

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
LOS ANGELES REGION**

597<sup>th</sup> Regular Board Meeting  
Thursday, June 9, 2016

ITEM NO. 11.1

ORDER NO. R4-2016-XXXX  
NPDES NO. CA0001201  
WASTE DISCHARGE REQUIREMENTS  
FOR  
AES REDONDO BEACH LLC  
REDONDO BEACH GENERATING STATION

**CHANGE SHEET**

(Additions are underlined, deletions are lined over)

**ATTACHMENT F (FACT SHEET)**

**Fact Sheet Page F-22, Section IV.B.8., Agenda Page 11.1-032.**

Effluent limitations are specific to the type of discharge. The pH of all discharges, except once-through cooling water, shall be within the range of 6.0 – 9.0 standard units [40 C.F.R section 423.12 (b) (1)]. There shall be no discharge of PCBs such as those commonly used in transformers. ~~discharge of PCBs is prohibited for all types of discharge.~~

**Fact Sheet Page F-22, Section IV.B.8., Table F-12, Footnote 2, Agenda Page 11.1-032.**

<sup>1</sup> The Discharge of PCBs from the Facility is prohibited.

**Fact Sheet Page F-24 – F-25, Section IV.C.2.e., Paragraph 4, , Agenda Page 11.1-034.**

As described in section 6.2 of the TMDL (Wasteload Allocations), the WLAs are to be translated to WQBELs with no further adjustment of dilution credit or background concentrations. In section 8.1, USEPA recommends the concentration-based WLAs be implemented as monthly average WQBELs in permits. As follows, monthly average effluent limitations for DDTs are included in this Order; however, the more stringent technology-based effluent limitations (TBELs) for PCBs is "no discharge" from the facility and it is included as a narrative effluent limitation, rather than an effluent limitation based on the WLA (see discussion in section IV.D.). The TBEL for PCBs in this Order hasve been applied as a Discharge Pprohibition of discharges from the facility. The Santa Monica Bay is impaired for PCBs. The concentrations of PCBs in the intake water exceed the TBEL established for discharges of PCBs from the facility. PCB containing equipment is present on the site. The equipment is located within secondary containment to ensure that any spill is kept within the area. Discharges from the secondary containment area discharge to the Retention Basin. Monitoring of the Retention Basin has resulted in no detections of PCBs. Therefore, concentrations of the

pollutant in the intake and effluent will be evaluated to determine if the facility operations are contributing to the concentration of PCBs in the effluent. Any increase in the effluent concentration of PCBs relative to the intake concentration yields a potential violation of the TBEL for PCBs.

The method for translating the DDT WLA into permit limits will vary between Discharge Point 001 and Discharge Point 002. At the time of TMDL development, the generating stations individual NPDES permits were considered ocean discharges, with Ocean Plan objectives and procedures. Following the period of initial TMDL development, the Regional Water Board notified the Discharger by letter dated January 21, 2003 that Discharge Point 002 was reclassified from an ocean discharge to an enclosed bay discharge. As a result of the reclassification for Discharge Point 002, CTR criteria and SIP procedures would apply in lieu of the Ocean Plan. Despite the reclassification, WQBELs must incorporate the assumptions of the TMDL WLAs to be consistent with the overall framework for achieving water quality objectives. Therefore the WQBELs for DDT and PCBs at the Facility are is translated directly into a monthly average effluent limits for Discharge Point 001. For Discharge Point 002, WQBELs for DDT are calculated from the WLAs provided in Table 6-2 of the TMDL using SIP procedures which incorporate statistical multipliers (see section IV.C.7 of this Fact Sheet).

**Fact Sheet Page F-36 to F-37, Table F-16, Footnote 7, Agenda Page 11.1-047.**

<sup>1</sup> The Discharge of PCBs from the Facility is prohibited (See Order Prohibitions section IV.A).

**Fact Sheet Page F-46, Table F-18, Footnote 5, Agenda Page 11.1-056.**

<sup>5</sup> The Discharge of PCBs from the Facility is prohibited (See Order Prohibitions section IV.A).

**Fact Sheet Page F-50, Section IV.D.4.a., Agenda Page 11.1-060, First complete sentence.**

~~The conditions above are satisfied as follows:~~

Criteria 1. The maximum ambient background concentration of the receiving water (RSW) and the maximum intake water concentration (INF-002) have been determined from data collected from November, 2010 through November, 2015. The most stringent applicable water quality criteria/water quality objectives were used to calculate the final average monthly effluent limitations (AMEL) established in this Order for Discharge Point 002. Therefore, these limitations are used to determine if the data satisfies Criteria 1 as follows:

**Table F-1. Intake Credit Criteria 1 Data**

Constituent	Units	AMEL	RSW Maximum Concentration	INF-002 Maximum Concentration	RSW and INF-002 > AMEL?
Copper	µg/L	2.1	32	7.69	Yes
Mercury	µg/L	0.051	0.0082	0.176	No
Nickel	µg/L	5.6	5	6.98	No

Constituent	Units	AMEL	RSW Maximum Concentration	INF-002 Maximum Concentration	RSW and INF-002 > AMEL?
Zinc	µg/L	30	963	49	Yes

**Criteria 2.** There are no TMDLs for King Harbor nor is King Harbor listed on the 2012 CWA 303(d) list of water quality limited segments. Santa Monica Bay (Offshore and Nearshore), including King Harbor, is on the 303(d) list for the following pollutants/stressors from point and non-point sources: DDT (tissue and sediment), PCBs (tissue and sediment), sediment toxicity, debris, and fish consumption advisory. TMDL's have been developed to address DDT and PCBs. TMDLs to address debris and sediment toxicity are both scheduled for 2019. Copper, mercury, nickel and zinc are not 303 (d) listed pollutants nor are they addressed by TMDLs. Therefore, the intake credits are consistent with applicable TMDLs and satisfy Criteria 2.

**Criteria 3a.** The intake water is from the same water body as the receiving water body. As shown in the table above, the ambient background maximum concentrations of the pollutant in the receiving water is similar to that of the intake water. Variations observed may be attributed to temporal variability, normal water quality variability, or analytical variability.

**Criteria 3b.** The intake water at the Facility consists of water directly from King Harbor intake structure located between the breakwaters that form the entrance to King Harbor. The breakwater area is directly connected to the area of King Harbor closer to shore where the discharge occurs. Both intake locations are hydrologically connected to the Discharge Point, satisfying criteria 3b.

**Criteria 3c.** King Harbor, where intake water is collected for the Facility, is continuously flushed by the Santa Monica Bay. Therefore the receiving water characteristics are similar to the intake water characteristics.

**Criteria 3d.** The Facility's intake source from King Harbor is near the Discharge Point. Intake waters would have reached the vicinity of the discharge point through natural mixing processes within a reasonable period of time and with the same effect had it not been diverted by the Discharger. Therefore Criteria 3d is satisfied.

**Criteria 4.** With the exception of temperature elevation and chlorination, the Facility does not alter the intake water chemically or physically. Neither temperature elevation nor chlorination is expected to alter the constituents for which intake credits are sought and no adverse impacts on water quality or beneficial uses are expected.

**Criteria 5.** As discussed under Criteria 3d, the intake water is present in King Harbor regardless of whether the Facility is operating. As this intake water is essentially passing through the Facility, neither the timing nor the location of the discharge cause adverse effects on water quality and beneficial uses.

According to Section 1.4.4 of the SIP, the Regional Water Board may establish effluent limitations allowing the Facility to discharge a mass and

~~concentration of the intake water pollutant that is no greater than the mass and concentration found in the facility's intake water. The Regional Water Board may also determine compliance by simultaneously monitoring the pollutant concentrations in the intake water and in the effluent.~~

**Fact Sheet Page F-52, Paragraph 2, -Agenda Page 11.1-062.**

~~(If only one effluent sample is taken per month, then the monitoring result has to comply with the monthly average limitation based on intake credits).~~

The potential to use intake credits, when the above criteria are satisfied, has been implemented at Outfall 002 for PCBs, copper, mercury, nickel, silver, thallium and zinc.

**Fact Sheet Page F-53, Table F-20, Footnote 10, -Agenda Page 11.1-063.**

<sup>10</sup> The Discharge of PCBs from the Facility is prohibited as per 40 C.F.R. section 423.13(a).

**Fact Sheet Page F-55, Table F-21, Footnote 3, -Agenda Page 11.1-065.**

<sup>3</sup> The Discharge of PCBs from the Facility is prohibited as per 40 C.F.R. section 423.13(a).

**Fact Sheet Page F-61, Section VII.A. Paragraph 2, -Agenda Page 11.1-071**

~~Order 00-085 contained semi-annual monitoring for a variety of metals in the intake water which has not been retained in the MRP (Attachment E). Although this monitoring is not required, the Discharger may elect to continue monitoring intake for metals for purposes of monitoring in plant additions and removals. This Order also includes monthly influent monitoring for the metals with effluent limitations, as well as bacteria (fecal coliform, total coliform, and enterococcus).~~

**Fact Sheet Page F-62, Section VII.B.1.d., Agenda Page 11.1-072.**

- d. Compliance with effluent limits must be determined using an approved method under 40 C.F.R. part 136. In the case of PCBs, this is Method 608. Consistent with the Santa Monica Bay Total Maximum Daily Loads for DDT and PCBs (TMDL), this Order also ~~requires-recommends that~~ each Discharger ~~to~~ monitor and report PCBs using USEPA's proposed Method 1668c, which is capable of quantifying PCBs that are present at lower levels than Method 608. The Regional Water Board will use data generated by Method 1668c PCBs data to verify assumptions and evaluate the need to further refine wasteload allocations in the TMDL. The Regional Water Board finds that these monitoring and reporting requirements bear a reasonable relationship to the Regional Water Board's need for and the benefits obtained from the reports.

**Fact Sheet Page F-62, Section VII.B.2.d., Agenda Page 11.1-072.**

- d. Compliance with effluent limits must be determined using an approved method under 40 C.F.R. part 136. In the case of PCBs, this is Method 608. Consistent with the Santa Monica Bay Total Maximum Daily Loads for DDT and PCBs (TMDL), this Order also ~~requires-recommends that~~ each Discharger ~~to~~ monitor and report PCBs using USEPA's proposed Method 1668c, which is capable of quantifying PCBs that are present at lower levels than Method 608. The Regional Water Board will use data generated by Method 1668c ~~PCBs data~~ to verify assumptions and evaluate the need to further refine wasteload allocations in the TMDL. The Regional Water Board finds that these monitoring and reporting requirements bear a reasonable relationship to the Regional Water Board's need for and the benefits obtained from the reports.

**Fact Sheet Page F-63, Section VII.D.1., Paragraph 2, Agenda Page 11.1-073.**

Annual monitoring for ammonia, pH, salinity, dissolved oxygen, temperature, chronic toxicity and priority pollutants in the receiving water has been established in this order to ~~conduct a reasonable potential analysis for these pollutants during the next permit reissuance.~~

**ORDER**

**Order Page 7, Section IV.A.1., Table 4, Footnote 10, Agenda Page 11.1-080.**

<sup>10</sup> The Discharge of PCBs from the Facility is prohibited as per 40 Code Federal of Regulations (CFR) section 423.13(a).

**Order Page 7, Section IV.A.1., Table 7, Agenda Page 11.1-082.**

**Table 2. Effluent Limitations for Discharge Point 002**

Parameter	Units	Effluent Limitations <sup>1</sup>			
		Average Monthly	Maximum Daily	Average Concentration	Instantaneous Maximum
pH	S.U.	--	--		6.5/8.5 <sup>12</sup>
Temperature	°F	--	--	--	86
PCBs <sup>2</sup>	µg/L	3			
Free Available Chlorine <sup>4,5</sup>	mg/L	--	--	0.2	0.50
Total Residual Chlorine <sup>4,5</sup>	mg/L	--	0.1	--	--
Copper, Total Recoverable <sup>11</sup>	µg/L	2.1	5.8	--	--
	lbs/day <sup>6</sup>	12	33	--	--
Mercury, Total Recoverable <sup>11</sup>	µg/L	0.051	0.10	--	--
	lbs/day <sup>6</sup>	0.29	0.56	--	--
Nickel, Total Recoverable <sup>11</sup>	µg/L	5.6	15	--	--
	lbs/day <sup>6</sup>	31	84	--	--
Silver, Total Recoverable <sup>11</sup>	µg/L	1.1	2.2	--	--
	lbs/day <sup>6</sup>	6.2	12	--	--

Parameter	Units	Effluent Limitations <sup>1</sup>			
		Average Monthly	Maximum Daily	Average Concentration	Instantaneous Maximum
Thallium, Total Recoverable <sup>11</sup>	µg/L	6.3	13	--	--
	lbs/day <sup>5</sup>	35	73	--	--
Zinc, Total Recoverable <sup>11</sup>	µg/L	30	92	--	--
	lbs/day <sup>5</sup>	168	517	--	--
DDT <sup>7</sup>	µg/L	0.00017	0.00034	--	--
	lbs/day <sup>5</sup>	0.00096	0.0019	--	--
Chronic Toxicity	Pass or Fail and % Effect for TST approach	Pass <sup>8,9</sup>	Pass or % Effect <50 <sup>9</sup>	--	--
Radioactivity	--	10			

<sup>1</sup> Effluent limitations for combined discharge at Discharge Point 002.

<sup>2</sup> PCBs shall mean the sum of chlorinated biphenyls whose analytical characteristics resemble those of Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254, and Aroclor-1260.

<sup>3</sup> The Discharge of PCBs from the Facility is prohibited as per 40 C.F.R. section 423.13(a).

<sup>4</sup> If other oxidants are used, this shall be the total of all oxidants reported as residual chlorine.

<sup>5</sup> Total residual and free available chlorine may not be discharged from any single generating unit for more than two hours per day unless the Discharger demonstrates to the permitting authority that discharge for more than two hours per day is required for macroinvertebrate control. Multiple units cannot discharge simultaneously.

<sup>6</sup> The mass (lbs/day) limitations are based on the permitted discharge flow for each discharge point (215 MGD for Discharge Point 001 and 674 for Discharge Point 002) and are calculated as follows:

$$\text{Mass (lbs/day)} = \text{Flow (MGD)} \times \text{Concentration (mg/L)} \times 8.34 \text{ (conversion factor)}$$

<sup>7</sup> DDT shall mean the sum of 4,4'-DDT, 2,4'-DDT, 4,4'-DDE, 2,4'-DDE, 4,4'-DDD and 2,4'-DDD.

<sup>8</sup> Report "Pass" or "Fail" for Median Monthly Effluent Limitation (MDEL). Report "Pass" or "Fail" and "% Effect" for Maximum Daily Effluent Limitation (MDEL). During a calendar month, exactly three independent toxicity tests are required for routine monitoring when one toxicity test results in "Fail".

<sup>9</sup> This is a Median Monthly Effluent Limitation.

<sup>10</sup> Radionuclides shall not be present in concentrations that are deleterious to human, plant, animal, or aquatic life or that result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal, or aquatic life. In lieu of monitoring, compliance with this effluent limitation may be demonstrated through the submission of a statement certifying that radioactive pollutants were not used at the Facility or added to the discharge.

<sup>11</sup> If the influent water pollutant concentration (measured at intake for Units 7 and 8) does not exceed the average monthly limitation then the limitations are applied as noted in the Table. If the influent water pollutant concentration exceeds the average monthly limitation but does not exceed the maximum daily limitation then compliance with the average monthly limitation will be determined based on intake water credits and compliance with the maximum daily limitation is applied as noted in the Table. If the influent water pollutant concentration exceeds the maximum daily limitation then compliance with both the average monthly and the maximum daily will be determined based on intake water credits. When determining compliance based on intake water credit, the pollutant effluent limitation is equal to the maximum pollutant concentration in the influent water. The equation is as follows:

$$\text{Maximum Pollutant Effluent Limitation with Intake Water Credit} = \text{Maximum Pollutant Influent Water Concentration}$$

$$\text{Monthly Pollutant Effluent Limitation with Intake Water Credit} = \text{Monthly Pollutant Influent Water Concentration}$$

<sup>12</sup> A Time Schedule Order (Order No. R4-2016-YYYY) has been issued that includes an interim limit of 9.0 for the pH instantaneous maximum limitation that is effective until December 31, 2020.

**ATTACHMENT E (MONITORING AND REPORTING PROGRAM (MRP))**

MRP Page E-7, Section III, Agenda Page 11.1-147. Insert table for influent monitoring.

**Table E-2 Influent Monitoring at FIP-002**

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
<b>Influent Monitoring at Location FIP-002</b>				
Total Coliform	MPN/ 100 mL	Grab	2/year	=
Fecal Coliform	MPN/ 100 mL	Grab	2/year	=
Enterococcus	MPN/ 100 mL	Grab	2/year	=
Copper, Total Recoverable	µg/L and mass <sup>2</sup>	Grab	1/month <sup>1</sup>	<sup>2</sup>
Mercury, Total Recoverable	µg/L and mass <sup>2</sup>	Grab	1/month <sup>1</sup>	<sup>2</sup>
Nickel, Total Recoverable	µg/L and mass <sup>2</sup>	Grab	1/month <sup>1</sup>	<sup>2</sup>
Silver, Total Recoverable	µg/L and mass <sup>2</sup>	Grab	1/month <sup>1</sup>	<sup>2</sup>
Thallium, Total Recoverable	µg/L and mass <sup>2</sup>	Grab	1/month <sup>1</sup>	<sup>2</sup>
Zinc, Total Recoverable	µg/L and mass <sup>2</sup>	Grab	1/month <sup>1</sup>	<sup>2</sup>
DDT <sup>8</sup>	µg/L and mass <sup>2</sup>	Grab	1/month <sup>1</sup>	<sup>2</sup>
PCBs <sup>9</sup>	µg/L and mass <sup>2</sup>	Grab	1/month <sup>1</sup>	<sup>2</sup>

<sup>1</sup> Monthly monitoring is required from October 2016 through October 2017 (one year period). If the discharge is in compliance with the prescribed effluent limitations during this one year period, after requesting and securing approval by the Executive Officer, the monitoring frequency may be decreased to quarterly.

<sup>2</sup> The mass emission (lbs/day) for the discharge shall be calculated and reported using the concentration and the actual flow rate measured at the time of discharge, using the formula:  
 Mass (lbs/day) = Actual Flow (MGD) x Reported Concentration (mg/L) x 8.34 (conversion factor)

MRP Page E-7, Table E-3, Agenda Page 11.1-147.

**Table E-3. Effluent Monitoring at Monitoring Location EFF-001**

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
<b>Effluent Monitoring at Location EFF-001</b>				
Flow	MGD	Flow Meter	Continuous <sup>1</sup>	--
Temperature	°F	Meter	Continuous <sup>3</sup>	--
pH	standard units	Grab	1/week	--
Ammonia, Total (as N)	mg/L and mass <sup>4</sup>	Grab	1/year	<sup>2</sup>
Nitrate (as N)	mg/L and mass <sup>4</sup>	Grab	1/year	<sup>2</sup>
Chronic Toxicity <sup>5</sup>	Pass or Fail and % effect for TST approach	24-hour composite or grab	1/quarter	<sup>2</sup>
Total Residual Chlorine	mg/L	Grab	1/day <sup>6</sup>	<sup>2</sup>
Free Available Chlorine	mg/L	Grab	1/day <sup>6</sup>	<sup>2</sup>

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Beryllium, Total Recoverable	µg/L and mass <sup>4</sup>	Grab	1/month <sup>15</sup>	2
Cadmium, Total Recoverable	µg/L and mass <sup>4</sup>	Grab	1/month <sup>15</sup>	2
Chromium (VI) <sup>7</sup>	µg/L and mass <sup>4</sup>	Grab	1/month <sup>15</sup>	2
Lead, Total Recoverable	µg/L and mass <sup>4</sup>	Grab	1/month <sup>15</sup>	2
Mercury, Total Recoverable	µg/L and mass <sup>4</sup>	Grab	1/month <sup>15</sup>	2
Nickel, Total Recoverable	µg/L and mass <sup>4</sup>	Grab	1/month <sup>15</sup>	2
Selenium, Total Recoverable	µg/L and mass <sup>4</sup>	Grab	1/month <sup>15</sup>	2
Silver, Total Recoverable	µg/L and mass <sup>4</sup>	Grab	1/month <sup>15</sup>	2
DDT <sup>8</sup>	µg/L and mass <sup>4</sup>	Grab	1/month <sup>15</sup>	2
PCBs <sup>9</sup>	µg/L and mass <sup>4</sup>	Grab	1/month <sup>15</sup>	2
TCDD Equivalents <sup>14</sup>	µg/L and mass <sup>4</sup>	Grab	2/year <sup>11</sup>	2
Remaining Ocean Plan Pollutants <sup>10</sup>	µg/L	Grab	2/year <sup>11</sup>	2
Radioactivity (including gross alpha, gross beta, combined radium-226 and radium-228, tritium, strontium-90 and uranium)	pCi/L	Grab	1/year	12
Total Coliform <sup>13</sup>	MPN/ 100 mL	Grab	±2/year	2
Fecal Coliform <sup>13</sup>	MPN/ 100 mL	Grab	±2/year	2
Enterococcus <sup>13</sup>	MPN/ 100 mL	Grab	±2/year	2
<b>Low-Volume Wastes Monitoring at Location INT-001A</b>				
Flow	MGD	Totalizing Meter	1/day	--
pH	standard units	Grab	1/month	--
Total Suspended Solids	mg/L	Grab	1/month	2
Oil and Grease	mg/L	Grab	1/month	2
Beryllium, Total Recoverable	µg/L	Grab	1/month <sup>15</sup>	2
Cadmium, Total Recoverable	µg/L	Grab	1/month <sup>15</sup>	2
Chromium (VI) <sup>4</sup>	µg/L	Grab	1/month <sup>15</sup>	2
Lead, Total Recoverable	µg/L	Grab	1/month <sup>15</sup>	2
Mercury, Total Recoverable	µg/L	Grab	1/month <sup>15</sup>	2
Nickel, Total Recoverable	µg/L	Grab	1/month <sup>15</sup>	2
Selenium, Total Recoverable	µg/L	Grab	1/month <sup>15</sup>	2
Silver, Total Recoverable	µg/L	Grab	1/month <sup>15</sup>	2
Ocean Plan Pollutants <sup>10</sup>	µg/L	Grab	2/year <sup>11</sup>	2



- 1 When continuous monitoring is required, the total daily flow shall be reported. Periods of no flow shall also be reported.
- 2 Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136; for priority pollutants, the methods must meet the lowest minimum levels (MLs) specified in Attachment 4 of the SIP, where no methods are specified for a given pollutant, by methods approved by this Regional Water Board or the State Water Board. If more than one analytical test method is listed for a given parameter, the Discharger must select from the listed methods and corresponding MLs.
- 3 Only maximum temperatures for each calendar day shall be reported, except when temperature exceeds 106°F, in which case the reason(s), duration, and time of day of the events of elevated temperature shall be reported.
- 4 The mass emission (lbs/day) for the discharge shall be calculated and reported using the effluent limitation concentration and the actual flow rate measured at the time of discharge, using the formula:
- 5  $\text{Mass (lbs/day)} = \text{Actual Flow (MGD)} \times \text{Reported Concentration (mg/L)} \times 8.34 \text{ (conversion factor)}$
- 6 Refer to section V, Whole Effluent Toxicity Testing Requirements.
- 7 Monitoring is only applicable during periods of chlorine addition. A statement certifying that chlorination did not occur during the day may be submitted in lieu of an analysis.
- 8 The Discharger may at their option meet this requirement as total chromium.
- 9 DDT shall mean the sum of 4,4'-DDT, 2,4'-DDT, 4,4'-DDE, 2,4'-DDE, 4,4'-DDD and 2,4'-DDD.
- 10 PCBs shall mean the sum of chlorinated biphenyls whose analytical characteristics resemble those of Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254, and Aroclor-1260.
- 11 Pollutants with water quality objectives designated in Table 1 of the Ocean Plan.
- 12 Monitoring once per semiannual period (January – June, July – December).
- 13 Analyze these radiochemicals by the following USEPA methods: method 900.0 for gross alpha and gross beta, method 903.0 or 903.1 for radium-226, method 904.0 for radium-228, method 906.0 for tritium, method 905.0 for strontium-90, and method 908.0 for uranium. Analysis for combined radium-226 & 228 shall be conducted only if gross alpha results for the same sample exceed 15 pCi/L or beta greater than 50 pCi/L. If radium-226 & 228 exceeds the stipulated criteria, analyze for tritium, strontium-90 and uranium.
- 14 A statement certifying that radioactive pollutants were not added to the discharge may be submitted in lieu of monitoring.
- 15 For each annual monitoring event, at least five weekly samplings and analyses shall be conducted until a geometric mean can be obtained for each parameter (using the five most recent sample results).
- TCDD Equivalents shall mean the sum of the concentrations of chlorinated dibenzodioxins (2,3,7,8-CDDs) and chlorinated dibenzofurans (2,3,7,8-CDFs) multiplied by their respective toxicity factors, as shown in the table below. USEPA method 1613 may be used to analyze dioxin and furan congeners.

$$\text{Dioxin-TEQ (TCDD Equivalents)} = \sum (C_x \times \text{TEF}_x)$$

Where:

$C_x$  = concentration of dioxin or furan congener x  
 $\text{TEF}_x$  = TEF for congener x

**Toxicity Equivalency Factors**

Isomer Group	Toxicity Equivalency Factor (TEF)
2,3,7,8-tetra CDD	1.0
2,3,7,8-penta CDD	0.5
2,3,7,8-hexa CDDs	0.1
2,3,7,8-hepta CDD	0.01
Octa CDD	0.001
2,3,7,8 tetra CDF	0.1
1,2,3,7,8 penta CDF	0.05
2,3,4,7,8 penta CDF	0.5
2,3,7,8 hexa CDFs	0.1
2,3,7,8 hepta CDFs	0.01
Octa CDF	0.001

- 15 Monthly monitoring is required from October 2016 through October 2017(one year period) . If the discharge is in compliance with the prescribed effluent limitations during this one year period, after requesting and securing approval by the Executive Officer, the monitoring frequency may be decreased to quarterly.

Table E-5. Effluent Monitoring at Monitoring Location EFF-002

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
<b>Effluent Monitoring at Location EFF-002</b>				
Flow	MGD	Flow Meter	Continuous <sup>1</sup>	<sup>2</sup>
Temperature	°F	Meter	Continuous <sup>3</sup>	<sup>2</sup>
pH	standard units	Grab	1/week	<sup>2</sup>
Ammonia, Total (as N)	mg/L and mass <sup>4</sup>	Grab	1/year	<sup>2</sup>
Nitrate (as N)	mg/L and mass <sup>4</sup>	Grab	1/year	<sup>2</sup>
Chronic Toxicity <sup>5</sup>	Pass or Fail and % effect for TST approach	24-hour composite or grab	1/quarter	<sup>2</sup>
Total Residual Chlorine	mg/L	Grab	1/day <sup>6</sup>	<sup>2</sup>
Free Available Chlorine	mg/L	Grab	1/day <sup>6</sup>	<sup>2</sup>
Copper, Total Recoverable	µg/L and mass <sup>4</sup>	Grab	1/Month <sup>12</sup>	<sup>2</sup>
Mercury, Total Recoverable	µg/L and mass <sup>4</sup>	Grab	1/Month <sup>12</sup>	<sup>2</sup>
Nickel, Total Recoverable	µg/L and mass <sup>4</sup>	Grab	1/Month <sup>12</sup>	<sup>2</sup>
Silver, Total Recoverable	µg/L and mass <sup>4</sup>	Grab	1/Month <sup>12</sup>	<sup>2</sup>
Thallium, Total Recoverable	µg/L and mass <sup>4</sup>	Grab	1/Month <sup>12</sup>	<sup>2</sup>
Zinc, Total Recoverable	µg/L and mass <sup>4</sup>	Grab	1/Month <sup>12</sup>	<sup>2</sup>
DDT <sup>7</sup>	µg/L and mass <sup>4</sup>	Grab	1/Month <sup>12</sup>	<sup>2</sup>
PCBs <sup>8</sup>	µg/L and mass <sup>4</sup>	Grab	1/Month <sup>12</sup>	<sup>2</sup>
TCDD Equivalents <sup>132</sup>	µg/L and mass <sup>4</sup>	Grab	1/year	<sup>2</sup>
Priority Pollutants <sup>9</sup>	µg/L	Grab	1/year	<sup>2</sup>
Radioactivity (including gross alpha, gross beta, combined radium-226 and radium-228, tritium, strontium-90 and uranium)	pCi/L	Grab	1/year	<sup>10</sup>
Total Coliform <sup>11</sup>	MPN/ 100 mL	Grab	42/year	<sup>2</sup>
Fecal Coliform <sup>11</sup>	MPN/ 100 mL	Grab	42/year	<sup>2</sup>
Enterococcus <sup>11</sup>	MPN/ 100 mL	Grab	42/year	<sup>2</sup>

<sup>1</sup> When continuous monitoring is required, the total daily flow shall be reported. Periods of no flow shall also be reported.

<sup>2</sup> Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136; for priority pollutants, the methods must meet the lowest minimum levels (MLs) specified in Attachment 4 of the SIP, where no methods are specified for a given pollutant, by methods approved by this Regional Water Board or the State Water Board. If more than one analytical test method is listed for a given parameter, the Discharger must select from the listed methods and corresponding MLs.

<sup>3</sup> Only maximum temperatures for each calendar day shall be reported, except when temperature exceeds 106°F, in which case the reason(s), duration, and time of day of the events of elevated temperature shall be reported.

<sup>4</sup> The mass emission (lbs/day) for the discharge shall be calculated and reported using the effluent limitation concentration and the actual flow rate measured at the time of discharge, using the formula:

$$\text{Mass (lbs/day)} = \text{Actual Flow (MGD)} \times \text{Reported Concentration (mg/L)} \times 8.34 \text{ (conversion factor)}$$

<sup>5</sup> Refer to section V, Whole Effluent Toxicity Testing Requirements.

<sup>6</sup> Monitoring is only applicable during periods of chlorine addition. A statement certifying that chlorination did not occur during the day may be submitted in lieu of an analysis. Multiple grab samples shall be collected at 25, 30,

and 35 minutes following the start of chlorination and the highest value of the three measurements shall be reported.

DDT shall mean the sum of 4,4'-DDT, 2,4'-DDT, 4,4'-DDE, 2,4'-DDE, 4,4'-DDD and 2,4'-DDD.

PCBs shall mean the sum of chlorinated biphenyls whose analytical characteristics resemble those of Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254, and Aroclor-1260.

Priority pollutants as defined by the CTR defined in Attachment I of this Order.

Analyze these radiochemicals by the following USEPA methods: method 900.0 for gross alpha and gross beta, method 903.0 or 903.1 for radium-226, method 904.0 for radium-228, method 906.0 for tritium, method 905.0 for strontium-90, and method 908.0 for uranium. Analysis for combined radium-226 & 228 shall be conducted only if gross alpha results for the same sample exceed 15 pCi/L or beta greater than 50 pCi/L. If radium-226 & 228 exceeds the stipulated criteria, analyze for tritium, strontium-90 and uranium.

A statement certifying that radioactive pollutants were not added to the discharge may be submitted in lieu of monitoring.

For each annual monitoring event, at least five weekly samplings and analyses shall be conducted until a geometric mean can be obtained for each parameter (using the five most recent sample results).

Monthly monitoring is required from October 2016 through October 2017 (one year period). If the discharge is in compliance with the prescribed effluent limitations during this one year period, after requesting and securing approval by the Executive Officer, the monitoring frequency may be decreased to quarterly.

TCDD equivalents shall be calculated using the following formula, where the ML's and the toxicity equivalency factors (TEFs) are as listed in the Table below. The Discharger shall report all measured values of individual congeners, including data qualifiers. When calculating TCDD equivalents, the Discharger shall set congener concentrations below the ML's to zero. U.S. EPA method 1613 may be used to analyze dioxin and furan congeners.

$$\text{Dioxin-TEQ (TCDD equivalents)} = \sum (C_x \times \text{TEF}_x)$$

where:  $C_x$  = concentration of dioxin or furan congener x

$\text{TEF}_x$  = TEF for congener x

**Toxicity Equivalency Factors**

Congeners	Minimum Levels (pg/L)	Toxicity Equivalence Factor (TEF)
2,3,7,8 - tetra CDD	10	1.0
1,2,3,7,8 - penta CDD	50	1.0
1,2,3,4,7,8 - hexa CDD	50	0.1
1,2,3,6,7,8 - hexa CDD	50	0.1
1,2,3,7,8,9 - hexa CDD	50	0.1
1,2,3,4,6,7,8 - hepta CDD	50	0.01
Octa CDD	100	0.0001
2,3,7,8 - tetra CDF	10	0.1
1,2,3,7,8 - penta CDF	50	0.05
2,3,4,7,8 - penta CDF	50	0.5
1,2,3,4,7,8 - hexa CDF	50	0.1
1,2,3,6,7,8 - hexa CDF	50	0.1
1,2,3,7,8,9 - hexa CDF	50	0.1
2,3,4,6,7,8 - hexa CDF	50	0.1
1,2,3,4,6,7,8 - hepta CDFs	50	0.01
1,2,3,4,7,8,9 - hepta CDFs	50	0.01
Octa CDF	100	0.0001

**Table E-2.3. Receiving Water Monitoring Requirements for RSW-001 through RSW-016**

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
pH	Standard units	Profile	2/year <sup>1,2</sup>	<sup>3</sup>
Temperature	°F	Profile	2/year <sup>1,4</sup>	<sup>3</sup>
Salinity	ppt	Profile	2/year <sup>1</sup>	<sup>3</sup>
Dissolved Oxygen	mg/L	Profile	2/year <sup>1</sup>	<sup>3</sup>
Total coliform <sup>9,10</sup>	MPN/100 mL	Grab	2/year	<sup>3</sup>
Fecal coliform <sup>9,10</sup>	MPN/100 mL	Grab	2/year	<sup>3</sup>
Enterococcus <sup>9,10</sup>	MPN/100 mL	Grab	2/year	<sup>3</sup>
Ammonia Nitrogen, Total (as N) <sup>5</sup>	mg/L	Grab	1/year <sup>1,6</sup>	<sup>3</sup>
Chronic Toxicity <sup>5</sup>	Pass or Fail and % effect for TST approach	24-hour composite or grab	1/year	<sup>7</sup>
Priority pollutants <sup>5,8</sup>	µg/L	Grab	1/year <sup>1</sup>	<sup>3</sup>

<sup>1</sup> Dissolved oxygen levels, temperature, salinity, and pH shall be measured semi-annually at the surface, mid-depth and bottom at each monitoring location, at a minimum.

<sup>2</sup> Semi-annual monitoring shall be conducted in summer and in winter. All monitoring locations shall be sampled on both the flood and ebb tides during each semi-annual survey, as near to the start of the flood and ebb tides as is practicable.

<sup>3</sup> Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136; for priority pollutants, the methods must meet the lowest minimum levels (MLs) specified in Attachment 4 of the SIP, where no methods are specified for a given pollutant, by methods approved by this Regional Water Board or the State Water Board. If more than one analytical test method is listed for a given parameter, the Discharger must select from the listed methods and corresponding MLs.

<sup>4</sup> Temperature profiles shall be measured semi-annually (summer and winter) each year at each monitoring location from surface to bottom at a minimum of one-meter intervals.

<sup>5</sup> Monitoring is required solely at Monitoring Location RSW-004 (King Harbor).

<sup>6</sup> pH, temperature and salinity must be collected at the same time as ammonia samples.

<sup>7</sup> Refer to section V, Whole Effluent Toxicity Testing Requirements.

<sup>8</sup> Priority pollutants as defined by the CTR defined in Attachment I of this Order.

<sup>9</sup> Monitoring is required solely at Monitoring Locations RSW-004 (King Harbor) and RSW-010 (Pacific Ocean)

<sup>10</sup> For each annual monitoring event, at least five weekly samplings and analyses shall be conducted until a geometric mean can be obtained for each parameter (using the five most recent sample results).

**Table E-10. Monitoring Periods and Reporting Schedule**

Sampling Frequency	Monitoring Period	Start Date	Duration	SMR Due Date
Continuous	All	Permit effective date	Ongoing	Submit with quarterly SMR
1/month	Monthly	First day of each calendar month	First day of calendar month through last day of calendar month	Submit with quarterly SMR
1/quarter	1st Quarter	January 1, <u>2017</u>	January 1 through March 31	May 1
	2nd Quarter	April 1, <u>2017</u>	April 1 through June 30	August 1
	3rd Quarter	July 1, <u>2017</u>	July 1 through September 30	November 1
	4th Quarter	October 1, <u>2016</u>	October 1 through December 31	February 1
2/year	<sup>1</sup> <sup>st</sup> Semiannual	January 1, <u>2017</u>	January 1 through June 30	August 1
	<sup>2</sup> <sup>nd</sup> Semiannual	July 1, <u>2017</u>	July 1 through December 31	February 1
1/year	Annual	January 1, <u>2017</u>	January 1 through December 31	February 1