



California Regional Water Quality Control Board

San Francisco Bay Region

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Alan C. Lloyd, Ph.D.
Agency Secretary

Arnold Schwarzenegger
Governor

TENTATIVE ORDER NO. NPDES NO. CA0030082

The following Discharger is authorized to discharge in accordance with the conditions set forth in this Order:

Discharger	Pacific Gas and Electric Company (PG&E)
Name of Facility	PG&E Shell Pond
Facility Address	½ Mile Northwest of North Broadway Street
	Bay Point, 94565
	Contra Costa

The Discharger is authorized to discharge from the following discharge point as set forth below:

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
001	Circulated Bay Water	38 °, 02', 34" N	121 °, 57', 14" W	Suisun Bay

This Order was adopted by the Regional Water Board on:	<Adoption Date>
This Order shall become effective on:	<Effective Date>
This Order shall expire on:	<Expiration Date>
The U.S. Environmental Protection Agency (USEPA) and the Regional Water Board have classified this discharge as a minor discharge.	
The Discharger shall file a Report of Waste Discharge in accordance with Title 23, California Code of Regulations, not later than 180 days in advance of the Order expiration date as application for issuance of new waste discharge requirements.	

IT IS HEREBY ORDERED, that Order No. 99-022 is rescinded upon the effective date of this Order except for enforcement purposes, and, in order to meet the provisions contained in Division 7 of the California Water Code (CWC) and regulations adopted therein, and the provisions of the Federal Clean Water Act (CWA), and regulations and guidelines adopted therein, the Discharger shall comply with the requirements in this Order.

I, Bruce H. Wolfe, Executive Officer, do hereby certify the following is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on <Adoption Date>.

Bruce H. Wolfe, Executive Officer

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
 REGION 2, SAN FRANCISCO BAY REGION**

ORDER NO. <XX-XXXX-XXX>
 NPDES NO. CA0030082

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	- Self-Monitoring Program, Part A, adopted August 1993	
	- Standard Provisions and Reporting Requirements, August 1993	
	- August 6, 2001 Staff Letter: <i>Requirement for Priority Pollutant Monitoring in Receiving Water and Wastewater Discharges</i>	

I. FACILITY INFORMATION

The following Discharger is authorized to discharge in accordance with the conditions set forth in this Order:

Discharger	Pacific Gas and Electric Company
Name of Facility	PG&E Shell Pond
Facility Address	½ Mile Northwest of North Broadway Street
	Bay Point, 94565
	Contra Costa
Facility Contact, Title, and Phone	Mr. Robert M. Gray, Consulting Environmental Scientist, (415) 973-3773
Mailing Address	P. O. Box 770000, San Francisco, 94177
Type of Facility	Flow-through pond for habitat enhancement
Facility Design Flow	Maximum average dry weather flow of 1 million gallons per day (MGD)

II. FINDINGS

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter Regional Water Board), finds:

- A. Background.** Pacific Gas and Electric Company (hereinafter Discharger) is currently discharging under Order No. 99-022 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0030082. The Discharger submitted a Report of Waste Discharge, dated November 25, 2003, and applied for a NPDES permit renewal to discharge up to 1 MGD of untreated pond water from PG&E Shell Pond. The application was deemed complete on December 19, 2003.
- B. Facility Description.** The Discharger owns the 72-acre pond. The treatment system consists of withdrawing water from adjacent slough, circulating water through the pond, and discharging pond water from its opposite end to reduce pond salinity level and ultimately enhance the pond as aquatic species and wildlife habitat. Pond water is discharged from Discharge Point 001 (see table on cover page) to Suisun Bay, a water of the United States within Suisun Basin. Attachment B provides a topographic map of the area around PG&E Shell Pond. Attachment C provides a flow schematic of PG&E Shell Pond.
- C. Legal Authorities.** This Order is issued pursuant to section 402 of the Federal CWA and implementing regulations adopted by USEPA and Chapter 5.5, Division 7 of CWC. It shall serve as a NPDES permit for point source discharges from PG&E Shell Pond to surface waters. This Order also serves as Waste Discharge Requirements (WDRs) pursuant to Article 4, Chapter 4 of the CWC for discharges that are not subject to regulation under CWA section 402.
- D. Background and Rationale for Requirements.** The Regional Water Board developed the requirements in this Order based on information submitted as part of the application, through monitoring and reporting programs, and through special studies. Attachments A through G,

which contain background information and rationale for Order requirements, are hereby incorporated into this Order and, thus, constitute part of the Findings for this Order.

- E. California Environmental Quality Act (CEQA).** This action to adopt a NPDES permit is exempt from the provisions of the CEQA (Public Resources Code Section 21100, et seq.) in accordance with Section 13389 of the CWC.
- F. Technology-based Effluent Limitations.** The Code of Federal Regulations (CFR) at 40 CFR §122.44(a) requires that permits include applicable technology-based limitations and standards. No technology-based limits have been established for this category of discharge.
- G. Water Quality-based Effluent Limitations.** Section 122.44(d) of 40 CFR requires that permits include water quality-based effluent limitations (WQBELs) to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water. Where numeric water quality objectives (WQOs) have not been established, 40 CFR §122.44(d) specifies that WQBELs may be established using USEPA criteria guidance under CWA section 304(a), proposed state criteria or a state policy interpreting narrative criteria supplemented with other relevant information, or an indicator parameter. A detailed discussion of the WQBELs development is included in the Fact Sheet (Attachment F).
 - 1. Constituents Identified in the 303(d) List.** On June 6, 2003, the USEPA approved a revised list of impaired water bodies prepared by the State (the 303(d) List). The State had prepared the 303(d) List pursuant to provisions of section 303(d) of the CWA requiring identification of specific water bodies where it is expected that water quality standards will not be met after implementation of technology-based effluent limitations on point sources. The pollutants impairing Suisun Bay include chlordane, DDT, diazinon, dieldrin, dioxin and furan compounds, mercury, nickel, total PCBs, PCBs (dioxin like), and selenium.

H. Water Quality Control Plans. The Regional Water Board adopted a Water Quality Control Plan for the Suisun Basin, *Water Quality Control Basin (Region 2)*, (hereinafter Basin Plan) that designates beneficial uses, establishes WQOs, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. In addition, State Water Resources Control Board (State Water Board) Resolution No. 88-63 requires that, with certain exceptions, the Regional Water Board assign the municipal and domestic supply use to water bodies that do not have beneficial uses listed in the Basin Plan. Beneficial uses applicable to Suisun Bay are as follows:

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	Suisun Bay	Estuarine Habitat (EST), Industrial Service Supply (IND), Fish Migration (MIG), Navigation (NAV), Preservation of Rare and Endangered Species (RARE), Fish Spawning (SPWN), Wildlife Habitat (WILD), Ocean, Commercial and Sport Fishing (COMM), Water Contact Recreation (REC-1), and Non-contact Water Recreation (REC-2).

I. National Toxics Rule (NTR) and California Toxics Rule (CTR). USEPA adopted the NTR on December 22, 1992, which was amended on May 4, 1995, and November 9, 1999, and the CTR on May 18, 2000, which was amended on February 13, 2001. These rules include water quality criteria (WQC) for priority pollutants and are applicable to this discharge.

- J. State Implementation Policy.** On March 2, 2000, State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP). The SIP became effective on April 28, 2000, with respect to the priority pollutant criteria promulgated for California by the USEPA through the NTR and to the priority pollutant objectives established by the Regional Water Boards in their basin plans, with the exception of the provision on alternate test procedures for individual discharges that have been approved by USEPA Regional Administrator. The alternate test procedures provision was effective on May 22, 2000. The SIP became effective on May 18, 2000. The State Water Board subsequently amended the SIP, and the amendments became effective on May 31, 2005. The SIP includes procedures for determining the need for and calculating WQBELs and requires dischargers to submit data sufficient to do so.
- 1. Requirement for Additional Monitoring.** On August 6, 2001, Regional Water Board staff sent a letter to all permitted dischargers pursuant to Section 13267 of CWC requiring the submittal of effluent and receiving water data on priority pollutants, hereinafter referred to as the “August 6, 2001 Letter”. Pursuant to the August 6, 2001 Letter, the Discharger collected and analyzed priority pollutants during the years 2002 through 2004. Details of these data and the rationale for the additional monitoring required in this Order are provided in the Fact Sheet (Attachment F).
- K. Compliance Schedules and Interim Requirements.** Section 2.1 of the SIP provides that, based on a discharger’s request and demonstration that it is infeasible for an existing discharger to achieve immediate compliance with an effluent limitation derived from a CTR criterion, compliance schedules may be allowed in an NPDES permit. Unless an exception has been granted under Section 5.3 of the SIP, a compliance schedule may not exceed 5 years from the date that the permit is issued or reissued, nor may it extend beyond 10 years from the effective date of the SIP (or May 18, 2010) to establish and comply with CTR criterion-based effluent limitations. Where a compliance schedule for a final effluent limitation exceeds one year, the Order must include interim numeric limitations for that constituent or parameter. Where allowed by the Basin Plan, compliance schedules and interim effluent limitations or discharge specifications may also be granted to allow time to implement new or revised WQOs. This Order does not include compliance schedules and interim effluent limitations nor discharge specifications.
- L. Antidegradation Policy.** Section 131.12 of 40 CFR requires that State water quality standards include an anti-degradation policy consistent with the Federal policy. The State Water Board established California’s antidegradation policy in State Water Board Resolution 68-16, which incorporates the requirements of the Federal antidegradation policy. Resolution 68-16 requires that existing quality of waters be maintained unless degradation is justified based on specific findings. As discussed in detail in the Fact Sheet (Attachment F), the permitted discharge is consistent with the anti-degradation provision of 40 CFR §131.12 and State Water Board Resolution 68-16.
- M. Anti-backsliding Requirements.** Sections 402(o)(2) and 303(d)(4) of the CWA and Federal regulations at 40 CFR § 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those

in the previous permit, with some exceptions where limitations may be relaxed. Some effluent limitations in this Order are less stringent than those in the previous Order. As discussed in detail in the Fact Sheet (Attachment F), this relaxation of effluent limitations is consistent with the anti-backsliding requirements of the CWA and Federal regulations.

- N. Monitoring and Reporting.** Section 122.48 of 40 CFR requires that all NPDES permits specify requirements for recording and reporting monitoring results. Sections 13267 and 13383 of the CWC authorize the Regional Water Boards to require technical and monitoring reports. The Monitoring and Reporting Program establishes monitoring and reporting requirements to implement Federal and State requirements. This Monitoring and Reporting Program is provided in Attachment E.
- O. Standard and Special Provisions.** Standard Provisions, which in accordance with 40 CFR §§122.41 and 122.42, apply to all NPDES discharges and must be included in every NPDES permit, are provided in Attachment D. The Regional Water Board has also included in this Order special provisions applicable to the Discharger (Attachment G). A rationale for the special provisions contained in this Order is provided in the attached Fact Sheet (Attachment F).
- 1. Pond Management Plan.** The Discharger has established a Pond Management Plan under the requirements specified by the Regional Water Board in the provisions of the previous permit. The requirements are consistent with the Basin Plan objectives.
- P. Notification of Interested Parties.** The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe WDRs for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Details of notification are provided in the Fact Sheet (Attachment F) of this Order.
- Q. Consideration of Public Comment.** The Regional Water Board, in a public meeting, heard and considered all comments pertaining to the discharge. Details of the Public Hearing are provided in the Fact Sheet (Attachment F) of this Order.

III. DISCHARGE PROHIBITIONS

- A.** Discharge of wastewater to PG&E Shell Pond is prohibited.
- B.** Discharge from PG&E Shell Pond at a location or in a manner different from that described in the Findings is prohibited.
- C.** Application of biocides is prohibited unless it has been demonstrated to the satisfaction of the Regional Water Board that a net environmental benefit results from their application. Should the use of biocides become necessary during the duration of this Order, written approval must be first obtained from the Executive Officer.

IV. EFFLEUNT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Final Effluent Limitations – Discharge Point 001

1. Final Effluent Limitations – Discharge Point 001

- a. The discharge of pond water shall maintain compliance with the following effluent limitations at Discharge Point 001, with compliance measured at Monitoring Location M-001A as described in the attached Monitoring and Reporting Program (Attachment E):

Parameter	Units ^[4]	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Dissolved Oxygen ^[2]	mg/L			5.0	
pH ^[2]	Standard units			6.5	8.5
Mercury ^{[1], [3]}	µg/L	0.02	0.041		
	lbs/month	0.006			
Selenium ^[3]	µg/L	4.1	8.2		
	lbs/month	1.29			
Bis(2-Ethylhexyl)Phthalate	µg/L	5.9	11.84		

^[1] The Regional Water Board may amend the limitation based on the Waste Load Allocations in the Total Maximum Daily Loads.

^[2] The Discharger may select discharge Monitoring Location M-001A, or receiving water Monitoring Location R-001, to determine compliance with dissolved oxygen and/or pH effluent limitation(s).

^[3] Mass emission rate is obtained from the following calculation for any calendar month:

$$\text{Mass emission rate (lb/month)} = \frac{8.345}{N} (\sum_{i=1}^N Q_i C_i)$$

In which 'N' is the number of samples analyzed in any calendar month. 'Q_i' and 'C_i' are the flow rate (MG) and the constituent concentration (mg/L), respectively, which are associated with each of the 'N' grab samples which may be taken in any calendar month.

^[4] Unit Abbreviations:

lbs/month = pounds per month
 mg/L = milligrams per liter
 µg/L = micrograms per liter

- b. **Intake Water Credit.** The Discharger has met the conditions specified in Section 1.4.4, Intake Water Credits, of the SIP as discussed in detail in the Fact Sheet (Attachment F). The Discharger qualifies to receive intake water credits for Mercury and Selenium applicable towards the concentration-based effluent limitations specified in IV.A.1.a of this Order. These credits are to offset any concentrations of the pollutant found in the intake water, and are only allowed on a pollutant-by-pollutant and discharge-by-discharge basis. Furthermore, these credits are only applicable upon each specific discharge event, and compliance with the concentration-based limitations specified in IV.A.1.a of this Order shall be assessed as follows:

- 1) **Monitoring Requirements.** The Discharger will monitor the pollutant concentrations in the intake and in the effluent (at Monitoring Location M-001A) during the same discharge event; however, the intake sample must be obtained from influent monitoring location M-INF immediately before initiating a discharge at Discharge Point 001.
- 2) **Exception to Condition 1).** During effluent discharges that occur when intake water is not being pumped into the pond (e.g. to lower the pond level during the wet season), the Discharger will monitor the effluent discharge at Monitoring Location M-001A only.
- 3) **Compliance Evaluation.** Compliance shall be evaluated using a 12 sample moving average of the pollutant concentrations in the intake water samples monitored at location M-INF. If the effluent monitoring sample's analytical results indicate that the pollutant concentration is equal to or less than the 12 sample moving average at M-INF, then the concentration and mass based effluent limitations specified in IV.A.1.a of this Order are not applicable, and therefore, the discharge is in compliance. Otherwise, the effluent must comply with the effluent limitations specified in IV.A.1.a of this Order.

2. Interim Effluent Limitations – Not Applicable (N/A)

B. Land Discharge Specifications – N/A

C. Reclamation Specifications – N/A

V. RECEIVING WATER LIMITATIONS

A. Surface Water Limitations

Receiving water limitations are based on WQOs contained in the Basin Plan and are a required part of this Order. The discharge shall not cause the following in Suisun Bay or in the adjacent discharge slough:

- 1 The discharge shall not cause the following conditions to exist in waters of the State at any place:
 - a. Floating, suspended, or deposited macroscopic particulate matter or foam in concentrations that cause nuisance or adversely affect beneficial uses;
 - b. Bottom deposits or aquatic growths to the extent that such deposits or growths cause nuisance or adversely affect beneficial uses;
 - c. Alterations of temperature, turbidity, or apparent color beyond present natural background levels;

- d. Visible, floating, suspended, or deposited oil or other products of petroleum origin; and
 - e. Toxic or other deleterious substances to be present in concentrations or quantities, which will cause deleterious effects on wildlife, waterfowl, or other aquatic biota, or which render any of these unfit for human consumption, either at levels created in the receiving waters or as a result of biological concentration.
2. The discharge shall not cause the following limits to be exceeded in waters of the State at any one place within one foot of the water surface:
- a. Dissolved Oxygen: 5.0 mg/L, minimum
The median dissolved oxygen concentration for any three consecutive months shall not be less than 80% of the dissolved oxygen content at saturation. When natural factors cause concentrations less than that specified above, then the discharges shall not cause further reduction in ambient dissolved oxygen concentrations.
 - b. Dissolved Sulfide: 0.1 mg/L, maximum
 - c. pH: The pH shall not be depressed below 6.5 nor raised above 8.5, nor caused to vary from normal ambient pH by more than 0.5 pH units.
 - d. Un-ionized Ammonia: 0.025 mg/L as N, annual median; and 0.16 mg/L as N, maximum.
 - e. Nutrients: Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.
3. The discharges shall not cause a violation of any particular water quality standard for receiving waters adopted by the Regional Water Board or the State Water Board as required by the Clean Water Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Clean Water Act, or amendments thereto, the Regional Water Board will revise and modify this Order in accordance with such more stringent standards.

B. Groundwater Limitations – N/A

VI. PROVISIONS

A. Standard Provisions

1. **Federal Standard Provisions.** The Discharger shall comply with all Standard Provisions included in Attachment D of this Order.

- 2. Regional Water Board Standard Provisions.** The Discharger shall comply with all applicable items (Items A.7, A.8, A.13, B.1-B.4, C.1, C.2, D.2, and D.3 are not applicable) of the *Standard Provisions and Reporting Requirements for NPDES Surface Water Discharge Permits, August 1993* (Attachment G), including any amendments thereto. Where provisions or reporting requirements specified in this Order are different from equivalent or related provisions or reporting requirements given in the Standard Provisions, the specifications of this Order shall apply.

B. Monitoring and Reporting Program Requirements

The Discharger shall comply with the Monitoring and Reporting Program (MRP), and future revisions thereto, in Attachment E of this Order. The MRP includes monitoring at M-001A for conventional, non-conventional, and toxic pollutants.

C. Special Provisions

- 1. Reopener Provisions.** The Regional Water Board may modify or reopen this Order prior to its expiration date in any of the following circumstances:
 - a.** If present or future investigations demonstrate that the discharge(s) governed by this Order will, or cease to, have adverse impacts on water quality and/or beneficial uses of the receiving waters.
 - b.** As new or revised WQOs come into effect for the San Francisco Bay estuary and contiguous water bodies (whether statewide, regional, or site-specific). In such cases, effluent limitations in this Order will be modified as necessary to reflect updated WQOs.
 - c.** If translator or other water quality studies provide a basis for determining that a permit condition(s) should be modified.
 - d.** An administrative or judicial decision on a separate NPDES permit or WDR that addresses requirements similar to this discharge; and
 - e.** as authorized by law.

The Discharger may request permit modification based on b, c, d, and e above. The Discharger shall include in any such request an antidegradation and antibacksliding analysis.

2. Special Studies, Technical Reports and Additional Monitoring Requirements.

- a. Effluent Monitoring.** The Discharger shall continue its effort to monitor and evaluate the discharge from Outfall M-001 for all 126 priority pollutants in the CTR as indicated in the sampling plan. The Discharger shall conduct monitoring as specified in the MRP in Attachment E of this Order effective March 1, 2006.

This information shall be included with the annual report required by the Self-Monitoring Program, Part A in Attachment G. The report shall summarize the data collected to date and describe future monitoring to take place. A final report that presents all the data shall be submitted to the Board no later than 180 days prior to the permit expiration date. Reporting requirements under this section may be satisfied by: (a) monthly reporting using the electronic reporting system (ERS), and (b) submittal of a complete application for permit reissuance no later than 180 days prior to the permit expiration date.

3. Best Management Practices and Pollution Prevention.

a. Pollutant Minimization Program.

- 1) According to Section 2.4.5 of the SIP, when there is evidence that a priority pollutant is present in the effluent above an effluent limitation and either:

- i.** A sample result is reported as detected, but not quantified (less than the ML) and the effluent limitation is less than the reported ML; or
- ii.** Sample result is reported as not detected (less than the MDL) and the effluent limitation is less than the MDL,

the Discharger shall be required to complete and implement a Pollutant Minimization Program.

- 2) If triggered by the reasons in (a) above and notified by the Executive Officer, the Discharger shall submit within 6 months of notification, the following:

- i.** An annual review and semiannual monitoring of potential sources of the reportable priority pollutant(s), which may include fish tissue monitoring and other bio-uptake sampling, or alternative measures approved by the Executive Officer when it is demonstrated that source monitoring is unlikely to produce useful analytical data.
- ii.** Quarterly monitoring for the reportable priority pollutant(s) in the influent to the treatment system, or alternative measures approved by the Executive Officer when it is demonstrated that influent monitoring is unlikely to produce useful analytical data.
- iii.** Submittal of a control strategy designed to proceed toward the goal of maintaining concentrations of the reportable priority pollutant(s) in the effluent at or below the effluent limitation.

- iv. Development of appropriate cost-effective control measures for the reportable priority pollutant(s), consistent with the control strategy.
- v. An annual status report that shall be sent to the Board including the following:
 - (1) All Pollution Prevention monitoring results for the previous year
 - (2) A list of potential sources of the reportable priority pollutant(s)
 - (3) A summary of all actions undertaken pursuant to the control strategy
 - (4) A description of actions to be taken in the following year.

4. Compliance Schedules – N/A

5. Construction, Operation and Maintenance Specifications

- a. **Pond Management Plan.** The Discharger shall review and update its Pond Management Plan annually (as necessary), to reflect any modifications in operation that it might need to implement in order to protect water quality and wildlife, and must notify the Regional Water Board of such changes, shortly after such changes have occurred.
- b. **Pond Limitations.** The Discharger shall not cause the following conditions at any point in PG&E Shell Pond:
 - 1) Aquatic growths in quantities sufficient to create a nuisance condition as defined in CWC;
 - 2) Visible, floating, suspended, or deposited oil or other petroleum products; and
 - 3) Toxic or other deleterious substances to be present in concentrations or quantities which will cause deleterious effects on wildlife, waterfowl, or other aquatic biota, or which render any of these unfit for human consumption.

6. Special Provisions for Municipal Facilities (POTWs Only) – N/A

7. Other Special Provisions

- a. **Discharge Termination and Notification Requirements.** The Discharger shall stop discharging if and when required to stop by Contra Costa Water District (CCWD). The Discharger shall ensure that discharge does not occur at times when CCWD is diverting water from Mallard Slough, unless the Discharger has obtained prior written approval to discharge from CCWD. If CCWD is diverting, the Discharger shall provide a copy of CCWD's approval to the Regional Water Board prior to discharging. If CCWD requires the Discharger to terminate discharging, the Discharger shall terminate its discharge within 24 hours, or within another period of time that is mutually agreeable to CCWD and the Discharger.

The Discharger shall provide annual notification of operations via email to CCWD. Each notification should summarize operations over the previous year (including total volume

and flow rate of discharges, and monitoring activities), provide any new monitoring data, and describe the projected operations for the upcoming year.

VII. COMPLIANCE DETERMINATION

Compliance with the effluent limitations contained in Section IV of this Order will be determined as specified below:

A. Average Monthly Effluent Limitation (AMEL).

If the average of daily discharges over a calendar month exceeds the AMEL for a given parameter, an alleged violation will be flagged and the Discharger will be considered out of compliance for each day of that month for that parameter (e.g., resulting in 31 days of non-compliance in a 31-day month). The average of daily discharges over the calendar month that exceeds the AMEL for a parameter will be considered out of compliance for that month only. If only a single sample is taken during the calendar month and the analytical result for that sample exceeds the AMEL, the discharger will be considered out of compliance for that calendar month. For any one calendar month during which no sample (daily discharge) is taken, no compliance determination can be made for that calendar month.

B. Average Weekly Effluent Limitation (AWEL) – N/A.

C. Maximum Daily Effluent Limitation (MDEL).

If a daily discharge exceeds the MDEL for a given parameter, an alleged violation will be flagged and the discharger will be considered out of compliance for that parameter for that 1 day only within the reporting period. For any 1 day during which no sample is taken, no compliance determination can be made for that day.

D. Instantaneous Minimum Effluent Limitation.

If the analytical result of a single grab sample is lower than the instantaneous minimum effluent limitation for a parameter, a violation will be flagged and the discharger will be considered out of compliance for that parameter for that single sample. Non-compliance for each sample will be considered separately (e.g., the results of two grab samples taken within a calendar day that both are lower than the instantaneous minimum effluent limitation would result in two instances of non-compliance with the instantaneous minimum effluent limitation).

E. Instantaneous Maximum Effluent Limitation.

If the analytical result of a single grab sample is higher than the instantaneous maximum effluent limitation for a parameter, a violation will be flagged and the discharger will be considered out of compliance for that parameter for that single sample. Non-compliance for each sample will be considered separately (e.g., the results of two grab samples taken within a calendar day that both exceed the instantaneous maximum effluent limitation would result in two instances of non-compliance with the instantaneous maximum effluent limitation).

F. Six-month Median Effluent Limitation – N/A.

ATTACHMENT A – DEFINITIONS

Average Monthly Effluent Limitation (AMEL): the highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

Average Weekly Effluent Limitation (AWEL): the highest allowable average of daily discharges over a calendar week (Sunday through Saturday), calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.

Daily Discharge: Daily Discharge is defined as either: (1) the total mass of the constituent discharged over the calendar day (12:00 am through 11:59 pm) or any 24-hour period that reasonably represents a calendar day for purposes of sampling (as specified in the permit), for a constituent with limitations expressed in units of mass or; (2) the unweighted arithmetic mean measurement of the constituent over the day for a constituent with limitations expressed in other units of measurement (e.g., concentration).

The daily discharge may be determined by the analytical results of a composite sample taken over the course of one day (a calendar day or other 24-hour period defined as a day) or by the arithmetic mean of analytical results from one or more grab samples taken over the course of the day.

For composite sampling, if 1 day is defined as a 24-hour period other than a calendar day, the analytical result for the 24-hour period will be considered as the result for the calendar day in which the 24-hour period ends.

Instantaneous Maximum Effluent Limitation: the highest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous maximum limitation).

Instantaneous Minimum Effluent Limitation: the lowest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous minimum limitation).

Maximum Daily Effluent Limitation (MDEL): the highest allowable daily discharge of a pollutant.

Six-month Median Effluent Limitation: the highest allowable moving median of all daily discharges for any 180-day period.

Pacific Gas and Electric Company
PG&E Shell Pond
TENTATIVE ORDER NO. XX-XXXX-XXX
NPDES NO. CA0030082

ATTACHMENT B – TOPOGRAPHIC MAP

Pacific Gas and Electric Company
PG&E Shell Pond
TENTATIVE ORDER NO. XX-XXXX-XXX
NPDES NO. CA0030082

ATTACHMENT C – FLOW SCHEMATIC

ATTACHMENT D – FEDERAL STANDARD PROVISIONS

I. STANDARD PROVISIONS – PERMIT COMPLIANCE

A. Duty to Comply

1. The Discharger must comply with all of the conditions of this Order. Any noncompliance constitutes a violation of the Clean Water Act (CWA) and the California Water Code (CWC) and is grounds for enforcement action, for permit termination, revocation and reissuance, or denial of a permit renewal application [40 CFR §122.41(a)].

2. The Discharger shall comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, even if this Order has not been modified to incorporate the requirement [40 CFR §122.41(a)(1)].

B. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a Discharger in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Order [40 CFR §122.41(c)].

C. Duty to Mitigate

The Discharger shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this Order that has a reasonable likelihood of adversely affecting human health or the environment [40 CFR §122.41(d)].

D. Proper Operation and Maintenance

The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Discharger to achieve compliance with the conditions of this Order. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by a Discharger only when necessary to achieve compliance with the conditions of this Order [40 CFR §122.41(e)].

E. Property Rights

1. This Order does not convey any property rights of any sort or any exclusive privileges [40 CFR §122.41(g)].

2. The issuance of this Order does not authorize any injury to persons or property or invasion of other private rights, or any infringement of State or local law or regulations [40 CFR §122.5(c)].

F. Inspection and Entry

The Discharger shall allow the Regional Water Board, State Water Board, United States Environmental Protection Agency (USEPA), and/or their authorized representatives (including an authorized contractor acting as their representative), upon the presentation of credentials and other documents, as may be required by law, to [40 CFR §122.41(i)] [CWC 13383(c)]:

1. Enter upon the Discharger's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order [40 CFR §122.41(i)(1)];
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order [40 CFR §122.41(i)(2)];
3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order [40 CFR §122.41(i)(3)];
4. Sample or monitor, at reasonable times, for the purposes of assuring Order compliance or as otherwise authorized by the CWA or the CWC, any substances or parameters at any location [40 CFR §122.41(i)(4)].

G. Bypass

1. Definitions
 - a. “Bypass” means the intentional diversion of waste streams from any portion of a treatment facility [40 CFR §122.41(m)(1)(i)].
 - b. “Severe property damage” means substantial physical damage to property, damage to the treatment facilities, which causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production [40 CFR §122.41(m)(1)(ii)].
2. Bypass not exceeding limitations – The Discharger may allow any bypass to occur which does not cause exceedances of effluent limitations, but only if it is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions listed in Standard Provisions – Permit Compliance I.G.3 and I.G.5 below [40 CFR §122.41(m)(2)].
3. Prohibition of bypass – Bypass is prohibited, and the Regional Water Board may take enforcement action against a Discharger for bypass, unless [40 CFR §122.41(m)(4)(i)]:
 - a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage [40 CFR §122.41(m)(4)(A)];
 - b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods

of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance [40 CFR §122.41(m)(4)(B)]; and

c. The Discharger submitted notice to the Regional Water Board as required under Standard Provision – Permit Compliance I.G.5 below [40 CFR §122.41(m)(4)(C)].

4. The Regional Water Board may approve an anticipated bypass, after considering its adverse effects, if the Regional Water Board determines that it will meet the three conditions listed in Standard Provisions – Permit Compliance I.G.3 above [40 CFR §122.41(m)(4)(ii)].

5. Notice

a. Anticipated bypass. If the Discharger knows in advance of the need for a bypass, it shall submit a notice, if possible at least 10 days before the date of the bypass [40 CFR §122.41(m)(3)(i)].

b. Unanticipated bypass. The Discharger shall submit notice of an unanticipated bypass as required in Standard Provisions - Reporting V.E below [40 CFR §122.41(m)(3)(ii)].

H. Upset

Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation [40 CFR §122.41(n)(1)].

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of paragraph H.2 of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review [40 CFR §122.41(n)(2)].

2. Conditions necessary for a demonstration of upset. A Discharger who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that [40 CFR §122.41(n)(3)]:

a. An upset occurred and that the Discharger can identify the cause(s) of the upset [40 CFR §122.41(n)(3)(i)];

b. The permitted facility was, at the time, being properly operated [40 CFR §122.41(n)(3)(i)];

- c. The Discharger submitted notice of the upset as required in Standard Provisions – Reporting V.E.2.b [40 CFR §122.41(n)(3)(iii)]; and
 - d. The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance I.C above [40 CFR §122.41(n)(3)(iv)].
3. Burden of proof. In any enforcement proceeding, the Discharger seeking to establish the occurrence of an upset has the burden of proof [40 CFR §122.41(n)(4)].

II. STANDARD PROVISIONS – PERMIT ACTION

A. General

This Order may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Discharger for modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any Order condition [40 CFR §122.41(f)].

B. Duty to Reapply

If the Discharger wishes to continue an activity regulated by this Order after the expiration date of this Order, the Discharger must apply for and obtain a new permit [40 CFR §122.41(b)].

C. Transfers

This Order is not transferable to any person except after notice to the Regional Water Board. The Regional Water Board may require modification or revocation and reissuance of the Order to change the name of the Discharger and incorporate such other requirements as may be necessary under the CWA and the CWC [40 CFR §122.41(l)(3)] [40 CFR §122.61].

III. STANDARD PROVISIONS – MONITORING

- A. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity [40 CFR §122.41(j)(1)].
- B. Monitoring results must be conducted according to test procedures under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503 unless other test procedures have been specified in this Order [40 CFR §122.41(j)(4)] [40 CFR §122.44(i)(1)(iv)].

IV. STANDARD PROVISIONS – RECORDS

- A. Except for records of monitoring information required by this Order related to the Discharger's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR Part 503), the Discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order, for a period of at least three (3) years from the date

of the sample, measurement, report or application. This period may be extended by request of the Regional Water Board Executive Officer at any time [40 CFR §122.41(j)(2)].

B. Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements [40 CFR §122.41(j)(3)(i)];
2. The individual(s) who performed the sampling or measurements [40 CFR §122.41(j)(3)(ii)];
3. The date(s) analyses were performed [40 CFR §122.41(j)(3)(iii)];
4. The individual(s) who performed the analyses [40 CFR §122.41(j)(3)(iv)];
5. The analytical techniques or methods used [40 CFR §122.41(j)(3)(v)]; and
6. The results of such analyses [40 CFR §122.41(j)(3)(vi)].

C. Claims of confidentiality for the following information will be denied [40 CFR §122.7(b)]:

1. The name and address of any permit applicant or Discharger [40 CFR §122.7(b)(1)]; and
2. Permit applications and attachments, permits and effluent data [40 CFR §122.7(b)(2)].

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

The Discharger shall furnish to the Regional Water Board, State Water Board, or USEPA within a reasonable time, any information which the Regional Water Board, State Water Board, or USEPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order or to determine compliance with this Order. Upon request, the Discharger shall also furnish to the Regional Water Board, State Water Board, or USEPA copies of records required to be kept by this Order [40 CFR §122.41(h)] [CWC 13267].

B. Signatory and Certification Requirements

1. All applications, reports, or information submitted to the Regional Water Board, State Water Board, and/or USEPA shall be signed and certified in accordance with paragraph (2.) and (3.) of this provision [40 CFR §122.41(k)].
2. All permit applications shall be signed as follows:
 - a. For a corporation: By a responsible corporate officer. For the purpose of this section, a responsible corporate officer means: (i) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or

- (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures [40 CFR §122.22(a)(1)];
- b. For a partnership or sole proprietorship: by a general partner or the proprietor, respectively [40 CFR §122.22(a)(2)]; or
- c. For a municipality, State, Federal, or other public agency: by either a principal executive officer or ranking elected official. For purposes of this provision, a principal executive officer of a federal agency includes: (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of USEPA) [40 CFR §122.22(a)(3)].
3. All reports required by this Order and other information requested by the Regional Water Board, State Water Board, or USEPA shall be signed by a person described in paragraph (b) of this provision, or by a duly authorized representative of that person. A person is a duly authorized representative only if:
- a. The authorization is made in writing by a person described in paragraph (2.) of this provision [40 CFR §122.22(b)(1)];
- b. The authorization specified either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company (a duly authorized representative may thus be either a named individual or any individual occupying a named position) [40 CFR §122.22(b)(2)]; and
- c. The written authorization is submitted to the Regional Water Board, State Water Board, or USEPA [40 CFR §122.22(b)(3)].
4. If an authorization under paragraph (3.) of this provision is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph (3.) of this provision must be submitted to the Regional Water Board, State Water Board or USEPA prior to or together with any reports, information, or applications, to be signed by an authorized representative [40 CFR §122.22(c)].
5. Any person signing a document under paragraph (2.) or (3.) of this provision shall make the following certification:

“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” [40 CFR §122.22(d)].

C. Monitoring Reports

1. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program in this Order [40 CFR §122.41(l)(4)].
2. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the Regional Water Board or State Water Board for reporting results of monitoring of sludge use or disposal practices [40 CFR §122.41(l)(4)(i)].
3. If the Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, or as specified in this Order, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Regional Water Board [40 CFR §122.41(l)(4)(ii)].
4. Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order [40 CFR §122.41(l)(4)(iii)].

D. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this Order, shall be submitted no later than 14 days following each schedule date [40 CFR §122.41(l)(5)].

E. Twenty-Four Hour Reporting

1. The Discharger shall report any noncompliance that may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Discharger becomes aware of the circumstances. A written submission shall also be provided within five (5) days of the time the Discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance [40 CFR §122.41(l)(6)(i)].
2. The following shall be included as information that must be reported within 24 hours under this paragraph [40 CFR §122.41(l)(6)(ii)]:

- a. Any unanticipated bypass that exceeds any effluent limitation in this Order [*40 CFR §122.41(l)(6)(ii)(A)*].
 - b. Any upset that exceeds any effluent limitation in this Order [*40 CFR §122.41(l)(6)(ii)(B)*].
 - c. Violation of a maximum daily discharge limitation for any of the pollutants listed in this Order to be reported within 24 hours [*40 CFR §122.41(l)(6)(ii)(C)*].
3. The Regional Water Board may waive the above-required written report under this provision on a case-by-case basis if an oral report has been received within 24 hours [*40 CFR §122.41(l)(6)(iii)*].

F. Planned Changes

The Discharger shall give notice to the Regional Water Board as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required under this provision only when [*40 CFR §122.41(l)(1)*]:

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR §122.29(b) [*40 CFR §122.41(l)(1)(i)*]; or
2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in this Order nor to notification requirements under 40 CFR Part 122.42(a)(1) (see Additional Provisions—Notification Levels VII.A.1) [*40 CFR §122.41(l)(1)(ii)*].
3. The alteration or addition results in a significant change in the Discharger's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan [*40 CFR §122.41(l)(1)(iii)*].

G. Anticipated Noncompliance

The Discharger shall give advance notice to the Regional Water Board or State Water Board of any planned changes in the permitted facility or activity that may result in noncompliance with General Order requirements [*40 CFR §122.41(l)(2)*].

H. Other Noncompliance

The Discharger shall report all instances of noncompliance not reported under Standard Provisions – Reporting E.1, E.2, and E.3 at the time monitoring reports are submitted. The reports shall contain the information listed in Standard Provision – Reporting V.E [*40 CFR §122.41(l)(7)*].

I. Other Information

When the Discharger becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Regional Water Board, State Water Board, or USEPA, the Discharger shall promptly submit such facts or information [40 CFR §122.41(l)(8)].

VI. STANDARD PROVISIONS – ENFORCEMENT

A. The CWA provides that any person who violates section 301, 302, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any such sections in a permit issued under section 402, or any requirement imposed in a pretreatment program approved under sections 402(a)(3) or 402(b)(8) of the Act, is subject to a civil penalty not to exceed \$25,000 per day for each violation. The CWA provides that any person who negligently violates sections 301, 302, 306, 307, 308, 318, or 405 of the Act, or any condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, or any requirement imposed in a pretreatment program approved under section 402(a)(3) or 402(b)(8) of the Act, is subject to criminal penalties of \$2,500 to \$25,000 per day of violation, or imprisonment of not more than one (1) year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than \$50,000 per day of violation, or by imprisonment of not more than two (2) years, or both. Any person who knowingly violates such sections, or such conditions or limitations is subject to criminal penalties of \$5,000 to \$50,000 per day of violation, or imprisonment for not more than three (3) years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than \$100,000 per day of violation, or imprisonment of not more than six (6) years, or both. Any person who knowingly violates section 301, 302, 303, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than \$250,000 or imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than \$500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in section 309(c)(3)(B)(iii) of the Clean Water Act, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than \$1,000,000 and can be fined up to \$2,000,000 for second or subsequent convictions [40 CFR §122.41(a)(2)] [CWC 13385 and 13387].

B. Any person may be assessed an administrative penalty by the Regional Water Board for violating section 301, 302, 306, 307, 308, 318 or 405 of this Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of this Act. Administrative penalties for Class I violations are not to exceed \$10,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed \$25,000. Penalties for Class II violations are not to exceed \$10,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed \$125,000 [40 CFR §122.41(a)(3)].

C. The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this

paragraph, punishment is a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than 4 years, or both [40 CFR §122.41(j)(5)].

D. The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this Order, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than six months per violation, or by both [40 CFR §122.41(k)(2)].

VII. ADDITIONAL PROVISIONS– NOTIFICATION LEVELS

A. Non-Municipal Facilities

Existing manufacturing, commercial, mining, and silvicultural dischargers shall notify the Regional Water Board as soon as they know or have reason to believe [40 CFR §122.42(a)]:

1. That any activity has occurred or will occur that would result in the discharge, on a routine or frequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following "notification levels" [40 CFR §122.42(a)(1)]:

- a. 100 micrograms per liter ($\mu\text{g/L}$) [40 CFR §122.42(a)(1)(i)];
- b. 200 $\mu\text{g/L}$ for acrolein and acrylonitrile; 500 $\mu\text{g/L}$ for 2,4-dinitrophenol and 2-methyl-4,6-dinitrophenol; and 1 milligram per liter (mg/L) for antimony [40 CFR §122.42(a)(1)(ii)];
- c. Five (5) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge [40 CFR §122.42(a)(1)(iii)]; or
- d. The level established by the Regional Water Board in accordance with 40 CFR §122.44(f) [40 CFR §122.42(a)(1)(iv)].

2. That any activity has occurred or will occur that would result in the discharge, on a non-routine or infrequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following "notification levels" [40 CFR §122.42(a)(2)]:

- a. 500 micrograms per liter ($\mu\text{g/L}$) [40 CFR §122.42(a)(2)(i)];
- b. 1 milligram per liter (mg/L) for antimony [40 CFR §122.42(a)(2)(ii)];
- c. Ten (10) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge [40 CFR §122.42(a)(2)(iii)]; or
- d. The level established by the Regional Water Board in accordance with 40 CFR §122.44(f) [40 CFR §122.42(a)(2)(iv)].

B. Publicly-Owned Treatment Works (POTWs)

All POTWs shall provide adequate notice to the Regional Water Board of the following [40 CFR §122.42(b)]:

1. Any new introduction of pollutants into the POTW from an indirect discharger that would be subject to Sections 301 or 306 of the CWA if it were directly discharging those pollutants [40 CFR §122.42(b)(1)]; and
2. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of adoption of the Order [40 CFR §122.42(b)(2)].

-
Adequate notice shall include information on the quality and quantity of effluent introduced into the POTW as well as any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW [40 CFR §122.42(b)(3)].

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ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

The Federal regulations 40 CFR §122.48 requires that all NPDES permits specify monitoring and reporting requirements. CWC sections 13267 and 13383 also authorize the Regional Water Board to require technical and monitoring reports. This Monitoring and Reporting Program (MRP) establishes monitoring and reporting requirements that implement the Federal and State regulations.

I. GENERAL MONITORING PROVISIONS

- A.** The Discharger shall comply with the MRP for this Order as adopted by the Regional Water Board, and with all of the Self-Monitoring Program, Part A, adopted August 1993 (SMP). The MRP and SMP may be amended by the Executive Officer pursuant to USEPA regulations 40 CFR 122.62, 122.63, and 124.5. If any discrepancies exist between the MRP and SMP, the MRP prevails.
- B.** Sampling is required during the entire year when discharging. All analyses shall be conducted using current USEPA methods, or that have been approved by the USEPA Regional Administrator pursuant to 40 CFR 136.4 and 40 CFR 136.5, or equivalent methods that are commercially and reasonably available, and that provide quantification of sampling parameters and constituents sufficient to evaluate compliance with applicable effluent limits. The Regional Water Board will find the Discharger in violation of the limitation if the discharge concentration exceeds the effluent limitation and the Reporting Level for the analysis for that constituent.
- C. Minimum Levels.** For compliance monitoring, analyses shall be conducted using the lowest commercially available and reasonably achievable detection levels. The objective is to provide quantification of constituents sufficient to allow evaluation of observed concentrations with respect to the Minimum Levels given below. All Minimum Levels are expressed as µg/L approximately equal to parts per billion (ppb).

According to the SIP, method-specific factors (MSFs) can be applied. In such cases, this additional factor must be applied in the computation of the Reporting Level. Application of such factors will alter the Reporting Level from the Minimum Level for the analysis. Dischargers are to instruct laboratories to establish calibration standards so that the Minimum Level value is the lowest calibration standard. At no time is the Discharger to use analytical data derived from extrapolation beyond the lowest point of the calibration curve.

CTR #	Constituent	Minimum Levels for Types of Analytical Methods [a]			
		GC	GCMS	ICPMS	CVAF
8.	Mercury [b]				0.002
10.	Selenium [c]			2	
16.	2,3,7,8-TCDD and 16 congeners	EPA 1613, ½ EPA MLs (5 µg/L - 50 µg/L)			
68.	Bis(2-Ethylhexyl)Phthalate		5		

[a] Laboratory techniques are defined as follows:

GC	=	Gas Chromatography;
GCMS	=	Gas Chromatography/Mass Spectrometry;
ICPMS	=	Inductively Coupled Plasma/Mass Spectrometry;
CVAF	=	Cold Vapor Atomic Fluorescence.

[b] Use ultra-clean sampling and analytical methods for mercury monitoring, USEPA 1669 and USEPA 1631. The Minimum Level for mercury is 0.002 µg/L.

[c] Selenium must be analyzed for by ICPMS, or atomic absorption gaseous hydride procedure (USEPA 200.8, or Standard Method 3114B or 3114C).

II. MONITORING LOCATIONS

The Discharger shall establish the following monitoring locations to demonstrate compliance with the effluent limitations, discharge specifications, and other requirements in this Order:

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
--	M-INF	Influent. At a point in the intake slough immediately adjacent to PG&E Shell Pond intake structure.
001	M-001A	Effluent. At a point in PG&E Shell Pond immediately adjacent to the discharge weir.
--	R-001	Surface Water. At a point in the discharge slough.

III. INFLUENT MONITORING REQUIREMENTS

A. Monitoring Location M-INF

- The Discharger shall monitor the influent to PG&E Shell Pond at M-INF as follows:

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow Rate ^[1]	mgd	Visual Observation ^[1]	Discharge Event	
Turbidity	NTU	Grab	Monthly	
pH	Standard units	Grab	Monthly	
Dissolved Oxygen	mg/L	Grab	Monthly	
Temperature	°F	Grab	Monthly	
2,3,7,8-TCDD and congeners ^[2]	pg/L	Grab	Twice/year (1/wet, 1/dry season)	

[1] To be estimated based on the biweekly site visit readings of the totalizer's values on the intake control panel and rated efficiency of the influent pumps.

[2] 2,3,7,8-TCDD and congeners. Chlorinated Dibenzodioxins and Chlorinated Dibenzofurans shall be analyzed using the latest version of USEPA Method 1613; the analysis shall be capable of achieving one half the USEPA method 1613 Minimum Levels. Alternative methods of analysis must be approved by the Executive Officer. In addition to reporting results for each of the 17 congeners, the TCDD TEQ shall be calculated and reported using 1998 USEPA Toxicity Equivalent Factors for dioxin and furan congeners.

- Influent monitoring identified in section III.A.1 of this MRP is the minimum required monitoring. Additional sampling and analyses is required for specific pollutants should the Discharger want to offset any concentrations found in the influent and apply the intake water credit towards the effluent limitation. Intake water credits are applied on a pollutant-by-pollutant basis and discharge-by-discharge basis, and must be monitored according to section IV.A.2 (Effluent Limitations and Discharge Specifications, Discharge Point 001) of

this MRP and section IV.A.1.b (Final Effluent Limitations – Discharge Point 001) of this Order.

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location M-001A

1. The Discharger shall monitor pond water at a point immediately adjacent to the discharge weir as follows:

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow Rate ^[1]	mgd	Visual ^[1] Observation	Discharge Event	
Turbidity	NTU	Grab	Monthly	
pH ^[3]	Standard Units	Grab	Discharge Event	
Dissolved Oxygen ^[3]	mg/L	Grab	Monthly	
Salinity ^[3]	ppt	Grab	Monthly	
Oil and Grease ^[5]	mg/L	Grab	Monthly	
Temperature	°F	Grab	Monthly	
Mercury ^[2]	µg/L	Grab	Monthly	
Selenium	µg/L	Grab	Monthly	
2,3,7,8-TCDD and congeners ^[4]	pg/L	Grab	Twice/year (1/wet, 1/dry season)	
Bis(2-Ethylhexyl)Phthalate	µg/L	Grab	Monthly	
August 6, 2001 Letter, Table 1 Selected Constituents (except those listed above), metals.	µg/L	Grab	Twice/year (1/wet, 1/dry season)	
August 6, 2001 Letter, Table 1 Selected Constituents (except those listed above), organics.	µg/L	Grab	Once/5-years	

[1] To be estimated on the biweekly site visit measurement of the elevation of the discharge above the v-notch at the discharge weir.

[2] The Discharger shall use ultra-clean sampling (USEPA 1669) to the maximum extent practicable, and ultra-clean analytical methods (USEPA 1631) for mercury monitoring. The Discharger may use alternative methods of analysis (such as USEPA 245), if that alternate method has a Minimum Level of 2 ng/L (0.002 µg/L) or less.

[3] The Discharger may determine compliance at the point of discharge or in the adjacent discharge slough.

[4] 2,3,7,8-TCDD and congeners. Chlorinated Dibenzodioxins and Chlorinated Dibenzofurans shall be analyzed using the latest version of USEPA Method 1613; the analysis shall be capable of achieving one half the USEPA method 1613 Minimum Levels. Alternative methods of analysis must be approved by the Executive Officer. In addition to reporting results for each of the 17 congeners, the TCDD TEQ shall be calculated and reported using 1998 USEPA Toxicity Equivalent Factors for dioxin and furan congeners.

[5] The Discharger shall use USEPA Method 1664 for monitoring Oil & Grease.

2. Samples of effluent shall be collected on days coincident with influent sampling unless during the wet season when the pond does not receive influent from the adjacent slough.
3. If any maximum daily limit is exceeded, the Discharger shall increase sampling frequency and collect additional samples as the previous monitoring analytical results are received from

its laboratory (not to exceed three weeks) until two consecutive analytical monitoring results show compliance with the maximum daily limit.

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS – N/A

VI. LAND DISCHARGE MONITORING REQUIREMENTS – N/A

VII. RECLAMATION MONITORING REQUIREMENTS – N/A

VIII. RECEIVING WATER MONITORING REQUIREMENTS – SURFACE WATER AND GROUNDWATER

A. Monitoring Location R-001

1. The Discharger shall monitor the discharge slough at R-001 as follows:

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Turbidity	NTU	Grab	Monthly	
pH	Standard Units	Grab	Discharge Event	
Dissolved Oxygen	mg/L	Grab	Monthly	
Sulfides, Total & Dissolved ^[1]	mg/L	Grab	Monthly	
Temperature	°F	Grab	Monthly	
Standard Observations		Visual Observation	Quarterly	

[1] Receiving water analysis for sulfides shall be ran when dissolved oxygen is less than 5.0 mg/L.

2. Receiving water samples shall be collected on days coincident with sampling of the effluent.
3. Samples shall be collected within one foot below the surface of the receiving water body, unless otherwise stipulated.
4. Standard Observations include:
 - a. Floating and suspended materials of waste origin (to include oil, grease, algae, and other macroscopic particulate matter), presence or absence, source, and size of affected area.
 - b. Discoloration and turbidity: description of color, source, and size of affected area.
 - c. Odor: presence or absence, characterization, source, distance of travel, and wind direction.
 - d. Hydrographic condition:
 - 1) Time and height of corrected high and low tides (corrected to nearest NOAA location for the sampling date and time of sample and collection).
 - 2) Depth of water columns and sampling depths.
 - e. Weather conditions:

- 1) Air temperatures.
- 2) Wind-direction and estimated velocity.
- 3) Total precipitation during the previous five days and on the day of observation.

IX. OTHER MONITORING REQUIREMENTS – N/A

X. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

1. The Discharger shall comply with all Standard Provisions (Attachments D & G) related to monitoring, reporting, and recordkeeping.
2. The Discharger shall comply with SMP (Attachment G), Section F.1, related to spill reports.

B. Self Monitoring Reports (SMRs)

1. At any time during the term of this Order, the State or Regional Water Board may notify the Discharger to electronically submit self-monitoring reports. Until such notification is given, the Discharger shall submit self-monitoring reports in accordance with the requirements described below.
2. The Discharger shall submit quarterly Self Monitoring Reports (SMRs) including the results of all required monitoring using USEPA-approved test methods or other test methods specified in this Order for each calendar quarter. Quarterly SMRs shall be due thirty days from the first day of January and every three months thereafter.
3. Monitoring periods and reporting for all required monitoring shall be completed according to the following schedule:

Sampling Frequency	Monitoring Period Begins On...	Monitoring Period	SMR Due Date
Continuous	effective date of permit	All	First day of second calendar month following month of sampling
Discharge Event	effective date of permit	Continuous: Beginning of flow up to the end. Grab: Not less than twice per week.	First day of second calendar month following month of sampling
Once/ month	effective date of permit	1 st day of calendar month through last day of calendar month	First day of second calendar month following month of sampling
Once / quarter	effective date of permit	January 1 through March 31 April 1 through June 30 July 1 through September 30 October 1 through December 31	May 1 August 1 November 1 February 1
Once / semi-annual period	effective date of permit	Wet Season: October 1 through April 30 Dry Season: May 1 to September 30	June 1 November 1
Once / year	effective date of permit	Dry Season: May 1 to September 30	November 1
Once / 5 years	effective date of permit		First day of second calendar month following month of sampling

4. The Discharger shall report with each sample result the Reporting Level (RL) and the current Method Detection Limit (MDL), as determined by the procedure in 40 CFR Part 136.

The Discharger shall report the results of analytical determinations for the presence of chemical constituents in a sample using the following reporting protocols:

- a. Sample results greater than or equal to the RL shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).
- b. Sample results less than the RL, but greater than or equal to the laboratory’s MDL, shall be reported as “Detected, but Not Quantified,” or DNQ. The estimated chemical concentration of the sample shall also be reported.

For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ as well as the words “Estimated Concentration” (may be shortened to “Est. Conc.”). The laboratory may, if such information is available, include numerical estimates of the data quality for the reported result. Numerical estimates of data quality may be percent accuracy (+ a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.

- c. Sample results less than the laboratory’s MDL shall be reported as “Not Detected,” or ND.
- d. The Dischargers shall instruct laboratories to establish calibration standards so that the RL value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. The Discharger shall not use analytical data derived from *extrapolation* beyond the lowest point of the calibration curve.

5. The Discharger shall arrange all reported data and observations in a tabular format. The data shall be summarized to clearly illustrate whether the facility is operating in compliance with interim and/or final effluent limitations.
6. The Discharger shall attach a cover letter to the SMR. The information contained in the cover letter shall clearly identify violations of the WDRs; discuss corrective actions taken or planned; and the proposed time schedule for corrective actions. Identified violations must include a description of the requirement that was violated and a description of the violation (magnitude, frequency, dates, and causes of the violation).
7. SMRs must be submitted to the Regional Water Board, signed and certified as required by the standard provisions (Attachment D), to the address listed below:

Executive Officer
California Regional Water Quality Control Board
San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, CA 94612
ATTN: NPDES Permit Division

8. The Discharger has the option to submit all monitoring results in an electronic reporting format approved by the Executive Officer. The Electronic Reporting System (ERS) format includes, but is not limited to, a transmittal letter, summary of violation details and corrective actions, and transmittal receipt. If there are any discrepancies between the ERS requirements and the “hard copy” requirements listed in the MRP, then the approved ERS requirements supercede.

C. Discharge Monitoring Reports (DMRs) – N/A

D. Other Reports

1. **Annual Reports.** By February 1st of each year, the Discharger shall submit an annual report to the Regional Water Board covering the previous calendar year. The report shall contain the items described in Part A of the SMP, Section F.5 (Attachment G).

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ATTACHMENT F – FACT SHEET

As described in Section II of this Order, this Fact Sheet includes the legal requirements and technical rationale that serve as the basis for the requirements of this Order.

I. PERMIT INFORMATION

The following table summarizes administrative information related to the facility.

WDID	2 071030005
Discharger	Pacific Gas and Electric Company (PG&E)
Name of Facility	PG&E Shell Pond
Facility Address	½ Mile Northwest of North Broadway Street
	Bay Point, 94565
	Contra Costa
Facility Contact, Title and Phone	Mr. Robert M. Gray, Consulting Environmental Scientist (415) 973-3773
Authorized Person to Sign and Submit Reports	Korbin D. Creek, Manager, Site Remediation (415) 973-2520
Mailing Address	P. O. Box 770000, San Francisco, 94177
Billing Address	SAME
Type of Facility	Flow-through pond for habitat enhancement
Major or Minor Facility	Minor
Threat to Water Quality	Low
Complexity	Low
Pretreatment Program	No
Reclamation Requirements	N/A
Facility Permitted Flow	One million gallons per day
Facility Design Flow	Maximum average dry weather flow of one million gallons per day (mgd)
Watershed	Suisun Basin
Receiving Water	Suisun Bay
Receiving Water Type	Surface Water

- A. PG&E (hereinafter Discharger) is the owner and operator of PG&E Shell Pond, a habitat enhancement project.
- B. PG&E Shell Pond discharges pond water to an adjacent slough, which ultimately flows to Suisun Bay, a water of the United States. PG&E Shell Pond is currently regulated by Order No. 99-022, which was adopted on May 25, 1999, and expired on May 25, 2004. The terms of the previous permit automatically continued in effect after the permit expiration date.
- C. The Discharger filed a report of waste discharge and submitted an application for renewal of its Waste Discharge Requirements (WDRs) and National Pollutant Discharge Elimination System

(NPDES) permit on December 1, 2003. Supplemental information was requested on November 25, 2003, and received on December 19, 2003.

II. FACILITY DESCRIPTION

In 1973, PG&E purchased the 72-acre Shell Pond site, located approximately ½ mile northwest of North Broadway Street in the city of Bay Point, from Shell Oil Products Company (Shell) as part of a planned expansion of the Pittsburg Power Plant. A location map of PG&E Shell Pond is included as Attachment B (Topographic Map) of this Order.

In 1994, the former Shell wastewater pond was identified in Pittsburg Power Plant's Resource Conservation and Recovery Act Part B Treatment, Storage and Disposal Permit as requiring the preparation of a Corrective Measures Study Plan.

On September 1, 2000, the Department of Toxic Substances Control approved PG&E's Corrective Measures Study Plan, which included circulation and discharge of slough water, surface water monitoring, site re-vegetation, levee inspection and maintenance.

A. Description of Wastewater Treatment or Controls. A pond circulation system was developed to reduce salinity levels, and therefore, improve water quality in the 72-acre pond. Water is automatically pumped from an adjacent slough into PG&E Shell Pond (influent) when the pond reaches specified levels; however, the pumps can also be controlled to intake or cease inflows as necessary. The slough water circulates through the pond water and is discharged by gravity out its opposite end into another slough (effluent) when its control structures are removed.

B. Discharge Points and Receiving Waters.

1. Discharge Point 001. PG&E Shell Pond is designed to discharge up to one million gallons per day (mgd) at discharge point 001, located at the northwest corner of the pond at latitude 38 °, 02', 34" N and longitude 121 °, 57', 14" W. The discharge is under controlled conditions in which stop logs are removed, and then the discharge flows over a v-notch weir (monitoring point M-001A) and into an adjacent slough (monitoring point R-001) that ultimately flows into Suisun Bay, approximately 2500 feet from Discharge Point 001. The USEPA and the Regional Water Board have classified this discharge as a minor discharge.

2. Storm Water Discharges.

a. Regulations. Federal regulations for storm water discharges were promulgated by the USEPA on November 19, 1990. The regulations [40 CFR Parts 122, 123, and 124] require specific categories of industrial activity (industrial storm water) to obtain an NPDES permit and to implement Best Available Technology Economically Achievable (BAT) and Best Conventional Pollutant Control Technology (BCT) to control pollutants in industrial storm water discharges.

b. Exemption from Coverage under Statewide Storm Water General Permit. The State Water Resources Control Board’s (the State Board’s) statewide NPDES permit for storm water discharges associated with industrial activities (NPDES General Permit CAS000001- the General Permit) was adopted on November 19, 1991, amended on September 17, 1992, and reissued on April 17, 1997. The Discharger is not required to be covered under the General Permit because all storm water is circulated through PG&E Shell Pond.

C. Summary of Existing Requirements and Self-Monitoring Report (SMR) Data. Effluent limitations contained in the previous permit for discharges from E-1 (now Discharge Point 001) and representative monitoring data from the term of the previous permit are as follows:

Parameter	Effluent Limitation			Monitoring Data (From 12/5/00 – To 8/5/04)		
	Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Turbidity (NTU)				71		71
pH (Standard Units)			8.5	8.8		8.9
Dissolved Oxygen (mg/L)			5.0 ^[1]			3.3 ^[1]
Arsenic (µg/L)				25		
Chromium (lb/month)	2.84			Non Detect		Non Detect
Mercury (lb/month)	0.006			0.002		0.002
Selenium (lb/month)	1.29			0.578		0.578
Zinc (µg/L)				58		58
Bis(2-Ethylhexyl)Phthalate				12		12

^[1] Dissolved oxygen represents the minimum allowable effluent limitation or lowest effluent discharge value.

D. Compliance Summary. Even though the pond circulation system was originally conceived to circulate water consistently to achieve habitat enhancement objectives, PG&E Shell Pond has only discharged ten occurrences during the previous permit’s limited discharge window between August 1st and December 31st. The main limiting factor has been elevated pH readings, which typically reads close to the upper limit of 8.5; however, discharges were immediately terminated when measured above this limit. In total, the upper pH limit was exceeded twice, and dissolved oxygen measured outside of the permit limit once. No toxic substances effluent limitations were violated during the term of the previous permit.

E. Planned Changes. To meet pH limits and ultimately circulate water consistently through the pond, the Discharger tested the feasibility of using aeration, adding chemicals, and also evaluated the potential for restricting discharge to nighttime, all of which had negligible effects on lowering the pH in the discharge. However, water quality monitoring analytical measurements indicate the pH of the pond water discharge as consistently lower during the rainy season, which is outside the previous permit’s discharge window. Therefore, the Discharger reached agreement with Regional Water Board staff and Contra Costa Water District (CCWD) staff to allow discharging year-round

provided the Discharger complies with the discharge termination and notification requirements (VI. Provision, C.7.b), and effluent limits contained in this Order. This Order does not contain a prohibition to discharge during the period January 1st through August 1st, as does the previous permit.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

The requirements contained in this Order are based on the requirements and authorities described in this section.

A. Legal Authorities.

1. This Order is issued pursuant to section 402 of the Federal Clean Water Act (CWA) and implementing regulations adopted by the US Environmental Protection Agency (USEPA) and Chapter 5.5, Division 7 of the California Water Code (CWC). It shall serve as a NPDES permit for point source discharges from this pond to surface waters. This Order also serves as Waste Discharge Requirements (WDRs) pursuant to Article 4, Chapter 4 of the CWC for discharges that are not subject to regulation under CWA section 402.
2. NPDES Permit/USEPA concurrence are based on 40 CFR 123.
3. Order expiration and reapplication are based on 40 CFR 122.46(a).

B. California Environmental Quality Act (CEQA). This action to reissue a NPDES permit is exempt from the provisions of the California Environmental Quality Act (Public Resources Code Section 21100, et seq.) in accordance with Section 13389 of the CWC.

C. State and Federal Regulations, Policies, and Plans.

1. **Water Quality Control Plans.** The Regional Water Board adopted a Water Quality Control Plan for the San Francisco Bay Basin (Region 2) (hereinafter Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. Beneficial uses applicable to Suisun Bay are as follows:

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	Suisun Bay	Estuarine Habitat (EST), Industrial Service Supply (IND), Fish Migration (MIG), Navigation (NAV), Preservation of Rare and Endangered Species (RARE), Fish Spawning (SPWN), Wildlife Habitat (WILD), Ocean, Commercial and Sport Fishing (COMM), Water Contact Recreation (REC-1), and Non-contact Water Recreation (REC-2).

- a. The Basin Plan (Table 4-1) contains a prohibition of discharge of any wastewater which has particular constituents of concern to beneficial uses (1) at any point at which the

wastewater does not receive a minimum initial dilution of at least 10:1; or (2) into any non-tidal water, dead-end slough, similar confined waters, or immediate tributaries thereof. In issuing the previous Order, the Regional Water Board determined that these prohibitions would not apply to the discharge because the discharge is considered a non-process wastewater discharge that does not contain characteristics of concern to beneficial uses, provided the discharge limitations contained in the Order are met. For this Order, the Regional Water Board continues to find that the discharge prohibition does not apply. Priority pollutants will specifically not be present in the discharge at levels of concern to beneficial uses because this Order finds only mercury, selenium, and bis(2-ethylhexyl)phthalate, are currently observed in the discharge at levels that could cause exceedances of water quality criteria, and establishes final water quality-based effluent limits for these pollutants.

2. **Thermal Plan.** The State Water Board adopted a *Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Water and Enclosed Bays and Estuaries of California* (Thermal Plan) on May 18, 1972, and amended this plan on September 18, 1975. This plan contains temperature objectives for inland surface waters.
3. **National Toxics Rule (NTR) and California Toxics Rule (CTR).** USEPA adopted the NTR on December 22, 1992, which was amended on May 4, 1995, and November 9, 1999, and the CTR on May 18, 2000, which was amended on February 13, 2001. These rules include water quality criteria (WQC) for priority pollutants and are applicable to this discharge.
4. **State Implementation Policy.** On March 2, 2000, State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP). The SIP became effective on April 28, 2000, with respect to the priority pollutant criteria promulgated for California by the USEPA through the NTR and to the priority pollutant objectives established by the Regional Water Boards in their basin plans, with the exception of the provision on alternate test procedures for individual discharges that have been approved by USEPA Regional Administrator. The alternate test procedures provision was effective on May 22, 2000. The SIP became effective on May 18, 2000. The State Water Board amended the SIP on February 24, 2005, and the amendments became effective on May 31, 2005. The SIP includes procedures for determining the need for and calculating water quality-based effluent limitations (WQBELs), and requires Dischargers to submit data sufficient to do so. The SIP also requires that final concentration-based WQBELs be included for all pollutants having reasonable potential to cause or contribute to an exceedance of applicable water quality standards.
5. **Antidegradation Policy.** Section 131.12 of 40 CFR requires that State water quality standards include an antidegradation policy consistent with the Federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution 68-16, which incorporates the requirements of the Federal antidegradation policy. Resolution 68-16 requires that existing water quality is maintained unless degradation is justified based on specific findings. The permitted discharge is consistent with the antidegradation provision of 40 CFR §131.12 and State Water Board Resolution 68-16, and the final limitations in this Order are in

compliance with antidegradation requirements and meet the requirements of the SIP because these limits hold the Discharger to performance levels that will not cause or contribute to water quality impairment or further water quality degradation.

- 6. Anti-Backsliding Requirements.** Sections 402(o)(2) and 303(d)(4) of the CWA and 40 CFR §122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require that effluent limitations in a reissued permit must be as stringent as those in the previous permit, with some exceptions in which limitations may be relaxed. All effluent limitations in this Order are at least as stringent as the effluent limitations in the previous permit; however, this Order does not contain mass limits for Chromium VI, as does the previous permit, because analysis of the effluent discharge data indicate that Chromium was not measured at levels that cause, have reasonable potential to cause, or contribute to an excursion above any state water quality standard. This relaxation of the Chromium mass effluent limitation is consistent with the anti-backsliding requirements of the CWA and Federal regulations.
- 7. Monitoring and Reporting Requirements.** Section 122.48 of 40 CFR requires that all NPDES permits specify requirements for recording and reporting monitoring results. Sections 13267 and 13383 of the CWC authorize the Regional Water Boards to require technical and monitoring reports. The Monitoring and Reporting Program (MRP) establishes monitoring and reporting requirements to implement Federal and State requirements. This MRP is provided in Attachment E of this Order. The MRP may be amended by the Executive Officer pursuant to USEPA regulation 40 CFR 122.62, 122.63, and 124.5.
- 8. Federal Water Pollution Control Act.** Water quality objectives (WQOs) and water quality criteria (WQC), effluent limitations, and calculations contained in this Order are also based on Sections 201 through 305, and 307 of The Federal Water Pollution Control Act, and amendments thereto, as applicable.

D. Impaired Water Bodies on CWA 303(d) List.

- 1.** On June 6, 2003, the USEPA approved a revised list of impaired water bodies prepared by the State (hereinafter referred to as the 303(d) list), prepared pursuant to provisions of Section 303(d) of the Federal CWA requiring identification of specific water bodies where it is expected that water quality standards will not be met after implementation of technology-based effluent limitations on point sources. The pollutants impairing the Suisun Bay include chlordane, DDT, diazinon, dieldrin, dioxin compounds, exotic species, furan compounds, mercury, nickel, total PCBs, PCBs (dioxin like), and selenium. The SIP requires final effluent limitations for all 303(d)-listed pollutants to be based on total maximum daily loads and associated waste load allocations.
 - 1. Total Maximum Daily Loads.** The Regional Water Board plans to adopt Total Maximum Daily Loads (TMDLs) for pollutants on the 303(d) list in Suisun Bay within the next ten years, with the exception of dioxin and furan compounds. The Water Board defers development of the TMDLs for dioxin and furan compounds to the USEPA. Future review

of the 303(d)-list for Suisun Bay may result in revision of the schedules or provide schedules for other pollutants.

- 3. Waste Load Allocations.** The TMDLs will establish waste load allocations (WLAs) for point sources and load allocations (LAs) for non-point sources, and will result in achieving the water quality standards for the waterbodies. Final WQBELs for 303(d)-listed pollutants in this discharge will be based on WLAs contained in the respective TMDLs.
- 4. Implementation Strategy.** The Regional Water Board's strategy to collect water quality data and to develop TMDLs is summarized below:
 - a. Data Collection.** The Regional Water Board has given the dischargers the option to collectively assist in developing and implementing analytical techniques capable of detecting 303(d)-listed pollutants to at least their respective levels of concern or WQOs/WQC. This collective effort may include development of sample concentration techniques for approval by the USEPA. The Regional Water Board will require dischargers to characterize the pollutant loads from their facilities into the water-quality limited waterbodies. The results will be used in the development of TMDLs, and may be used to update or revise the 303(d) list or change the WQOs/WQC for the impaired waterbodies including Suisun Bay.
 - b. Funding Mechanism.** The Regional Water Board has received, and anticipates continuing to receive, resources from Federal and State agencies for TMDL development. To ensure timely development of TMDLs, the Regional Water Board intends to supplement these resources by allocating development costs among dischargers through the RMP or other appropriate funding mechanisms.

E. Other Plans, Policies, and Regulations – N/A

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

The CWA requires point source dischargers to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into the waters of the United States. The control of pollutants discharged is established through effluent limitations, and other requirements in NPDES permits. There are two principal bases for effluent limitations: 1) 40 CFR §122.44(a) requires that permits include applicable technology-based limitations and standards, and 2) 40 CFR §122.44(d) requires that permits include water quality-based effluent limitations to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water. Where numeric water quality objectives have not been established three options exist to protect water quality: 1) 40 CFR §122.44(d) specifies that WQBELs may be established using USEPA criteria guidance under CWA section 304(a); 2) proposed State criteria or a State policy interpreting narrative criteria supplemented with other relevant information may be used; or 3) an indicator parameter may be established.

This Order contains restrictions on individual pollutants that are no more stringent than required by the Federal Clean Water Act. Individual pollutant restrictions consist of water quality-based effluent limitations that have been scientifically derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to Federal law and are the applicable Federal water quality standards. To the extent that toxic pollutant water quality-based effluent limitations were derived from the California Toxics Rule, the California Toxics Rule is the applicable standard pursuant to 40 CFR 131.38. The scientific procedures for calculating the individual water quality-based effluent limitations are based on the CTR-SIP, which was approved by USEPA prior to May 1, 2001, or Basin Plan provisions approved by USEPA on May 29, 2000. Most beneficial uses and water quality objectives contained in the Basin Plan were approved under state law and submitted to and approved by USEPA prior to May 30, 2000. Any water quality objectives and beneficial uses submitted to USEPA prior to May 30, 2000, but not approved by USEPA before that date, are nonetheless “applicable water quality standards for purposes of the [Clean Water] Act” pursuant to 40 CFR 131.21(c)(1). The remaining water quality objectives and beneficial uses implemented by this Order were approved by USEPA on January 5, 2005, and are applicable water quality standards pursuant to 40 CFR 131.21(c)(2). Collectively, this Order’s restrictions on individual pollutants are no more stringent than the applicable water quality standards for purposes of the Clean Water Act.

Several specific factors affecting the development of limitations and requirements in this Order are discussed as follows:

A. Discharge Prohibitions.

- 1. Prohibition III.A (No discharge of wastewater to PG&E Shell Pond).** This prohibition is the same as on the previous permit, and is based on the California Water Code (CWC) 13260 that requires filing a report of waste discharge (ROWD) for permission to discharge. The Discharger has not filed a ROWD for waste discharges into the pond, thus any such discharges are prohibited.
- 2. Prohibition III.B (No discharge other than as described in this Order).** This prohibition is the same as on the previous permit, and is based on the CWC 13260 that requires filing of a ROWD before a permit to discharge can be granted. The Discharger submitted a ROWD, dated November 25, 2003, for permission to discharge as specified in this permit, thus any discharges other than as described in this Order are prohibited.
- 3. Prohibition III.C (No application of biocides unless demonstrated that a net environmental benefit will result).** This prohibition is the same as on the previous permit, and is based on the Basin Plan requirement (Chapter 4, Table 4-1, Prohibition 11).

B. Technology-based limitations – N/A

C. Water Quality-Based Effluent Limitations (WQBELs).

1. Scope and Authority.

- a. As specified in 40 CFR §122.44(d)(1)(i), permits are required to include WQBELs for pollutants (including toxicity) that are or may be discharged at levels that cause, have reasonable potential to cause, or contribute to an excursion above any state water quality standard (Reasonable Potential). The process for determining Reasonable Potential and calculating WQBELs when necessary is intended to protect the designated uses of the receiving water as specified in the Basin Plan, and achieve applicable water quality objectives and criteria that are contained in other State plans and policies, or water quality criteria contained in the CTR and NTR.
- b. NPDES regulations and the SIP provide the basis to establish Maximum Daily Effluent Limitations (MDELs).
 - 1) **NPDES Regulations.** NPDES regulations at 40 CFR Part 122.45(d) state:
“For continuous discharges all permit effluent limitations, standards, and prohibitions, including those necessary to achieve water quality standards, shall *unless impracticable* be stated as maximum daily and average monthly discharge limitations for all discharges other than publicly owned treatment works.”
 - 2) **SIP.** The SIP (page 8, Section 1.4) requires WQBELs be expressed as MDELs and average monthly effluent limitations (AMELs).
- c. MDELs are used in this Order to protect against acute water quality effects. The MDELs are necessary for preventing fish kills or mortality to aquatic organisms.

2. Applicable Beneficial Uses and Water Quality Criteria and Objectives.

The WQC and WQOs applicable to the receiving waters for this discharge are from the Basin Plan, the USEPA’s May 18, 2000 Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California (the California Toxics Rule, or the CTR), and the USEPA’s National Toxics Rule (the NTR).

- a. **Basin Plan.** The Basin Plan specifies numeric WQOs for 10 priority toxic pollutants, as well as narrative WQOs for toxicity and bioaccumulation in order to protect beneficial uses. The pollutants for which the Basin Plan specifies numeric objectives are arsenic, cadmium, chromium (VI), copper in freshwater, lead, mercury, nickel, silver, zinc, and cyanide (see also c., below). The narrative toxicity objective states in part “[a]ll waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms.” The bioaccumulation objective states in part “[c]ontrollable water quality factors shall not cause a detrimental increase in concentrations of toxic substances found in bottom sediments or aquatic life. Effects on aquatic organisms, wildlife, and human health will be considered.” Effluent limitations and provisions contained in this Order are designed to implement these objectives, based on available information.

- b. CTR.** The CTR specifies numeric aquatic life criteria for 23 priority toxic pollutants and numeric human health criteria for 57 priority toxic pollutants. These criteria apply to inland surface waters and enclosed bays and estuaries such as here, except that where the Basin Plan's Tables 3-3 and 3-4 specify numeric objectives for certain of these priority toxic pollutants, the Basin Plan's numeric objectives apply over the CTR (except in the South Bay south of the Dumbarton Bridge).
- c. NTR.** The NTR established numeric aquatic life criteria for selenium, numeric aquatic life and human health criteria for cyanide, and numeric human health criteria for 34 toxic organic pollutants for waters of San Francisco Bay upstream to, and including, Suisun Bay and the Delta. This includes the receiving water for this Discharger.
- d. Technical Support Document for Water Quality-Based Toxics Controls.** Where numeric objectives have not been established or updated in the Basin Plan, 40 CFR Part 122.44(d) specifies that WQBELs may be set based on USEPA criteria, supplemented where necessary by other relevant information, to attain and maintain narrative WQOs to fully protect designated beneficial uses. Regional Water Board staff used best professional judgment (BPIs) to determine the WQOs, WQCs, WQBELs, and calculations contained in this Order as defined by USEPA's March 1991 Technical Support Document for Water Quality-Based Toxics Control (the TSD).
- e. Basin Plan Receiving Water Salinity Policy.** The Basin Plan states that the salinity characteristics (i.e., freshwater vs. saltwater) of the receiving water shall be considered in determining the applicable WQC. Freshwater criteria shall apply to discharges to waters with salinities equal to or less than one ppt at least 95 percent of the time. Saltwater criteria shall apply to discharges to waters with salinities equal to or greater than 10 ppt at least 95 percent of the time in a normal water year. For discharges to water with salinities in between these two categories, or tidally influenced freshwaters that support estuarine beneficial uses, the criteria shall be the lower of the salt or freshwater criteria, (the latter calculated based on ambient hardness), for each substance.
- 1) Receiving Water Salinity.** The receiving water for the subject discharge is Suisun Bay and is classified as estuarine. Regional Water Board staff evaluated salinity data for the period of February 1993 through August 2001, monitored through the RMP at Honker Bay station. These data indicate a minimum salinity of 0 ppt, a maximum salinity of 7.2 ppt, with 52% of the measurements less than 1 ppt. These data indicate the receiving water is estuarine. Regional Water Board staff also evaluated salinity data for the period of February 1998 through December 2002 for New York Slough that was collected by Delta Diablo Sanitation District. These data also indicate the receiving water is estuarine. Furthermore, Suisun Bay is identified as supporting estuarine habitat in the Basin Plan; therefore, this receiving water falls under the Basin Plan's definition for estuarine water, and the effluent limitations in this Order are based on the more stringent of fresh and saltwater objectives/criteria.
- f. Hardness.** Some WQOs/WQC are hardness dependent. The RMP monitored for hardness at its Suisun Bay station, and 56 receiving water hardness data values

(hereinafter referred to as receiving water data) were obtained during February 1994 through August 2001. The minimum observed hardness data value is 46.4 mg/L and the maximum value is 1930 mg/L. Section F.2.f Hardness, of the CTR (page 31692), states that the derivations of criteria are most accurate between the hardness values of 25 mg/L to 400 mg/L, and therefore Regional Water Board staff censored this receiving water data by eliminating all hardness values above 400 mg/L. This censored receiving water data set contains 37 hardness data values, and indicates the maximum observed hardness data value as 334 mg/L with 67% of the observed values less than 87 mg/L. To determine a representative hardness value for the CTR's intended level of protection from this censored data set, Regional Water Board staff used the adjusted geometric mean (AGM), which is the same method used in determining the Water-Effect Ratio (It is believed that hardness plays a similar role as the Water-Effect Ratio in influencing the toxicity of metals). AGM is the value that 30% of the data points fall below the AGM, and from this censored receiving water data, the AGM is calculated to be 86 mg/L. The following lists the procedure to calculate an AGM:

- 1) Calculate the logarithms of each hardness value.
- 2) Calculate the arithmetic mean of the logarithms.
- 3) Calculate the standard deviation(s) of the logarithms.
- 4) Calculate the standard error (SE) of the arithmetic mean:
$$SE = s/\sqrt{n}$$
- 5) Calculate $A = \text{arithmetic mean} - t_{0.7} \times SE$
where $t_{0.7}$ is the value of Student's t statistics for a one-sided probability of 0.7 with $n-1$ degrees of freedom, n -sample size. When the Sample size is large, the Student t statistics can be approximate by the normal distribution z -statistics. With a sample size of 37, $t_{0.7} = 0.538$.
- 6) Take the antilogarithm of A , $\text{antilog } A$ is the Adjusted Geometric Mean (AGM).

- 3. Determining the Need for WQBELs.** Title 40 CFR Part 122.44(d) (1) (i) requires permits to include WQBELs for all pollutants (non-priority or priority) "which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any narrative or numeric criteria within a State water quality standard" (have Reasonable Potential). Thus, assessing whether a pollutant has Reasonable Potential is the fundamental step in determining whether or not a WQBEL is required. For non-priority pollutants, Regional Water Board staff used available monitoring data, receiving water's designated uses, and/or previous permit pollutant limitations to determine Reasonable Potential as described in Sections 3.a. and 3.b. below. For priority pollutants, Regional Water Board staff used the methods prescribed in Section 1.3 of the SIP to determine if the discharge from Discharge Point 001 demonstrates Reasonable Potential as described below in sections 3.c – 3.h.

a. Dissolved Oxygen. This effluent limitation is unchanged from the previous permit, and is based on water quality objectives in the Basin Plan (Chapter 3, Dissolved Oxygen).

b. pH. This effluent limitation is unchanged from the previous permit, and is based on the Basin Plan (Chapter 4, Table 4-2).

c. Reasonable Potential Analysis. Using the methods prescribed in Section 1.3 of the SIP, Regional Water Board staff analyzed the effluent data to determine if the discharge

from Discharge Point 001 demonstrates Reasonable Potential. The Reasonable Potential Analysis (RPA) compares the effluent data with numeric and narrative WQOs in the Basin Plan and numeric WQC from the USEPA, the NTR, and the CTR. The Basin Plan objectives and CTR criteria are shown in Appendix A of this Fact Sheet.

- d. Reasonable Potential Methodology.** Using the methods and procedures prescribed in Section 1.3 of the SIP, Regional Water Board staff analyzed the effluent and background data and the nature of facility operations to determine if the discharge has reasonable potential to cause or contribute to exceedences of applicable SSOs or WQC. Appendix A of this Fact Sheet shows the stepwise process described in Section 1.3 of the SIP.

The RPA identifies the observed MEC in the effluent for each pollutant, based on effluent concentration data. There are three triggers in determining Reasonable Potential:

- 1) The first trigger is activated if the MEC is greater than the lowest applicable WQO ($MEC \geq WQO$), which has been adjusted, if appropriate, for pH, hardness, and translator data. If the MEC is greater than the adjusted WQO, then that pollutant has reasonable potential, and a WQBEL is required.
 - 2) The second trigger is activated if the observed maximum ambient background concentration (B) is greater than the adjusted WQO ($B > WQO$) and the pollutant was detected in any of the effluent samples.
 - 3) The third trigger is activated if a review of other information determines that a WQBEL is required to protect beneficial uses, even though both MEC and B are less than the WQO/WQC. A limitation may be required under certain circumstances to protect beneficial uses.
- e. Effluent Data.** The Regional Water Board's August 6, 2001 letter titled *Requirement for Monitoring of Pollutants in Effluent and Receiving Water to Implement New Statewide Regulations and Policy* (hereinafter referred to as the Regional Water Board's August 6, 2001 Letter) to all permittees, formally required the Discharger (pursuant to Section 13267 of the CWC) to initiate or continue to monitor for the priority pollutants using analytical methods that provide the best detection limits reasonably feasible. Regional Water Board staff analyzed this effluent data and the nature of PG&E Shell Pond treatment system to determine if the discharge has Reasonable Potential. The RPA is based on effluent monitoring data collected by the Discharger from December 2000 through August 2004 (See Appendix A of this Fact Sheet).
- f. Ambient Background Data.** Ambient background values are used in the RPA and in calculations of the effluent limitations. For the RPA, ambient background concentrations are the observed maximum water column concentrations. The SIP allows background to be determined on a discharge-by-discharge or water body-by-water body basis (SIP section 1.4.3). Consistent with the SIP, Regional Water Board staff has chosen to use a water body-by-water body basis because of the uncertainties inherent in accurately characterizing ambient background in a complex estuarine system on a discharge-by-discharge basis.

With this in mind, the Sacramento River Station also fits the guidance for ambient background in the SIP compared to other stations in the Regional Monitoring Program (RMP). Section 1.4.3 of the SIP specifies that “preference should be given to...concentrations immediately upstream or near the discharge, but not within an allowed mixing zone for the discharge.” The SIP further states that data are applicable if they are “representative of the ambient receiving water column that will mix with the discharge.” The Sacramento River station is upstream, not within a mixing zone, and does represent water that will mix with the discharge. The Sacramento River is the primary source of fresh inflow water to the Delta, which flows to Suisun Bay. Salt water also influences Suisun Bay through diurnal tidal currents but its influence is generally less during the wet seasons when Delta outflow is the highest (Jan-April).

g. RPA Determination. The MECs, WQOs/WQC, bases for the WQOs/WQC, background concentrations used, and Reasonable Potential conclusions from the RPA are listed in the following table for all constituents analyzed. Some of the constituents in the CTR were not determined because of the lack of an objective/criteria or effluent data. Based on the RPA methodology in the SIP, some constituents did not demonstrate Reasonable Potential. The RPA results are shown below and Appendix A of this Fact Sheet. The pollutants that exhibit Reasonable Potential are mercury, selenium, and bis(2-ethylhexyl)phthalate.

CTR #	PRIORITY POLLUTANTS	MEC or Minimum DL ¹ (µg/L)	Governing WQO/WQC (µg/L)	Maximum Background or Minimum DL ^{1,2} (µg/L)	RPA Results ³
1	Antimony	60	4300	0.337	No
2	Arsenic	25	36	3.65	No
3	Beryllium	2	No Criteria	0.126	Undetermined
4	Cadmium	2	1.01	0.05	No
5b	Chromium (VI)	5	11	Not Available	No
6	Copper	5	3.73	9.86	No
7	Lead	2	2.63	2.35	No
8	Mercury	0.0322	0.025	0.0377	Yes
9	Nickel	10	7.1	21.79	No
10	Selenium	11	5.0	0.299	Yes
11	Silver	5	2.3	0.057	No
12	Thallium	5	6.3	0.14	No
13	Zinc	58	58	18.21	No
14	Cyanide	10	1.0	0.5	No
16	2,3,7,8-TCDD (Dioxin)	3.14E-06	1.3E-08	4.8E-08	Cannot Determine
17	Acrolein	5	780	0.5	No
18	Acrylonitrile	5	0.66	0.05	No
19	Benzene	0.2	71	0.05	No
20	Bromoform	0.5	360	0.5	No
21	Carbon Tetrachloride	0.2	4.4	0.06	No
22	Chlorobenzene	0.2	21000	0.5	No
23	Chlorodibromomethane	0.2	34	0.05	No
24	Chloroethane	0.2	No Criteria	0.5	Undetermined
25	2-Chloroethylvinyl Ether	2.5	No Criteria	0.5	Undetermined
26	Chloroform	0.2	No Criteria	0.5	Undetermined
27	Dichlorobromomethane	0.2	46	0.05	No
28	1,1-Dichloroethane	0.2	No Criteria	0.05	Undetermined
29	1,2-Dichloroethane	0.2	99	0.04	No
30	1,1-Dichloroethylene	0.2	3.2	0.5	No
31	1,2-Dichloropropane	0.2	39	0.05	No
32	1,3-Dichloropropylene	0.2	1700	Not Available	No
33	Ethylbenzene	0.2	29000	0.5	No
34	Methyl Bromide	10	4000	0.5	No
35	Methyl Chloride	10	No Criteria	0.5	Undetermined
36	Methylene Chloride	1	1600	0.5	No
37	1,1,2,2-Tetrachloroethane	0.2	11	0.05	No

CTR #	PRIORITY POLLUTANTS	MEC or Minimum DL ¹ (µg/L)	Governing WQO/WQC (µg/L)	Maximum Background or Minimum DL ^{1,2} (µg/L)	RPA Results ³
38	Tetrachloroethylene	0.2	8.85	0.05	No
39	Toluene	0.2	200000	0.3	No
40	1,2-Trans-Dichloroethylene	0.2	140000	0.5	No
41	1,1,1-Trichloroethane	0.2	No Criteria	0.5	Undetermined
42	1,1,2-Trichloroethane	0.2	42	0.05	No
43	Trichloroethylene	0.2	81	0.5	No
44	Vinyl Chloride	0.3	525	0.5	No
45	2-Chlorophenol	0.94	400	1.2	No
46	2,4-Dichlorophenol	0.94	790	1.3	No
47	2,4-Dimethylphenol	0.94	2300	1.3	No
48	2-Methyl-4,6-Dinitrophenol	4.7	765	1.2	No
49	2,4-Dinitrophenol	4.7	14000	0.7	No
50	2-Nitrophenol	19	No Criteria	1.3	Undetermined
51	4-Nitrophenol	19	No Criteria	1.6	Undetermined
52	3-Methyl-4-Chlorophenol	0.94	No Criteria	1.1	Undetermined
53	Pentachlorophenol	19	7.9	1	No
54	Phenol	0.94	4600000	1.3	No
55	2,4,6-Trichlorophenol	0.94	6.5	1.3	No
56	Acenaphthene	0.47	2700	0.0019	No
57	Acenaphthylene	0.94	No Criteria	0.000122	Undetermined
58	Anthracene	0.47	110000	0.000197	No
59	Benzidine	5	0.00054	0.0015	No
60	Benzo(a)Anthracene	0.47	0.049	0.0011	No
61	Benzo(a)Pyrene	0.47	0.049	0.000547	No
62	Benzo(b)Fluoranthene	0.94	0.049	0.0019	No
63	Benzo(ghi)Perylene	0.94	No Criteria	0.000705	Undetermined
64	Benzo(k)Fluoranthene	0.47	0.049	0.000928	No
65	Bis(2-Chloroethoxy)Methane	0.94	No Criteria	0.3	Undetermined
66	Bis(2-Chloroethyl)Ether	0.94	1.4	0.3	No
67	Bis(2-Chloroisopropyl)Ether	0.94	170000	Not Available	No
68	Bis(2-Ethylhexyl)Phthalate	12	5.9	0.000144	Yes
69	4-Bromophenyl Phenyl Ether	0.94	No Criteria	0.23	Undetermined
70	Butylbenzyl Phthalate	19	5200	0.000052	No
71	2-Chloronaphthalene	0.94	4300	0.3	No
72	4-Chlorophenyl Phenyl Ether	0.94	No Criteria	0.3	Undetermined
73	Chrysene	0.47	0.049	0.00116	No
74	Dibenzo(a,h)Anthracene	0.94	0.049	0.00067	No
75	1,2 Dichlorobenzene	5	17000	0.8	No
76	1,3 Dichlorobenzene	5	2600	0.8	No
77	1,4 Dichlorobenzene	5	2600	0.8	No
78	3,3-Dichlorobenzidine	0.94	0.077	0.004	No
79	Diethyl Phthalate	0.94	120000	0.24	No
80	Dimethyl Phthalate	0.94	2900000	0.24	No
81	Di-n-Butyl Phthalate	0.94	12000	0.000026	No
82	2,4-Dinitrotoluene	0.94	9.1	0.27	No
83	2,6-Dinitrotoluene	0.94	No Criteria	0.29	Undetermined
84	Di-n-Octyl Phthalate	0.94	No Criteria	0.38	Undetermined
85	1,2-Diphenylhydrazine	5	0.54	0.0087	No
86	Fluoranthene	0.94	370	0.0036	No
87	Fluorene	0.94	14000	0.0024	No
88	Hexachlorobenzene	0.94	0.00077	0.000078	No
89	Hexachlorobutadiene	5	50	0.3	No
90	Hexachlorocyclopentadiene	4.7	17000	0.31	No
91	Hexachloroethane	0.94	8.9	0.2	No
92	Indeno(1,2,3-cd) Pyrene	0.47	0.049	0.0037	No
93	Isophorone	0.94	600	0.3	No
94	Naphthalene	0.47	No Criteria	0.00281	Undetermined
95	Nitrobenzene	0.94	1900	0.25	No
96	N-Nitrosodimethylamine	0.94	8.1	0.3	No
97	N-Nitrosodi-n-Propylamine	0.94	1.4	0.001	No
98	N-Nitrosodiphenylamine	0.94	16	0.001	No
99	Phenanthrene	0.47	No Criteria	0.00168	Undetermined
100	Pyrene	0.94	11000	0.0016	No
101	1,2,4-Trichlorobenzene	5	No Criteria	0.3	Undetermined
102	Aldrin	0.047	0.00014	Not Available	No
103	alpha-BHC	0.047	0.013	0.000347	No
104	beta-BHC	0.047	0.046	0.000118	No
105	gamma-BHC	0.047	0.063	0.0010032	No

CTR #	PRIORITY POLLUTANTS	MEC or Minimum DL ¹ (µg/L)	Governing WQO/WQC (µg/L)	Maximum Background or Minimum DL ^{1,2} (µg/L)	RPA Results ³
106	delta-BHC	0.047	No Criteria	0.00038	Undetermined
107	Chlordane	0.094	0.00059	0.000302	No
108	4,4'-DDT	0.094	0.00059	0.000349	No
109	4,4'-DDE	0.094	0.00059	0.00092	No
110	4,4'-DDD	0.094	0.00084	0.000347	No
111	Dieldrin	0.094	0.00014	0.00038	No
112	alpha-Endosulfan	0.047	0.0087	0.00062	No
113	beta-Endosulfan	0.094	0.0087	0.00042	No
114	Endosulfan Sulfate	0.094	240	0.0002	No
115	Endrin	0.094	0.0023	0.00015	No
116	Endrin Aldehyde	0.094	0.81	Not Available	Cannot Determine
117	Heptachlor	0.047	0.00021	0.00031	Cannot Determine
118	Heptachlor Epoxide	0.047	0.00011	0.00097	No
119-125	PCBs sum	3.76	0.00017	Not Available	Cannot Determine
126	Toxaphene	0.9	0.0002	Not Available	Cannot Determine
	Total PAHs	0.94	15.0	0.0333	No

- [1] Maximum Effluent Concentration (MEC) in bold is the actual detected MEC, otherwise the MEC shown is the maximum detection level.
- [2] Maximum Background = Not Available, if there is not monitoring data for this constituent.
- [3] RPA Results = Yes, if MEC > WQO/WQC,
 = No, if MEC or all effluent concentration non-detect < WQO/WQC,
 = Undetermined, if no objective promulgated, and
 = Cannot be determined due to lack of data.
- [4] Indicates constituents on 303(d) list, dioxin applies to 2,3,7,8-TCDD TEQ calculated using i-98 Toxicity Equivalent Factors.
- [5] Undetermined due to lack of objective/criteria, and/or lack of effluent data.

1) **Constituents with limited data.** The Discharger has performed sampling and analysis for the constituents listed in the CTR. This data set was used to perform the RPA. In some cases, Reasonable Potential cannot be determined because effluent data are limited, or ambient background concentrations are not available. The Discharger will continue to monitor for these constituents in the effluent using analytical methods that provide the best feasible detection limits. When additional data become available, further RPA will be conducted to determine whether to add numeric effluent limitations to this Order or to continue monitoring.

2) **Pollutants with no Reasonable Potential.** WQBELs are not included in this Order for constituents that do not demonstrate Reasonable Potential; however, monitoring for those pollutants is still required. If concentrations of these constituents are found to have increased significantly, the Discharger will be required to investigate the source(s) of the increase(s). Remedial measures are required if the increases pose a threat to water quality in the receiving water.

h. RPA Considerations for Specific Pollutants.

1) **Mercury.** This Order establishes effluent limitations for mercury because both the 0.0322 µg/L MEC and 0.0377 µg/L ambient background values exceed the governing WQO of 0.025 µg/L, demonstrating Reasonable Potential. The governing WQO is based on the Basin Plan's WQO of 0.025 µg/L as a 4-day average for the chronic protection of fresh water aquatic life. Self-monitoring data for the period of December 2000 through August 2004 indicate mercury was detected seven out of

the eight samples. The detection levels ranged from 0.00442 µg/L to 0.0322 µg/L (MEC), and the minimum detection limit was 0.0001 µg/L.

- 2) **Selenium.** This Order establishes effluent limitations for selenium because the 11 µg/L MEC value exceeds the governing WQC of 5 µg/L, demonstrating Reasonable Potential. The governing WQC is based on the CTR's WQC of 5 µg/L for the chronic protection of both freshwater and saltwater aquatic life. Self-monitoring data for the period of December 2000 through August 2004 indicate selenium was detected once, at 11 µg/L, out of 13 samples, and the minimum detection limit was 5 µg/L.
- 3) **Bis(2-Ethylhexyl)Phthalate.** This Order establishes effluent limitations for Bis(2-Ethylhexyl)Phthalate because the 12 µg/L MEC exceeds the governing WQC of 5.9 µg/L, demonstrating Reasonable Potential. The governing WQC is based on the CTR's WQC of 5.9 µg/L for the protection of human health.
- 4) **Chromium (VI) or Total Chromium.** The previous permit includes a monthly mass emission limit of 2.84 pounds per month for this pollutant. This Order implements the policy and regulations of the CTR and SIP in regard to Chromium VI. Regional Water Board staff could not determine MECs for Chromium VI (or Total Chromium) because all self-monitoring data for the period from August 2001 through August 2004 were reported with non-detects, and the detection limit was 5 µg/L, which is below the WQC of 11 µg/L for Chromium VI. This Order does not contain effluent limits, because there is no demonstration of Reasonable Potential, and therefore, no WQBELs are required. Furthermore, Chromium VI is not listed as a pollutant impairing Suisun Bay, and therefore, this Order is consistent with the anti-degradation provision of 40 CFR §131.12 and with the anti-backsliding requirements of the CWA and Federal regulations.
- 5) **Dioxin TEQ.** The CTR establishes a numeric human health WQC of 0.14 picograms per liter (pg/L) for 2,3,7,8-tetrachlorinated dibenzo-p-dioxin (2,3,7,8-TCDD) based on consumption of aquatic organisms.

The preamble of the CTR states that California NPDES permits should use toxicity equivalents (TEQs) where dioxin-like compounds have Reasonable Potential with respect to narrative criteria. In USEPA's National Recommended Water Quality Criteria, December 2002, USEPA published the 1998 World Health Organization Toxicity Equivalence Factor (TEF)¹ scheme. Additionally, the CTR preamble states USEPA's intent to adopt revised WQC guidance subsequent to its health reassessment for dioxin-like compounds.

The SIP applies to all toxic pollutants, including dioxins and furans. The SIP requires a limitation for 2,3,7,8-TCDD, if a limitation is necessary, and requires

¹ The 1998 World Health Organization scheme includes TEFs for dioxin-like PCBs. Since dioxin-like PCBs are already included within "Total PCBs", for which the CTR has established a specific standard, dioxin-like PCBs are not included in this Order's version of the TEF scheme.

monitoring by all NPDES dischargers for the other sixteen dioxin and furan compounds.

The Basin Plan contains a narrative WQO for bio-accumulative substances:

“Many pollutants can accumulate on particulates, in sediments, or bio-accumulate in fish and other aquatic organisms. Controllable water quality factors shall not cause a detrimental increase in concentrations of toxic substances found in bottom sediments or aquatic life. Effects on aquatic organisms, wildlife, and human health will be considered.”

This narrative WQO applies to dioxin and furan compounds, based in part on the scientific community’ consensus that these compounds associate with particulates, accumulate in sediments, and bio-accumulate in the fatty tissue of fish and other organisms.

The USEPA’s 303(d) listing determined that the narrative objective for bio-accumulative pollutants was not met because of the levels of dioxins and furans in the fish tissue.

The Discharger monitored for dioxins and furans three times during the years 2002 and 2003. Two dioxin and furan compounds were detected in the effluent during this time period (1,2,3,4,6,7,8-HpCDD and OCDD) and the 2,3,7,8 TCDD TEQ levels exceed the WQC. Concentrations of the remaining dioxins and furans were reported with non-detects, and the detection limits ranged from <0.84 pg/L to <27 pg/L. Due to the limited effluent data, there is uncertainty in determining compliance or establishing an interim limitation. As a result, this Order does not contain dioxin limits (either final or interim). The final limitations for dioxins will be based on the WLA assigned to the Discharger in the TMDL. This Order does require the Discharger to collect additional data on individual dioxins and furans levels in the effluent twice annually. When these data become available, Regional Water Board staff will reevaluate Reasonable Potential for individual dioxins and furans to determine the need for interim dioxin limits.

4. WQBEL Calculations

- a. **WQBELs.** WQBELs were developed for the toxic and priority pollutants that were determined to have reasonable potential to cause or contribute to exceedences of the WQOs or WQC. The WQBELs were calculated based on appropriate WQOs/WQC and the appropriate procedures specified in Section 1.4 of the SIP (See p. F-22, section IV.C.4.e. of this Fact Sheet). The WQOs or WQC used for each pollutant with Reasonable Potential is indicated in the following table:

Pollutant	Chronic WQO/WQC (µg/L)	Acute WQO/WQC (µg/L)	Human Health WQC (µg/L)	Basis of WQO/WQC
Mercury	0.025	2.1	0.051	BP & CTR
Selenium	5.0	20	--	NTR
Bis(2-Ethylhexyl)Phthalate	--	--	5.9	CTR

- b. Dilution Credit.** This discharge is fed by gravity through a v-notch weir into an adjacent slough that ultimately flows into Suisun Bay. The Basin Plan states that dilution credit may be granted on a discharger-by-discharger and pollutant-by-pollutant basis based on provisions of the SIP. However, the Discharger did not provide any information that demonstrates to Regional Water Board staff that a dilution credit is appropriate. Therefore, a dilution credit value was not used in the calculation of the WQBELs.
- c. Assimilative Capacity.** In response to the State Water Board's Order No. 2001-06, Regional Water Board staff have evaluated the assimilative capacity of the receiving water for 303(d)-listed pollutants for which the subject discharge demonstrates Reasonable Potential. The evaluation included a review of RMP data and WQOs. From this evaluation, it is determined that the assimilative capacity is highly variable due to the complex hydrology of the receiving water. Therefore, there is uncertainty associated with the representative nature of the appropriate ambient background data to conclusively quantify the assimilative capacity of the receiving water.
- d. Mass Loading, and Mass Emission Limitations for Mercury and Selenium.** This Order contains mass emission limitations for mercury and selenium because the Regional Water Board has determined that there is no additional assimilative capacity for mercury or selenium in San Francisco Bay. This determination is consistent with SIP Section 2.1.1 requirements that the Regional Water Board should consider whether additional assimilative capacity exists for 303(d)-listed bioaccumulative pollutants. That determination also considered the fact that a fish consumption advisory currently exists to protect human health from elevated mercury concentrations in fish taken from San Francisco Bay.
- 1) Mercury.** San Francisco Bay fish tissue data shows that mercury exceeds screening levels. The fish tissue data are contained in "Contaminant Concentrations in Fish from San Francisco Bay 1997" May 1997. A mass emission limitation for mercury is further justified by fish advisories to the San Francisco Bay. The Office of Environmental Health and Hazard Assessment (OEHHA) performed a preliminary review of the data from the 1994 San Francisco Bay pilot study, "Contaminated Levels in Fish Tissue from San Francisco Bay." The results of the study showed elevated levels of chemical contaminants in the fish tissues. Based on these results, OEHHA issued an interim consumption advisory covering certain fish species from the bay in December 1994. This interim consumption advice was issued and is still in effect due to health concerns based on exposure to sport fish from the bay contaminated with mercury.

During the period of December 2000 through August 2004, the Discharger's effluent monitoring data resulted in seven detected values out of eight samples of mercury. Regional Water Board staff finds this small number of data precludes any meaningful statistical evaluation, and therefore performance-based limitations for mercury were not attained. Nevertheless, the previous permit includes a mercury mass emission limitation of 0.006 lb/month, which is established in this Order.

- 2) **Selenium.** For selenium, justification for a mass emission limitation is based on Bay waterfowl tissue data presented in the California Department of Fish and Game's Selenium Verification Study (1986 – 1990). These data show elevated levels of selenium in the livers of waterfowl that feed on bottom dwelling organisms such as clams. Additionally, in 1987 OEHHA issued an advisory for the consumption of two species of diving ducks in the North Bay found to have high tissue levels of selenium. This advisory is still in effect.

During the period of December 2000 through August 2004, the Discharger's effluent monitoring data resulted in one detected value out of thirteen samples of selenium. Regional Water Board staff finds this small number of data precludes any meaningful statistical evaluation, and therefore performance-based limitations for selenium were not attained. Nevertheless, the previous permit includes a selenium mass emission limitation of 1.29 lb/month, which is established in this Order.

e. Effluent Limit Calculations

PRIORITY POLLUTANTS	Mercury	Selenium	Bis(2-Ethylhexyl)Phthalate
Basis and Criteria type	BP SW (4-d, 1-hr avg)	NTR - SW	CTR - HH
Lowest WQO	0.025	5.0	5.90
Translators			
Dilution Factor (D) (if applicable)	0	0	0
no. of samples per month	4	4	4
Aquatic life criteria analysis required? (Y/N)	Y	Y	N
HH criteria analysis required? (Y/N)	Y	N	Y
Applicable Acute WQO	2.1	20	
Applicable Chronic WQO	0.025	5	
HH criteria	0.050		5.90
Background (max conc for Aquatic Life calc)	0.0377	0.3	
Background (avg conc for HH calc)	0.0377	0.3	
Is the pollutant Bioaccumulative(Y/N)? (e.g., Hg)	Y	N	N
ECA acute	2.1	20	
ECA chronic	0.025	5	
ECA HH	0.05		5.9
No. of data points <10 or atleast 80% of data reported non detect? (Y/N)	Y	Y	Y
avg of data points			
SD			
CV calculated	N/A	N/A	N/A
CV (Selected) - Final	0.60	0.60	0.60
ECA acute mult99	0.32	0.32	
ECA chronic mult99	0.53	0.53	
LTA acute	0.67	6.42	
LTA chronic	0.01	2.64	
minimum of LTAs	0.013	2.64	
AMEL mult95	1.55	1.55	1.55
MDEL mult99	3.11	3.11	3.11
AMEL (aq life)	0.02	4.09	
MDEL(aq life)	0.04	8.21	
MDEL/AMEL Multiplier	2.01	2.01	2.01
AMEL (human hlth)	0.050		5.9
MDEL (human hlth)	0.100		11.83652
minimum of AMEL for Aq. life vs HH	0.02	4.09	5.9
minimum of MDEL for Aq. Life vs HH	0.041	8.21	11.8365
Current limit in permit (30-d avg)	0.084	N/A	N/A
Current limits in permit (daily)	N/A	N/A	N/A
Final limit - AMEL	0.020	4.1	5.90
Final limit - MDEL	0.041	8.2	11.84
Max Effl Conc (MEC), 2000-2004	0.032	11.0	12

f. Comparison to Previous Permit Limitations. The effluent limitation for chromium (VI) is discontinued because there is no demonstration of Reasonable Potential, and therefore, no WQBELs are required. For mercury and selenium, the mass-based effluent limitations are the same in this Order as in the previous permit; however, this Order also contains concentration-based effluent limitations for these pollutants whereas the previous permit does not. The previous permit also does not include limitations for Bis(2-Ethylhexyl)Phthalate.

5. Whole Effluent Toxicity (WET) – The Basin Plan requires dischargers to either conduct flow-through effluent toxicity tests or perform static renewal bioassays (Chapter 4, Acute Toxicity) to measure the toxicity of wastewaters and to assess negative impacts upon water quality and beneficial uses caused by the aggregate toxic effect of the discharge of pollutants. This Order does not require WET testing because the Discharger does not alter the intake water (receiving water) or discharge wastewater into the pond, and therefore, WET testing would only measure toxicity of the ambient waters. This relief from WET testing is consistent with the previous permit and with other discharge permits with similar processes (i.e. flow through cooling waters).

D. Final Effluent Limitations

Summary of Final Effluent Limitations Discharge Point 001

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Dissolved Oxygen	mg/L				5.0	
pH	Standard units				6.5	8.5
Mercury ^[1]	µg/L	0.02		0.041		
	lbs/mo	0.006				
Selenium ^[2]	µg/L	4.1		8.2		
	lbs/mo	1.29				
Bis(2-Ethylhexyl)Phthalate	µg/L	5.9		11.84		

^[1] The Regional Water Board may amend the limitation based on the Waste Load Allocations in the Total Maximum Daily Loads.

^[2] The Regional Water Board may amend the limitation based on the Site Specific Objectives for this parameter, provided such amendment complies with anti-backsliding and antidegradation.

1. Intake Water Credits. 40 CFR §122.45(g) and Section 1.4.4 of the SIP allows intake water credits where specified conditions are met. The Discharger meets all these specified conditions, and therefore, may receive intake water credits for Mercury or Selenium, which are applicable towards the effluent limitations specified in IV.A.1 (Effluent Limitations-Discharge Point 001) of this Order.

a. 40 CFR §122.45(g). 40 CFR §122.45(g) allows credit for pollutants in intake water, in some cases where the facility is faced with situations in which limits are difficult or impossible to meet with BAT/BCT technology. Net credits are authorized only up to the extent necessary to meet the applicable limitation or standard, and if the intake water is taken from the same body of water into which the discharge is made.

As previously described in this Order, PG&E Shell Pond is a habitat enhancement project, the discharge is considered a non-process wastewater discharge, and the discharge of industrial wastewater into PG&E Shell Pond is prohibited (Discharge Prohibition A of this Order). Installation of BAT or chemical additions to PG&E Shell Pond could adversely affect its aquatic and wildlife species and habitat, and therefore, is not a consideration. However, the pond circulation system, which includes the automatically controlled intake pumps and controlled structures to manage the effluent discharges, is an effective BCT. Yet additional BCT technologies may not result in any net environmental benefit.

The pond circulation system draws water from an adjacent slough (an inlet on Suisun Bay) into PG&E Shell Pond. The slough water circulates through the pond water and is discharged by gravity out its opposite end into another slough that ultimately flows back into Suisun Bay, approximately 2500 feet from Discharge Point 001. Based on these factors, Regional Water Board staff determined that the Discharger meets all conditions specified in 40 CFR §122.45(g) and that the intake water credits in this Order are appropriate

b. Section 1.4.4 of the SIP. The SIP allows intake water credits provided the Discharger meets the following conditions to the satisfaction of the Regional Water Board:

- 1) The observed maximum ambient background concentration and the intake water concentration of the pollutant exceed the most stringent applicable WQO/WQC for that pollutant;
- 2) The intake water credits are consistent with any TMDL applicable to the discharge;
- 3) The intake water is from the same water body as the receiving water body;
- 4) The facility does not alter the intake water pollutant chemically or physically in a manner that adversely affects water quality and beneficial uses; and
- 5) The timing and location of the discharge does not cause adverse effects on water quality and beneficial uses that would not occur if the intake water pollutant had been left in the receiving water body.

Ambient Background. The Sacramento River station, which fits the definition for ambient background in the SIP, is upstream, not within a mixing zone, and does represent water that will mix with the discharge. The RMP station at Sacramento River has been sampled for most of the inorganic and some of the organic toxic pollutants

during the period from 1993 to 2000, and during this period the RMP station measured concentrations of both mercury and selenium in 25 different samples. For mercury, the maximum detected concentration measured was 0.0377 µg/L, which is above the applicable WQO/WQC of 0.025 µg/L, and for selenium, the maximum detected concentration measured was 0.299 µg/L, which is below the applicable WQO/WQC of 5 µg/L.

The Discharger measured both mercury and selenium in its influent water 13 times during the period 2000 to 2004. Mercury was detected in all the samples, and the maximum detected concentration was 0.219 µg/L; however, selenium was detected only once during that period, and measured at 5.7 µg/L. Both pollutants were detected above the applicable WQO/WQC.

Mercury. For mercury, the Discharger meets all conditions for intake water credit specified in the SIP as summarized in the following: 1) The observed ambient background and the intake water (influent) concentrations exceed the most stringent WQO/WQC. 2) The Discharger does not alter the intake water, and 3) the Discharger withdraws water from Suisun Bay, circulates the bay water through PG&E Shell Pond, and discharges the pond water into Suisun Bay.

Selenium. For selenium, although the maximum detected background levels measured at the Sacramento RMP Station was below the applicable WQO/WQC, Regional Water Board staff determined that the Discharger still met all conditions for intake water credits because of the uncertainties inherent in accurately characterizing ambient background in a complex estuarine system, and based on the following facts:

- 1) On September 9, 2002, (which was the only occurrence of selenium detected during the monitoring period from 2000 to 2004) PG&E Shell Pond discharged for approximately three hours at an average flow rate of 142.7 gallons per minute, which is approximately 24,108 gallons. Analytical results of the influent water measured selenium concentrations at 5.7 µg/L, and also measured selenium concentrations in the effluent discharge at 11 µg/L. This discharge was the first within the year 2002, and in fact, since 8/14/2001.
- 2) PG&E Shell Pond's effluent discharge point is approximately 10,000 feet from its intake water point.
- 3) Based on factors 1) and 2), even if mixing occurred, the influent concentration couldn't have been previously influenced by effluent discharges.
- 4) Moreover, it is highly unlikely that the influent concentration on 9/09/02 was influenced by the discharge on that same day, because the discharge occurred during the decelerating rising tide, 40 minutes before high tide, and the likelihood of the discharge being carried over 10,000 feet to the intake point is negligible.
- 5) During the remaining time before the intake sample was collected, the bay was in an accelerating ebb tide, which would carry the effluent west, in the opposite direction of the intake.
- 6) Furthermore, the Sacramento RMP station does not have monitoring data for this period because the last monitoring sample was obtained on 7/30/02.

- 7) Finally, based on the above factors, Regional Water Board staff determined that the measurement of Suisun Bay at the intake is representative of ambient background, and therefore, based on the same factors provided for mercury, the Discharger also qualifies for intake water credits for selenium.

E. Interim Effluent Limitations – N/A

F. Land Discharge Specifications – N/A

G. Reclamation Specifications – N/A

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

A. Surface Water.

1. **Receiving Water Limitations V.A.1 through V.A.3 (conditions to be avoided).** These limitations are in the previous permit and are based on the narrative/numerical objectives contained in Chapter 3 of the Basin Plan.
2. **Receiving Water Limitations V.A.4 (compliance with State Law).** This requirement is in the previous permit, requires compliance with Federal and State law, and is self-explanatory.

B. Groundwater – N/A

VI. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS (Provision B)

The principal purposes of a monitoring program by a discharger are to:

- 1) Document compliance with waste discharge requirements and prohibitions established by the Regional Water Board,
- 2) Facilitate self-policing by the discharger in the prevention and abatement of pollution arising from waste discharge,
- 3) Develop or assist in the development of limitations, discharge prohibitions, national standards of performance, pretreatment and toxicity standards, and other standards, and to
- 4) Prepare water and wastewater quality inventories.

Section 122.48 of 40 CFR requires all NPDES permits to specify recording and reporting of monitoring results. Sections 13267 and 13383 of the California Water Code authorize the Regional Water Boards to require technical and monitoring reports. The Monitoring and Reporting Program (MRP), Attachment E of this Order, establishes monitoring and reporting requirements to implement Federal and State requirements. The following provides the rationale for the monitoring and reporting requirements contained in the MRP for PG&E Shell Pond.

The MRP is a standard requirement in almost all NPDES permits issued by the Regional Water Board, including this Order. It contains definitions of terms, specifies general sampling and analytical protocols, and sets out requirements for reporting of spills, violations, and routine monitoring

data in accordance with NPDES regulations, the California Water Code, and Regional Water Board's policies. The MRP also contains a sampling program specific for PG&E Shell Pond. It defines the sampling stations and frequency, the pollutants to be monitored, and additional reporting requirements. Pollutants to be monitored include all parameters for which effluent limitations are specified. Monitoring for additional constituents, for which no effluent limitations are established, is also required to provide data for future completion of RPAs for them.

A. Influent Monitoring. The MRP includes monitoring at Discharge M-INF for conventional and toxic pollutants. The monitoring frequency of the intake flow rate has been changed from "daily" to "each discharge event" because the flow rate is estimated on the readings of the totalizer's values on the intake control panel and rated efficiency of the influent pumps, and because the contracted technicians visit the site only twice per week. This Order requires monthly monitoring of turbidity, pH, dissolved oxygen, and temperature (which is unchanged from the previous permit) to facilitate self-policing for the prevention and abatement of potential pollution arising in the effluent discharge. This Order also requires the Discharger to collect twice yearly monitoring for all the 2,3,7,8-TCDD congeners, while simultaneously monitoring the concentrations in the effluent discharge to determine Reasonable Potential. In addition, sampling and analyses of mercury and selenium is required should the Discharger want to offset any concentrations found in the influent and apply the intake water credit towards the effluent limitation, as specified in IV.A.2 of this Order.

B. Effluent Monitoring. The MRP includes monitoring at Discharge Point 001 for conventional, non-conventional, and toxic pollutants. The monitoring frequency for pH has been increased from "monthly" to "each discharge event" because the Discharger has previously demonstrated difficulty in complying with the previous permit's pH limitation. This Order also requires monthly monitoring for salinity to determine if the discharge contains levels that may adversely affect beneficial uses. This Order requires monthly monitoring for dissolved oxygen, mercury, selenium, and bis(2-ethylhexyl)phthalate to demonstrate compliance with final effluent limitations. This Order also requires monthly monitoring for turbidity, oil and grease, and temperature to demonstrate compliance with surface water limitations. Moreover, the Discharger shall collect twice yearly monitoring for all the 2,3,7,8-TCDD congeners, to determine Reasonable Potential since these pollutants have limited data. Furthermore, this Order requires monitoring bi-annually of all other priority pollutant metals, and monitoring once in five years for the remaining organic priority pollutants to determine Reasonable Potential since these pollutants have sparse data with either limited or no detected values in the effluent during the period 2000 through 2004.

C. Whole Effluent Toxicity Testing Requirements – N/A

D. Receiving Water Monitoring.

1. Surface Water. The MRP includes monitoring at monitoring location R-001 for conventional pollutants. The monitoring frequency for pH has been increased from "monthly" to "each discharge event" because the Discharger has previously demonstrated difficulty in complying with the previous permit's pH effluent limitation, and to determine

compliance with the receiving water limitation. All other monitoring requirements are unchanged from the previous permit.

2. Groundwater – N/A

E. Other Monitoring Requirements - N/A

VII. RATIONALE FOR PROVISIONS

A. Standard Provisions (Provision A). Standard Provisions, which in accordance with 40 CFR §§122.41 and 122.42, apply to all NPDES discharges and must be included in every NPDES permit, are provided in Attachments D and G of this Order.

B. Special Provisions (Provision C).

1. Reopener Provisions. These provisions are based on 40 CFR 123 and allow future modification of this Order and its effluent limitations as necessary in response to updated WQOs that may be established in the future.

2. Special Studies and Additional Monitoring Requirements.

a. Effluent Characterization for Selected Constituents. This Order does not include effluent limitations for the selected constituents addressed in the August 6, 2001 Letter that do not demonstrate Reasonable Potential, but this provision requires the Discharger to continue monitoring for these pollutants as described in the August 6, 2001 Letter and as specified in the MRP of this Order. If concentrations of these constituents increase significantly, the Discharger will be required to investigate the source of the increases and establish remedial measures, if the increases result in reasonable potential to cause or contribute to an excursion above the applicable WQO/WQC. This provision is based on the Basin Plan and the SIP.

3. Best Management Practices and Pollution Prevention. This provision is based on the Basin Plan, page 4-25 – 4-28.

4. Compliance Schedules – N/A

5. Construction, Operation, and Maintenance Specifications.

a. Pond Management Plan. The Basin Plan states that a pollution prevention goal, at a minimum, is to identify sources and reduce overall discharge of specific pollutants that have been found to impact or threaten beneficial uses. This provision requires the Discharger to implement, review, and update its Pond Management Plan, and to notify Regional Water Board staff of any modifications to this plan. This provision is unchanged from the previous permit, and is based on the Basin Plan (Chapter 4, Pollution Prevention and Pretreatment Programs, Direct Industrial Discharger Pollution Prevention Program).

b. Pond Limitations. This provision is unchanged from the previous permit and is based on the narrative/numerical objectives contained in Chapter 3 of the Basin Plan.

6. Special Provisions for Municipal Facilities – N/A

7. Other Special Provisions

a. Discharge Termination and Notification Requirements. This provision requires the Discharger to submit monthly notifications of operations to Contra Costa Water District (CCWD), and to stop discharging within 24 hours upon notification from CCWD. This provision is based on an agreement between PG&E and Contra Costa Water District.

VIII. PUBLIC PARTICIPATION

The San Francisco Bay Regional Water Board is considering the issuance of waste discharge requirements (WDRs) that will serve as a National Pollutant Discharge Elimination System (NPDES) permit for PG&E Shell Pond. As a step in the WDR adoption process, the Regional Water Board staff has developed tentative WDRs. The Regional Water Board encourages public participation in the WDR adoption process.

A. Notification of Interested Parties. The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Notification was provided through the following <Describe Notification Process (e.g., newspaper name and date)>

B. Written Comments. The staff determinations are tentative. Interested persons are invited to submit written comments concerning these tentative WDRs. Comments should be submitted either in person or by mail to the Executive Office at the Regional Water Board at the address above on the cover page of this Order, Attention Gayleen Perreira.

To be fully responded to by staff and considered by the Regional Water Board, written comments should be received at the Regional Water Board offices by 5:00 p.m. on January 14, 2006.

C. Public Hearing

The Regional Water Board will hold a public hearing on the tentative WDRs during its regular Board meeting on the following date and time and at the following location:

Date: February 8, 2005

Time: 9:00 a.m.

Location: Elihu Harris State Office Building

1515 Clay Street

Oakland, CA

1st floor Auditorium

Contact: Ms. Gayleen Perreira, Phone: (510)622-2407; email: gperreira@waterboards.ca.gov

Interested persons are invited to attend. At the public hearing, the Regional Water Board will hear testimony, if any, pertinent to the discharge, WDRs, and permit. Oral testimony will be heard; however, for accuracy of the record, important testimony should be in writing.

Please be aware that dates and venues may change. Our web address is www.waterboards.ca.gov/rwqcb2 where you can access the current agenda for changes in dates and locations.

D. Waste Discharge Requirements Petitions

Any aggrieved person may petition the State Water Board to review the decision of the Regional Water Board regarding the final WDRs. The petition must be submitted within 30 days of the Regional Water Board's action to the following address:

State Water Resources Control Board
Office of Chief Counsel
P.O. Box 100, 1001 I Street
Sacramento, CA 95812-0100

- E. Information and Copying.** The Report of Waste Discharge (RWD), related documents, tentative effluent limitations and special provisions, comments received, and other information are on file and may be inspected at the address above at any time between 8:30 a.m. and 4:45 p.m. except from noon to 1:00 p.m., Monday through Friday. Copying of documents may be arranged through the Regional Water Board by calling (510) 622-2300.
- F. Register of Interested Persons.** Any person interested in being placed on the mailing list for information regarding the WDRs and NPDES permit should contact the Regional Water Board, reference this facility, and provide a name, address, and phone number.
- G. Additional Information.** Requests for additional information or questions regarding this order should be directed to Ms. Gayleen Perreira at (510) 622-2407, or by e-mail at gperreira@waterboards.ca.gov.

Pacific Gas and Electric Company
PG&E Shell Pond
TENTATIVE ORDER NO. XX-XXXX-XXX
NPDES NO. CA0030082

APPENDIX A – RPA RESULTS FOR PRIORITY POLLUTANTS