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STATE WATER RESOURCES CONTROL BOARD BOARD MEETING SESSION – DIVISION OF WATER QUALITY APRIL 21, 2015

ITEM 5

SUBJECT

CONSIDERATION OF A PROPOSED RESOLUTION APPROVING AN EXCEPTION TO THE CALIFORNIA OCEAN PLAN FOR THE UNIVERSITY OF CALIFORNIA SAN DIEGO SCRIPPS INSTITUTION OF OCEANOGRAPHY AND ADOPTING AN ADDENDUM TO THE INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

DISCUSSION

On March 21, 1974, the State Water Resources Control Board (State Water Board) issued [Resolution No. 74-28](https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/1974/rs74_028.pdf) (https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/1974/rs74_028.pdf), designating 34 Areas of Special Biological Significance (ASBS). Among those ASBS designated were the San Diego – Scripps ASBS (previously named the San Diego Marine Life Refuge ASBS) and La Jolla ASBS (previously named as San Diego La Jolla Ecological Reserve ASBS). In 1983, the State Water Board issued [Resolution No. 83-87](https://www.waterboards.ca.gov/coloradoriver/board_decisions/adopted_orders/orders/1983/83_87.pdf) (https://www.waterboards.ca.gov/coloradoriver/board_decisions/adopted_orders/orders/1983/83_87.pdf), amending the California Ocean Plan (Ocean Plan) to include a prohibition of waste discharge into ASBS. Specifically, the Ocean Plan states that, “Waste shall not be discharged to areas designated as being of special biological significance. Discharges shall be located a sufficient distance from such designated areas to assure maintenance of natural water quality conditions in these areas.” The amendment also included provisions for exceptions to the prohibition.

The University of California San Diego Scripps Institution of Oceanography (UCSD/SIO) is located on the coast adjacent to the San Diego Scripps ASBS. The UCSD/SIO was founded in the early twentieth century and has been discharging waste seawater into the ocean in the vicinity of its pier since 1910. In July, 2004, the State Water Board issued [Resolution No. 2004- 0052](https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2004/rs2004-0052.pdf) (https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2004/rs2004-0052.pdf), providing UCSD/SIO a conditional exception to the Ocean Plan for discharges into the San Diego – Scripps ASBS. The San Diego Regional Water Quality Control Board (San Diego Water Board) incorporated this conditional exception into UCSD/SIO’s waste discharge requirements, NPDES Permit No. CA0107239 adopted on February 9, 2005 as [Order R9-2005- 0008](https://www.waterboards.ca.gov/sandiego/board_decisions/adopted_orders/2005/2005_0008/order%2005-0008.pdf) (https://www.waterboards.ca.gov/sandiego/board_decisions/adopted_orders/2005/2005_0008/order%2005-0008.pdf), and revised on November 12, 2008 as [Order R9-2008-0139](https://www.waterboards.ca.gov/sandiego/board_decisions/adopted_orders/2005/2005_0008/res%20no.%2008-0139.pdf) (https://www.waterboards.ca.gov/sandiego/board_decisions/adopted_orders/2005/2005_0008/res%20no.%2008-0139.pdf).

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The conditional exception included a sunset provision whereby the exception expired at the end of the five-year term of the Scripps permit that incorporates the conditions in that resolution (i.e. expired in 2009). Since that time, the UCSD/SIO permit has been on administrative extension. UCSD/SIO seeks a renewal of the exception from the Ocean Plan's prohibition on discharges into ASBS. If renewed, the exception would allow continued waste seawater and commingled storm water discharge from UCSD/SIO facilities into the San Diego - Scripps ASBS.

The conditional exception also included provisions to ensure that the discharges into San Diego-Scripps ASBS from UCSD/SIO do not adversely impact the biological communities in the ASBS or compromise protection of ocean waters for beneficial uses. UCSD/SIO has complied with all of the conditions, which included the following conditions worth special note:

- "UCSD/SIO must minimize the concentrations of chemical additives, including antibiotics, in the effluent..."

UCSD/SIO re-plumbed the seawater system and installed a 12,500 gallon holding tank to prevent seawater that is treated with medication/chemicals from being discharged to the ocean outfall by diverting treated water to the sanitary sewer system. Seawater treated with chemicals is discharged into the sanitary sewer system in accordance with guidelines established by the San Diego Metropolitan Waste Water Department. Chemical treatments are no longer discharged to an ocean outfall.

- "Effluent and receiving water analysis for copper must employ the approved analytical method with the lowest minimum detection limits. A quarterly report of all chemical additives discharged via waste seawater must be submitted in the quarterly report to the RWQCB [Regional Water Board]. Flow measures (using a flow metering device) for Outfall 001, and estimates for all other permitted outfalls, must be made and reported quarterly to the Regional Water Board."

UCSD/SIO uses inductively coupled plasma/mass spectrometry to analyze for copper in the effluent and receiving water samples collected at UCSD/SIO. UCSD/SIO includes a log of all chemical additives used in the seawater system and daily flow data for each of the permitted outfalls in the quarterly reports it submits to the Regional Water Board.

- "By January 1, 2007, UCSD/SIO must eliminate all discharges of non-storm water urban runoff..."

UCSD/SIO trains facilities management staff on an annual basis on dry weather flow prevention and elimination source controls (e.g., irrigation system retrofits and outdoor washing best management practices, etc.). In addition, UCSD/SIO installed treatment controls to prevent dry weather flows from reaching the ASBS, including four media filters along the seawall above the beach, dry weather flow diversions to bioswales, and infiltration galleries around storm drains. These treatment systems mimic the natural environment and do not require mechanical equipment or energy, making them ideal for developed coastal areas where space is limited.

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Wash racks were installed at various locations at UCSD/SIO to capture wash water and discharge it to the sanitary sewer system.

- “The effluent from Outfall 001 must be sampled and analyzed monthly for copper concentrations. If after UCSD/SIO had demonstrated that copper as a treatment additive has been eliminated from the discharge into the ASBS, the Regional Board in consultation with the State Board Division of Water Quality may reduce the frequency of monitoring for copper in the effluent.”

UCSD/SIO has sampled and analyzed the effluent from Outfall 001 for copper on a monthly basis since 2005. The seawater system has been re-plumbed so that seawater treated with copper or any other treatment chemical is discharged to the sanitary sewer system, not to Outfall 001. UCSD/SIO has requested that the Regional Board reduce the monitoring frequency for copper.

- “Twice annually, once during dry weather and once during wet weather, the receiving water and sediment in the vicinity of the UCSD/SIO pier must be sampled and analyzed for Ocean Plan Table B constituents...”

UCSD/SIO has sampled the receiving water and sediment in the vicinity of the SIO pier in accordance with the NPDES permit. Acute toxicity has not been observed in the sediment samples collected over the last 7 years. In addition to the permit requiring wet and dry weather receiving water monitoring, UCSD/SIO has also conducted receiving water monitoring under the Southern California Bight '08 Regional Monitoring program and is requesting the option of continuing to participate in regional monitoring in the future (e.g., Bight '13) in lieu of individual monitoring.

- “A study must be performed to determine the initial dilution and fate of the discharge during storms and non-storm periods...”

Based on a the review of the dilution model and Natural Water Quality Committee responses, the dilution factor was increased from 2:1 to 7:1 in UCSD/SIO's NPDES permit on November 26, 2008. The Regional Water Board found that the minimum dilution factor of 7:1, observed during the study, would be the most protective of the San Diego Marine Life Refuge ASBS. Effluent limits were recalculated to reflect the change in the dilution factor.

POLICY ISSUE

Should the State Water Board adopt the amended exception to the Ocean Plan and the proposed addendum to the initial study/mitigated negative declaration.

FISCAL IMPACT

State Water Board staff work associated with or initiated as a result of this action will be addressed with existing and future budgeted resources.

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REGIONAL BOARD IMPACT

The San Diego Regional Water Quality Control Board will have the responsibility to implement the proposed exception to Ocean Plan.

STAFF RECOMMENDATION

Staff recommends that the State Water Board approve the exception and adopt the proposed addendum to the initial study/mitigated negative declaration.

State Water Resources Control Board action on this item will assist the Water Boards in reaching Goal 4 of the Strategic Plan Update: 2008-2012 to comprehensively address water quality protection and restoration, the relationship between water supply and water quality, and describe the connections between water quality, water quantity, and climate change throughout California's water planning processes. In particular, approval of this item will assist in fulfilling objective 4.2 to take appropriate enforcement actions and innovative approaches as needed to protect and restore all surface waters.

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STATE WATER RESOURCES CONTROL BOARD RESOLUTION NO. 2015-

APPROVING AN EXCEPTION TO THE CALIFORNIA OCEAN PLAN FOR THE UNIVERSITY OF CALIFORNIA SAN DIEGO SCRIPPS INSTITUTION OF OCEANOGRAPHY AND ADOPTING AN ADDENDUM TO THE INITIAL STUDY/ MITIGATED NEGATIVE DECLARATION

WHEREAS:

1. The State Water Resources Control Board (State Water Board) adopted the Water Quality Control Plan for Ocean Waters of California (Ocean Plan) on July 6, 1972 and revised it in 1978, 1983, 1988, 1990, 1997, 2001, 2005, 2009, and 2012.
2. The Ocean Plan states that waste shall not be discharged to areas designated as being of special biological significance.
3. Exceptions to the Ocean Plan may be granted by the State Water Board provided that
 - (a) the exception will not compromise protection of ocean waters for beneficial uses, and
 - (b) the public interest will be served.
4. The Ocean Plan includes general requirements for management of waste discharges to the ocean that include the requirement that natural water quality conditions are not altered in areas of special biological significance (ASBS) or areas that existing marine laboratories use as a source of seawater.
5. Natural ocean water quality has been defined by the ASBS Natural Water Quality Committee as that water quality (based on selected physical, chemical and biological characteristics) that is required to sustain marine ecosystems, and which is without apparent human influence, i.e., an absence of significant amounts of: (a) man-made constituents (e.g., DDT); (b) other chemical (e.g., trace metals), physical (temperature/thermal pollution, sediment burial), and biological (e.g., bacteria) constituents at concentrations that have been elevated due to man's activities above those resulting from the naturally occurring processes that affect the area in question; and (c) non-indigenous biota (e.g., invasive algal bloom species) that have been introduced either deliberately or accidentally by humans. Discharges "*shall not alter natural ocean water quality*" as determined by a comparison to the range of constituent concentrations in reference areas agreed upon via a regional monitoring program.

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6. The waters of San Diego Marine Life Refuge were designated by the State Water Board as an ASBS in 1974. In 2005, the State Water Board renamed the San Diego Marine Life Refuge ASBS to the San Diego-Scripps ASBS.
7. The University of California San Diego Scripps Institution of Oceanography (UCSD/SIO) and its Stephen Birch Aquarium (Birch Aquarium) discharge waste seawater, at times commingled with urban runoff, into the San Diego-Scripps ASBS and the adjoining La Jolla ASBS.
8. There are other locations along the coastline of the San Diego-Scripps ASBS where urban runoff drains from UCSD/SIO into the ASBS. This exception covers all discharges from UCSD/SIO into the ASBS, including all storm water discharges whether commingled with waste seawater or not.
9. UCSD/SIO requested an exception to the Ocean Plan's prohibition against discharges to ASBS for waste discharges from its facility. This request was granted by the State Water Board through adoption of [Resolution No. 2004-0052](https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2004/rs2004-0052.pdf) (https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2004/rs2004-0052.pdf). The exception established requirements and conditions applicable to the discharges into the ASBS from the seawater system at UCSD/SIO and from the municipal storm water collection system.
10. On July 22, 2004, the State Water Board prepared and circulated an Initial Study/Mitigated Negative Declaration (IS/MND) for the proposed exception adopted in Resolution No. 2004-0052 in accordance with the California Environmental Quality Act and the California Code of Regulations, title 14, Section 15070. In 2004, the State Water Board found there was no substantial evidence that approval of the exception would have a significant effect on the environment because of the terms and conditions that have been incorporated into the project. This finding was based on the entire record, including the IS/MND and all comments received by the State Water Board. The 2004 IS/MND reflected the State Water Board's independent judgment and analysis.
11. The San Diego Regional Water Quality Control Board (San Diego Water Board) issued a National Pollutant Discharge Elimination System (NPDES) permit [R9-2005-0008](https://www.waterboards.ca.gov/sandiego/board_decisions/adopted_orders/2005/2005_0008/order%2005-0008.pdf) (CA0107239) (https://www.waterboards.ca.gov/sandiego/board_decisions/adopted_orders/2005/2005_0008/order%2005-0008.pdf) for the discharges which was contingent upon the exception granted by the State Water Board in 2004 and incorporated the conditions of the exception.
12. Resolution No. 2004-0052 stated the exception shall expire at the end of the five-year term of the UCSD/SIO permit.
13. UCSD/SIO has requested an amended exception with no expiration date.
14. All conditions in the exception adopted under Resolution No. 2004-0052 have been met in full by UCSD/SIO, including the elimination of non-storm water runoff, monthly monitoring of copper in the waste seawater effluent from Outfall

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001, a bioaccumulation study using both mussels and sand crabs, a study to determine the initial dilution of waste seawater in the surf zone, sediment sampling and analysis for toxicity and chemical constituents, indicator bacteria and residual chlorine monitoring at Outfall 003, and the development of a plan to prevent releases of exotic species into the ASBS. These conditions are no longer required and therefore have been eliminated from the amended exception.

15. The State Water Board finds that granting the requested exception will not compromise protection of ocean waters for beneficial uses or adversely impact biological communities provided the applicant complies with the prohibitions and special conditions in the Special Protection, contained in Appendix A to this resolution.
16. The State Water Board finds that the public interest will be served by granting this exception since the UCSD/SIO occupies a leading role in marine research, with important applications in the fields of medicine and the environment. Its Birch Aquarium is an extremely valuable educational resource, serving 400,000 visitors a year. UCSD/SIO research activities and the Birch Aquarium both depend on the use of the open seawater system.
17. The proposed amended exception will not violate the State Water Board [Resolution No. 68-16](https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/1968/rs68_016.pdf) (https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/1968/rs68_016.pdf) (Antidegradation Policy); the discharge will not unreasonably affect present and anticipated beneficial uses; the discharge will not result in water quality lower than that prescribed in the Ocean Plan; and, the people of California will benefit from the research and education provided by UCSD/SIO while beneficial uses will still be protected. Compliance with existing exception has improved the water quality of UCSD/SIO's discharges into ASBS and this improvement should continue in the future.
18. The State Water Board held a public hearing on April 21, 2015 to consider comments on the proposed amended exception.
19. The State Water Board finds that there will be no additional or new impacts associated with the proposed amended exception and an [revised draft addendum to the 2004 IS/MND](https://www.waterboards.ca.gov/water_issues/programs/ocean/asbs/docs/042115_5_revised_draft_addendum.pdf) (https://www.waterboards.ca.gov/water_issues/programs/ocean/asbs/docs/042115_5_revised_draft_addendum.pdf) is appropriate.
20. Based on the effort and success exhibited by UCSD/SIO in protecting water quality, the State Water Board finds that it is appropriate to extend the exception at this time with no expiration date.
21. The exception will be reviewed during the Triennial Review of the Ocean Plan. If the State Water Board finds cause to revoke or re-open this exception, it may do so during the Triennial Review or at any other time that it so desires.

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22. The State Water Board's record of proceedings in this matter is located at 1001 I Street, Sacramento, California and the custodian is the Division of Water Quality.

THEREFORE BE IT RESOLVED THAT:

1. The State Water Board amends the exception to the Ocean Plan prohibition against discharges to the San Diego-Scripps ASBS to the UCSD/SIO for discharges of waste seawater, wet weather urban runoff from its seawater system outfalls, and other urban runoff discharges.
2. The exception is conditioned on compliance by UCSD/SIO with its NPDES permit. The following conditions will be included in the permit:
 - a. The NPDES permit shall incorporate all of the Special Protections, contained in Appendix A to this exception, which are applicable to the discharge;
 - b. Natural water quality conditions in the receiving water must not be altered as a result of the discharge;
 - c. The discharge must comply with all other applicable provisions, including water quality standards, contained in the Ocean Plan; and
 - d. Only seawater system waste discharge and storm water discharges by the applicant are covered by this Resolution. All other waste discharges to ASBS are prohibited, unless they are covered by a separate, applicable Ocean Plan exception.
3. The State Water Board authorizes the Executive Director or designee to transmit the exception and administrative record for this action to the U.S. Environmental Protection Agency for concurrence.
4. The State Water Board authorizes the Executive Director or designee to file the Notice of Determination with the Governor's Office of Planning and Research.

CERTIFICATION

The undersigned Clerk to the Board does hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly adopted at a meeting of the State Water Resources Control Board held on April 21, 2015.

Jeanine Townsend
Clerk to the Board

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Appendix A

Special Protections for the San Diego-Scripps Area of Special Biological Significance

1. Natural water quality conditions in the receiving water, seaward of the surf zone, must not be altered as a result of the discharge. The surf zone is defined as the area between the breaking waves and the shoreline at any one time. Natural water quality is defined as: That water quality (based on selected physical chemical and biological characteristics) that is required to sustain marine ecosystems, and which is without apparent human influence, i.e., an absence of significant amounts of:
 - a. man-made constituents (e.g., DDT),
 - b. other chemical (e.g., trace metals), physical (temperature/thermal pollution, sediment burial) and biological (e.g., bacteria) constituents at concentrations that have been elevated due to man's activities above those resulting from the naturally occurring processes that affect the area in question, and
 - c. non-indigenous biota (e.g., invasive algal bloom species) that have been introduced either deliberately or accidentally by man.

This definition is based on a review of the monitoring data by the Areas of Special Biological Significance (ASBS) Natural Water Quality Committee.

2. University of California San Diego Scripps Institution of Oceanography (UCSD/SIO) must minimize concentrations of chemical additives, including antibiotics, in the effluent. Formalin shall not be discharged to the ocean. The discharge of copper additives is prohibited. All additives to the seawater at the Stephen Birch Aquarium must be minimized to prevent the alteration of natural water quality conditions in the receiving water. In addition and at a minimum, UCSD/SIO must comply with effluent limits, implementing Table 1 water quality objectives as required in Section III.C. of the California Ocean Plan (Ocean Plan).
3. A quarterly report of all chemical additives discharged via waste seawater must be submitted in the quarterly monitoring report to the Executive Officer of the San Diego Regional Water Quality Control Board (Regional Water Board).
4. All discharges of non-storm water urban runoff (i.e., any discharge of urban runoff to a storm drain that is not composed entirely of storm water), except those associated with emergency firefighting, are prohibited.
5. UCSD/SIO must specifically address the prohibition of non-storm water urban runoff and the reduction of pollutants in storm water discharges draining to the ASBS in a revised Storm Water Management Plan/Program (SWMP). UCSD/SIO is required to submit its revised SWMP to the Regional Water Board within six months of permit

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issuance. The SWMP is subject to the approval of the Regional Water Board Executive Officer.

6. The revised SWMP must include a map of all entry points (known when the revised SWMP is prepared) for urban runoff entering the UCSD/SIO drainage system. The revised SWMP must also include a procedure for updating the map and plan when other entry points are discovered.
7. The SWMP must describe the measures by which non-storm water discharges will be eliminated and interim measures that will be employed to reduce non-storm water flows until the ultimate measures are implemented.
8. The revised SWMP must also address storm water discharges and how pollutants will be reduced in storm water runoff into the ASBS through the implementation of Best Management Practices (BMPs). The revised SWMP must describe BMPs designed to prevent alteration of natural water quality conditions by reducing storm water discharges or reducing pollutants (due to on-site treatment or other BMPs). The implementation schedule must be developed to ensure that non-structural BMPs are implemented within one year of the approval date of the revised SWMP by the Regional Water Board Executive Officer.
9. Once every permit cycle, a quantitative survey of benthic marine life must be performed to determine the concentrations of metals near field and far field (up and down coast, and offshore) in the ASBS. The Regional Water Board Executive Officer, in consultation with the Deputy Director or designee at the State Water Board Division of Water Quality, must approve the survey design. The results of the survey must be completed and submitted to the San Diego Water Board within six months before the end of the permit cycle. Alternatively, this requirement may be met by participating in a regional monitoring program approved by the Deputy Director of the State Water Board Division of Water Quality.
10. During the first year of the permit cycle, two samples must be collected from Outfall 001 (once during dry weather and once during wet weather) and analyzed for all Ocean Plan Table 1 constituents. During the first year of the permit cycle, two composite samples must also be collected (once during dry weather and once during wet weather) representing flows from Outfalls 002, 003, 004A, and 004B; these two composite samples must also be analyzed for all Ocean Plan Table 1 constituents. For wet weather samples from Outfall 001 and for the wet weather composite sample from Outfalls 002, 003, 004A, and 004B, the effluent samples must also be analyzed for Ocean Plan indicator bacteria. Based on these results, the Regional Board Water Board Executive Officer will determine the frequency of sampling (at a minimum, annually) and the constituents to be tested during the remainder of the permit cycle, except chronic toxicity must be tested at least twice annually.
11. Twice annually, once during dry weather and once during wet weather, the receiving water in the vicinity of the UCSD/SIO pier must be sampled and analyzed for Ocean Plan Table 1 constituents. During wet weather, the receiving water must be sampled

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both before and during a storm event and a reference site shall also be monitored for Table 1 constituents as a proxy for natural water quality. Receiving water must also be monitored during wet weather for compliance with Ocean Plan bacteria water quality objectives.

12. The requirement for wet weather receiving water and reference site monitoring may be met by participating in a regional monitoring program approved by the Deputy Director of the State Water Board Division of Water Quality.
13. If the results of receiving water monitoring indicate that wet weather discharges are causing or contributing to an alteration of natural water quality in the ASBS, UCSD/SIO is required to submit a report to the Regional Water Board within 30 days of receiving the results. Those constituents in storm water that alter natural water quality must be identified in that report. The report must describe BMPs that are currently being implemented, BMPs that are planned for in the revised SWMP, and additional BMPs that may be added to the revised SWMP. The report shall include a new or modified implementation schedule. The Regional Water Board may require modifications to the report. Within 30 days following approval of the report by the Executive Officer of the Regional Water Board, UCSD/SIO must revise its revised SWMP to incorporate any new or modified BMPs that have been and will be implemented, the implementation schedule, and any additional monitoring required.

Implementation of BMPs must be within one year of the approval by the San Diego Water Board of the revised SWMP. The Executive Officer of the Regional Water Board may, for good cause, approve a longer time period for structural BMPs. In any event, a schedule longer than one year must be as short as practicable, as determined by the Executive Officer of the Regional Water Board. As long as UCSD/SIO has complied with the procedures described above and is implementing the revised SWMP, then UCSD/SIO does not have to repeat the same procedure for continuing or recurring exceedance of the same constituent.

14. UCSD/SIO must maintain administrative and/or engineering controls that result in a negligible risk of the release of exotic species, including foreign pathogens (parasites, protozoa, bacteria, and viruses) according to the “Non – Indigenous Species Pilot Treatment Study Results for Scripps Institution of Oceanography and the Stephen Birch Aquarium at Scripps.”