February 12, 2020
Item No. 9
Supporting Document No. 12

California Regional Water Quality Control Board
San Diego Region

Supplemental Response to Comments Report

Tentative Order No. R9-2019-0169

NPDES No. CA0108031

Waste Discharge Requirements for the Fallbrook Public Utility District,
Fallbrook Water Reclamation Plant and
Santa Margarita Groundwater Treatment Plant
Discharge to the Pacific Ocean through the Oceanside Ocean Outfall

February 12, 2020

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INTRODUCTION

On October 28, 2019, the Fallbrook Public Utility District (District) provided comments on Tentative Order No. R9-2019-0169, NPDES No. CA0108031, *Waste Discharge Requirements for the Fallbrook Public Utility District, Fallbrook Water Reclamation Plant and Santa Margarita Groundwater Treatment Plant Discharge to the Pacific Ocean through the Oceanside Ocean Outfall* (Tentative Order). At the December 11, 2019, meeting, the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) opened a public hearing to consider adoption of the Tentative Order and heard staff testimony regarding the Tentative Order. The San Diego Water Board continued the matter to the February 12, 2020, Board Meeting to allow staff time to meet with the District to review the costs associated with the Tentative Order's monitoring and reporting program, and to further consider other concerns regarding permit provisions. By email dated December 24, 2019, the San Diego Water Board requested the District submit additional information regarding its cost estimates for the monitoring and reporting program. By email dated January 6, 2020, the District provided additional information on the cost estimates initially provided in the District's October 28, 2019, comment letter with additional clarifying comments. On January 13, 2020, the San Diego Water Board met with the District and discussed the information provided on January 6, 2020.

The District's summarized written comments and San Diego Water Board responses are provided below beginning on page 5. Responses include a description of any actions taken to revise the Tentative Order in response to the comment. Proposed revisions to the Tentative Order are in red-underline for added text and ~~red strikeout~~ for deleted text for changes made after the September 27, 2019, public release. Proposed revisions to the Tentative Order are in yellow highlight and red-underline for added text and ~~yellow highlight and red strikeout~~ for deleted text for changes made after the December 11, 2019, Board Meeting.

COMMENTS AND RESPONSES

1. Cost Calculations

1.1. Comment -

Comment 19 in the District's October 28, 2019, comment letter stated "All of the additional monitoring listed in the Tentative Order will cost the District at least an increased $100,000 per year and this is not accounting for inflation, the changes to BIGHT studies, or all of the new receiving water monitoring."

By email dated December 24, 2019, the San Diego Water Board requested price quotes and detailed cost calculations for the above statement. The District provided the requested information on January 6, 2020, and met with the San Diego Water Board on January 13, 2020, to discuss remaining differences with the monitoring requirements in the Tentative Order.

The District's January 6, 2020, comment:

Plume Tracking:

If it costs roughly $100,000 per Autonomous Underwater Vehicle (AUV) deployment, and there will be a minimum of three over the permit term, then one scenario is that the District will pay one-third of the share, roughly $100,000, split across five years. If it were to be split across each year of the permit term for simple averaging, then it would cost the District $20,000/year.

Here is a breakdown of the additional costs per year showing the financial impact of the Tentative Order. Although many of these items are one-time, they have been normalized against the time of 5-year permit term for simple averaging purposes.

Additional Costs	Per Year	Permit Term
Annual sampling converted to semi-annual	$1,285	$6,425
TCDD 2 extra analyses/year	$1,200	$6,000
Heptachlor and heptachlor epoxide 10/year	$1,850	$9,250
Fecal and enterococcus 4/year	$440	$2,200
Plume Tracking	$20,000	$100,000
Intensive Monitoring (add Rig fishing and trawl)*	$500	$2,500
Plume Tracking	$6,329	$31,647
Receiving Water Continuous Profile and Chemistry**	$480	$2,400
Human Marker HF183***	$7,000	$35,000
Composite Sampler	$2,208.60	$11,043
Climate Change Action Plan	$20,000	$100,000
Initial TRE	$2,000.	$10,000
Pollution Minimization Program	$3,000.	$15,000

Additional Costs	Per Year	Permit Term
TOTAL	**$66,293**	**$331,465**

*Received estimate from City of Oceanside stating this will cost an additional $25,000 over the permit's life. Please see Oceanside's response.

**Received estimate from City of Oceanside stating this will cost an additional $24,000 over the permit's life. Please see Oceanside's response.

***It is difficult to ascertain the cost of HF183 at this point. Based on the quote received from Source Molecular, it may end up being significantly higher than what is shown above.

The yearly figure of $66,293 is not the whole-picture cost. It is important to stress that the receiving water analyses, intensive monitoring, plume tracking, human marker costs shown above are just one part of the puzzle and that ultimately, they could end up being significantly higher when the whole picture is taken into account. This is because, in addition to sample collection, these types of monitoring programs require laboratory analysis, staff time, quality analysis/quality control, data entry, maintenance of the Oceanside Ocean Outfall (OOO), electrical costs, etc. For instance, currently, the City of Oceanside pays Marine Taxonomic Services, Ltd (MTS) ~$11,000/year for sample collection of the receiving water monitoring; however, the District's annual share of the receiving water monitoring costs ~$12,000/year, even though the % flow is 5% (November 2019) due to all of the other costs listed above. There are also new State Water Board, Division of Drinking Water Environmental Laboratory Accreditation Program (ELAP) requirements that are being implemented that could further increase laboratory costs and should be taken into consideration.

In addition, the District produces Title-22 disinfected tertiary recycled water, and short of any upset or unlikely circumstance, only sends dechlorinated recycled water to the ocean. Because of this reason, the District recommends that the San Diego Water Board remove the Human Marker HF183 requirement from the Tentative Order as it does not appear to be suitable for the District's permit.

Response

The San Diego Water Board agrees with the District that the Tentative Order requirement for a plume tracking monitoring program is expected to cost approximately $100,000 per AUV survey, with two to three AUV surveys being planned for other ocean outfalls in the San Diego Region, such as the San Elijo Ocean Outfall and the Encina Ocean Outfall. The Tentative Order encourages collaboration among the publicly owned treatment works (POTW) agencies connected to the Oceanside Ocean Outfall (OOO) and the cost of the plume tracking program can be shared among the POTW agencies. The District clarified that the additional plume tracking cost of $31,647 over the permit term is for the Plume Tracking Work Plan and Monitoring Plan. The District's cost

estimate for the Plume Tracking Work Plan and Monitoring Plan is unclear if the cost is for only the District's share of the cost, or if that is the total cost that would be split among the POTW agencies connected to the OOO. Nonetheless, the San Diego Water Board does not agree that the Plume Tracking Work Plan and Monitoring Plan will cost $31,647. Dr. Michael Welch, the consultant who has drafted the Plume Tracking Work Plan and will be drafting the Plume Tracking Monitoring Plan for the San Elijo and Encina Ocean Outfalls, stated that the Plume Tracking Work Plan and Plume Tracking Monitoring Plan will cost a total of approximately $25,000 for the OOO. This cost could be shared by the three POTW agencies discharging through the OOO.

The District notes that the Tentative Order's requirement to conduct a continuous profile and chemistry sampling in the receiving water will cost approximately $2,400 over the permit term. The District's comment did not provide a basis or documentation for this estimate.

The District did not account for the Tentative Orders reductions in receiving water monitoring requirements for sediment, and nearshore and offshore bacteria. These reductions in monitoring compared to the Current Order No. R9-2012-0004 (Current Order) will provide the District with additional cost savings to offset other new monitoring requirements in the Tentative Order.

Using price quotes from the City of Oceanside (City), the San Diego Water Board estimates the reductions in sediment monitoring will save the POTW agencies discharging through the OOO approximately $32,760 per permit term and up to $67,760 per permit term if the cost to analyze sediment infauna increases to $2,000 per samples in 2020, as noted in the City's price quote submitted on January 6, 2020. This estimate includes the Tentative Order's new requirement to monitoring for sediment toxicity, but does not include boat and personnel cost to conduct one extra sediment sampling event.

The San Diego Water Board estimated that the reductions in the nearshore and offshore bacteria monitoring requirements will yield a cost savings of approximately $289,000 per permit term for the shared receiving water monitoring program. This estimate was included in the total receiving water monitoring cost estimate that was presented by San Diego Water Board staff at the December 11, 2019, Board Meeting. However, this San Diego Water Board estimate was based on a price quote from American Scientific Laboratories of $165 per sample for *Enterococci* and fecal coliform and $35 per sample for total coliform, and boat and personnel cost information obtained from Southern California Coastal Water Research Project (SCCWRP). In the District's January 6, 2020, comment letter, the District provided an updated cost quote of $45 per sample for fecal coliform and $65 per sample for *Enterococci* (see response to comment no. 1.5). Using 1) the District's new price quote for fecal coliform and *Enterococci*, 2) American Scientific Laboratories price quote of $35 per sample for total coliform, with 3) SCCWRP's price quote of approximately $1,000 per sampling event for boat use and $800 per sampling event for two personnel (two

technicians at $100 per hour working an 8-hour day, consistent with SCCWRP's estimated sampling time), yields a cost savings of approximately $204,200 per permit term for all three POTW agencies discharging through the OOO.

The City provided a spreadsheet with 2017 laboratory costs for *Enterococci* at $30 per sample, fecal coliform at $15-25 per sample, and total coliform at $15 per sample. The City also provided an invoice from Marine Taxonomic Services, Ltd. (MTS) for "Monthly Offshore Water Sampling – November 2019" for a cost of $945. It's unclear what this cost includes. The District notes that the price quote from MTS is for sample collection. This price quote likely does not include the cost for sample analysis. Using the City's price quote of $30 per sample for *Enterococci,* $15 per sample for total coliform, $15 per sample fecal coliform, and $945 for sample collection only, the San Diego Water Board estimates the costs savings due to the reduced nearshore and offshore bacteria monitoring will be approximately $92,700 per permit term. The difference in cost estimates by the San Diego Water Board, District, and City for the reduced nearshore and offshore bacteria monitoring requirements are due to difference in laboratory and field sampling price quotes.

The San Diego Water Board acknowledges that the cost estimates presented by the District and the Board do not include all aspects of monitoring, such as data analyses, data entry and management, QA/QC, report development, staff time, electricity, etc. However, for calculation and comparison of the increase of the monitoring costs, these costs were not accounted for when determining the monitoring costs of the Current Order's requirements.

The District reports their current annual share of the receiving water monitoring costs for the OOO is approximately $12,000. The District did not provide a basis or documentation for this cost.

See Response to Comment No. 1.3 in the December 11, 2019, Response to Comments for discussion on the parameters that are required to be monitored semiannually in the effluent; see Response to Comment No. 1.4 for discussion on effluent monitoring requirements for chlorinated dibenzodioxins and chlorinated dibenzofurans (TCDDs), heptachlor, and heptachlor epoxide; see Response to Comment No. 1.5 for discussion on effluent monitoring requirements for fecal coliform and *Enterococci*; and see Response to Comment No. 1.7 for discussion about the HF183 monitoring requirement.

Action Taken

None.

1.2. Comment –

The San Diego Water Board requested the cost calculation for the following statement in comment number 19.2 of the District's comment letter submitted on October 28, 2019:

"2) Chronic toxicity – quarterly monitoring costs may increase up to $11,200/year due to potential change in species from new method, plus more if there are any exceedances of the new objectionable Pass/Fail limit."

The District's January 6, 2020 comment:

Page 45 of the Ocean Plan states: "For discharges between 0.1 and 10 million gallons per day (MGD), the monitoring frequency for acute and/or chronic toxicity of the effluent should be at least annually."

The District has never exceeded the permit limit [for chronic toxicity], and this is an area for the Regional Board to use the data it has collected over the years to justify cutting back on the toxicity sampling. The District requests that chronic toxicity be performed 1/year and that screenings be performed 1/permit cycle. The District's daily average effluent flow in 2018 was 0.65 MGD, and in 2017 was 0.81 MGD. The District has been performing chronic toxicity testing on a quarterly basis, costing the District $1,400/test or roughly $5,600/year for non-screening years. Performing the 3 additional tests for non-screening years is costing the District an additional $4,200/year, when it should only cost the District $1,400/year for non-screening years (if it were to be cut back to 1/year following the intent of the Ocean Plan). Performing the chronic toxicity tests for the screening years costs the District up to an additional $11,505 if the species that is most sensitive is not the same each time since it can take up to 3 consecutive months using 3 species each month. The 3 species used to generate this number are Giant Kelp, Topsmelt, and Sea Urchin. Please refer to the attached Price List from Aquatic Bioassay.

1) Giant Kelp $1,400

2) Sea Urchin $1,085

3) Topsmelt $1,350

SDRWQCB R9-2012-0004 and Tentative Order R9-2019-0169: 4 Chronic Toxicity Test/Year and 1 Screening/ 2 Years.

Year	Type of year	Includes	Cost
2020	Non-screening	4 tests	$5,600
2021	Screening	3 tests and a screening (3 species/month up to 3 months)	$4,200 + $11,505 =$15,705
2022	Non-screening	4 tests	$5,600

Year	Type of year	Includes	Cost
2023	Screening	3 tests and a screening (3 species/month up to 3 months)	$4,200 + $11,505 =$15,705
2024	Non-screening	4 tests	$5,600
2025	Screening	3 tests and a screening (3 species/month up to 3 months)	$4,200 + $11,505 =$15,705
		Total	**$63,915**

The District's Recommendation: 1 Chronic Toxicity Test/Year. and 1 Screening/ Permit Cycle

Year	Type of year	Includes	Cost
2020	Non-screening	1 test	$1,400
2021	Non-screening	1 test	$1,400
2022	Screening	A screening (up to 3 months using 3 species each month)	$11,505
2023	Non-screening	1 test	$1,400
2024	Non-screening	1 test	$1,400
2025	Non-screening	1 test	$1,400
		Total	**$18,505**

Response

The San Diego Water Board does not agree that chronic toxicity monitoring costs have increased in the Tentative Order. While some increased costs are associated with a change in species, this change in cost due to a change in species could also occur under the Current Order's requirements.

While the Ocean Plan requires a minimum frequency of annual chronic toxicity sampling, the Ocean Plan also allows the San Diego Water Board to require more frequent monitoring. While not directly applicable to ocean discharges, the State Water Board's draft *Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California* currently requires quarterly monitoring for POTWs discharging less than five MGD. The State Water Board is shifting to increased frequency for chronic toxicity because of the benefits of the test. Toxic pollutants have been previously detected in the District's effluent (e.g., TCDDs, heptachlor and heptachlor epoxide). Chronic toxicity testing ensures that no synergetic effects among the pollutants are harmful to aquatic life and

ecosystems, and that beneficial uses are protected. Further, the Tentative Order requires the chronic toxicity data to be analyzed according to the Test of Significant Toxicity (TST) statistical approach. Unlike the previous statistical methods used to analyze chronic toxicity data, the TST approach incorporates false negative error rates which improve the reliability of the test to identify truly toxic samples. Retaining the chronic toxicity monitoring frequency from the Current Order will ensure the effluent is truly non-toxic and that the previous results were not the result of a false negative.

The San Diego Water Board does not agree that species sensitivity screening should be reduced to once per permit term. The District is proposing to discharge from a new facility, the Santa Margarita Groundwater Treatment Plant, with an effluent of unknown water quality at this time. The species sensitivity screening will ensure that the most sensitive species for toxicity testing is appropriate when the new discharge comes online.

To further reduce costs, the San Diego Water Board has modified the Tentative Order to authorize the San Diego Water Board to reduce chronic toxicity monitoring from quarterly to semiannually if the District's discharge under the Tentative Order does not cause an exceedance of the chronic toxicity performance goal for a minimum of ten consecutive routine chronic toxicity tests.

The Tentative Order removes the requirement to conduct concurrent reference toxicant screening and allows the District to use the monthly reference toxicant screening. The San Diego Water Board has modified the Tentative Order to clarify that monthly reference toxicant screenings are allowed if in accordance with *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms* (EPA/600/R-95/136, 1995).

Action Taken

Modified Attachment E section III.B.2, Table E-4 to include the following footnote:

10. If the effluent is in compliance with the chronic toxicity performance goal contained in Section IV.A.2, Table 8 of this Order for ten consecutive routine monitoring events, the Discharger may submit a request to the San Diego Water Board to decrease the minimum sampling frequency for chronic toxicity from quarterly to semiannually. If during the reduced frequency the effluent is not in compliance with the chronic toxicity performance goal, the frequency is automatically increased back to once per quarter.

Modified Attachment E section III.C.5.d as follows:

d. Monthly reference toxicant testing is sufficient if in accordance with *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms* (EPA/600/R-95/136, 1995).

All reference toxicant test results should be reviewed and reported using the effects concentration at 25 percent (EC25).

1.3. Comment – Cost of Monitoring Requirements

The San Diego Water Board requested the price quote for the following statement in comment number 19.3 of the District's comment letter submitted on October 28, 2019:

"Increased costs breakdown:

3) New semi-annual sampling (previously all annual sampling, now semi-annual) = an increased cost of $2,715/year quote from BSK Laboratories."

The District's January 6, 2020 comment:

The quote shows an increase of $1,285/year. (Supporting Document No. 11)

Response

The District provided a price quote that was dated December 26, 2019, after the submittal of the October 28, 2019, comment letter and after the December 2019 Board Meeting. The District did not submit a price quote consistent with the October 28, 2019, comment letter. The price quote provided by the District shows $1,285 for laboratory costs for beryllium, semi-volatile organics, TCDDs, organochlorine pesticides and PCBs, and volatile organics. While this price quote provided by the District includes most parameters where the Tentative Order has increased the monitoring frequency to semiannually, the price quote did not include tributyltin, which the Tentative Order also increased the monitoring frequency from annually to semiannually. The price quote includes TCDDs analyzed by an unspecified method, and organochlorine pesticides and PCBs analyzed by USEPA method 608.3, which is also the test method for analysis of heptachlor and heptachlor epoxide. Under USEPA method 608.3, laboratories will analyze the full suite of parameters contained in the method at a single cost. Based on discussion with several laboratories, the cost is not reduced for analyzing a single parameter. Therefore, when the District analyzes samples for heptachlor and heptachlor epoxide every month, the remaining organochlorine pesticides and PCBs will also be analyzed at no additional cost, and the results can be reported to fulfill the semiannual monitoring requirement for these parameters. TCDDs, organochlorine pesticides, and PCBs are monitored at higher frequency and should not be included in the price quote and cost calculation as these parameters are accounted for under a separate category.

Using the price quote for the missing parameter, tributyltin, as provided by the City of Oceanside, the San Diego Water Board estimates the cost increase to monitor for parameters that increased from annually to semiannually will be approximately $665 per year, significantly lower than the increase of $2,715 per year reported by the District in their October 28, 2019, comment letter. The increase in effluent monitoring costs presented by the San Diego Water Board at

the December 2019 Board Meeting used the price quoted by the District in the October 28, 2019, comment letter for the parameters that were increased from annually to semiannually. The increased cost associated with the increased monitoring frequency for parameters is reasonable to ensure that there is a robust dataset to conduct a reasonable potential analysis for future permit reissuance.

Action Taken

None.

1.4. Comment –

The San Diego Water Board requested the price quote for the following statement in comment number 19.4 of the District's comment letter submitted on October 28, 2019:

"Increased costs breakdown:

4) Monthly monitoring or heptachlor, heptachlor epoxide, TCDD equivalents = $9,420/year quote from BSK Laboratories."

The District's January 6, 2020 comment:

The quote shows an increase of $1,850/year. (Supporting Document No. 11)

Response

The District provided a quote for the aforementioned parameters dated December 27, 2019, which is after the submittal of the October 28, 2019, comment letter and after the December 2019 Board Meeting. The District did not submit a price quote consistent with the District's October 28, 2019, comment letter. The District's price quote submitted on January 6, 2020, has a price of $1,850 to analyze ten samples for organochlorine pesticides and PCBs (heptachlor and heptachlor epoxide are organochlorine pesticides), or $185 per sample. The price quote did not include TCDDs, but the cost to analyze TCDDs was provided by the District in a different quote. The San Diego Water Board 's December 11, 2019, Response to Comments noted on page 8 that the frequency of monitoring for TCDDs in the Tentative Order was increased to quarterly from semiannually and was not increased to monthly. Using the price quotes submitted by the District, the cost increase for the Tentative Order's increased monitoring frequency for TCDDs, heptachlor, and heptachlor epoxide is $3,235 per year, significantly less than the $9,420 per year cost increase reported in the District's October 28, 2019, comment letter. At the December 2019 Board Meeting, the San Diego Water Board estimated the increased cost to monitor for TCDDs, heptachlor, and heptachlor epoxide at approximately $2,240 per year, based on a price quote from American Scientific Laboratories, Inc. The difference in cost estimates is due to differences in laboratory price quotes. The increase in cost is reasonable to ensure that TCDDs, heptachlor, and heptachlor epoxide are

not exceeding effluent limitations and that water quality is protected. These parameters have been previously been detected in the District's effluent and are highly toxic.

Action Taken

None

1.5. Comment –

The San Diego Water Board requested the price quote for the following statement in comment number 19.5 of the District's comment letter submitted on October 28, 2019:

"Increased costs breakdown:

5) Cost of quarterly monitoring for Fecal and Entero = $2,100/year"

The District's January 6, 2020 comment:

The quote shows an increase of $440/year. (Supporting Document No. 11)

Response

The District provided a price quote dated December 26, 2019, which is after the submittal of their October 28, 2019, comment letter and after the December 2019 Board Meeting. The District did not submit a price quote consistent with the District's October 28, 2019, comment letter. The price quote submitted by the District on January 6, 2020, shows a total of $440 to analyze four samples of fecal coliform and four samples of "Miscellaneous External (1)." "Miscellaneous External (1)" is not defined and could be *Enterococci*. The price quote submitted on January 6, 2020, is significantly less than the $2,100 per year reported by the District in their October 28, 2019, comment letter. At the December 2019 Board Meeting, the San Diego Water Board estimated the cost to monitor for fecal coliform and *Enterococci* at $660 per year, based on a price quote from American Scientific Laboratories, Inc. and assuming that the cost to analyze fecal coliform and total coliform are equivalent. The increase in monitoring costs for fecal coliform and *Enterococci* is reasonable to correlate the bacteria concentrations in the effluent to the bacteria concentrations at the offshore monitoring locations.

Action Taken

None.

1.6. Comment –

The San Diego Water Board requested the price quote for the following statement in comment number 19 of the District's comment letter submitted on October 28, 2019:

"This also does not include the cost of a new composite sampler that would be required for M-003 costing $11,000"

The District's January 6, 2020 comment:

The quote shows an increase of $11,043 to purchase the composite sampler. (Supporting Document No. 11)

Response

The San Diego Water Board agrees with the District that the cost of a composite sampler is approximately $11,000. To save on monitoring costs, the San Diego Water Board has modified the Tentative Order's requirement to sample for turbidity and total suspended solids from 24-hour composite to grab samples. This change is consistent with the requirements in Tentative Order No. R9-2019-0167 for Marine Corps Camp Pendleton. The San Diego Water Board will use the results collected over the permit term to determine the need for composite samples in future permits.

Action Taken

Modified Attachment E section III.B.2, Table E-5

3. The Discharger shall monitor the effluent at Monitoring Location M-003 as follows:

Table E-5. Effluent Monitoring at Monitoring Location M-003[1]

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	MGD	Recorder/Totalizer	Continuous	--
TSS	mg/L	~~24-hr Composite[2]~~Grab	1/Day~~[3,4]~~[2,3]	~~5~~4
pH	standard units	Grab	1/~~Day[3]~~Day[2]	~~5~~4
Oil and Grease	mg/L	Grab	1/~~Month[4]~~Month[3]	~~5~~4
Settleable Solids	milliliter per liter (ml/L)	Grab	1/~~Day[3]~~Day[2]	~~5~~4
Turbidity	nephelometric turbidity unit (NTU)	~~24-hr Composite[2]~~Grab	1/Week	~~5~~4

[1] See Attachment A for definitions of abbreviations and a glossary of common terms used in this Order.

~~[2] If the discharge is intermittent, the 24-hr composite may be composed of samples taken from less than a 24-hr period. If 24-hr composite is not possible~~

~~(e.g., a 24-hr composite would not yield sufficient volume to perform analytical testing), the Discharger may take a grab in lieu of the 24-hr composite. The Discharger shall document and report the day(s) and reason(s) it was not able to collect a 24-hr composite.~~

[3] Applies 5 days per week, except 7 days per week for at least 1 week during July or August of each year.

[4] The Discharger shall calculate and report the mass emission rate (MER) of the constituent for each sample taken. The MER shall be calculated in accordance with section VII.I.4 of this Order.

[5] As required under 40 CFR part 136.

1.7. Comment –

The San Diego Water Board requested the cost calculation and price quotes for the Human Marker HF183 monitoring requirements.

The District's January 6, 2020 comment:

It is difficult to predict the cost of this at the outset, especially for the District, but the quote below is provided from Source Molecular to the City of Oceanside. (quote provided in Supporting Document No. 11)

Response

The District reports that the HF183 monitoring requirement of the Tentative Order will cost the District approximately $35,000 over the permit term. Using this figure and if the District divided the costs evenly among the three POTW agencies discharging through the OOO, then the District asserts that the total cost for all three POTW agencies discharging through the OOO combined is $105,000 per permit term. The Tentative Order requires HF183 samples be collected concurrently with fecal coliform samples. However, analysis of HF183 samples is only required if the concurrently collected sample for fecal coliform exceeds the single sample maximum receiving water limitation for fecal coliform included in section V.A.1 of the Tentative Order. While the analysis of HF183 samples are only required if the sample for fecal coliform exceeds the single sample maximum receiving water limitation, additional costs are associated with the collection of HF183 samples, such as filtration and storage of the samples. Using the price quote provided in the City's October 28, 2019, comment letter, the San Diego Water Board calculated the cost to monitor for HF183 to be approximately $83,430 over the permit term, assuming an unlikely worst case scenario where every sample at every offshore monitoring locations exceeds the receiving water limitation for fecal coliform. This cost could be shared between the three POTW agencies discharging to the OOO.

While the unlikely worst-case scenario could cost approximately $83,430 per permit term shared by all three POTWs, based on historical fecal coliform

exceedances which occurred approximately once per quarter between the years 2011 to 2019, the San Diego Water Board estimated the expected cost for HF183 monitoring to be approximately $34,290 per permit term. As previously stated, this cost could be shared between the three POTW agencies discharging to the OOO. As reported by the City at the December 2019 Board Meeting, the agencies assume a worst-case scenario for initial budgeting purposes. However, the agencies are unlikely to spend the fully budgeted cost and any savings could be carried over to the next budget cycle.

The District also reports that the cost of HF183 monitoring may be higher based on a price quote provided by the City from Source Molecular dated January 6, 2020, which is after the submittal of the comment letter submitted on October 28, 2019, and after the December 2019 Board Meeting. The City's January 6, 2020, price quote is not consistent with the price quote in the City's October 28, 2019, comment letter. Source Molecular is a laboratory located in Florida; and the City did not provide a basis for selecting a laboratory in Florida. The San Diego Water Board is aware of laboratories in Southern California qualified and capable of conducting the HF183 analyses.

The City's January 6, 2020 price quote for HF183 from Source Molecular is $1,800 per sample for triplicate filters using USEPA method 1696, $600 per sample for a single filter using USEPA method 1696, and $354 per sample using Droplet Digital Polymerase Chain Reaction (ddPCR) method developed by the Southern California Coastal Waters Research Project (SCCWRP). As noted in the quote, USEPA method 1696 can be performed on a single filter. The costs provided in the City's January 6, 2020, price quote are significantly higher than the price quote that was provided in the City's October 28, 2019, comment letter, which was from a local Southern California laboratory. The City did not report the name of the local Southern California laboratory that provided the price quote contained in the City's October 28, 2019, comment letter. The San Diego Water Board requested that the City provide the HF183 price quote as presented in the October 28, 2019, but the City did not provide this information.

While the price quote from Source Molecular does not include the cost to filter the samples, extract the DNA/RNA, store the samples, or complete the cooler preparation, the City's October 28, 2019, Comment Letter stated the cost to filter HF183 samples is $45, the cost to extract the DNA/RNA and store for one year is $49 per sample, and the cost for cooler preparation is $175 per sampling event. Using the price quote from Source Molecular for the cost of sample analysis and the price quote in the City's October 28, 2019, Comment Letter for sample filtration, DNA/RNA extraction and storage, and cooler preparation, the San Diego Water Board estimates that the cost for HF183 monitoring using USEPA method 1696 will be approximately $586,460 per five-year permit term for an unlikely worst-case scenario where every station exceeds the fecal coliform receiving water limitation with every sample. This cost could be shared among the three POTW agencies discharging through the OOO. The cost estimate

includes filtration of 42 samples to obtain triplicate filters with three samples at mid-depth and three samples at the surface for each offshore monitoring station, DNA/RNA extraction and storage of 42 filters, cooler preparation, and $1,800 for analysis of each triplicate filter. The City reports that the cost of the HF183 monitoring requirement is approximately $957,600. The City did not describe how this figure was calculated.

While the unlikely worst-case scenario could cost approximately $586,460 per permit term, based on historical fecal coliform exceedances which occurred approximately once per quarter between the years 2011 to 2019, the San Diego Water Board estimates the expected cost for HF183 monitoring to be approximately $118,460 per permit term. This cost could be shared among the three POTW agencies discharging through the OOO. This estimate uses the price quote provided by the City from Source Molecular of $1,800 per sample for analysis of triplicate filters using USEPA method 1696, and the price quote in the City's October 28, 2019 Comment Letter for sample filtration, DNA/RNA extraction and storage, and cooler preparation.

If the District analyzes the samples for HF183 using the ddPCR method rather than USEPA method 1696, the cost for HF183 monitoring is estimated to be approximately $128,940 per permit term for an unlikely worst-case scenario where every station exceeds the fecal coliform receiving water limitation with every sample. This estimate includes filtration of 14 samples, RNA extraction and storage of 14 filters, cooler preparation, and analysis using ddPCR. The actual HF183 monitoring cost is likely to be much less than this estimate, since historically only one station, not every station, exceeds the fecal coliform receiving water limitation every quarter.

The Tentative Order allows the City and District to propose alternative methods for measuring HF183 in the receiving water that do not need to use USEPA methods. The District may propose an alternative method which could be more cost effective. However, the San Diego Water Board has modified the Tentative Order to allow analysis of HF183 samples using the cheaper ddPCR method. Analysis using the ddPCR method is as accurate as analysis using USEPA method 1696 as long as proper QA/QC procedures are followed.

Action Taken

Modified Attachment E section IV.B.2.b of the Tentative Order

Sample Analysis. If a result for fecal coliform exceeds the single sample maximum receiving water limitation of 400 CFU per 100 mL (section V.A.1.a.i.(b) of this Order), the Discharger shall analyze the Human Marker ~~HF-183~~HF183 sample that was collected concurrently with the fecal coliform sample that exceeded the receiving water limitation. Samples shall be analyzed in accordance with EPA method 1696, the droplet digital polymerase chain reaction (ddPCR) method developed by the Southern California Coastal Waters Research

Project (SCCWRP), or an alternative method proposed by the Discharger with comparable accuracy, unless the alternative method is not accepted by the San Diego Water Board. If the Discharger proposes to use the ddPCR method, the Discharger shall submit a QA/QC procedure for acceptance by the San Diego Water Board. The Discharger shall follow all quality control and quality assurance procedures outlined in the method or as approved by the San Diego Water Board. If the results for fecal coliform are below receiving water limitations, the discharger may discard the Human Marker ~~HF-183~~HF183 sample.

1.8. Comment

The San Diego Water Board requested the cost calculation and price quotes for the fish community trawls, offshore fish tissue analysis, offshore sediment sampling, receiving water bacteria sampling, nearshore and offshore conductivity temperature depth profiles, and nearshore and offshore total nitrogen and total phosphorus monitoring.

The District's January 6, 2020 comment:

The District's comment refers to the City's January 6, 2020 comment letter to provide cost information regarding offshore community trawls, offshore fish tissue analysis, offshore sediment monitoring, nearshore and offshore bacteria monitoring, nearshore and offshore CTD profiles, nearshore and offshore total nitrogen and total phosphorus monitoring, and surf zone bacteria monitoring.

Response

See the San Diego Water Board's Response to Comments Document for the City of Oceanside Tentative Order R9-2019-0166, Comment No. 1 provided as Supporting Document No. 11 to agenda item No. 8 for the February 12, 2020 Board Meeting. Based on the City's response, the San Diego Water Board has modified the Tentative Order to provide additional cost savings by revising the Tentative Order to give the District the option to sample for temperature, dissolved oxygen, light transmittance, pH, and salinity at the nearshore monitoring locations by either using a conductivity-temperature-depth (CTD) profiler throughout the entire water column or by collecting grab samples at the surface.

The San Diego Water Board also modified the Tentative Order to remove the requirement to submit a Benthic Monitoring Work Plan if the District is fulfilling the sediment monitoring requirements contained in Attachment E section IV.C.1 through IV.C.3 of the Tentative Order by participating in a regional monitoring program, as described in Attachment E section V.B of the Tentative Order. However, the Benthic Monitoring Work Plan is required if the District is not fulfilling the sediment monitoring requirements by participating in a regional monitoring program.

Action Taken

Modified Attachment E section IV.B.1, Table E-7.

Table E-7 Nearshore and Offshore Water Quality Monitoring Requirements[1]

Parameter	Units	Sample Type	Minimum Sampling Frequency
Visual Observations	--	Visual[2]	1/Quarter
Fecal Coliform	CFU /100 ml	Grab[3,4]	1/Quarter
Enterococci	CFU/100 ml	Grab[3,4]	1/Quarter
Human Marker HF183	Number of copies (molecules)/100 mL	Grab[~~3,~~5]	1/Quarter
Nitrogen, Total	mg/L	Grab[3]	1/Quarter
Phosphorus, Total (as P)	mg/L	Grab[3]	1/Quarter
Temperature and Depth	˚C, meters	~~Continuous Profile~~[6]	1/Quarter
Dissolved Oxygen	mg/L	~~Continuous Profile~~[6]	1/Quarter
Light Transmittance	percent	~~Continuous Profile~~[6]	1/Quarter
pH	standard units	~~Continuous Profile~~[6]	1/Quarter
Salinity	ppt	~~Continuous Profile~~[6]	1/Quarter

[1] See Attachment A for definitions of abbreviations and a glossary of common terms used in this Order.

[2] Visual observations of the surface water conditions at the designated receiving water stations shall be conducted in such a manner as to enable the observer to describe and report the presence, if any, of floatables of sewage origin. Observations of wind (direction and speed), weather (cloudy, sunny, or rainy), direction of current, tidal conditions (high or low), water color, oil and grease, turbidity, and odor shall be recorded. The proximity of recreational and commercial vessels to monitoring locations shall also be recorded. These observations shall be taken whenever a sample is collected.

[3] At the surface for nearshore monitoring locations N1 through N7 and surface and mid-depth for offshore monitoring locations A1 through A5, B1, and B2.

[4] Samples for fecal coliform and enterococci shall be collected on the same day fecal coliform and enterococci are sampled at monitoring location M-004.

[5] Samples shall be collected at the surface and mid-depth at offshore monitoring locations A1-A5, B1 and B2 and analyzed in~~In~~ accordance with section IV.B.2 of this MRP.

[6] For offshore monitoring locations A1-A5, B1 and B2, temperature~~Temperature~~, depth, dissolved oxygen, light transmittance, pH, and salinity profile data shall be measured throughout the entire water column

using a ~~conductivity-temperature-depth (~~CTD~~)~~ profiler during the quarterly sampling events. Depth profile measurements shall be obtained using multiple sensors to measure parameters through the entire water column (from the surface to as close to the bottom as practicable). For nearshore monitoring locations N1 through N7, temperature, depth, dissolved oxygen, light transmittance, pH, and salinity shall be measured throughout the entire water column by a CTD profiler or at the surface by grab samples.

Modified Attachment E section IV.C.4.a.

a. Benthic Monitoring Work Plan. The Discharger shall submit to the San Diego Water Board within 180 days after the effective date of this Order, a Benthic Monitoring Work Plan to implement the sediment monitoring program. The Benthic Monitoring Work Plan is not required if the Discharger is fulfilling the benthic monitoring requirements contained in Attachment E section IV.C.1 through IV.C.3 by participating in a regional monitoring program, as described in Attachment E section V.B. If required, the~~The~~ Benthic Monitoring Work Plan shall include the following elements:

1.9. Comment –

The San Diego Water Board requested the cost calculation and price quotes for total nitrogen and total phosphorus monitoring of the effluent.

The District's January 6, 2020 comment:

This quarterly monitoring has not been deemed as a significant cost increase.

Response

Comment noted.

Action Taken

None.

1.10. Comment –

The San Diego Water Board requested a price quote to develop the Climate Change Action Plan, initial TRE Work Plan, and pollutant minimization program.

The District's January 6, 2020 comment:

An increase of $90,000 - $120,000. (Climate Change Action Plan)

An increase of $5,000 - $10,000 (Initial TRE Work Plan)

An increase of $15,000 (Pollutant Minimization Program)

(Price quotes were provided by Woodard and Curran in an email. Email states these costs are ballpark cost estimates.)

Response

The District's price quote to develop the Climate Change Action Plan (CCAP) of $90,000 to $120,000 is considered a high estimate. For reference, the price quoted for the CCAP is approximately equivalent to the cost of hiring one full-time staff for a year. The City of San Diego stated the CCAP for the Point Loma Ocean Outfall cost approximately $50,000, and this cost includes staff time and a consultant. The City of San Diego used information from the city-wide Climate Action Plan to assist in the development of Point Loma CCAP. The District could develop their Climate Action Plan using information in the County of San Diego's CCAP which already includes a climate change analysis for the unincorporated areas of San Diego County, including Fallbrook. The Tentative Order's CCAP requirement is included in all newly reissued NPDES permits for publicly owned treatment works (POTWs) in the San Diego Region and has been since 2017. The CCAP requirement is consistent with Governor Newsom's Executive Order N-10-1920, 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* which require a proactive approach to climate change in all state and regional actions.

The San Diego Water Board agrees that the Initial TRE Work Plan could cost approximately $5,000 to $10,000. However, the Current Order already requires the District to have an initial TRE Work Plan. To satisfy the Tentative Order's requirement for the Initial TRE Work Plan, the District need only update the previous TRE Work Plan submittal with current information.

The San Diego Water Board agrees that the Pollutant Minimization Program could cost around $15,000. The Pollutant Minimization Program is required by section III.C.9 of the Ocean Plan.

Action Taken

None.

2. San Diego Water Board Cost Analysis Summary:

2.1. Increase in Receiving Water Monitoring Costs Per Permit Term

The following table presents the estimated increase in costs for the receiving water monitoring requirements. Estimates are derived by the San Diego Water Board, District, and City. The costs presented by the San Diego Water Board and the City represent the total cost for the outfall, these costs may be shared among the agencies:

Monitoring Requirement	San Diego Water Board Original Estimate[5]	San Diego Water Board New Estimate[5]	District's Estimate[1]	City's Estimate
Surf Zone Bacteria	$39,000	$9,000 to $22,500	N/A	N/A
Nearshore and Offshore Bacteria	(-$289,300) (-$584,500 if used price for bacteria quoted in Fallbrook PUD's October 28, 2019 comment letter)	(-$92,700) to (-$204,200)	$2,400	(-$6,500)
Nearshore and Offshore Nutrients	$26,600	$26,600	N/A	N/A
Plume Tracking	$316,467	$316,467	$100,000	$316,466
Fish Tissue Analysis	$10,800[2]	$12,240 ($14,240 to $24,240 with sample collection)	$2,500	$25,000
Sediment Monitoring	(-$31,850)[3]	(-$32,760) to (-$67,760)[3,4]	N/A	N/A
HF183	Worst-case scenario: $83,430 Expected based off exceedance history: $34,290	Worst-case scenario: $83,430 to $586,460 Expected: $34,290 to $118,460	$35,000	$200,000 to $957,600
Total Cost	$106,007 to $155,147	$126,637 to $850,807	$139,900	$534,966 to $1,292,566

1. Estimates are Fallbrook PUDs portion of the costs and may include administrative cost.

2. Does not include the cost to collect sample and assumes that the cost to collect fish for fish tissue analysis was equivalent to the cost of an extra sediment sampling event.

3. Does not include cost to collect sample and assumes that the cost to sample sediment was equivalent to the cost to collect fish for fish tissue analysis.

4. Underestimation due to the unknown cost for some sediment chemistry parameters. City of Oceanside's price quote states infauna analysis cost may double next year.

5. Negative values in the table indicate cost savings due to reductions in monitoring requirements in the Tentative Order compared to the requirements of the Current Order.

2.2 Increase in Effluent Monitoring Cost Per Permit Term

The following table presents the estimated increase in costs for the effluent monitoring requirements derived by the San Diego Water Board and District.

Monitoring Parameter(s)	San Diego Water Board's Original Estimate	San Diego Water Board's New Estimate[2]	District's Original Estimate	District's New Estimate
Total Nitrogen and Total Phosphorous	$1,400	$1,400	N/A	N/A
Enterococci and Fecal Coliform	$3,300	$2,200	$10,500	$2,200
TCDD	$4,050	$6,000	$47,100[1]	$6,000
Heptachlor and Heptachlor Epoxide	$7,150	$10,175		$9,250
Parameters Increased to Semiannual	$13,575	$3,325	$13,575	$6,425
Chronic Toxicity	Not included	(-$5,425) to (-$7,000)	$11,200	N/A
Total Cost	$29,475	$16,100 to $17,675	$82,375	$23,875

1. The District presented a combined cost for TCDDs, heptachlor, and heptachlor epoxide.

2. Negative values in the table indicate cost savings due to reductions in monitoring requirements in the Tentative Order compared to the requirements of the Current Order.

2.3 Work Plan Cost Per Permit Term

The following table presents the estimated increase in costs for the Work Plans associated with the Tentative Order derived by the San Diego Water Board, City, and District:

Work Plan	Water Board's Estimate	City's Estimate	District's Estimate
Climate Change Action Plan	$50,000 (Based on City of San Diego's cost, includes staff time and consultant. Also used information from city-wide CCAP)	$150,000	$100,000
Pollutant Minimization Program	$15,000 to $20,000 (Ocean Plan Required)	$20,000	$15,000
Initial TRE Work Plan	$0 (Staff Time) to $10,000	$10,000	$10,000
Benthic Monitoring Work Plan	$0 to $150,000	$150,000	N/A
Plume Tracking Work Plan and Monitoring Plan	$25,000	$50,000	$31,647
State of the Ocean Oral Report	$0 (Staff Time) to $7,000	$7,000	N/A