

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

SAN DIEGO REGION

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REVISED (Version 10/27/2014) TENTATIVE ORDER NO. R9-2014-0071

**AN ORDER MODIFYING
ORDER NO. R9-2013-0006 (NPDES NO. CA0109045)
WASTE DISCHARGE REQUIREMENTS
FOR THE CITY OF SAN DIEGO SOUTH BAY WATER RECLAMATION PLANT
DISCHARGE TO THE PACIFIC OCEAN VIA THE SOUTH BAY OCEAN OUTFALL**

Changes to the Tentative Order listed below are shown in **green bold and underline/strikeout** format to indicate added and removed language, respectively.

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

1. On February 13, 2013, the San Diego Water Board adopted Order No. R9-2013-0006 (NPDES No. CA0109045), establishing waste discharge requirements for the City of San Diego (Discharger) to discharge up to 15 million gallons per day (MGD) of secondary-treated effluent from the South Bay Water Reclamation Plant (SBWRP) into the Pacific Ocean via the South Bay Ocean Outfall (SBOO).
2. On June 26, 2014, the San Diego Water Board adopted Order No. R9-2014-0009 (NPDES No. CA0108928), establishing waste discharge requirements for the U.S. Section of the International Boundary and Water Commission (USIBWC) to discharge up to 25 MGD of secondary-treated effluent from the South Bay International Wastewater Treatment Plant (SBIWTP) into the Pacific Ocean via the SBOO.
3. The effluents from the SBWRP and SBIWTP co-mingle as they discharge through the SBOO. Thus, the receiving water monitoring program is conducted jointly by the Discharger and USIBWC to characterize the ocean receiving waters and the effects of the combined discharge on the ocean receiving waters.
4. The receiving water monitoring requirements established as part of Order No. R9-2014-0009 were based on the previous receiving water monitoring requirements, the receiving water monitoring requirements for the Discharger's Point Loma Ocean Outfall, up-to-date developments in ocean monitoring, and the 2012 California Ocean Plan.
5. By e-mail dated July 10, 2014, the Discharger requested that the San Diego Water Board modify the receiving water monitoring requirements in Order No. R9-2013-0006 to match the receiving water monitoring requirements in Order No. R9-2014-0009, to enable the Discharger and USIBWC to continue jointly conducting the receiving water monitoring program for SBOO. The joint monitoring effort achieves maximum efficiency and economy of resources through sharing of technical resources, trained personnel, and associated costs. The joint monitoring effort also creates an integrated receiving water monitoring program covering the combined discharges from the SBWRP and the SBIWTP to ocean waters.

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6. Section 13263(e) of the Water Code, provides that the San Diego Water Board may, upon application by any affected person, or on its own motion, review and revise waste discharge requirements. Section 122.62(a) of title 40 of the Code of Federal Regulations authorizes the reopening and modification of a National Pollutant discharge Elimination System (NPDES) permit based upon new information.
7. Order No. R9-2013-0006 is not being reopened for any other purpose than the revisions contained herein. Except as contradicted or superseded by the findings and directives set forth in this Order, all of the previous findings and directives of Order No. R9-2013-0006 shall remain in full force and effect.
8. Any person aggrieved by this action of the San Diego Water Board may petition the State Water Board to review the action in accordance with Water Code section 13320 and California Code of Regulations, title 23, sections 2050 et seq. The State Water Board must receive the petition by 5:00 p.m., 30 days after the adoption date of this Order. Copies of the law and regulations applicable to filing petitions may be found on the Internet at: http://www.waterboards.ca.gov/public_notices/petitions/water_quality or will be provided upon request.
9. This action is exempt from the requirement of preparation of environmental documents under the California Environmental Quality Act [Public Resources Code, division 13, chapter 3, section 21000 et seq.] in accordance with section 13389 of the California Water Code.
10. The Regional Board has notified all known interested parties of its intent to adopt Order No. R9-2014-0071.
11. The San Diego Water Board in a public meeting heard and considered all comments pertaining to the proposed modifications to Order No. R9-2013-0006.

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IT IS HEREBY ORDERED that:

Except as modified or superseded by the permit modifications set forth below, all of the findings, prohibitions, provisions, and other requirements of Order No. R9-2013-0006, NPDES No. CA0109045, remain in full force and effect. The following modifications of Order No. R9-2013-0006, NPDES No. CA0109045, are shown in **bold and underline/strikeout** format to indicate added and removed language, respectively, and are hereby incorporated and immediately effective:

1. The first page of Order No. R9-2013-0006 is amended as follows:

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2. Table 4, page 4, of Order No. R9-2013-0006 is amended as follows:

Table 4. Facility Information

Discharger	City of San Diego
Name of Facility	South Bay Water Reclamation Plant
Facility Address	2411 Dairy Mart Road San Diego, CA 92154 San Diego County
Facility Contact, Title, and Phone	<u>Halla Razak, Director of Public Utilities, (858) 292-6401</u> Roger Bailey, P.E., Director of Public Utilities, (858) 292-6401
Mailing Address	9192 Topaz Way, San Diego, CA 92123
Type of Facility	Publicly Owned Treatment Works (POTW)
Facility Flow Rate	15 million gallons per day (MGD)

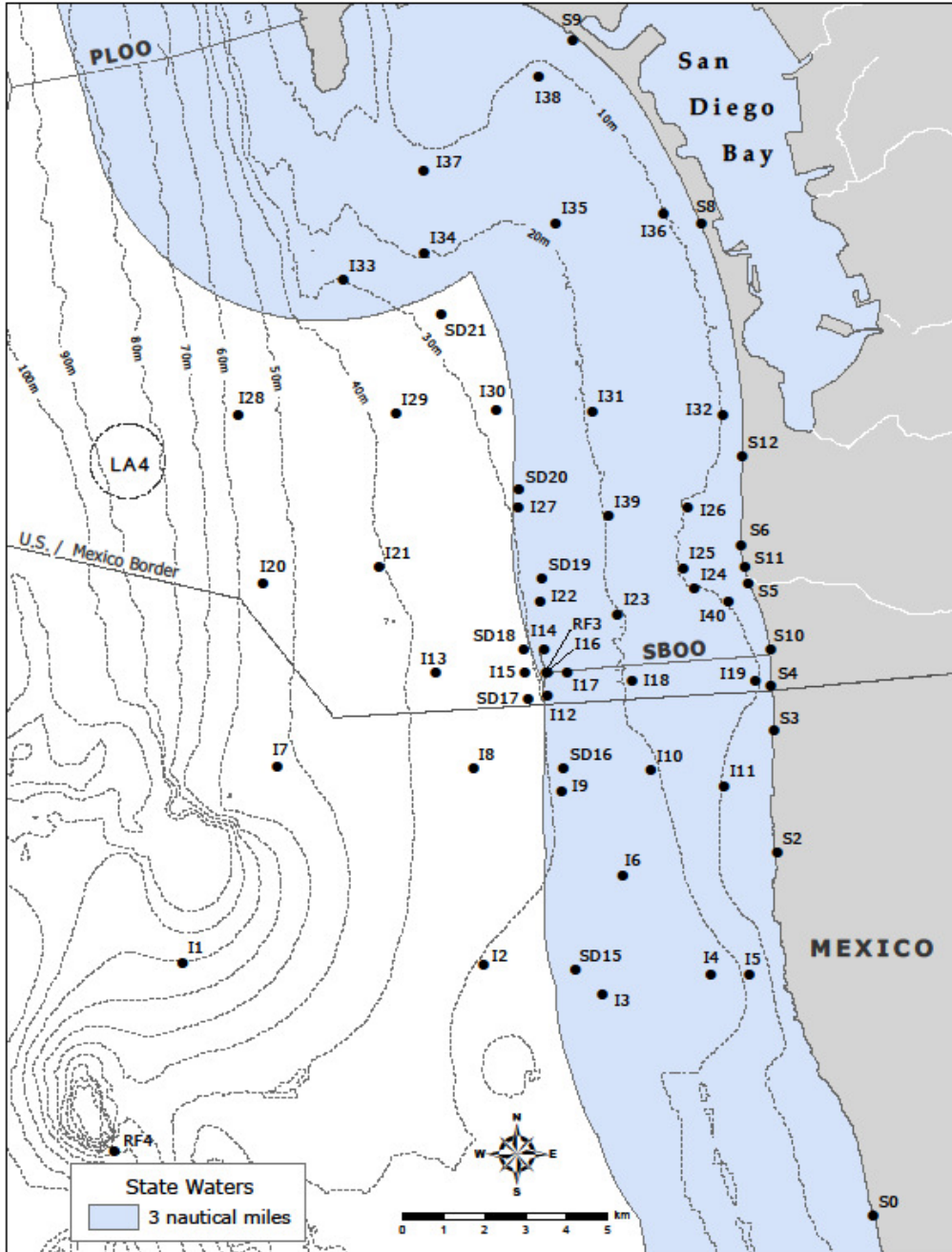
3. The first paragraph of section II.A, page 4, of Order No. R9-2013-0006 is amended as follows:

A. Background. The City of San Diego (hereinafter Discharger) is currently discharging pursuant to Order No. R9-2006-0067 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0109045. The Discharger submitted a Report of Waste Discharge, received July 1, 2011, and applied for a NPDES permit reissuance to discharge up to 15 MGD of secondary treated wastewater from the South Bay Water Reclamation Plant (hereinafter Facility) to the Pacific Ocean through the South Bay Ocean Outfall (SBOO). The application was deemed complete on July 31, 2011. **By e-mail dated July 10, 2014, the Discharger requested that the San Diego Water Board modify the receiving water monitoring requirements in Order No. R9-2013-0006 to match the receiving water monitoring requirements in Order No. R9-2014-0009, to enable the Discharger and USIBWC to continue jointly conducting the receiving water monitoring program for SBOO.**

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4. Figure B-3, *Receiving Water Monitoring Locations*, page B-3, of Attachment B of Order No. R9-2013-0006 is replaced with the following:



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5. The Monitoring Location Description for Monitoring Location Name “S-0” contained in Table E-1, page E-3, of Attachment E of Order No. R9-2013-0006 is amended as follows:

Latitude: 32° 25.148’N; Longitude: 117° 05.837’W

~~Mexico (Southernmost location) United States (Southernmost location, just north of the border fence)~~

6. Section V and Table E-4, pages E-8 through E-11, of Attachment E of Order No. R9-2013-0006 is deleted. The sections and tables following the deleted section and table are renumbered as appropriate.
7. The first paragraph of section VI (renumbered as section V), page E-11, of Attachment E of Order No. R9-2013-0006 is amended as follows:

The Discharger shall conduct chronic toxicity testing on effluent samples collected at Effluent Monitoring Station E-001 ~~and the Land Outfall Monitoring (as described in Section V above)~~ in accordance with the following schedule and requirements:

8. Table E-5 (renumbered as Table E-4), page E-12, of Attachment E of Order No. R9-2013-0006 is amended as follows:

Table E-54. Whole Effluent Toxicity Testing

Monitoring Location	Test	Unit	Sample Type	Minimum Test Frequency
E-001	Screening period for chronic toxicity	TU _c	24-hr Composite	Every other year for 3 months, beginning with the calendar year 2012
	Chronic Toxicity	TU _c	24-hr Composite	1/Quarter
Land Outfall Monitoring (as described in Section V above)	Screening period for chronic toxicity	TU_c	24-hr Composite	Every other year for 3 months, beginning with the calendar year 2012
	Chronic Toxicity	TU_c	24-hr Composite	1/Quarter
	Acute Toxicity	TU_a	24-hr Composite	1/Year

9. Section IX (renumbered as section VIII), pages E-13 through E-19, of Attachment E of Order No. R9-2013-0006 is amended as follows:

~~Receiving water and sediment monitoring in the vicinity of the SBOO shall be conducted as specified below. Station location, sampling, sample preservation and analyses, when not specified, shall be by methods approved by the San Diego Water Board. The monitoring program may be modified by the San Diego Water Board at any time.~~

~~The receiving water and sediment monitoring program for the SBOO may be conducted jointly with other dischargers to the SBOO.~~

~~During monitoring events, if possible, sample stations shall be located using a land-based microwave positioning system or a satellite positioning system such as GPS. If an alternate navigation system is proposed, its accuracy should be compared to that of microwave and satellite based systems, and any compromises in accuracy shall be justified.~~

~~A. Surf Zone Water Quality Monitoring~~

~~All surf zone stations shall be monitored as follows.~~

- ~~1. Grab samples shall be collected and analyzed for total and fecal coliform and enterococcus bacteria at a minimum frequency of one time per week. As required by implementation procedures at section III.D of the Ocean Plan, measurement of enterococcus density shall be conducted at all stations where measurement of total and fecal coliform bacteria is required.~~

~~If a single sample exceeds any of the single sample bacterial standards, repeat sampling at that location shall be conducted to determine the extent and persistence of the exceedance. Repeat sampling shall be conducted within 24 hours of receiving analytical results and continued until the sample result is less than the single sample bacterial standards or until a sanitary survey is conducted to determine the source of the high bacterial densities.~~

~~Single sample bacterial standards include:~~

- ~~i. Total coliform density will not exceed 10,000 per 100 ml; or~~
 - ~~ii. Fecal coliform density will not exceed 400 per 100 ml; or~~
 - ~~iii. Total coliform density will not exceed 1,000 per 100 ml when the ratio of fecal/total coliform exceeds 0.1;~~
 - ~~iv. Enterococcus density will not exceed 104 per 100 ml.~~
- ~~2. At the same time samples are collected from surf zone stations, the following information shall be recorded: observation of wind direction and speed; weather (cloudy, sunny, or rainy); current direction; tidal conditions; and observations of water color, discoloration, oil and grease; turbidity, odor, and materials of sewage origin in the water or on the beach; water temperature.~~
 - ~~3. In the event of stormy weather which makes sampling hazardous at certain surf zone stations, collection of samples at such stations can be omitted, provided that such omissions do not occur more than 5 days in any calendar year or occur at consecutive sampling times. The observations listed in (2) above shall still be recorded and reported to the San Diego Water Board for these stations at the time the sample was attempted to be collected.~~

~~B. Off Shore Water Quality Monitoring~~

~~All receiving water monitoring shall be conducted as follows:~~

~~Table E-7. Offshore Monitoring Requirements~~

Parameter	Units	Stations	Sample Type	Sampling Frequency
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Visual Observations ⁴	--	I1 to I40	Visual	⁴
Temperature ²	°C	I1 to I40	Profile	Monthly
pH ²	units	I1 to I40	Profile	Monthly
Salinity ²	ppt	I1 to I40	Profile	Monthly
Dissolved Oxygen ²	mg/L	I1 to I40	Profile	Monthly
Light Transmittance ²	Percent	I1 to I40	Profile	Monthly
Oil and Grease ³	mg/L	I3, I5, I7 to I14, I16, I18 to I26, I30, I32, I33, I36 to I40	Grab	Monthly
Total Suspended Solids	mg/L	I3, I5, I7 to I14, I16, I18 to I26, I30, I32, I33, I36 to I40	Grab	Monthly
Total and Fecal Coliforms; Enterococcus ⁵	CFU/100 ml	I3, I5, I7 to I14, I16, I18 to I24, I30, I32, I33, I36 to I38, and I40	Grab	Monthly
Total and Fecal Coliforms; Enterococcus ⁶	CFU/100 ml	I25, I26, I39	Grab	Weekly

¹ ~~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. These observations shall be taken whenever a sample is collected.~~

² ~~Temperature, salinity, dissolved oxygen, light transmittance, and pH shall be measured monthly throughout the entire water column using probes (XBTs, CTDs) or meters (DO, pH). Suspended solids and light transmittance measurements shall be taken on the same day and as close together in time as possible.~~

³ ~~Oil and grease shall be measured monthly in the top five feet of surface water.~~

⁴ ~~Total suspended solids shall be measured monthly at three depths (sub-surface, mid-depth, and bottom).~~

⁵ ~~Total and fecal coliform and enterococcus shall be sampled at least monthly at 25 offshore stations from three depths (sub-surface, mid-depth, and bottom).~~

⁶ ~~Total and fecal coliform and enterococcus shall be sampled at three kelp bed stations (I25, I26, and I39) at least five times per month, such that each day of the week is represented over a two month period. Samples shall be collected from three depths (sub-surface, mid-depth, and bottom).~~

C. Benthic Monitoring

~~Sediment Characteristics. Sediment samples shall be collected from 27 stations (I1 to I4, I6 to I10, I12 to I16, I18, I20 to I23, I27 to I31, I33 to I35) using a 0.1-square meter modified Van Veen grab sampler. Sediment samples for chemical analyses shall be taken from the top 2 centimeters of the grab. The samples shall be analyzed for the set of constituents listed below. Sediment chemistry ambient monitoring may be conducted~~

using USEPA approved methods, or methods developed by NOAA's National Status and Trends for Marine Environmental Quality. For chemical analysis of sediment, samples shall be reported on a dry weight basis.

1. Sediment Characteristics. Analyses shall be performed on the upper 2 inches of core.

Table E-8. Sediment Monitoring Requirements

Determination	Units	Type of Sample	Minimum Frequency
Sediment grain size	µm	Core	2/Year
Total Organic Carbon	Percent	Core	2/Year
Total Nitrogen	Percent	Core	2/Year
Acid Volatile Sulfides	mg/kg	Core	2/Year
Aluminum	mg/kg	Core	2/Year
Antimony	mg/kg	Core	2/Year
Arsenic	mg/kg	Core	2/Year
Cadmium	mg/kg	Core	2/Year
Chromium	mg/kg	Core	2/Year
Copper	mg/kg	Core	2/Year
Iron	mg/kg	Core	2/Year
Lead	mg/kg	Core	2/Year
Manganese	mg/kg	Core	2/Year
Mercury	mg/kg	Core	2/Year
Nickel	mg/kg	Core	2/Year
Selenium	mg/kg	Core	2/Year
Silver	mg/kg	Core	2/Year
Tin	mg/kg	Core	2/Year
Zinc	mg/kg	Core	2/Year
PCBs	ng/kg	Core	2/Year
2,4-DDD	ng/kg	Core	2/Year
4,4-DDD	ng/kg	Core	2/Year
2,4-DDE	ng/kg	Core	2/Year
4,4-DDE	ng/kg	Core	2/Year
2,4-DDT	ng/kg	Core	2/Year
4,4-DDT	ng/kg	Core	2/Year
Aldrin	ng/kg	Core	2/Year
Alpha-Chlordane	ng/kg	Core	2/Year
Dieldrin	ng/kg	Core	2/Year
Endosulfan	ng/kg	Core	2/Year
Endrin	ng/kg	Core	2/Year
Gamma-BHC	ng/kg	Core	2/Year
Heptachlor	ng/kg	Core	2/Year
Heptachlor Epoxide	ng/kg	Core	2/Year
Hexachlorobenzene	ng/kg	Core	2/Year
Mirex	ng/kg	Core	2/Year
Trans-Nonachlor	ng/kg	Core	2/Year

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Determination	Units	Type of Sample	Minimum Frequency
Acenaphthene	µg/kg	Core	2/Year
Acenaphthylene	µg/kg	Core	2/Year
Anthracene	µg/kg	Core	2/Year
Benzo(a)anthracene	µg/kg	Core	2/Year
Benzo(e)fluoranthene	µg/kg	Core	2/Year
Benzo(k)fluoranthene	µg/kg	Core	2/Year
Benzo(ghi)pyrene	µg/kg	Core	2/Year
Benzo(a)pyrene	µg/kg	Core	2/Year
Benzo(e)pyrene	µg/kg	Core	2/Year
Biphenyl	µg/kg	Core	2/Year
Chrysene	µg/kg	Core	2/Year
Dibenz(ah)anthracene	µg/kg	Core	2/Year
Fluoranthene	µg/kg	Core	2/Year
Fluorene	µg/kg	Core	2/Year
Indeno(123cd)pyrene	µg/kg	Core	2/Year
Naphthalene	µg/kg	Core	2/Year
1-Methylnaphthalene	µg/kg	Core	2/Year
2-Methylnaphthalene	µg/kg	Core	2/Year
2,6-Dimethylnaphthalene	µg/kg	Core	2/Year
2,3,5-Trimethylnaphthalene	µg/kg	Core	2/Year
Perylene	µg/kg	Core	2/Year
Phenanthrene	µg/kg	Core	2/Year
1-Methylphenanthrene	µg/kg	Core	2/Year
Pyrene	µg/kg	Core	2/Year

Infauna. For analyses of benthic infauna, two replicate samples of bottom sediments shall be collected and analyzed semiannually from the following 27 stations: (I1 to I4, I6 to I10, I12 to I16, I18, I20 to I23, I27 to I31, I33 to I35).

The benthic infaunal samples shall be collected using a 0.1-square meter modified Van Veen grab sampler. These grab samples shall be separate from those collected for sediment analyses. The samples shall be sieved using a 1.0-millimeter mesh screen. The benthic organisms retained on the sieve shall be fixed in 10 percent buffered formalin, and transferred to 70 percent alcohol within two to seven days of storage. Infaunal organisms, obtained during benthic monitoring shall be counted and identified to as low a taxon as possible.

Monitoring results shall consist of the raw data (number of individuals per species) along with an analysis of community parameters per station as follows:

- 1) Number of species per 0.1-square meter
- 2) Total number of species per station
- 3) Total numerical abundance

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- ~~4) Benthic Response Index (BRI)~~
- ~~5) Swartz's 75 percent dominance index~~
- ~~6) Shannon-Weiner's diversity index (H)~~
- ~~7) Pielou evenness (J)~~

~~In addition to the community parameters, an annual evaluation shall be performed that includes more detailed statistical comparisons including community, temporal, and spatial analyses. Methods may include, but are not limited to, various multivariate, such as cluster analysis, ordination, and regression. Additional analyses shall also be conducted, as appropriate, to elucidate temporal and spatial trends in the data.~~

~~An additional array of 40 randomly selected stations shall be sampled and analyzed annually for sediment chemistry and benthic infauna. The same procedures must be followed as outlined in this section, with the exception of the number of samples collected per station. Only one sample is required from each of the 40 randomly selected stations. These stations shall be reselected each year by USEPA using USEPA probability-based Environmental Monitoring and Assessment Program (EMAP) design. The area shall extend from the mouth of the San Dieguito River south to the Mexican border.~~

~~The Discharger shall submit reports to the San Diego Water Board on benthic monitoring annually.~~

~~The random benthic sampling requirement may be suspended as part of a resource exchange agreement to allow for participation in the Southern California Bight Regional Monitoring Surveys at the discretion of the Executive Officer.~~

~~D. Additional Biological Monitoring~~

~~1. Fish Trawls~~

~~Fish trawls shall be conducted quarterly to assess the community structure of demersal fish and macroinvertebrates and the presence of priority pollutants in fish. Single trawls shall be conducted quarterly at seven trawl stations (SD-15 to SD-24) using a Marinovich 25-foot head rope otter trawl and following the most recent Southern California Bight Project field manual guidance. The organisms captured at each trawl station shall be identified as to species.~~

~~For each of the seven stations, a community structure analysis shall be conducted. This will consist of the wet weight of each species, number of individuals per species, total numerical abundance, species richness and diversity (i.e. Shannon-Weiner), and multivariate pattern analyses (e.g. ordination and classification analyses). Abnormalities and disease systems shall be recorded and itemized, such as fin erosion, tumors, lesions, etc.~~

~~Chemical analyses of fish tissue shall be performed semiannually on selected target species at the seven trawl stations. The list of constituents shall be the same as for sediments with the exception that a measurement for total lipids will replace organic carbon, nitrogen, and grain size. The species targeted for analysis will be selected~~

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~~for their ecological or commercial importance. Three replicate composite samples shall be prepared from each trawl station for liver tissue and taken from at least three fish of the same species.~~

~~The species targeted for analysis shall be primarily flatfish including, but not limited to, the following: pacific sanddab (*Citharichthys sordidus*), longfin sanddab (*Citharichthys xanhostigma*), speckled sanddab (*Citharichthys stigmaeus*), bigmouth sole (*Hippoglossina stomata*), and hornyhead turbot (*Pleuronichthys verticalis*). The California scorpionfish (*Scorpaena guttata*) and the halfbanded rockfish (*Sebastes semicinctus*) shall be targeted at trawl stations not having sufficient number of flatfish.~~

~~The Discharger shall submit reports to the San Diego Water Board on fish trawl monitoring annually.~~

2. Rig Fishing

~~Rig fishing shall be performed semiannually to monitor the uptake of pollutants in fish that are consumed by humans to determine the impact on public health, and to assess the impacts on local fish populations. The fish shall be collected by hook and line or by setting baited lines from within the zone of initial dilution (ZID) and at some point removed from the ZID. The fish shall be representative of those caught by recreational and commercial fisherman in the area. Fish samples shall be identified to species, with number of individuals per species, standard length and wet weight recorded. Physical abnormalities and disease symptoms shall be recorded and itemized (e.g., fin rot, lesions, and tumors).~~

~~Three replicate composite samples of the target species shall be obtained at each station. Each composite shall consist of a minimum of three individuals. Muscle tissue shall be chemically analyzed for the same set of constituents as trawl-caught fish.~~

~~The Discharger shall submit reports to the San Diego Water Board on rig fishing monitoring annually.~~

The receiving water and sediment monitoring requirements set forth below are designed to measure the effects of the SBOO discharge on the receiving ocean waters. These monitoring requirements will remain in effect on an interim basis, pending development of a new and updated monitoring and assessment program. The overall receiving water monitoring program is intended to answer the following questions:

- (1) Does the receiving water meet water quality standards?**
- (2) Are the receiving water conditions getting better or worse over time?**
- (3) What is the relative contribution of the Facility discharge to pollution in the receiving water?**

At this time, receiving water and sediment monitoring in the vicinity of the SBOO shall be conducted as specified below. This program is intended to document

conditions within the waste field in the vicinity of the “Zone of Initial Dilution” (ZID) boundary, at reference stations, and at areas beyond the ZID where discharge impacts might be reasonably expected. Station location, sampling, sample preservation and analyses, when not specified, shall be by methods approved by the San Diego Water Board. The monitoring program may be modified by the San Diego Water Board at any time. The Discharger may also submit a list of, and rationale for, any reductions in, or other changes, to these monitoring requirements that it considers to be appropriate to the San Diego Water Board for approval.

The receiving water and sediment monitoring program for the SBOO may be conducted jointly with other dischargers to the SBOO.

During monitoring events sample stations shall be located using a land-based microwave positioning system or a satellite positioning system such as GPS. If an alternate navigation system is proposed, its accuracy should be compared to that of microwave and satellite based systems, and any compromises in accuracy shall be justified.

In the event that the Discharger is unable to obtain a sample from a monitoring station(s) located in Mexico, due to safety, legal, or other reasons, collection of samples at such station(s) can be omitted. In the event that a monitoring location is omitted, the Discharger shall submit a statement to the San Diego Water Board containing, at a minimum, the following information:

1. The monitoring station(s) that was omitted;
2. The date the monitoring station was omitted; and
3. A description of the circumstances for omitting the collection of data at the monitoring station.

A. Surf Zone Water Quality Monitoring Requirements

As ocean surface waves come closer to shore they break, forming the foamy, bubbly surface called surf. The region of breaking waves defines the surf zone.

Monitoring of the surf zone is intended to answer the following questions:

- (1) Does the effluent cause or contribute to an exceedance of the water quality standards in the receiving water?
- (2) Does the effluent reach water contact zones or commercial shellfish beds?
- (3) Are densities of bacteria in water contact areas below levels protective of public health?

All surf zone stations shall be monitored as follows:

Table E-6 Surf Zone Monitoring Requirements

<u>Parameter</u>	<u>Units</u>	<u>Stations</u>	<u>Sample Type</u>	<u>Sampling Frequency</u>
<u>Visual Observations</u>	<u>--</u>	<u>S0, S2-S6, S8-S12</u>	<u>Visual</u>	<u>1</u>
<u>Temperature</u>	<u>°C</u>	<u>S0, S2-S6, S8-S12</u>	<u>Grab</u>	<u>Weekly</u>
<u>Total and Fecal Coliforms; Enterococcus^{2,3}</u>	<u>CFU/100 mL</u>	<u>S0, S2-S6, S8-S12</u>	<u>Grab</u>	<u>Weekly</u>

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1. 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, discoloration, oil and grease, turbidity, and odor shall be recorded. These observations shall be taken whenever a sample is collected. Visual observations shall also be conducted for repeat sampling.
2. The geometric mean shall be calculated using the five most recent sample results from each site.
3. If a single sample exceeds any of the single sample maximum (SSM) bacterial standards, repeat sampling at that location shall be conducted to determine the extent and persistence of the exceedance. Repeat sampling shall be conducted within 24 hours of receiving analytical results and continued until the sample result is less than the SSM standard or until a sanitary survey is conducted to determine the source of the high bacterial densities.

Single Sample Maximum bacterial standards include:

- i. Total coliform density shall not exceed 10,000 per 100 mL; or
- ii. Fecal coliform density shall not exceed 400 per 100 mL; or
- iii. Total coliform density shall not exceed 1,000 per 100 mL when the ratio of fecal/total coliform exceeds 0.1;
- iv. Enterococcus density shall not exceed 104 per 100 mL.

When repeat sampling is required because of an exceedance of any one single sample density, values from all samples collected during that 30-day period will be used to calculate the geometric mean. Repeat sampling is not required for the stations located in Mexico.

Sample Station Omission Due to Storm Condition. In the event of stormy weather which makes sampling hazardous at certain surf zone stations, collection of samples at such stations can be omitted, provided that such omissions do not occur more than 5 days in any calendar year or occur at consecutive sampling times. The visual observations listed in footnote no. 1 above shall still be recorded and reported to the San Diego Water Board for these stations at the time the sample was attempted to be collected. If practicable, an effort should be made to return to the sampling station that was omitted and collect the sample during calmer conditions within the same reporting period.

B. Offshore Water Quality Monitoring Requirements

Offshore monitoring extends from south of the international border to Point Loma. See Attachment B for a map of the offshore monitoring stations.

Offshore monitoring is necessary to answer the following questions:

- (1) Is natural light significantly reduced at any point outside the zone of initial dilution as a result of the discharge?
- (2) Does the discharge cause a discoloration of the ocean surface?
- (3) Does the discharge of oxygen demanding waste cause the dissolved oxygen concentration to be depressed at any time more than 10 percent from that which occurs naturally?
- (4) Does the discharge of waste cause the pH to change at any time more than 0.2 units from that which occurs naturally?

- (5) Is the wastewater plume encroaching upon receiving water areas used for swimming, surfing, diving and shellfish harvesting?
- (6) What is the fate of the discharge plume?

Offshore receiving water monitoring shall be conducted as follows:

Table E-7 Offshore Monitoring Requirements

<u>Parameter</u>	<u>Units</u>	<u>Stations</u>	<u>Sample Type</u>	<u>Sampling Frequency</u>
<u>Visual Observations¹</u>	<u>--</u>	<u>I1 to I40</u>	<u>Visual</u>	<u>1</u>
<u>Conductivity, Temperature, and Depth²</u>	<u>Practical Salinity Units, °C, feet</u>	<u>I1 to I40</u>	<u>Profile</u>	<u>Quarterly</u>
<u>pH²</u>	<u>units</u>	<u>I1 to I40</u>	<u>Profile</u>	<u>Quarterly</u>
<u>Salinity²</u>	<u>ppt</u>	<u>I1 to I40</u>	<u>Profile</u>	<u>Quarterly</u>
<u>Dissolved Oxygen²</u>	<u>mg/L</u>	<u>I1 to I40</u>	<u>Profile</u>	<u>Quarterly</u>
<u>Light Transmittance²</u>	<u>Percent</u>	<u>I1 to I40</u>	<u>Profile</u>	<u>Quarterly</u>
<u>Oil and Grease³</u>	<u>mg/L</u>	<u>I3, I5, I7 to I14, I16, I18 to I26, I30, I32, I33, I36 to I40</u>	<u>Grab</u>	<u>Quarterly</u>
<u>Total Suspended Solids⁴</u>	<u>mg/L</u>	<u>I3, I5, I7 to I14, I16, I18 to I26, I30, I32, I33, I36 to I40</u>	<u>Grab</u>	<u>Quarterly</u>
<u>Total and Fecal Coliforms; Enterococcus⁵</u>	<u>CFU/100 mL</u>	<u>I3, I5, I7 to I14, I16, I18 to I24, I30, I32, I33, I36 to I38, and I40</u>	<u>Grab</u>	<u>Quarterly</u>
<u>Total and Fecal Coliforms; Enterococcus⁶</u>	<u>CFU/100 mL</u>	<u>I19, I24, I25, I26, I32, I39, I40</u>	<u>Grab</u>	<u>Weekly</u>

- 1 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. These observations shall be taken whenever a sample is collected.
- 2 Conductivity, temperature, depth, salinity, dissolved oxygen, light transmittance, and pH shall be measured quarterly throughout the entire water column. Suspended solids and light transmittance measurements shall be taken on the same day and as close together in time as possible.
- 3 Oil and grease shall be measured quarterly in the top five feet of surface water.
- 4 TSS shall be measured quarterly at three depths (sub-surface, mid-depth, and bottom).
- 5 Total and fecal coliform and enterococcus shall be sampled at least quarterly at 25 offshore stations from three depths (sub-surface, mid-depth, and bottom).
- 6 Total and fecal coliform and enterococcus shall be sampled at three kelp bed stations and four other nearshore stations along the 9-m depth contour (I19, I24, I25, I26, I32, I39, and I40) at least five times per month, such that each day of the week is represented over a two month period. Samples shall be collected from three depths (sub-surface, mid-depth, and bottom). Monitoring for stations I19, I24, I32, and I40 shall be effective January 1, 2015.

Sample Station Omission Due to Storm Condition. In the event of stormy weather which makes sampling hazardous at certain offshore stations, collection of samples at such stations can be omitted, provided that such omissions do not occur more than 5 days in any calendar year or occur at consecutive sampling times. The visual observations listed in footnote no. 1 above shall still be recorded and reported to the San Diego Water Board for these stations at the time the sample was attempted to be collected. If practicable, an effort should be made to return to the sampling station that was omitted and collect the sample during calmer conditions within the same reporting period.

C. Benthic Community Protection Monitoring Requirements

Sediments integrate constituents that are discharged to the ocean. Most particles that come from the SBOO discharge, and any associated contaminants, will eventually settle to the seafloor where they are incorporated into the existing sediments. Sediments can accumulate these particles over the years until the point where sediment quality is degraded and beneficial uses are impaired.

The benthic community is strongly affected by sediment composition and quality and water quality. Because the benthos are dependent on their surroundings, they serve as a biological indicator that reflects the overall conditions of the aquatic environment.

Sediment and benthic monitoring is necessary to answer the following question:

- (1) Is the dissolved sulfide concentration of waters in sediments significantly increased above that present under natural conditions?
- (2) Is the concentration of substances, set forth in Table 1 of the Ocean Plan for protection of marine aquatic life, in marine sediments at levels which would degrade the benthic community?
- (3) Is the concentration of organic pollutants in marine sediments at levels that would degrade the benthic community?
- (4) Are benthic communities degraded as a result of the discharge?
- (5) Is the sediment quality changing over time?

1. Sediment Chemistry

- a. Sediment Characteristics. The physical and chemical properties of seafloor sediments and the ecological status of the biological communities (benthos) that live in or on these sediments are monitored to evaluate potential effects of the SBOO discharge and compliance with narrative water quality standards specified in the Ocean Plan.**
- b. Sediment Sampling Stations and Monitoring Frequency. The core sediment monitoring program is designed to assess spatial and temporal trends at 27 of the offshore stations listed in Table E-1, including 12 primary stations located along the outfall discharge depth contour (i.e., stations I2, I3, I6, I9, I12, I14, I15, I16, I22, I27, I30, I33) and 15 secondary stations located at other depths (i.e., stations I1, I4, I7, I8, I10, I13, I18, I20, I21, I23, I28, I29, I31, I34,**

135). At the discretion of the San Diego Water Board, the requirement for sampling the secondary stations may be relaxed to allow Discharger participation in Southern California Bight regional monitoring efforts, or to reallocate resources to accommodate approved Strategic Process Studies. Sediment samples shall be collected twice per year during the Winter (e.g., January) and Summer (e.g., July) at each of the 27 offshore stations described above and at the locations specified in Table E-1 in order to assess benthic habitat condition in terms of physical and chemical composition (e.g., grain-size distribution, sediment chemistry).

- c. Sediment Sample Collection Methods. Sediment samples shall be taken using a 0.1-square meter modified Van Veen grab sampler. Samples for grain-size and chemical analyses shall be taken from the top 2 centimeters of the grab and analyzed for the set of constituents listed in Table E-8.
- d. Sediment Analysis. Chemical analysis of sediment shall be conducted using USEPA approved methods, methods developed by the National Oceanic and Atmospheric Administration's (NOAA's) National Status and Trends for Marine Environmental Quality, or methods developed in conjunction with the Southern California Bight Regional Monitoring Program. For chemical analysis of sediment, samples shall be reported on a dry weight basis.

Table E-8 Sediment Monitoring Requirements

<u>Determination</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Minimum Frequency</u>
<u>Sediment grain size</u>	<u>µm</u>	<u>Grab</u>	<u>2/Year</u>
<u>Total Organic Carbon</u>	<u>Percent</u>	<u>Grab</u>	<u>2/Year</u>
<u>Total Nitrogen</u>	<u>Percent</u>	<u>Grab</u>	<u>2/Year</u>
<u>Acid Volatile Sulfides</u>	<u>mg/kg</u>	<u>Grab</u>	<u>2/Year</u>
<u>Aluminum</u>	<u>mg/kg</u>	<u>Grab</u>	<u>2/Year</u>
<u>Antimony</u>	<u>mg/kg</u>	<u>Grab</u>	<u>2/Year</u>
<u>Arsenic</u>	<u>mg/kg</u>	<u>Grab</u>	<u>2/Year</u>
<u>Cadmium</u>	<u>mg/kg</u>	<u>Grab</u>	<u>2/Year</u>
<u>Chromium</u>	<u>mg/kg</u>	<u>Grab</u>	<u>2/Year</u>
<u>Copper</u>	<u>mg/kg</u>	<u>Grab</u>	<u>2/Year</u>
<u>Iron</u>	<u>mg/kg</u>	<u>Grab</u>	<u>2/Year</u>
<u>Lead</u>	<u>mg/kg</u>	<u>Grab</u>	<u>2/Year</u>
<u>Manganese</u>	<u>mg/kg</u>	<u>Grab</u>	<u>2/Year</u>
<u>Mercury</u>	<u>mg/kg</u>	<u>Grab</u>	<u>2/Year</u>
<u>Nickel</u>	<u>mg/kg</u>	<u>Grab</u>	<u>2/Year</u>
<u>Selenium</u>	<u>mg/kg</u>	<u>Grab</u>	<u>2/Year</u>
<u>Silver</u>	<u>mg/kg</u>	<u>Grab</u>	<u>2/Year</u>
<u>Tin</u>	<u>mg/kg</u>	<u>Grab</u>	<u>2/Year</u>
<u>Zinc</u>	<u>mg/kg</u>	<u>Grab</u>	<u>2/Year</u>
<u>PCBs</u>	<u>ng/kg</u>	<u>Grab</u>	<u>2/Year</u>
<u>2,4-DDD</u>	<u>ng/kg</u>	<u>Grab</u>	<u>2/Year</u>
<u>4,4-DDD</u>	<u>ng/kg</u>	<u>Grab</u>	<u>2/Year</u>
<u>2,4-DDE</u>	<u>ng/kg</u>	<u>Grab</u>	<u>2/Year</u>
<u>4,4-DDE</u>	<u>ng/kg</u>	<u>Grab</u>	<u>2/Year</u>
<u>2,4-DDT</u>	<u>ng/kg</u>	<u>Grab</u>	<u>2/Year</u>
<u>4,4-DDT</u>	<u>ng/kg</u>	<u>Grab</u>	<u>2/Year</u>

<u>Determination</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Minimum Frequency</u>
<u>Aldrin</u>	<u>ng/kg</u>	<u>Grab</u>	<u>2/Year</u>
<u>Alpha-Chlordane</u>	<u>ng/kg</u>	<u>Grab</u>	<u>2/Year</u>
<u>Dieldrin</u>	<u>ng/kg</u>	<u>Grab</u>	<u>2/Year</u>
<u>Endosulfan</u>	<u>ng/kg</u>	<u>Grab</u>	<u>2/Year</u>
<u>Endrin</u>	<u>ng/kg</u>	<u>Grab</u>	<u>2/Year</u>
<u>Gamma-BHC</u>	<u>ng/kg</u>	<u>Grab</u>	<u>2/Year</u>
<u>Heptachlor</u>	<u>ng/kg</u>	<u>Grab</u>	<u>2/Year</u>
<u>Heptachlor Epoxide</u>	<u>ng/kg</u>	<u>Grab</u>	<u>2/Year</u>
<u>Hexachlorobenzene</u>	<u>ng/kg</u>	<u>Grab</u>	<u>2/Year</u>
<u>Mirex</u>	<u>ng/kg</u>	<u>Grab</u>	<u>2/Year</u>
<u>Trans-Nonachlor</u>	<u>ng/kg</u>	<u>Grab</u>	<u>2/Year</u>
<u>Acenaphthene</u>	<u>µg/kg</u>	<u>Grab</u>	<u>2/Year</u>
<u>Acenaphthylene</u>	<u>µg/kg</u>	<u>Grab</u>	<u>2/Year</u>
<u>Anthracene</u>	<u>µg/kg</u>	<u>Grab</u>	<u>2/Year</u>
<u>Benzo(a)anthracene</u>	<u>µg/kg</u>	<u>Grab</u>	<u>2/Year</u>
<u>Benzo(o)fluoranthene</u>	<u>µg/kg</u>	<u>Grab</u>	<u>2/Year</u>
<u>Benzo(k)fluoranthene</u>	<u>µg/kg</u>	<u>Grab</u>	<u>2/Year</u>
<u>Benzo(ghi)pyrene</u>	<u>µg/kg</u>	<u>Grab</u>	<u>2/Year</u>
<u>Benzo(a)pyrene</u>	<u>µg/kg</u>	<u>Grab</u>	<u>2/Year</u>
<u>Benzo(e)pyrene</u>	<u>µg/kg</u>	<u>Grab</u>	<u>2/Year</u>
<u>Biphenyl</u>	<u>µg/kg</u>	<u>Grab</u>	<u>2/Year</u>
<u>Chrysene</u>	<u>µg/kg</u>	<u>Grab</u>	<u>2/Year</u>
<u>Dibenz(ah)anthracene</u>	<u>µg/kg</u>	<u>Grab</u>	<u>2/Year</u>
<u>Fluoranthene</u>	<u>µg/kg</u>	<u>Grab</u>	<u>2/Year</u>
<u>Fluorene</u>	<u>µg/kg</u>	<u>Grab</u>	<u>2/Year</u>
<u>Ideno(123cd)pyrene</u>	<u>µg/kg</u>	<u>Grab</u>	<u>2/Year</u>
<u>Naphthalene</u>	<u>µg/kg</u>	<u>Grab</u>	<u>2/Year</u>
<u>1-Methylnaphthalene</u>	<u>µg/kg</u>	<u>Grab</u>	<u>2/Year</u>
<u>2-Methylnaphthalene</u>	<u>µg/kg</u>	<u>Grab</u>	<u>2/Year</u>
<u>2,6-Dimethylnaphthalene</u>	<u>µg/kg</u>	<u>Grab</u>	<u>2/Year</u>
<u>2,3,5-Trimethylnaphthalene</u>	<u>µg/kg</u>	<u>Grab</u>	<u>2/Year</u>
<u>Perylene</u>	<u>µg/kg</u>	<u>Grab</u>	<u>2/Year</u>
<u>Phenanthrene</u>	<u>µg/kg</u>	<u>Grab</u>	<u>2/Year</u>
<u>1-Methylphenanthrene</u>	<u>µg/kg</u>	<u>Grab</u>	<u>2/Year</u>
<u>Pyrene</u>	<u>µg/kg</u>	<u>Grab</u>	<u>2/Year</u>

2. Sediment Toxicity

- a. Sediment Toxicity Monitoring Plan. Within 180 days of the effective date of this permit, the Discharger shall, in consultation with the USIBWC, the San Diego Water Board, and the State Water Board, prepare and submit a Sediment Toxicity Monitoring Plan to implement an on-going acute sediment toxicity monitoring program in conformance with the requirements of Ocean Plan Appendix III, Standard Monitoring Procedures, Aquatic Life Toxicity. The Monitoring Plan shall include the following elements:

to seven days of storage. Benthic organisms, obtained during benthic monitoring shall be counted and identified to as low a taxon as possible.

- c. *Benthic Community Analysis.* Analysis of benthic community structure shall include determination of the number of species, number of individuals per species, and total numerical abundance present. The following parameters or metrics shall be calculated for each 0.1-square meter grab sample and summarized by station as appropriate.
- i. Number of species per 0.1-square meter
 - ii. Total numerical abundance
 - iii. Benthic Response Index (BRI)
 - iv. Swartz's 75 percent dominance index
 - v. Shannon-Weiner's diversity index (H)
 - vi. Pielou evenness index (J)

In addition to summarizing the above community structure parameters at each station, a more rigorous assessment shall be performed each year that includes more detailed comparisons to evaluate any spatial and temporal patterns or trends in the data. Methods may include, but are not limited to, various multivariate statistical techniques, such as cluster analysis, ordination, and regression. Additional analyses shall also be conducted to further evaluate relationships between benthic community structure and sediment quality.

- d. *Benthic Community Random Sampling.* Beginning with calendar year 2015, an additional array of 40 randomly selected stations shall be sampled and analyzed annually for sediment chemistry and benthic community conditions. The same sampling and processing procedures must be followed as outlined above for core benthic sediment and benthic community condition monitoring. These stations shall be reselected each year by USEPA or their designee using the USEPA probability-based Environmental Monitoring and Assessment Program (EMAP) design. The area of coverage shall extend from the mouth of the San Dieguito River south to the USA/Mexico border.

The random benthic sampling requirement may be suspended as part of a resource exchange agreement to allow for participation in the Southern California Bight Regional Monitoring Surveys at the discretion of the Executive Officer as specified in section II.R of this Order.

- e. *Benthic Community Monitoring Reporting Frequency.* The Discharger shall submit reports to the San Diego Water Board on benthic monitoring annually in accordance with the due dates specified in Table E-11 for the Annual Receiving Waters Monitoring Report. The reports shall include, as a minimum, the following information:
- i. A description of climatic and receiving water characteristics at the time of sampling (weather observations, floating debris, discoloration, wind

speed and direction, swell or wave action, time of sampling, tide height, etc.)

- ii. A description of sampling stations, including differences unique to each station (e.g., station location, sediment grain size, distribution of bottom sediments, rocks, shell litter, calcareous worm tubes, etc.).
- iii. A description of the sample collection and preservation procedures used in the survey.
- iv. A description of the specific method used for laboratory analysis.
- v. An in-depth discussion of the results of the survey including detailed statistical analyses of all data. All tabulations and computations shall be explained.
- vi. An in-depth discussion, evaluation, interpretation and tabulation of benthic data including interpretations and conclusions as to whether applicable Receiving Water Limitations in this Order have been attained at each sample station.

D. Fish and Invertebrate Monitoring Requirements

Many pollutants discharged into receiving waters have the potential to bioaccumulate and persist in tissue of aquatic organisms, including fish. Chemical pollutants that bioaccumulate tend to magnify in concentration as they pass through the aquatic food chain. Fish monitoring data is required to assess the human health risks for individuals who may consume fish and to assess trends of contaminants levels in the receiving water over time.

Aquatic invertebrates are excellent indicators of ecosystem health because they are ubiquitous, abundant, diverse, and typically sedentary. The growth, survival, and reproduction of aquatic invertebrates are all sensitive to declines in environmental health, making analysis of assemblage structure a good ecosystem monitoring tool.

Fish and invertebrate monitoring is necessary to answer the following questions:

- (1) Does the concentration of pollutants in fish, shellfish, or other marine organisms used for human consumption bioaccumulate to levels that are harmful to human health?
- (2) Does the concentration of pollutants in marine life bioaccumulate to levels that degrade marine communities?
- (3) Are the concentrations of pollutants in fish and other marine organisms changing over time?
- (4) Is the health of fish changing over time?
- (5) Is the population of selected species changing over time?

1. Fish and Invertebrate Trawls

- a. Fish and Invertebrate Trawl Frequency and Monitoring Stations. Epibenthic trawls shall be conducted to assess the structure of demersal fish and

megabenthic invertebrate communities, while the presence of priority pollutants in fish will be analyzed from species captured using both trawling and rig fishing techniques (see section VIII.D.2 for more information). Single community trawls for fish and invertebrates shall be conducted semiannually (January and July) at seven trawl stations designated SD15–SD21 at the locations specified in Table E-1. Trawls shall be conducted using a Marinovich 7.62 m (25 ft) head rope otter trawl, using the guidance specified in the most recent field manual developed for the Southern California Bight Regional Monitoring Program. All trawl-captured fishes and megabenthic invertebrates shall be identified at each station.

- b. Fish and Invertebrate Community Structure Analysis. All fish and megabenthic invertebrates collected by trawls should be identified to species if possible. For fish, community structure analysis shall consist of determining the standard length and total wet weight, total number of individuals per species, the total numerical abundance of all fish, species richness, species diversity (H'), and multivariate pattern analyses (e.g., ordination and classification analyses). The presence of any physical abnormalities or disease symptoms (e.g., fin erosion, external lesions, tumors) or parasites shall also be recorded. For invertebrates, community structure shall be summarized as the total number of individuals per species, the total numerical abundance of all invertebrates, species richness, and species diversity (H').
- c. Fish Tissue Chemical Analysis. Chemical analyses of fish tissues shall be performed annually (i.e., during October) on target species collected at or near the trawl stations. The various stations are classified into zones for the purpose of collecting sufficient numbers of fish for tissue analyses. Trawl Zone 5 represents the nearfield zone, defined as the area within a 1-km radius of stations SD-17 and/or SD-18; Trawl Zone 6 represents the north farfield zone, defined as the area within a 1-km radius of stations SD-19 and/or SD-20; Trawl Zone 7 represents the far-north farfield zone, defined as the area within a 1-km radius of station SD-21; Trawl Zone 8 represents the south farfield zone, defined as the area within a 1-km radius of station SD-16; Trawl Zone 9 represents the far-south farfield zone, defined as the area within a 1-km radius of station SD-15. There are no depth requirements for these five zones with regards to the collection of fishes for tissue analysis.

Liver tissues shall be analyzed from fishes collected in each of the above five trawl zones during the annual survey. No more than a maximum of five 10-minute (bottom time) trawls shall be required per zone in order to acquire sufficient numbers of fish for composite samples; these trawls may occur anywhere within a defined zone. Three replicate composite samples shall be prepared from each trawl zone, with each composite consisting of tissues from at least three individual fish of the same species. These liver tissues shall be analyzed for the constituents listed in Table E-9 below.

Table E-9 Fish Tissue Monitoring Requirements

<u>Determination</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Minimum Frequency</u>
<u>Total Lipids</u>	<u>mg/kg</u>	<u>Composite</u>	<u>Annual</u>
<u>Aluminum</u>	<u>mg/kg</u>	<u>Composite</u>	<u>Annual</u>
<u>Antimony</u>	<u>mg/kg</u>	<u>Composite</u>	<u>Annual</u>
<u>Arsenic</u>	<u>mg/kg</u>	<u>Composite</u>	<u>Annual</u>
<u>Cadmium</u>	<u>mg/kg</u>	<u>Composite</u>	<u>Annual</u>
<u>Chromium</u>	<u>mg/kg</u>	<u>Composite</u>	<u>Annual</u>
<u>Copper</u>	<u>mg/kg</u>	<u>Composite</u>	<u>Annual</u>
<u>Iron</u>	<u>mg/kg</u>	<u>Composite</u>	<u>Annual</u>
<u>Lead</u>	<u>mg/kg</u>	<u>Composite</u>	<u>Annual</u>
<u>Manganese</u>	<u>mg/kg</u>	<u>Composite</u>	<u>Annual</u>
<u>Mercury</u>	<u>mg/kg</u>	<u>Composite</u>	<u>Annual</u>
<u>Nickel</u>	<u>mg/kg</u>	<u>Composite</u>	<u>Annual</u>
<u>Selenium</u>	<u>mg/kg</u>	<u>Composite</u>	<u>Annual</u>
<u>Silver</u>	<u>mg/kg</u>	<u>Composite</u>	<u>Annual</u>
<u>Tin</u>	<u>mg/kg</u>	<u>Composite</u>	<u>Annual</u>
<u>Zinc</u>	<u>mg/kg</u>	<u>Composite</u>	<u>Annual</u>
<u>PCBs</u>	<u>ng/kg</u>	<u>Composite</u>	<u>Annual</u>
<u>2,4-DDD</u>	<u>ng/kg</u>	<u>Composite</u>	<u>Annual</u>
<u>4,4-DDD</u>	<u>ng/kg</u>	<u>Composite</u>	<u>Annual</u>
<u>2,4-DDE</u>	<u>ng/kg</u>	<u>Composite</u>	<u>Annual</u>
<u>4,4-DDE</u>	<u>ng/kg</u>	<u>Composite</u>	<u>Annual</u>
<u>2,4-DDT</u>	<u>ng/kg</u>	<u>Composite</u>	<u>Annual</u>
<u>4,4-DDT</u>	<u>ng/kg</u>	<u>Composite</u>	<u>Annual</u>
<u>Aldrin</u>	<u>ng/kg</u>	<u>Composite</u>	<u>Annual</u>
<u>Alpha-Chlordane</u>	<u>ng/kg</u>	<u>Composite</u>	<u>Annual</u>
<u>Dieldrin</u>	<u>ng/kg</u>	<u>Composite</u>	<u>Annual</u>
<u>Endosulfan</u>	<u>ng/kg</u>	<u>Composite</u>	<u>Annual</u>
<u>Endrin</u>	<u>ng/kg</u>	<u>Composite</u>	<u>Annual</u>
<u>Gamma-BHC</u>	<u>ng/kg</u>	<u>Composite</u>	<u>Annual</u>
<u>Heptachlor</u>	<u>ng/kg</u>	<u>Composite</u>	<u>Annual</u>
<u>Heptachlor Epoxide</u>	<u>ng/kg</u>	<u>Composite</u>	<u>Annual</u>
<u>Hexachlorobenzene</u>	<u>ng/kg</u>	<u>Composite</u>	<u>Annual</u>
<u>Mirex</u>	<u>ng/kg</u>	<u>Composite</u>	<u>Annual</u>
<u>Trans-Nonachlor</u>	<u>ng/kg</u>	<u>Composite</u>	<u>Annual</u>
<u>Acenaphthene</u>	<u>µg/kg</u>	<u>Composite</u>	<u>Annual</u>
<u>Acenaphthylene</u>	<u>µg/kg</u>	<u>Composite</u>	<u>Annual</u>
<u>Anthracene</u>	<u>µg/kg</u>	<u>Composite</u>	<u>Annual</u>
<u>Benzo(a)anthracene</u>	<u>µg/kg</u>	<u>Composite</u>	<u>Annual</u>
<u>Benzo(o)fluoranthene</u>	<u>µg/kg</u>	<u>Composite</u>	<u>Annual</u>
<u>Benzo(k)fluoranthene</u>	<u>µg/kg</u>	<u>Composite</u>	<u>Annual</u>
<u>Benzo(ghi)pyrene</u>	<u>µg/kg</u>	<u>Composite</u>	<u>Annual</u>
<u>Benzo(a)pyrene</u>	<u>µg/kg</u>	<u>Composite</u>	<u>Annual</u>
<u>Benzo(e)pyrene</u>	<u>µg/kg</u>	<u>Composite</u>	<u>Annual</u>
<u>Biphenyl</u>	<u>µg/kg</u>	<u>Composite</u>	<u>Annual</u>
<u>Chrysene</u>	<u>µg/kg</u>	<u>Composite</u>	<u>Annual</u>
<u>Dibenz(ah)anthracene</u>	<u>µg/kg</u>	<u>Composite</u>	<u>Annual</u>
<u>Fluoranthene</u>	<u>µg/kg</u>	<u>Composite</u>	<u>Annual</u>
<u>Fluorene</u>	<u>µg/kg</u>	<u>Composite</u>	<u>Annual</u>

<u>Determination</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Minimum Frequency</u>
<u>Ideno(123cd)pyrene</u>	<u>µg/kg</u>	<u>Composite</u>	<u>Annual</u>
<u>Naphthalene</u>	<u>µg/kg</u>	<u>Composite</u>	<u>Annual</u>
<u>1-Methylnaphthalene</u>	<u>µg/kg</u>	<u>Composite</u>	<u>Annual</u>
<u>2-Methylnaphthalene</u>	<u>µg/kg</u>	<u>Composite</u>	<u>Annual</u>
<u>2,6-Dimethylnaphthalene</u>	<u>µg/kg</u>	<u>Composite</u>	<u>Annual</u>
<u>2,3,5-Trimethylnaphthale</u>	<u>µg/kg</u>	<u>Composite</u>	<u>Annual</u>
<u>Perylene</u>	<u>µg/kg</u>	<u>Composite</u>	<u>Annual</u>
<u>Phenanthrene</u>	<u>µg/kg</u>	<u>Composite</u>	<u>Annual</u>
<u>1-Methylphenanthrene</u>	<u>µg/kg</u>	<u>Composite</u>	<u>Annual</u>
<u>Pyrene</u>	<u>µg/kg</u>	<u>Composite</u>	<u>Annual</u>

- d. Fish Targeted for Analysis. The species of fish targeted for tissue analysis from the trawl sites shall be primarily flatfish, including, but not limited to, Pacific sanddab (Citharichthys sordidus), longfin sanddab (Citharichthys xanhostigma), bigmouth sole (Hippoglossina stomata), and hornyhead turbot (Pleuronichthys verticalis). If sufficient numbers of these primary flatfish species are not present in a zone, secondary candidate species such as the California scorpionfish (Scorpaena guttata) and halfbanded rockfish (Sebastes semicinctus) may be collected as necessary.
- e. Fish and Invertebrate Trawls Report Frequency. The Discharger shall submit reports to the San Diego Water Board on fish and invertebrate trawl monitoring annually in accordance with the due dates specified in Table E-11 for the Annual Receiving Waters Monitoring Report. The reports shall include, as a minimum, the following information:
 - i. A description of climatic and receiving water characteristics at the time of sampling (weather observations, floating debris, discoloration, wind speed and direction, swell or wave action, time of sampling, tide height, etc.).
 - ii. A description of sampling stations, including, if such information is available, differences unique to each station (e.g., station location, sediment grain size, distribution of bottom sediments, rocks, shell litter, calcareous worm tubes, etc.).
 - iii. A description of the sample collection and preservation procedures used in the survey.
 - iv. A description of the specific method used for laboratory analysis.
 - v. An in-depth discussion, evaluation, interpretation and tabulation of fish and invertebrate trawl data including interpretations and conclusions as to whether applicable Receiving Water Limitations in this Order have been attained at each trawl sample station.

2. Rig Fishing

- a. Rig Fishing Frequency. Muscle tissues shall be analyzed annually (i.e., during October) from fishes collected in each of the two rig fishing zones described below in order to monitor the uptake of pollutants in species and tissues that are consumed by humans.
- b. Rig Fishing Method and Location. The fish shall be collected by hook and line or by setting baited lines from within zones surrounding rig fishing stations RF-3 and RF-4 listed in Table E-1. Rig Fishing Zone 3 is the nearfield (near ZID) area centered within a 1-km radius of station RF-3; Rig Fishing Zone 4 is considered the farfield area centered within a 1-km radius of station RF-4. There are no depth requirements for these two zones with regards to the collection of fishes for tissue analysis. The species targeted for muscle tissue analysis in the rig fishing stations shall be representative of those caught by recreational and/or commercial fishery activities in the region. The species targeted for muscle tissue analysis shall be primarily rockfish, which may include, but are not limited to, the vermilion rockfish (*Sebastes miniatus*) and the copper rockfish (*Sebastes caurinus*). If sufficient numbers of these primary species are not present or cannot be caught in a particular zone, secondary target species (e.g., other rockfish, scorpionfish) may be collected and analyzed as necessary. Fish samples shall be identified to species, with number of individuals per species, standard length and wet weight recorded. The presence of any physical abnormalities or disease symptoms (e.g., fin erosion, external lesions, tumors) or parasites shall also be recorded. Physical abnormalities and disease symptoms shall be recorded and itemized (e.g., fin rot, lesions, and tumors).
- c. Rig Fishing Collection. Three replicate composite samples of the target species shall be obtained from each zone, with each composite consisting of a minimum of three individual fish. Muscle tissue shall be chemically analyzed for the same set of constituents as trawl-caught fish specified in Table E-9 above.
- d. Rig Fishing Report Frequency. The Discharger shall submit reports to the San Diego Water Board on rig fishing monitoring annually in accordance with the due dates specified in Table E-11 for the Annual Receiving Waters Monitoring Report. The reports shall include, as a minimum, the following information:
 - i. A description of climatic and receiving water characteristics at the time of sampling (weather observations, floating debris, discoloration, wind speed and direction, swell or wave action, time of sampling, tide height, etc.).
 - ii. A description of sampling stations, including, if such information is available, differences unique to each station (e.g., station location, sediment grain size, distribution of bottom sediments, rocks, shell litter, calcareous worm tubes, etc.).
 - iii. A description of the sample collection and preservation procedures used in the survey.

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- iv. A description of the specific method used for laboratory analysis.
- v. An in-depth discussion, evaluation, interpretation and tabulation of fish data including interpretations and conclusions as to whether applicable Receiving Water Limitations in this Order have been attained at each rig fishing station.

10. Section X (renumbered as section IX), pages E-28 through E-29, of Attachment E of Order No. R9-2013-0006 is amended as follows:

~~X.—OTHER MONITORING REQUIREMENTS~~

~~a.—Kelp Bed Canopy~~

~~The Discharger shall participate with other ocean dischargers in the San Diego Region in an annual regional kelp bed photographic survey. Kelp beds shall be monitored annually by means of vertical aerial infrared photography to determine the maximum aerial extent of the region's coastal kelp beds within the calendar year. Surveys shall be conducted as close as possible to the time when kelp bed canopies cover the greatest area. The entire San Diego Region coastline, from the international boundary to the San Diego Region/Santa Ana Region boundary shall be photographed on the same day.~~

~~The images produced by the surveys shall be presented in the form of 1:24,000 scale photo-mosaic of the entire San Diego Region coastline. Onshore reference points, locations of all ocean outfalls and diffusers, and the 30-foot mean lower low water (MLLW) and 60-foot (MLLW) depth contours shall be shown.~~

~~The aerial extent of the various kelp beds photographed in each survey shall be compared to that noted in surveys of previous years. Any significant losses which persist for more than one year shall be investigated by divers to determine the probable reason for the loss.~~

~~b.—Regional Monitoring~~

~~The Discharger shall, as directed by the San Diego Water Board, participate with other regulated entities, other interested parties, and the San Diego Water Board in development, refinement, implementation, and coordination of regional monitoring and assessment programs to:~~

- ~~1.—Determine the status and trends of conditions in ocean waters with regard to beneficial uses, e.g.
 - ~~a.—Are fish and shellfish safe to eat?~~
 - ~~b.—Is water quality safe for swimming?~~
 - ~~c.—Are ecosystems healthy?~~~~
- ~~2.—Identify the stressors causing / contributing to conditions of concern;~~
- ~~3.—Identify the sources of the stressors causing / contributing to conditions of concern;
and~~

- ~~4. Evaluate the effectiveness (i.e., environmental outcomes) of actions taken to address such stressors and sources.~~

IX Regional Monitoring Requirements

Regional ocean water monitoring provides information about the sources, fates, and effects of anthropogenic contaminants in the coastal marine environment necessary to make assessments over large areas. The large scale assessments provided by regional monitoring describe and evaluate cumulative effects of all anthropogenic inputs and enable better decision making regarding protection of beneficial uses of ocean waters. Regional monitoring data assists in the interpretation of core monitoring studies by providing a more accurate and complete characterization of reference conditions and natural variability. Regional monitoring also leads to methods standardization and improved quality control through intercalibration exercise. The coalitions implementing regional monitoring enable sharing of technical resources, trained personnel and associated costs. Focusing these resources on regional issues and developing a broader understanding of pollutants effects in ocean waters enables the development of more rapid and effective response strategies. Based on all of these considerations the San Diego Water Board supports regional approaches to monitoring ocean waters.

The Discharger shall, as directed by the San Diego Water Board, participate with other regulated entities, other interested parties, and the San Diego Water Board in development and implementation of new and improved monitoring and assessment programs for ocean waters in the San Diego Region and discharges to those waters. These programs shall be developed and implemented so as to:

- (1) Determine the status and trends of conditions in ocean waters in the San Diego Region with regard to beneficial uses, e.g.,**
 - i. Are fish and shellfish safe to eat?**
 - ii. Is water quality safe for swimming?**
 - iii. Are ecosystems healthy?**
- (2) Identify the primary stressors causing or contributing to conditions of concern;**
- (3) Identify the major sources of the stressors causing or contributing to conditions of concern; and**
- (4) Evaluate the effectiveness (i.e., environmental outcomes) of actions taken to address such stressors and sources.**

Development and implementation of new and improved monitoring and assessment programs for ocean waters will be guided by the following:

- 1. Water Quality Control Plan Ocean Waters of California (Ocean Plan);**
- 2. San Diego Water Board Resolution No. R9-2012-0069, "Resolution in Support of A Regional Monitoring Framework;"**

3. San Diego Water Board staff report entitled “A Framework for Monitoring and Assessment in the San Diego Region;” and
4. Other guidance materials, as appropriate.

A. Kelp Bed Canopy Monitoring Requirements

Kelp consists of a number of species of brown algae. Along the central and southern California coast, giant kelp (*Macrocystis pyrifera*) is the largest species colonizing rocky, and in some cases sandy, subtidal habitats. Giant kelp is an important component of coastal and island communities in southern California, providing food and habitat for numerous animals. Monitoring of the kelp beds is necessary to answer the following questions:

- (1) What is the maximum areal extent of the coastal kelp bed canopies each year?
- (2) What is the variability of the coastal kelp bed canopy over time?
- (3) Are coastal kelp beds disappearing? If yes, what are factors that could contribute to the disappearance?
- (4) Are new coastal kelp beds forming?

The Discharger shall participate with other southern California ocean dischargers in an ongoing regional survey of coastal kelp beds in the Southern California Bight. The intent of these surveys is to provide an indication of the health of these kelp beds, recognizing that the extent of kelp bed canopies may change due to variety of influences.

Kelp beds shall be monitored by means of vertical aerial infrared photography to determine the maximum areal extent of the canopies of coastal kelp beds each year. Surveys shall be conducted as close as possible to when kelp bed canopies are at their greatest extent during the year. The entire San Diego Region coastline, from the international boundary to the San Diego Region/Santa Ana Region boundary shall be photographed on the same day.

The maximum areal extent of kelp bed canopies each year shall be compared to that observed in previous years. Any significant losses that persist for more than one year shall be investigated by divers to document benthic and understory conditions.

The data, analyses, assessment, and images produced by the surveys shall be made available in a user-friendly format on a website that is readily available to the public. In addition to the kelp bed canopies, the images shall show onshore reference points, locations of all ocean outfalls and diffusers, artificial reefs, areas of known hard-bottom substrate (i.e., rocky reefs), and depth contours at intervals of 30-foot mean lower low water (MLLW).

The surveys shall be conducted on a “continuous improvement” basis, i.e., each year improvements shall be made in monitoring, analysis, assessment, and/or documentation. For example, these could include:

1. More sophisticated analysis of patterns, correlations, and cycles that may be related to the extent of kelp bed canopies; or

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2. Projects to improve understanding of influences on kelp beds or of how the extent of the canopies of various kelp beds has changed since the early 20th century.

B. Southern California Bight Monitoring Program Participation Requirements

The Discharger is required to participate in the, Southern California Bight Regional Monitoring Program coordinated by the Southern California Coastal Water Research Project (SCCWRP), or any other coordinator named by the Executive Officer, pursuant to CWC 13267, 13383, and 40 CFR 122.48. The intent of the Southern California Bight Regional Monitoring Program is to maximize the efforts of all monitoring partners using a more cost-effective monitoring design and to best utilize the pooled scientific resources of the Southern California Bight.

During these coordinated sampling efforts, the Discharger's receiving water sampling and analytical effort, as defined in section IV of this MRP, may be reallocated to provide a regional assessment of the impact of the discharge of municipal wastewater to the Southern California Bight. In that event, the Executive Officer shall notify the Discharger in writing that the requirement to perform the receiving water sampling and analytical effort defined in section IV of this MRP is suspended for the duration of the reallocation. Anticipated modifications to the monitoring program will be coordinated so as to provide a more comprehensive picture of the ecological and statistical significance of monitoring results and to determine cumulative impacts of various pollution sources. The level of resources in terms of sampling and analytical effort redirected from the receiving water monitoring program required under section IV this MRP shall approximately equal the level of resources provided to implement the regional monitoring and assessment program, unless the Executive Officer, the Discharger and the USIBWC agree otherwise. The specific scope and duration of the receiving water monitoring program reallocation and redirection shall be determined in writing by the Executive Officer in consultation with the Discharger and USIBWC.

11. Table F-1, page F-3, of Attachment F of Order No. R9-2013-0006 is amended as follows:

Table F-1. Facility Information

WDID	9 000000900
Discharger	City of San Diego
Name of Facility	South Bay Water Reclamation Plant
Facility Address	2411 Dairy Mart Road San Diego, CA 92154 San Diego County
Facility Contact, Title and Phone	Halla Razak, Director of Public Utilities, (858) 292-6401 Roger Bailey, P.E., Director of Public Utilities, (858) 292-6401
Authorized Person to Sign and Submit Reports	Halla Razak, Director of Public Utilities, (858) 292-6401 Roger Bailey, P.E., Director of Public Utilities, (858) 292-6401
Mailing Address	9192 Topaz Way, San Diego, CA 92123
Billing Address	Same as Mailing Address
Type of Facility	Publicly Owned Treatment Works (POTW)
Major or Minor Facility	Major
Threat to Water Quality	1
Complexity	A
Pretreatment Program	Yes
Reclamation Requirements	Producer and Distributor (regulated under separate waste discharge requirements (WDRs))
Facility Permitted Flow	15.0 MGD
Facility Design Flow	18.0 MGD
Watershed	Pacific Ocean
Receiving Water	Pacific Ocean
Receiving Water Type	Ocean

12. Section VI.D, page F-30, of Attachment F of Order No. R9-2013-0006 is amended as follows:

~~Combined effluent monitoring is established to determine the pollutant concentrations in the combined effluent discharged from the SBIWTP and the SBWRP through the SBOO and evaluate the potential of the combined effluent to negatively impact the receiving water.~~

~~Although the effluent limitations listed in Section IV of the Order do not apply to the combined effluent, the combined effluent from the SBIWTP and the SBWRP shall also be monitored quarterly. Samples shall be collected from the effluent of each plant and combined in the laboratory in accordance with a ratio that is proportional to the flow from each plant. The monitored parameters shall be the same as for the effluent monitoring program except that chronic toxicity testing shall use the most sensitive species as determined by screening tests of the combined effluent. Land Outfall Monitoring shall also include acute toxicity testing. Additional information regarding land outfall monitoring is in Section V of Attachment E of this Order.~~

Since the SBIWTP was upgraded to a secondary treatment wastewater plant and has been in substantial compliance with secondary effluent limitations, there is no longer a need to monitor the combined effluent from SBIWTP and the SBWRP.

13. Section VI.E, page F-30, of Attachment F of Order No. R9-2013-0006 is amended as follows:

The receiving water and sediment monitoring requirements set forth below are designed to measure the effects of the SBOO discharge on the receiving ocean waters. These monitoring requirements will remain in effect on an interim basis, pending development of a new and updated monitoring and assessment programs. The overall receiving water monitoring program is intended to answer the following questions:

- (5) **Does the receiving water meet water quality standards?**
- (6) **Are the receiving water conditions getting better or worse over time?**
- (7) **What is the relative contribution of the Facility discharge to pollution in the receiving water?**

1. Surf Zone Water Quality Monitoring Requirements

As ocean surface waves come closer to shore they break, forming the foamy, bubbly surface called surf. The region of breaking waves defines the surf zone.

Monitoring of the surf zone is intended to answer the following questions:

- (1) **Does the effluent cause or contribute to an exceedance of the water quality standards in the receiving water?**
- (2) **Does the effluent reach water contact zones or commercial shellfish beds?**
- (3) **Are densities of bacteria in water contact areas below levels protective of public health?**

Surf Zone Station S-1 (located in Mexico near Punta Bandera) was abandoned after August 6, 2002 as a result of legal restrictions that prevented access to this station beginning in July 2002. Consequently, Surf Zone Station S-0 was established to replace S-1 as the southernmost surf zone sampling site for SBOO. Sampling began at S-0 on August 13, 2002. This change was documented in the August 2002 monthly self-monitoring report.

Refer to section VIII.A of Attachment E of this Order for a summary of surf zone water quality monitoring requirements.

2. Offshore Water Quality Monitoring Requirements

Offshore monitoring extends from south of international border to Point Loma. See Attachment B for a map of the offshore monitoring stations.

Offshore monitoring is necessary to answer the following questions:

- (1) **Is natural light significantly reduced at any point outside the zone of initial dilution as a result of the discharge?**

- (2) Does the discharge cause a discoloration of the ocean surface?
- (3) Does the discharge of oxygen demanding waste cause the dissolved oxygen concentration to be depressed at any time more than 10 percent from that which occurs naturally?
- (4) Does the discharge of waste cause the pH to change at any time more than 0.2 units from that which occurs naturally?
- (5) Is the wastewater plume encroaching upon receiving water areas used for swimming, surfing, diving and shellfish harvesting?
- (6) What is the fate of the discharge plume?

Refer to section VIII.B of Attachment E of this Order for a summary of off shore water quality monitoring requirements.

3. Benthic Community Protection Monitoring Requirements

Sediments integrate constituents that are discharged to the ocean. Most particles that come from the SBOO discharge, and any associated contaminants, will eventually settle to the seafloor where they are incorporated into the existing sediments. Sediments can accumulate these particles over the years until the point where sediment quality has degraded and beneficial uses are impaired.

The benthic community is strongly affected by sediment composition and quality and water quality. Because the benthos are dependent on its surroundings, they serve as a biological indicator that reflects the overall conditions of the aquatic environment.

Sediment and benthic community monitoring are necessary to answer the following question:

- (1) Is the dissolved sulfide concentration of waters in sediments significantly increased above that present under natural conditions?
- (2) Is the concentration of substances, set forth in Table 1 of the Ocean Plan for protection of marine aquatic life, in marine sediments at levels which would degrade the benthic community?
- (3) Is the concentration of organic pollutants in marine sediments at levels that would degrade the benthic community?
- (4) Are benthic communities degraded as a result of the discharge?
- (5) Is the sediment quality changing over time?

Refer to section VIII.C of Attachment E of this Order for a summary of sediment and benthic monitoring requirements.

4. Fish and Invertebrate Monitoring Requirements

Many pollutants discharged into receiving waters have the potential to bioaccumulate and persist in tissue of aquatic organisms, including fish. Chemical pollutants that bioaccumulate tend to magnify in concentration as they pass through the aquatic food chain. Fish monitoring data is required to

assess the human health risks for individuals who may consume fish and to assess trends of contaminants levels in the receiving water over time.

Aquatic invertebrates are excellent indicators of ecosystem health because they are ubiquitous, abundant, diverse, and typically sedentary. The growth, survival, and reproduction of aquatic invertebrates are all sensitive to declines in environmental health, making analysis of assemblage structure a good ecosystem monitoring tool.

Fish and invertebrate monitoring is necessary to answer the following questions:

- (1) Does the concentration of pollutants in fish, shellfish, or other marine organisms used for human consumption bioaccumulate to levels that are harmful to human health?**
- (2) Does the concentration of pollutants in marine life bioaccumulate to levels that degrade marine communities?**
- (3) Are the concentrations of pollutants in fish and other marine organisms changing over time?**
- (4) Is the health of fish changing over time?**
- (5) Is the population of selected species changing over time?**

Refer to section VIII.D of Attachment E of this Order for a summary of fish monitoring requirements.

1. Surface Water

a. Microbiological (Off Shore)

~~The off shore water quality sampling program is designed to help evaluate the fate of the wastewater plume under various conditions and to determine if the Ocean Plan standards are being negatively impacted by the discharge. Further, bacterial sampling is required to provide data to help track the wastewater plume in the offshore waters, to evaluate compliance with recreational water standards in the kelp beds, and to address issues of beach water quality at the shoreline stations.~~

b. Benthic Monitoring

~~Sediment and infauna monitoring is required to help evaluate the potential effects of the discharge on the physical and chemical properties of the sediment and biological communities in the vicinity of the discharge, consistent with Order No. R9-2006-0067.~~

~~c.—Fish and Invertebrate~~

~~Fish and invertebrate monitoring is required to assess the effects of the discharge on local fish and megabenthic invertebrate communities in the surrounding area of the discharge location, consistent with Order No. R9-2006-0067.~~

14. Section VI.F; page F-30, of Attachment F of Order No. R9-2013-0006 is amended as follows:

F Regional Monitoring Requirements~~Other Monitoring Requirements~~

Regional ocean water monitoring provides information about the sources, fates, and effects of anthropogenic contaminants in the coastal marine environment necessary to make assessments over large areas. The large scale assessments provided by regional monitoring describe and evaluate cumulative effects of all anthropogenic inputs and enable better decision making regarding protection of beneficial uses of ocean waters. Regional monitoring data assists in the interpretation of core monitoring studies by providing a more accurate and complete characterization of reference conditions and natural variability. Regional monitoring also leads to methods standardization and improved quality control through intercalibration exercise. The coalitions implementing regional monitoring enable sharing of technical resources, trained personnel and associated costs. Focusing these resources on regional issues and developing a broader understanding of pollutants effects in ocean waters enables the development of more rapid and effective response strategies. Based on all of these considerations the San Diego Water Board supports regional approaches to monitoring ocean waters.

The Discharger shall, as directed by the San Diego Water Board, participate with other regulated entities, other interested parties, and the San Diego Water Board in development and implementation of new and improved monitoring and assessment programs for ocean waters in the San Diego Region and discharges to those waters. These programs shall be developed and implemented so as to:

- (1) Determine the status and trends of conditions in ocean waters in the San Diego Region with regard to beneficial uses, e.g.,
 - i. Are fish and shellfish safe to eat?
 - ii. Is water quality safe for swimming?
 - iii. Are ecosystems healthy?
- (2) Identify the primary stressors causing or contributing to conditions of concern;
- (3) Identify the major sources of the stressors causing or contributing to conditions of concern; and

(4) Evaluate the effectiveness (i.e., environmental outcomes) of actions taken to address such stressors and sources.

1. Kelp Bed Canopy Monitoring Requirements

Kelp consists of a number of species of brown algae. Along the central and southern California coast, giant kelp (*Macrocystis pyrifera*) is the largest species colonizing rocky, and in some cases sandy, subtidal habitats. Giant kelp is an important component of coastal and island communities in southern California, providing food and habitat for numerous animals. Monitoring of the kelp beds is necessary to answer the following questions:

- (1) What is the maximum areal extent of the coastal kelp bed canopies each year?**
- (2) What is the variability of the coastal kelp bed canopy over time?**
- (3) Are coastal kelp beds disappearing? If yes, what are factors that could contribute to the disappearance?**
- (4) Are new coastal kelp beds forming?**

Refer to section V.A of Attachment E of this Order for a summary of kelp bed canopy monitoring requirements.

2. Southern California Bight Monitoring Program Participation Requirements

The Discharger is required to participate in the Southern California Coastal Water Research Project (SCCWRP), Southern California Bight Regional Monitoring Program), or any other coordinator named by the Executive Officer, pursuant to CWC 13267, 13383, and 40 CFR 122.48. The intent of the Southern California Bight Regional Monitoring Program is to maximize the efforts of all monitoring partners using a more cost-effective monitoring design and to best utilize the pooled scientific resources of the Southern California Bight.

During these coordinated sampling efforts, the Discharger's receiving water sampling and analytical effort, as defined in section IV of the MRP, may be reallocated to provide a regional assessment of the impact of the discharge of municipal wastewater to the Southern California Bight. In that event, the receiving water sampling and analytical effort defined in section IV of the MRP will not be required for the duration of the reallocation. Anticipated modifications to the monitoring program will be coordinated so as to provide a more comprehensive picture of the ecological and statistical significance of monitoring results and to determine cumulative impacts of various pollution sources. The level of resources in terms of sampling and analytical effort redirected from the receiving water monitoring program required under section IV the MRP shall equal the level of resources provided to implement the regional monitoring and assessment program, unless the Executive Officer, the Discharger and USIBWC agree otherwise. The specific scope and duration of the receiving water monitoring program reallocation and redirection shall be determined and set by the Executive Officer in consultation with the Discharger and USIBWC.

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~~Kelp Bed Monitoring. Kelp bed monitoring is intended to assess the extent to which the discharge of wastes may affect the aerial extent and health of coastal kelp beds. The aerial extent of the various kelp beds photographed in each survey will provide a baseline for future monitoring to help evaluate any significant and persistent losses to the kelp beds.~~

~~**Regional Monitoring.** The Discharger is required to participate in regional monitoring activities coordinated by the Southern California Coastal Water Project (SCGWRP). The procedures for San Diego Water Board and USEPA approval shall be the same as detailed above for the strategic process studies. The intent of regional monitoring activities is to maximize the efforts of all monitoring partners using a more cost-effective monitoring design and to best utilize the pooled scientific resources of the region. During these coordinated sampling efforts, the Discharger's sampling and analytical effort may be reallocated to provide a regional assessment of the impact of the discharge of municipal wastewater to the Southern California Bight. Anticipated modifications to the monitoring program will be coordinated so as to provide a more comprehensive picture of the ecological and statistical significance of monitoring results and to determine cumulative impacts of various pollution sources.~~

G Solids Monitoring.

Since all sewage sludge/ biosolids are returned to the sewer system for transport to the City of San Diego Point Loma Wastewater Treatment Plant, the Discharger is not required to monitor solids generated at the Facility pursuant to 40 CFR Part 503.

I, David W. Gibson, Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Diego Region, on **November 12, 2014**.

Tentative Order
David W. Gibson
Executive Officer