

3.0 NON-STORM WATER DISCHARGES/ILLICIT DISCHARGE DETECTION AND ELIMINATION

3.1 INTRODUCTION

This update to the Authority SWMP is in response to the requirements of the Municipal Permit and Industrial Permit. The Authority prohibits all types of non-storm water discharges into its MS4 unless such discharges are authorized by Section IV of the Industrial Permit, Provision E.2 of the Municipal Permit, or a separate NPDES permit. The Authority is required by both the Municipal Permit and Industrial Permit to eliminate unauthorized or illicit non-storm water discharges. If the Authority identifies a non-storm water discharge as a significant source of pollutants to the waters of the United States (receiving waters), both permits require the Authority to prohibit the discharge. Certain non-storm water discharges are authorized under the Municipal Permit if controls are in place to reduce the discharge of pollutants to the MEP, or as prescribed in the permit. Under the Industrial Permit, non-storm water discharges are authorized if the Authority, in its SWPPP, (1) identifies the sources of pollution that potentially affect the quality of authorized non-storm water discharges, and (2) describes and ensures the implementation of BMPs to reduce or prevent pollutants in authorized non-storm water discharges using BAT and BCT.

Section 3.0 addresses the requirements in Municipal Permit Provisions D.2.b, D.4.b(1), E.2, and E.7.a and Industrial Permit Sections III, IV, VI, X.G.e, X.H.1 and XI.A for non-storm water discharges and illicit discharge detection and elimination.

The provisions of the Municipal Permit require the Authority to:

D.2.b—Develop an MS4 Outfall Discharge Monitoring Program to detect discharges from MS4 outfalls during dry weather. The monitoring program requirements include field screening and non-storm water persistent flow monitoring. Section 3.6.4 and Appendix D-2 have been prepared to address this requirement.

D.4.b.(1)—Assess and report on the effectiveness of the MS4 Outfall Discharge Monitoring Program in effectively reducing, eliminating, or prohibiting non-storm water and illicit discharges, and identify any modifications needed to increase the effectiveness of the program. Section 3.8 and Appendix D-2 have been prepared to address this requirement.

E.2.a—Establish an IDDE program, in accordance with the WQIP strategies, to actively seek and eliminate illicit discharges and connections to the storm drain system. This program provides a framework for the detection, investigation, follow-up, and elimination of reported violations. The program is designed to be adaptive and to allow the Authority to periodically assess data, re-evaluate areas of concern, and concentrate control methods and corrective actions as necessary in those areas. Municipal Permit Provision E.2.a requires all non-storm water discharges to be treated as an illicit discharge unless the discharge is (1) authorized under a separate NPDES permit, (2) identified as an allowable discharge as outlined in Municipal Permit Provision E.2.a.(3) and not as a source of pollutants to receiving waters, or (3) identified as an allowable discharge as outlined in Municipal Permit Provisions E.2.a.(4) or E.2.a.(5) and controlled using the measures detailed in those sections of the permit or in the WQIP. Section 3.5 and Appendix D-2 have been prepared to address this requirement.

E.2.b—Update its MS4 inventory and drainage area map to include all areas of the MS4 that are owned, operated, or maintained by the Authority; locations of discharge inlets and all outfalls; known connections with other MS4s; any segments of receiving water within the Authority’s jurisdiction that are affected by its MS4 discharges; and locations of any outfalls with non-storm water persistent flow, identified during outfall field screening. Authority employees and contractors are encouraged to be vigilant in identifying and reporting illicit discharges and connections during daily activities. Reporting should include a public hotline and email address to receive reports. The Authority should designate and implement response procedures for illicit discharges to prevent discharges from reaching the MS4, including control of spills, prevention of seepage from sanitary sewers to the MS4, and coordination with other upstream Copermittees to prevent illicit discharges from entering the MS4 within the Authority’s jurisdiction. Sections 3.5, 3.6.4, and 3.7 have been prepared to address this requirement.

E.2.c—Implement a strategy for field screening the MS4 within its jurisdiction to detect non-storm water discharges and connections to the MS4. Section 3.6 and Appendix D-2 has been prepared to address this requirement.

E.2.d—Develop a timeline and prioritization for responding to reports or observations of non-storm water or illicit discharges, using the criteria detailed in Municipal Permit Provision E.2.d.(1). These criteria include whether or not pollutants are (1) classified as highest or focused priority pollutants in the WQIP; (2) listed on the 303(d) list for the receiving water; (3) used within the Authority’s jurisdiction; (4) causing an exceedance to a Numeric Action Level (NAL), or (5) posing a threat to human health or the environment. The Authority must implement investigation procedures to determine the validity of each report, prioritize responses, respond and investigate, attempt to identify the source of the discharge, assess and reclassify discharges if necessary, and maintain records of the report and actions taken. The Authority is also required to implement procedures to eliminate illicit discharges and connections to its MS4 by enforcing its legal authority and implementing the Enforcement Response Plan (ERP) required under Municipal Permit Provision E.6. A summary of the non-storm water and illicit discharges, investigations, and actions to eliminate the discharges must be included in the WQIP. Sections 3.6 and 3.7 have been prepared to address this requirement.

The Industrial Permit requires the Authority to:

III.—Effectively prohibit all non-storm water discharges, with the exception of those authorized by the Industrial Permit or by other NPDES permits. Sections 3.1.1 to 3.4 have been prepared to address this requirement.

IV.A—Ensure that all authorized non-storm water discharges, as listed in Industrial Permit Section IV.A, meet the conditions described in Industrial Permit Section IV.B. Sections 3.1.1 and 3.2 have been prepared to address these requirements.

IV.B—Ensure that any authorized non-storm water discharges do not violate the San Diego Basin Plan, applicable water quality standards, or any applicable Authority ordinance or code, and implement BMPs to reduce or prevent pollutants in authorized non-storm water discharges as well as the flow or volume of those discharges to the MEP, by using BAT/BCT. The Authority should conduct monthly visual observations of authorized non-storm water discharges to ensure effective BMP implementation and report all authorized non-storm water discharges in the Industrial Annual Report. Sections 3.6.4 and 7.5.3 have been prepared to address this requirement.

VI—Ensure that authorized non-storm water discharges, once they reach receiving waters, do not contribute to water quality impairments, cause exceedances in water quality standards, threaten human health or the environment, or contain pollutants that contribute to overall pollution or public nuisance. Sections 3.6.1 and 7.5.4 have been prepared to address this requirement.

X.G.e—Evaluate the facility to identify all non-storm water discharges, including their sources and drainage areas. The Authority is required to evaluate all drains connected to the MS4 and describe the process by which all unauthorized non-storm water discharges have been eliminated. The Authority is also required to include in this SWMP the source, quantity, frequency, characteristics, and drainage areas of all non-storm water discharges, and whether they are authorized or unauthorized. Section 7.7 and 7.8.4.2 has been prepared to address this requirement.

X.H.1—Implement and maintain a minimum set of BMPs to prevent spills and illicit discharges from entering the storm drain system and to minimize authorized non-storm water discharges. Sections 3.2, 3.4, and 7.7.4 have been prepared to address this requirement.

XI.A—At least once per month during daylight hours of a dry weather period, visually observe each drainage area, including all industrial operational areas and equipment and material storage areas, for authorized or unauthorized non-storm water discharges and the associated BMPs and their effectiveness. These monthly visual observations and facility inspections actively seek to detect and eliminate illicit discharges, and help determine the effectiveness of BMPs in minimizing and controlling authorized non-storm water discharges. Sections 3.6.4 and 7.8.4.2, and Appendix D-1 have been prepared to address this requirement.

3.1.1 AUTHORIZED NON-STORM WATER DISCHARGES

The Municipal Permit and/or the Industrial Permit allow the following non-storm water discharges at SAN provided that they have not been identified as a source of pollutants to receiving waters, and are either permitted under another NPDES permit or are controlled using the BMPs outlined in this SWMP, which include measures specified in the Municipal Permit or in the WQIP to prevent contact with pollutants and reduce the flow and volume of those discharges:

- Fire prevention system flushing/testing
- Potable water sources and system flushing/testing
- Drinking water fountains
- Air conditioning, refrigeration and compressor condensate
- Landscape irrigation, provided that integrated pest management has been utilized
- Uncontaminated natural springs, groundwater, and foundation and footing drainage
- Tidal intrusion
- Incidental windblown mist from cooling towers

The authorized non-storm water discharges are in compliance with the Municipal Permit and Industrial Permit if they meet the following conditions:

- The non-storm water discharges are in compliance with the San Diego Basin Plan and statewide water quality control plans and requirements.
- The non-storm water discharges are in compliance with any Authority ordinances, codes, or requirements.

- BMPs are specifically included in the SWMP to prevent or reduce the contact of non-storm water discharges with significant materials or equipment; minimize, to the MEP, the flow or volume of non-storm water discharges; ensure that non-storm water discharges do not contain quantities of pollutants that result in water quality exceedances; and reduce or prevent discharges of pollutants in non-storm water discharges using BAT/BCT.
- The non-storm water discharges are listed as an authorized non-storm water discharge under the Industrial Permit Section IV.A.
- The monitoring program includes monthly visual observations of each non-storm water discharge and its source to ensure that BMPs are being implemented and are effective.
- The non-storm water discharges have not been identified by the Regional Water Board as a source of pollutants to receiving water.
- Any non-storm water discharges listed in Provision E.2.a.(4) of the Municipal Permit that are applicable to the Authority are identified and controlled in accordance with the requirements under that provision.
- Firefighting discharges are not identified as a significant source of pollutants. Authorized firefighting discharges must be controlled by the requirements under Provision E.2.a.(5) of the Municipal Permit, as described in Section 3.2.
- The non-storm water discharges are described and reported in the Annual Reports.

3.1.2 SOURCE CHARACTERIZATION

Potential non-storm water discharges at SAN include these sources: groundwater, water from crawl space pumps and footing drains, air conditioning and cooling plant condensation and mist, landscape irrigation, potable water flushing, eye wash station testing, water fountains, hose bibs, fire hydrant and sprinkler system flushing, non-emergency and emergency firefighting flows, and tidal intrusion into the MS4. The potential for these non-storm water discharges to be a source of pollutants to the receiving water is discussed below.

GROUNDWATER, WATER FROM CRAWL SPACES, AND FOOTING DRAINS

The elevation and proximity of SAN in relation to San Diego Bay creates a relatively shallow groundwater table, generally approximately 10 to 15 feet below the ground surface, with depth to groundwater increasing to the northeast, away from San Diego Bay. Groundwater elevations vary around SAN and fluctuations occur during and following periods of heavy rain. The shallow groundwater tends to infiltrate into below-grade structures at the airport, including utility vaults, below-grade crawl spaces, footing drains, and the storm drain system itself. The Industrial Permit authorizes these non-storm water discharges as long as the discharger meets the conditions identified in Section IV.B of the Industrial Permit. Discharges from rising groundwater or groundwater infiltration to the MS4 and any water pumped from footing drains above the groundwater table are authorized with common-sense control measures in place as outlined in Section 3.2.

AIR CONDITIONING AND COOLING PLANT CONDENSATION

Air conditioners are located throughout the Authority and are used for environment and equipment cooling. Condensate is regularly discharged from air conditioners, although most discharge rates are extremely low, and air conditioning condensate in passenger boarding bridges in drainage basins 8, 12 and 15 is captured and reused in power washing activities (in 2014, 5,225 gallons of condensate were captured this way). Air conditioner condensate may contact contaminants if allowed to flow through areas where significant materials, oil from parking lots, sediment, trash, and construction debris may potentially be carried into the storm drain system by the discharge.

The cooling plant in the Terminal 2 parking lot (Drainage Basin 9) upgraded as a part of the Green Build construction project includes four electric centrifugal chillers, four cooling towers with condenser water pumps for individual tower bypass, and a primary, secondary, and tertiary chilled water system to improve cooling of the airport terminals. These cooling devices dispense water through mist, evaporation, and blowdown, which may collect on rooftops and adjacent structures. Cooling towers generally evaporate 3 gallons of water per minute for every 100 tons of cooling. Metals and debris from rooftops may potentially be carried into the storm drain system by the condensate mist. Control measures to address the potential for air conditioner and cooling plant condensate to transport pollutants to receiving waters are described in Section 3.2.

LANDSCAPE IRRIGATION

Landscape irrigation constitutes a small portion of the potable water usage at SAN, (6 million gallons in 2012, before completion of xeriscaping), due in part to the limited landscape acreage (approximately 18 acres) in drainage basins 1, 3, 5, 6, 7, 8, 9, 10, and 11 and the use of xeriscaping to help reduce the need for irrigation, including planting indigenous and drought-tolerant plants. For example, water-intensive shrubs were replaced with turf and drought-tolerant trees in front of the Terminal 1 check-in building. SAN has also used a satellite water-tracking system to determine the airport's watering needs; this system is expected to save approximately 9 million gallons of water each year. Approximately 2 acres of bioswales and 1.25 acres of bioretention swales have been installed in the last three years as part of SAN's Green Build low-impact development projects. These areas will require additional landscaping and irrigation. This non-storm water discharge is authorized by the Authority, since it is an authorized discharge under the Industrial Permit, provided that integrated pest management practices have been used and industry standard control measures are implemented in regard to the landscape irrigation discharges as outlined in Section 3.2.

POTABLE WATER, HOSE BIBS, AND EYE WASH STATIONS

Each of the airline passenger loading/unloading gates at Terminals 1 and 2 (drainage basins 8, 12 and 15) features a potable water supply cabinet with a hose to dispense potable water to the aircraft. Proper use and maintenance of the water cabinets requires potable water to be flushed from the system and if possible, flushed water should be captured for non-potable reuse or reduced to a minimum flushing time onto the ramp area.

A drinking water fountain was installed outside of the Terminal 2 West baggage claim area. The water is contained and is pumped back through the back flow system, where it is treated for algae. The water fountain is flushed directly into the sanitary sewer annually.

Hose bibs are installed around the perimeter of the terminals for connection to hoses. Hose bibs can be locked and use is limited. These hose bibs provide the opportunity for non-storm water discharge.

Eye wash stations are located outside most gates along Terminals 1 and 2 for emergency purposes. This equipment requires monthly testing, during which water is released onto the ramp.

Water discharged from these sources may contact contaminants if allowed to flow through areas where significant materials, oil, sediment, trash, and construction debris may potentially be carried into the storm drain system by the discharge. Control measures to address the potential for potable water flushing, drinking water fountain leaks, hose bibs, and eye wash station testing to transport pollutants to receiving waters are described in Section 3.2.

FIRE HYDRANT FLUSHING

The City of San Diego Water Department generally maintains the water mains and fire hydrants at SAN. However, Allied Aviation performs annual flush testing of fire hydrants in its operating area, (Drainage Basin 6) and the Authority FMD responds to minor leaks and breaks throughout the airport. Fire hydrant

flushing has the potential to transport pollutants to receiving waters if the discharge is allowed to flow through areas where significant materials, oil, sediment, trash, and construction debris may potentially be carried into the storm drain system. Fire hydrant or fire response system flushing is an authorized discharge under the Industrial Permit only if the discharge meets the conditions provided in Section IV.B. The Industrial Permit requires BMPs to be used for those non-prohibited discharges, as outlined in Section 3.2.

NON-EMERGENCY FIREFIGHTING FLOWS

The ARFF and Allied Aviation (in Drainage Basin 6) are the only facilities at SAN that operate and maintain fire suppression systems and/or perform firefighting activities. Non-emergency firefighting flows at SAN generally fall into two categories: (1) discharges from building fire suppression systems during installation, maintenance, or testing; and (2) discharges of potable water and/or potable water mixed with firefighting foaming agents from the ARFF rigs during firefighting practice drills and other exercises. Quantities and frequencies involved are outlined in Section 3.2. Allied Aviation maintains fire suppression systems surrounding oil storage areas and regularly tests the foam-to-water ratio of their equipment. Once potable water has been left to stand in building fire suppression systems or mixed with foaming agents, the water becomes contaminated and serves as a transport mechanism for pollutants. Discharges of potable water from the ARFF equipment during firefighting practice drills and equipment testing have the potential to transport foaming agents or other pollutants to receiving waters if the discharge is allowed to flow through areas where significant materials, oil, sediment, trash, and construction debris may potentially be carried into the storm drain system. Not all the activities conducted at the ARFF station that generate non-storm water discharges are considered non-emergency firefighting flows. Routine vehicle and equipment cleaning is conducted either at the SAN wash rack or in a nearby permeable area. The Authority requires the implementation of various BMPs to address these types of activities.

The Authority allows non-emergency firefighting equipment testing to be performed, but prohibits the discharge of non-emergency firefighting flows, which consist of potable water mixed with foaming agents, to the MS4. The proper disposal of non-emergency firefighting flows is discussed in Section 3.2.

TIDAL INTRUSION

Many of the outfalls from the storm drain system at SAN are submerged during high tides and even during low tides, allowing water from San Diego Bay to travel upstream in the storm water conveyance system. The tidal waters have the potential to transport back downstream to the receiving water any pollutants that have accumulated in the SAN storm water conveyance system. Pollutants from industrial operations, residue from spills of significant materials, construction debris, sediment, and oil from parking lots and streets have the potential to collect in the storm water conveyance system. Control measures to address the potential for tidal intrusion to transport pollutants to receiving waters are described in Section 3.2.

3.2 CONTROL MEASURES FOR AUTHORIZED NON-STORM WATER DISCHARGES

Authorized non-storm water discharge categories that may be sources of pollutants to receiving water without proper management and control are identified in Section 3.1.2. To prevent impacts to storm water quality, the Authority requires the use of BMPs designed to prevent these discharges from contacting pollutants, reduce the flow or volume of the discharges, or prevent these discharges from reaching the storm drain system. The Authority conducts regular inspections to ensure that these BMPs are properly and fully implemented. The BMPs required by the Authority for the non-storm water discharges identified above are discussed in this section. Monitoring and reporting of all non-storm water discharges as required by the applicable permits are described in Appendix D-1 and D-2 and Section 12.0.

GROUNDWATER, WATER FROM CRAWL SPACES, AND FOOTING DRAINS

While rising groundwaters, groundwater infiltration to the MS4, and any water pumped from footing drains above the groundwater table have not been identified as significant sources of storm water pollution, in addition to the standard airport-wide BMPs described in Appendix B, the following common-sense BMPs are generally applicable to these types of non-storm water discharges:

- Verify that the discharge does not originate from an area of known environmental contamination.
- Conduct a visual, olfactory inspection of the discharge to check that the discharge is free of obvious, observable pollutants.
- Prevent the discharge from contacting surface pollutants in the path of the discharge.
- Prevent discharges from entering the storm water conveyance system, if possible, by diverting the flow to a landscaped area, a pervious area, an impervious area where the discharge can evaporate, an OWS, or the sanitary sewer.

As indicated in Section 3.1.2, the Industrial Permit authorizes permittees to discharge water from crawl space pumps, uncontaminated pumped groundwater, and any water pumped from footing drains below the groundwater table as long as certain conditions identified in the permit are met.

AIR CONDITIONING AND COOLING PLANT CONDENSATE

Incidental air conditioning and cooling tower condensate has been identified as a source of storm water pollution only when allowed to contact pollutants lying in the path of the discharge. In addition to the standard airport-wide BMPs described in Appendix B, the following BMPs are applicable to air conditioning and cooling plant discharges:

- Monitor and control the amount of blow-down water or water lost to evaporation. To ensure the most efficient use of water, cooling towers can be equipped with automatic blowdown control systems or water flow meters to monitor water loss.
- Keep a log to track the make-up and blowdown quantities, conductivity, and cycles of concentration to detect leaks, excessive blowdown, or deterioration.
- Properly maintain the air conditioners and cooling towers to help reduce the amount of condensate discharged. Monitor water usage in cooling towers to track water loss and efficiency.
- Capture and reuse air conditioning condensate as appropriate.
- Prevent the discharge from contacting surface pollutants in the path of the discharge.
- Prevent discharges from entering the storm water conveyance system, if possible, by diverting the flow to a landscaped area or other pervious surface, an impervious area where the discharge can evaporate, an OWS or other treatment control or LID BMP, or the sanitary sewer.

LANDSCAPE IRRIGATION

Although the Municipal Permit prohibits discharges into the MS4 from over-irrigation because it has been found to be a source of pollutants such as nutrients, bacteria, pesticides and sediment, the Industrial Permit authorizes landscape irrigation as a non-storm water discharge provided that integrated pest management is implemented and BMPs are implemented to minimize, prevent or control those discharges. The following BMPs are utilized during landscape irrigation to minimize, to the extent practicable, the volume of the non-storm water discharges and to prevent these discharges from contacting sources of pollution:

- Utilize native plants to reduce the need for irrigation and fertilization. Perform soil analysis seasonally to determine appropriate fertilization requirements and minimize the use of chemical fertilizers.
- Apply pesticides, herbicides, and fertilizers as needed and in accordance with manufacturer instructions to maximize the utility of the product and minimize the potential for product residue to contact irrigation runoff. Do not use pesticides or herbicides if a rain event is expected. Do not apply pesticides or herbicides during periods of high wind.
- Combat weeds by hand pulling when feasible. Use herbicides only as a last resort.
- Properly dispose of landscaped materials in the garbage or compost. If immediate disposal is not feasible, store landscaped materials and vegetation debris in areas that are covered or otherwise protected from wind and rain dispersal.
- Avoid exposed soils by revegetating or temporarily covering these areas.
- Do not water during a rain event or at least 48 hours following a rain event.
- Employ water conservation practices, such as:
 - Water a maximum of two days per week.
 - Limit watering days to Mondays and Fridays. Exceptions include:
 - Irrigation with a landscape permit.
 - Erosion control.
 - Landscape establishment following a disaster.
 - When using a standard sprinkler system, limit watering duration to 5 minutes between the hours of 4:00 pm to 10:00 am from November 1 to May 31 and 6:00 pm to 10:00 am from June 1 to October 31.
 - When available, use recycled or reclaimed water for landscaping purposes.
 - Use automatic sprinkler timers. Automatic sprinklers, when properly set, minimize runoff by turning off the system at the appropriate intervals.
 - Where automatic sprinkler timers are not used, periodically observe the area being watered.
 - Conduct weekly observations to identify and correct damaged sprinkler systems and to adjust sprinkler heads. The landscaped or vegetated LID areas should also be observed for prevention of over-watering and runoff.
 - Assess the soil moisture and depth and utilize the Authority’s satellite water-tracking system to determine accuracy of irrigation schedules.
 - Use water delivery rates that do not exceed the infiltration rate of the soil, but instead minimize ponding and runoff and allow water to infiltrate into the soil.

- If a rain event is predicted, temporarily turn off sprinkler systems or use smart controllers to avoid over-watering and runoff.
- Avoid overspray outside of the landscaped areas and adjust irrigation systems to prevent overspray, minimize or eliminate runoff, and prevent contact with surface pollutants.
- Use micro-irrigation systems (e.g., drip irrigation).
- Use a control nozzle if watering by hand to avoid runoff.
- Avoid placing, storing, or parking equipment and vehicles in areas being irrigated to minimize the potential for runoff caused by blocking the spray or water delivery patterns. In this way, the potential for inadvertent runoff to contact pollutants is precluded.

POTABLE WATER FLUSHING, HOSE BIBS, AND EYE WASH STATION TESTING

While potable water flushing has been identified as a source of storm water pollution only when the water is allowed to contact pollutants lying in the path of the discharge, in addition to the standard airport-wide BMPs described in Appendix B, the following BMPs are generally applicable to potable water flushing discharges:

- Minimize flushing time and volume of water released.
- Do not perform flushing activities near storm drains or in a manner that discharges water directly to a storm drain, but rather flush water in a manner and direction that allow the water to pond on the surface and evaporate without ever reaching a storm drain.
- Capture and reuse released potable water, where possible.
- Flush water to a landscaped area, or other pervious surface, if possible.
- Flush water in a manner and direction that prevents the discharge from contacting surface pollutants in the path of the discharge.

Further BMPs applicable to hose bibs and eye wash stations include the following:

- Lock hose bibs to limit excessive usage.
- Post signs at hose bibs to discourage use.
- Inspect eye wash stations when necessary and release only minimal water so that it evaporates before reaching the storm drain.

Inspect eye wash stations and hose bibs for signs of leaking.

FIRE HYDRANT FLUSHING

Fire hydrant flushing has been identified as a source of storm water pollution only when the water is allowed to contact pollutants lying in the path of the discharge. Fire hydrant flushing and maintenance activities are authorized under the Industrial Permit Section IV.A, provided that they meet the conditions in Section IV.B. BMPs should be implemented to minimize contact between pollutants and flows, minimize the potential for erosion from any nearby landscaped areas, and use treatment control BMPs, where applicable, to treat the discharge to remove pollutants before entering the MS4. The City of San Diego Water Department flushes fire hydrants at SAN once per year. Allied Aviation's annual flushing activities are performed in a bermed area and nearby storm drains are covered. All waste water and foam is contained and collected for offsite disposal.

- **Fire Suppression System Installation, Maintenance, and Testing:** Potable water that has been left to stand in a building fire suppression system has a significant potential to carry pollutants, especially over time, as the water tends to stagnate and undergo various physical and chemical changes. As such, the Authority requires the following BMPs be implemented to address the discharge of this type of water:
 - Obtain the proper permit(s) from the City of San Diego MWWD to discharge the water directly to the sanitary sewer.
 - Discharge the water directly into a tanker truck for proper disposal offsite.
 - Capture the discharge in a holding tank or lined, bermed area or sump of sufficient capacity to store the water prior to discharge to an on-site sewer under proper permit(s) from MWWD or prior to transferring the water to a tanker truck for proper disposal offsite. In addition, berm or block storm drains located close to or within the test area to prevent any risk of seepage into the MS4.
 - Direct flows to nearby landscaped or pervious area to infiltrate or evaporate during dry weather.
 - Direct flows to a contained area and collect using a wet vacuum or equivalent, and properly dispose of collected water. Remove any residue in contained area and do not perform during rain events.

If the methods above cannot be used, pollutants in the path of the discharge should be removed and the flow should be mechanically filtered with an appropriate filter to treat the expected pollutants, so that the discharge to the storm drain is a clear, odorless, pH neutral liquid.

NON-EMERGENCY FIREFIGHTING FLOWS

Non-emergency firefighting flows that have the potential to transport pollutants to receiving waters include potable water that has been mixed with firefighting foaming agents, or potable water discharged from the ARFF rigs during firefighting practice drills and other exercises if allowed to contact pollutants lying in the path of the discharge. Fire hydrants will be used only to fight fires and to maintain human health and safety. The Authority requires implementation of the following BMPs to reduce pollutants in non-emergency firefighting flows to the MEP and using BAT/BCT:

1) Firefighting Foam Discharge

While firefighting equipment is tested annually at Allied Aviation's Fuel Storage Facility (FSF), the test is conducted using water only and the water is discharged into storm drains connected to the onsite OWS. At the FSF foam house, the test ports inside the house are used to test the water-to-foam ratio; however, no foam discharge is created in this process. During all equipment and facility testing, the test area is bermed and all waste water is collected and disposed offsite.

Firefighting foam testing is performed only by ARFF. ARFF performs its testing once per year north of the north ramp, using approximately 1,000 gallons of water and 50 gallons of 3 percent foaming agent. Although the entire north ramp drainage area is connected to OWSs, these systems are used only as a back-up fail-safe. The slit drainage trench is blocked off from the storm drain system by sandbags prior to conducting the foam test, allowing the foam to be captured in the slit trench, but preventing the foam from entering the storm drain. All of the foam is then vacuumed into a tanker truck and properly disposed of to an onsite sanitary sewer under the proper permit from the Metropolitan Wastewater Department (MWWD).

2) Firefighting Training

Firefighting training typically involves discharges of potable water from the ARFF rigs. These discharges may transport storm water pollutants when allowed to contact contaminants lying in the path of the discharge. As such, in addition to the standard airport-wide BMPs described in Appendix B, the following BMPs are generally applicable to firefighting training discharges:

- Pre-plan training exercises to allow integration of structural BMPs to control runoff.
- Use lower gallon per minute (GPM) nozzle settings.
- Use fog streams for short durations and change the direction of discharge as frequently as possible.
- Avoid training activities and discharges near storm drains and do not discharge water directly to a storm drain.
- Discharge water in the direction of landscaped or pervious areas whenever possible.
- Discharge water in a manner and direction that allows the water to pond on the surface and evaporate without ever reaching a storm drain.
- Utilize techniques for storm drain inlet protection when possible.
- Remove debris from adjacent curbs or inlets when possible.
- Prior to training, inspect the training area to avoid transporting debris to the storm drain system through flows produced during training.
- Utilize techniques for berming or diking the discharge to allow evaporation whenever possible.
- Utilize techniques for velocity reduction (energy dissipaters) when possible.
- Utilize techniques for sediment control in training whenever possible.
- Discharge water in a manner and direction that maximize either or both the time and/or distance required for the discharge to reach the storm drain system, such that the potential for evaporation is also maximized.
- Discharge water in a manner and direction that prevents the discharge from contacting surface pollutants in the path of the discharge.

TIDAL INTRUSION

Tidal intrusion has been identified as a source of water quality impact to receiving waters only when pollutants are allowed to accumulate in the SAN storm water drain system and then be carried downstream by the receding tidal flow. To prevent these potential impacts, the Authority regularly inspects and cleans the storm drain system to reduce potential pollutants from coming into contact with tidal flows. The Authority's monthly inspection program is more fully described in Section 7.8.4. In addition to the standard airport-wide BMPs described in Appendix B, the following BMPs are employed to maintain a clean storm drain system:

- Perform monthly and additional ad hoc inspections of the MS4.
- Perform annual inspection of all storm water conveyance systems. Daily, inspect the sump by the trash compactor, OWS near the Aircraft Service International Group (ASIG) fueling facility, and storm drain near the California Least Turn nesting areas.

- Perform annual cleaning of all OWSs and underground storm drain pipes, quarterly cleaning of drop inlet, curb inlet, trench drains, slit drains, and high priority catch basins located near terminal areas. Additional storm drains are cleaned as needed on the basis of year-round ad hoc inspections, monthly and after each storm event during the wet season.
- Install and maintain screens in front of curb inlets on the southern side of SAN. Additional screens will be installed as necessary.
- Keep accurate logs on cleaning and maintenance of the storm drain system.
- Maintain a clean and waste-free facility by using foreign object damage (FOD) buckets, performing frequent dumpster service, and cleaning all dumpsters, compactors, and trash haulers.

3.3 UNAUTHORIZED NON-STORM WATER DISCHARGES

The following discharges are prohibited in accordance with the Industrial and/or Municipal Permits unless otherwise authorized by a separate NPDES permit:

- All non-storm water discharges that have not been identified as authorized in Section IV of the Industrial Permit
- Any authorized non-storm water discharges that contain pollutants that cause, or threaten to cause, contamination or nuisance of receiving water quality
- Discharges that violate prohibitions of applicable Regional Water Board Basin Plans or other statewide water quality control plans or policies
- Non-storm water discharges that contain hazardous material in concentrations exceeding the quantities listed under 40 CFR
- Discharges identified by the Regional Water Board as a source of pollutants to receiving water
- Discharges authorized by the Municipal or Industrial Permits, but not controlled in accordance with the Permit requirements
- Discharges from water line flushing and water main breaks, other than those authorized under the Industrial Permit, that have not received coverage under Permit CAG679001 (Order No. R9-2010-0003)
- Firefighting discharges that have been identified as a significant source of pollutants to receiving water.
- Any wash water, e.g., from vehicle, equipment, ground or building washing activities.

3.4 CONTROL MEASURES TO PREVENT UNAUTHORIZED NON-STORM WATER DISCHARGES

A full description of BMPs in place at SAN to prevent or eliminate unauthorized non-storm water discharges is in Appendix B. Examples of the potential sources of unauthorized non-storm water discharges at SAN and corresponding BMPs to prevent them include:

- **Aircraft and Vehicle Washing:** Washing of equipment, vehicles, and aircraft is prohibited by the Authority, unless it is performed at the designated wash areas located at the Wash Bay Facility, where wash water is collected and recycled, and the American Airlines aircraft wash rack. Both areas are bermed and direct all flow to a sump, an OWS, or the sanitary sewer. All fluids in the American Airlines facility go through an OWS and are collected in a sump and then discharged to the sanitary sewer.

During a storm event, the valve is switched to discharge the storm water to the storm drain system and no washing is performed. The ASIG wash area drains to the sanitary sewer. The use of a control nozzle on all hoses is recommended to minimize the amount of water used. According to City of San Diego water conservation measures, vehicles, equipment, and aircraft should be washed only during the following time increments:

- November 1 to May 31: 4:00 pm to 10:00 am
- June 1 to October 31: 6:00 pm to 10:00 am
- **Erosion/Sediment Transport:** The amount of exposed soils at SAN should be minimized to the extent possible. For areas where soil is exposed, temporary erosion and sediment control measures can be used to minimize erosion of exposed soils and to minimize the potential for sediment transport (i.e., erosion control blankets, mulch, gravel bags, fiber rolls, and silt fences). These temporary BMPs require regular inspection and maintenance or replacement to check their effectiveness.
- **Aboveground Storage Tanks:** All ASTs are equipped with built-in cement secondary containment. ASTs used and maintained by the Authority are inspected daily by FMD and maintenance is performed as needed. The Authority ensures that all tenants perform inspection, maintenance, and safety protocols as required under their Use and Occupancy Permit if their operations require the use of ASTs.
- **Vehicle, Equipment and Material Leaks or Spills:** Preventive employee and tenant training, inspections, and vehicle and equipment maintenance activities are conducted regularly to reduce the potential for leaks and spills. All fuel operators are required to perform monthly testing of all fueling equipment. A full description of the Authority’s spill prevention and cleanup program is described in Section 3.5.3. Seven OWSs serve as a precautionary capture method for leaks and spills. Each installed OWS has an alarm system. If the oil reaches a certain level, or oil leaks to the ground, an alarm goes off. The capacities of the OWSs range from 3,000 to 40,000 gallons, depending on the respective loads anticipated in each area. If a spill occurs and must be diverted to an OWS, the person(s) who caused the spill is(are) responsible for cleaning out the OWS once the spill has been contained and the threat removed. The OWSs are inspected by the EAD and maintenance is conducted as needed.
- **Debris Accumulation:** Sweeping at SAN is conducted using mechanical and regenerative air sweepers. Roadway sweeping is conducted 5 days per week and daily sweeping is conducted within the aircraft operations area (AOA), including ramps, parking lots, perimeter roads, and construction areas. Each ramp area is on rotation throughout the week so that terminal and taxiway areas are swept at least once per week. As part of the SAN ramp-walk program, FMD inspects and sweeps up against each building every month.

3.5 ILLICIT DISCHARGE DETECTION AND ELIMINATION

As defined in the Municipal Permit, an illicit discharge is “any discharge to the MS4 that is not composed entirely of storm water except discharges pursuant to a NPDES permit and discharges resulting from firefighting activities.” Washwater, sediment, spilled chemicals, and other pollutants allowed to enter the storm drain system may contribute to the degradation of the local water quality. Releases from the sanitary sewer or private laterals can allow pathogens, ammonia, detergents, and other contaminants to enter the storm drain system.

Illicit connections are defined as “...any manmade conveyance or drainage system through which a non-storm water discharge to the storm water drainage system occurs or may occur. Any connection to the MS4 that conveys an illicit discharge...” These connections provide pathways for pollutants to enter the storm drain system. Improperly installed or defective rain diversion systems or devices that release pollutants into the storm drain system will also be considered illicit connections. A complete evaluation and

characterization of all non-storm water discharges, their sources, and drainage areas is included in Section 7.7.3.

The IDDE program incorporates several elements of the Authority's storm water management program to develop a comprehensive approach to preventing, detecting, and eliminating illicit discharges. Inspection, maintenance, and enforcement activities contribute to the identification of illicit discharges and the elimination of those detected. Often, when an illicit discharge is detected as a part of an inspection or maintenance program, it can be eliminated before it potentially affects a receiving water. Authority regulations prohibit illicit discharges. The Authority code can require a responsible party to conduct abatement activities to eliminate an illicit discharge, or allow the Authority to conduct those activities itself at the cost of the responsible party. Non-storm water discharge and IDDE enforcement programs are discussed below in Section 3.7.

Authority staff and airport tenants play an important role in the detection of illicit discharges. Education and outreach efforts for Authority staff and airport tenants are directed at storm and non-storm water pollution prevention, including the detection and elimination of illicit discharges. Education programs for the Authority staff are described in Section 9.0.

The Authority's dry weather monitoring programs or IDDE components are described in Appendix D-1 and D-2 of this SWMP. The following section discusses those IDDE program elements that are not described in Appendix D-1 and D-2.

3.5.1 PUBLIC REPORTING OF ILLICIT DISCHARGES AND CONNECTIONS

Public reporting mechanisms are an effective way to promote the reporting of illicit discharges. To meet the requirements of Provisions E.2.b.(3) and F.4 of Municipal Permit, the Authority promotes four primary mechanisms for reporting complaints or concerns regarding unauthorized non-storm water discharges: (1) the Authority Environmental Affairs Department main telephone line (619-400-2782) and webpage (<http://www.san.org/Airport-Projects/Environmental-Affairs>); (2) the SAN public reporting hotline (619-400-2710) and e-mail contact environmental@san.org for reporting non-storm water and illicit discharges; (3) the County of San Diego storm water hotline (888) 846-0800 and online complaint reporting forum (<http://www.projectcleanwater.org/html/complaints.html>), and (4) the THINK BLUE Hotline at (619-235-1000) and webpage (www.sandiego.gov/thinkblue) operated by the City of San Diego, which is available Monday through Friday, 8:00 a.m. to 5:00 p.m. and provides a voice mail message for 24-hour access in both English and Spanish. The hotline operators forward complaint information, as appropriate, to the Authority EAD for investigation and follow-up. The City of San Diego also offers an online storm water service request help line through which the public can report a violation through cell phone texts or the online mapping tool.

The Authority's SAN Operations Department storm water hotline is a 24-hour telephone line that allows Authority staff and airport tenants to report complaints or concerns regarding unauthorized non-storm water discharges. This reporting mechanism is promoted by including the telephone number on the back of SAN Security ID Badges that are issued at SAN.

Each call or email message that is forwarded to the Authority through these public reporting mechanisms is handled as an incoming complaint and entered into the Web-based database as a unique incoming record. The report includes the date the violation was reported, a description of the violation, its location, the SAN personnel notified, and whether or how the issue was addressed. All reported incidents, along with a description of how each one was investigated and/or resolved, will be summarized in the Annual Report required by the Municipal Permit.

3.5.2 TRASH POLLUTION PREVENTION

Litter and illegal dumping can be significant sources of pollutants if allowed to reach the storm drain. Trash is often transported in runoff and accumulates at storm drains or inlets. To reduce the amount of trash transported to receiving waters, the Authority conducts ramp sweeping four times per month and as needed or requested. Roadways leading into and out of SAN are swept daily; FMD also inspects and sweeps each terminal building up against the building every other month, as a part of the ramp-walk program. Every tenant is required to provide FOD containers on the ramp to deposit materials picked up on ramps and other areas inside the AOA. These containers are covered and emptied regularly. FOD walks are also conducted monthly to observe and pick up debris. If large amounts of debris are found in a tenant's operational area, a warning is provided and the tenant has three days to address the issue. Dumpsters and trash facilities are serviced several times throughout the day depending on the rate of accumulation. Tenants are encouraged to report overflowing trash facilities to FMD to prevent wind-blown litter. "No dumping" signs should also be posted along SAN's perimeter close to major roadways and walk ways. The Authority's Web-based database will be employed to track incidents of intentional littering or dumping. During monthly visual observations, inspectors will identify (if known) the illegal dumping hot spots, patterns and types of occurrence, mode of dumping, reporting mechanism, and known or suspected source or responsible party in the Web-based database.

3.5.3 SPILL PREVENTION, REPORTING, AND RESPONSE

The Authority has programs and procedures to prevent, respond to, contain, and clean up all sewage and other spills that may impact the storm drain system, as required by Provision E.2.b.(4) of the Municipal Permit. Many of the same programs and procedures are implemented as a requirement of Section X.H.1.c of the Industrial Permit. Potential pollution sources were evaluated and descriptions are included in Section 7.7.3.

3.5.3.1 Spill Prevention

SANITARY SEWERS

As discussed in Section 6.4 of this SWMP, the Authority's preventive and corrective sanitary sewer maintenance programs focus heavily on those areas of known problems or concerns. Known problem areas typically consist of the lines immediately downstream of food services, which have a tendency to be impacted by grease. For all locations, the Authority provides for or requires the food service provider (as a requirement of the lease) to conduct the minimum of annual routine monitoring, inspection, and cleaning. Wastewater from restaurants moves through three grease interceptors before entering the sanitary sewer system. Grease interceptors are maintained and cleaned every 1 to 2 months. When system malfunctions do occur, such as stoppages, the cause of the problem is investigated and analyzed. Maintenance schedules are then adjusted accordingly. If necessary, repairs are initiated by Authority maintenance crews or food service provider, as appropriate. If appropriate, the infrastructure component is referred for repair or replacement by maintenance crews. Larger, more complex issues generally become recommendations for capital improvement projects as part of the Authority budget planning and approval process (Section 10.0).

OTHER SPILLS

Refueling and equipment maintenance activities utilize jet fuel, aviation gas, hydraulic oils, oil, deicing fluids, degreasers, and other solvents. Because of the intensity of use, there is a higher possibility of significant spills of jet fuel. Jet fuel is stored in aboveground tanks at the FSF and distributed via pipeline to a RFF. The USEPA requires facilities with "an aggregate aboveground oil storage capacity greater than 1,320 U.S. gallons or a completely buried storage capacity greater than 42,000 U.S. gallons" (USEPA, 2015) to develop and implement a Spill Prevention Control and Countermeasure (SPCC) Plan. Every tenant who must file a SPCC Plan with the USEPA is also required to file a copy with the EAD. Tenants must also contract a hazardous materials emergency response and cleanup services provider and provide the

information to the SAN Operations and the EAD. Aircraft fueling is performed by a fleet of fuel trucks (containing several hundred gallons of fuel) operated by two refueling operations. The fuel trucks operate on the ramp areas of the main terminals, the FBO building, the air cargo area, and the overnight aircraft parking areas. The Authority requires the implementation of spill response BMPs, secondary containment, frequent inspection and maintenance of vehicles, equipment, and storage containers, and proper labeling and dating of material containers. Spills from tenants are reduced through the required use of BMPs, education, and enforcement of relevant regulations for the storage and usage of hazardous materials.

3.5.3.2 Spill Reporting

In the event of a spill, the responsible party (Authority staff or airport tenant) is required to contact SAN Operations (619-400-2710) in all cases, and ARFF if the spill (1) presents a fire hazard, (2) is an immediate human health hazard, (3) is over 10 feet in length or 50 square feet in area, (4) has a source that is continuous, and/or (5) cannot be cleaned immediately. If a vehicle or equipment spill or leak reaches a storm drain or inlet, and cannot be controlled or cleaned with onsite personnel and equipment, the person(s) causing the spill must report it to SAN Operations, the Harbor Police, the National Response Center, and the State of California Office of Emergency Management Agency. If the Authority determines that the incident endangers human health or the environment, then the Authority will provide verbal notification to the Regional Water Board within 24 hours from the time that the Authority becomes aware of the circumstances. The verbal report will include any unanticipated bypass or upset that exceeds any applicable effluent limitations and any violation of a maximum daily discharge limitation for pollutants listed in the permit to be reported within 24 hours. Within 5 days of the time that the Authority becomes aware of the circumstances, the Authority will provide the Regional Water Board with a written submission containing a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, whether the noncompliance has not been corrected, and the anticipated amount of time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. The Authority will include a summary of the spill, its source, and the elimination procedures in the WQIP Annual Report, which includes a JRMP Annual Report form, as required by Provision F.3.b.(3) of the Municipal Permit. Any instances of noncompliance will be identified and explained in the Industrial Annual Report Compliance Checklist, as required by Section XVI.B.2 of the Industrial Permit.

3.5.3.3 Spill Response

Each tenant, contractor, or Authority staff member responsible for any spill of sewage or other material is also responsible for immediately responding to that spill. Immediate response to a spill helps to prevent an unauthorized release to the storm drain system and to prevent further contamination of storm water runoff due to spill residuals on the surface. The appropriate spill response includes carrying out appropriate notification procedures, stopping the source of the spill, containing the spill, implementing the proper cleanup procedures, immediately and properly disposing of the spilled materials and other items used for the cleanup, and maintaining records.

Each facility/operation that utilizes, stores, and/or generates hazardous materials is responsible for creating spill response procedures and ensuring that their employees are properly trained in those procedures. The MS4 and Industrial Permits require the preparation of spill response procedures, and those procedures are described below and in the "Spill Prevention, Control, and Cleanup" BMP (SR01) provided in Appendix B. Each airline tenant is responsible for maintaining spill response equipment in its terminal gate area. Spill response equipment includes absorbent materials, shovels, brooms, gloves, and other necessary items. In addition to spill response equipment maintained by the airline tenants and the fuel vendors, the Authority has established, and strategically located on the airfield, three spill response trailers with an adequate inventory of spill response equipment to respond to any spills, including a worst-case incident. Authority staff and airport tenant education and outreach efforts highlight the existence and intended use of these spill response trailers.

SMALL SPILL CLEANUP PROCEDURES

Small spills of jet fuel, hydraulic oil, lube oil, or lavatory wastes are generally efficiently cleaned up using bulk absorbent material. Absorbent is used as a dike to prevent spill migration into the storm drain system and is also used to absorb any ponded material. All waste sorbent and waste material should be stored in a Department of Transportation-approved drum that is properly labeled with the contents, generation date, and facility contact information.

LARGE SPILL CLEANUP PROCEDURES

In the case of a large spill, the responsibility for initial action remains with the party responsible for the spill. In the case of a large fuel or sewage spill, a systematic and controlled response is especially vital. The following procedures can be used as guidelines for responding to a large spill of fuel or petroleum products, and sewage spills. These activities should be performed as appropriate considering the details of the spill:

- Stop the source:
 - Shut off valves on aircraft or refueler trucks
 - Install plugs in ruptured tanks or valve fittings
 - Relocate leaking vehicle to nearby area of secondary containment
 - Transfer fuel into other vessels, tanker trucks, etc.
- Perform notifications:
 - Tenants Contact SAN Operations (619-400-2710) and SAN Rescue and Firefighting Facility (619-231-5204)
 - Harbor Police (619-686-8000)
 - National Response Center (800-424-8802 or 202-267-2675), as necessary or required by law
- SAN Operations Contact:
 - Authority Environmental Affairs (619-400-2782)
 - California Department of Fish and Game/Office of Spill Prevention and Response 24-hour hotline (916-445-9338) or CalTip line (888-334-2258), as necessary or required by law
 - State of California Office of Emergency Management Agency (800-852-7550 or 916-845-8911)
 - U.S. Coast Guard (619-683-6495), as necessary or required by law
 - Regional Water Board (619-516-1990), as necessary or required by law
 - USEPA Office of Emergency Services (800) 300-2193, as necessary or required by law
- Contain and absorb the spill:
 - Prevent the spill from reaching the storm drain.
 - Turn on emergency shutoff valves if they are installed in the nearby storm drains.
 - Create dikes with absorbent or other material.
 - Plug storm drain inlets with rubber mats and tarps and collect ponded materials by vacuum truck, drum-mounted vacuum, squeegee roller, or other means. If the spill is too large to control or if it reaches the storm drain, the person responsible for the spill should immediately contact a Hazardous Materials Contractor.

- Protect San Diego Bay, as necessary, by installing barrier booms and/or absorbent booms at the storm drain outfall and monitoring outfall for signs of release.
- Ensure that emergency diversion to a storm drain is conducted only on the north ramp or the Terminal 2 West ramp where the storm drains have approved separation devices. The responsible party must clean and remove the spilled fluids from the separation device once the spill has been controlled and the surrounding area has been cleaned.
- Make follow-up notifications and submit reports, as necessary, to agencies necessary or required by law.

INCIDENT COMMAND SYSTEM IMPLEMENTATION

Several Authority staff members have been trained in the application of incident command systems for large-scale emergency incidents, such as a large fuel or sewage spill. The responsible party may voluntarily relinquish control of spill response responsibilities to a federal, state, or local agency appropriately prepared to respond, and the responsible party should not hesitate to do so when requested by such an agency. In situations where the release threatens public safety and property damage by fire, explosion, or vapor levels, or if structural collapse is imminent, the SAN ARFF Department has overall authority to control response actions. Only after the immediate threat to life and property has been abated and the ARFF has relinquished exclusive site control will the responsible party enter the incident command system structure. The incident command system will be used to apply control in any emergency response where multiple agencies are involved. Where appropriate, the responsible party may be requested to participate in various aspects of the incident command system.

3.6 DRY WEATHER MONITORING PROGRAMS

The Authority conducts or participates in urban runoff monitoring programs to meet the requirements of both the Industrial Permit and the Municipal Permit. Several of these programs help to identify non-storm water illicit discharges and their potential sources within the Authority's jurisdiction. The Authority can also utilize the data collected through monitoring efforts to identify and eliminate illicit discharge sources.

As required by Provision B of the Municipal Permit, the Authority is collaborating with the County of San Diego, Port of San Diego, and the cities of Chula Vista, Coronado, Imperial Beach, La Mesa, Lemon Grove, National City, and San Diego (collectively, the San Diego Bay WMA Responsible Parties) to develop a WQIP with goals and strategies to reduce pollutant discharges from MS4 outfalls in the San Diego Bay WMA during wet and dry weather. The monitoring programs described below were developed to prevent non-storm water MS4 discharges and to meet water quality goals outlined in the WQIP.

The following urban runoff monitoring programs were developed to meet the requirements of Provision D of the Municipal Permit. The monitoring programs implemented at SAN by the Authority are described in Appendix D-2.

3.6.1 RECEIVING WATER MONITORING

As required by Provision D.1 of the Municipal Permit, the Copermittees developed a receiving water monitoring program to characterize the long-term trends in receiving water quality and determine whether management strategies are effective. The long-term receiving water monitoring station designated by the Copermittees is the Sweetwater River Mass Loading Station (SR-MLS). This site has been monitored by the Copermittees since 2001 because it represents the conditions and water quality of the WMA. Field observations, field measurements, laboratory analytical chemistry, and toxicity testing are conducted at this site during three dry weather events each year. In addition, bioassessment and hydromodification monitoring events are each conducted once during the Municipal Permit term in accordance with the requirements in the Municipal Permit. Section 5.3 of the WQIP provides further information about the monitoring program.

3.6.2 REGIONAL MONITORING

The Copermittees are required to participate in regional monitoring programs, including the Storm Water Monitoring Coalition and Southern California Bight Regional Monitoring programs. The Copermittees have chosen to participate in the Southern California Bight '13 Regional Monitoring Program, Storm Water Monitoring Coalition Stream Survey, Hydromodification Regional Monitoring Program, and San Diego County Beach Water Quality Monitoring Program.

3.6.3 SEDIMENT QUALITY MONITORING

The Copermittees will perform sediment quality monitoring in accordance with the requirements of the Municipal Permit Provision D.1.e.(2). A Sediment Monitoring Plan is included in the WQIP.

3.6.4 MS4 OUTFALL MONITORING

Under Provision D.2 of the Municipal Permit, the Authority will monitor MS4 outfalls during dry weather to assess MS4 outfall discharges for their potential contributions to receiving water quality and to assess the effectiveness of jurisdictional urban runoff management programs. Detailed information about jurisdictional and regional MS4 outfall monitoring programs is provided in the San Diego Bay WQIP and the Authority's program is described additionally in Appendix D-2.

The Authority has developed a Dry Weather Analytical Monitoring Program to encompass both Industrial and Municipal Permit requirements for monitoring dry weather discharges. The dry weather monitoring activities conducted at SAN are summarized below, and described in further detail in Appendix D-1 and D-2.

SELECTION OF OUTFALLS

Two major outfalls within the Authority's jurisdiction have been selected. These two outfalls are tidally influenced and cannot be screened safely at the outfall. Therefore, nearby upstream locations were selected as proxies to provide adequate coverage of the entire drainage areas of those two outfalls. The monitoring locations were selected as far downstream as possible to capture as many areas with industrial activities and sources of potential illicit discharges as possible and to provide adequate coverage of those storm drain lines. The storm drain system outfall monitoring locations have been added to the existing dry weather monitoring locations, along with additional locations in new or redeveloped drainage areas, or those added to comply with new Industrial Permit requirements. Monitoring locations were established to isolate particular land uses, drainage areas, and areas of concern on the basis of historical data.

A storm drain system map was created in geographic information system (GIS) 9.0 to depict the storm drain system, the 15 drainage basins, and the monitoring locations. The storm drain system map is used in source investigations and satisfies the requirements of Provision E.2.b.(1). of the Municipal Permit. During the dry weather monitoring, the storm drain system map is checked for accuracy, and corrections and changes are made accordingly.

DRY WEATHER MS4 OUTFALL DISCHARGE FIELD SCREENING

The Authority conducts dry weather field screening and analytical monitoring in accordance with Provision D.2 of the Municipal Permit to identify water quality problems that may result from any of the non-storm water discharges described in Sections 3.1 and 3.3. Field screening will be conducted at the 2 major MS4 outfalls within the Authority's jurisdiction, as well as at 16 compliance locations and outdoor industrial equipment and storage areas to identify any unauthorized and authorized non-storm water discharges, as required under the Industrial Permit (Section XI.A.1.a).

NON-STORM WATER PERSISTENT FLOW MS4 OUTFALL DISCHARGE MONITORING

Observations and analytical data will be collected twice annually at each outfall monitoring station experiencing persistent flow, if any, during dry weather periods to detect which non-storm water discharges impact receiving water quality. Appendix D-2 of this document describes the MS4 outfall monitoring program. Field monitoring and laboratory analysis procedures, including a list of constituents, equipment required, and quality assurance measures are included in Appendix D-1.

INDUSTRIAL DRY WEATHER VISUAL OBSERVATIONS

The Authority conducts monthly visual observations of all drainage areas within SAN for the presence of unauthorized non-storm water discharges and any authorized non-storm water discharges and their sources, as described in Section 7.8.4.2. The objective of the monthly inspections is to identify sources of non-storm water discharges and to check that BMPs are being properly implemented and are effective, and to prevent or eliminate unauthorized discharges.

3.6.5 SPECIAL STUDIES

The Municipal Permit, Provision D.3.a.(1), requires Copermittees to select special studies to fill in data gaps and provide further information for better management and elimination of pollutants. The Municipal Permit specifically requires:

- At least two special studies related to highest priority water quality conditions for each WMA
- One special study to address the pollutants and/or stressors impacting receiving waters within the San Diego region

The Authority will take part in regional special studies identified in the WQIP, Section 5.3. The Authority will also implement a source identification special study specific to its Focused Priority Conditions.

The Authority will implement a source identification study to determine the potential (PGAs) and areas that contribute the highest concentrations of copper and zinc as part of a special study required under Provision D.3.a.(1) of the Municipal Permit. As part of this study, the Authority will prepare and analyze a report characterizing copper and zinc and the activities and areas that are potential sources. The report will help the Authority target sources of these constituents and develop actions to eliminate or minimize the source activity. A Source Identification Monitoring Plan will also be prepared. The monitoring plan will support the identification of PGAs, quantify the potential loadings from particular activities or areas, and prioritize sources of discharge(s).

3.7 FOLLOW-UP AND ENFORCEMENT

Source investigations are conducted by the Authority when an illicit discharge is detected or suspected and the source of the illicit discharge is not readily identifiable. The purpose of these investigations is to locate the source of an illicit discharge so that necessary measures required to eliminate the illicit discharge can be implemented. This section has been prepared to meet the requirements in Provision E.2.d of the Municipal Permit. Section 3.7.3 provides a detailed description of the Authority's Enforcement Response Plan.

3.7.1 FOLLOW-UP SOURCE INVESTIGATION PROCEDURE

The Authority will encourage staff, contractors, and developers to assist in identifying and reporting illicit discharges and connections to SAN Operations if observed during daily activities. The investigation action criteria for dry weather monitoring results were developed by the Copermittees and are provided in Appendix D-2. Additionally, the Municipal Permit now includes non-storm water action levels. Within two business days of receiving dry weather field screening or laboratory results that exceed any action levels, the

Authority will conduct an investigation to identify the source or provide a rationale for why the discharge does not pose a threat to water quality and does not require further investigation. The trash assessment information collected may also provide the Authority with useful information in regard to problem areas or activities. Source investigations will typically be conducted by the Authority's EAD monitoring personnel. In some cases, other onsite Authority personnel may conduct a source investigation. If a source investigation reveals an upstream source outside of SAN's jurisdiction, the Authority will notify and work with responsible Copermitees to eliminate the source.

In some cases, the mere existence of flows in a portion of the storm drain system or the noticeable increase in dry weather flows at a certain location may trigger a source investigation. The Authority's monitoring personnel will use their judgment and experience in making these and similar decisions in the field on the basis of site-specific observations. The steps taken to identify and eliminate an illicit discharge are described in Appendix D-2.

Follow-up investigations are typically conducted by the Authority under the following circumstances:

- Report of an illicit or suspected illicit discharge
- Exceedance of field or analytical action levels
- Ceasing of the discharge prior to arrival at the point of observation or during a source investigation, and inability to determine the source without the discharge
- Insufficient information produced during source investigations to locate the source or provide enough evidence to identify a responsible party
- An order issued by the Authority to a responsible party and a follow-up investigation necessary to ensure that the responsible party has complied with the required abatement actions
- An area or activity identified as having a high potential for the occurrence of an illicit discharge and, therefore, periodic follow-up visits to ensure that future discharges are rapidly identified and eliminated

3.7.2 DOCUMENTATION AND REPORTING

Source investigations should be documented using photographs, detailed notes on observations, completed field observation sheets when applicable, discussions or decisions made, and other information relevant to the investigation. This information could be useful for future investigations and for possible future resolution of illicit discharges for which sources were unidentified. Documentation is also used in support of enforcement actions. The Authority will document and keep a record of the investigation. The investigation report will include:

- The location of the violation, the hydrologic subarea, the impacted receiving water body, the point of discharge from the MS4
- The initial source of information which triggered investigation
- The date and method through which the information was received
- The date of the investigation
- The corrective action or enforcement procedures implemented
- If any follow-up investigations were conducted and the dates and results of each investigation

- The identified or suspected source of the discharge
- Any known or suspected incidents that may relate to the source of the discharge
- Final results of the investigation

If a source could not be identified after a thorough investigation, a complete report will still be generated and will include a plan to improve the investigation procedure if the same discharge is observed or reported in the future. If the discharge reoccurs and the source is still unidentified through source investigations, the discharge will be considered an illicit discharge and the SWMP will be updated to evaluate the common and suspected sources of the illicit discharge.

If the source of an illicit discharge is considered natural in origin and conveyance, the discharge and source will be documented and all data and evidence in support of this conclusion will be provided to Regional Water Board to demonstrate that the discharge is natural and does not require further investigation.

Sampling for field screening or laboratory analysis should be done when deemed appropriate by the investigator. In many cases, once the source is identified, the makeup of the illicit discharge can be determined by a survey of the source and, therefore, analysis may not be necessary. However, in other cases, analysis of samples may be evidence to support enforcement actions.

All documentation and other information relevant to source investigations should be collected by or be turned over to the EAD. The department will handle, retain, and track files pertaining to the various illicit discharge investigations, and whether or not a responsible party has been identified. The department will also determine whether the discharge is an isolated incident that will be addressed through enforcement procedures, or whether the category of discharge should be prohibited as an illicit discharge, as specified in Provision E.2.a.(6) of the Municipal Permit.

A summary report of the non-storm water and illicit discharges and connections identified during investigations will be included in the WQIP Annual Report in accordance with the requirements of Provision F.3.b.(3) of the Municipal Permit. Additional details on information that will be provided in the WQIP Annual Report are included in Section 12.1. In summary, the illicit discharge and source investigation report will include:

- The known or suspected sources causing or contributing to the highest priority water quality conditions within the Watershed Management Area
- BMPs or additional programs implemented to address these sources
- Education programs implemented to notify the public of the sources of discharge
- Frequency and description of inspections implemented to determine if the source(s) has(have) been eliminated
- Enforcement actions and/or incentives implemented to eliminate the source(s)
- The optional strategies that the Authority plans to implement to prohibit non-storm water and illicit discharges in accordance with Municipal Permit Provision B.3.b.

3.7.3 ENFORCEMENT

The Authority is authorized to enforce prohibitions of illicit discharges and illicit connections and to ensure that the requirements for authorized non-storm water discharges are met to maintain compliance with the Municipal and Industrial Permits, the Authority Rules and Regulations, the Storm Water Code (Article 8), this SWMP, and any contracts and leases. As required by Provision E.6 of the Municipal Permit, the Authority has established an ERP to enforce its legal authority to achieve compliance and respond to reports of violations or noncompliance with the above documents. Provision E.1.a. of the Municipal Permit requires the Authority to prohibit illicit discharges and connections to the MS4, control the discharge of spills, dumping, or dumping of materials other than storm water into the MS4, control through interagency agreements the contribution of pollutants from one portion of the MS4 to another, utilize enforcement mechanisms, and carry out inspections and monitoring of tenants, contractors, developers, and employee operations and activities to ensure compliance. Municipal Permit Provision E.6 requires the use of necessary escalating enforcement measures, and should be in compliance with the strategies in the WQIP. The Authority is authorized to inspect and, if necessary, issue corrective actions, notifications, or written warnings or fines appropriate to the level of violation.

The Authority plans to increase tenant BMP inspections from quarterly to monthly. Ad hoc inspections are also performed. Inspections will focus on pollutant generating areas and activities, and tenants will be encouraged to improve and increase BMP implementation through a graphic scoring system. A detailed list of BMPs evaluated during tenant inspections is included in Appendix B.

Violations are determined on the basis of noncompliance with Authority rules and regulations, permit requirements, provisions in the Storm Water Code, or applicable laws and regulations. Any violations noted during a site inspection by the EAD inspector will be discussed onsite if appropriate personnel are available, be reported as outlined in Section 3.7.2, and be recorded in the Web-based database. Immediate action will be taken to stop or control active prohibited discharges, spills, or obvious illicit discharges. Field screening and monitoring of other non-storm water discharges, as outlined in Appendix D-2, will be conducted to prioritize responses and follow-up investigations. The inspection report will detail the corrective actions required, the timeframe in which corrective actions must be completed, and any enforcement actions issued.

The enforcement mechanisms used by the Authority are listed below. The Authority generally obtains compliance using the first four mechanisms listed. The remaining enforcement mechanisms can be used, as necessary, to increase the severity of penalties and to compel compliance as soon as possible. Violations are required to be corrected within a minimum of 30 days after the violations are identified, or prior to the next predicted rain event, whichever is sooner. If the responsible party requires more than 30 days to correct the violation, the rationale must be described in the Authority's Web-based database and approved by EAD.

- 1) Verbal and written warnings
- 2) Written notices of violation
- 3) Written notices to clean, test, or abate
- 4) Orders to cease and desist (stop work orders)
- 5) Fines
- 6) Denial or revocation of permits and approvals
- 7) Administrative and criminal penalties
- 8) Bonding requirements
- 9) Liens

The Authority's ERP for illicit discharge detection and elimination has two main levels of enforcement, with escalating enforcement measures utilized as necessary on a case by case basis, using the professional judgment of the Authority inspector. The Authority has the discretion to initiate or escalate enforcement using any enforcement mechanism available, depending on the nature of the violation or discharge, the effect on water quality, and the degree of cooperation or response time of responsible parties. Further information on enforcement activities used by the Authority is provided in Section 2.3. The general escalated enforcement process is outlined below:

- Enforcement Level 1 is initiated by the finding of BMP deficiencies. The responsible party is contacted and the inspector provides a verbal warning to fix the observed violation. The notification will also be documented in the Web-based database so that the responsible party and interested parties are aware of the violation. The responsible party can then notify the inspector via the Web-based database when the corrective action has been completed. If the inspector determines that the violation is severe enough that a verbal warning is not sufficient, a written notice will be issued to the responsible party. The written notice documents the violation, the time frame for correction, and the date of follow-up inspection. The written notice will be provided to the responsible party and the facility/operation supervisor. If the violation is resolved within the time frame, the inspector will document compliance and save the inspection information in the inspection file.
- Enforcement Level 2 is initiated when the noncompliant activity or violation may impact water quality, human health, or the environment (i.e. prohibited discharge). A written notice to clean, test, or abate, and/or a CDO is used to initiate enforcement and compliance is expected within 24 hours. If a CDO is issued, the recipient must cease and desist all activities that cause or contribute to illegal discharges or remove illicit connections. A notice and order to clean, test, and abate is a written or verbal order to perform the activities listed in the Authority's Storm Water Code. Penalties and fines may be issued if administrative authority is ineffective and the violation continues.

If the noncompliance resulted in a spill or discharge, the party responsible for the discharge is responsible for conducting cleanup measures appropriate to the degree of the spill or discharge, or if needed, for contacting the appropriate emergency response or cleanup contractor.

Contractors and developers are required to abide by the Authority documents, permits, rules, and regulations while working within airport operational areas. The Authority may use provisions within the contract to correct any noncompliant activities. The Authority may also employ this mechanism for tenants that are under lease or use permits.

3.8 MONITORING PROGRAM ASSESSMENTS

The following assessments will be conducted in accordance with the requirements outlined in the Municipal Permit, Provision D.4.

RECEIVING WATER ASSESSMENTS

The Copermittees will assess the condition of receiving water quality, including a review of data collected during long-term receiving water monitoring, regional monitoring programs, and sediment quality monitoring. These assessments will be included in the Report of Waste Discharge, as required under Provision F.5.b of the Municipal Permit. Additional information on receiving water assessments is provided in Section 5.3 of the WQIP.

NON-STORM WATER MS4 OUTFALL DISCHARGE ASSESSMENTS

The Authority will review the data collected during the MS4 outfall discharge monitoring programs at least once during the term of the Municipal Permit. Assessments of the data collected during the MS4 Outfall Receiving Water Monitoring Program will be made to assess the overall effectiveness of the Illicit Discharge

Detection and Elimination program. These assessments will be included in the WQIP Annual Report (Provision F.3.b.(3)) and Report of Waste Discharge. Additional information on MS4 outfall assessments is provided in Section 5.3 of the WQIP.

SPECIAL STUDIES ASSESSMENTS

The Authority will work with the other Copermittees to assess the effectiveness of the special studies established regionally and within each Watershed Management Area. The Copermittees will report the results of the special studies assessments and identify any necessary modifications to the WQIP. Additional information on regional monitoring program and special studies effectiveness assessments is provided in Section 5.3 of the WQIP.

3.9 ILLICIT DISCHARGE DETECTION AND ELIMINATION COMPONENT PROGRAM REVIEW AND MODIFICATION

The Authority has reserved this section to identify and document future changes to the Illicit Discharge Detection and Elimination Component of the SWMP. In an effort to support the iterative approach and adaptive management process of the WQIPs, updates will be made to the WQIP as the Illicit Discharge Detection and Elimination programs are modified in response to findings during effectiveness assessments. As required under the Municipal Permit Provision B.5, the WQIP will be assessed during preparation of the Report of Waste Discharge. New sources of non-storm water and illicit discharges may be discovered through the approaches described in Section 3.0. The WQIP goals and strategies to meet required pollutant load reductions may need to be modified as a result of findings or reports made during these programs. Section 13.0 of this SWMP details the program modifications made to the March 2008 version of the SWMP to bring this document into compliance with the renewed Municipal Permit.

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