

California on the Rise

A precursor for the future of industrial stormwater?

BY JONATHAN MERONEK AND ALISSA BARROW

Industrial stormwater dischargers face ever-increasing regulatory compliance as defined by the National Pollutant Discharge Elimination System (NPDES). Even under the current Administration and what is interpreted to be “loosened” WOTUS rules and the current the COVID-19 pandemic, stormwater dischargers face increased regulations. For some dischargers already imbedded in a complex regulatory waterscape, compliance will be even harder to achieve.

The Federal Multi-Sector General Permit (MSGP) is in its final stages and is slated to be implemented in January 2021. It will have a wide-ranging and plenary effect on the majority of American states’ Industrial General Permits. In the states that do not have primacy (New Mexico, New Hampshire, and West Virginia), the effect will be felt immediately, as the EPA is the regulating body in those states. For the remaining 47 states, the additional state-specific regulations are less than one permit cycle away (generally every five years). Washington, Oregon, and California have already seen increased regulation in their statewide industrial general permits. California is currently in its sixth industrial stormwater reporting year (July 1 through June 30), under the NPDES General Permit for Storm Water Discharges Associated with Industrial Activities (IGP or General Permit).

The California IGP was adopted by the State Water Resources Control Board (State Water Board or SWRCB) on April 1, 2014, and became effective July 1, 2015. California permittees also face new challenges through recent amendments (July 1, 2020) to their Statewide General Permit. This permit has a significant number of regulatory directives that echo the increased regulatory regime as seen in the new MSGP; for compliance under the Clean Water Act (CWA), California can be seen as a regulatory “precursor” in this regard.

For the past five years, some California facilities have succeeded, while others have failed to achieve compliance. Emerging strategies and lessons learned can offer clues for compliance for dischargers in other states as they face increased industrial stormwater regulation.

Historically, California has had some of the toughest surface water quality standards in the country. In response to rapid post-war growth and subsequent outbreaks of water-borne diseases and degradation of receiving waters California enacted sweeping changes to water quality and water pollution control. When framing the Clean Water Act, Congress looked to California’s stricter regulations in place under the Dickey Water Pollution Control Act (1949).

As America’s most populous state, the current IGP impacts a significant



A stormwater swale in California

amount of industrial facilities and corresponding sectors. Ubiquitous metals, increasing inbound and outbound loads of materials, and sites that receive an increase of new municipal program-based recycling items (or take back material that was rejected from other countries)—these are some of the current challenges facing California dischargers, especially within the solid waste sectors. Additionally, the ongoing oversight by the NGOs through citizen suits (505) under the CWA, permittees are scrutinized frequently for not achieving Best Available Technology

and/or Best Conventional Technology (BAT/BCT) levels of control for their site’s Best Management Practices (BMPs). Under the CWA, any citizen can bring suit on the basis of potential shortcomings. Federal courts may enforce the water quality standards and or apply civil penalties for violations of limits, standards, or orders. NGOs and environmental groups can utilize these 505 lawsuits to force action on the part of the industrial discharger.

California Industrial Stormwater Dischargers

As of June 2020, the California State Water Board Stormwater Multiple Application and Reporting Tool (SMARTS) database shows nearly 14,000 permittees enrolled in the IGP. Of the permittees, roughly 8,700 are Notice of Intent (NOI) sites with typical Stormwater Pollution Prevention Plans (SWPPPs). Approximately 5,300 are covered by way of a “No Exposure Certification” whereby a discharger indicates that the facility has no exposure to contribute pollutants of concern in stormwater discharge. The IGP is promulgated down from the EPA to the state (CalEPA) through the State Water Resources Control Board (SWRCB). The current SWRCB IGP was considered a deep-dive and plenary rewrite for a statewide general permit. In the draft permit stages, it went through numerous iterations from approximately 2002 through 2014.

At the time of permit implementation, it was arguably the strictest standard for the largest number of industrial dischargers. Many of the fundamental regulatory compliance items—such as invocation of Exceedance Response (Corrective) Actions through Numeric Action Limits (NALs), escalation of BMP implementation, and increased trajectory of reporting responsibilities—are reflected in the new MSGP.

In addition to the current permit, the California IGP includes three new recent

Andrea Hill/Digital Vision Vectors/Getty Images

(July 2020) requirements, which include:

- 1) Total Maximum Daily Loads (TMDLs),
- 2) sufficiently sensitive test methods, and
- 3) alternative compliance options.

1. In the California regions that face the impending Total Maximum Daily Loads (TMDLs) with corresponding benchmarks, the ramifications can be significant. In the case that certain receiving water bodies cannot assimilate additional pollutant loads, the TMDL Amendment could potentially be a moratorium on new businesses, if the constituent(s) of concern may cause or contribute additional pollutants to the receiving water. The regional water quality control board (RWQCB) has developed a 303d list of impaired water bodies and associated TMDLs. The 2018 IGP amendment will include TMDL-based effluent limitations (TNELs), which are lower than current Numeric Action Levels (NALs), and exceedances will result in direct violation of the IGP and possible mandatory minimum penalties.

Under the new Amendments, any IGP permittee discharging a TMDL-specific pollutant either directly or indirectly to a 303d impaired water body must:

- Implement best management practices (BMPs) to reduce/prevent the pollutant in stormwater discharge.
 - Develop and implement a monitoring implementation plan.
 - Conduct sampling and analysis for all applicable parameters.
 - Develop and implement an updated stormwater pollution prevention plan (SWPPP).
2. Sufficiently sensitive test methods require permittees to use US EPA-approved analytical methods that are capable of detecting and measuring the pollutants at or below the applicable permit limits. This is important for dischargers with applicable TMDLs, as TNALs are likely to be significantly lower than the associated NELs.
3. Alternative compliance options incentivize stormwater capture and use by allowing dischargers to capture and contain industrial stormwater discharges (and authorized

non-stormwater discharges) in lieu of complying with discharge effluent limitations and other selected permit requirements. Dischargers may either contain stormwater on-site in an engineer-designed BMP or may participate in agreements with municipalities or other dischargers to install off-site BMP(s) for stormwater containment. Required storage capacity is the volume of the 85th percentile 24-hour storm event with a 24-hour drawdown. Infiltration BMPs must comply with groundwater quality objectives as indicated in the Regional Basin Plans through the Porter-Cologne Act.

These additional items add to the already significant onus on dischargers to make sure their stormwater management program is prepared for the upcoming wet-weather season and in full compliance with the new regulations.

Emerging Permit Response Scenarios

Similar to the new MSGP Draft Permit, the California IGP has built-in “escalation scenarios,” whereby a discharger collects stormwater samples and compares them to the permit’s analytical benchmarks. For California, the benchmarks are called Numeric Action Limits (NALs). All facilities must test for the baseline parameters of pH, total suspended solids (TSS), and Oil and Grease (O&G). Certain sectors have additional analytical parameter requirements, based on their SIC Code. Additional constituents of concern may also be added from the SWPPP’s pollutant source assessment. Grab samples are collected during Qualifying Storm Events (QSEs). If an exceedance occurs, the discharger must report them accordingly and, in some cases, implement additional BMPs. They move from baseline to ERA Level 1 than Level 2 through a trajectory of NAL exceedances. NGOs can also look at permittees that are in these levels through the public database, thereby essentially short-listing facilities that have insufficiently met BAT/BCT levels of control. Currently, based on the current SMARTs data, one can conclude that many dischargers have not

achieved full control of their stormwater program. This can occur for many reasons. A facility must collect four sampling events with no exceedances to return to baseline. For successfully getting back to baseline, there are some emerging general commonalities of “lessons learned” that can help dischargers be more successful in managing their stormwater program.

1. Get out in front of a stormwater benchmark exceedance and do it early. Looking back at the onset of California IGP, many businesses were caught off-guard. Many times, a discharger’s capital expenditure and budgeting did not line up with a Facility’s fiscal budget. As the sampling results came in and the first annual report came due, including an exceedance response, managers scrambled to prepare or were unprepared for the next season and soon found themselves in an exceedance response scenario.
2. California’s Exceedance Response scenarios force the discharger to assess and prioritize BMPs. As the reporting and responses escalate, so does the need to potentially assess, isolate, and characterize each contributory drainage management area (DMA). Each site can collect significant useful data. Use a weather gauge on-site for site data and know the precipitation vs. sampling time (freq. intensity and duration). This also includes proper training. In California, there is a certification program through a combined effort between the SWRCB and California Stormwater Quality Association (CASQA). Successful candidates become a Qualified Industrial Stormwater Professional (QISP) and are trained by select QISP Trainers of Record (ToR).
3. As indicated, many facilities have additional SIC code-based parameters. One of the significant challenges for California dischargers, especially at urban sites, is that of metals in stormwater discharge. These sites sometimes lack the capacity for large retention ponds or expanded bio-filtration areas. If source control is well established, additional analysis

may be necessary for the constituents of concern that exceed benchmarks. While the exceedances could be attributed to a naturally occurring background or a non-industrial source (or combination of both), a discharger usually chooses an industrial BMP demonstration for permit compliance. With metals, successful water quality characterization is key, and some useful general guidance can be considered:

- a. Using US EPA Methods 200.7 and 200.8, measure total metals as a fraction of total vs. dissolved. Using this method, BMP prioritization can be better served. For many industrial sites, TSS is a surrogate to other exceedances. If the pollutants are particulate in nature, prioritize the BMPs to TSS first, metals second. If a law of diminishing returns is seen in TSS versus metals, then there is a good chance that the metals are dissolved.
- b. Particle and Grain-size Distribution Analysis for further definition. For these tests, a Laser Particle Counter (LPC) can determine the number and size distribution of particles in the collected grab sample's liquid suspension. A typical LPC can handle particle size distributions ranging from 1 micrometer (μm) to 100 μm in diameter. Generally speaking, once particles become more dissolved, the site may need more source control or active treatment. Depending upon the corresponding sample analytical result, there is a possibility no passive filtration or gravity fed mechanism will work. If an active treatment system (ATS) is a possibility, then the majority of ATS purveyors will ask for these results or conduct this test during the next QSE.
- c. Watch for outliers during QSEs. Why was one instance/event worse? Did a hydraulic hose break the day of sampling up-gradient of the sampling point? In this case, the sample was not indicative of normal

industrial activities. BMPs should be implemented to best control typical industrial contributions in stormwater discharge.

- d. The SWPPP Pollutant Source Assessment: Have you correctly identified (per drainage area) your potential pollutants? Know the chemicals, including MSDS sheets. Sites with maintenance areas must be vigilant in this regard as track in/track out can affect stormwater discharge within the nearest drainage areas. Notes taken by the personnel during a QSE can be also be reviewed while taking these items into consideration.
- e. Know your pollutant baseline. If substantial subsurface conveyances exist at your site, there is a strong possibility that there are residual and/or legacy pollutants left behind. Clean drainage inlet culvert boxes and associated drainage areas. Drainage assets can become weak over time. Pipes can have cracks that allow soil to leach into them and can also sags/bellies, which can

Trust is earned.

That is a fact not lost on us.
We share the values that
you hold most dear.





For related articles:
www.stormh2o.com

collect residual pollutants. These issues may significantly affect your ultimate effluent stormwater sample. If possible, have the subsurface areas hydro-jetted and filmed for verification and review. This allows for better characterization of normal contributory surface pollutants of concern in stormwater discharge, within the drainage management area.

To implement these types of control measures, it is important to stay flexible, set realistic goals, and have a buy-in from all site stakeholders involved, including upper management and/or management that can make budgetary and capital expenditure decisions.

On the Horizon

In addition to the general permit regulations, legislation can be passed that is outside the permit but forces action on the part of industrial stormwater

dischargers. An example of this is the recent California Senate Bill 205 (SB-205, Hertzog Bill). This legislation went into effect on January 1, 2020, and was a result of an environmental group's push to rein in non-filers, the number of which was deemed to be significant. It essentially "levels the playing field" by forcing potential non-filers by way of proof of NPDES registration at the City or County level through their business license application and/or renewal. As indicated, IGP coverage is based on the Standard Industrial Classification (SIC) code. If your primary establishment SIC Code falls to within the range of covered Sites, then a Site must apply for coverage. It is expected that some states will follow in order to capture potential non-filers, which will affect many sites that may not have been subject to general permit coverage.

The trajectory of industrial stormwater regulatory compliance is clear. Regulations are increasing at a substantial rate and will significantly affect industrial dischargers. Addition-

ally, environmental groups and NGOs have become a de facto regulatory mechanism through CWA citizen 505 lawsuits. The Pacific states, including California, have endured these types of increased standards for industrial stormwater dischargers. With the new MSGP coming in January 2021, the reach and trajectory will surely continue. By understanding challenges, staying flexible, and being prepared, industrial stormwater consultants, managers, and owners can better manage their industrial stormwater programs to be in full compliance and keep the target off their backs. ♠

Jonathan Meronek is a State of California IGP Qualified Industrial Storm Water Practitioner (QISP) He has been with SCS Engineers for over 17 years and is the Stormwater Lead for the Southwest Business Unit. Alissa Barrow has 10 years of experience as an environmental professional specializing in environmental assessment, remediation, and compliance. She works with SCS Engineers.