December 11, 2019
Item No. 11
Supporting Document No. 6

California Regional Water Quality Control Board
San Diego Region

Errata Sheet No. 1 for

Response to Comments Report

Tentative Order R9-2019-0166
NPDES No. CA0107433

Waste Discharge Requirements for the City of Oceanside
San Luis Rey Water Reclamation Facility, La Salina Wastewater Treatment Plant, and
Mission Basin Groundwater Purification Facility
Discharge to the Pacific Ocean through the Oceanside Ocean Outfall

December 11, 2019

The following changes are proposed by San Diego Water Board to the Response to Comments Report document included as Supporting Document No. 4 for Item No. 11 on the San Diego Water Board December 11, 2019 Board Meeting Agenda. Changes to the Tentative Order are shown in underline/~~strikeout~~ format to indicate added and removed language, respectively.

1.6 Comment – Human Marker HF-183 Monitoring Requirements and Costs

The City strongly objects to Receiving Water Monitoring Requirement VI.B.2 that would require the quarterly collection of receiving water samples for the human fecal marker HF-183 for all nearshore and offshore stations. The Tentative Order requires that the HF-183 samples be filtered upon collection and stored at a temperature of -80° C. The stored samples are to then be analyzed for the HF-183 marker using EPA Method 1696 if the associated fecal coliform samples from the same location exceed the Ocean Plan body contact single sample maximum limit for fecal coliform. The proposed HF-183 monitoring represents a significant monitoring cost and imposition on the City without providing corresponding value. Immediate implementation of the proposed HF-183 monitoring is thus simply not feasible.

The stated reason for this monitoring is: “Human Marker HF-183 monitoring is required to confirm the presence of human fecal material when the single sample maximum receiving water limitation for fecal coliform is exceeded.” Testing for human marker does not identify the source of the exceedance, but only identifies that the bacteria collected potentially contained a human source. The proposed monitoring is neither required nor useful for compliance assessment. The Tentative Order (see page F-49 of the Fact Sheet)

acknowledges that no receiving water limitations exist for HF-183. The mandated HF-183 monitoring does not address the key monitoring questions applicable to the discharge. The Monitoring and Assessment element of the Regional Water Board's Practical Vision emphasizes a question-based approach for monitoring. The Tentative Order does not follow this approach, and instead justifies the imposition of HF-183 monitoring is being required for "information purposes" without stating the specific questions to be addressed or identifying how the collected information will be used.

This monitoring cannot be compared any promulgated water quality standard and cannot be guaranteed to be valid or accurate. "The current lack of a formal standardized method protocol for any HF-183 method poses a large obstacle for integration into water management frameworks." See Improved HF-183 Quantitative Real-Time PCR Assay for Characterization of Human Fecal Pollution in Ambient Surface Water Samples, Green, et al., Applied and Environmental Microbiology, May 2014. Very recent 2019 studies show that freshwater Bacteroides were identified in uncontaminated water samples, demonstrating that measures of total Bacteroides do not reflect fecal pollution. In addition, a comparison of two previously described human Bacteroides assays (HB and HF-183/BacR287) in municipal wastewater influent and sewage-contaminated urban water samples revealed identical results. See Highly Specific Sewage-Derived Bacteroides Quantitative PCR Assays Target Sewage-Polluted Waters, Feng, McLellan, Appl Environ Microbiol, 2019 Mar 6.

Estimates were retrieved from a local Southern California laboratory qualified to collect, handle and process host-specific genetic marker samples. Below is an estimate of a conservative scenario for annual and permit-term costs associated with HF-183 sample processing.

Assay/Service	**Price**	**Quantity or #Samples**	**Frequency**	**Cost**
One-time Field Sampling Training (Molecular grade clean hands technique)	$690	1	1	$690
Filtration of water sample	$45	24	4	$4,320
DNA/RNA Extraction & archival from filtered water sample (1- year of cold storage included)	$49	24	4	$4,704
HF-183 Assay via qPCR (includes filtration, extraction, controls)	$189	24	4	$18,144

HF-183 Assay via **ddPCR** (includes filtration, extraction, controls) – *included herein only as reference – not part of annual total*	$369	24	4	($35,424)
Cooler Prep	$175	1	4	$700
Annual Total (Note 1)	--	--	--	$28,558
Over the life of 5-year NPDES permit (Notes 2 and 3)	--	--	--	$142,790

Note 1 for above table: Annual Total (assumes worst-case scenario of FIB exceedance at every station) – includes one-time training, filtration & extraction of samples, qPCR run, and sample cooler preps.

Note 2 for above table: costs herein do not include courier fees for sample transport to contract lab

Note 3 for above table: Digital Droplet PCR (ddPCR) is not included in the annual total; this method is optional to confirm target gene copy counts and reduce quantification inhibition (increased accuracy).

Because of these downfalls and problems with using Human Markers, the burden of this monitoring, including costs, are unreasonable and do not bear a reasonable relationship to the need for or benefits obtained from this additional data. (California Water Code §13267(b), §13225(c), and §13000).

Response

The San Diego Water Board does not agree with the removal of the HF-183 monitoring requirements and has concluded the monitoring costs are reasonable and not overly burdensome.

The City states a conservative estimate of HF-18 monitoring costs for a calendar year is $28,558. However, this estimate is the worse-case scenario assuming every offshore and nearshore monitoring location exceeds the fecal coliform receiving water limitation during every sampling event. From 2011 to 2019, there were 28 fecal coliform receiving water exceedances at the offshore monitoring stations. Assuming one fecal coliform exceedance per quarter and using the City's cost estimates, the HF-183 monitoring requirements would cost the City approximately $10,480 per year. This estimate includes filtration, cooler prep, and DNA/RNA extraction and storage, but does not include the one-time field sampling training cost of $690.

Monitoring for HF-183 when a fecal coliform exceedance occurs will provide a valuable line of evidence for determining the potential sources of receiving water bacteria exceedances. The City asserts that "Testing for human marker does not identify the source of the exceedance, but only identifies that the bacteria collected potentially contained a human source." While testing for the human marker may ~~will~~ not solely identify the source of the exceedance, it may ~~can~~ rule out the Oceanside Ocean Outfall as a source if the human marker HF-183 is not detected. If the human marker is consistently detected when there are fecal coliform exceedances, it suggests that the source of the exceedances may be due to the Oceanside Ocean Outfall as there are limited sources of the human marker HF-183 in the vicinity of the Oceanside Ocean Outfall. This finding would warrant further investigation into the causes of receiving water bacteria exceedances. Furthermore, total and fecal coliforms, and enterococci (collectively fecal indicator bacteria or FIB) receiving water limitation exceedances occur more frequently at monitoring locations near the Oceanside Ocean Outfall than at the reference monitoring locations located one mile north and south of the Oceanside Ocean Outfall, with 65 exceedances occurring near the outfall and only 6 exceedances occurring at the reference monitoring locations.

The City states the HF-183 monitoring requirements is not consistent with the San Diego Water Board's Practical Vision that emphasizes a question driven monitoring approach as the Tentative Order does not state the specific question to be addressed with the HF-183 monitoring. The City's statement is incorrect, Attachment E section IV.B, question number 9 of the Tentative Order states "Is fecal indicator bacteria present outside the zone of initial dilution? If so, is the bacteria human source?" The HF-183 will determine if the fecal bacteria exceedance correlate to the presence of the HF-183. As previously mentioned, there are limited sources of HF-183 in the vicinity of the Oceanside Ocean Outfall.

The City quotes "The current lack of a formal standardized method protocol for any HF-183 method poses a large obstacle for integration into water management frameworks." While this may be true for developing water quality objectives for HF-183, it does not apply to the HF-183 monitoring requirements in the Tentative Order as there is currently no receiving water limitation for HF-183, and the monitoring is for informational purposes only.

For the reasons noted above, the San Diego Water Board believes the cost of the HF-163 monitoring is reasonable. The information obtained will provide a line of evidence for identifying potential sources of FIB receiving water limitation exceedances that occur more frequently around the Oceanside Ocean Outfall than at the offshore reference stations located one mile north and south of the Oceanside Ocean Outfall. However, to reduce monitoring costs further, the San Diego Water Board agrees to remove the requirement

to monitor for HF-183 at the nearshore monitoring locations as there have been no FIB exceedances at these monitoring locations.

The San Diego Water Board also agrees that additional information should be included in the Fact Sheet on the number of receiving water exceedances near the Oceanside Ocean Outfall.

The San Diego Water Board has modified the following sections of the Tentative Order:

Attachment E section IV.B.1, Table E-7, Note 4

4. Samples shall be collected at the offshore monitoring locations A1-A5, B1 and B2 and analyzed i~~I~~n accordance with section IV.B.2 of this MRP.

Attachment E section IV.B.2.a

Sample Collection. The Discharger shall collect samples for the Human Marker HF-183 concurrently with samples collected for fecal coliform at the offshore monitoring locations A1 through A5, B1, and B2, and in accordance with EPA method 1696, or an alternative method proposed by the Discharger with comparable accuracy, unless the alternative method is not accepted by the San Diego Water Board. Samples shall be filtered through a membrane filter as soon as possible, but no later than 6 hours after sample collection. Following filtration, the membrane filter shall be stored at -80 ºC for later analysis.

Attachment F section VII.B.2.d

Results for the Human Marker HF-183 is used for informational purposes only, there is no receiving water limitation for the Human Marker HF-183. This requirement was included ~~because of~~ due to the 65 ~~large number of~~ exceedances of bacteria receiving water limitations at the offshore monitoring locations located near the OOO.

Action Taken

Modified Attachment E section IV.B.1, Table E-7, Note 4; Attachment E section IV.B.2.a; and Attachment F section VII.B.2.d.

1.8 Comment – Climate Change Action Plan

No authority has been provided for these new requirements that do not belong in an NPDES permit and would be more logical to be included in a 13267 order. If maintained over objection, the permit must include the authority for this provision as well as a 13267 analysis.

Response

As stated in Attachment F of the Tentative Order, climate change conditions may fundamentally alter the way wastewater facilities are designed and operated. Increased carbon dioxide emissions may trigger changes to climate patterns,

including sea level rise, costal storm surges, more erratic and extreme weather events, more intense wet seasons with increased frequency and severity of flooding, and changes to ocean water chemistry. These changes to the sea level and weather patterns may significantly affect wastewater facilities (e.g., through flooding, increased influent flows during wet weather, and heat waves). The federal regulations, at 40 CFR section 122.41(e), require that dischargers properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used to achieve compliance with the conditions of the permit. Facilities may need to enhance resilience to impacts of climate change and increase operational flexibility to ensure proper operations and maintenance of their facilities. Increased operational resilience and flexibility may reduce vulnerability of wastewater infrastructure to flooding, storm surges, and sea level rise. In response to the impacts of climate change, the Governor's Executive Order N-10-19 directs state agencies to prepare a water resiliency portfolio that meets the needs of California's communities, economy, and environment. The State Water Board's Resolution No. 2017-0012, Comprehensive Response to Climate Change, and the San Diego Water Board's Resolution No. R9-2018-0051, Addressing Threats to Beneficial Uses from Climate Change, also require a proactive approach to climate change in all state and regional actions.

Water Code section 13383 provides ample justification for the San Diego Regional Board to impose the Climate Change Action Plan as part of the Monitoring and Reporting Program in Attachment E of the Tentative Order. To the extent Water Code section 13267 provides additional authority, it does not require an "analysis" as alleged by FPUD. Instead, Water Code section 13267 requires a consideration by the San Diego Water Board that the burden, including costs, of the report bears a reasonable relationship to the need of the report and the benefits to be obtained from the report. Having considered the burdens of the Climate Change Action Plan, the burdens are anticipated to bear a reasonable relationship to the need for and multiple benefits obtained from the plan related to decreased vulnerability and increased flexibility and resiliency to respond to climate change impacts. To the extent that FPUD may also make use of existing climate-change-related plans to comply with the requirement, any such burdens may be further reduced.

~~The California Public Resources Code (Public Resources Code) recognizes that anthropogenic greenhouse gas emissions responsible for climate change are also driving major shifts in the chemical properties of the world's oceans (Public Resources Code section 35630(c)). Furthermore, Governor Newsom's Executive Order N-10-1920 directs state agencies to prepare a water resiliency portfolio that meets the needs of California's communities, economy, and environment. The State Water Board's Resolution No. 2017-0012, *Comprehensive Response to Climate Change*, and the San Diego Water Board's Resolution No. R9-2018-~~

~~0051, *Addressing Threats to Beneficial Uses from Climate Change,* also require a proactive approach to climate change in all state and regional actions.~~

Action Taken

The Tentative Order Fact Sheet has been modified in Attachment F, section VII.D.1, Climate Action to include the response above as follows:

….. The changes to the water temperature and pH may affect how the receiving waters reacts to the discharges.

The California Public Resources Code (Public Resources Code) recognizes that anthropogenic greenhouse gas emissions responsible for climate change are also driving major shifts in the chemical properties of the world's oceans (Public Resources Code section 35630(c)). Furthermore, Governor Newsom's Executive Order N-10-1920 directs state agencies to prepare a water resiliency portfolio that meets the needs of California's communities, economy, and environment. The State Water Board's Resolution No. 2017-0012, Comprehensive Response to Climate Change, and the San Diego Water Board's Resolution No. R9-2018-0051, Addressing Threats to Beneficial Uses from Climate Change, also require a proactive approach to climate change in all state and regional actions.

Based on all of these considerations, this ~~This~~ Order requires the Discharger to prepare and submit a Climate Change Action Plan (CCAP) within three years of the effective date of this Order.