CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

TENTATIVE INVESTIGATIVE ORDER NO. ~~R9-2018-0021~~ R9-2019-0014

AN ORDER DIRECTING THE CITY OF SAN DIEGO, THE CITY OF SANTEE, THE CITY OF EL CAJON, THE CITY OF LA MESA, THE COUNTY OF SAN DIEGO, THE SAN DIEGO COUNTY SANITATION DISTRICT, THE PADRE DAM MUNICIPAL WATER DISTRICT, ~~THE RAMONA MUNICIPAL WATER DISTRICT~~, SAN DIEGO STATE UNIVERSITY, THE METROPOLITAN TRANSIT SYSTEM, AND THE CALIFORNIA DEPARTMENT OF TRANSPORTATION

TO SUBMIT TECHNICAL AND MONITORING REPORTS TO IDENTIFY AND QUANITIFY THE SOURCES AND TRANSPORT PATHWAYS OF HUMAN FECAL MATERIAL TO THE LOWER SAN DIEGO RIVER WATERSHED

The California Regional Water Quality Control Board, San Diego Region (hereinafter San Diego Water Board) finds:

PART I. OVERVIEW AND REGULATORY BACKROUND
Part I, Section A. Introduction and Regulatory Considerations

1. **Geographical Scope and Water Quality.** For the purposes of this Investigative Order the Lower San Diego River Watershed is defined as extending from the mouth of the San Diego River to Channel Road in the City of Lakeside in the Lower San Diego Hydrologic Area (HA) 907.1. Thirteen (13) stations located along the mainstem of the San Diego River or at points in major tributaries joining the River, were sampled during two storm events in the 2016 and 2017 wet seasons. The sample results indicate uniformly high enterococci concentrations and detectable levels of a human-associated fecal source marker HF183 at every station that had flowing water during both sampling events. As explained below wet-weather river flows in the mainstem of the Lower San Diego River[1] cause or contribute to elevated concentrations of enterococci exceeding applicable water quality objectives in the tidally influenced Lower San Diego River estuary and adjacent beach coastal waters at the mouth of the River. Pathogen sampling indicates the presence of norovirus, a common cause of gastroenteritis (GI) illness in humans, in about 30 percent of the 13 stations sampled across both storms and further confirms the presence of human fecal material in the mainstem of the Lower San Diego River. The risk of GI illness in humans after water-contact activities is elevated by the presence of this human fecal

[1] Mainstem of the Lower San Diego River refers to the principal watercourse of the Lower San Diego River riverine drainage system as contrasted to its tributaries. Water enters the mainstem from the Lower San Diego River's drainage basin defined by the Lower San Diego Hydrologic Area (HA) 907.1, the land area through which the mainstem and its tributaries flow All references to the mainstem of the San Diego River are to the mainstem within the Lower San Diego River Watershed as defined by the Lower San Diego HA 907.1.

waste material in the flowing water. The human waste material appears to originate from diffuse sources throughout the Lower San Diego River Watershed. Based on available information these potential sources include sanitary sewer overflows from publicly-owned sewer collection systems; sewage discharges from privately-owned lateral sewer lines; sewage exfiltration from publicly-owned sanitary sewer collection systems and privately-owned lateral sewer lines, faulty on-site wastewater treatment systems; illicit connections and discharges to storm water infrastructure; and discharges from homeless population encampments.

2. **Responsible Parties** As owners and operators of municipal separate stormwater sewer systems (MS4s) and/or publicly owned sanitary sewer collection systems, each of the following public agencies discharge or are suspected of discharging or having discharged human fecal waste material into the Lower San Diego River Watershed:

City of San Diego	County of San Diego
City of Santee	City of El Cajon
City of La Mesa	San Diego State University
California Transportation System	Metropolitan Transit System~~,~~
Padre Dam Municipal Water District	San Diego County Sanitation District

The County of San Diego also has local agency responsibility for permitting the installation of and regulating onsite wastewater treatment systems, including but not limited to septic systems, within the Lower San Diego Rover Watershed. Based on these considerations as set forth in further detail in the findings of this Investigative Order, each public agency listed above is responsible for complying with the directives and provisions of this Investigative Order and is designated as a Responsible Party.

3. **Legal Authority**. Section 13267, subdivision (a) of the Porter Cologne Water Quality Control Act (Water Code), provides the San Diego Water Board with broad authority to investigate the quality of any waters of the state within the San Diego Region. Section 13267, subdivision (b) authorizes the San Diego Water Board to require persons who discharge, have discharged, or are "suspected of having discharged or discharging" waste within the San Diego Region to furnish technical or monitoring program reports.[2] "Waste" is broadly defined in Water Code section 13050(d) and includes "sewage and any and all other waste substances, liquid, solid, gaseous, or radioactive, associated with human habitation, or of human or animal origin . . . ." an includes human fecal material. Water Code section 13225, subdivision (c), authorizes the San Diego Water Board to require "any state or local agency to investigate and report on any technical factors involved in water quality control or to obtain and submit analyses of water.".

[2] Water Code section 13383, subdivision (a), contains similar provisions for discharges to surface waters and is applicable to and provides additional regulatory support for requiring the persons responsible to implement this Investigative Order.

4. **Regulatory Measures**. The San Diego Water Board regulates the discharge of waste to surface waters and groundwaters in the San Diego Region through various regulatory measures, including but not limited to, the issuance and enforcement of waste discharge requirements (WDRs), National Pollutant Discharge Elimination System (NPDES) permits, and waivers of WDRs. These regulatory measures impose conditions which protect water quality by implementing the Water Quality Control Plan for Ocean Waters of California (Ocean Plan), the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays and Estuaries of California (ISWEBE Plan) , the Water Quality Control Plan for the San Diego Basin – Region 9 (Basin Plan), and other applicable State and federal regulations and policies.

5. **Ocean Plan and ISWEBE Plan.** The Ocean Plan contains provisions designed to protect the quality of the ocean waters for use and enjoyment by the people of the State. The Ocean Plan states that the beneficial uses of the ocean waters that shall be protected include industrial water supply; water contact and non-contact recreation, including aesthetic enjoyment; navigation; commercial and sport fishing; mariculture; preservation and enhancement of designated Areas of Special Biological Significance; rare and endangered species; marine habitat; fish migration; fish spawning and shellfish harvesting. The Ocean Plan includes numeric water quality objectives for indicator bacteria (total coliform, fecal coliform, and enterococcus) for ocean waters that are designed to protect the water contact and non-contact recreation and shellfish harvesting beneficial uses. The Ocean Plan contains implementation provisions for bacterial characteristics that include water quality monitoring at specified water-contact recreation zones. The ISWEBE Plan contains all water quality control plan provisions adopted by the State Water Resources Control Board (State Water Board) that relate to surface waters other than open bays and the ocean.[3]

6. **Basin Plan**. The Basin Plan is designed to preserve and enhance water quality and protect the beneficial uses of all regional waters. Specifically, the Basin Plan: (1) designates beneficial uses for surface waters and groundwaters; (2) sets narrative and numerical objectives that must be attained or maintained to protect the designated beneficial uses and conform to the State's antidegradation policy; (3) describes implementation programs to protect the beneficial uses of all waters in the Region; and (4) describes surveillance and monitoring activities to evaluate the effectiveness of the Basin Plan.

7. **Beneficial Use Designations**. According to the Basin Plan, Pacific Ocean shorelines at the mouth of the Lower San Diego River (Mission San Diego Hydraulic Subarea

[3] On August 7, 2018 the State Water Board adopted new statewide bacteria water quality objectives and implementation options to protect recreational users from the effects of pathogens in California water bodies. The objectives and implementation options are contained in a new part 3 of the ISWEBE Plan and an amendment to the Ocean Plan. The statewide bacteria objectives are based on the USEPA 2012 Recreational Criteria and use E. coli as the indicator of pathogens in freshwaters and enterococci as the indicator of pathogens in estuarine waters and ocean waters. Additional information is available on the State Water board website at: https://www.waterboards.ca.gov/bacterialobjectives/ (as of August 8, 2018)

(HSA) 907.11) have designated beneficial uses including, but not limited to, Contact (REC-1) and Non-Contact (REC-2) Water Recreation and Shellfish Harvesting (SHELL). The Lower San Diego River and its tributaries have designated beneficial uses including, but not limited to, REC-1 and REC-2. REC-1 includes uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and SCUBA diving, surfing, whitewater activities, fishing, or use of natural hot springs. REC-2 includes the uses of water for recreational activities involving proximity to water, but not normally involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tide pool and marine life study, hunting, sightseeing, or aesthetic enjoyment in conjunction with the above activities. SHELL includes uses of water that support habitats suitable for the collection of filter-feeding shellfish (e.g., clams, oysters, and mussels) for human consumption, commercial, or sport purposes. The Basin Plan includes numeric water quality objectives for indicator bacteria (total coliform, fecal coliform, E. coli, and enterococcus) that are designed to protect the REC-1, REC-2, and SHELL beneficial uses

Part I, Section B. Ongoing Regulatory Efforts to Address Bacteria Impairments

8. **Clean Water Act Section 303(D) List.** In 2002, a significant number of waterbodies throughout the San Diego Region, including the Lower San Diego River, were identified and listed on the Clean Water Act section 303(d) List of Water Quality Impaired Segments as impaired by indicator bacteria. The bacteria concentrations in these waters were impairing or threatening to impair the water quality needed to support the REC-1, REC-2, and SHELL beneficial uses. Although indicator bacteria do not necessarily pose a health risk, their presence is correlated to the presence of human pathogens. Indicator bacteria have been historically used as indicators of human pathogens because bacteria are easier and less costly to measure than the pathogens themselves. Pathogenic viruses, bacteria, and protozoan cysts associated with human fecal material are known to cause illnesses in humans when exposed during contact recreation.

9. **Bacteria Total Maximum Daily Load (TMDL)**. On February 10, 2010, the San Diego Water Board adopted ~~a~~ Resolution No. R9-2010-0001, *A Resolution Amending the Water Quality Control Plan for the San Diego Basin (9) to Incorporate Revised Total Maximum Daily Loads for Indicator Bacteria, Project I – Twenty Beaches and Creeks in the San Diego Region (including Tecolote Creek)*; (Bacteria TMDL). The Bacteria TMDL was subsequently approved by the State Water Resources Control Board (State Water Board) on December 14, 2010, the Office of Administrative Law on April 4, 2011, and the United States Environmental Protection Agency (USEPA) on June 22, 2011. Forester Creek (tributary to the Lower San Diego River), the lower six miles of the San Diego River, and the shoreline at the river mouth (aka Dog Beach) are included in the Bacteria TMDL.

10. **Responsible Municipalities – Bacteria TMDL**. Resolution No. R9-2010-0001 identifies Responsible Municipalities for complying with the Bacteria TMDL in the San Diego River watershed as described in Table 1:

Table 1. Responsible Municipalities

Watershed	Waterbody	Segment or Area	Responsible Municipalities
Mission San Diego Hydrologic Subarea, 907.11 (Mission San Diego HSA) and Santee Hydrologic Subarea, 907.12 (Santee HSA)	Forrester Creek	Lower 1 mile	• City of El Cajon • City of Santee • County of San Diego • Caltrans • Owners/operators of small Municipal Storm Separate Sewer Systems*
	San Diego river, Lower	Lower 6 miles	• City of El Cajon • City of La Mesa • City of San Diego • City of Santee • County of San Diego • Caltrans • Owners/operators of small Municipal Storm Separate Sewer Systems* • Padre Dam Municipal Water District
	Pacific Ocean Shoreline	At San Diego river Mouth at Dog Beach	

*Resolution No. R9-2010-0001 includes "Owners/operators of small MS4s" as Responsible Municipalities for complying with the TMDL. As of the date of issuance of this Investigative Order, this list includes San Diego State University and the Metropolitan Transit System.

11. **Bacteria TMDL Waste Load Allocations**. The Bacteria TMDL establishes waste load allocations (WLAs) for point source dischargers of fecal coliform, total coliform, and enterococcus. This includes the owners and operators of municipal separate storm sewer systems (MS4s), the California Department of Transportation (Caltrans), and Padre Dam Municipal Water District (for fecal coliform only). The Bacteria TMDL considered existing discharges of indicator bacteria and establishes load allocations (LAs) for non-point sources of fecal coliform, total coliform, and enterococcus, including agricultural and open space land uses.[4] ~~(open space land use is considered uncontrollable, i.e., not subject to regulation, and therefore the LA was set equal to current mass loading)~~. In order to account for seasonal variations, the Bacteria TMDL establishes seasonal WLAs and LAs. Wet weather WLAs and LAs were based on the REC-1 single sample maximum water quality objectives and contain an allowable exceedance frequency, and dry weather WLAs and LAs were based on REC-1 geometric mean water quality objectives, with no exceedance frequency allowed. The compliance date to achieve the dry weather TMDLs is April 4, 2021 and the

[4] Bacterial loads from open space areas were considered uncontrollable because the chief sources were viewed as originating from natural sources (e.g. bird and wildlife feces) and largely located in areas without constructed (man-made) MS4s or in areas located upstream of MS4 networks. See Final Technical Report, Revised for Revised Total Maximum Daily Loads for Indicator Bacteria, Project I – Twenty Beaches and Creeks in the San Diego Region (Including Tecolote Creek), Pages 4 and 51, San Diego Water Board. February 10, 2010, available on the San Diego Water Board website at https://www.waterboards.ca.gov/sandiego/water_issues/programs/tmdls/docs/bacteria/updates_022610/2010-0210_Final_Technical_Report.pdf (as of March 1, 2010).

compliance date to achieve the wet weather TMDLs is April 4, 2031. The WLAs and LAs are demonstrated in Tables 2A, 2B, and 2C.

Bacteria Existing Loads, TMDLs, WLAs, and LAs Expressed as Monthly Loads (Billion MPN/month)

Table 2A. Total - Watershed

Watershed	Indicator Bacteria	Total Watershed	
		Existing Load	TMDL[2]
Mission San Diego HSA and Santee HSA	**Wet Weather**		
	Fecal Coliform	4,932,380 +1,302[3]	4,680,838 +1,302[2]
	Enterococci	7,255,759	6,590,966[2]
	Dry Weather		
	Fecal Coliform	4,928 +461[3]	1,506 +461[2]
	Enterococci	4,106	248[4]

Table 2B. Point Sources – Municipal MS4 and Caltrans

Watershed	Indicator Bacteria	Point Sources[1]					
		Municipal MS4			Caltrans		
		Existing Load	WLA[2]	Reduction Required	Existing Load	WLA[2]	Reduction Required
Mission San Diego HSA and Santee HSA	**Wet Weather**						
	Fecal Coliform	472,660	221,117	53.22%	1,009	1,009	0.00%
	Enterococci	1,555,411	890,617	42.74%	2,430	2,430	0.00%
	Dry Weather						
	Fecal Coliform	4,928	1,506	69.44%	0	0	0.00%
	Enterococci	4,106	248	93.96%	0	0	0.00%

Table 2C. Nonpoint Sources – Agriculture and Open

Watershed	Indicator Bacteria	Nonpoint Sources[1]					
		Agriculture			Open		
		Existing Load	LA[2]	Reduction Required	Existing Load	LA[2]	Reduction Required
Mission San Diego HSA and Santee HSA	**Wet Weather**						
	Fecal Coliform	414,721	414,721	0.00%	4,043,991	4,043,991	0.00%
	Enterococci	213,149	213,149	0.00%	5,484,770	5,484,770	0.00%
	Dry Weather						
	Fecal Coliform	0	0	0.00%	0	0	0.00%
	Enterococci	0	0	0.00%	0	0	0.00%

1. Sources that are not identified are assumed to be assigned a zero-allowable load as part of the mass load based TMDL (i.e., WLA = 0 or LA = 0). In other words, discharges of pollutant loads from these sources are not expected or allowed as part of the TMDLs.
2. Wet Weather - TMDLs, WLAs, and LAs calculated based on numeric targets consisting of the single sample maximum water quality objective for fecal coliform (400 MPN/100mL), enterococcus (104 MPN/100mL or 61 MPN/100mL) and a 22 percent allowable exceedance frequency. Dry Weather - TMDLs, WLAs, and LAs calculated based on numeric targets consisting of the 30-day geometric mean water quality objective for fecal coliform (200 MPN/100mL) enterococcus (35 MPN/100mL or 33 MPN/100mL) and a zero percent allowable exceedance frequency for dry weather. Meeting the numeric targets in the discharge and/or receiving water indicate the TMDLs, WLAs, and/or LAs have been met.
3. Permitted existing fecal coliform bacteria load from Padre Dam Municipal Water District, assigned as a separate point source wasteload allocation for discharges from Padre Dam Municipal Water District equal to the permitted existing load.
4. Total Maximum Daily Load calculated using an enterococcus numeric target of 33 MPN/100mL that is conservatively protective of the REC-1 “designated beach” usage frequency for freshwater creeks and downstream beaches.

12. **Basin Plan Triennial Review**. At ~~its most recent~~ the Basin Plan Triennial Review in May 2015, the San Diego Water Board identified an evaluation of the REC-1 water quality objectives and Methods for Quantifying Exceedances as one of the Board's priority projects. The goal of the project is to (1) determine whether and to what extent data supports amending the implementation provisions for applicable TMDLs, or the TMDLs themselves, and (2) develop recommendations for carrying out such amendments. Results of the evaluation may include amendments to the Bacteria TMDL. At the request of the San Diego Water Board, a Cost-Benefit Analysis, funded by the City of San Diego, the County of San Diego and the County of Orange, was performed to determine the impact of regulations related to improvement of beneficial uses versus best management practices costs.

PART II. INFORMATON DOCUMENTING PRESENCE OF HUMAN FECAL MATERIAL
Part II, Section A. Recent Studies

13. **Genetic Human Markers**. As part of the San Diego Water Board's effort to evaluate water quality objectives and existing TMDLs, including the Bacteria TMDL, the Board considers relevant studies related to pathogenic viruses and emerging technologies for detecting sources of human fecal material, particularly those regarding the protection of the REC-1, REC-2, and SHELL beneficial uses. Recent research suggests that viral pathogens associated with human fecal material, in particular, norovirus, are the primary etiologic agents of swimming associated gastrointestinal illness in the United States. In recent years, the use of "genetic human markers" has proven valuable in detecting human sources of fecal material in receiving waters. Genetic human markers include gene segments of the bacteria that are mostly associated with human feces, not other (i.e., non-human) sources. In recent years, the detection of human-associated fecal source markers, especially HF183, has been increasingly used in microbial source tracking studies to identify ~~provide evidence for a human origin of detected~~ fecal material of human origin.

14. **Surfer Health Study**. In the winters of 2013/2014 and 2014/2015, a Surfer Health Study (**SHS**) [5] was conducted by the City of San Diego and County of San Diego, in partnership with the Southern California Coastal Water Research Project (SCCWRP), ~~at Ocean Beach (located at the mouth of the San Diego river) and Tourmaline Beach beaches in the region~~ to determine if the REC-1 beneficial use was supported in wet weather by measuring illness rates of surfers after their ocean exposure. A majority of surfing sessions occurred at 13 beaches across San Diego County, with 40% of surfing activities taking place at two sentinel surfing beaches in the City of San Diego, including Ocean Beach, at the mouth of the San Diego River, and Tourmaline Surfing Park, adjacent to Tourmaline Creek and a storm drain. The SHS results indicated an

[5] Southern California Coastal Water Research Project (SCCWRP), SCCWRP Technical Report 943, The Surfer Health Study, A Three Year Study Examining Illness Rates Associated with Surfing During Wet Weather, September 2016, available at ftp://ftp.sccwrp.org/pub/download/DOCUMENTS/TechnicalReports/943_SurferHealthStudy.pdf (as of September 25, 2018).

increased rate of gastrointestinal illness following ocean exposure compared with not entering the water (25 illnesses/1000 swimmers, vs. 18 illnesses/1000 swimmers). This illness rate increased even further following wet weather (up to 30 illnesses/1000 swimmers). The SHS results, obtained among surfers during two study winters of a drought period in Southern California~~s~~, predict less health risk than the most recent USEPA guidance for recreational beaches from 2012, which recommends no more than an average 32 to 36 gastrointestinal illnesses per 1,000 swimmers. However, intrinsic differences in the study designs between the SHS and epidemiology studies conducted by USEPA should be considered in evaluating the SHS results using the USEPA guidance. The target population studied in the SHS (i.e. adult surfers) does not include the sensitive population (i.e., children) used in the USEPA studies. Additionally, it has been reported that bacteria concentrations in surf zones, where the majority of surfing activities occur, are lower than in the near-shore beach water of ankle depth[6], where young children typically recreate in the water under exposed conditions. Therefore, it cannot be concluded that ocean waters in the nearshore recreational zone do not present a health risk based on SHS results.

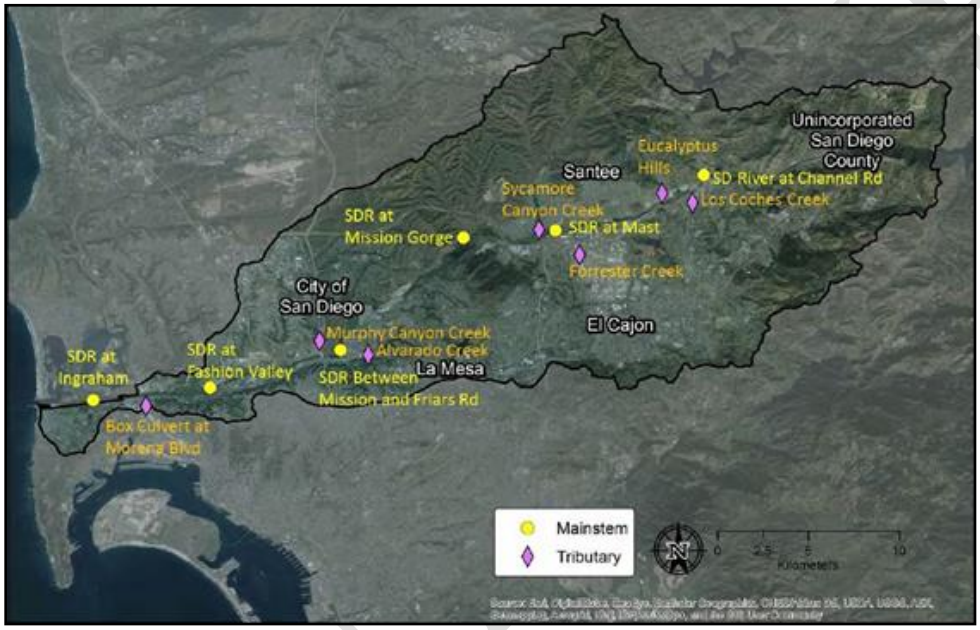
Further, in addition to HF183, etiologic agents such as norovirus and campylobacter were consistently detected at elevated concentrations in the flowing water of the Lower San Diego River during rain events. The detection of human pathogens and HF183, as well as enterococci at levels exceeding USEPA recreational water quality criteria, indicates the contamination of the receiving water by human fecal material despite the existing regulatory prohibitions and restrictions on discharges of human fecal waste, including sewage wastewater, upstream in the watershed.

15. **Upstream Microbial Source Tracking Study.** ~~Based on the results of the SHS~~ Due to frequent detection in the SHS of human pathogens and HF183, as well as elevated concentrations of enterococci in ~~storm water discharges~~ wet weather water flows of the Lower San Diego River, ~~the~~ an Upstream Microbial Source Tracking Study was conducted by SCCWRP during two rain events in January-February 2016 and February 2017, respectively, to evaluate the presence of pathogens, ~~and~~ HF183, and enterococci at ~~five~~ six mainstem stations and seven tributary stations in the Lower San Diego River Watershed[7] (Figure 1).

[6] Bight 2003 Report, Shoreline Microbiology, Southern California Bight 2003 Regional Monitoring Program, August 2007, SCCWRP, available online at http://ftp.sccwrp.org/pub/download/DOCUMENTS/TechnicalReports/526_B03_micro.pdf (as of October 25, 2018)

[7] Steele et al., October 2017, Tracking Human Fecal Sources in an Urban Watershed During Wet Weather, Southern California Coastal Water Research Project, available at ftp://ftp.sccwrp.org/pub/download/DOCUMENTS/TechnicalReports/1002_HumanMarkerTracking.pdf (as of October 25, 2018)

Figure 1 –~~Surfer Health Study Wet Weather~~Upstream Microbial Source Tracking Study Sampling Locations in the Lower San Diego River.



16. **Multiple Lines of Evidence**. The results of the SHS, the Upstream Microbial Source Tracking Study, and the Bight 2013 study[8] ~~Multiple lines of evidence~~ point~~ed~~ towards human fecal contamination in wet weather water flows of the Lower San Diego River Watershed ~~wet weather discharges~~. During the SHS, actual human pathogens (including norovirus, adenovirus, c~~C~~ampylobacter, and s~~S~~almonella) and HF183 ~~were observed~~ were deter~~c~~ted in samples collected from the mainstem ~~in~~of the Lower San Diego River. In particular, norovirus was detected in 96 percent of the samples and HF183 was detected in 100 percent of the samples. In the Upstream Microbial Source Tracking Study, norovirus was detected at four stations in 2016 and three stations in 2017, and in both years, HF183 was detected in 100 percent of samples at all 12 stations that had flowing water in the Lower San Diego River Watershed. The

[8] Results of the Southern California Bight Regional Monitoring Program (Bight 2013) demonstrate that HF183 was detected in quantifiable concentrations in 22% and 44% of samples collected in dry and wet weather respectively from 22 coastal drainages in Southern California, including the San Diego River. During the Bight 2013 survey, HF183 was detected in about 28% of samples collected from the San Diego River during dry weather and in about 41% of samples collected from the San Diego River during wet weather. The SCCWRP Technical Report 1005, Volume X, Bight 13 Shoreline Microbiology Report is available on the SCCWRP website at http://ftp.sccwrp.org/pub/download/DOCUMENTS/TechnicalReports/1005_B13_BightShorelineMicrobiology.pdf (as of October 25, 2018).

maximum concentrations of norovirus and HF183 observed in these studies were up to 495 copies/100ml and 16,240 copies/100ml, respectively (see Table 3). Similarly, enterococci were also frequently detected at elevated concentrations in the wet-weather samples. The high frequencies of pathogen, ~~and~~ HF183, and enterococci detections, together with their relatively high concentrations, point towards broadly distributed human fecal contamination in the Lower San Diego River Watershed, ~~wet weather discharges~~ during wet weather river flows. These conditions present ~~presenting~~ an ongoing ~~risk~~ threat to the public health ~~of surfers,~~ and threaten recreational beneficial uses in the Lower San Diego River Watershed as well as recreational and shellfish consumption beneficial uses in downstream beach coastal waters ~~and shellfish consumers at Ocean Beach following storm events~~.

Table 3. ~~—~~Pathogen and Human Marker Results of Surfer Health Study and Upstream Microbial Source Tracking Study

Category		Surfer Health Study		Upstream Source Tracking			
				2016		2017	
		Detection Frequency[a, f]	Max. Conc.[d]	Detection Frequency[a,b]	Max. e.[c,d]	Detection Frequency[a,b]	Max. Conc.[d,e]
Pathogen	Norovirus	96	495	33	280	25	168
	Adenovirus	22	42	N/A	N/A	N/A	N/A
	Campylobacter sp.	100	1,136	N/A	N/A	N/A	N/A
	Salmonella	25	14	N/A	N/A	N/A	N/A
	Enterovirus	0	N/A	16	470	N/A	N/A
Human Marker	HF183	100	3,363	100	16, 240	100	5,971
Fecal Indicator Bacteria	Enterococci	100	26,000	100	30,342	100	21,492

[a] Method Detection Limits are 3 copies/100 ml for HF183, 1 to 23 copies/100 ml for pathogens, and 1 CFU or MPN/100 ml for enterococci.
[b] Percent, n = 12 stations.
[c] Maximum concentrations were observed at the Morena Boulevard outfall.
[d] Gene copies/100 mL for pathogens and human marker, CFU or MPN/100 ml for enterococci.
[e] Maximum concentrations were observed at the Morena Boulevard outfall for Norovirus and the Los Coches tributary for HF183.
[f] Percent, n = 23 samples from one station.

Part II, Section B. Homeless Encampments in Lower San Diego River Watershed

17. **Homeless Encampments**. Although not specifically identified in the San Diego Water Board or State Water Board-issued permits discussed below, the presence of homeless encampments and transient populations in public spaces such as parks, under transportation overpasses, near light rail stations, and riparian area corridors present a challenge to public agencies whether in their capacity as MS4 owners or operators or as public agencies with land use authorities on public spaces from which discharges of waste can occur. According to the San Diego River Park Foundation's 2016 survey, there were approximately 116 encampments, or 290 individuals, living along the mainstem of the San Diego River from the City of Santee to western Mission Valley, within the Lower San Diego River Watershed.[9] The encampments from the 2016 survey are identified in Figures 3 and 4. Many encampments exist on public rights-of-way areas, including those owned by Caltrans. Encampments may also exist on property owned by San Diego State University and Metropolitan Transit System.[10] Assuming that individuals living in the San Diego River or tributaries are not regularly using restroom facilities, they are likely defecating outdoors, resulting in a discharge of human fecal material waste directly into the Lower San Diego River or its tributaries, or adjacent to such waters in a manner which may permit the waste to be transported (e.g. during storm events or high flows) into the waters. ~~This is an illicit discharge that must be eliminated pursuant to Provision E.2.d of Order No R9-2013-0001, Provision C of Order No. 2013-0001-DWQ, and Provision B.1 of Order No. 2012-0011-DWQ. The Copermittees regulated by Order No. R9-2013-0001, San Diego State University, Metropolitan Transit System, and Caltrans must use their land use and enforcement authority to prevent and eliminate illicit discharges to the MS4, including discharges from homeless encampments. This requirement pertains to the San Diego River because urban streams such as the San Diego River are considered both an MS4 and a receiving water per Finding 11 of Order No. R9-2013-0001. Municipalities typically have the legal authority to prevent habitation of public open space areas in their municipal code and can thus prevent such illicit discharges.~~

[9] Email from Shannon Quigley-Raymond, San Diego River Park Foundation, to Helen Yu, San Diego Water Board, dated November 3, 2017.

[10] Email from Dr. Natalie Mladenov, San Diego State University, to Helen Yu, San Diego Water Board, dated March 14, 2019

Figure 3. Map of Homeless Encampments in Lower San Diego River

Figure 4. Close-up of Encampments located between I-15 and Qualcomm Way

Source: http://www.immappler.com/sandiego16/

PART III. COOPERATIVE EFFORTS TO CONTROL DISCHARGES

18. **SCS Study and Quantitative Microbial Risk Assessment**. In an ongoing effort to reduce human health risk associated with human pathogens and comply with the Bacteria I Total Maximum Daily Load (Bacteria I TMDL), the City of San Diego reports

that, in coordination with the County of San Diego, the City has taken, or is planning, actions to identify and quantify the sources and transport pathways of human fecal material in the Lower San Diego River Watershed. This includes ~~conducting~~ completing the SHS with the County of San Diego ~~and~~ in partnership with SCCWRP. In addition, the City of San Diego ~~completed~~ reports that it initiated the first wet weather epidemiology and quantitative microbial risk assessment (QMRA) in the Tecolote Creek Watershed that led to follow-up studies that identified and eliminated some sources of human fecal material. Results of this QMRA can inform appropriate strategies for future investigations on human fecal material sources in the San Diego Region, including requirements contained in this Investigative Order for investigation of the Lower San Diego River Watershed.

19. **Clean SD Program.** ~~In 2017, the~~ The City of San Diego reports that it increased efforts to remove trash and human pathogens throughout the City ~~of San Diego~~ through its "Clean SD" program and in response to the hepatitis A outbreak emergency. Under the Clean SD program, the City of San Diego reports that it increased the frequency of waste abatements and removal of trash and debris, including some with human fecal material, from the San Diego River and its tributaries and in nine other areas in the City. The City also reported that streets, sidewalks and other public areas were regularly cleaned and disinfected in an effort designed to reduce potential exposure to public health. The City reports that these efforts are ongoing and will continue in the future. The San Diego Water Board is aware of recent ~~S~~similar efforts by the City of Santee, City of El Cajon, City of La Mesa, County of San Diego, and Caltrans ~~were taken~~ to remove trash and human pathogens in response to the hepatitis A outbreak emergency.

~~20.~~ ~~**Cooperative Efforts**.Also in 2017, following completion of the SHS, the Upstream **Microbial** Source Tracking Study in the San Diego river watershed, and the City of San Diego's QMRA study in the Tecolote Creek Watershed, the City of San Diego and the County of San Diego with SCCWRP initiated a 3-year study to identify potential sources of human fecal material from a variety of sources in the San Diego river watershed. The San Diego Water Board supports the City of San Diego and County of San Diego efforts to proactively initiate this study.~~

20. **Initial Compliance Steps**. The activities of the City of San Diego, the City of Santee, the City of El Cajon, the City of La Mesa, the County of San Diego and Caltrans, as described in Findings ~~14-16~~ 18 through 20 above, represent initial steps towards compliance with the technical and monitoring reporting requirements of this Investigative Order ~~No. R9-2018-0021 (Investigative Order).~~

PART IV. SUSPECTED SOURCES AND TRANSPORTATON PATHWAYS

21. **Transport Pathways**. The discharge of human fecal material to the environment likely originates from various sources and may occur through a number of transport pathways, including but not limited to:

- Sanitary sewer overflows from publicly-owned sewer collection systems;
- Sewage spills from privately-owned lateral sewer lines;
- Exfiltration from publicly-owned sanitary sewer collection systems (a type of SSO) and privately-owned lateral sewer lines (a private lateral sewage discharge);
- ~~, and~~ Faulty privately-owned on-site wastewater treatment systems (OWTS);
- Illegal connections to MS4s;
- Illicit discharges to MS4s; and
- Direct or indirect deposition from homeless encampments.

~~To a lesser extent, pathogens and human fecal material (as measured by HF183) may also be present in treated effluent from wastewater treatment plants discharging to land or surface waters in the Lower San Diego River Watershed~~. To some extent, the human associated fecal marker, HF183, may be present in treated effluent from Padre Dam Water District's, Ray Stoyer Water Reclamation Facility.

As set forth in Part IV, sections A, B, C, D and E of this Investigative Order below the following facilities and/or entities discharge or are suspected of discharging or having discharged human fecal material within the Lower San Diego River Watershed and are responsible for complying with the Directives in this Investigative Order.

Part IV, Section A. Sanitary Sewer Collection Systems

22. **Basin Plan Prohibitions**. Sanitary sewer collection systems are designed to collect raw domestic and industrial wastewater from various sources and to convey that wastewater to treatment facilities. Because domestic wastewater is primarily comprised of human waste, it contains human fecal material, bacteria, and illness-causing pathogens. Sanitary sewer collection systems are subject to the following Basin Plan waste discharge prohibitions:

    - The discharge of waste to waters of the State in a manner causing, or threatening to cause a condition of pollution, contamination or nuisance as defined in Water Code section 13050, is prohibited.
    - The discharge of waste to land, except as authorized by WDRs or the terms described in Water Code section 13264 is prohibited.
    - The unauthorized discharge of treated or untreated sewage to waters of the State or to a storm water conveyance system is prohibited.

23. **Regional and Statewide General WDRs**. Publicly owned sanitary sewer collection systems are regulated by Order No. R9-2007-0005, Waste Discharge Requirements for Sewage Collection Agencies in the San Diego Region, and by Order No. 2006-0003-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems. All or a portion of the sanitary sewer collection systems for the following public entities are located within the Lower San Diego River Watershed: the City of San Diego, the San Diego County Sanitation District, the City of El Cajon, the City of La Mesa, San Diego State University, and Padre Dam Municipal Water District. Waste discharges from sanitary sewer collection systems by these entities are therefore subject to the requirements of Order Nos. R9-2007-0005 and 2006-0003-DWQ.

24. **Regional General WDR Prohibitions.** Order No. R9-2007-0005, adopted by the San Diego Water Board on February 14, 2007, prohibits the discharge of waste to land, except as authorized by WDRs or Water Code section 13264. Provision B.1. of Order No. R9-2007-0005 states that the discharge of sewage from a sanitary sewer system at any point upstream of a sewage treatment plant is prohibited.

25. **Statewide General WDR Prohibitions.** Order No. 2006-0003-DWQ, adopted by the State Water Board on May 2, 2006, and amended on September 9, 2013, contains the following prohibitions:

    - Any SSO that results in a discharge of untreated or partially treated wastewater to waters of the United States is prohibited.

    - Any SSO that results in a discharge of untreated or partially treated wastewater that creates a nuisance as defined in Water Code section 13050(m) is prohibited.

    Consistent with Order No. 2006-0003-DWQ, any overflow, spill, release, discharge or diversion of untreated or partially treated wastewater from a sanitary sewer system that results in a discharge of untreated or partially treated wastewater to waters of the United States or creates a nuisance as defined in Water Code section 13050(m) is prohibited.

26. **Sewer System Management Plans and Occurrence of Sanitary Sewer Overflows and Exfiltration**. Order No. 2006-0003-DWQ requires Sewer Collection Agencies[11] to develop and implement a Sewer System Management Plan (SSMP) to reduce or eliminate Sanitary Sewer Overflows (SSOs). Sanitary sewer collection systems are designed to collect wastewater from a variety of sources and to convey that wastewater to treatment facilities. Although SSMPs are implemented by Sewer Collection Agencies, sanitary sewer systems are nonetheless susceptible to

[11] Sewer Collection Agencies are federal and state agencies, municipalities, counties, districts, and other public entities that own or operate sanitary sewer systems greater than one mile in length that collect and/or convey untreated or partially treated wastewater to a publicly owned treatment facility in the State of California.

exfiltration[12] and other SSOs[13], both of which allow pathogens and other pollutants to enter the environment and discharge into downstream receiving waters.

a. **SSOs**. All of the public entities that own or operate a sanitary sewer collection system in the Lower San Diego River watershed and named in Order Nos. R9-2007-0005 and 2006-0003-DWQ have developed and implemented a SSMP. ~~All of the permittees discharging to the San Diego River and named in Order Nos. R9-2007-0005 and 2006-0003-DWQ have developed and implemented a SSMP.~~ The SSMPs include routine line cleaning and cyclic inspection programs, including the use of closed circuit television to identify repairs or maintenance needs. Despite implementation of these preventative measures, SSOs are known to occur from these sanitary sewer collection systems ~~as described in Findings 25-30~~.

b. **Exfiltration**. Recent research indicates that sewage exfiltration can occur from a sanitary sewer and infiltrate storm drains that are nearby, e.g., placed vertically below and laterally within five meters from the sewer pipe.[14]

27. **City of San Diego Sanitary Sewer Collection System.** The City of San Diego owns and operates a sanitary sewer collection system comprised of approximately 3,000 miles of gravity sewers in total; the collection system is located in the following watersheds: San Dieguito River, Peñasquitos, Mission Bay/La Jolla, San Diego River, San Diego Bay, and Tijuana River.

[12] Exfiltration refers to the leakage of sewage wastewater through minute cracks, gaps or breaks in sanitary sewer collection system infrastructure or private laterals to the surrounding environment. ~~Exfiltration refers to the migration of wastewater from the sanitary sewer collection system to the surrounding environment through joints or breaks in the collection system or through the material making up the system itself (e.g. vitrified clay pipe (VCP))~~. For regulatory purposes any sewage exfiltration release from a public sanitary sewer system is defined as a sanitary sewer overflow (SSO) and any sewage exfiltration release from a private lateral is defined as a private lateral sewage discharge (PLSD). Exfiltration may be related to construction practices and/or materials, infrastructure deterioration, inadequate preventive maintenance programs, or insufficient planned system rehabilitation or replacement programs which have resulted in deteriorated pipes, manholes, and pump stations that allow sewage containing high levels of suspended solids, pathogenic organisms, toxic pollutants, nutrients, oil, and grease to exit the systems and contaminate adjacent ground and surface waters, and/or enter the storm drain.

[13] A SSO is any unintended release of wastewater from a sanitary sewer collection system to the surrounding environment (e.g. onto land or into storm drains or surface waters). SSOs are typically caused by blockages in the collection system (e.g. grease or root blockages), damages to the collection system (e.g. failure of a slope causing exposure and breakage of the collection system), structural or material failures, pump station mechanical failures or power outage, lack of capacity (e.g. inflow and infiltration), and vandalism. For clarification purposes a Private Lateral Sewage Discharge (PLSD) is a sewage discharge caused by blockages or other problems within privately owned laterals or collection systems which are tributary to a publicly owned sanitary sewer system.

[14] Sercu et al., 2011 *Sewage Exfiltration as a Source of Storm Drain Contamination during Dry Weather in Urban Watersheds,* Environ. Sci. Technol., 45, 7151-7157, available at https://pubs.acs.org/doi/abs/10.1021/es200981k (as October 25, 2018)

a. Exfiltration - The City of San Diego has not reported, to the San Diego Water Board, any estimation regarding the exfiltration of wastewater from the sanitary sewer collection system to the Lower San Diego River Watershed.

b. SSOs - Between ~~October~~ January 1, 2013 and ~~October 1, 2017~~December 31, 2018, the City of San Diego reported ~~136~~ 231 SSOs totaling ~~7,677,091~~ 7,854,572 gallons of sewage from the sewage collection system and ~~191~~ 276 private lateral spills totaling ~~77,819~~ 101,361 gallons of sewage from private laterals. The data reported by the City of San Diego represents SSOs and private lateral spills over the entire sewer collection system in all six watersheds.

28. **San Diego County Sanitation District Sanitary Sewer Collection System.** The San Diego County Sanitation District owns and operates a sanitary sewer collection system comprised of approximately 400 miles of gravity sewers in total; the collection system is located in the San Diego River, San Diego Bay, and Tijuana River Watersheds.

a. Exfiltration - The San Diego County Sanitation District has not reported, to the San Diego Water Board, any estimation regarding the exfiltration of wastewater from the sanitary sewer collection system to the Lower San Diego River Watershed.

b. SSOs - Between ~~October~~ January 1, 2013 and ~~October 1, 2017~~December 1, 2018, the San Diego County Sanitation District reported ~~9~~ 56 SSOs totaling ~~908,311~~964,986 gallons of sewage from the sewage collection system and 5 private lateral spills totaling 1,870 gallons of sewage from private laterals ~~occurring in the San Diego River Watershed. The San Diego County Sanitation District did not report any spills from private laterals occurring in the San Diego River Watershed during this time frame~~.

29. **City of El Cajon Sanitary Sewer Collection System.** The City of El Cajon owns and operates a sanitary sewer collection system comprised of approximately 200 miles of gravity sewers within the San Diego river watershed. The system is located entirely within the Lower San Diego River Watershed.

a. Exfiltration - The City of El Cajon has not reported, to the San Diego Water Board, any estimation regarding the exfiltration of wastewater from the sanitary sewer collection system to the Lower San Diego R~~r~~iver Watershed.

b. SSOs - Between ~~October 1~~January 1, 2013 and ~~October 1, 2017~~December 31, 2018, the City of El Cajon reported ~~8~~ 10 SSOs totaling ~~1,760~~ 2,055 gallons of sewage from the sewage collection system and ~~49~~ 76 spills from private laterals totaling ~~28,602~~ 37,778 gallons of sewage from private laterals.

30. **City of La Mesa ~~-~~Sanitary Sewer Collection System.** The City of La Mesa owns and operates a sanitary sewer collection system comprised of approximately 150 miles of gravity sewers located within the San Diego Bay and Lower San Diego River Watersheds.

    a. Exfiltration - The City of La Mesa has not reported, to the San Diego Water Board, any estimation regarding the exfiltration of wastewater from the sanitary sewer collection system to the Lower San Diego River Watershed.

    b. SSOs - Between ~~October~~ January 1, 2013 and ~~October 1, 2017~~December 31, 2018, the City of La Mesa reported ~~73~~ 96 SSOs totaling ~~12,910~~ 15,570 gallons of sewage from the sewage collection system and ~~35~~ 41 spills from private laterals totaling ~~3,088~~ 3,956 gallons of sewage. The data reported by the City of La Mesa represents SSOs and sewage spills from private laterals over the entire sewer collection system in both watersheds.

31. **San Diego State University Sanitary Sewer Collection System.** San Diego State University owns and operates a sanitary sewer collection system comprised of approximately 6 miles of gravity sewers, located entirely in the Lower San Diego River Watershed.

    a. Exfiltration – San Diego State University has not reported, to the San Diego Water Board, any estimation regarding the exfiltration of wastewater from the sanitary sewer collection system to the Lower San Diego River Watershed.

    b. SSOs - Between ~~October~~ January 1, 2013 and ~~October 1, 2017~~ December 31,2018, San Diego State University reported ~~4~~ 5 SSOs totaling ~~5,920~~ 5,945 gallons of sewage from its sewage collection system, all of which occurred in the Lower San Diego River Watershed.

32. **Padre Dam Municipal Water District Sanitary Sewer Collection System.** Padre Dam Municipal Water District owns and operates a sanitary sewer collection system comprised of approximately 160 miles of gravity sewers in the City of Santee, the City of El Cajon, and the unincorporated community of Lakeside in the Lower San Diego River Watershed. The collection system is located entirely within the Lower San Diego River Watershed.

    a. Exfiltration - Padre Dam Municipal Water District has not reported, to the San Diego Water Board, any estimation regarding the exfiltration of wastewater from the sanitary sewer collection system to the Lower San Diego River Watershed.

    b. SSOs -Between ~~October~~ January 1, 2013 and ~~October 1, 2017~~ December 31,2018, Padre Dam Municipal Water District reported ~~7~~ 12 SSOs totaling ~~654~~ 6,523 gallons of sewage from the sewage collection system and ~~28~~ 39 spills

from private laterals totaling ~~10,395~~ 12,381 gallons of sewage from private laterals occurring within the Lower San Diego River Watershed.

33. **The Sanitary Sewer Collection Agencies Are Designated as Responsible Parties.** As detailed in Findings 14 through 16, evidence shows that human fecal waste is present in the Lower San Diego River Watershed. Sewage releases from sanitary sewer collection systems are known to contain bacteria, viruses, and pathogens and can adversely affect human health and water quality. As detailed in Findings 27 through 32, the sanitary sewer collection agencies have discharged or are suspected of having discharged waste that may contain human fecal material to areas within or draining to the Lower San Diego River Watershed. The City of San Diego, the County of San Diego Sanitation District, the City of La Mesa, the City of El Cajon, San Diego State University and the Padre Dam Municipal Water District are dischargers responsible for complying with the directives and provisions of this Investigative Order and are each designated as a Responsible Party.

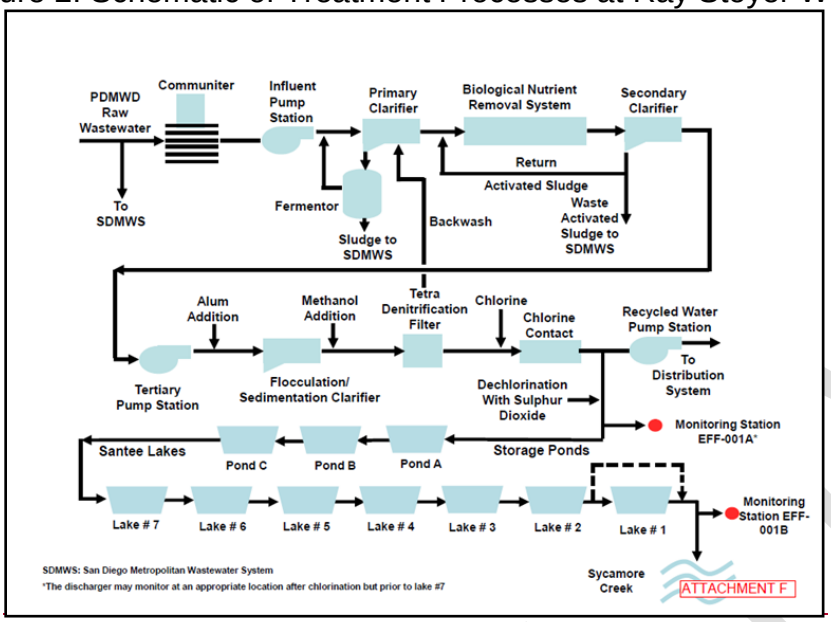
Part IV, Section B. Publicly-Owned Treatment Works

34. **Padre Dam Municipal Water District, Ray Stowe Water Recycling Facility.** . Publicly-owned treatment works (POTWs) refer to wastewater treatment plants owned by a government agency. The term includes systems used for the storage, treatment, and recycling of municipal wastewater. Padre Dam Municipal Water District's, Ray Stoyer Water Recycling Facility (Ray Stoyer WRF) is the only ~~In the San Diego River Watershed, there is one~~ POTW ~~that is~~ authorized to discharge to receiving waters in the Lower San Diego River Watershed. ~~: the Ray Stoyer Water Recycling Facility (Ray Stoyer WRF);, and one POTW that is authorized to discharge to land (where the effluent is not intended to be reused): Julian Water Pollution Control Facility, owned and operated by the San Diego County Sanitation District.~~

35. **Ray Stoyer WRF Treatment Process.** Order No. R9-2015-0002, *Waste Discharge Requirements for the Padre Dam Municipal Water District, Ray Stoyer Water Recycling Facility Discharge to Sycamore Creek*, was adopted by the San Diego Water Board on May 13, 2015, and amended by Order No. R9-2016-0099 on June 22, 2016. Padre Dam Municipal Water District is the owner and operator of the Ray Stoyer WRF, a tertiary POTW that discharges up to 2 million gallons per day of effluent to Sycamore Creek, a tributary of the San Diego River. The treatment process at the Ray Stoyer WRF consists of primary clarification, a five-stage Bardenpho process, secondary clarification, alum and polymer addition, flocculation, sedimentation, denitrification, chlorine disinfection, and dechlorination. After dechlorination, effluent flows through a series of three holding ponds and Santee Lakes before being discharged to Sycamore Creek, a tributary of the San Diego River in the Lower San Diego River Watershed. The holding ponds and Santee Lakes help stabilize the quality of effluent by reducing the total nitrogen concentrations, and as a result are considered a continuation of the treatment system. ~~, which are considered a continuation of the treatment system (stabilizing the quality of the~~

~~effluent by reducing the total nitrogen concentrations)~~. This process is shown in Figure 2.

Figure 2. Schematic of Treatment Processes at Ray Stoyer WRF



36. **Ray Stoyer WRF Bacterial Effluent Limitations.** Order No. R9-2015-0002 (as amended) contains effluent limitations for total coliform, fecal coliform, enterococci, and E-coli at Monitoring Location EFF-001A (the discharge from the chlorination system to the first holding pond). Monitoring for total coliform, fecal coliform, enterococci, and E-coli occurs at Monitoring Location EFF-001A and Monitoring Location EFF-001B (the discharge from Santee Lakes to Sycamore Creek). Order No. R9-2015-0002 (as amended) also contains receiving water limitations for total coliform, fecal coliform, enterococci, and E-coli. Monitoring for total coliform, fecal coliform, and enterococci is required upstream and downstream of the discharge point in Sycamore Creek.

37. **Ray Stoyer WRF Action Plan for Receiving Water Limitation Exceedances.** In accordance with its permit, if effluent and receiving water monitoring data demonstrates that the Ray Stoyer WRF is causing or contributing to exceedances of indicator bacteria, then the Padre Dam Municipal Water District must develop an Action Plan to detail the causes of the exceedances and operational changes to minimize the impact of these causes. An Action Plan must be implemented and submitted to the San Diego Water Board within six months of the first determination that the Facility is causing or contributing to downstream exceedances of receiving water limitations for indicator bacteria. Treated effluent from the Ray Stoyer WRF is complaint with bacteria effluent limitations specified in Order No. R9-2015-0002. In addition, concentrations of indicator bacteria in treated effluent from the Ray Stoyer WRF are typically well below bacteria water quality objectives for surface waters. As a result, no Action Plan has been triggered since at least 2015.

~~38. Order **No**. 83-09, Waste Discharge Requirements for Julian Sanitation District, County of San Diego, was adopted on July 18, 1983. The County of San Diego Department of Public Works owns and operates the Julian Water Pollution Control Facility (Julian WPCF). Order No. 83-09 establishes requirements for the treatment and disposal of up to 40,000 gallons of secondary treated wastewater from the Julian WPCF.~~

~~39. Treated wastewater from the Julian WPCF is discharged to a spray irrigation/disposal field. The Julian WPCF is located in the Inaja Hydrologic Subarea (907.41) which is located within the San Diego river watershed.~~

~~40. Section A. 1 of Order No. 83-09 prohibits the disposal of wastewater in a manner that would result in ponding or surfacing of wastewater on lands beyond the disposal area as defined in the Report of Waste Discharge. Section A.6.h of Order No. 83-09 also specifies that the discharge of wastewater or sludge shall not cause a surface flow in the San Diego river or its tributaries.~~

~~41. Effluent from the Ray Stoyer Water Recycling Facility and the Julian WPCF is not measured for the presence of the HF183 human genetic marker. Therefore, the degree to which effluent from these facilities may be causing or contributing to measurable levels of HF183 in the San Diego River or its tributaries is unknown.~~

38. **Padre Dam Municipal Water District, Ray Stoyer WRF is Designated as a Responsible Party**. In the Upstream Microbial Source Tracking Study, HF183 was detected in quantifiable concentrations in wet weather water flows in Sycamore Creek downstream of where the Ray Stayer WRF discharge enters the creek from Santee Lakes. Moreover, Santee Lakes are frequently used by local residents for recreational activities, including fishing, RV parking, and boat paddling. Santee Lakes also provide habitat for various wildlife. As treated effluent passes through Santee Lakes, occasional exceedances of *E.coli* concentrations slightly above applicable water quality objectives have been documented at the discharge point where Santee Lakes overflow to Sycamore Creek, suggesting fecal sources other than treated effluent may have been released to Sycamore Creek.

Based on the above information, Padre Dam Municipal Water District's Ray Stoyer WRF discharges or is suspected of discharging waste in the Lower San Diego River Watershed. Padre Dam Municipal Water District's Ray Stoyer WRF is a discharger responsible for complying with the requirements of this Order and is designated as a Responsible Party. However, considering the lower heath risk of disinfected tertiary effluent compared with that of raw sewage, and past monitoring reports demonstrating that the treated effluent discharge from the Ray Stoyer WRF to Santee Lakes is compliant with bacteria effluent limitations specified in Order No. R9-2015-0002, the San Diego Water Board has determined that Padre Dam Municipal Water District may choose to comply by evaluating the Ray Stoyer WRF effluent discharge as described below. Ray Stoyer WRF may quantify its contribution of HF183 to the Lower San Diego River Watershed by characterizing levels in its treated effluent and

evaluating the mass contribution of HF183 based on discharge volume information. To comply in this manner, Padre Dam Municipal Water District must prepare a work plan to quantify the contribution of HF183 from the treated effluent discharges of the Ray Stoyer WRP to Sycamore Creek pursuant to Directive 3 of this Investigative Order. This work plan can be prepared separately for the treated effluent portion only, or as part of the larger work plan, consistent with the requirements in Directive 3.

Part IV, Section C. Municipal Separate Storm Sewer Systems

39. **Municipal Separate Storm Sewer System Pollutant Discharges.** During rain events, urban storm water runoff is transported by gravity flow through a vast network of roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, storm drains, concrete channels and underground pipes referred to as municipal separate storm sewer systems (MS4s) (also referred to as storm water conveyance systems~~, also known as~~ or storm drain systems ~~or MS4s~~). Such systems ultimately discharge the runoff, which carries pollutants, into receiving waters often with little or no treatment. Storm water runoff typically carries pollutants such as sediment, nutrients, oxygen-demanding substances (e.g., decaying vegetation), heavy metals, pesticides, and illness-causing bacteria and pathogens. During dry weather, storm drains also transport non-storm water discharges containing pollutants into the MS4s. The San Diego Water Board regulates the quality of discharges from MS4s through issuance of National Pollutant Discharge Elimination System (NPDES) permits to the owners and operators of MS4s. The overall objective of the storm water permitting program is to reduce or eliminate the discharge of pollutants into and out of the storm water conveyance system.

~~39. **Duty to Comply with Bacteria TMDL Wasteload Allocations**. Owners and operators of MS4s in the Lower San Diego River Watershed that are identified in the Bacteria TMDL as responsible for complying with WLAs, as described in Table 1, include the Cities of El Cajon, La Mesa, San Diego, and Santee, the County of San Diego, Caltrans, and owners and operators of small MS4s (at the time of issuance of this Investigative Order, this includes San Diego State University and Metropolitan Transit System). These dischargers are regulated by Order No. R9-2013-0001 (as amended), Order No. 2013-0001-DWQ, and Order No. 2012-0011-DWQ (as amended).~~

40. **Regional MS4 Permit**. The Regional MS4 Permit, Order No. R9-2013-0001 (as amended), National Pollutant Discharge Elimination System (NPDES) Permit and Waste Discharge Requirements for Discharges from the Municipal Separate Storm Sewer Systems (MS4s) Draining the Watersheds within the San Diego Region, was adopted by the San Diego Water Board on May 8, 2013, and amended on February 11, 2015 and November 18, 2015. Order No. R9-2013-0001 (as amended) is issued to the following municipalities in the Lower San Diego River Watershed: the Cities of San Diego, Santee, El Cajon, and La Mesa, and the County of San Diego (Copermittees). The Regional MS4 Permit requires that Copermittees effectively prohibit non-storm water discharges into the Copermittees' MS4s and reduce

pollutants in storm water discharges from the Copermittees' MS4s to the maximum extent practicable (MEP).

~~41. **Regional MS4 Permit Regulatory Requirements.** Order No. R9-2013-0001 (as amended) **requires** Copermittees to effectively prohibit non-storm water discharges into the Copermittees' MS4s and reduce pollutants in storm water discharges from the Copermittees' MS4s to the maximum extent practicable (MEP). Provision E.1.a.(1) states that "Each Copermittee must establish, maintain, and enforce adequate legal authority to control pollutant discharges into and from its MS4… [and that] this legal authority must authorize the Copermittee to prohibit and eliminate all illicit discharges and illicit connections to its MS4." Provision E.2 describes requirements related to the detection and elimination of illicit discharges to the MS4~~:

- ~~Provision E.2.b.(4): "Each Copermittee must implement practices and procedures (including a notification mechanism) to prevent, respond to, contain, and clean up any spills that may discharge into the MS4 within its jurisdiction from any source. The Copermittee must coordinate, to the extent possible, with spill response teams to prevent entry of spills into the MS4, and prevent contamination of surface water, ground water, and soil. The Copermittee must coordinate spill prevention, containment, and response activities throughout all appropriate Copermittee departments, programs, and agencies.~~

- ~~Provision E.2.b.(5): "Each Copermittee must implement practices and procedures to prevent and limit infiltration of seepage from sanitary sewers (including private laterals and failing septic systems) to the MS4."~~

- ~~Provision E.2.b.(6): "Each Copermittee must coordinate, when necessary, with upstream Copermittees and/or entities to prevent illicit discharges from upstream sources into the MS4 within its jurisdiction."~~

41. **Human Fecal Material Discharges into and through MS4s.** Based on available information there are several potential pathways for discharges of human fecal material into and through MS4s to receiving waters of the Lower San Diego Watershed. Sanitary sewer overflows from publicly-owned sewer collection systems and sewage discharges from privately-owned lateral sewer can discharge into and through MS4s into receiving waters. Minute cracks and gaps in sewage collection system infrastructure and private laterals can potentially provide a pathway for sewage-related contaminants to escape into the surrounding environment through exfiltration. Such sewage exfiltration discharges near and/or above storm drains, may have a hydraulic pathway for sewage to enter the MS4 and be discharged into receiving waters. Surfacing effluent or rising groundwater containing human fecal material attributable to faulty on-site wastewater treatment systems (e.g. failing septic tank systems) can discharge into and through nearby MS4s to receiving waters. Discharges from persons residing in homeless encampments may result in a discharge of human fecal material waste directly into and through MS4s to receiving

waters, or adjacent to MS4s in a manner which may permit the waste to be transported (e.g. during storm events or high flows) into and through the MS4s to receiving waters. Discharges of human fecal material from illegal connections or activities can flow into and through MS4s into receiving waters.

In recognition that leaking sanitary sewers or private laterals may allow infiltration of sewage into MS4s, the Regional MS4 Permit at Provision E.2.b.[15] ~~These provisions~~ requires that Copermittees implement controls and measures to prevent infiltration of sewage into the MS4 from leaking sanitary sewers and to prevent illegal dumping. This can be particularly challenging because identifying and locating certain illicit connections to the MS4, such as from private sewer laterals, are difficult to detect. Similarly, instances of illegal dumping are difficult to predict and prevent. Copermittees ~~that do not operate both a sewage collection system and a MS4~~ must coordinate with Sewage Collection Agencies to keep themselves informed of ~~relevant and appropriate maintenance~~ activities ~~and other improvement projects~~ taking place in their jurisdiction that may cause or contribute to seepage of sewage into the MS4.

42. **The Cities of El Cajon, La Mesa, San Diego and Santee and the County of San Diego are Designated as Responsible Parties**. The Cities of El Cajon, La Mesa, San Diego and Santee and the County of San Diego discharge storm water and non-storm water containing pollutants into and through MS4s to receiving waters within the Lower San Diego River Watershed. Potential sources of human fecal waste discharges to MS4s owned and operated by these parties include sanitary sewer collection systems, private laterals, on-site wastewater treatment systems, homeless encampments and illicit connections and connections located adjacent to MS4s. As described in Finding 11 and Tables 2a through 2c of this Investigative Order, these Copermittees are assigned WLAs and are required to comply with the Bacteria TMDL to achieve reductions in bacteria discharged to receiving waters in the Lower San Diego River Watershed. The Cities of El Cajon, La Mesa, San Diego and Santee and the County of San Diego discharge or are suspected of discharging human fecal waste to waters in the Lower San Diego River Watershed. Each of these entities is a discharger responsible for complying with the directives and provisions of this Investigative Order and is designated as a Responsible Party.

43. **Small MS4 General Permit**. San Diego State University and Metropolitan Transit System are permittees under the statewide Order No. 2013-0001-DWQ, as amended by Order WQ-20015-0133-EXEC, Order WQ 2018-0001 EXEC and Order WQ 2018-0007 EXEC, *National Pollutant Discharge Elimination System (NPDES) Permit and Waste Discharge Requirements (WDRs) for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems (MS4s)* ~~was adopted by the State Water Board on February 5, 2013~~. Order No. 2013-0001-DWQ, as amended is also referred

[15] Provision E.2.b.(5): "Each Copermittee must implement practices and procedures to prevent and limit infiltration of seepage from sanitary sewers (including private laterals and failing septic systems) to the MS4." Provision E.2.b.(6): "Each Copermittee must coordinate, when necessary, with upstream Copermittees and/or entities to prevent illicit discharges from upstream sources into the MS4 within its jurisdiction."

to as the Small MS4 General Permit. San Diego State University enrolled under ~~Order No. 2013-0001-DWQ~~ the Small MS4 General Permit on October 7, 2013. ~~On February 8, 2017, the San Diego Water Board designated Metropolitan Transit System as a discharger subject to the Small MS4 General Permit Order No. 2013-0001-DWQ, and as a result, Metropolitan Transit System is in the process of obtaining permit coverage.~~Metropolitan Transit System enrolled under the Small MS4 General Permit on May 2, 2018. Both ~~of these dischargers~~ San Diego State University and Metropolitan Transit System are located in the Lower San Diego River Watershed.

44. **San Diego State University and Metropolitan Transit System are Designated as a Responsible Parties.** Provision C of ~~Order No. 2013-0001-DWQ~~ the Small MS4 General Permit states that "[p]ermittees shall implement controls…to reduce the discharge of pollutants from their MS4s to waters of the United States to the MEP." ~~Provisions F.5.a.1.(ii)(a) and F.5.a.1.(ii)(b) require permittees to have adequate legal authority to 1) effectively prohibit non-storm water discharges through the MS4, and 2) detect and eliminate illicit discharges and illegal connections to the MS4. As owners and operators of small MS4s that are~~ San Diego State University is responsible for complying with the Bacteria TMDL WLAs to reduce bacteria loading to the Lower San Diego River Watershed ~~San Diego State University and Metropolitan Transit System must reduce bacteria loading to the San Diego River watershed using their legal authority described above by the compliance schedule described in the Bacteria TMDL~~. And as noted in Finding 12 of State Water Board Order WQ 2018-0007-EXEC, Metropolitan Transit System operations are within land uses associated with Municipal MS4s and are considered contributors to the impairment of the waterbodies of the Lower San Diego River Watershed listed as impaired for bacteria. While Metropolitan Transit System has not yet been named in Attachment G of the Small MS4 General Permit as having requirements under the Bacteria TMDL, in that same Finding, the State Water Board finds that Metropolitan Transit District should anticipate compliance with the requirements for implementing the Bacteria TMDL contained in Attachment G of the Small MS4 General Permit following a future amendment to the Small MS4 General Permit.[16] Based on the above information, both San Diego State University and Metropolitan Transit District discharge or are suspected of discharging waste to waters in the Lower San Diego River Watershed. Each of these entities is a discharger responsible for complying with the directives and provisions of this Investigative Order and is designated as a Responsible Party.

45. **Caltrans is Designated as a Responsible Party.** Order No. 2012-0011-DWQ (as amended), National Pollutant Discharge Elimination System (NPDES) Permit and Waste Discharge Requirements (WDRs) for State of California Department of

[16] Water Quality Order 2018-0007-EXEC, Amending Water Quality Order 2013-0001-DWQ, National Pollutant Discharge Elimination System General Permit No. CAS000004, Waste Discharge Requirements For Storm Water Discharges From Small Municipal Separate Storm Sewer Systems (MS4), approved by the State Water Board Executive Officer on March 13, 2018. Available on the State Water Board website at https://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2018/wqo2018_0007_exec.pdf (as of October 25, 2018)

Transportation, was adopted by the State Water Board on September 19, 2012, and amended on January 17, 2014, May 20, 2014, and April 7, 2015. Order No. 2012-0011-DWQ (as amended) requires storm water discharges from Caltrans' MS4 containing pollutants that have not been reduced to the MEP, be prohibited. Provision B.1 of Order No. 2012-0011-DWQ requires that [Caltrans] shall effectively prohibit non-storm water discharges into its storm water conveyance system unless such discharges are either: a) authorized by a separate NPDES permit; or b.) conditionally exempt in accordance with provision B.2. of this NPDES permit. Pursuant to the requirements in Attachment IV of Order No. 2012-0011-DWQ (as amended), as a responsible party named under the Bacteria TMDL, Caltrans shall implement control measures to ensure that the effective prohibition of non-storm water discharges and implement BMPs to prevent or eliminate the discharge of bacteria from its [rights of way] to meet the waste load reduction goals by the compliance schedule described in the Bacterial TMDL. Caltrans has discharged or is suspected of discharging waste into waters in the Lower San Diego River Watershed. Caltrans is a discharger responsible for compliance with the directives and provisions of this Investigative Order and is designated as a Responsible Party.

46. **MS4 Dischargers Designated as Responsible Parties**. MS4 dischargers in the Lower San Diego River Watershed are named as responsible parties under the Bacteria TMDL[17] to reduce their waste loads of fecal indicator bacteria. These entities discharge or are suspected of discharging non-stormwater and/or stormwater containing human fecal waste material through their MS4 conveyances to receiving waters of the Lower San Diego River Watershed. As discussed in the above Findings, each of these MS4 dischargers is a discharger responsible for complying with the directives of this Investigative Order and is designated as a Responsible Party.

47. **Public Agency Responsibility for Investigation of Discharges Originating from Homeless Encampments on Public Lands**. As discussed in Finding 17 and Figures 3 and 4, numerous homeless encampments are located on public lands or within public rights-of-way or similar areas on lands owned or controlled by public entities that are also MS4 entities named as Responsible Parties in this Investigative Order. Based on available information and documented presence of human fecal material in the Lower San Diego River Watershed, it is reasonable to suspect that discharges of human fecal material from homeless encampments in many instances originate from lands owned or controlled by these entities and are discharged directly or indirectly to receiving waters within these jurisdictions. This provides an additional basis for requiring the owners and operators of the above MS4s to investigate and quantify sources of human fecal material from homeless encampments near or adjacent to surface waters in the Lower San Diego River Watershed

~~Part IV, section D.. Recycled Water Systems~~

[17] As discussed in earlier findings, it is expected that Metropolitan Transit District will be named as responsible for complying with the Bacteria TMDL in a future amendment of the Small MS4 General Permit.

47. ~~Recycled water means water which, because of treatment of waste, is suitable for a direct beneficial use or a controlled use that would not otherwise occur and is therefore considered a valuable resource. (Water Code section 13050(n). In the San Diego river watershed, recycled water is primarily used for landscape irrigation. The San Diego Water Board has issued WDRs to three recycled water purveyors in the San Diego river watershed, as described in the following Findings. These WDRs implement statewide water recycling criteria contained in California Code of Regulations, title 22, division 4, chapter 3 (hereafter title 22). The WDRs allow the discharge of recycled water to land, but prohibit the discharge of recycled water runoff from end use application areas to surface waters.~~

48. ~~The Padre Dam Municipal Water District is regulated under Order No. 97-49, Waste Discharge Requirements and Water Recycling Requirements for the Production and Purveyance of Recycled Water for Padre Dam Municipal Water District, adopted by the San Diego Water Board on December 10, 1997. Order No. 97-49 establishes WDRs for the treatment and distribution of up to 2.0 million gallons per day of disinfected tertiary recycled water[18] from the Ray Stoyer WRF. Disinfected tertiary recycled water produced from the Ray Stoyer WRF is used mainly for landscape irrigation at use sites within the Santee HSA and the El Cajon Hydrologic Subarea, 907.13 (El Cajon HSA) which are located within the San Diego river watershed. Padre Dam Municipal Water District also discharges recycled water to Santee Lakes which flows to Sycamore Creek (a tributary of the San Diego river). Padre Dam Municipal Water District reported that about 642 acre-feet of recycled water was used for landscape irrigation at use sites located in Santee and El Cajon HSAs in 2015.~~

49. ~~The Ramona Municipal Water District is regulated under Order No. R9-2009-0005 (as amended), Master Reclamation Permit for Ramona Municipal Water District San Vicente Wastewater Treatment Plant, adopted by the San Diego Water Board on March 11, 2009. Order No. R9-2009-0005 establishes requirements for the treatment and distribution of recycled water from the San Vicente Water Reclamation Facility (San Vicente WRF). Recycled water produced from the San Vicente WRF is used for landscape irrigation at the San Vicente Golf Course and for irrigation of groves at Spangler Peak Ranch. The San Vicente Golf Course and Spangler Peak Ranch are located in the Gower Hydrologic Subarea, 907.23 which is in the San Diego river watershed. Disinfected tertiary recycled water is used for landscape irrigation at the San Vicente Golf Course. Disinfected tertiary recycled water is typically used for irrigation of groves at Spangler Peak Ranch, however, pursuant to Order No. R9-~~

[18] ~~Disinfected tertiary recycled water is filtered and disinfected to meet criteria specified in section 6031.230 of title 22. Section 60301.230 of title 22 also specifies that the median concentration of total coliform bacteria measured in the disinfected effluent does not exceed an Most Probable Number of 2.2 per 100 milliliters (mL) utilizing the bacteriological results of the last seven days for which analyses have been completed and the number of total coliform bacteria does not exceed an MPN of 23 per 100 mL in more than one sample in any 30-day period. No sample shall exceed an MPN of 240 total coliform bacteria per 100 mL.~~

~~2009-0005 disinfected secondary-2.2 recycled water[19] can be used for irrigation at the Spangler Peak Ranch. Ramona Municipal Water District reported that about 425 acre-feet of recycled water was used for irrigation at San Vicente Golf Course and Spangler Peak Ranch in 2015.~~

~~50.~~ ~~The City of San Diego is regulated under Order No. R9-2015-0091, Master Recycling Permit for the City of San Diego North City Water Reclamation Plant, adopted by the San Diego Water Board on December 16, 2015. Order No. R9-2015-0091 establishes requirements for the treatment and distribution of disinfected tertiary recycled water from the North City Water Reclamation Plant. Order No. R9-2015-0091 identifies the Mission San Diego HSA as one of the hydrologic subareas in which recycled water from the North City Water Reclamation Plant could potentially be used; however, the City of San Diego has not reported any recycled water use within the Mission San Diego HSA.~~

~~51.~~ ~~Recycled water produced and distributed by Padre Dam, the Ramona Municipal Water District, and the City of San Diego is typically in compliance with discharge specifications for total coliform bacteria specified in Master Recycling Permits and treatment criteria for total coliform bacteria specified in title 22. Disinfection and filtration requirements specified in title 22 are intended to ensure treatment, removal, and inactivation of bacteria and other pathogens to levels protective of human health. Recycled water, including residual levels of bacteria or pathogens, is primarily intended for landscape irrigation and is prohibited from being discharged to surface waters, including the San Diego river.~~

~~52.~~ ~~The Master Recycling Permits issued to the aforementioned recycled water agencies require the agencies to conduct periodic inspections of end use areas and prevent overwatering and excessive runoff from the end use areas. These measures are intended to ensure recycled water is used in a manner that is protective of public health and water quality, and to ensure compliance with the discharge prohibition to surface waters.~~

~~53.~~ ~~Disinfection and treatment to tertiary standards, as required by the Master Recycling Permits, results in the removal and inactivation of bacteria and pathogens to levels protective of human health, as measured by the presence or absence of total coliform. However, the effluent is not measured for the presence of the HF183 human genetic marker. Therefore, the degree to which effluent from these facilities may be causing or contributing to measurable levels of HF183 in the San Diego river or its tributaries is unknown.~~

~~[19] Pursuant to section 60301.220 of title 22, "disinfected secondary-2.2 recycled water" means recycled water that has been oxidized and disinfected so that the median concentration of total coliform bacteria in the disinfected effluent does not exceed a MPN of 2.2 per 100 mL utilizing the bacteriological results of the last seven days for which analyses have been completed, and the number of total coliform bacteria does not exceed an MPN of 23 per 100 milliliters in more than one sample in any 30 day period.~~

Section IV.D. On-Site Wastewater Treatment Systems

48. **On-Site Wastewater Treatment Systems**. On-Site Wastewater Treatment Systems (OWTS) also known as septic systems, are used to treat domestic wastewater from residences and commercial establishments in the Lower San Diego River Watershed that are not connected to community sewer systems and municipal wastewater treatment plants. Because domestic wastewater is primarily comprised of human waste, it contains human fecal material, bacteria, and illness-causing pathogens.

49. **OWTS Policy and Basin Plan Amendment.** The State Water Board adopted the Water Quality Control Plan for Siting, Design, Operation, and Maintenance of Onsite Wastewater Treatment Systems (OWTS Policy) on June 19, 2012. The OWTS Policy establishes a statewide, risk-based, tiered approach for the regulation and management of OWTS installations and replacements and establishes the level of performance and protection expected from OWTS. The San Diego Water Board adopted Resolution No. R9-2015-0008 on April 15, 2015, a Basin Plan amendment which incorporated the OWTS Policy into the Basin Plan. The Basin Plan amendment was approved by the State Water Board on November 17, 2015 and approved by the Office of Administrative Law on May 17, 2016 and became effective on the same day.

50. **County of San Diego Responsivities under OWTS Policy**. The OWTS Policy **includes** a conditional waiver of WDRs, which allows the San Diego Water Board to waive WDRs for qualifying OWTS and defer regulation of qualifying OWTS in San Diego County to the County of San Diego Department of Environmental Health (County DEH). According to County DEH, there are ~~approximately~~ about ~~17,5000~~ 8000 OWTS located in the Lower San Diego River Watershed that are regulated under the conditional waiver of WDRs. County DEH is the local agency responsible for permitting, regulating, and managing OWTS in San Diego County.

51. **Local Agency Management Plan (LAMP)**. Pursuant to the OWTS Policy, the County DEH has developed a Local Agency Management Plan (LAMP).[20] The LAMP contains the County DEH's criteria for design, siting, installation, and management of OWTS. OWTS with design flows of 10,000 gallons per day or less are regulated by the County DEH under the LAMP. Projects proposing OWTS with design flows greater than 10,000 gallons per day are required to submit a report of waste discharge to the San Diego Water Board to obtain WDRs. As of the date of this Investigative Order, the San Diego Water has not issued WDRs to any OWTS within the Lower San Diego River Watershed.

52. **Requirements to Protect Water Quality from OWTS Discharges**. Effluent from OWTS is typically dispersed using leach fields, in which effluent applied beneath the ground surface infiltrates into the soil. As the effluent infiltrates into the soil; mechanisms such as microbial predation, filtration/adsorption, and inactivation (die-off) remove and attenuate pathogenic bacteria, viruses, and protozoa. The OWTS Policy and LAMP also both establish setback distances to be maintained between

[20] The County DEH's LAMP was approved by the San Diego Water Board by letter dated, April 29, 2015.

wastewater treatment components and wastewater dispersal areas and surface waters. Setbacks are included as a means of reducing pathogenic risks by coupling pathogen inactivation rates with groundwater travel time to a well or other potential exposure route (e.g. water contact activities). Setbacks also provide additional attenuation of other wastewater constituents through physical, chemical, and biological processes. Section 11.4 of the OWTS Policy specifies that any OWTS that has affected, or will affect, groundwater or surface water to a degree that makes it unfit for drinking or other uses (e.g., water contact activities) or is causing a human health or other public nuisance condition shall be modified or upgraded to abate its impact. Section 11.1 of the OWTS Policy also requires property owners to repair or replace any OWTS that has pooling effluent or that discharges effluent to the ground surface.

53. **Potential OWTS Water Quality Impacts**. Despite the pathogen removal mechanisms inherent in OWTS in areas where groundwater and surface waters are interconnected, effluent discharged from OWTS can potentially be transported from shallow groundwater to surface waters and adversely impact surface waters. In addition, in the event an OWTS fails and effluent from the OWTS pools on the ground surface, the effluent could potentially runoff from the leach field and introduce pathogens to surface waters. Groundwater and surface waters in areas with a large concentration of OWTS are also more susceptible to being adversely impacted by OWTS.

54. **County of San Diego Responsibilities under this Investigative Order.** The County DEH estimated that there are about 8000 OWTS located within the Lower San Diego River Watershed. Areas in the Lower San Diego River Watershed with greater densities of OWTS include Lakeside and Eucalyptus Hills. If groundwater and surface waters are interconnected in those areas, there could be a potential for OWTS to adversely impact surface waters. Improperly functioning or failing OWTS in such areas also have a higher likelihood to adversely impact groundwater or surface water. San Diego County's DEH, does not discharge waste from the OWTS it regulates so is not named as the responsible party in this Investigative Order to investigate and quantify contributions of human fecal materials to surface waters within the Lower San Diego River Watershed. However, pursuant to Water Code section 13225, subdivision (c), San Diego County's DEH is required to report available information that can inform the investigation to quantify the extent of the contribution, if any, of human fecal materials in discharges to the Lower San Diego River Watershed from OWTS. To comply in this manner, San Diego County DEH must prepare a work plan to quantify the extent of the contribution, if any from OWTS, pursuant to Directive 3 of this Investigative Order. This work plan can be prepared separately for the OWTS treated effluent portion only, or as part of the larger work plan, consistent with the requirements in Directive 3.

PART V. OTHER REGULATORY CONSIDERATIONS

55. **Interim Remedial Actions.** ~~The~~ Dischargers ~~shall~~ designated as Responsible Parties are expected to continue to take all steps necessary to reduce, eliminate or prevent the unauthorized discharges described in this Investigative Order within their jurisdiction through compliance with applicable WDRs and NPDES permits, including the full use of their separate legal authorities, statues, ordinances, permits, contracts or similar means to require compliance.

56. **Basis for Requiring Technical and Monitoring Reports**. . Water Code section 13267 authorizes the San Diego Water Board to investigate the quality of the waters in its region and in doing so it may require dischargers, past dischargers, or suspected dischargers to provide specified reports so long as the burden, including costs, of these reports, bears a reasonable relationship to the need for the reports and the benefits to be obtained from the reports. The Board also must provide the named Dischargers with a written explanation as to the need for the reports and identify the evidence that supports requiring them to provide the reports. Applicable findings of this Investigative Order establish that the County of San Diego, the City of San Diego, the City of La Mesa, the City of El Cajon, the City of Santee, the San Diego County Sanitation District, the Padre Dam Municipal Water District, San Diego State University, the Metropolitan Transit System, and the California Department of Transportation have discharged, are discharging or are suspected of having discharged or discharging waste within the Lower San Diego River Watershed and are properly included as Dischargers or responsible parties subject to the requirements of this Investigative Order. The evidence that supports requiring these entities to provide the reports is set forth in the above findings. Section 13225, subdivision (c), of the Water Code authorizes the San Diego Water Board to require "any state or local agency to investigate and report on any technical factors involved in water quality control or to obtain and submit analyses of water; provided that the burden, including costs, of such reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained therefrom." San Diego County DEH is required to participate in this Investigative Order pursuant to Water Code section 13225, subdivision (c), as discussed in Finding 54. ~~Water Code section 13267 provides that the San Diego Water Board may require dischargers, past dischargers, or suspected dischargers to furnish those technical or monitoring reports as the San Diego Water Board may specify, provided that the burden, including costs, of these reports, must bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports.~~

57. **Need for Technical and Monitoring Reports**. The San Diego Water Board is investigating the quality of the waters in the Lower San Diego River Watershed. The technical and monitoring reports required under this Investigative Order are needed because human fecal material, as indicated by HF183, elevated bacteria levels, and pathogens, are present in surface waters of the Lower San Diego River Watershed. The risk of GI illness in humans after water-contact activities is elevated by the presence of this human fecal waste material in the flowing water. This condition is occurring despite the requirements of multiple NPDES permits and WDRs that prohibit the discharge of human fecal materials to receiving waters in the Lower San

Diego River and its tributaries. The presence of human fecal materials is of significant concern because it adversely affects or threatens to adversely affect recreation and shell fish harvesting beneficial uses, ~~threatens human health upon people's water contact recreation activities and negatively affect economy (see more details in Finding No. 7). This information is needed to: (1) identify and quantify the relative contributions of suspected sources of human fecal material to the San Diego River, and (2) determine if the management measures in use by the various dischargers in their respective programs are adequately addressing the REC-1, REC-2, and SHELL beneficial use impairments caused by the presence of human fecal material in the San Diego Rriver, its tributaries, and the downstream beach coastal waters. With the required information, the San Diego Water Board expects to be able to effectively evaluate the need and scope necessary for amendments to the Bacteria TMDL, permits issued by the San Diego Water Board, or reduce instances of human fecal material reaching surface waters, thereby reducing water quality impairments. While the costs of this investigation, which is anticipated to include complex and resource-intensive studies, cannot be known with any certainty, the burden of incurred costs are expected to be reasonable and bears a reasonable relationship to the benefits to water quality and human health to be gained considering the significant sources and serious health risks. In large part, the monitoring required under this Investigated Order is consistent with the scope of what is required in the NPDES permits, and WDRs cited in previous Findings.~~ The required reports are expected to result in the identification and quantification of the relative contributions of suspected sources of human fecal material to the Lower San Diego River Watershed, and will facilitate determinations about whether management measures used by the various dischargers in their respective programs are adequately addressing the REC-1, REC-2 and SHELL beneficial use impairments caused by the presence of human fecal material in the Lower San Diego River, its tributaries and the downstream beach coastal waters. With the required information, the San Diego Water Board expects to be able to effectively evaluate whether amendments to the Bacteria TMDL, permit modifications or other regulatory actions are necessary and appropriate to reduce and control discharges of human fecal material to surface waters, thereby reducing water quality impairments.

58. **Cost Considerations.** In requiring the reports described in the directives of this Investigative Order, the San Diego Water Board considered the costs presented in a draft conceptual work plan proposal prepared by SCCWRP in concert with the City of San Diego and the County of San Diego (SCCWRP proposal).[21] The study objectives and proposed scope of work contained in the SCCWRP proposal are generally consistent with the requirements of this Investigative Order and include proposals for

[21] The draft workplan proposal is contained in *Quantifying Sources of Human Fecal Contamination Loading ot the San Diego River*, *A Conceptual Workplan developed by the Southern California Water Research Project*, February 20, 2019, SCCWRP available on the San Diego Water Board website at https://www.waterboards.ca.gov/sandiego/water_issues/programs/san_diego_river_io/docs/Fecal_Loading_Workplan_20190314.pdf (as of May 10, 2019).

complex and resource-intensive studies with a projected cost totaling $4.14 million dollars. The projected cost is broken up into seven tasks as set forth below:

- Task 1 establishing an Advisory Committee for decision making, independent technical review, and creating project documentation at an estimated cost of $70,000;
- Task 2 microbial community profiling to confirm sanitary sewers are a contributor of human waste followed by discrete measurements of volumetric loss from sanitary sewers to quantify exfiltration rates at an estimated cost of $960,000;
- Task 3 assessing the integrity of private sewer laterals and septic systems based on age, materials of construction, geology, proximity to receiving waters, and history of spills using visual inspections, closed circuit television, and pressure/die/smoke testing for laterals; and video camera septic systems at an estimated cost of $650,000;
- Task 4 performing a census[22] of people inhabiting in or near waterbodies in the Lower San Diego River Watershed using a variety of techniques including aerial surveys using manned or unmanned aircraft with high-resolution infrared sensors and on-the ground counts and quantifying the proportion of people defecating in or near the river at an estimated cost of $1,885,000;
- Task 5 using real time sensors and automated equipment to detect and sample illicit discharge events from recreational vehicles at an estimated cost of $260,000
- Task 6 develop and implement a monitoring program that surveys the presence of HF183 during dry weather to supplement ongoing illegal connection and illicit discharge dry weather monitoring at an estimated cost of $185,500; *and*
- Task 7 perform interim and final reporting and data management analysis required by the Investigative Order at an estimated cost of $130,000.

While the precise costs of preparing the technical report(s) required by this Investigative Order may not be exactly as projected in the draft conceptual work plan, the San Diego Water Board concludes that the burden of incurred costs under this Investigative Order are expected to be similar to the projected costs noted above. The estimated costs bear a reasonable relationship to the benefits to water quality and human health to be gained considering the significant sources of pollution and associated public health risks involved. In large part, the monitoring required under this Investigative Order is consistent with the scope of what is required in the NPDES permits, and WDRs cited in previous Findings of this Investigative Order.[23] Moreover, in order to achieve maximum efficiency and economy of resources the Responsible

[22] Three census are proposed during the wet season to assess variability over time.

[23] For example, MS4 Copermittees in the Lower San Diego River Watershed are required under the Regional MS4 Permit to implement Illicit Discharge Detection and Elimination (IDDE) programs to actively detect and eliminate illicit discharges and improper disposal, including human fecal materials, into the MS4s. Under the Bacterial TMDL, the MS4 Copermittees are required to reduce fecal indicator bacteria waste loads within each of their jurisdictions during both dry and wet weather conditions.

Parties can collaborate on ways to address the directives of this Investigative Order. Such a collaborative effort would enable the sharing of technical resources, trained personnel, consultants and associated costs and provide an integrated approach to help ensure that the relative load contributions from each of the potential sources are quantified consistently and accurately.

59. **California Environmental Quality Act.** The issuance of this Investigative Order is an enforcement action taken by a regulatory agency and is categorically exempt from the provisions of the California Environmental Quality Act (CEQA) pursuant to section 15321(a) (2), chapter 3, title 14 of the California Code of Regulations (CCR). This action is also exempt from the provisions of CEQA in accordance with section 15061(b)(3) of chapter 3, title 14 CCR because it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment. Issuance of this Investigative Order is also exempt from CEQA under section 13389 of the Water Code to the extent the Order relies on the authority provided in Water Code section 13383 as an additional basis for the required reports.

60. **Qualified Professionals.** ~~The Dischargers'~~ Responsible Party reliance on qualified professionals promotes proper planning, implementation, and long-term cost-effectiveness of investigations. Professionals should be qualified, licensed where applicable, and competent and proficient in the fields pertinent to the required activities. California Business and Professions Code sections 6735, 7835, and 7835.1 require that engineering and geologic evaluations and judgments be performed by or under direction of licensed professionals.

61. **Public Notice.** The San Diego Water Board has notified the Responsible Parties and interested agencies and persons of it's intent to adopt this Investigative Order and has provided them with an opportunity to submit their written comments and recommendations. The San Diego Water Board has also provided an opportunity for the Responsible Parties and interested agencies and persons to submit oral comments and recommendations at a public hearing.

62. **Consideration of Public Comment**. The San Diego Water Board, in a public meeting, heard and considered all comments pertaining to this Investigative Order.

PART VI. INVESTIGATIVE ORDER DIRECTIVES

IT IS HEREBY ORDERED, pursuant to Water Code section 13267 ~~and~~ 13383,[24] and 13225 that the Cities of San Diego, Santee, El Cajon, La Mesa, the County of San Diego, the San Diego County Sanitation District, the Padre Dam Municipal Water District, ~~the Ramona Municipal Water District,~~ San Diego State University, Metropolitan Transit System, and the California Department of Transportation (~~Dischargers~~ Responsible Parties) must submit to the San Diego Water Board:

~~***Technical and Monitoring Reports***~~

1. **Investigation to Identify Sources of Human Fecal Material Discharges in the Lower San Diego ~~r~~River watershed**. No later than 48 months after the effective date of this Investigative Order~~June 30, 2022~~, the ~~Dischargers~~ Responsible Parties must submit the results (Final Investigative Study Report) of an investigative study, or studies, to identify and quantify sources and pathways of human fecal material discharges, from their respective jurisdictions[25], to the Lower San Diego River and its tributaries.

   Suspected sources or pathways of human fecal material discharges to the San Diego river are described in Finding ~~14~~ 21 and restated below:

   - Sanitary sewer overflows (SSO) from publicly-owned sewer collection systems;
   - Sewage spills from privately-owned lateral sewer lines;
   - Exfiltration from publicly-owned sanitary sewer collection systems(a type of SSO) and, privately-owned lateral sewer lines (a private lateral sewage discharge) ;
   - Faulty , and privately-owned OWTS;
   - Illegal connections to MS4s;

[24] Water Code section 13383 provides that the San Diego Water Board may establish monitoring and reporting requirements for Dischargers (e.g., MS4 agencies or POTWs) who discharge, or proposed to discharge, pollutants to navigable waters of the United States and as applicable, this section provides additional authority for the requirements in this Investigative Order. The San Diego Water Board recognizes that Water Code section 13383 may not be applicable to all Dischargers named as a responsible party in this Investigative Order.

[25] Responsible Parties shall comply with the requirements of this Investigative Order to the fullest extent of their legal authorities. A Responsible Party is not required to investigate suspected sources or pathways of human fecal material discharges to the extent it lacks legal authority and cannot reasonably obtain legal authority (such as access to private property) to conduct the required investigations. However, to maximize the accuracy and the cost-effectiveness of investigations, Responsible Parties are encouraged to communicate and coordinate their investigation efforts and take a holistic study approach at a watershed scale.

- Illicit discharges to MS4s; and

- Direct or indirect deposition from homeless encampments.; ~~and~~

- ~~Treated effluent from wastewater treatment plants.~~ To some extent, the human associated fecal marker, HF183, may be present in treated effluent from Padre Dam Water District's Ray Stoyer Water Reclamation Facility.

In the Final Investigative Study Report the ~~Dischargers~~ Responsible Parties must describe the following information for each of the above applicable suspected sources or pathways of human fecal material discharges to the Lower San Diego River Watershed:

a. Whether or not the suspected source or pathway is an actual source or pathway of human fecal material discharges to either the San Diego river or its tributaries;

b. The loading rate(s) of each known ~~source~~ category of human fecal material into the environment;

c. The circumstances causing discharges of each known source of human fecal material; and

d. How the data obtained in this Investigation will be used to assess the effectiveness of the ~~Discharger's~~ Responsible Parties programs in preventing discharges of human fecal material into the Lower San Diego Rver, its tributaries, and downstream beach coastal waters.

2. **Conceptual Watershed Model.** The ~~Dischargers~~ Responsible Parties shall begin the Investigative Study by first constructing a conceptual watershed model (CWM) based on available data applicable to the Lower San Diego River watershed on the occurrence of human fecal material discharges from the suspected sources or pathways of human fecal material described in Directive 1 of this Investigative Order. The CWM shall identify sources of human fecal material discharges; the waste constituent composition and concentration; affected media (soil and water), three-dimensional spatial extent and temporal variability of the waste constituents; routes of waste constituent migration; and the location of actual and potential points of release to the Lower San Diego River Watershed.

The CWM shall be refined and updated as the Investigative Study data becomes available. The initial CWM shall include a discussion of the level of uncertainty of conclusions, outline data gaps in the initial CWM, and describe additional work needed to complete the CWM. Updates to the CWM shall be included in all future reports submitted. The initial CWM shall be submitted with the Investigative Study Work Plan described in Directive 3 ~~4~~ of this Investigative Order.

3. **Investigative Study Work Plan Describing Investigative Study Milestones.** No later than 180 days after the effective date of this Investigative Order, unless permission for a later date has been granted by the San Diego Water Board Executive Officer,~~January 7, 2019~~, the ~~Dischargers,~~ Responsible Parties must submit an Investigative Study Work Plan describing the proposed actions to be conducted to complete the investigative study described in Directive 1. The Investigative Study Work Plan can be prepared by an individual Responsible Party or through participation in a coalition of the Responsible Parties preparing a joint Work Plan, or both as determined by the Responsible Party. The ~~Dischargers~~ Responsible Parties must implement the Investigative Study Work Plan within ~~60~~ 90 days of submittal, unless otherwise directed by the San Diego Water Board. The Investigative Study Work Plan must include, but not be limited to, the following:

   a. A Quality Assurance Project Plan (QAPP) describing the objectives and organization of the Investigative Study, functional activities, and quality assurance/quality control to be conducted. The purpose of the QAPP is to ensure that the data collection and analysis is consistent with the type and quality of data needed to meet the goals and objectives of the Investigative Study. The QAPP shall include at least the five sections listed below. A QAPP template is available at:

      http://www.waterboards.ca.gov/water_issues/programs/swamp/tools.shtml

      (1) Project management including ~~Discharger~~ Responsible Party roles and responsibilities;

      (2) Data generation and acquisition including sample process design (i.e., monitoring locations, frequencies, as well as sample matrixes and target compounds) and contingencies for monitoring and collecting additional samples;

      (3) Standard operating procedures for field sampling methods and laboratory analytical methods;

      (4) Data Assessment and Oversight;

      (5) Data Validation and Usability.

   b. The initial CWM described in Directive 2 of this Investigative Order.

   c. A description of how each of the Investigative Study Work Plan activities will accomplish the goal of identifying and quantifying sources and pathways of human fecal material discharges in the Lower San Diego River Watershed as described in Directive 1;

d. A schedule for completion of activities, including semiannual and final reporting; and

e. Modifications as required by the San Diego Water Board upon Investigative Study Work Plan review.

4. **Semiannual Progress Reports**. The ~~Dischargers~~ Responsible Parties shall prepare and provide written semiannual progress reports as provided below. The semiannual progress reports can be prepared by an individual Responsible Party or through participation in a coalition of the Responsible Parties preparing a joint progress report, or both as determined by the Responsible Party.

   a. **Required Information**. Semiannual progress reports must: (1) describe the actions taken toward achieving compliance with this Investigative Order during the previous six months; (2) include all results of sampling, tests, and all other verified or validated data received or generated by or on behalf of the ~~Dischargers~~ Responsible Parties during the previous six months in the implementation of the actions required by this Investigative Order; (3) describe all activities including, data collection and other field activities which are scheduled for the next six months and provide other information relating to the progress of work, including, but not limited to, a graphical depiction of the progress of the investigative study; (4) identify any modifications to the Investigative Study Work Plan or other work plan(s) that the ~~Dischargers~~ Responsible Parties proposed to the San Diego Water Board or that have been approved by San Diego Water Board during the previous six months; and (5) include information regarding all delays encountered or anticipated that may affect the future schedule for completion of the actions required, and a description of all efforts made to mitigate those delays or anticipated delays.

   b. **Submittal Schedule**. All semiannual progress reports shall be submitted to the San Diego Water Board by the (15th) day of ~~January~~ April and ~~July~~ October of each year following the effective date of this Investigative Order. Submission of these progress reports shall continue until submittal of the Final Investigative Study Report verifying completion of the investigative study or studies required under Directive 1 of this Investigative Order.

Provisions

5. **Qualified Professionals**. All reports, plans, and documents required under this Investigative Order must be prepared under the direction of appropriately qualified professionals. A statement of qualifications and license numbers, if applicable, of the responsible lead professional and all professionals making significant and/or substantive contributions must be included in reports submitted by the ~~Dischargers~~ Responsible Parties. The lead professional performing the engineering and geologic evaluations and judgements must sign and affix their professional geologist or civil engineer registration stamp to all plans, technical reports, or documents submitted to

the San Diego Water Board.

6. **Certified Laboratories**. All samples must be analyzed by California State-certified laboratories using methods approved by the USEPA, or otherwise approved by the San Diego Water Board, for the type of analysis to be performed.

7. **Laboratory Analytical Report(s)**. Any report presenting new analytical data is required to include the complete Laboratory Analytical Report(s). The Laboratory Analytical Report(s) must be signed by the laboratory director and contain:

   a. Complete sample analytical reports;

   b. Complete laboratory quality assurance and quality control (QA/QC) reports;

   c. A discussion of the sample and QA/QC data; and

   d. A transmittal letter that indicates if all the analytical work was supervised by the director of the laboratory and contains the following statement:

      "All analyses were conducted at a laboratory certified for such analyses by the California Department of Public Health in accordance with USEPA procedures or otherwise approved by the San Diego Water Board."

8. **Signatories to Reports**. All documents submitted to the San Diego Water Board must be signed and certified.

   a. All reports required by this Investigative Order must be signed as follows:

      (1) For a corporation, by a principal executive officer of at least the level of vice-president;

      (2) For a partnership or sole proprietorship, by a general partner or the proprietor, respectively;

      (3) For a municipality, state, federal or other public agency, by either a principal executive or ranking elected official; or

      (4) By a duly authorized representative, of a person designated above in Directive 8.a.(1), 8.a.(2), or 8.a.(3). A person is a duly authorized representative only if:

         (a) The authorization is made in writing by a person described in paragraph 8.a above;

         (b) The authorization specifies either an individual or position having responsibility for the overall operation of the regulated facility or activity; and

(c) The written authorization is submitted to the San Diego Water Board.

b. **Certification**. Any person signing a document required by this Investigative Order must make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

9. **Electronic Reporting**. All documents submitted to the San Diego Water Board in compliance with this Investigative Order must be submitted in electronic, Portable Document Format (PDF), unless otherwise directed. All electronic format documents required under this Investigative Order must be submitted to:

Executive Officer
SanDiego@waterboards.ca.gov
California Regional Water Quality Control Board
San Diego Region
2375 Northside Drive, Suite 100
San Diego, CA 92108
Attn: Laurie Walsh, PE, Storm Water Management Unit
PIN No. 794853

10. **Investigative Order Actions**. This Investigative Order may be amended or ~~amended,or~~ rescinded~~, or updated~~ by the Executive Officer. The ~~Dischargers~~ Responsible Parties may propose changes or alternatives to the requirements in this Investigative Order if a valid rationale for the changes is shown. The filing of a request by a Discharger for amending or ~~amending, or~~ rescinding ~~, or updating~~ this Investigative Order, or notification of planned changes or anticipated noncompliance does not stay any condition of this Investigative Order.

Notifications

11. **Enforcement Action**. The San Diego Water Board reserves its right to take any enforcement action authorized by law for violations of the terms and conditions of this Investigative Order.

12. **Duty to Comply**. Failure to comply with requirements of this Investigative Order may subject the ~~Dischargers~~ Responsible Parties to enforcement action, including but not limited to administrative enforcement orders requiring the ~~Dischargers~~ Responsible Parties to cease and desist from violations, imposition of administrative civil liability,

pursuant to Water Code section 13268, not to exceed $1,000 (one thousand dollars) per day if imposed administratively ($5,000 (five thousand dollars) per day if imposed judicially) for each day in which the violation occurs and section 13385 in an amount not to exceed $10,000 (ten thousand dollars) per day if imposed administratively ($25,000 (twenty-five thousand dollars) per day if imposed judicially) for each day in which the violation occurs, referral to the State Attorney General for injunctive relief, and referral to the District Attorney for criminal prosecution.

13. **Filing of Water Quality Petitions.** Any person aggrieved by this Investigative Order may petition the State Water Board to review the Investigative Order in accordance with Water Code section 13320 and the title 23 CCR sections 2050 and following. The State Water Board must receive the petition by 5:00 p.m., 30 days following the date of this Investigative Order. Copies of the laws and regulations applicable to filing petitions may be found on the State Water Board website at http://www.waterboards.ca.gov/public_notices/petitions/water_quality or will be provided upon request.

    For instructions on how to file a petition for review, see the State Water Board website at: http://www.waterboards.ca.gov/public_notices/petitions/water_quality/wqpetition_instr.shtml.

I, David W. Gibson, Executive Officer, do hereby certify that this Order is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Diego Region, on June 12, 2019 .

Ordered By: ____TENTATIVE_____

David W. Gibson
EXECUTIVE OFFICER
DATE