

Attachment A to Settlement Agreement and Stipulation for Entry of Administrative Civil Liability Order No. R9-2023-0017: Penalty Calculation Methodology

A. Enforcement Policy Background

The State Water Resources Control Board (State Water Board) adopted updates to the [Water Quality Enforcement Policy](#)¹ in 2017 with the goal to protect and enhance the quality of the waters of the State by defining an enforcement process that addresses water quality problems in a fair, efficient, effective, and consistent manner. According to the Enforcement Policy, enforcement is a critical component in creating the deterrence needed to encourage the regulated community to anticipate, identify, and correct violations. Formal enforcement should always result when a non-compliant member of the regulated public begins to realize a competitive economic advantage over compliant members of the regulated public. Formal enforcement should be used as a tool to maintain a level playing field for those who comply with their regulatory obligations by setting appropriate civil liabilities for those who do not.

California Water Code (Water Code) section 13385 requires the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) to consider several factors in determining administrative civil liability, such as the potential for harm to the environment, and a Discharger's culpability and ability to pay. The Enforcement Policy incorporates these factors in a methodology for determining administrative civil liability in instances of noncompliance. This document describes the methodology and factors used by the San Diego Water Board's Prosecution Team (Prosecution Team) to calculate the proposed liability for the alleged violations presented below.

B. Sanitary Sewer Overflow Background

The City of San Diego (City) owns and operates the municipal sanitary sewer system of the City and provides wastewater conveyance and treatment services to 15 other cities and special districts. The wastewater sanitary sewer system serves approximately 1.3 million residents over 340 square miles and includes approximately 3,000 miles of sewer mains and 73 pump stations.

¹ A copy of the 2017 Enforcement Policy is available at: https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2017/040417_9_fi nal%20adopted%20policy.pdf

On April 10-11, 2020, after rainfall totaling almost 6 inches over 7 days (as measured by the County of San Diego’s Bonita rain gauge station²), the City’s sanitary sewer system failed, resulting in a sanitary sewer overflow (SSO) of 11.23 million gallons directly into the Sweetwater River. The spill release point is located approximately one-quarter mile upstream of the mouth of the Sweetwater River, where it joins the lower San Diego Bay. The area surrounding the mouth of the Sweetwater River includes recreational areas and wildlife habitat. Pepper Park, which is located on the north side near the mouth of the river, is a community park that has a fishing pier, boat dock, playground, and picnic tables. On the south side of the river mouth is a National Wildlife Refuge that includes high value wetlands with important ecological functions. Figure 1 shows the spill location in relation to these areas and the lower San Diego Bay.



Figure 1. Spill release point near the mouth of the Sweetwater River (Google satellite photo).

The SSO occurred at the south side of the Sweetwater River at an emergency overflow location, known as the south siphon transition structure. This structure carries wastewater from a trunk sewer northward, and from there the wastewater traverses roughly 400 feet across the River through four elliptical siphon barrels. The wastewater then passes through the north siphon transition structure into a trunk sewer, and onward to Pump Station 1 (PS1). Figure 2 shows the trunk sewers in yellow and the siphon structures in green.

² Rain totals from San Diego County Flood Control website: www.sandiego.onerain.com



Figure 2. Satellite view of City infrastructure and Sweetwater River³

The City's ability to learn of and respond to the SSO as it was occurring was compromised by a dead solar battery in the wastewater level sensor and alarm at the south siphon transition structure. The battery failed and resulted in a jumbled signal and a delay in knowledge that the spill had occurred. Although the SSO began on Friday, April 10, 2020, the City did not become aware of it until the following Monday (April 13, 2020) when hydraulic modeling staff found significant discrepancies with flow meter data measured by participating agencies during the storm and flow meter data meter data measured at PS1. City staff determined that an SSO must have occurred even though it did not receive any complaints or alerts from the public or other agencies. As required by Order No. 2006-0003-DWQ, *Statewide General Waste Discharge Requirements for Sanitary Sewer Systems*, ([Statewide General Order](#)),⁴ the City notified the San Diego Water Board of the SSO and initiated an investigation into the cause.

According to the *Phase I-High Priority Siphon Assessment Report – City of San Diego*, a report commissioned by the City in 2021 to determine the cause of the SSO, several factors contributed to the SSO, including:

- 1) Higher than normal rainfall spanning several days,
- 2) Reduction in siphon capacity due to a blockage in barrel #2,

³ Figure obtained from *Phase I-High Priority Siphon Assessment Report – City of San Diego (Draft)* dated June 9, 2021.

⁴ A copy of the Statewide General Order is available at: https://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2006/wgo/wgo2006_0003.pdf

- 3) Debris buildup in barrel #3, and
- 4) Inoperability of one or more pumps at PS1.

The City has either completed or is in the process of completing repairs to key equipment within the sanitary sewer system to avoid another SSO at this location and other locations. The necessary repairs are described in tentative Cease and Desist Order No. R9-2023-0016.⁵ The City intends to complete all outstanding items by December 31, 2028.

C. Violation 1: Unauthorized Discharge of 11.23 Million Gallons of Untreated Sewage to Waters of the State and United States.

The City is enrolled in the Statewide General Order, which regulates all entities that own or operate a sanitary sewer system greater than one mile in length, that collects or conveys untreated or partially treated wastewater to a publicly owned treatment facility in the State of California. The City is also enrolled in Regional Board Order No. R9-2007-0005, *Waste Discharge Requirements for Sewage Sanitary Sewer Agencies in the San Diego Region* ([Regional General Order](#)),⁶ which also regulates owners and operators of sanitary sewer systems.

Prohibition C.1 of the Statewide General Order states that “[a]ny SSO that results in a discharge of untreated or partially treated wastewater to waters of the United States is prohibited.” Prohibition B.1 of the Regional General Order states that “[t]he discharge of sewage from a sanitary sewer system at any point upstream of a sewage treatment plant is prohibited.”

The City’s discharge of untreated sewage on April 10-11, 2020, was in violation of Statewide General Order Prohibition C.1, Regional General Order Prohibition B.1, Clean Water Act section 301 and Water Code section 13376, which prohibit the discharge of pollutants to surface waters except in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. The discharge was also in violation of Basin Plan Waste Discharge Prohibition No. 1 which states “[t]he discharge of waste to waters of the state in a manner causing, or threatening to cause a condition of pollution, contamination or nuisance as defined in Water Codes section 13050, is prohibited” and Prohibition No. 9 which states “[t]he unauthorized discharge of treated or untreated sewage to waters of the state or to a storm water conveyance system is prohibited.” For

⁵ Tasks to be completed at PS1 include repairs to assets with imminent safety issues, assets with a high risk of failure, or maintenance items that otherwise severely compromise system performance.

⁶ A copy of the Regional General Order is available at: https://www.waterboards.ca.gov/sandiego/board_decisions/adopted_orders/2007/R9-2007-0005_ADA.pdf

the purposes of calculating the administrative civil liability, the Prosecution Team is using its discretion to calculate a single base liability amount for all violations since the violations are not independent of one another, are not substantially distinguishable, and are the result of a single act that violates similar requirements in different applicable permits and plans that are designed to address the same water quality issue.⁷

A discharger who violates Water Code section 13376 or Clean Water Act section 301 is subject to administrative civil liability pursuant to Water Code section 13385(a). Additionally, the unauthorized discharge of untreated sewage in violation of the Statewide General Order, Regional General Order, and Basin Plan Prohibitions is subject to administrative civil liability pursuant to Water Code section 13350. The San Diego Water Board Prosecution Team elected to pursue enforcement of the alleged violations pursuant to Water Code section 13385. Water Code section 13385(c) authorizes the San Diego Water Board to impose administrative civil liability up to \$10,000 per day of violation, plus \$10 for each gallon exceeding 1,000 gallons discharged but not cleaned up.

Ten-Step Penalty Calculation Methodology

Step 1. Actual or Potential for Harm for Discharge Violations

For discharge violations, the Enforcement Policy uses a three-factor scoring system to quantify: (1) the degree of toxicity of the discharge; (2) the actual harm or potential harm to beneficial uses; and (3) the discharge's susceptibility to cleanup or abatement. Application of the three-factor scoring system to is set forth below.

Factor 1: Degree of Toxicity of the Discharge = Above Moderate (3)

The Enforcement Policy requires an evaluation, using a scale from zero to four (negligible to significant risk), of the degree of toxicity of the discharged material. The evaluation considers the physical, chemical, biological, and/or thermal characteristics of the discharge and the risk of damage the discharge could cause to the receptors or beneficial uses. A score of three or "above moderate" degree of toxicity is appropriate when the discharged material poses an above-moderate risk or a direct threat to potential receptors (i.e., the chemical and/or physical characteristics of the discharged material exceed known risk factors or there is substantial threat to potential receptors).

The unauthorized discharge of untreated sewage represents an "above moderate" risk level because untreated sewage contains high levels of suspended solids, pathogenic organisms, toxic pollutants, nutrients, oxygen-demanding organic compounds, oil and grease, and other pollutants known to exceed existing water quality standards. These pollutants exert varying levels of impacts to beneficial uses of the receiving waters. The

⁷ See Enforcement Policy, Section VI.A, Step 4, Multiple Violations Resulting from the Same Incident.

high degree of toxicity in untreated sewage poses a direct threat to human and ecological receptors.

Factor 2: Actual Harm or Potential Harm to Beneficial Uses = Moderate (3)

The Enforcement Policy requires an evaluation, using a scale from zero to five (negligible to major harm), of the actual or potential harm to beneficial uses in the affected receiving waterbody. This risk may result from exposure to the pollutants or contaminants in the discharge, consistent with the statutory factors of the nature, circumstances, extent, and gravity of the violation(s). A score of three or “moderate” is typified by observed or reasonably expected potential impacts, but harm or potential harm to beneficial uses is moderate and likely to attenuate without appreciable medium or long term acute or chronic effects.

In accordance with Resolution [R9-2017-0030](#),⁸ San Diego Bay is a key area for three key beneficial use categories: habitats and ecosystems (BIOL, EST, MAR, MIGR, RARE, SPWN, and WILD), consumption of fish and shellfish (COMM, SHELL), and recreation (REC-1, REC-2). The spill location is located approximately one-quarter mile upstream of the Sweetwater Marsh Unit of the San Diego Bay National Wildlife Refuge (Refuge), an area of special importance for habitats and ecosystems. These enhanced and restored wetlands provide high quality habitat for fish, birds, and coastal salt marsh plants. The Refuge protects a rich diversity of endangered, threatened, migratory, and native species, and is the site of a very successful breeding program for the endangered Ridgeway’s Rail.

In evaluating the potential for harm, the San Diego Water Board discussed impacts of the SSO on the Refuge with the Refuge manager. Notably, Refuge staff did not observe impacts to wildlife or other natural resources of San Diego Bay due to the SSO.⁹ There is no known information to suggest that the SSO caused actual harm to beneficial uses at the Refuge.

The spill location is also approximately one-quarter mile upstream of Pepper Park, which is located on the north side of the Sweetwater channel as it joins San Diego Bay. San Diego Bay is considered an area of special importance for fish and shellfish consumption, and Pepper Park is particularly important with its fishing pier. Pepper Park also has a playground, picnic tables, and a boat launch that support the non-contact recreational beneficial use.

⁸ A copy of the Resolution is available at:
https://www.waterboards.ca.gov/rwqcb9/board_decisions/adopted_orders/2017/R9-2017-0030.pdf

⁹ Per phone discussion between Christina Arias, San Diego Water Board, and Brian Collins, U.S. Fish & Wildlife Service, May 9, 2022.

Under normal circumstances, the discharge of untreated sewage, which contains harmful pathogens and toxic substances, could negatively affect the beneficial uses of the lower San Diego Bay. Because the SSO occurred during the first full month after Covid-19 related stay-at-home orders were issued by San Diego County, acute impacts of the SSO to the fish and shellfish consumption and recreational beneficial uses were most likely lowered. At that time, municipal parks and beaches throughout the region were closed to limit the spread of Covid-19.

The City gathered water quality samples for indicator bacteria seven days following the SSO. The data showed bacteria concentrations were within Basin Plan standards following the spill. However, the samples were of limited value due to the delay in knowledge that the spill had occurred and a delayed response (discussed below under Culpability).

In summary, available data and information following the SSO suggests a moderate potential for harm occurred to the beneficial uses of the lower Sweetwater River and San Diego Bay, as impacts likely attenuated without appreciable medium or long term acute or chronic effects.

Factor 3: Susceptibility to Cleanup or Abatement = 1

A score of one is assigned for this factor if less than 50 percent of the discharge is susceptible to cleanup or abatement, or if the Discharger failed to cleanup 50 percent or more of the discharge within a reasonable amount of time. In this case, the SSO occurred without the City's knowledge, and none of the discharged sewage was cleaned up.

The Potential for Harm score is:

Potential for Harm score = 3 [Factor 1] + 3 [Factor 2] + 1 [Factor 3] = 7

Step 2. Assessment for Discharge Violations

The initial liability amount is based on the potential for harm score from Step 1 and the extent of deviation from requirement. The deviation from requirement must be characterized as either minor, moderate, or major.

The deviation from requirement is **major**. According to the Enforcement Policy, a major deviation from requirement occurs when the requirement was rendered ineffective (e.g., the requirement was rendered ineffective in its essential functions). The discharge of 11.23 million gallons of untreated sewage is a major deviation from the Discharge Prohibitions in Statewide General Order, Regional General Order, and Basin Plan, as well as Clean Water Act section 301 and California Water Code section 13376.

The per-gallon liability assessment is the per gallon factor from Table 1 of the Enforcement Policy multiplied by the maximum per gallon amount allowed under the Water Code. Using a potential for harm score of 7 and a major deviation from requirement, the per-gallon factor from Table 1 is 0.41.

Water Code section 13385 (c)(2) states that the per-gallon maximum civil liability is \$10.00/gallon multiplied by the number of gallons discharged but not cleaned up over 1,000 gallons. For this violation, the civil liability is based on 11.23 million gallons minus 1,000 gallons. The Enforcement Policy allows for discharges that exceed 2,000,000 gallons, to use \$1.00/gallon in the penalty calculation methodology instead of the statutory \$10.00/gallon. For this case, the Prosecution Team has elected to use \$1.00/gallon due to the nature and volume of the discharge. This reduction does not result in an inappropriately small liability.

Using a maximum of \$1.00 per gallon for high volume discharges as allowed by the Enforcement Policy, the initial liability assessment calculated on a per gallon basis is:

$$[\$1.00 \text{ (per gallon maximum)} \times 0.41 \text{ (per gallon factor)} \times (11,230,000 - 1,000 \text{ gallons})] = \mathbf{\$4,603,890}$$

The per-day liability assessment is the per day factor from Table 2 of the Enforcement Policy multiplied by the maximum per day amount allowed under the Water Code. Using a potential for harm score of 7, and a major deviation from requirement, the per-day factor from Table 2 is 0.41. The SSO occurred on two days, April 10 and 11, 2020. The initial liability assessment calculated on a per day basis for this violation is:

$$[\$10,000 \text{ (per day statutory maximum)} \times 0.41 \text{ (per day factor)} \times 2 \text{ (days of violation)}] = \mathbf{\$8,200}$$

The Initial Liability Amount is $\$4,603,890 + \$8,200 = \mathbf{\$4,612,090}$.

Step 3. Per Day Assessment for Non-Discharge Violations

This step is not applicable.

Step 4. Adjustment Factors

The San Diego Water Board must consider three additional factors for potential modification of the administrative civil liability amount: the Discharger's degree of culpability, the Discharger's prior violation history, and the Discharger's voluntary efforts to clean up and cooperate with regulatory authorities after the violation.

Degree of Culpability = 1.2

The Enforcement Policy allows a multiplier between 0.75 and 1.5 to be used, with a higher multiplier for intentional or negligent behavior, and a lower multiplier for accidental or non-negligence behavior.

The City bears culpability for the SSO. According to the *Phase I-High Priority Siphon Assessment Report – City of San Diego*, a report commissioned by the City in 2021 to determine the cause of the SSO, several factors contributed to the SSO, including:

- Higher than normal rainfall spanning several days,

- Reduction in siphon capacity due to a blockage in barrel #2,
- Debris buildup in barrel #3, and
- Inoperability of one or more pumps at PS1.

To a lesser extent, tidal surge that entered the sanitary sewer system also contributed to the SSO. Additionally, the City's response was delayed due to a malfunction of the alarm system at the overflow site. Each of these items are discussed below.

Excessive rainfall – Between April 6, 2020, and April 11, 2020, there was significant rainfall (5.99 inches over 7 days at San Diego County Flood Control District's Bonita rain gauge, equating to a 50-year recurrence interval rainfall event). Increased inflow and infiltration into the sanitary sewer system was highly likely. The sanitary sewer system was designed to operate during a 50-year rainfall event, and the City was prepared with adequate staff to respond to nearly 50 high-flow alarms occurring throughout the storm. However, there was no alarm from the site of the SSO at the Sweetwater River south siphon transition structure, which is discussed later.

Siphon blockage and debris build-up – The primary cause of the SSO was most likely a total blockage in one of four siphons traversing the Sweetwater River, which was discovered during an assessment in the weeks following the SSO. The City is unsure of how long the siphon had been obstructed, but assumes it was obstructed at the time of the SSO.

The siphons were constructed in 1971 and were designed to be "self-scouring" such that debris build-up would be below acceptable thresholds, even with minimal mechanical cleaning. The siphons were designed to ensure a sedimentation depth of less than 5 percent of pipe diameter throughout the length of the pipe, which the City was able to verify using a sediment transport model and data specific to the Sweetwater River siphons. This threshold meets the National Association of Sewer Service Company's (NASSCO's) industry standards for siphon conditions.

The City's only sonar assessment and siphon cleaning before the SSO occurred was in 2010. The average depth of debris ranged from 1.55 to 2.15 inches in the 68-inch by 43-inch elliptical barrels. The siphons are considered clean when the level of accumulated debris is less than five percent along any 10-foot portion of the pipe segment. Accordingly, the average debris accumulation in the barrels in 2010 was between 2.28 and 3.16 percent, which is within the five percent NASSCO industry standard acceptable depth for debris accumulation. Finding minimal debris build-up after almost 40 years in use, the City presumed the "self-scouring" design to be highly effective, and the operational approach for the siphons to be reasonable and adequate.

The City performed a sonar assessment after the SSO and found that a large object was tangled up in ropes and had completely blocked barrel #2, rendering it totally ineffective. There was also higher than acceptable debris build-up in barrel #3. Over time, the intermittent flow experienced by barrel #3 may have caused the flowrate to fall

below the self-scouring velocity of 3 feet per second, allowing debris to settle out. The remaining two barrels had normal debris levels.

Pump failure at PS1 – PS1 services about 143 square miles of sanitary sewer system pipeline and has a maximum capacity of 160 million gallons a day (MGD). In 2018, the City commissioned a condition assessment of PS1¹⁰ because it had been experiencing repetitive service disruptions and interruptions in performance of several pump station assets. The assessment found that major repairs and replacements were warranted, such as repairing non-functional pump motors. The City did not proceed with several major repairs that were recommended in the report before the SSO occurred.

Pump Number 4 at PS1 was inoperable for 11 hours on April 10, 2020. Four of the six pumps were in use on April 10, 2020, but a fifth pump was needed to maintain the flow rate within an acceptable margin below the maximum capacity. Pump Number 6 had been out of service since June 2019 and Pump Number 4 failed to start that day. There were no replacement parts immediately available because the equipment was aging, and not all spare parts were kept on hand. Eventually, the Plant Process Control Supervisor (electrician) used parts from Pump Number 6 to repair Pump Number 4, making it operable. Although the maximum flow rate at PS1 reached 158 MGD and thus stayed below its design capacity, the inability to use a fifth pump for several hours most likely contributed to the SSO because the pump failure occurred simultaneously with the siphon blockage. Had there been no siphon blockage, four pumps may have been sufficient to avoid a spill. But, with the blockage and excessively high volume of flow, the working pumps were not able to effectively move wastewater through the siphon structures.

Tidal surge into the sanitary sewer system – To a lesser extent, the sanitary sewer system was also stressed on April 10, 2020 from tidal surge entering a hole created by corroding concrete at the emergency overflow release valve. The hole was located between the concrete headwall of the spillway and the steel frame of the release valve. The City discovered after the SSO that during high tide (conditions that were present on April 10, 2020), water from the Sweetwater River was able to enter the south siphon transition structure through the opening.

The City was aware of the corroding concrete because of a condition assessment conducted on the Sweetwater River siphon transition structures in 2018. However, the City decided to couple the repairs with a larger capital improvement project (CIP) rather than repair the concrete at the headwall when it was discovered.

Failure of the alarm system -- Although not causing the SSO, a dead solar battery in the level sensor and alarm at the south siphon transition structure prevented the City from learning of and responding to the SSO immediately. The battery was designed to hold charge for about three days; but with the ongoing storm event (seven days), there

¹⁰ *Wastewater Facilities Condition Assessment* dated May 11, 2018

was little sunlight to charge the battery. This resulted in a jumbled signal and a delay in knowledge that the spill had occurred.

The City bears culpability for the SSO because it neglected maintenance of critical assets within its sanitary sewer system. However, the main cause of the SSO, namely the total blockage in one of four siphons, was not necessarily an egregious oversight given the City's understanding of the Sweetwater siphon's performance. A score of 1.2 is appropriate for this factor.

History of Violations = 1.1

The Enforcement Policy states that where a discharger has prior violations within the last five years, the Water Boards should use a multiplier of 1.1. On January 4, 2016, the City experienced a 6.75-million-gallon spill into Tecolote Creek, tributary to Mission Bay; addressed through [Stipulated Order No. R9-2020-0150](#).¹¹ This spill was also the result of a sanitary sewer system failure during a high-intensity storm, in and near a waterway, that took several days to identify.

Cleanup and Cooperation = 1.1

The Enforcement Policy allows a multiplier between 0.75 and 1.5 to be used to adjust the penalty to account for voluntary efforts to cleanup and/or cooperate with regulatory authorities in returning to compliance after the violation. Adjustments below or above 1.0 should be applied where the discharger's response to a violation or order is above and beyond, or falls below, the normally expected response, respectively.

Because the City was unaware that the SSO was occurring, it did not timely implement response protocols. The SSO occurred on a Friday, and the City became aware of it the following Monday (April 13, 2020) when hydraulic modeling staff reviewed wastewater flow meter data from participating agencies, a routine practice following rain events. Seeing a discrepancy with the flow measured upstream of the south siphon transition structure and the flow measured at PS1, City staff determined that an SSO must have occurred. The City confirmed the SSO with a site visit to the south siphon transition structure and photo-documented evidence of debris consistent with that found in municipal wastewater.

On Tuesday, April 14, 2020, the City notified the San Diego Water Board that a possible spill had occurred but did not initiate water quality monitoring as required the Statewide General Order (Section D of the Monitoring and Reporting Program requires ammonia and bacterial indicator monitoring within 48 hours of an SSO). The City continued to

¹¹ A copy of Order No. R9-2020-0150 is available at: https://www.waterboards.ca.gov/sandiego/board_decisions/adopted_orders/2020/R9-2020-0150.pdf

evaluate the flow data and modeling analysis for three more days, and on Friday, April 17, 2021, the City finally initiated water quality monitoring.

On Saturday, April 18, 2020, eight days after the spill, microbiological results were reported to the County of San Diego's Department of Environmental Health (DEH). The City tested three locations, including one location downstream of the SSO location at Pepper Park. DEH determined that no additional samples were required.

The City did not initiate an assessment of environmental impacts when it became aware of the SSO, which it had done following a 6.75 million-gallon SSO in Tecolote Creek in 2016. Assessing potential environmental impacts was especially important considering the SSO's proximity to the Wildlife Refuge.

Even though the City did not immediately respond to the SSO as expected, in the months following the SSO, the City completed analyses of the SSO cause, and voluntarily implemented improvements to internal processes and infrastructure to prevent future SSOs at this location and other locations. These actions include:

- Completion of the *Phase I - High Priority Siphon Assessment Report-City of San Diego (Draft)* dated June 9, 2021. According to this report, all five siphon locations in the sanitary sewer system (larger than 30 inches in diameter) were cleaned in 2020. This includes siphons crossing the Otay River, Sweetwater River, San Diego River, and Tecolote Creek.
- Installation of an additional long-range level device (level indicator) at the south siphon transition structure overflow site to provide reliability and redundancy to the existing alarm system. This was installed on November 13, 2020.
- Replacement of the corroded concrete around the emergency release valve at the south siphon transition structure. This was completed on November 20, 2020.
- Incorporation of new PRISM tool (web application) for flow monitoring to allow pump station staff to observe flow levels throughout the sanitary sewer system, providing redundancy and upgrade of the existing monitoring system. Staff were trained for this system in July 2021.
- Update to SSO protocol for SSOs reaching south San Diego Bay to include explicit contact with National Wildlife Refuge managers in November 2021.
- Procurement of funds needed to complete a multi-year capital improvement project at PS1 in March 2022.
- Replacement of the cooling towers, cooling tower ducts, and water softener at PS1 in March 2022.

- Update to SSO response protocol to include biological assessment following suspected Category 1 spills in March 2022.

Considering the City's initial slow response to the spill and the subsequent completion of voluntary corrective measures, a Cleanup and Cooperation score of 1.1 is appropriate.

Step 5. Determination of Total Base Liability Amount

The Total Base Liability Amount is determined by multiplying the Initial Liability Amount by the Adjustment Factors in Step 4:

Total Base Liability Amount = [\$4,612,090 (initial liability amount) x 1.2 (degree of culpability) x 1.1 (history of violations) x 1.1 (cleanup and cooperation)] = **\$6,696,754.**

Steps 6. Ability to Pay and Ability to Continue in Business

The City of San Diego is a public entity with the ability to leverage fees and/or taxes. The San Diego Water Board is not aware of, and the City of San Diego has not provided, any evidence of inability to pay.

Step 7. Economic Benefit

The City of San Diego gained an economic benefit by not maintaining or replacing key equipment within the sanitary sewer system. The key elements that most likely would have avoided the SSO or assisted with emergency response are listed below.

- Avoided cost to assess debris build-up in Sweetwater siphons using sonar technology in 2015 (once every 5 years): \$94,628
- Avoided cost to clean siphons at Sweetwater location (routine maintenance) in 2015 (once every 5 years): \$282,040
- Delayed cost to repair Pump No. 6 at PS1: about \$18,000
- Delayed cost to repair corroded concrete at the south siphon transition structure: \$237,500
- Delayed cost to install more reliable and redundant level sensor at the Sweetwater River south transition structure: about \$1,000

Using USEPA's BEN Model, the City experienced an economic benefit of approximately \$450,273 from not timely completing the above items.

Step 8. Other Factors As Justice May Require

The City has agreed to complete several major corrective measures at PS1 to avoid future SSOs at the Sweetwater overflow location and other locations. This is itemized in tentative Cease and Desist Order No. R9-2023-0016, which requires improvements to be completed no later than December 31, 2028. Because the City is willing to stipulate to the timely completion of these corrective actions, the Prosecution Team is willing to reduce the proposed administrative civil liability to \$4,565,969, which is equivalent to a Cleanup and Cooperation score of 0.75, rather than 1.1 as described in Step 4 above, plus the staff costs described below.

As of April 30, 2022, the San Diego Water Board expended \$43,755 in staff costs associated with the investigation and preparation of this enforcement action. Shortly thereafter, the City and the San Diego Water Board reached an agreement in principle on the settlement. The City has agreed to pay staff costs as part of the agreed upon Final Liability Amount.

Step 9. Maximum and Minimum Liability Amounts

Maximum Liability -- A violation of the General Order's requirements subjects the City to administrative civil liability pursuant to Water Code section 13385(c)(2), which authorize the San Diego Water Board to impose administrative civil liability up to \$10,000 per violation per day, plus \$10 for each gallon exceeding 1,000 gallons discharged but not cleaned up.

The Maximum Liability Amount that could be assessed for the violation is:

$$[11,230,000 \text{ gallons} - 1,000 \text{ gallons}] \times (\$10/\text{gal}) + [(2 \text{ days of violation}) \times (\$10,000/\text{day})] \\ = \mathbf{\$112,310,000}$$

Minimum Liability – Water Code section 13385 requires recovery of economic benefit. The Enforcement Policy states that the minimum liability should be at least ten percent higher than the economic benefit amount.

The Minimum Liability Amount that could be assessed for the violation is:

$$\$450,273 + (\$450,273 \times 10\%) = \mathbf{\$495,300}$$

Step 10. Final Liability Amount

The Final Liability Amount is \$4,565,969 (Adjusted Total Base Liability) + \$43,755 (staff costs) = **\$4,609,724**, which is between the maximum and minimum liabilities described in the Enforcement Policy.

Documents Available Upon Request

Item No.	Document Handle No.	Item	Date
1	9371099	Pump Stations 1-2 Condition Assessment Report, May 2018	5/11/2018
2	9400067	2019 City of San Diego Certified Sewer System Management Plan	4/15/2019
3	9400071	7-Day Rainfall Summary at Bonita Rain Gauge	4/10/2020
4	9400073	Precipitation Frequency Data, Bonita Rain Gauge	4/10/2020
5	9465532	CIWIQS SSO Notification	4/10/2020
6	9375049	45-Day Spill Report - Technical Report describing causes of SSO and City response. Contains as Attachment 9 - City Sonar Inspection (of Siphons), February 2010, and Attachment 10 - SMI Siphon Access Structure Condition Assessment, May 2018.	6/17/2020
7	8811490	Notice of Violation No. R9-2020-0204	7/31/2020
8	8811491	Investigative Order No. R9-2020-0205	7/31/2020
9	8859205	City's Response to Investigative Order	9/14/2020
10	9468423	City's Response to Investigative Order- Appendices	9/14/2020
11	9132478	Email from A. Vosskuhler (Port District) to C.Arias regarding SSO notification	5/12/2021
12	9132479	Email to C. Clemente- Description of C. Arias conversation with C. Roberts (USFWS) regarding SSO notification	5/13/2021
13	9305315	Phase I High Priority Siphon Assessment Report (Draft)	6/9/2021

Item No.	Document Handle No.	Item	Date
14	9375054	City of San Diego Letter dated addressing questions raised in email from C. Arias dated 6/4/2021	6/21/2021
15	9375056	Attachments 1-12 to letter dated 6/21/2021	6/21/2021
16	9305311	CIWQS collection system spill summary range 8-1-2016 to 8-25-2021	8/25/2021
17	9305310	USFWS website: Description of San Diego Bay Wildlife Refuge and species	10/11/2021
18	9483691	Email from B. Collins (USFWS) to C. Arias regarding SSO impacts	5/9/2022
19	9557298	Staff Costs Thru April 2022	8/5/2022
20	9557297	Economic Benefit	8/5/2022