

July 31, 2017

Ben Neill  
Water Resources Control Engineer  
Core Regulatory Unit  
San Diego Regional Water Quality Control Board  
2375 Northside Drive, Suite 100  
San Diego, CA 92123

**SUBJECT: Order R9-2006-0065 Discharge Monitoring Report – June, 2017**

**PROJECT: Carlsbad Desalination Plant (CDP), 4590 Carlsbad Blvd., Carlsbad, CA 92008**

Dear Mr. Neill,

Poseidon Resources (Channelside), LP (Discharger) is submitting its monthly discharge monitoring report in compliance with the requirements of the National Pollutant Discharge Elimination System (NPDES) Permit Number CA0109223, Order Number R9-2006-0065. For reference, a summary of the order for the site is presented below:

<u>NPDES Permit</u>	<u>Order No.</u>	<u>Adopted</u>	<u>Order Effective</u> <u>Date</u>
CA0109223	R9-2006-0065	June 14, 2006	October 1, 2006

During the month of June 2017, continuous discharges occurred in accordance with Order R9-2006-0065 (NPDES Permit Number CA0109223). The Discharger self-reported two (2) Deficient Monitoring violation for not completing chronic toxicity analysis as required within the Order during the June 2017 reporting period.

On June 28, 2017 CDP self-reported a deficient monitoring violation for not conducting daily chronic toxicity analysis as required under Attachment E, Footnote 15 of the Order during a plant bypass/maintenance period. Daily grab sample analysis for total suspended solids, pH, oil and grease, settleable solids, turbidity temperature, and salinity conducted at M-001 indicated that CDP effluent discharge remained within compliance during this operational period. Daily water quality analysis were uploaded to CIWQS as attachments for the June 2017 reporting period.

On June 29, 2017 CDP self-reported a deficient monitoring violation for not conducting accelerated weekly chronic toxicity analysis as required under the Order. Weekly grab sample analysis for total suspended solids, pH, oil and grease, settleable solids, turbidity temperature, and salinity conducted at M-001 indicated that CDP effluent discharge

remained within compliance during this operational period. Weekly water quality analysis were uploaded to CIWQS as attachments for the June 2017 reporting period.

On June 22, 2017 at 10:42 AM CDP stopped delivery to the SDCWA and started to overflow the product water tank (PWT). Operational mode change/overflow was due to a SCADA interlock between a tripped pressure switch and dosing pump failure on the ammonia dosing system. PWT overflow was complete and normal delivery/discharge operations were restored on June 22, 2017 at 8:04 PM. During this period the combined discharge volumes of PWT overflow (3.56 MG) and brine (13.31 MG) temporarily discharged to the Pacific Ocean was 16.87 MG.

On June 23, 2017 at 8:12 AM the CDP Operator started to overflow the PWT due to an increase in production to meet SDCWA production request for 2:00 PM delivery window. PWT overflow was complete and normal delivery/discharge operations were restored on June 23, 2017 at 3:00 PM. During this period the combined discharge volumes of PWT overflow (2.65 MG) and brine (10.34 MG) temporarily discharged to the Pacific Ocean was 12.99 MG.

On June 26, 2017 at 5:36 AM the CDP Operator stopped the product water delivery pump station to repair a manifold leak in the cascade and address high cluster UCL's on RO Trains 2 and 8. Product water delivery was resumed on June 26, 2017 at 8:40 PM. During this period the following pretreatment filtrate and RO permeate total volumes were temporarily discharged to the Pacific Ocean: June 26<sup>th</sup> – 29.35 MG.

On June 28, 2017 at 9:11 AM the CDP Operator stopped the product water delivery pump station to flush multiple RO trains concurrently. Product water delivery was resumed on June 28, 2017 at 8:26 PM. During this period the following pretreatment filtrate and RO permeate total volumes were temporarily discharged to the Pacific Ocean: June 28<sup>th</sup> – 24.29 MG. Monthly average discharge flow from M-001 for the June 2017 reporting period was 44.50 MG.

Six compliance chronic toxicity samples were collected during the June 2017 reporting period; results of analysis are as follows: June 2<sup>nd</sup> – 16.5 TUc, June 9<sup>th</sup> – 40 TUc, June 16<sup>th</sup> – 40 TUc, June 22<sup>nd</sup> – >40 TUc, June 23<sup>rd</sup> – 40 TUc, and June 26<sup>th</sup> – 16.5 TUc. Chronic toxicity analysis reports were uploaded as attachments in CIWQS for the June 2017 reporting period.

Monthly chronic toxicity results for a composite sample collected on May 04, 2017 exceeded the permitted limit of 16.5 TUc. In response to the May 04, 2017 exceedance CDP initiated accelerated weekly chronic toxicity sampling. Accelerated weekly analysis from May 19<sup>th</sup>, May 26<sup>th</sup>, June 9<sup>th</sup>, and June 16<sup>th</sup> also exceeded the permit limit. Due to

the result of the accelerated chronic toxicity analysis CDP initiated TRE/TIE screening on June 29th in an effort to further identify and mitigate the source(s) contributing to the toxicity. The Discharger self-reported four violation for exceedance of the chronic toxicity limit of 16.5 TUC during the June 2017 reporting period.

The June 2017 chronic toxicity test results are an artifact of the conservative toxicity testing procedure set forth in the NPDES permit for the CDP, and did not result in harm to the environment. Under existing regulations, the CDP is required to meet the toxicity standard after initial mixing occurs. Initial mixing includes the mixing of the CDP's brine discharge with the discharge from the Encina Power Plant (four gallons of seawater exiting the power plant is mixed with every gallon of brine leaving the CDP); and then the combined CDP/power plant discharge receives additional mixing in the ocean prior to reaching the compliance point under the permit that is located 1,000 feet offshore (15 gallons of seawater mixes with every gallon of combined CDP/power plant discharge prior to reaching the compliance point).

Under the terms of the permit, the CDP is required to test for toxicity at higher discharge concentrations than is actually occurring at the compliance point. This is because the conservative testing regime set forth in the permit fails to take into consideration the initial dilution provided by the power plant.

The Discharger has been conducting two sets of toxicity tests since this problem was first identified in December 2015. For the period beginning December 9, 2015 through June 30, 2017 38 out of 99 monthly, weekly, and daily chronic toxicity samples tested demonstrated some level of toxicity; whereas 43 out of 44 of the samples tested with the full initial dilution provided by the power plant and in the ocean have been below the toxicity limit in the permit. These results effectively demonstrate that the exceedance of the toxicity limit is a result of the failure to account for the dilution provided by the power plant discharge in toxicity monitoring procedure included in the permit, and not an indication of the plant causing toxic conditions in the Pacific Ocean.

In accordance with the Order, further steps are being taken to identify and minimize source(s) of toxicity. Accelerated toxicity monitoring was initiated immediately after the first test demonstrating a toxicity issue and a Toxicity Investigation Evaluation (TIE) is being conducted in conformance with a Regional Water Board approved Toxicity Reduction Evaluation (TRE) Plan. The TIE includes investigative toxicity testing to identify the source of the toxicity.

The Discharger has been in close communication with the Regional Water Board on the CDP toxicity monitoring and the TIE. Additional sampling and testing will continue in an effort to identify and minimize the source(s) of toxicity.

I Certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sincerely,

A handwritten signature in dark ink, appearing to read "Peter MacLaggan". The signature is fluid and cursive, with a large initial "P" and a long, sweeping underline.

Peter MacLaggan