAMS

4. Construction Program

- a. The objectives of the Construction Program shall be to:
 - i. Provide adequate legal authority to control pollutants to the MS4 from construction sites;
 - ii. Require review of construction plans and grading permits consistent with Permittee requirements;
 - iii. Require BMPs to control sediment and pollutants from construction sites to the MS4;
 - iv. Maintain a tracking system (inventory) of active construction sites;
 - v. Inspect construction sites to ensure proper BMP implementation and compliance with local requirements and applicable Provisions of this Order;
 - vi. Bring forth enforcement actions for sites in violation of Permittee requirements and advise the Central Valley Water Board of potential violations of Construction General Permit requirements;
 - vii. Provide regular internal and external training on applicable components of the SWMP and related Permits; and
 - viii. Conduct an assessment as a part of the annual reporting process to determine the effectiveness of the Construction Program and identify any necessary modifications.
- b. Each Permittee shall update its SWMP to reduce pollutants in runoff from construction sites during all construction phases to the MEP. At a minimum

the Construction Program shall address the objectives listed above, as well as include the following control measures:

- i. Source Identification;
 - ii. Threat to water quality prioritization;
 - iii. Progressive enforcement of non-compliant sites; and
 - iv. Reporting of recalcitrant non-compliant sites to the Central Valley Water Board.
- c. Each Permittee shall continue to implement and enforce a program to control runoff from all construction sites. The program shall ensure the following minimum requirements are effectively implemented at construction sites:
- i. Sediments generated on the project site shall be retained using adequate source control BMPs;
 - ii. Construction-related materials, wastes, spills, or residues shall be retained at the project site to avoid discharge to streets, drainage facilities, receiving waters, or adjacent properties by wind or runoff;
 - iii. Non-storm water runoff from equipment and vehicle washing and any other activity shall be contained at the project site;
 - iv. Erosion from slopes and channels shall be controlled by implementing an effective combination of BMPs such as limiting grading during the wet season; inspecting graded areas during rain events; planting and maintenance of vegetation on slopes; and covering erosion susceptible slopes;
 - v. Prior to issuing a grading permit for a construction site, an erosion and sediment control plan must be submitted to the permitting agency that contains, at a minimum, the following:
 - a) If applicable to the site, a certification that a Notice of Intent has been submitted to the State Water Board;
 - b) A vicinity map showing nearby roadways, the construction site perimeter, and the geographic features and general topography surrounding the site;
 - c) A site map showing the construction project in detail, including the existing and planned paved areas and buildings; general topography both before and after construction; drainage patterns across the

- project area; and anticipated storm water discharge locations (i.e., the receiving water, a conduit to receiving water, and/or drain inlets);
- d) A description of BMPs to address contractor activities that generates pollutants including, at a minimum, vehicle washing, equipment maintenance, and waste handling;
 - e) A description of the type and location of erosion and sediment control BMPs, including, but not limited to, limited grading during the wet season, and planting and maintenance of vegetation on slopes, to be employed at the site; and
 - f) The name and telephone number of the qualified person responsible for implementing the Storm Water Pollution Prevention Plan (SWPPP);
- vi. If applicable, all environmental permits must be obtained from agencies such as the California Department of Fish and Wildlife, U.S. Army Corps of Engineers, and the Central Valley Water Board's 401 Water Quality Certification Program; and
 - vii. The Permittees shall inspect construction sites within the MS4 Permit boundaries for compliance with local ordinances and SWMP and to confirm the Construction General Permit required SWPPP documents are on site. Sites shall be re-inspected at a frequency determined to be effective by the Permittees, based on the site's threat to water quality, and/or record of compliance until site completion and termination from coverage under the Construction General Permit. Sites in chronic noncompliance shall be reported to the Central Valley Water Board.
- d. The Permittees submitted a Grading Inspection Checklist to the Central Valley Water Board per WDR Order 5-01-130, Provision D.4. The checklist must be updated to include items in 4.c above. An updated copy shall be included in the Annual Report.

5. Commercial and Industrial Program:

- a. The objectives of the Commercial and Industrial Program shall be to:
 - i. Provide adequate legal authority to control pollutants from industrial and commercial facilities to the MS4;
 - ii. Develop and maintain an inventory of industrial and commercial facilities located within the Permittees' jurisdiction;

- iii. Prioritize the industrial and commercial facilities within the inventory, based on their threat to water quality;
 - iv. Conduct inspections of the industrial and commercial facilities that pose a significant threat to water quality with an inspection frequency based on the prioritization of the facility and conduct follow-up inspections to bring the facility into compliance;
 - v. Implement a progressive enforcement policy to ensure that adequate enforcement is conducted, and, if necessary, to refer potential non-filers to the Central Valley Water Board;
 - vi. Provide regular internal and external training on components of the SWMP and related Permits; and
 - vii. Conduct an assessment as a part of the annual reporting process, determine the effectiveness of the Commercial and Industrial Program and identify any necessary modifications.
- b. Each Permittee shall update the Commercial and Industrial Program of its SWMP to reduce pollutants in runoff from commercial and industrial sites to the MEP. At a minimum, the Commercial and Industrial Program shall address the objectives listed above, as well as the following control measures:
- i. At a minimum, the Permittees shall inventory restaurants, automotive service facilities, retail gasoline outlets, and industrial facilities not covered by the General Industrial Permit. The Permittees are required to inventory any additional facilities which may pose a threat to water quality.
 - ii. The Permittees must prioritize all facilities into high, medium, and low categories on the basis of the potential for water quality impact using criteria such as pollutant sources on site, pollutants of concern, proximity to a water body, and violation history of the facility. The different priority categories will be assigned different inspection frequencies, with the highest priority facilities receiving more frequent inspections. The Permittees must describe the process for prioritizing inspections and frequency of inspections. High priority facilities must be inspected a minimum of once per year. If any geographical areas are to be targeted for inspections due to high potential for storm water pollution, these areas must be listed in the SWMP. Further the SWMP must explain how the priority assigned to any one facility may be modified based on the site inspection findings and the facility's potential to discharge pollutants.
 - iii. Each Permittee shall require implementation of pollutant reduction and control measures at high priority industrial and commercial facilities with the objective of effectively prohibiting non-storm water runoff and

reducing pollutants in storm water runoff. Except as specified in other sections of this Order, pollutant reduction and control measures can be used alone or in combination, and can include Source and Treatment Control BMPs, which can be applied before, during, and/or after pollution generating activities.

- iv. Inspections must at a minimum:
 - a) Evaluate the facility's compliance with the requirement to select, design, install, and implement storm water control measures;
 - b) Conduct a visual observation for evidence of unauthorized discharges, illicit connections, and potential discharge of pollutants to storm water;
 - c) Verify whether the facility is required to obtain coverage under the General Industrial Permit, and whether the facility has in fact obtained such permit coverage; and
 - d) Evaluate the facility's compliance with any other relevant local storm water requirements.

- v. At a minimum, the Permittees must document the following for each inspection:
 - a) The inspection date and time; the name(s) and signature(s) of the inspector(s);
 - b) Weather information and a description of any discharges occurring at the time of the inspection;
 - c) Any previously unidentified discharges of pollutants from the site;
 - d) Any control measures needing maintenance or repairs;
 - e) Any failed control measures that need replacement;
 - f) Any incidents of noncompliance observed; and
 - g) Any additional control measures needed to comply with the Permit Requirements.

Further, inspection findings must be tracked to ensure inspections are conducted at the frequency required, to highlight and document the recidivism of noncompliant facilities, and to aid follow up and enforcement activities.

- vi. The Permittees must ensure that all necessary follow up and enforcement activities are conducted, as necessary, to require necessary implementation and maintenance of the control measures implemented by industrial/commercial facilities.
- vii. The Permittees must ensure that all staff whose primary job duties are implementing the industrial storm water program is trained to conduct facility inspections. The training must cover what is required under this permit in terms of storm water control measures, the requirements of other applicable Industrial storm water general permits or other related local requirements, the Permittees' site inspection and documentation protocols, and enforcement procedures. Follow-up training must be provided every other year to address changes in procedures, techniques, or staffing. Permittees must document and maintain records of the training provided and the staff trained.
- viii. The Permittees must conduct an assessment as a part of the Annual Report process to determine the effectiveness of the program and identify any necessary modifications.

6. Municipal Operations Program

- a. The objectives of the Municipal Operations Program shall be to:
 - i. Prevent sanitary sewer overflows (SSO) or spills from entering the storm drain system and respond quickly and appropriately if an SSO or spill does enter the storm drain system;
 - ii. Implement development standards that require source and treatment control BMPs to reduce pollutants from Permittee owned construction projects;
 - iii. Implement pollution prevention BMPs for public facilities (e.g., corporation yards) and Facility Pollution Prevention Plans (FPPPs) for public facilities to minimize or eliminate pollutant discharges to the storm drain system;
 - iv. Implement a standard protocol for storage, usage, and disposal of pesticides, herbicides (including pre-emergents), and fertilizers on Permittee-owned property such as park sites, landscaped medians, and golf courses;
 - v. Promote the use of integrated pest management methods and less toxic alternatives;
 - vi. Clean and maintain catch basin inlets to prevent debris accumulation and flooding;

- vii. Ensure that catch basin inlets are properly stenciled or permanently imprinted, or have legible curb markers to discourage illicit discharges into the storm drain system, and promote the 24 hour hotline number;
 - viii. Maintain and inspect detention basins and pump stations;
 - ix. Conduct street sweeping activities;
 - x. Clean and inspect Permittee-owned parking facilities to minimize the build-up and discharge of pollutants to the storm drain system;
 - xi. Provide regular internal training on applicable components of the SWMP; and
 - xii. Conduct an assessment as a part of the annual reporting process, determine the effectiveness of the Program Element and identify any necessary modifications.
- b. Each Permittee shall update the Municipal Operations Program component in its SWMP to effectively prohibit non-storm water discharges and prevent or reduce pollutants in runoff from all municipal land use areas, facilities, and activities to the MEP. At a minimum, the Municipal Operations Program shall address the objectives listed above, as well as the following control measures:
- i. Sanitary sewer overflow and spill response;
 - ii. Construction requirements for municipal capital improvement projects;
 - iii. Pollution prevention at Permittee facilities;
 - iv. Landscape and pest management;
 - v. Storm drain system maintenance;
 - vi. Street cleaning and maintenance;
 - vii. Parking facilities maintenance;
 - viii. Retention/detention basin construction and maintenance;
 - ix. Public industrial activities management;
 - x. Emergency procedures;
 - xi. Non-emergency firefighting flows;

- xii. Training; and
 - xiii. Effectiveness assessment.
- c. The Permittees submitted a summary of standard operation procedures (SOPs) of inspection maintenance schedules for drainage facilities per WDR Order 5-01-130, Provision D.14. The Permittees are required to update this SOP and schedule to include a process for prioritizing the inspection and maintenance of drainage facilities based upon water quality impacts. The updated SOPs shall be included in the Annual Report.

7. Illicit Discharge Detection and Elimination Program

- a. The objectives of the Illicit Discharge Detection and Elimination Program shall be to:
- i. Provide adequate legal authority to control and/or prohibit pollutants from being discharged to the municipal storm drain system;
 - ii. Proactively detect illicit discharges and illegal connections through a variety of mechanisms including, but not limited to, public reporting, dry weather monitoring, and field crew inspections;
 - iii. Upon identification of an illegal connection, investigate and eliminate the connection through a variety of mechanisms including, but not limited to, permitting or plugging the connection;
 - iv. Upon identification of an illicit discharge, investigate the discharge and conduct any necessary follow up actions to mitigate the impacts of the discharge; and
 - v. Conduct an assessment as a part of the annual reporting process; determine the effectiveness of the Program Element and identify any necessary modifications.
- b. Each Permittee shall update the Illicit Discharge Detection and Elimination Program in the SWMP to actively seek and eliminate illicit discharges and connections. At a minimum, the Illicit Discharge Detection and Elimination Program shall address the objectives listed above and include the following control measures:
- i. Detection of Illicit Discharges and Illegal Connections;
 - ii. Illegal Connection Identification and Elimination;
 - iii. Investigation/Inspection and Follow-up Procedures;

- iv. Enforcement of Local Codes and Ordinances;
 - v. Training; and
 - vi. Effectiveness Assessment.
- c. The Permittees submitted a proposed training program covering storm water pollution prevention and illicit discharge detection and elimination to the Central Valley Water Board per WDR Order 5-01-130, Provision D.11. Permittees are required to update the training program in the SWMP to include training necessary for personnel to meet the objectives described in Provision 7.
 - d. The Permittees submitted a proposed program to further control illegal dumping to the Central Valley Water Board per WDR Order 5-01-130, Provision D.13. The Permittees are required to continue to implement this enhanced program as a part of the Illicit Discharge Detection and Elimination Program described in Provision 7.
- 8. Public Outreach and Public Education Program (Public Outreach Program):**
- a. The objectives of the Public Outreach Program shall be to:
 - i. Encourage the public to actively participate in the implementation of the storm water program as well as the various outreach events;
 - ii. Promote the use of the 24-hour public reporting hotline;
 - iii. Implement a public education strategy for the overall program that includes developing and distributing materials, conducting a mixed media campaign, participating in community outreach events, and conducting public opinion surveys to gauge the level of awareness and behavior change within a community and/or target audience;
 - iv. Evaluate the ability to interface and coordinate with school education programs on a regional or local level;
 - v. Implement a business outreach program; and
 - vi. Conduct an assessment as a part of the annual reporting process, determine the effectiveness of the Public Outreach Program and identify any necessary modifications.
 - b. The Permittees shall add a Public Outreach Program to its SWMP, incorporating the public outreach activities in the current SWMP. At a

minimum, the Public Outreach Program shall address the objectives listed above and include the following control measures:

- i. Public Participation
 - ii. Hotline/ website
 - iii. Public Outreach Implementation
 - iv. Public School Education
 - v. Business Outreach
 - vi. Effectiveness Assessment
- c. The Permittees shall incorporate a mechanism for public participation in the implementation of the SWMP (i.e., programs that engage the public in cleaning up creeks, removal of litter in river embankments, stenciling of storm drains, etc.).
- d. The Permittees submitted a public outreach program for users of pesticides and fertilizers per WDR Order 5-01-130, Provision D.16. The Permittees are required to update and implement this program to:
- i. Coordinate with the County Agriculture Commission and Extension Service and environmental organizations, and interested stakeholders;
 - ii. Provide targeted information concerning proper pesticide use and disposal, potential adverse impacts on water quality, and alternative, less toxic methods of pest prevention and control, including IPM; and
 - iii. Continue coordination with household hazardous waste collection agencies.

9. Planning and Land Development Program:

- a. The objectives of the Planning and Land Development Program shall be to:
- i. Incorporate water quality and watershed protection principles into the Permittees' policies and planning procedures;
 - ii. Ensure that selected post-construction storm water controls will remain effective upon project completion by requiring a maintenance agreement and transfer or establishing a maintenance district zone for all priority development projects;
 - iii. Provide a comprehensive review of development plans to ensure that storm water quality controls are properly selected to minimize storm water quality impacts;

- iv. Provide regular internal training on applicable components of the SWMP; and
 - v. As a part of the annual reporting process, conduct an assessment (at least annually) to determine the effectiveness of the Program Element and identify any necessary modifications.
 - b. Each Permittee shall update the Planning and Land Development Component of its SWMP to minimize the short and long-term impacts on receiving water quality from new development and redevelopment. At a minimum, the Planning and Land Development Program shall address the objectives listed above and include the following control measures:
 - i. New/Revised Development Standards;
 - ii. Plan Review Sign-Off;
 - iii. Maintenance Agreement and Transfer;
 - iv. Training; and
 - v. Effectiveness Assessment.
- 10. **Water Quality Protection Principles** - In order to further reduce pollutants and runoff flows from new development and redevelopment, each Permittee shall encourage the following concepts:
 - a. Minimization of impervious surfaces and directly connected impervious surfaces in areas of new development and redevelopment and where feasible to maximize on-site infiltration of runoff (low impact development concepts).
 - b. Implementation of pollution prevention methods supplemented by pollutant source controls and treatment, and where practical, use of strategies that control the sources of pollutants or constituents (i.e., the point where water initially meets the ground) to minimize the transport of urban runoff and pollutants offsite and into MS4s.
 - c. Preservation, and where possible, creation or restoration of areas that provide important water quality benefits, such as riparian corridors, wetlands, and buffer zones.
 - d. Limiting disturbances of natural water bodies and natural drainage systems by development including roads, highways, and bridges.
 - e. Identification and avoidance of development in areas that are particularly susceptible to erosion and sediment loss; or establishment of guidance that protects areas from erosion and sediment loss.
 - f. Coordination with local traffic management programs to reduce pollutants associated with vehicles and increased traffic resulting from development.
 - g. Implementation of source and structural controls as necessary and appropriate to protect downstream receiving water quality from increased pollutant loads

and flows (hydromodification concepts) from new development and significant redevelopment.

- h. Control of the post-development peak storm water run-off discharge rates and velocities to maintain or reduce pre-development downstream erosion, and to protect stream habitat.
 - i. Low Impact Development - New development and redevelopment projects shall consider integration of Low Impact Development (LID) principles into project design.
11. **Development Standards** - Permittees shall review and revise their current Development Standards **by 16 Months from the adoption of this Order** as necessary to address the following:
- a. **Post Development Standards** - Each Permittee shall ensure that all new development and significant redevelopment projects falling under the priority project categories listed below and not draining to terminal drainage basins meet Development Standards.
 - b. **Priority Development Project Categories** – For projects which do not drain to a terminal drainage basin, Development Standards requirements shall apply to: (1) significant redevelopment; (2) home subdivisions of 10 housing units or more; (3) commercial developments great than 100,000 square feet; (4) automotive repair shops; (5) restaurants; (6) parking lots 5,000 square feet or more or with 25 or more parking spaces and potentially exposed to urban runoff; (7) streets and roads; and (8) retail gasoline outlets (RGO).

Significant redevelopment is defined as the creation or addition of at least 5,000 square feet of impervious surfaces on an already developed site. Significant redevelopment includes, but is not limited to, expansion of a building footprint or addition or replacement of a structure; structural development including an increase in gross floor area and/or exterior construction or remodeling; replacement of impervious surface that is not part of a routine maintenance activity; and land disturbing activities related with structural or impervious surfaces. Where significant redevelopment results in an increase of less than fifty percent of the impervious surfaces of a previously existing development, and the existing development was not subject to the Development Standards, the numeric sizing criteria discussed below applies only to the addition, and not the entire development.
 - c. **BMP Requirements** – The Development Standards shall include a list of recommended pollution prevention, source control, and/or structural treatment control BMPs. The Development Standards shall require all new development and significant redevelopment projects falling under the above priority project categories or locations to implement a combination of BMPs selected from the

recommended BMP list, including at a minimum: (1) source control BMPs and (2) structural treatment control BMPs.

- d. **Numeric Sizing Criteria** – The Development Standards shall require structural treatment BMPs, including LID BMPs where feasible, to be implemented for all priority development projects. In addition to meeting the BMP requirements listed above, all structural treatment BMPs for a single priority development project shall be sized collectively to comply with either the volume-based or flow-based numeric sizing criteria:
- i. Volume-based BMPs shall be designed to mitigate (infiltrate or treat) either:
 - a) The volume of runoff produced from a 85th percentile, 24-hour storm event, as determined from the local historical rainfall record; or
 - b) The volume of runoff produced by the 85th percentile, 24-hour rainfall event, determined as the maximized capture storm water volume for the area, from the formula recommended in *Urban Runoff Quality Management, WEF Manual of Practice No. 23/ASCE Manual of Practice No. 87*, (1998); or
 - c) The volume of annual runoff based on unit basin storage volume, to achieve 80% or more volume treatment by the method recommended in *California Storm Water Best Management Practices Handbook – Industrial/Commercial*, (1993); or
 - d) A Permittee justified design storm volume that is determined as part of the Development Standard development and approved by the Executive Officer. The treatment of this volume shall achieve approximately the same reduction in pollutant loads achieved by treatment of the 85th percentile, 24-hour runoff event.
 - ii. Flow-based BMPs shall be designed to mitigate (infiltrate or treat) either:
 - a) The maximum flow rate of runoff produced by the 85th percentile hourly rainfall intensity, as determined from the local historical rainfall record, multiplied by a factor of two; or
 - b) The maximum flow rate of runoff, as determined from local historical rainfall records, that achieves approximately the same reduction in pollutant loads and flows as achieved by mitigation of the 85th percentile hourly rainfall intensity multiplied by a factor of two.
- e. **Equivalent Numeric Sizing Criteria** - Each Permittee may develop any equivalent numeric sizing criteria or performance-based standard for post-

construction structural treatment BMPs as part of the Development Standards. Such equivalent sizing criteria may be authorized for use in place of the above criteria. In the absence of development and subsequent authorization of such equivalent numeric sizing criteria, the above numeric sizing criteria requirement shall be implemented.

- f. **Pollutants and Activities of Concern** – As part of the Development Standards, each Permittee shall identify pollutants and/or activities of concern for each new development or significant redevelopment project. The Permittees shall identify the pollutants of concern by considering the following (1) receiving water quality, including pollutants for which receiving waters are listed as impaired under CWA Section 303(d); (2) land use type of the development project and pollutants associated with that land use type; (3) pollutants expected to be present on site at concentrations that pose potential water quality concerns; (4) activities expected to be on the site; and (5) changes in flow rates and volumes resulting from the development project and sensitivity of receiving waters to changes in flow rates and volumes.
- g. **Restaurants Less than 5,000 Square Feet** - New development and significant redevelopment restaurant projects where the land area development is less than 5,000 square feet shall meet all Development Standards except for structural treatment BMP.
- h. **Infiltration and Groundwater Protection** – To protect groundwater quality, each Permittee shall consider the type of development and resulting storm water discharge and, if appropriate, apply restrictions to the use of structural BMPs, which are designed to primarily function as infiltration devices (such as infiltration trenches and infiltration basins).
- i. **Maintenance Agreement and Transfer-** Each Permittee shall require that all developments subject to Development Standards and site specific plan requirements provide verification of maintenance provisions for Structural Treatment Control BMPs, including but not limited to legal agreements, covenants, California Environmental Quality Act (CEQA) mitigation requirements, and or conditional use permits. Verification at a minimum shall include:
 - i. The developer's signed statement accepting responsibility for maintenance until the responsibility is legally transferred; and either
 - ii. A signed statement from the public entity assuming responsibility for Structural Treatment Control BMP maintenance and that it meets all local agency design standards; or
 - iii. Written conditions in the sales or lease agreement, which requires the recipient to assume responsibility for maintenance and conduct a

maintenance inspection at least once a year; or

- iv. Written text in project conditions, covenants and restrictions for residential properties assigning maintenance responsibilities to the Home Owners Association for maintenance of the Structural Treatment Control BMPs; or
- v. Any other legally enforceable agreement that assigns responsibility for the maintenance of post-construction Structural Treatment Control BMPs.

12. **California Environmental Quality Act (CEQA) Document Update-** Each Permittee shall incorporate into its CEQA process, procedures for considering potential storm water quality impacts and providing for appropriate mitigation when preparing and reviewing CEQA documents. The procedures shall require consideration of the following:

- a. Potential impact of project construction on storm water runoff;
- b. Potential impact of project post-construction activity on storm water runoff;
- c. Potential for discharge of storm water from areas from material storage, vehicle or equipment fueling, vehicle or equipment maintenance (including washing), waste handling, hazardous materials handling or storage, delivery areas or loading docks, or other outdoor work areas;
- d. Potential for discharge of storm water to impair the beneficial uses of the receiving waters or areas that provide water quality benefit;
- e. Potential for the discharge of storm water to cause significant harm on the biological integrity of the waterways and water bodies;
- f. Potential for significant changes in the flow velocity or volume of storm water runoff that can cause environmental harm; and
- g. Potential for significant increases in erosion of the project site or surrounding areas.

13. **General Plan Update**

- a. Each Permittee shall amend, revise, or update its General Plan to include watershed and storm water quality and quantity management considerations and policies when any of the following General Plan elements are updated or amended: (i) Land Use, (ii) Housing, (iii) Conservation, and (iv) Open Space.
- b. Each Permittee shall provide the Central Valley Water Board with the draft amendment or revision when a listed General Plan element or the General Plan is noticed for comment in accordance with California Government Code

§ 65350 et seq.

14. **Planning Department Coordination, Enforcement and Tracking-** The Permittees submitted a description of the procedures for incorporating storm water BMPs into the site planning process for new developments and public works projects per WDR Order 5-01-130, Provision D.15. The Permittees are required to update these procedures as a part of the Municipal Operations Program described in Provision 6.
- a. Each Permittee shall provide for the review of proposed project plans and require measures to ensure that all applicable development will be in compliance with storm water ordinances, local permits, and all other applicable ordinances and requirements.
 - b. Each Permittee shall develop a process by which its Development Standards will be implemented. The process shall identify at what point in the planning process development projects will be required to meet Development Standards. The process shall also include identification of the roles and responsibilities of various municipal departments in implementing the Development Standards, as well as any other measures necessary for the implementation of Development Standards.
 - c. Each Permittee shall develop and implement no later than **(9 months from this Order's adoption)** the following:
 - i. A GIS or other electronic system for tracking projects that have been conditioned for post-construction treatment control BMPs. The electronic system, at a minimum, should contain the following information:
 - a) Municipal Project ID.
 - b) State WDID No.
 - c) Project Acreage.
 - d) BMP Type and Description.
 - e) BMP Location (coordinates).
 - f) Date of Acceptance.
 - g) Date of O&M Certification.
 - h) Inspection Dates and Summaries.
 - i) Corrective Actions Taken.
 - j) Date Certificate of Occupancy Issued.
15. **Targeted Employee Training-** Each Permittee shall periodically train its employees in targeted positions (whose jobs or activities are engaged in development planning) to ensure they can adequately implement the Planning and Land Development Program requirements.

16. **Outreach and Guidance for Developers-** Each Permittee, individually or in collaboration, shall develop and provide information to the development community promoting water quality protection principles and LID designs for new development and redevelopment projects.

MONITORING PROGRAM

17. **Monitoring and Reporting Program:** The Permittees shall comply with Monitoring and Reporting Program No. R5-2013-0153-01, which is part of this Order, and any revisions thereto approved by the Central Valley Water Board.
18. **Additional Studies:** The Permittees shall conduct any additional studies described herein, within the Monitoring and Reporting Program, or as described in the revised SWMP, once approved by the Central Valley Water Board.
19. **Program Effectiveness Assessment**
 - a. The Permittees shall assess the effectiveness of their SWMP in their Annual Reports. The assessment shall identify the direct and indirect measurements that the Permittees used to track the effectiveness of their programs as well as the outcome levels at which the assessment is occurring consistent with this Order. Direct and indirect measurements shall include, but not limited to, conformance with established Performance Standards, quantitative monitoring to assess the effectiveness of Control Measures, measurements or estimates of pollutant load reductions or increases from identified sources, raising awareness of the public, and/or detailed accounting/documentation of SWMP accomplishments.
 - b. The Permittees shall track the long-term progress of their SWMP towards achieving improvements in receiving water quality.
 - c. The Permittees shall use the information gained from the program effectiveness assessment to improve their SWMPs and identify new BMPs, or modification of existing BMPs. This information shall be reported within the Annual Reports consistent with this Order.
 - d. **Long Term Effectiveness Assessment (LTEA) Strategy:** The Permittees shall collaborate to develop a LTEA strategy, which shall build on the results of the Permittees' Annual Reports and the initial program effectiveness assessments. The LTEA shall be submitted to the Central Valley Water Board **no later than 180 days prior to the permit expiration date of 6 December 2018** and shall identify how the Permittees will conduct a more comprehensive effectiveness assessment of the storm water program as part of the SWMP. The strategy will address the storm water program in terms of achieving both programmatic goals (raising awareness, changing

behavior) and environmental goals (reducing pollutant discharges, improving environmental conditions).

ADDITIONAL REQUIREMENTS

20. This Order may be modified, or alternatively, revoked or reissued, prior to the expiration date as follows: a) to address significant changed conditions identified in the technical reports required by the Central Valley Water Board which were unknown at the time of the issuance of this Order; b) to incorporate applicable requirements of statewide water quality control plans adopted by the State Water Board or amendments to the Basin Plan approved by the State Water Board; c) to comply with any applicable requirements, guidelines, or regulations issued or approved under Section 402(p) of the CWA, if the requirement, guideline, or regulation so issued or approved contains different conditions or additional requirements not provided for in this Order, or d) if new information is provided that indicates a potential groundwater quality problem. The Order as modified or reissued under this paragraph shall also contain any other requirement of the CWA when applicable.
21. Each Permittee shall comply with all applicable items of the "Standard Provisions and Monitoring Requirements for Waste Discharge Requirements (NPDES)," dated February 2004, which are part of this Order. This attachment and its individual paragraphs are referred to as "Standard Provisions."
22. This Order expires on **(five years following adoption date)**. The Permittees must file a Report of Waste Discharge (RWD) in accordance with Title 23, California Code of Regulations, not later than 180 days in advance of such date as application for re-issuance of waste discharge requirements. U.S. EPA 40 CFR Part 122 *Interpretive Policy Memorandum on Reapplication Requirements for Municipal Separate Storm Sewer Systems* states the fourth year annual report may be used as the RWD reapplication package. The reapplication package must identify any proposed changes or improvement to the SWMP, an assessment of the effectiveness of the program, and monitoring activities for the upcoming five year term of the permit, if those proposed changes have not already been submitted pursuant to 40 CFR 122.42 (c).

I, PAMELA C. CREEDON, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an order adopted by the California Regional Water Quality Control Board, Central Valley Region, on **6 December 2013, and amended on 5 June 2015.**

Original signed by

PAMELA C. CREEDON, Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER R5-2013-0153-01
NPDES CA0083399

MONITORING AND REPORTING PROGRAM

CITY OF BAKERSFIELD
AND
COUNTY OF KERN
STORM WATER DISCHARGES FROM
MUNICIPAL SEPARATE STORM SEWER SYSTEM
KERN COUNTY

I. **MONITORING AND REPORTING PROGRAM REQUIREMENTS**

This Monitoring and Reporting Program (MRP) is issued pursuant to Water Code Section 13267.

The Permittees shall not implement any changes to this MRP unless and until the Central Valley Regional Water Quality Control Board (Central Valley Water Board) or Executive Officer issues a revised MRP. Attachment A of the Waste Discharge Requirements shows the City of Bakersfield limits and the Kern County urbanized areas (collectively called Bakersfield Urbanized Area) which are covered under this Order. To save time and money, and avoid duplication of efforts, the Permittees shall coordinate their monitoring program with local, state, and federal agencies whenever possible.

- A. **Annual Work Plan:** By **1 September of each year**, each Permittee shall submit an Annual Work Plan with the Annual Report that supports the development, implementation, and effectiveness of the approved Storm Water Management Plan (SWMP) and Order No. R5-2013-0153-01.
- B. **Annual Report:** The Permittees shall submit, in both electronic and paper formats and no later than **1 September of each year**, an Annual Report documenting the progress of the Permittees' implementation of the SWMP and the requirements of Order No. R5-2013-0153-01. The Annual Report shall cover each fiscal year from **1 July through 30 June**. The status of compliance with permit requirements including implementation dates for all time-specific deadlines should be included for each program area. If permit deadlines are not met, the Permittees shall report the reasons why the requirement was not met and how the requirements will be met in the future, including projected implementation dates. A comparison of program implementation results to performance standards established in the SWMP and Order No. R5-2013-0153-01 shall be included for each program area.

Specific requirements that must be addressed in the Annual Reports are listed below.

1. An Executive Summary discussing the effectiveness of the SWMP to reduce storm water pollution to the MEP and to achieve compliance with water quality objectives in receiving waters;
2. A summary of activities conducted by the Permittees;
3. Identification of BMPs and a discussion of their effectiveness at reducing urban runoff pollutants; and
4. A summary of the monitoring data and an assessment of each component of the MRP. To comply with Provisions C.1 and C.2 of the Order No. R5-2013-0153-01, the Permittees shall compare receiving water and discharge data with applicable water quality standards. The lowest applicable standard from the Basin Plan, California Toxics Rule (CTR), and California Title 22 (Title 22), and constituent specific concentrations limits (e.g., mercury) shall be used for comparison. When the data indicate that discharges are causing or contributing to exceedances of applicable water quality standards or constituent specific concentrations limits, the Permittees shall prepare a Report of Water Quality Exceedance and identify potential sources of the problems, and recommend future monitoring and BMP implementation measures to identify and address the sources.
5. Raw data are required to be submitted in electronic format.
6. For each monitoring program requirement, the Annual Reports shall include the following results and information:
 - a. All physical, chemical and biological data collected in the assessment;
 - b. All graphs, charts, statistical analysis, modeling, and any other analytical analyses in support of the Permittees' evaluation of the data and conclusions derived from that analysis; and
 - c. Documentation of quality assurance and control procedures (QA/QC).
7. An effectiveness assessment for each core program, as defined in the SWMP, shall be conducted annually, shall be built upon each consecutive year, and shall identify any necessary modifications. The SWMP shall describe, in detail, the performance standards or goals to

use to gauge the effectiveness of the storm water management program. The primary questions that must be assessed for each core program include the following:

- a. Level 1 Outcome: Was the core program implemented in accordance with the Order provisions, SWMP control measures and performance standards?
 - b. Level 2 Outcome: Did the core program raise the target audience's awareness of an issue?
 - c. Level 3 Outcome: Did the core program change a target audience's behavior, resulting in the implementation of recommended BMPs?
 - d. Level 4 Outcome: Did the core program reduce the load of pollutants from the sources to the storm drain system?
 - e. Level 5 Outcome: Did the core program enhance or change the urban runoff and discharge quality?
 - f. Level 6 Outcome: Did the core program enhance or change receiving water quality?
8. A summary of any Reports of Water Quality Exceedance (RWQEs) that have been completed during the year, and a status update for those in progress. The summary shall include the conclusions and recommendations of completed RWQEs and the status of any additional BMP implementation pursuant to RWQEs;
 9. Pursuant to 40 CFR 122.42(c)(7), the Permittees shall identify water quality improvements in, or degradation of, urban storm water;
 10. For each monitoring component, photographs and maps of all monitoring station locations and descriptions of each location;
 11. Recommendations to improve the monitoring program, BMPs, performance standards, and the SWMP to address potential receiving water quality exceedances and potential pollutant sources, and to meet the MEP standard;
 12. Provide operating data from all city and county pump stations (permanent and temporary) used to discharge storm water to surface

waters, as an appendix in electronic format only to assist in calculating flow volumes, as applicable.

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

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

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

Executed on the ___ day of, 201 __, at _____.

(Signature)_____ (Title)_____";

The Permittees shall mail the original of each annual report to:

CALIFORNIA REGIONAL WATER QUALITY
CONTROL BOARD – CENTRAL VALLEY REGION
1685 "E" Street, Suite 100
Fresno, CA 93706-2007

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

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

II. **MONITORING PROGRAM**

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

- Assessing compliance with WDR Order R5-2013-0153-01;
- Measuring and improving the effectiveness of the SWMP;
- Assessing the chemical, physical, and biological impacts on receiving waters resulting from urban runoff;
- Characterizing urban runoff;
- Identifying sources of pollutants; and
- Assessing the overall health and evaluating long-term trends in receiving water quality.

Ultimately, the results of the monitoring requirements outlined below shall be used to refine the SWMP to reduce pollutant loadings and protect and enhance the beneficial uses of the receiving waters in the Bakersfield Urbanized Area. The Monitoring Program consists of the following elements:

- **Baseline Monitoring**
 - Wet Weather Monitoring
 - Receiving Water Monitoring
 - Dry Weather Field screening
- **Special Studies**
 - Copper and Zinc Investigation
 - Monitoring Data Assessment Methodology

Regional Monitoring Program

Permittees that elect to participate in a RMP may request a reduction in some of the local water quality monitoring specified in the MRP of this Order. Participation in a RMP by a Permittee shall consist of providing funds and/or in-kind services to the RMP at least equivalent to discontinued individual monitoring and study efforts.

If the Permittees propose to reduce the local water quality monitoring and instead participate in a RMP, the Permittees shall submit a letter signed by an authorized representative informing the Central Valley Water Board that the Permittees will participate in a RMP, the date on which local water quality monitoring required under the MRP for this Order would cease, or be modified, and specific monitoring locations and constituent combinations that would no longer be conducted individually. To ensure consistency with this Order and this MRP, reductions in local water quality monitoring require the Executive Officer's prior written approval

of the Permittees' request including related SWMP modifications. Approval by the Executive Officer is not required prior to participating in the RMP.

If the Permittees are approved to participate in a RMP and reduce some local water quality monitoring, the Permittees shall continue to participate in a RMP until such time as the Permittees inform the Central Valley Water Board that participation in a RMP will cease and all local water quality monitoring will be reinstated. To the extent approved by the Executive Officer, some local water quality monitoring under the MRP, and related monitoring identified in the SWMP, required under this Order may be discontinued so long as the Permittees adequately support a RMP. Data from the RMP may be utilized to characterize the receiving water in the permit renewal. Alternatively, the Permittees may conduct any site-specific receiving water monitoring deemed appropriate by the Permittees and submit that monitoring data with this characterization monitoring. If the Permittees fail to maintain adequate participation in a RMP by not providing funds and/or in-kind services, the Permittees shall reinstate individual local water quality monitoring. During participation in the RMP, the Permittees may conduct and submit any or part of the monitoring included in this Monitoring and Reporting Program that is deemed appropriate by the Permittees, provided the modified monitoring program approved by the Executive Officer is conducted at a minimum.

Although RMP data is not intended to be used directly to represent receiving water quality for purposes of determining if a discharge is causing or contributing to an exceedance of any applicable water quality standards, Permittees may be able to demonstrate that this data is usable for this purpose. RMP monitoring stations are established generally as "integrator sites" to evaluate the combined impacts on water quality of multiple sources; RMP monitoring stations would not normally be able to identify the source of any specific constituent, but would be used to identify water quality issues needing further evaluation. RMP monitoring data, along with local Permittees data, may be used to help establish ambient receiving water quality for a water quality data analysis after evaluation of the applicability of the data for that purpose. RMP data, as with all environmental monitoring data, can provide an assessment of water quality at a specific location and time that can be used in conjunction with other information, such as other receiving water monitoring data, spatial and temporal distribution and trends of receiving water data, point and non-point source discharges, receiving water flowrate and velocity, and to determine a potential source or sources of a constituent that contributed to an exceedance of any applicable water quality standards.

During the period of participation in the RMP, the Permittees shall continue to report any individually conducted local water quality monitoring data in the Annual Report consistent with Provision I.B.4, Monitoring and Reporting Program. In addition, with each submitted Annual Report, the Permittees shall include 1) a statement that the Permittees are participating in the RMP and have reduced some of the local water quality monitoring program required by the permit, and 2) the

Permittees shall continue to attach a copy of the letter originally submitted to the Central Valley Water Board describing the monitoring location(s) and constituents that will no longer be conducted individually.

Local Water Quality Monitoring

The Permittees shall implement the Monitoring Program as follows:

Baseline Monitoring

A. Sampling Protocol

1. Samples from each receiving water and discharge outfall location described below shall be collected and analyzed following standard U.S. Environmental Protection Agency (U.S. EPA) protocol (40 CFR Part 136).
2. The Permittees may discontinue sampling of a constituent if it is not detected at or above the method detection limit for its respective test method, as shown in Attachment 1, in the last 12 consecutive sampling events. The Permittees shall conduct confirmation sampling in the fourth year of the Order for non-detected constituents during the first storm event monitored at each station.
3. Grab samples shall be used for receiving water monitoring. For monitoring of urban discharge outfalls during wet weather, the Permittees shall use flow-composite sampling equipment when feasible and grab samples otherwise.
4. The Permittees shall collect flow data at the time of sampling for all monitoring stations sampled during a given year. Receiving water or urban discharge flow may be estimated using U.S. EPA methods¹ at sites where flow measurement devices are not in place.

B. Wet Weather Monitoring

1. The Permittees shall continue to collect wet weather samples from three locations:
 - a. Mohawk Drive outfall to the detention basin;
 - b. North Chester Avenue manhole access north of the Golden State Overpass; and

¹ NPDES Storm Water Sampling Guidance Document, U.S. EPA 833-B-92-001, July 1992

- c. Hawthorne Ravine at the intersection of Hawthorne Avenue and River Boulevard.
2. Wet weather monitoring shall be conducted **during two qualifying storm events**².
3. Samples shall be collected during the first three hours of runoff from a storm event of at least 0.1 inches precipitation³. The two monitoring events shall be separated by at least 20 days. Inasmuch as possible, the Discharger shall collect samples early in the rain season during “first flush” conditions. The second storm event to be monitored shall be preceded by at least three dry weather days.
4. Collected storm water samples shall be analyzed for the constituents in Table 1.

C. Receiving Water Monitoring

1. All receiving water samples shall be grab samples, collected at mid-depth, in mid-stream of the receiving water, and in a manner that measures the water quality impacts of corresponding urban discharge outfalls. Receiving water sampling may be postponed if hazardous weather and/or river flow conditions prevent safe access to sampling location.
2. Receiving water monitoring shall be taken after discharges from the wet weather monitoring stations have occurred.
3. Each year, samples shall be collected **during two storm events** and during **one monitoring event during the dry season**.
4. Upstream receiving water sampling shall be taken at Rocky Point Weir, and downstream receiving water sampling shall be taken at Calloway Headgate.
5. Collected storm water samples shall be analyzed for the constituents in Table 1.

² A qualifying storm event occurs when there is sufficient rainfall within a 24-hour period to monitor at least one wet weather monitoring location and one corresponding receiving water station; the Permittees shall target storm events with a predicted rainfall of at least 0.25 inches at a seventy percent probability of rainfall 48 hours prior to the event.

³ A day with a storm event too small to generate runoff (typically 0.1 inches or less) shall be considered a dry weather day.

Table 1. Monitoring Constituents

Constituent	Unit	Wet Weather Monitoring	Receiving Water
		Sample Type	Sample Type
Biochemical Oxygen Demand	mg/L	Composite	Grab
Chemical Oxygen Demand	mg/L	Composite	Grab
Total Organic Carbon	mg/L	Composite	Grab
Total Dissolved Solids	mg/L	Composite	Grab
Total Suspended Solids	mg/L	Composite	Grab
Total Hardness (as CaCO ₃)	mg/L	Composite	Grab
Total Phosphorous	mg/L	Composite	Grab
Dissolved Phosphorous	mg/L	Composite	Grab
Total Kjeldahl Nitrogen	mg/L	Composite	Grab
Nitrate (as Nitrogen)	mg/L	Composite	Grab
Total Ammonia (as Nitrogen)	mg/L	Composite	Grab
Total Arsenic	µg/L	Composite	Grab
Total Cadmium	µg/L	Composite	Grab
Total Chromium	µg/L	Composite	Grab
Total Copper	µg/L	Composite	Grab
Total Lead	µg/L	Composite	Grab
Total Mercury	µg/L	Composite	Grab
Total Nickel	µg/L	Composite	Grab
Total Selenium	µg/L	Composite	Grab
Total Zinc	µg/L	Composite	Grab
Oil and Grease	mg/L	Grab	Grab
Specific Conductance	µmhos/cm	Grab	Grab
pH	units	Grab	Grab
Organochlorine Pesticides ¹	µg/L		Grab
Organophosphate Pesticides ¹	µg/L		Grab
Purgeable Aromatic Constituents ¹	µg/L		Grab
Herbicides ¹	µg/L		Grab
Total Coliform	MPN/100 mL	Grab	Grab
Fecal Coliform	MPN/100 mL	Grab	Grab
E. Coli and/or enterococcus ²	MPN/100 mL	Grab	Grab

¹ Receiving water monitoring only.

² Monitoring of E. Coli and/or enterococcus shall begin following the update by the State Water Resources Control Board of its indicator bacteria water quality objectives, in accordance with any implementation schedule adopted with the update. If the update contains no implementation schedule, monitoring of E. Coli and/or enterococcus shall begin within 30 days of the final approval of the update.

D. Dry Weather Field Screening

1. The permittees shall conduct dry weather monitoring that screens all of the Permittees' outfalls each year.
2. Sites with sufficient flow will be analyzed in the field for temperature, pH, phenols, chlorine, total copper, specific conductance (EC), methyl blue activated substances (detergents/ surfactants), and turbidity.
3. The Permittees shall provide follow-up investigation to verify the presence of an illicit connection if the following action levels are exceeded:

Table 2. Dry Weather Field Screening Action Levels

Constituent	Units	Action Levels
Phenols	mg/L	>0.017
Total Copper	mg/L	>2
Electrical Conductivity	umhos/cm	>700
Methyl Blue Activated Substances	mg/L	>0.275
Turbidity	NTU	>55

E. Special Studies

1. Copper and Zinc Investigation and Reduction Plan

By <9 months from order adoption> the Permittees shall submit for Executive Officer approval, a work plan and time schedule for the development of a copper and zinc investigation and reduction plan to evaluate the extent and cause of copper and zinc in the storm water discharge and to implement management actions to eliminate or reduce sources.

2. Monitoring Program and Monitoring Data Assessment Methodology

By <9 months from order adoption> the Permittees shall submit for Executive Officer approval, a proposal for modification of the monitoring program and monitoring data assessment methodology to provide a better overall assessment of the effectiveness of the SWMP. The assessment shall include a means of analyzing trends, identifying improvements to or degradation of receiving water quality, and calculating pollutant load reduction. The methodology shall insure the data collected are of the appropriate type and quality to provide meaningful assessment of the potential impacts of the MS4 on the receiving waters.

III. STANDARD MONITORING PROVISIONS

All monitoring activities shall meet the following requirements:

A. Monitoring and Records [40 CFR 122.41(j)(1)]

Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

B. Monitoring and Records [40 CFR 122.41(j)(2)] [California Water Code §13383(a)]

The Permittees shall retain records of all monitoring information, including all calibration and maintenance of monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the Report of Waste Discharge and application for this Order, for a period of at least five (5) years from the date of the sample, measurement, report, or application. This period may be extended by request of the Central Valley Water Board or U.S. EPA at any time and shall be extended during the course of any unresolved litigation regarding this discharge.

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

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

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

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

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

The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this Order shall, upon conviction, be punished by a fine of not more than \$10,000, or by imprisonment for not more than two years, or both. If a conviction of a person is for a violation committed after a first

conviction of such person under this paragraph, punishment is a fine of not more than \$20,000 per day of violation, or by both.

- F. All chemical, bacteriological, and toxicity analyses shall be conducted at a laboratory certified for such analyses by an appropriate governmental regulatory agency.
- G. For priority toxic pollutants that are identified in the CTR (65 Fed. Reg. 31682), the MLs published in Appendix 4 of the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California 2005 (SIP) shall be used for all analyses, unless otherwise specified. Appendix 4 of the SIP is included as Table 1. For pollutants not contained in Appendix 4 of the SIP, the test method and method detection limit (MDL) listed in Table 1 shall be used for all analyses, and the ML for these parameters shall be lower than or equal to the lowest applicable water quality criteria from the Basin Plan and/or the SIP.
- H. The Monitoring Report shall specify the analytical method used, the MDL and the ML for each pollutant. For the purpose of reporting compliance with numerical limitations, performance goals, and receiving water limitations, analytical data shall be reported with one of the following methods, as appropriate:
 - 1. An actual numerical value for sample results greater than or equal to the ML;
 - 2. "Not-detected (ND)" for sample results less than the laboratory's MDL with the MDL indicated for the analytical method used; or
 - 3. "Detected, but Not Quantified (DNQ)" if results are greater than or equal to the laboratory's MDL but less than the ML. The estimated chemical concentration of the sample shall also be reported. This is the concentration that results from the confirmed detection of the substance by the analytical method below the ML value.
 - 4. For priority toxic pollutants, if the Permittee can demonstrate that a particular ML is not attainable, in accordance with procedures set forth in 40 CFR 136, the lowest quantifiable concentration of the lowest calibration standard analyzed by a specific analytical procedure (assuming that all the method specified sample weights, volumes, and processing steps have been followed) may be used instead of the ML listed in Appendix 4 of the SIP. The Permittee must submit documentation from the laboratory to the Central Valley Water Board Executive Officer for approval prior to raising the ML for any constituent.

I. Monitoring Reports [40 CFR 122.41(l)(4)(ii)]

If the Permittees monitor any pollutant more frequently than required by the permit using test procedures approved under 40 CFR part 136, unless otherwise specified in the Order, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the Annual Report.

J. Monitoring Reports [40 CFR 122.41(l)(4)(iii)]

Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order.

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

L. The Executive Officer or the Regional Water Board, consistent with 40 CFR 122.41, may approve changes to the Monitoring Program, after providing the opportunity for public comment, either:

1. By petition of the Permittees or by petition of interested parties after the submittal of the Annual Report. Such petition shall be filed not later than 60 days after the Annual Report submittal date, or
2. As deemed necessary by the Executive Officer following notice to the Permittees.

I, PAMELA C. CREEDON, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region on, **6 December 2013, and amended on 5 June 2015.**

Original signed by

PAMELA C. CREEDON, Executive Officer

5 June 2015

Date

Attachment 1: LIST OF CONSTITUENTS AND THEIR ANALYTICAL LIMITS

**ATTACHMENT 1-
 LIST OF CONSTITUENTS AND THEIR ANALYTICAL LIMITS
 ORDER R5-2013-0153-01
 CITY OF BAKERSFIELD AND COUNTY OF KERN
 MUNICIPAL SEPARATE STORM SEWER SYSTEM**

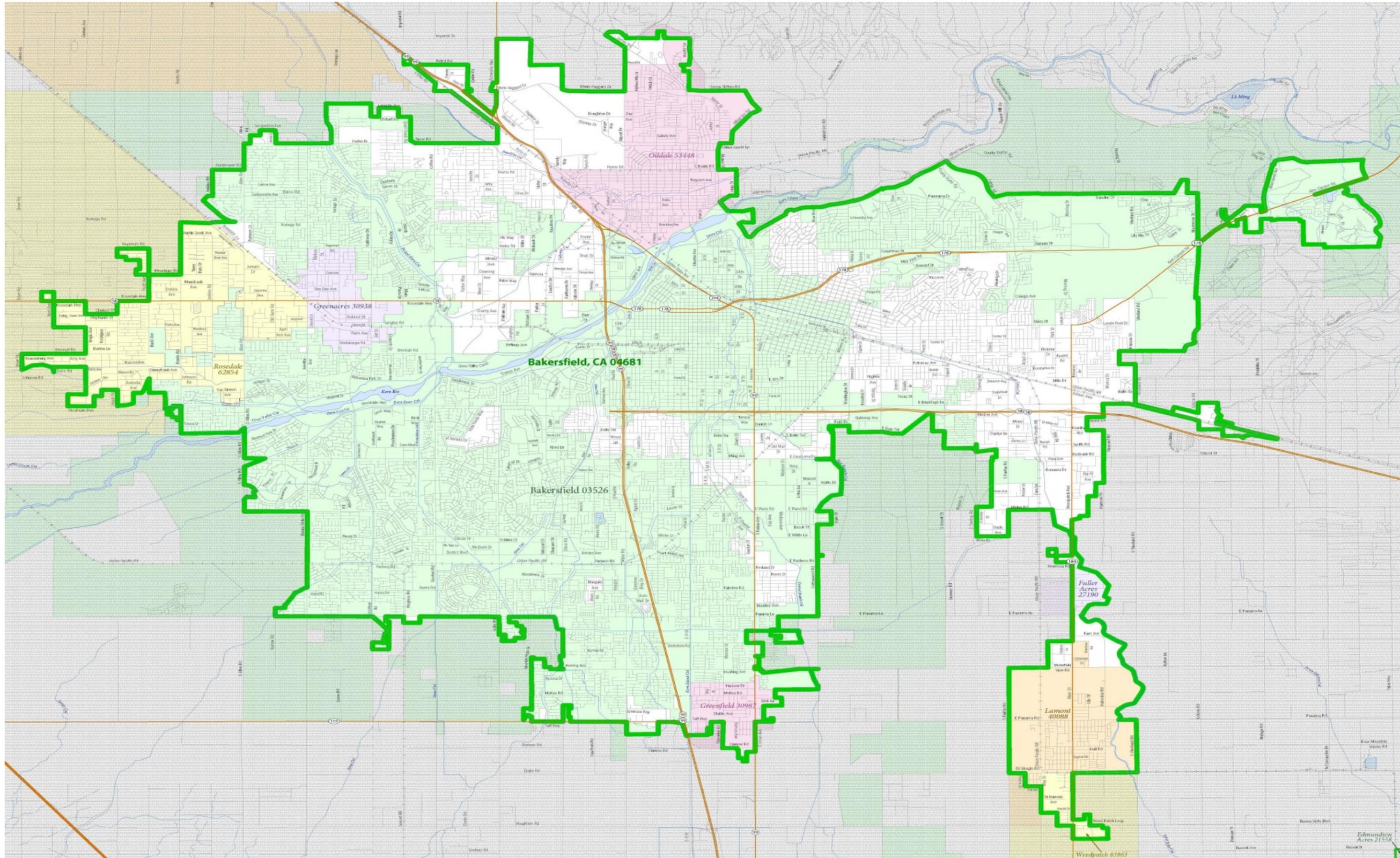
CONSTITUENTS	MLs ¹
CONVENTIONAL POLLUTANTS	mg/L
Oil and Grease	5
pH	0 - 14
FIELD MEASUREMENTS	
Date	mm/dd/yyyy
Sample Time	hr:min (regular time)
Weather	degrees F
Water Temperature	degrees C
BACTERIA	
Total coliform	<20 mpn/100ml
Fecal coliform	<20 mpn/100ml
E.coli and/or enterococcus ²	<20 mpn/100ml
GENERAL	mg/L
Turbidity	0.1 NTU
Total Suspended Solids	2
Total Dissolved Solids	2
Total Organic Carbon	1
Biochemical Oxygen Demand	2
Chemical Oxygen Demand	20-900
Total Kjeldahl Nitrogen	0.1
Alkalinity	2
Total Ammonia (as Nitrogen)	0.1
Nitrate (as Nitrogen)	0.1

¹ For Priority Pollutants, the MLs represent the lowest value listed in Appendix 4 of SIP. MDLs must be lower than or equal to the ML value. If a particular ML is not attainable in accordance with procedures set forth in 40 CFR 136, the lowest quantifiable concentration of the lowest calibration standard analyzed by a specific analytical procedure may be used instead.

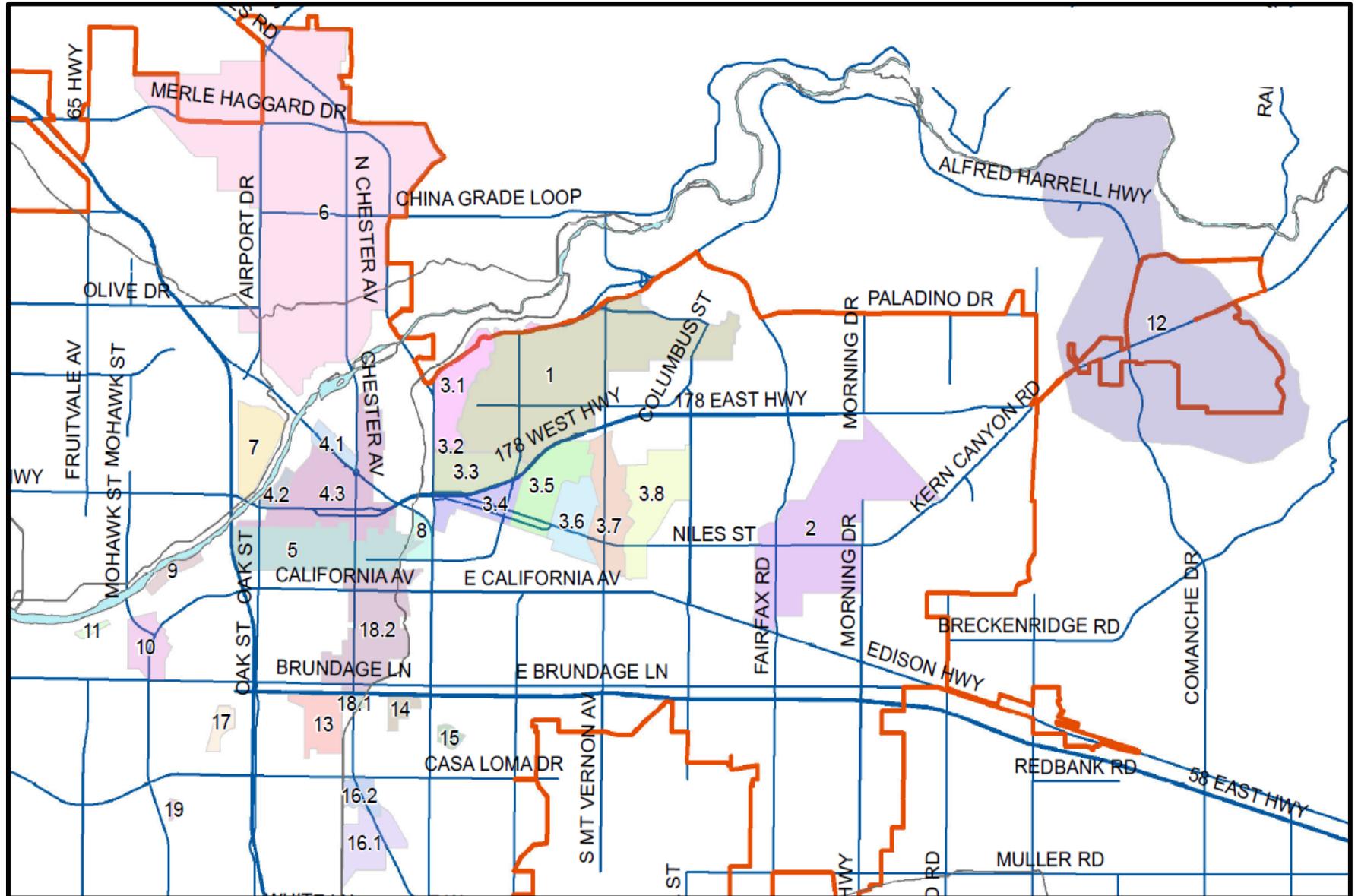
² Monitoring of E.coli and/or enterococcus shall begin following the update by the State Water Resources Control Board of its indicator bacteria water quality objectives, in accordance with any implementation schedule adopted with the update. If the update contains no implementation schedule, monitoring of E.coli and/or enterococcus shall begin within 30 days of the final approval of the update.

Total Phosphorus	0.05
Specific Conductance	1 umho/cm
Total Hardness	2
METALS	µg/L
Total Arsenic	2
Total Cadmium	0.25
Total Chromium	0.5
Total Copper	0.5
Total Iron	100
Total Lead	0.5
Total Mercury	0.2
Total Nickel	1
Total Selenium	2
Total Zinc	1

ATTACHMENT A- Bakersfield Urbanized Area
WASTE DISCHARGE REQUIREMENTS ORDER R5-2013-0153-01
CITY OF BAKERSFIELD AND COUNTY OF KERN
MUNICIPAL SEPARATE STORM SEWER SYSTEM
KERN COUNTY



ATTACHMENT B- Drainage Watersheds Discharging to Waters of the United States
WASTE DISCHARGE REQUIREMENTS ORDER R5-2013-0153-01
CITY OF BAKERSFIELD AND COUNTY OF KERN
MUNICIPAL SEPARATE STORM SEWER SYSTEM
KERN COUNTY



ATTACHMENT C- Drainage Watersheds
WASTE DISCHARGE REQUIREMENTS ORDER NO. R5-2013-0153-01
CITY OF BAKERSFIELD AND COUNTY OF KERN
MUNICIPAL SEPARATE STORM SEWER SYTSEM
KERN COUNTY

Drainage Watershed No.	Watershed Name	Area (acres)	Receiving Water	Outfall Location
1	NE BAKERSFIELD	1789	Kern River	at Manor St.
1.1	NE BAKERSFIELD	4	Carrier Canal	at Manor St.
2*	PIONEER	1335	East Side Canal	at Fairfax Rd.
3.1	GARCES HIGH AREA	310	Kern Island Canal	at Irene St.
3.2	BERNARD & UNION (NE)	19	East Side Canal	at Bernard St.
3.3	ALTA VISTA	264	East Side Canal	at Niles St. and Union Ave.
3.4	BAKER ST.	202	East Side Canal	along Lake St. between Union Ave. and Owens St.(18 outfalls)
3.5	ROBINSON	353	East Side Canal	along Lake St. between Owens St. and Brown St. (10 outfalls)
3.6	VIRGINIA	235	East Side Canal	along Lake St. between Brown St. and Canal St. (4 outfalls)
3.7	MT. VERNON	346	East Side Canal	at Mt. Vernon St.
3.8*	HAWTHORNE	425	East Side Canal	at Webster St.
4.1	GOLDEN STATE	72	Kern River	at Golden State Hwy
4.2	ELM ST.	45	Kern River	at Olive St.
4.3	ELM ST.	692	Kern River	near Beach Park
5	DOWNTOWN	600	Carrier Canal	at Truxtun Ave.
6.1*	OILDALE	3353	Kern River	at North Chester Ave.
6.2*	OILDALE	881	Kern River	at Hart St.
7		246	Kern River	near Sillect Ave.
8	UNION	76	Kern Island Canal	at R St.
9	TRUXTUN EXT UNDERPASS	40	Kern River	near Commercial Way
10*	CALIFORNIA AVE.	178	Carrier Canal	near Mohawk St.
11*	TRUXTUN PLAZA	19	Kern River	at Truxtun Lake
12*	RIO BRAVO	3722	Kern River	near Lake Ming and Kern River Golf Course
13.1	BELLE TERRACE (EAST)	106	Kern Island Canal	at Belle Terrace East
13.2	BELLE TERRACE (WEST)	85	Kern Island Canal	at Adams St.
14	TERRACE WAY	88	Kern Island Canal- East Branch	at Terrace Way
15	UNION & BELLE TERRACE	49	Kern Island Canal- East Branch	at Belle Terrace East
16.1*	SOUTH CHESTER	241	Kern Island Canal	at S. H St.
16.2*	SOUTH CHESTER	64	Kern Island Canal- Central Branch	at S. Chester Ave.
17	BELLE TERRACE (WEST)	61	Stine Canal	near Terrace Ave.
18.1	VERNAL PLACE	29	Kern Island Canal	at R St.
18.2	VERNAL PLACE	557	Kern Island Canal	at Vernal Place
19	HASTI-ACRES	13	Stine Canal	at Wilson Ave.
	Total Area (acres)	16499		
	Total Number of Outfalls	62		
*Drainage areas also served by detention basins				

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER R5-2013-0153-01

NPDES PERMIT CA0083399

FACT SHEET
FOR
CITY OF BAKERSFIELD AND COUNTY OF KERN
STORM WATER DISCHARGES FROM
MUNICIPAL SEPARATE STORM SEWER SYSTEM
KERN COUNTY

I. PURPOSE

The Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board) will be considering renewal of the Waste Discharge Requirements (WDR) Order/National Pollutant Discharge Elimination System (NPDES) Permit (Order) that regulates discharges from the Municipal Separate Storm Sewer System (MS4) of the City of Bakersfield and the County of Kern, hereafter referred to as Permittees. This Fact Sheet provides the Permittees and interested persons an overview of the proposed Order and provides the technical basis for the permit requirements.

The proposed Order specifies requirements necessary for the Permittees to reduce the discharge of pollutants in urban runoff to the maximum extent practicable (MEP). Since compliance with the MEP standard is an iterative process, the Permittees' storm water programs must continually be assessed and modified as urban runoff management knowledge increases to incorporate improved programs, control measures, best management practices (BMPs), etc. in order to achieve the MEP standard. This continual assessment, revision, and improvement of storm water management program implementation is expected to achieve compliance with water quality standards.

II. THE NEED TO REGULATE STORM WATER DISCHARGES

The National Urban Runoff Program (NURP) Study [U.S. Environmental Protection Agency (U.S. EPA) 1983] showed that MS4 discharges draining from residential, commercial, and light industrial areas contain significant loadings of total suspended solids. Although the NURP Study did not cover industrial sites, the study suggested that runoff from industrial sites may have significantly higher contaminant levels than runoff from other urban land use sites. Several studies tend to support this observation. For example, in Fresno, a NURP project site, industrial areas had the poorest storm water quality of the four land uses evaluated. The study found that pollutant levels from illicit discharges were high enough to significantly degrade receiving water quality and threaten aquatic life, wildlife, and human health.

The National Water Quality Inventory Reports to Congress [305(b) Report]¹ prepared by the U.S. EPA indicate that storm water runoff and urban runoff remain one of the top ten causes of water quality impairments in rivers, lakes, and estuaries.

According to the NURP, if not properly controlled and managed, urbanization could result in the discharge of pollutants in urban runoff. "America's Clean Water-The States' Nonpoint Source Assessment, 1985" and the Biennial National Water Quality Inventory Reports to Congress cite urban runoff as a major source of beneficial use impairment. Urban area runoff may contain² elevated levels of pathogens (e.g., bacteria, protozoa, viruses), sediment, trash, fertilizers (nutrients, compounds of nitrogen and phosphorus), pesticides (e.g., DDT, Chlordane, Diazinon, Chlorpyrifos), heavy metals (e.g., cadmium, chromium, copper, lead, zinc), and petroleum products (e.g., oil, grease, petroleum hydrocarbons, polycyclic aromatic hydrocarbons). Urban runoff can carry these pollutants to rivers, streams, lakes, bays and the ocean. In addition, increased flows due to urbanization may increase erosion of stream banks and channels and cause stream channel alterations and impact aquatic resources.

III. Benefits of Permit Program Implementation

Implementation of BMPs should reduce pollutant discharges, and improve surface water quality. The expected benefits of implementing the provisions of the City of Bakersfield and County of Kern MS4 NPDES permit include:

1. **Enhanced Aesthetic Value:** Storm water pollution may affect the appearance and quality of a water body, and the desirability of working, living, traveling, or owning property near that water body. Reducing storm water pollution makes the benefits of these water bodies more desirable.
2. **Enhanced Opportunities for Boating:** Reducing storm water runoff may, in turn, reduce the loading of sediment and/or other pollutant which could adversely impact water clarity. By protecting the water clarity, the program enhances the boating experience.
3. **Enhanced Recreational and Subsistence Fishing:** Pollutants in storm water can eliminate or decrease the numbers, or size, of sport fish and shell fish in receiving waters. Reducing pollutant concentrations in storm water can reverse these impacts.
4. **Reduced Flood Damage:** Storm water runoff controls may mitigate the potential for flood damage by incorporating controls to address the diversion of runoff, insufficient storage capacity, and reduced channel capacity from sedimentation.

¹ *Quality of Our Nation's Waters: Summary of the National Water Quality Inventory 2004 Report to Congress* - U.S. EPA EPA 841-R-08-001 - June 2009.

² Makepeace, D.K., D.W. Smith, and S.J. Stanley. 1995. Urban stormwater quality: summary of contaminant data. *Critical Reviews in Environmental Science and Technology* 25(2):93-139.

5. **Reduced Illness from Consuming Contaminated Fish:** Storm water controls may reduce the presence of pathogens in fish caught by recreational anglers.
6. **Reduced Illness from Swimming in Contaminated Water:** Epidemiological studies indicate that swimmers in water contaminated by storm water runoff are more likely to experience illness than those who swim farther away from a storm water outfall.
7. **Enhanced Opportunities for Non-contact Recreation:** Storm water controls reduce turbidity, odors, floating trash, and other pollutants, which then allow waters to be used as focal point for recreation, and enhance the experience of the users.
8. **Drinking Water Benefits:** Pollutants from storm water runoff, such as solids, toxic pollutants, and bacteria may pose additional costs for treatment, or render the water unusable for drinking.
9. **Water Storage Benefits:** The heavy load of solids deposited by storm water runoff can lead to rapid sedimentation of reservoirs and the loss of needed water storage capacity.
10. **Improved Habitat Benefits:** Storm water can have significant impacts to habitat and aquatic life. Storm water controls can minimize impacts to creek corridors and the wildlife dependent upon them.

IV. STATUTORY AND REGULATORY CONSIDERATIONS

The 1972 amendments to the federal Clean Water Act (CWA) prohibit the discharge of any pollutant to waters from a point source, unless a NPDES permit authorizes the discharge. The U.S. Congress amended the CWA in 1987, requiring the U.S. EPA to create phased NPDES requirements for storm water discharges.

In response to the 1987 Amendments to the CWA, the U.S. EPA developed Phase I of the NPDES Storm Water Program in 1990. Phase I requires NPDES permits for storm water discharges from: (i) "medium" and "large" MS4s generally serving, or located in incorporated places or counties with, populations of 100,000 or more people; and (ii) eleven categories of industrial activity (including construction activity that disturbs five acres or greater of land).

Phase II, adopted in December 1999 and became effective in March 2003, requires operators of small MS4s and small construction sites (construction activity disturbing greater than or equal to 1 acre of land or less than 1 acre if part of a larger common plan of development or sale) in urban areas to control storm water runoff discharges. Phase II establishes a cost-effective approach for reducing environmental harm caused by storm water discharges from previously unregulated small MS4s.

CWA Section 402(p)(3)(B) specifically requires that permits for discharges from MS4s must: (1) effectively prohibit the discharges of non-storm water to the MS4; and (2) require controls to reduce pollutants in discharges from MS4 to the maximum extent practicable (MEP) including best management practices, control techniques, system design and engineering methods, and such other provisions determined to be appropriate. Compliance with water quality standards is to be achieved over time, through an iterative approach requiring improved BMPs.

CWA Section 402(p)(3)(B)(ii) requires that permits for discharges from municipal storm sewers “shall include a requirement to effectively prohibit non-storm water discharges into the storm sewers.” The Central Valley Water Board’s *Water Quality Control Plan for the Tulare Lake Basin, Second Edition*, revised January 2004, also prohibits the discharge of waste to waters of the State in a manner causing, or threatening to cause a condition of pollution, contamination, or nuisance as defined in Water Code Section 13050.

Pursuant to the CWA, the U.S. EPA promulgated the MS4 Permit application regulations set forth in 40 CFR 122.26(d). These federal regulations describe in detail the permit application requirements for MS4s operators. Federal regulations at 40 CFR 122.26(d)(2)(iv)(B) also require MS4 operators, “to detect and remove illicit discharges and improper disposal into the storm sewer.” Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B)(1) provides that the Permittees shall prevent all types of illicit discharges into the MS4 except for certain, specified non-storm water discharges.

The Permit requires the implementation of a comprehensive SWMP through a selection of BMPs [see 40 Code of Federal Regulations (CFR) 122.44(k)] as the mechanism to achieving the reduction of pollutants in storm water to the MEP [see CWA § 402(p)(3)(B)(iii)]. The information in the permit application (commonly called a Report of Waste Discharge) and the existing SWMP was utilized to develop the Permit conditions.

No numeric effluent limitations are proposed at this time. In accordance with 40 CFR 122.44(k), the U.S. EPA has required a series of increasingly more effective BMPs³, in the form of a comprehensive SWMP and performance standards, in lieu of numeric limitations.⁴

Additionally, on 14 November 2003, the California Superior Court ruled; “Water quality-based effluent limitations are not required for municipal Storm water discharges [33 USC §1342(p)(3)(B)] and [40 CFR §122.44(k)(3)]. For municipal storm water discharges, the permits must contain best management practices (BMPs), which reduce pollutants to the maximum extent practicable [33 USC §1342(p)(3)(B)]. These permits do contain these through the Storm Water Management Plan which is incorporated into the permits by

³ *Interpretative Policy Memorandum on Reapplication Requirements* of MS4s issued by U.S. EPA (61 Fed. Reg. 41697)

⁴ *Interim Permitting Approach for Water Quality-Based Effluent Limitations in Storm Water Permits* (61 Fed. Reg. 43761)

reference.” (*San Francisco Baykeeper vs. Regional Water Quality Control Board, San Francisco Bay Region*, Case No. 500527, 14 November 2003).

Subsequently, the State Water Resources Control Board (SWRCB) convened a Storm Water Panel (Blue Ribbon Panel) of experts to address the issue of numeric effluent limits.⁵ The study, finalized in June 2006, also concludes that it is not feasible at this time to set enforceable numeric effluent limits for storm water and non-storm water discharges from MS4s.

V. CITY OF BAKERSFIELD AND KERN COUNTY MS4

The unincorporated urbanized area within the County is defined as a medium municipality (population greater than 100,000 but less than 250,000) in Appendix I to Part 122 of Title 40 of the Federal Code of Regulations (40 CFR). As such, the County must obtain a NPDES municipal storm water permit for storm water discharges associated with its urbanized area. The City is also designated as a medium municipality in Appendix G of 40 CFR 122. Due to the interrelationship between the discharges of the County and City municipal storm sewers, the urbanized areas of Kern County in the vicinity of Bakersfield are designated as part of the medium municipal storm sewer. The County and City each have jurisdiction over about half of the Bakersfield metropolitan area. The City and County (Permittees) originally obtained coverage under WDR Order 94-164, NPDES Permit CA0083399, adopted on 24 June 1994 and are currently regulated by WDR Order 5-01-130, NPDES Permit CA0083399, adopted on 14 June 2001.

Storm Drain System

The area subject to this Order will be referred to as the Bakersfield Urbanized Area (shown in Attachment A) that for this Order, coincides with the Census Bureau 2010 Census Map. The County of Kern and City of Bakersfield own, operate, and maintain a storm drainage system serving metropolitan Bakersfield and a portion of the surrounding unincorporated area. The system includes approximately 2 to 3 miles of major storm drain open channels and approximately 40 miles of major closed conduit conveyances. Storm water runoff from the Bakersfield Urbanized Area is directed to either one of approximately 322 terminal retention basins or to one of 52 direct outfalls or 10 indirect outfalls (discharging after flowing through detention basins) discharging to the Kern River, East Side Canal, Carrier Canal, Stine Canal, or Kern Island Canal. The East Side Canal, Stine Canal, and Kern Island Canal are owned and operated by the Kern Delta Water District. The Carrier Canal is jointly owned by the City of Bakersfield and the Kern Delta Water District and operated by the City of Bakersfield. Approximately 90 percent of the average annual storm water runoff is retained in storm water detention basins. The Kern River and

⁵ Recommendations of the Blue Ribbon Panel were finalized as *The Feasibility of Numeric Effluent Limits Applicable to Discharges of Storm Water Associated with Municipal, Industrial and Construction Activities*, dated 19 June 2006.

the canals are considered waters of the United States. Urban drainage watersheds that discharge to waters of the U.S. (shown in Attachment B) cover approximately 16,499 acres of the 88,576 acres within the Bakersfield Urbanized Area. Locations of outfalls that correspond with the drainage basin watersheds are listed in Attachment C.

There are portions within the Bakersfield Urbanized Area that are mainly agricultural, rural, and open space lands. It is not the intent of the federal storm water regulations to regulate storm water discharges from land uses of these types. Therefore, these areas are exempt from the requirements of this Order unless they are a point source discharge to the Permittees' conveyance system. Discharges from these sources may be subject to TMDL allocations and control programs.

Audits

The U.S. EPA Region 9 and the Central Valley Water Board conducted a program evaluation (2002 Evaluation) of the City of Bakersfield and the County of Kern's SWMP in November 2002, and U.S. EPA Region 9 conducted an inspection (2009 Inspection) of the City of Bakersfield's Construction Program in November 2009. The U.S. EPA Region 9 and PG Environmental conducted a program evaluation of the illicit discharge and construction components of the City and County programs in August 2012 (2012 Inspection). The purpose of the evaluation and inspections was to determine Permittees' compliance with WDR Order 5-01-130, and to review the overall effectiveness of the program with respect to U.S. EPA's storm water regulations.

During the 2002 Evaluation, the auditors found that the City and County were not adequately reviewing, tracking, or inspecting construction sites greater than 5 acres (now 1 acre) for erosion and sediment controls. The City and the County were not implementing BMPs at municipal facilities, and not conducting inspections at industrial facilities. In April 2003, the City responded to the 2002 Evaluation by submitting a Notice of Intent to obtain coverage under the Industrial General Permit for the City Corporation Yard and a soil and storm water characterization plan for the retention basin in the City Corporation Yard. On 1 October 2003, the City and County submitted proposed modifications to the SWMP to address the deficiencies noted in the 2002 Evaluation and submitted model SWPPPs for industrial and construction projects.

During the 2009 Inspection, the auditors found that the City was not ensuring that private and public construction projects were in compliance with local ordinances and the Construction General Permit per WDR Order 5-01-130, Provisions D.20, D.21, and D.22. The auditors found the City was not inspecting private construction projects, not requiring the submittal of SWPPPs or reviewing SWPPPs for private projects, not able to provide an inventory of active construction projects, and not issuing any enforcement actions against non-compliant project sites. Furthermore, the auditors found the City was not adequately conducting and documenting inspections of public projects. The City's lack of construction program implementation was not adequately ensuring compliance with the City's local ordinances, the Construction General Permit, or WDR Order 5-01-130. On

2 September 2011, the City responded that the deficiencies noted in the 2009 Inspection, specific to certain projects, were corrected at the conclusion of the evaluation and new procedures were now being implemented for public projects: (1) The City stated it was in the process of training Construction Inspection and Engineering staff in order to obtain certifications as Qualified SWPPP Developers (QSD) and Qualified SWPPP Practitioners (QSP); (2) As now required under the Construction General Permit, the City is requiring contractors to prepare and submit a Storm Water Pollution Prevention Plan (SWPPP), which has been prepared by a QSD, for Capital Improvement Projects (CIP); (3) As the Legally Responsible Party, the City said it will approve and certify all CIP SWPPPs and ensure the SWPPPs are uploaded into the State of California Storm Water Multiple Application and Report Tracking System (SMARTS); (4) The City will require contractors to have a QSP on all CIP projects to perform all inspection, testing, and reporting; and (5) City construction inspection staff will monitor all qualifying CIP projects to ensure that the BMP's are maintained and that proper inspection and reporting work is being performed by the contractor.

Potential permit violations identified during the 2012 Inspection include failure of the City and County to facilitate a public reporting hotline or website, failure of the City and County to implement a storm drain stenciling program, failure of the City to provide written protocols for dry weather field screening and sampling, and failure of the City and County to ensure compliance with the Construction General Permit. The results of the 2012 Inspection were transmitted to the City and County on 1 May 2013. The County response indicated many of the potential violations had been corrected and additional deficiencies noted in the 2012 Inspection would be corrected by revisions to the City's and County's SWMP.

VI. ANTIDegradation

The State Water Resources Control Board adopted Resolution 68-16 ("Statement of Policy with Respect to Maintaining High Quality of Waters in California") (Antidegradation Policy), which requires the regional water boards to assure maintenance of the high quality of waters of the State unless it has been shown that: the degradation does not result in water quality less than that prescribed in state and regional policies, including violation of one or more water quality objectives; the degradation will not unreasonably affect present and anticipated future beneficial uses; the discharger employs Best Practicable Treatment or Control (BPTC) to minimize degradation; and the degradation is consistent with the maximum benefit to the people of the state.

The communities covered by this Permit have continued to develop since adoption of the previous permit. Because future development will be required to implement the same level of water quality protection as the current program requires for existing development, the anticipated incremental growth over this permit term is not expected to cause significant impairment of receiving waters. The proposed Order allows storm water utility service necessary to accommodate housing and economic expansion in the area, and is considered to be a benefit to the people of the State. Compliance with these requirements

Chemical Oxygen Demand	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
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Discharger Water Quality

In 1992, as part of its original permit application, the Permittees submitted a storm water discharge characterization plan that proposed sampling three drainage areas: the Mohawk Drive detention basin inlet as representative of commercial area discharge; the North Chester Avenue manhole access north of the Golden State Overpass representing industrial area discharge; and the Hawthorne Ravine at the intersection of Hawthorne Avenue and River Boulevard representing residential area discharge. The intent of the characterization plan was to characterize the storm water runoff from each of the three area types, then use the pollutant concentrations to estimate the total pollutant load from the entire Bakersfield Urbanized Area.

The following table provides the pollutant concentration results from the discharge characterization monitoring for the past five years for the residential, commercial and industrial representative areas:

Hawthorne- Residential Area

<u>Metals (ug/L)</u>	2011-2012	2010-2011	2009-2010	2008-2009		2007-2008	2006-2007
				1st Storm	2nd Storm		
Arsenic	5.4	6.4	4.6	<1.0	<1.0	3.9	5.3
Cadmium	<1.0	<1.0	<1.0	8.6	3.7	<1.0	<1.0
Chromium	6.2	3.3	3.5	0.23	0.31	3.9	<3.0
Copper	49	55	32	4.4	2.6	32	110
Lead	15	9.1	6.1	39	34	9.2	2.1
Mercury	<0.2	<0.2	<0.2	9.3	7.9	<0.2	<0.2
Nickel	7.1	8.1	5.8	8.7	5.1	6.5	2.6
Selenium	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Zinc	170	170	150	160	90	160	77
<u>General Chemistry (mg/L)</u>							
Calcium	8.5	22	11	15	12	13	58
Magnesium	1.9	3.5	1.9	2.6	1.4	2.5	4.9
Total Hardness, CaCO ₃	29	70	34	98	36	44	440
Total Dissolved Solids	61	170	96	78	82	120	9.3
Total Suspended Solids	160	76	43	48	31	96	160
Ammonia as N (Distilled)	<0.02	2.8	1.9	2.6	1.3	1.5	0.56
Total Phosphorus	0.64	0.99	0.65	0.71	0.054	0.69	0.46
Chemical Oxygen Demand	210	230	25	160	84	140	

North Chester- Industrial Area

<u>Metals (ug/L)</u>	2011-2012	2010-2011	2009-2010	2008-2009		2007-2008	2006-2007
				1st Storm	2nd Storm		
	Arsenic	2.2	no flow	4.1	no flow	2.2	5.1
Cadmium	<1.0	no flow	<1.0	no flow	1.3	1	no flow
Chromium	4.5	no flow	7.3	no flow	3.8	5.7	no flow
Copper	21	no flow	35	no flow	22	32	no flow
Lead	11	no flow	18	no flow	7.2	12	no flow
Mercury	<0.2	no flow	<0.2	no flow	<0.2	<0.2	no flow
Nickel	4.5	no flow	9	no flow	5.2	7.3	no flow
Selenium	<1.0	no flow	<1.0	no flow	<1.0	<1.0	no flow
Zinc	270	no flow	640	no flow	380	650	no flow
<u>General Chemistry (mg/L)</u>							
Calcium	5.4	no flow	8.5	no flow	6.7	11	no flow
Magnesium	1.1	no flow	2.2	no flow	0.99	2.1	no flow
Total Hardness, CaCO3	18	no flow	30	no flow	89	36	no flow
Total Dissolved Solids	41	no flow	77	no flow	32	130	no flow
Total Suspended Solids	64	no flow	91	no flow	21	99	no flow
Ammonia as N (Distilled)	<0.02	no flow	1.6	no flow	2.4	1.8	no flow
Total Phosphorus	0.29	no flow	1.5	no flow	0.37	0.53	no flow
Chemical Oxygen Demand	87	no flow	120	no flow	68	96	no flow

Mohawk- Commercial Area

<u>Metals (ug/L)</u>	2011-2012	2010-2011	2009-2010	2008-2009		2007-2008	2006-2007
				1st Storm	2nd Storm		
	Arsenic	2.3	1.2	6.4	1.9	2.6	1.7
Cadmium	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chromium	3.9	<3.0	9.4	3	3.1	<3.0	<3.0
Copper	53	5.9	48	29	20	24	<2.0
Lead	6.3	<1.0	8.6	3.3	5	4.5	<1.0
Mercury	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Nickel	4.3	<2.0	11	5.4	4.1	5.7	<2.0
Selenium	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Zinc	170	25	280	170	240	150	<5.0
<u>General Chemistry (mg/L)</u>							
Calcium	5.6	34	12	12	7.9	14	37
Magnesium	1.9	3	2.8	1.7	1.1	2.7	3.7

	2011-2012	2010-2011	2009-2010	2008-2009	2007-2008	2006-2007	
Total Hardness, CaCO ₃	22	97	41	37	24	47	110
Total Dissolved Solids	36	220	120	110	95	150	7
Total Suspended Solids	160	9.2	120	35	33	64	250
Ammonia as N (Distilled)	<0.02	0.5	2.2	2.8	1.2	1.6	0.15
Total Phosphorus	0.51	0.39	0.83	0.61		0.84	0.36
Chemical Oxygen Demand	150	44	270	130	82	160	<4.0

Receiving Water Limitations

Receiving Water Limitations are retained from previous MS4 permits and they reflect applicable water quality standards from the Basin Plan.

Impaired Water Bodies on the CWA 303(d) List

Section 303(d) of the CWA requires states to identify specific water bodies where water quality standards are not expected to be met after implementation of technology-based effluent limitations on point sources. U.S. EPA approved the State’s 2008-2010 303(d) list of impaired water bodies on November 12, 2010. Currently the Kern River below Kern River Powerhouse No. 1 is not listed as an impaired water body.

Total Maximum Daily Loads (TMDLs)

For all 303(d)-listed water bodies and pollutants, the Central Valley Water Board plans to develop and adopt TMDLs that will specify waste load allocations (WLAs) for point sources and load allocations (LAs) for non-point sources, as appropriate. No TMDLs currently apply to receiving waters within the Kern County/Bakersfield MS4, however, should the U.S. EPA or the Central Valley Water Board develop applicable TMDLs, this permit may be reopened to impose additional conditions that require additional control measures.

VII. STORM WATER MANAGEMENT PROGRAM

Federal regulations (40 CFR 122.26(d)(2)(iv)) provide that, “A proposed management program covers the duration of the permit. It shall include a comprehensive planning process which involves public participation and where necessary intergovernmental coordination, to reduce the discharge of pollutants to the maximum extent practicable using management practices, control techniques and system, design and engineering methods, and such other provisions which are appropriate. The program shall also include a description of staff and equipment available to implement the program.”

The Permittees have submitted a SWMP (dated June 2006 and submitted March 2007) describing the framework for management of storm water discharges during the term of this permit. The overall goals of the Permittees’ SWMP are to a) reduce the degradation of waters of the State and waters of the United States (U.S.) by urban runoff and protect

their beneficial uses, and b) develop and implement an effective SWMP that is well understood and broadly supported by regional stakeholders. The SWMP and modifications or revisions to the SWMP that are approved in accordance with this permit, are an integral and enforceable component of this Order.

The existing SWMP includes the following program components:

- Maintenance of Structural Controls
- Master Plan to Develop, Implement and Enforce Controls on New Development and Significant Redevelopment
- Operation and Maintenance of Roads, Streets and Highways
- Assessment of Existing and Proposed Flood Management Projects
- Controls for Landfills and Other Treatment, Storage or Disposal Facilities
- Controls for Pesticides, Herbicides and Fertilizer
- Leaking Sanitary Sewage Controls
- Spill Prevention, Containment, and Response Procedures
- Illegal Dumping Controls
- Storm Drain System Inspections and Control Measures
- Monitoring Program for Industrial Activities
- Site Planning Procedures
- Structural and Non-structural BMPs

The Permittees are required to modify and/or update the existing SWMP as necessary to address the requirements of the following core programs and submit to the Regional Water Board for review:

- Program Management
 - Legal Authority
 - Fiscal Analysis
- Core Programs
 - Construction Program
 - Planning and Development Program
 - Industrial and Commercial Program
 - Municipal Operations Program
 - Illicit/Illegal Discharge Program
 - Public Education and Outreach Program
- Program Effectiveness Assessment and Reporting

The core programs and the corresponding proposed Order requirements under those core programs are discussed below.

Program Management

This Order requires submission of an Annual Work Plan. The Annual Work Plan requires a description of the SWMP's and the Permittees' proposed activities for the upcoming fiscal year.

Pursuant to 40 CFR 122.42(c), this Order also requires submission of an Annual Report by 1 September of each year documenting the Permittees' status of implementing the SWMP; proposed changes to the SWMP programs; a summary of data accumulated throughout the year; documentation of the fiscal analysis discussed below; a summary of the number and nature of enforcement actions taken throughout the year; a summary of the number and nature of inspections conducted; identification of water quality improvements or degradation; and identification of the Permittees' status relative to the activities proposed in the previous year's Annual Work Plan. The Annual Report will also include a program effectiveness assessment and recommended modifications for each core program. Each Annual Report will build upon the previous year's efforts using and identifying BMPs to the MEP. The Annual Report will also include a compilation of deliverables and milestones completed during the previous 12-month period, as described in the SWMP and Annual Work Plan.

The Permittees are required to coordinate in order to ensure that all of the requirements outlined in this Order and the SWMP are implemented. To this end, the Permittees are required to review and if necessary, revise their existing memoranda of understanding (MOU) to ensure that it provides a suitable management structure and outline the roles and responsibilities for each Permittee. The Order also requires the Permittees to identify all departments responsible for water pollution control regulated activities and their roles and responsibilities under this Order. This information will be presented on an organizational chart submitted with the Annual Report.

The Program Management component of the SWMP requires the Permittees to evaluate existing training protocols and describe how the protocols will be changed to meet the requirements of the updated Permit.

Finally, the Permittees are required to secure the resources necessary to meet the requirements of this Order and prepare an annual fiscal summary as part of the SWMP Annual Report.

Construction Program

40 CFR 122.26(d)(i) requires the Permittees to implement a program to control the contributions of pollutants to the MS4 from storm water discharges associated with industrial activities. Construction sites of five acres or more are considered industrial activities. For smaller sites, 40 CFR 122.26 (d) (iv) (D), also requires a program to implement and maintain structural and non-structural best management practices at construction sites. This Order requires the Permittees to update the SWMP to reduce pollutants in runoff from construction

sites during all construction phases to the MEP. At a minimum, the Construction Program will ensure the following:

1. Identification of all active and inactive construction sites within their jurisdictions,
2. Prioritization of each site based on its threat to water quality,
3. Adding progressive enforcement, and
4. Reporting to the Central Valley Water Board of non-compliant sites.

Additionally, this Permit requires each Permittee to implement and enforce a program to control runoff from all construction sites subject to the State's *NPDES, General Permit For Storm Water Discharges Associated With Construction And Land Disturbance Activities, Order 2009-0009-DWQ, NPDES CAS000002* (General Construction Permit). The program will ensure:

1. Sediments are retained on-site by adequate source control BMPs;
2. Construction-related materials, wastes, spills, or residues are retained at the project site;
3. Non-storm water runoff from equipment and vehicle washing and any other activity is contained on-site;
4. Erosion from slopes and channels is controlled by effective BMPs;
5. Erosion and sediment control plans are secured prior to issuance of a grading permits;
6. All other environmental permits are obtained from agencies such as Department of Fish and Game, U.S. Army Corp of Engineers, and the Central Valley Water Board;
7. Construction sites within the MS4 permit boundaries are inspected for compliance with local ordinances and to confirm the Construction General Permit required SWPPP documents are on site; and
8. Sites in chronic noncompliance shall be reported to the Central Valley Water Board.

Based on the dual coverage and partnership approach between the permitting authority and municipalities that the U.S. EPA envisioned in the storm water regulations^{6,7} and to best use limited resources at the state and local levels, this Order requires the Permittees to implement the construction program provisions of the proposed Order and coordinate with the State Water Board's information system to avoid duplication and strengthen their inspections activities.

⁶ Letter dated December 19, 2000, from Alexis Strauss, Director, Water Division, U.S. EPA Region IX, to Dennis Dickerson, Executive Officer, Regional Water Quality Control Board-Los Angeles Region.

⁷ Letter dated April 30, 2001, from Alexis Strauss, Director, Water Division, U.S. EPA Region IX, to Honorable Stephen Horn, U.S. House of Representatives.

Industrial and Commercial Program

40 CFR 122.26(d)(2)(iv)(C) requires "A description of a program to monitor and control pollutants in storm water discharges to municipal systems from municipal landfills, hazardous waste treatment, disposal and recovery facilities, industrial facilities that are subject to section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA), and industrial facilities that the municipal permit applicant determines are contributing a substantial pollutant loading to the municipal storm sewer system. The program will:

1. Identify priorities and procedures for inspections and establishing and implementing control measures for such discharges;
2. Describe a monitoring program for storm water discharges associated with industrial facilities [...]"

Industrial awareness of the program may not be complete; there may be facilities within the MS4 area that should have coverage under the State Water Quality Order 97-03-DWQ, NPDES General Permit CAS000001, *Waste Discharge Requirements For Discharges Of Storm Water Associated With Industrial Activities, Excluding Construction Activities* (General Industrial Permit) but do not (non-filers). The Permittees shall continue to implement an industrial and commercial inspection and enforcement program to control the contribution of pollutants from industrial and commercial sites to the MS4.

In the preamble to the 1990 regulations, the U.S. EPA clearly states the intended strategy for discharges of storm water associated with industrial activity:

"Municipal operators of large and medium municipal separate storm sewer systems are responsible for obtaining system-wide or area permits for their system's discharges. These permits are expected to require that controls be placed on storm water discharges associated with industrial activity which discharge through the municipal system." The U.S. EPA also notes in the preamble *"municipalities will be required to meet the terms of their permits related to industrial dischargers."*

The U.S. EPA's Guidance Manual⁸ (Chapter 3.0) specifies that MS4 applicants must demonstrate that they possess adequate legal authority to:

- Control construction site and other industrial discharges to MS4s;
- Prohibit illicit discharges and control spills and dumping;
- Carry out inspection, surveillance, and monitoring procedures.

⁸ *Guidance Manual For the Preparation of Part 2 of the NPDES Permit Applications for Discharges from Municipal Separate Storm Sewer Systems* - U.S. EPA -November 1992

The document goes on to explain that "*control*", in this context means not only to require disclosure of information, but also to *limit, discourage, or terminate* a storm water discharge to the MS4. Further, to satisfy its permit conditions, a municipality may need to impose additional requirements on discharges from permitted industrial facilities, as well as discharges from industrial facilities and construction sites *not* required to obtain permits.

The same Guidance Manual (Chapter 6.3.3) states that the municipality is ultimately responsible for discharges from its MS4. Consequently, the MS4 applicant must describe how the municipality will help the U.S. EPA and authorized NPDES States to:

- Identify priority industries discharging to its systems;
- Review and evaluate storm water pollution prevention plans (SWPPPs) and other procedures that industrial facilities must develop under general or individual permits;
- Establish and implement BMPs to reduce pollutants from these industrial facilities (or require industry to implement them); and
- Inspect and monitor industrial facilities discharging storm water to the municipal systems to ensure these facilities are in compliance with its NPDES storm water permit, if required.

Consistent with federal regulations and the above described guidance, this Order requires the Permittees to:

1. Review and update, if necessary, existing ordinances/standards/specifications to ensure they provide sufficient legal authority to implement the Industrial and Commercial Program,
2. Inventory and inspect industrial/commercial facilities within their jurisdiction and determine their compliance with local codes and ordinances, and
3. Coordinate with the state regarding the implementation of General Industrial Permit.

The goal is to control industrial and commercial sources identified as significant contributors of pollutants. The result should be a coordinated program with greater impact on limiting and eliminating (as a final goal) the contribution of pollutants to the receiving water. To achieve this goal, the Permittees will be required to control the storm water discharges associated with industrial activities and other commercial facilities identified as significant contributors of pollutants; and assist the Central Valley Water Board in implementing the General Industrial Permit. The strategy, as outlined in this Permit, builds on the state/Permittee partnership by focusing their limited resources on the following activities:

- The Permittees will take a lead role in inspecting industrial and commercial facilities including, restaurants and automotive service facilities;
- The Central Valley Water Board will be the lead agency for inspections of facilities covered or in need of coverage under General Industrial Permit;
- The Permittees will assist the Central Valley Water Board in its activities to fully enforce the General Industrial Permit through spot check inspections, referrals, and/or joint inspections; and

- The Central Valley Water Board and Permittees will coordinate their information systems and task scheduling to avoid duplication and strengthen their inspections activities.

Studies indicate that facilities with paved surfaces subject to frequent motor vehicle traffic (such as parking lots and fast food restaurants), or facilities that perform vehicle repair, maintenance, or fueling (automotive service facilities) are potential sources of pollutants of concern in storm water. [References: Pitt et al., Urban Storm Water Toxic Pollutants: Assessment, Sources, and Treatability, Water Environment Res., 67, 260 (1995); Results of Retail Gas Outlet and Commercial Parking Lot Storm Water Runoff Study, Western States Petroleum Association and American Petroleum Institute, (1994); Action Plan Demonstration Project, Demonstration of Gasoline Fueling Station Best Management Practices, Final Report, County of Sacramento (1993); Source Characterization, R. Pitt, In Innovative Urban Wet-Weather Flow Management Systems (2000) Technomic Press, Field, R et al. editors; Characteristics of Parking Lot Runoff Produced by Simulated Rainfall, , L.L. Tiefenthaler et al. Technical Report 343, Southern California Coastal Water Research Project (2001)].

The Los Angeles and San Diego Regional Water Quality Control Boards have jointly prepared a Technical Report on the applicability of new development BMP design criteria for RGOs, [Retail Gasoline Outlets: New Development Design Standards for Mitigation of Storm Water Impacts, (June 2001)]. In March 1997, the California Storm Water Quality Task Force (SWQTF) published Best Management Practice Guide – Retail Gasoline Outlets.

State Water Board Order WQ 2000-11 directed the Los Angeles Regional Water Quality Control Board to mandate that RGOs employ the BMPs listed in SWQTF's March 1997 RGO BMP publication. Due to the potential threat to storm water quality from RGOs, Development Standards for RGOs are included in this Order.

During the 2002 Evaluation, auditors found that City and County were not conducting storm water inspections at industrial facilities. According to the evaluation response, since the 2002 Evaluation, the City's pretreatment inspection staff has been conducting storm water inspections at industrial facilities regulated by the City's pretreatment program. These include dry cleaners, radiator service facilities, animal care facilities, vehicle services, food services, mobile cleaning companies, and grease haulers.

This Order requires the Permittees to develop an inventory of all potential commercial and industrial sites/sources that could contribute pollutants to the MS4, at a minimum restaurants, automotive service facilities, retail gasoline outlets, and industrial facilities required by 40 CRF 122.26(b)(14) to be covered under the General Industrial Permit.

The inventory information will provide the Permittees with information on potential pollutant sources that contribute to the MS4 system, and the locations in the system into which they discharge. This information will also allow the Permittees to prioritize inspections and tailor education and outreach efforts to best assist the facility in implementing appropriate pollution

prevention practices or other on-site storm water controls. Additionally, the information contained in the inventory will enable Permittees to characterize these facilities and prioritize them based on their potential impact on storm water quality.

The Permittees are required to ensure that minimum control measures are implemented, as applicable, at every industrial/commercial facility included in its inventory. The controls required by the Permittees should be consistent with the General Industrial Permit.

Municipal Operations Program

Federal regulations [40 CFR 122.26(d)(2)(iv)(A)(1,3,4,5, and 6)] require that each Permittee must develop a program to reduce the discharge of pollutants from the MS4 to the MEP for all urban land uses and activities, including municipal areas and activities.

During the 2002 Evaluation, auditors found that the City's and County's corporation yards lacked adequate controls to prevent storm water contamination. In response to the evaluation, the City developed a Pollution Prevention Plan for its corporation yard and the County submitted a model SWPPP to be used to develop site specific best management practices for County facilities. In January 2011, the City implemented a Spill Prevention Control and Countermeasure Plan (SPCC) for the City's corporation yard.

Each Permittee is required to update and continue to implement a Municipal Operations Program to effectively prohibit non-storm water discharges and prevent or reduce pollutants in runoff from all municipal land use areas, facilities, and activities to the MEP. This is to include the development of standard operating procedures (SOPs) for inspection and maintenance of drainage facilities. Further, the Permittees are required to address discharges from the following activities:

1. Sanitary sewer overflow and spill response,
2. Municipal capital improvement projects,
3. Landscape and pest management,
4. Storm drain system maintenance,
5. Street cleaning and maintenance,
6. Parking facilities maintenance,
7. Detention basin construction and maintenance,
8. Public industrial activities management,
9. Emergency procedures, and
10. Non-emergency fire-fighting flows.

Illicit Connection/Illegal Discharge Program

Federal regulations [40 CFR 122.26(d)(2)(iv)(B)] state that the Permittees must implement a management program to detect and remove (or require dischargers to the municipal storm sewer to obtain a separate NPDES permit for) illicit discharges and improper disposal into the MS4.

During dry weather, much of the discharge to storm drain systems consists of non-storm water sources. A portion of such discharges may be from illicit discharges or connections, or both. Illicit discharges may occur either through direct connections, such as deliberate or mistaken piping, or through indirect connections, such as dumping, spillage, subsurface infiltration, and washdown.

Each Permittee is required to update and continue to implement an Illicit Discharge Detection and Elimination Program to actively seek and eliminate illicit discharges and connections to the MEP. This is to include updating the existing training program for municipal staff.

Public Involvement and Education Program (Public Outreach Program)

Federal regulations [40 CFR 122.26(d)(2)(iv)(A)(6)] requires that the Permittees' management program include, "A description of a program to reduce to the maximum extent practicable, pollutants in discharges from municipal separate storm sewer system associated with the application of pesticides, herbicides, and fertilizer which will include, as appropriate, controls such as educational activities, permits, certifications, and other measures for commercial applicators and distributors, and controls for application in public right-of-ways and at municipal facilities." These regulations [40 CFR 122.26(d)(2)(iv)(B)(6)] also provide that the proposed management program include, "A description of education activities, public information activities, and other appropriate activities to facilitate the proper management and disposal of used oil and toxic materials."

To satisfy the Public Outreach Program, the Permittees need to: (i) Implement a public education program to distribute educational materials to the community, or conduct equivalent outreach activities about the impacts of storm water discharges on local water bodies and the steps that can be taken to reduce storm water pollution; and (ii) Determine the appropriate BMPs and measurable goals for this minimum control measure.

Implementation of a Public Outreach Program is a critical BMP and a necessary component of a storm water management program. The State Board Technical Advisory Committee recognizes that education with an emphasis on pollution prevention is the fundamental basis for solving nonpoint source pollution problems. Furthermore, the public can provide valuable input and assistance to a municipal storm water management program and should play an active role in the development and implementation of the program. An active and involved community is essential to the success of a storm water management program.

The Order requires the Permittees to implement a Public Outreach Program using all media as appropriate to (1) measurably increase the knowledge of target communities regarding MS4s, impacts of urban runoff on receiving waters, and potential BMP solutions for the target audience; and (2) to change the behavior of target communities and thereby reduce pollutant releases to MS4s and the environment.

The current SWMP does not contain a separate program component for a Public Outreach Program. The Permittees will be required to revise the SWMP to include the Public Outreach Program as a separate core program in the SWMP. The purpose of the Public Outreach Program is to educate the public and encourage their participation in the implementation of the SWMP to the MEP. In addition, the Permittees will be required to incorporate a mechanism for **public participation** in the implementation of the SWMP (i.e., programs that engage the public in cleaning up creeks, removal of litter in river embankments, stenciling of storm drains, etc.).

Planning and Land Development Program

40 CFR 122.26 (d) (2) (iv) requires the Permittees program to include a comprehensive planning process to reduce the discharge of pollutants to the MEP using management practices, control techniques and system design, and design and engineering methods. The program must describe structural and source control measures.

On 5 October 2000, the State Water Board adopted Order WQ 2000-11⁹ concerning the use of Standard Urban Storm Water Mitigation Plans (SUSMPs) in municipal storm water permits for new developments and significant redevelopments by the private sector. The precedent setting decision largely sustained the LA Regional Board SUSMPs. The State Water Board amended the SUSMP to limit its application to discretionary projects as defined by California Environmental Quality Act (CEQA), eliminated the category for projects in environmentally sensitive areas, and set aside the requirement for retail gasoline outlets to treat storm water until a threshold is developed in the future. In addition, the State Water Board articulated its support for regional solutions and mitigation banking. The State Water Board recognized that the decision includes significant legal or policy determinations that are likely to recur (Gov. Code §11425.60). Due to the precedent setting nature of Order WQ 2000-11, this permit must be consistent with applicable portions of the State Water Board's decision and include SUSMPs.

Several of the MS4 permits for areas around the State contain or have given consideration to Standard Urban Storm Water Mitigation Plans (SUSMPs), also referred to as Development Standards, for specific categories of new development and redevelopment. In general, the SUSMPs require that 85 percent of the runoff from the subject sites be treated prior to discharge to surface waters or infiltrated and recommend or require other BMPs. The State Board has found that the provisions in the SUSMPs constitute MEP.

On 13 June 2002, the Permittees submitted a technical report comparing the existing SWMP and the SUSMPs, concluding that the SWMP requirements are comparable to SUSMPs. The SUSMP used by the Permittee for the comparison contained four options for numerical sizing criteria for structural BMPs (detention and retention basins). The City of Bakersfield requires that most new developments include retention basins designed to contain run-off

⁹ State Water Board Order WQ 2000-11: SUSMP; Memorandum from Chief Counsel to Regional Board Executive Officers, (December 26, 2000) discusses statewide policy implications of the decision.

produced by the 100-year, 24-hour storm event and capable of draining by percolation or evaporation within seven days. In cases where retention basins cannot be used, the City requires that developments include detention basins. Detention basins must be designed to detain the 100-year, 24-hour storm event. Kern County requires basins be sized to retain the Intermediate Storm Design Discharge 5-day storm event, which is equivalent to the 10-year, 24-hr storm times a factor of 1.44. The SUSMP criteria requires a basin that can infiltrate or treat the volume of annual runoff based on unit storage volume, to achieve 90% or more volume treatment by the method recommended in California Storm Water Best Management Practice Handbook- Industrial/Commercial (1993). The three methods, applied to a 1-acre drainage area with a 0.90 runoff coefficient requires a 0.135 acre-foot basin under the City of Bakersfield criteria, a 0.162 acre-foot basin under the Kern County criteria, and a 0.035 acre-foot basin under the SUSMP criteria. Both the City of Bakersfield and Kern County basin sizing criteria exceed the SUSMP criteria.

Approximately 90% of runoff from new development within the Bakersfield Urbanized Area is not discharged to waters of the U.S., but to terminal retention basins that are sized substantially above SUSMP criteria.

To ensure that the ever evolving standard of MEP is met, this Permit requires the Permittees to update the SWMP to ensure:

1. Continued maintenance of all storm water basins to maximize infiltration rates;
2. Continued maintenance of post-construction storm water controls not owned and operated by the Permittees by the implementation of transfer or maintenance agreements, as appropriate, and periodic inspections for all priority development projects;
3. Regular internal training is conducted on applicable components of the SWMP; and
4. Completion, as a part of the annual reporting process, of an annual assessment to determine the effectiveness of the program component and identify any necessary modifications.

VIII. MONITORING PROGRAM

Regional Monitoring Program

The Central Valley Water Board requires individual Permittees and Permittee groups to conduct local water quality monitoring. The purpose of this local water quality monitoring is to provide information regarding the impacts of discharges on local receiving waters, and on the extant condition of those waterbodies. However, the equivalent funds spent on current local water quality monitoring efforts could be used more efficiently and productively, to better characterize the spatial and temporal distribution of contaminants and physical conditions of Central Valley waterbodies on a regional scale or other regional water quality issues, if those funds were used for a coordinated monitoring effort, rather than continue to be used in individual, uncoordinated local water quality monitoring programs. Regional Monitoring

Programs (RMPs), such as the Delta RMP,¹⁰ provide data to better inform management and policy decisions regarding Central Valley region waterbodies.

With this Order, the Central Valley Water Board is authorizing Permittees that elect to participate in a RMP to reduce some of the local water quality monitoring required in the Monitoring and Reporting Program (MRP) and related monitoring described in the SWMP. If the Permittees elect to reduce local water quality monitoring and participate in a RMP, the Permittees shall submit a letter signed by an authorized representative to the Executive Officer informing the Central Valley Water Board that the Permittee will participate in a RMP and the date on which local water quality monitoring, would be modified. To ensure consistency with this Order and the MRP, reductions in local water quality monitoring require the Executive Officer's prior written approval.

RMP data is not intended to be used directly to represent receiving water quality for purposes of determining if a discharge is causing or contributing to an exceedance of any applicable water quality standards. RMP monitoring stations are established generally as "integrator sites" to evaluate the combined impacts on water quality of multiple discharges into Central Valley region waterbodies; RMP monitoring stations would not normally be able to identify the source of any specific constituent, but would be used to identify water quality issues needing further evaluation. RMP monitoring data may be used to help establish receiving water quality for a water quality data analysis after evaluation of the applicability of the data for that purpose. In general, monitoring data from samples collected in the immediate vicinity of the discharge will be given greater weight in permitting decisions than receiving water monitoring data collected at greater distances from the discharge point. RMP data, as with all environmental monitoring data, can provide an assessment of water quality at a specific location and time that can be used in conjunction with other information, such as other receiving water monitoring data, spatial and temporal distribution and trends of receiving water data, point and non-point source discharges, receiving water flow rate and velocity, and to determine potential source or sources of a constituent that contributed to an exceedance of any applicable water quality standards.

If the Permittees participate in a RMP and reduce some local water quality monitoring, the Permittees shall continue to participate in the RMP until such time as the Permittees inform the Central Valley Water Board that participation in the RMP will cease and all local water quality monitoring is reinstated. Some monitoring under Provision II, Monitoring and Reporting Program, is not required under this Order so long as the Permittees adequately support the RMP. Participation in the RMP by a Permittees shall consist of providing funds and/or in-kind services to a RMP at least equivalent to discontinued local water quality monitoring efforts as determined by the RMP Steering Committee. If the Permittees fail to maintain adequate participation in a RMP by not providing funds and/or in-kind services, the Permittees shall reinstitute individual local water quality monitoring.

¹⁰ Specific information regarding the Delta RMP is available at http://www.waterboards.ca.gov/centralvalley/water_issues/delta_water_quality/comprehensive_monitoring_program/index.shtml.

Data from a RMP may be utilized to characterize the receiving water in the permit renewal. The Permittees may, however, conduct any site-specific monitoring deemed appropriate by the Permittee and submit that monitoring data to the Central Valley Water Board provided the modified monitoring program approved by the Executive Officer is conducted at a minimum. Historic receiving water monitoring data taken by the Permittees and from other sources may also be evaluated to determine whether or not that data is representative of current receiving water conditions. If found to be representative of current conditions, then that historic data may be used in characterizing receiving water quality.

Federal regulations (40 CFR 122.26(d)) require the following: (1) quantitative data from representative outfalls designated by the permitting authority, which shall designate between five and ten outfalls or field screening points as representative of the commercial, residential, and industrial land use activities of the drainage area contributing to the MS4; (2) estimates of the annual pollutant load of the cumulative discharges to waters of the United States from all identified municipal outfalls and the event mean concentration of the cumulative discharges for constituents of concern; (3) estimated reductions in loadings of pollutants from discharges of municipal storm sewer constituents from municipal storm sewer systems expected as the result of SWMP implementation; and (4) the Permittees to submit an annual report that identifies, among other things, water quality improvements or degradation. Items 1-3 were required as Part 2 of the initial application and were necessary for discharge characterization.

Wet Weather Monitoring

In December 1992, the Permittees submitted a wet weather discharge characterization plan proposing a monitoring program to collect data that could be used to determine total annual pollutant discharge loading. The discharge characterization plan was approved and incorporated into the monitoring and reporting program for WDR Order 94-164 and required annual reporting of monitoring data results to include an estimate of the annual pollutant load and comparison to previous years' estimates to evaluate the effectiveness of the SWMP. Monitoring and Reporting Program 5-01-130 required continuation of the wet weather discharge monitoring program from WDR Order 94-164.

Since 1992, the Permittees have monitored three drainage area locations: the Mohawk Drive detention basin inlet as representative of commercial area discharge; the North Chester Avenue manhole access north of the Golden State Overpass representing industrial area discharge; and at the Hawthorne Ravine at the intersection of Hawthorne Avenue and River Boulevard representing residential area discharge. The monitoring data from the representative areas has been used to calculate the Annual Storm Water Pollutant Load Estimation. The monitoring data will be further discussed later in this Fact Sheet

This Order carries over the wet weather monitoring in accordance with Monitoring and Reporting Program 5-01-130 until modifications to the Monitoring and Reporting Program

have been approved by the Central Valley Water Board. Constituents to be monitored are carried over from WDR Order 5-01-130.

Receiving Water Monitoring

Receiving water is currently sampled in the Kern River once a year during dry weather and twice a year during storm events. The upstream receiving water sample is collected at Rocky Point Weir. The downstream receiving water sample is collected at the Calloway Headgate. Sample collection and analysis follows standard U.S. EPA protocol. Constituents to be monitored are carried over from WDR Order 94-164. The receiving water monitoring will be further discussed later in this Fact Sheet.

This Order requires the Permittees to continue to conduct receiving water monitoring in accordance with Monitoring and Reporting Program 5-01-130 until any modifications to the Monitoring and Reporting Program have been approved by the Central Valley Water Board. Constituents to be monitored are carried over from WDR Order 5-01-130.

Dry Weather Field Screening

The Permittees conduct dry weather field screening at all surface water outfalls each year between mid-August and mid-October. Outfalls with sufficient flow are monitored in the field per Section II.D. of the MRP R5-2013-0153 for temperature, pH, phenols, chlorine, total copper, specific conductance, methyl blue activated substances, and turbidity, with follow-up investigation for discharges exceeding action levels to determine presence of illicit connections.

Special Studies

Copper and Zinc Investigation and Reduction Plan

The Permittees are required to develop a Copper and Zinc Plan to evaluate the extent and causes of copper and zinc in their storm water discharge and implement management actions to eliminate or reduce sources of copper and zinc. These pollutants were determined to be pollutants of concern based upon monitoring that was conducted between 2007 and 2012. Analysis of the discharge characterization monitoring data submitted by the Permittees (shown below) shows copper and zinc concentrations being discharged at levels that may require additional management activities and observation to ensure they do not negatively impact water quality.

Chester Site	2007-08	2008-09		2009-10	2010-11	2011-12
Constituent	Storm 1	Storm 1	Storm 2	Storm 1	Storm 1	Storm 1
Total Copper(ug/L)	32.0	NR	22.0	35.0	NR	21.0
Total Zinc(ug/L)	650	NR	380	640	NR	270
Hardness(mg/L)	36	NR	21	30	NR	18

Mohawk Site	2007-08	2008-09	2009-10	2010-11	2011-12
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FACT SHEET ORDER R5-2013-0153-01
 COUNTY OF KERN AND CITY OF BAKERSFIELD
 MUNICIPAL SEPARATE STORM SEWER SYSTEM
 KERN COUNTY

Constituent	Storm 1	Storm 1	Storm 2	Storm 1	Storm 1	Storm 1
Total Copper(ug/L)	24.0	29.0	20.0	48.0	5.90	53.0
Total Zinc(ug/L)	150	170	240	280	25	170
Hardness(mg/L)	47	37	24	41	97	22

Hawthorne Site	2007-08	2008-09		2009-10	2010-11	2011-12
Constituent	Storm 1	Storm 1	Storm 2	Storm 1	Storm 1	Storm 1
Total Copper(ug/L)	32.0	39.0	34.0	32.0	55.0	49.0
Total Zinc(ug/L)	160	160	90	150	170	170
Hardness(mg/L)	44	48	36	34	70	29

Copper and zinc have water quality criteria that are dependent on the hardness values of the water (effluent or receiving water depending on the water body). For comparison, these are the benchmark monitoring values for copper and zinc in the EPA *Final National Pollutant Discharge Elimination System (NPDES) Multi-Sector General Permit for Stormwater Discharges From Industrial Activities (MSGP)* that became effective 29 September 2009:

Water Hardness Range	Copper (ug/L)	Zinc (ug/L)
0-25 mg/L	3.8	40
25-50 mg/L	5.6	50
50-75 mg/L	9.0	80
75-100 mg/L	12.3	110
100-125 mg/L	15.6	130
125-150 mg/L	18.9	160
150-175 mg/L	22.1	180
175-200 mg/L	25.3	200
200-225 mg/L	28.5	230
225-250 mg/L	31.6	250
250+ mg/L	33.2	260

These are the values which U.S. EPA uses to determine if a storm water discharge from an industrial facility needs additional best management practices for storm water treatment. While the benchmark values are not a part of this Order, the copper and zinc concentrations in the discharge characterization sampling usually exceed the benchmark values.

As an additional point of reference, the California Toxics Rule criteria for copper, acute (1-hour average) and chronic (4-day average) are 3.2 µg/L and 2.4 µg/L, respectively, as total recoverable; and for zinc, chronic criterion (maximum four-day average concentration) and the applicable acute criterion (maximum one-hour average concentration) are both 31.9 µg/L, as total recoverable. These criteria are not directly applicable to urban storm water runoff, but can be used as an indicator that further examination of these pollutants may be warranted.

Monitoring Program and Monitoring Data Assessment Methodology

The Permittees have annually submitted a report entitled *Annual Stormwater Pollutant Load Estimation* containing the annual pollutant load calculation. This estimation is calculated using the annual average pollutant concentration from the compiled storm water monitoring record (1993-2012) and 30-year average annual precipitation (1970-1999). The Permittees have not been using the data to identify trends in pollutant concentration or to evaluate the effectiveness of their SWMP. In order to determine if the water quality is improving or declining from year to year, the annual pollution concentrations and annual pollutant loads should be compared to identify trends that may be related to implementation of the SWMP. Due to the low annual rainfall (less than 6 inches/ annual average) and seasonal variability in the quantity of rainfall in the Bakersfield Area, comparison of annual pollutant loads and/or pollutant concentrations may not be an indication of SWMP effectiveness.

Central Valley Water Board staff reviewed the current receiving water monitoring program and determined that it does not adequately assess impact to the Kern River because the monitoring locations are not located upstream and downstream of all storm water outfalls to the Kern River. Drainage area 12 discharges upstream from Rocky Point Weir and drainage areas 4.1, 4.2, 4.3, 7, 9, and 11 discharge below the Calloway Weir. Only drainage areas 1, 6, 6.1, and 6.2 discharge between the upstream and downstream monitoring points. No receiving water monitoring has been conducted within any of the canals that receive storm water discharge.

The Order requires the Permittees to assess the current monitoring and data analysis methodology and propose modifications that will provide a better assessment of the effectiveness of the SWMP.

Program Effectiveness Assessment

This Order requires the Permittees to provide an analysis of the effectiveness of their SWMP in their Annual Reports. The Order requires the assessment to identify the direct and indirect measurements that the Permittees use to track the effectiveness of their programs as well as the outcome levels at which the assessment is occurring consistent with the proposed Order. Direct and indirect measurements shall include, but not limited to, conformance with established performance standards, quantitative monitoring to assess the effectiveness of program components, measurements or estimates of pollutant load reductions or increases from identified sources, raising awareness of the public, and/or detailed accounting/ documentation of SWMP accomplishments.

- a. The Permittees will be required to track the long-term progress of their SWMP towards achieving improvements in receiving water quality.
- b. The Permittees will be required to use the information gained from the program effectiveness assessment to improve their SWMPs and identify new BMPs, or modification of existing BMPs. This information shall be reported within the Annual Reports consistent with this Order.
- c. Long Term Effectiveness Assessment (LTEA) Strategy: The Permittees will collaborate to develop a LTEA strategy, which shall build on the results of the Annual

Reports and the initial program effectiveness assessments. The LTEA is required to be submitted to the Regional Water Board no later than 180 days prior to the permit expiration date **of 6 December 2018** and shall identify how the Permittees will conduct a more comprehensive effectiveness assessment of the storm water program as part of the SWMP.

The strategy will address the storm water program in terms of achieving both programmatic goals (raising awareness, changing behavior) and environmental goals (reducing pollutant discharges, improving environmental conditions).