



California Regional Water Quality Control Board

San Diego Region



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December 7, 2007

CERTIFIED MAIL:
7006 2760 0000 1615 6205

Mr. Andrew Fichthorn
Executive Vice President and General Manager
Sea World San Diego
500 Sea World Drive
San Diego, CA 92109-7904

In reply refer to:
SCR: 12-00083.01

Dear Mr. Fichthorn:

RESPONSE TO COMMENTS AND ERRATA SHEET FOR TENTATIVE ADDENDUM NO. 1 TO ORDER NO. R9-2005-0091, NPDES NO. CA0107336; FOR THE DISCHARGE OF WASTE FROM SEAWORLD AERIAL FIREWORKS DISPLAYS TO SAN DIEGO MISSION BAY, SAN DIEGO

The San Diego Regional Water Quality Control Board (Regional Board) has reviewed all written comments received regarding tentative Addendum No. 1 to Order No. R9-2005-0091. Comments were received from SeaWorld and from Ms. Ariadna Wall.

Enclosed are the Regional Board's Responses to Comments Document and corresponding Errata Sheet. Full copies of comment letters will be available at the Regional Boards website at <http://www.swrcb.ca.gov/rwqcb9/rb9board/Dec-07.html>.

The comments and Regional Board Responses to Comments document and Errata Sheet will be provided to the Regional Board for consideration prior to the December 12, 2007 Regional Board regularly scheduled meeting. The tentative order with errata will be presented to the Regional Board for adoption at their regularly scheduled meeting on December 12, 2007. The meeting will begin promptly at 9:00 a.m. and will be held at the following location:

San Diego Regional Water Quality Control Board
9174 Sky Park Court, Suite 100
San Diego, CA 92123

California Environmental Protection Agency

Mr. Andrew Fichthorn
Executive Vice President and General Manager
Sea World San Diego

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December 7, 2007

The heading portion of this letter includes a Regional Board code number noted after "In reply refer to:" In order to assist us in the processing of your correspondence, please include this code number in the heading or subject line portion of all correspondence and reports to the Regional Board pertaining to this matter.

If you have any questions, please contact Ms. Michelle Mata at (858) 467-2981 or by email at mmata@waterboards.ca.gov.

Respectfully,

for *Brian D. Kelley,*
Michael P. McCann, P.E.
Assistant Executive Officer

MPM:bdk:mm

Enclosure: Response to Comments Document and Errata Sheet

cc:

Douglas Eberhardt, USEPA Region IX, 75 Hawthorne Street, San Francisco, 94105

Nancy Yoshikawa, USEPA Region IX (via email)

Kevin Carr, Sea World San Diego, 500 Sea World Drive, San Diego, 92109

California Coastal Commission, 7575 Metropolitan Drive, Suite 103, San Diego, 92108

Bruce Reznik, Executive Director, San Diego Coastkeeper, 2825 Dewey Road, Suite 200, San Diego, 92106

Marco A. Gonzalez, Coast Law Group LLP, 169 Saxony Road, Suite 204, Encinitas, CA 92024

California Environmental Protection Agency

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS
TENTATIVE ADDENDUM NO. 1 TO ORDER NO R9-2005-0091**

A. Comments submitted by SeaWorld San Diego on November 28, 2007

GENERAL COMMENTS & MAJOR CONCERNS	REGIONAL BOARD RESPONSES
<p>1. <u>Recital No. 1: There is a typographical error in the date December 7, 2007. It should be December 7, 2006.</u></p>	<p>The tentative Addendum will be revised. See Errata Sheet Item No. 2.</p>
<p>2. <u>Recital No. 2: Does not include a description of the dimensions of the shells or the mass of the fireworks used at SeaWorld.</u></p>	<p>The tentative Addendum will be revised to include a description of the shells and the mass of fireworks. See Errata Sheet Item No. 3.</p>
<p>3. <u>Recital No. 3 : Perchlorate is listed as a “typical fireworks constituent”. Potassium nitrate is a more common oxidizer in SeaWorlds fireworks than potassium perchlorate.</u></p> <p>Also the word “water” should be added in the second paragraph in front of the word “quality”.</p>	<p>The Regional Board understands that currently potassium nitrate is a more common oxidizer in SeaWorld fireworks. However, because of the uncertainty of the make-up of various fireworks obtained from domestic and international sources there is no guarantee that other oxidizers would not be present. Perchlorate is one of the most common oxidizers in fireworks and as such shall remain in the monitoring program.</p> <p>The language in Finding No. 3 will be revised. See Errata Sheet Item No. 4</p>
<p>4. <u>Recital No. 4: In addition to the use of hand held fishnets to collect any floating fireworks debris after the show, there is a boom with a net off the bow of the boat that is used to collect debris. This should be included in the description.</u></p>	<p>The tentative Addendum will be revised to include this description. See Errata Sheet Item No. 5</p>
<p>5. <u>Recital No. 5: Suggested word change for sentence no. 2.</u></p>	<p>The tentative Addendum will be revised. See Errata Sheet Item No. 6</p>

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GENERAL COMMENTS & MAJOR CONCERNS	REGIONAL BOARD RESPONSES
<p>6. <u>Discharge Prohibitions Paragraph I: This discharge prohibition appears to suggest that even a de minimis amount of “settleable material or substances” could be prohibited from being discharged.</u></p> <p>Very small amounts of fireworks debris will undoubtedly be discharged into Mission Bay despite the recovery efforts of the sweeps after each show. SeaWorld anticipates these discharges will be minor in mass and consist of small particles of uncombusted paper and some deposition of the products of combusted fireworks.</p>	<p>Paragraph I has been replaced with wording that is consistent with the California Ocean Plan (2005). The definition of the word “degrade” is also added from the Ocean Plan.</p> <p>See Errata Sheet Item No. 7 and 8</p>
<p>7. <u>Discharge Prohibitions Paragraph J: Prohibition limits fireworks shows to Easter through Labor Day and New Year’s Eve, and not to exceed 150 days per year.</u></p> <p>SeaWorld is already restricted to 150 days per year as part of the Master Plan approved by the City of San Diego in 2001. Under that approval SeaWorld is not limited to the time frame specified above. SeaWorld typically allocated some of it’s 150 days per year for evenings during the Spring Break time period, which typically predates Easter. SeaWorld request the restriction be changed to be consistent with the provisions in the SeaWorld Master Plan approval, which would permit shows up to 150 days per year, but would not restrict the time of year that those shows should take place.</p>	<p>The tentative Addendum will be revised to include similar language as the SeaWorld Master Plan.</p> <p>See Errata Sheet No. 9</p>
<p>8. <u>Monitoring and Reporting Program Paragraph F.1. (years of sampling): SeaWorld’s understanding of this paragraph is that it requires three years of extensive monitoring efforts for calendar years 2008, 2009, and 2010, but that monitoring will cease after those 3 years. Please advise if this understanding is correct.</u></p>	<p>Monitoring extends through 2010, which corresponds to the expiration date of Order No. R9-2005-0091, CA0107336. At the time of renewal of Order No. R9-2005-0091, the Monitoring and Reporting Program for the aerial fireworks displays will be reviewed to ensure the program is adequate, and if needed, included in the renewed permit.</p> <p>See Errata Sheet Item No. 11</p>

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<p>9. <u>Monitoring and Reporting Program Paragraph F.2. (water quality sampling locations): SeaWorld's understanding of Paragraph F.2. is that it provides a generic description of where the Regional Board wants water and sediment sampling points, but that the specific sampling locations that will satisfy this general criterion are contained in the other paragraphs of Section F. We do not read this paragraph to require any sampling locations other than those that are specified elsewhere in the draft Order. Please advice if this understanding is incorrect.</u></p>	<p>Your interpretation is correct.</p>
<p>10. <u>Monitoring and Reporting Program Paragraph F.3 (water quality sampling locations): SeaWorld suggests that the specific locations for all four sampling points be identified, with GPS coordinates, in advance of any sampling after discussion between the Regional Board's staff, SeaWorld and Brown and Caldwell and that this identification be done at the beginning of each of the three calendar years. 2008, 2009, and 2010.</u></p>	<p>The water quality sampling location will be removed and the tentative Addendum will be revised to allow SeaWorld to prepare a Monitoring Location Plan.</p> <p>See Errata Sheet Items No. 11</p>
<p>11. <u>Monitoring and reporting Program Paragraph F.4. :SeaWorld requests that the SVOCs, the explosive compounds, total nitrogen, and the following metals: Beryllium, Mercury, Selenium, Thallium, Cadmium, Molybdenum, Silver, and Tin be deleted from the monitoring requirements for water quality.</u></p>	<p>The Regional Board acknowledges your explanation for removing these constituents, however, because of the uncertainty of the make-up of various fireworks obtained from domestic and international sources there is no guarantee these constituents would not be present. Monitoring for these constituents will remain in the Monitoring and Reporting Program.</p> <p>The previous data collected was not sufficient to justify elimination of the constituents.</p>
<p>12. <u>Monitoring and reporting Program Paragraph F.5.:SeaWorld requests that the SVOCs, the explosive compounds, total nitrogen, and the following metals: Beryllium, Mercury, Selenium, Thallium, Cadmium, Molybdenum, Silver, and Tin be deleted from the monitoring requirements for sediments.</u></p>	<p>The Regional Board acknowledges your explanation for removing these constituents, however, because of the uncertainty of the make-up of various fireworks obtained from domestic and international sources there is no guarantee these constituents would not be present. Monitoring for these constituents will remain in the</p>

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	<p>Monitoring and Reporting Program.</p> <p>The previous data collected was not sufficient to justify elimination of the constituents.</p>
<p>13. <u>Monitoring and Reporting Program Paragraph F.6. (infauna monitoring): there does not appear to be any basis for including the benthic infauna monitoring plan. SeaWorld recommends completing the three-year water and sediment quality monitoring and reporting programs set forth in Paragraphs F.4 and F.5, and then evaluating whether there is any basis for conducting a study of potential effects of fireworks on benthic infauna.</u></p> <p>If the Board does not change the current benthic infauna monitoring, SeaWorld has the following comments:</p> <p>The benthic infauna monitoring plan requires sampling at three locations within the fireworks deposition zone and in the “area of greatest potential impact”. The text then suggest that those three locations will be sampled twice per year, but it is not completely clear that it is the same three locations.</p> <p>The benthic infauna monitoring plan further requires that ten additional locations be sampled once per year. While the draft Order does not state that the objective of the sampling is to compare the parameters of the benthic community in the “area of greatest potential impact” beneath the fireworks deposition zone with the ten randomly selected locations, SeaWorld presumes that is the intent. If this is the case, then the ten randomly selected locations must not include the fireworks deposition zone.</p> <p>The tentative addendum does not identify the statistical methods to be used to determine statistically significant increase or decrease in the parameters being measured between the benthic organisms beneath the “area of greatest potential impact” and the other randomly selected locations. Or, will SeaWorld’s technical consultants be required to perform the statistical analysis using</p>	<p>Sediment chemistry alone is not sufficiently reliable when used to assess sediment quality impacts due to toxic pollutants. Upon further review, the Regional Board has determined that a multiple lines of evidence “TRIAD” approach is needed to assess whether benthic communities are protected or degraded as a result of exposure to toxic pollutants in sediment and to protect human health. As such, the</p> <p>Regional Board will also be adding sediment toxicity testing to the monitoring program.</p> <p>Benthic organisms have many characteristics that make them useful as indicators of environmental stress. They are of interest because they have limited mobility, respond to many types of environmental stress, and integrate the effects of environmental conditions at a place over time.</p> <p>The tentative Addendum will be revised to allow SeaWorld to prepare a monitoring location plan for benthic infauna and sediment toxicity.</p> <p>The monitoring program requires that ten additional locations be sampled once per year. The locations shall be randomly selected within the fireworks deposition zone to ensure statistically valid sampling. Sampling locations should be probabilistically selected to reduce sampling bias. The tentative Addendum will be revised to include further clarification.</p> <p>See Errata Sheet Item No. 13</p> <p>SeaWorld will be responsible for preparing a report with monitoring results and an interpretation the monitoring results. Reports shall be submitted to the Regional Board for review and comments</p> <p>See Errata Sheet Item No. 13</p>

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<p>appropriate measures?</p> <p>According to the draft addendum, the selection of the ten locations is to be done each year by US EPA using its Probability Environmental Monitoring and Assessment Program. It is not clear from the wording of the tentative addendum whether the Regional Board intends US EPA to undertake this effort each year.</p>	<p>The tentative Addendum will be revised to allow SeaWorld to randomly select the ten locations using the US EPA using its Probability Environmental Monitoring and Assessment Program.</p> <p>See Errata Sheet Item No. 13</p>
<p>14. Monitoring and Reporting Program Paragraph F.8: Since sampling will occur twice per year, it makes no sense to prepare a fireworks deposition map for every event. The Brown and Caldwell Dispersion Report provides a far more accurate prediction of the likely deposition of fireworks combustion products and should be used to help SeaWorld, the Regional Board staff and Brown and Caldwell to come up with the likely Fireworks Deposition Zone and related sampling locations on an annual basis.</p>	<p>The tentative Addendum will be revised. See Errata Sheet No. 14</p>

B. Comments from Ms. Ariadna Wall on December 4, 2007

GENERAL COMMENTS & MAJOR CONCERNS	REGIONAL BOARD RESPONSES
<p>1. <u>All fireworks should be suspended until further and more accurate studies are done to protect human, animal, air, and water health.</u></p> <p>Provided articles for reference.</p>	<p>The Regional Board is not currently recommending termination of the fireworks. The Regional Board will evaluate the data obtained from the monitoring and reporting program to determine if the discharge is having an adverse impact to Mission Bay.</p> <p>The information (articles) has been provided for reference to the Regional Board.</p>