

**APPENDIX B**

**COMMENTS**

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN FRANCISCO BAY REGION  
1515 CLAY STREET, SUITE 1400  
OAKLAND, CA 94612

COMMENT LETTERS  
ON THE TENTATIVE ORDER

for

NPDES PERMIT AND WASTE DISCHARGE REQUIREMENTS FOR

POTRERO POWER PLANT  
MIRANT POTRERO, LLC.  
SAN FRANCISCO COUNTY

LETTERS RECEIVED BY MARCH 20, 2006



# BAYKEEPER.

Defending Our Waters—from the  
High Sierra to the Golden Gate

March 20, 2006

Attention: Derek Witworth  
San Francisco Bay Regional Water Quality Control Board  
1515 Clay Street, Suite 1400  
Oakland, CA 94612

*Submitted via electronic mail to [dwitworth@waterboards.ca.gov](mailto:dwitworth@waterboards.ca.gov)*

RE: February 16, 2006 Draft Permit for Mirant LLC Potrero Power Plant (NPDES Permit No. CA0005657)

Dear Regional Water Board Staff:

I am writing on behalf of Baykeeper and our members with regard to the draft permit for United 3 of the Mirant Potrero Power Plan, made publicly available on February 16, 2006. These comments supplement those we submitted on January 10, 2005 and December 19, 2005. Please note that Baykeeper also supports and incorporates by reference all comments submitted by Bayview Hunters Point Community Advocates and Communities for a Better Environment.

As we have repeatedly stated in our previous comments, we believe that the Water Board has allowed the antiquated Potrero Plant to operate as-is for too long. With the adoption of a new permit, the Water Board must require Mirant to update the Potrero facility and bring it into compliance with all applicable state and federal laws.

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COMMENT 2

1. The permit still fails to prohibit PCB discharges as required by law.

Despite staff's response to comments, the draft permit still effectively allows for PCB discharges. The permit's toxic substances effluent limitation for PCBs fails to prohibit discharges as required by law because the permit contains a loophole that must be removed. Discharge of PCBs by the Potrero plant is prohibited by EPA regulations, 40 C.F.R. 423.12(b)(2), and section 402 of the Clean Water Act. Section 402, the Clean Water Act's anti-backsliding provision, prohibits the Water Board from issuing permits that "contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit." 33 U.S.C. § 1342(o). The Plant's previous permit, issued in 1994, contained a blanket prohibition on the discharge of PCBs. Therefore, any subsequently issue permit must also prohibit all PCB discharges.

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The draft permit violates the anti-backsliding provision of the Clean Water Act because it creates a loophole that would enable Mirant to discharge PCBs without technically violating the permit. Under the permit's definition of compliance, Mirant could legally discharge PCBs as long as the single day effluent concentration is lower than the 12-day moving average of the intake effluent. Additionally, because the permit appears to require PCB monitoring only twice a year, no compliance determination could be made for six years, thereby allowing discharges of PCBs during that timeframe. To make the permit consistent with section 402, the compliance provision of the PCB prohibition must be removed so that the prohibition stands alone.

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We also strongly recommend that the Water Board require Mirant to provide a detailed study design in addition to the vague work plan submitted on February 1, 2006. The study design should contain specifics regarding study objectives, sampling locations, sampling frequency, and quality assurance and control measures. To ensure the study's effectiveness, the Water Board should require Mirant to have it reviewed by independent technical experts prior to implementation. Moreover, as with all plans related to the Potrero facility, Mirant should make the study plan available to the public for comment. These requirements will ensure that Mirant's sampling efforts will provide useful information about the presence and potential sources of PCBs at the facility.

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COMMENT 13.

2. The permit must require reduction of the Plant's impingement/entrainment impacts.

Compliance with the 316(b) regulations requires the permit to specify actions Mirant will take to reduce demonstrated entrainment impacts. Section 316(b) requires large existing power plants to achieve rule-specified performance standards relating to entrainment and impingement. 40 C.F.R. §125.91. "Section 316(b) requirements are implemented for a facility through an NPDES permit." *Id.* at §125.98(b)(1). When an existing permit has expired but the Water Board is not able to issue a permit containing the impingement and entrainment requirements then the permit should specify "the best technology available to minimize adverse environmental impact...based on the [Water Board's] best professional judgment *Id.* at §125.95(a)(2)(ii). The permit issued by the Water Board must specify what BTA Mirant must implement immediately – between now and Mirant's selection of the compliance alternatives described in 40 C.F.R. § 125.94.

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We disagree with the Water Board's position that "[a]ny meaningful steps to mitigate the effects due to entrainment...would take significant time to implement and may not be consistent with the findings of the [Comprehensive Demonstration Study]." *Responses to Comments on the November 14, 2004 Tentative Order*, pg. 17 (march 6, 2006). It is clear from the entrainment report that the Plant's entrainment impacts are significant. *Mirant Potrero 316B review by Pete Raimondi*, pg. 14-15 (September 2, 2005). Every effort should be made by Mirant and the Water Board to determine what technologies can be implemented now to mitigate those impacts as required by federal law. The Potrero Plant has been allowed to operate at the expense of the health of the Bay for too long; Mirant should not be allowed to delay addressing known impacts for another two or more years. We urge the Water Board

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to incorporate into the permit technologies or operational measures necessary to reduce the Plant's known entrainment impacts.

We are concerned that Mirant may be using the Phase II study requirements to delay selecting and implementing entrainment and impingement-reducing technologies. Mirant has clearly stated that it intends to "evaluate the full range of compliance alternatives and options available in the Phase II rule for potential use in the CDS." *Clean Water Act 316(b) Proposal for Information Collection for Mirant's Potrero Power Plant*, pg. 3-1 (February 2006). We believe that this broad scope is inconsistent with the purpose of the CDS and unnecessary. According to the regulations, the purpose of the CDS is to "confirm that the technologies, operational measures, and/or restoration measures...selected and installed...meet the applicable requirements. 40 C.F.R. §125.95(b) (emphasis added). Additionally, it is premature to prepare a CDS before the alternative(s) are selected because the components of the CDS vary depending on the alternative chosen. For example, a Proposal for Information Collection is not even necessary if Mirant chooses to implement a previously approved technology. Considering that many believe the plant to be nearing the end of its useful life and the fact that Mirant refuses to indicate when whether it intends to close the plant, we are concerned that the company is using the 316(b) requirements to avoid the expense of installing technology necessary to protect Bay habitat. We urge the Water Board to require Mirant to narrow the scope of its proposed CDS to the alternative(s) that are most appropriate. This will ensure that valuable time is not wasted while Mirant exhaustively considers every alternative regardless of its suitability to this plant.

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COMMENT 5

3. The permit must incorporate the San Francisco Bay Basin Plan's prohibition on undiluted discharges.

The draft permit incorrectly asserts that Mirant's discharge complies with the Basin Plan's prohibition on undiluted discharges. *Draft Permit* at 19. The San Francisco Bay Basin Plan prohibits discharges that contain "characteristics of concern to beneficial uses" unless those discharges receive a minimum initial dilution of 10:1. *Water Quality Control Plan for the San Francisco Bay Basin*, Table 4-1. The discussion accompanying the prohibition further elaborates that the purpose is to protect against two things: effects of abnormal discharges and the continuous effects of waste discharge. The Water Board's assertion that the prohibition applies only to sewage or discharges from treatment processes subject to upset is incorrect. *Draft Permit* at 19. Rather, the prohibition applies to all discharges that, because of their constituents, are likely to affect beneficial uses.

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The Basin Plan prohibition applies to Mirant's discharge because the discharge results from a process subject to upset and because the discharge contains constituents of concern. As the draft permit acknowledges, Mirant chlorinates and dechlorinates its cooling water. If an upset occurs in the dechlorination process, the resulting undiluted chlorinated discharge to shallow Bay waters would be devastating. The permit's assertion that dilution is unnecessary because the "discharger has excellent compliance with its permit limits for chlorine and pH, which demonstrates excellent reliability of its treatment system for these parameters" is flawed. The dilution requirement exists to protect against upsets, which by their nature, are unreliable.

Application of the prohibition is consistent with the Water Board's own interpretation and cannot be avoided simply because an upset has not yet occurred.

In addition to presenting the possibility of an upset, discharges from the Plant contain many "constituents of concern." Even the draft permit acknowledges that the plant's discharges of heat, mercury, and copper constitute "constituents of concern." *Draft Permit* at 20. The permit then cursorily concludes that the Basin Plan prohibition does not apply to heat because the Basin Plan "defers its regulation of thermal waste to the State Thermal Plan," and that it is not likely to apply to copper and mercury because "existing information does not suggest that the discharge is a substantial source of these pollutants." *Id.* Both conclusions are incorrect.

The Basin Plan does not *defer* regulation to the State Thermal Plan, rather it incorporates it by reference. Furthermore, nothing in the State Thermal Plan prevents the Regional Water Boards from imposing more restrictive limitations, such as the 10:1 dilution requirement, if necessary to protect beneficial uses. Continuous thermal discharges have demonstrated harmful effects on aquatic life and these effects are clearly of the type contemplated by the Basin Plan Prohibition.

In terms of copper and mercury, the draft permit concedes that copper and mercury may be "constituents of concern" if the Plant is a "substantial source." *Draft permit* at 20. This position is misguided for several reasons. First, the prohibition makes no reference, explicitly or implicitly, to mass or concentration as relevant factors in determining whether a pollutant is a "constituent of concern." Therefore, the amount being discharged is irrelevant in determining whether the prohibition applies. Second, the Bay is already impaired for both mercury and copper and lacks the capacity to assimilate more of either. Any amount mercury or copper discharged by Mirant will cause or contribute to a violation of water quality standards. Therefore, these pollutants are clearly constituents of concern and the Basin Plan's prohibition on undiluted discharges applies. The final permit must therefore prohibit any discharges that do not receive an initial dilution of at least 10:1.

4. The permit must incorporate thermal waste limitations that are protective of beneficial uses.

We disagree with the draft permit's conclusion that the Mirant thermal discharges are not harming beneficial uses. The State Thermal Plan, which is incorporated into the San Francisco Bay Basin Plan by reference, requires that existing discharges of thermal waste to enclosed bays comply with limitations necessary to assure protection of beneficial uses. *Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California*, pg. 4; *San Francisco Bay Basin Plan*, Chapter 3, Water Quality Objective for Temperature.

The permit's cursory reliance on the PG&E thermal study is inadequate to support a finding that the proposed limitations are protective of beneficial uses. The only study relied upon in establishing the limitation was PG&E's outdated study; we find this study's conclusion (that large volume discharges into shallow waters does not affect beneficial uses) specious. At a

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minimum, the Water Board should consider other studies on the effects of thermal waste aquatic organisms before establishing the permit's thermal limitations. Furthermore, the permit should contain a detailed explanation of the applicability and/or inapplicability of the previous study.

5. The Water Board should establish Water Quality Based Effluent Limitations for nickel and selenium.

Baykeeper recommends amending the permit to include numeric water quality based effluent limitations (WQBELs) for nickel and selenium. WQBELs must be established for all pollutants that have reasonable potential to cause or contribute to an excursion above any State water quality standard. 40 CFR §122.44(d)(1)(i). The State Implementation Plan ("SIP") describes the process to determine whether reasonable potential exists. *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California*, pg. 4 (March 2000). Reasonable potential exists and a water quality based effluent limitation is required if it is deemed necessary to protect beneficial uses. *Id.* The SIP describes the steps to be taken by the Water Board in determining whether reasonable potential exists. If, however, insufficient information exists for the Board to complete the analysis, then it must establish an interim requirement that also requires additional monitoring. *Id.* at 5.

At a minimum, the permit should include an interim limitation for nickel and selenium. The San Francisco Bay is currently listed as impaired for both pollutants and power plant cooling water is known to be a source of metals, especially nickel. Although the data provided by Mirant and relied upon by the Water Board in completing the reasonable potential analyses did not show that the plant is discharging nickel or selenium, these results only represent ten days of data. It is unclear whether the data is representative of the facility's discharges and more data will need to be assessed to complete the reasonable potential analysis. Therefore, the permit must incorporate an interim limitation for these two pollutants and require additional monitoring to be completed.

6. Incorporate the EPA's recommendation that the permit require opportunity for public participation.

In its comments, the EPA specifically recommended that the permit be revised to require the Mirant to hold a series of public meetings relating to the CDS results. The results of the CDS and all of the studies Mirant must complete will have significant impacts on Bay water quality and be of great interest to members of both environmental and local communities. In order to foster transparency around this very contentious issue, we strongly urge the Water Board to insert into the permit the public participation requirements recommended by the EPA.

For more than 40 years, the Potrero Hill Power Plant has been allowed to operate to the detriment of its environment. It employs incredibly outdated technologies known to have significant impacts on aquatic life. It is time that Mirant invest in the upgrades necessary to protect the Bay and to bring the Plant into compliance with federal and state laws. At a

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COMMENT 12

Baykeeper Comments  
Potrero Power Plant NPDES Permit  
March 20, 2006

minimum, the permit must require Mirant to immediately remove the shallow water discharge and to reduce known entrainment impacts. Unless and until Mirant commits substantial resources to improving the Plant and bringing it into compliance, it should not be allowed to profit at the expense of the Bay environment and community.

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COMMENT 12

Thank you for consideration of these comments; please do not hesitate to contact us with any questions.

Sincerely,

Amy Chastain  
Program Associate

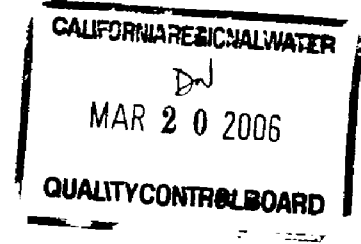
Sejal Choksi  
Baykeeper and Program Director

cc: Bruce Wolfe, Executive Officer, San Francisco Regional Water Board  
Bill Johnson, Staff, SF Regional Water Board  
Lila Tang, Staff, SF Regional Water Board  
Alan Ramo, Esq. Bayview Hunters Point Community Advocates  
Greg Karras, Communities for a Better Environment  
Joe Como, Deputy City Attorney City of San Francisco



# GOLDEN GATE UNIVERSITY

ENVIRONMENTAL LAW AND JUSTICE CLINIC • SCHOOL OF LAW



By Personal Delivery

March 20, 2006

Lila Tang, NPDES Division Chief  
Derek Whitworth, Regional Board Staff  
California Regional Water Quality Control Board  
San Francisco Bay Region  
1515 Clay Street, Suite 1400  
Oakland, CA 94612

RE: Comments on Reissuance of NPDES Permit, Mirant Potrero Power Plant, San Francisco  
Tentative Permit Order dated 2/14/06.

Dear Ms. Tang and Mr. Witworth:

Please find enclosed the comments of Communities for a Better Environment and the Bayview Hunters Point Community Advocates on the above-described tentative order.

These organizations continue to be concerned with the failure to require that an upland cooling system be designed and implemented, and in the meantime, that technology available now is not implemented to minimize well documented entrainment, toxic and thermal effects. They are also concerned with the failure to properly implement a PCB prohibition. They contend these failures violate federal 316(b) and PCB prohibition requirements, the State Thermal Plan and Basin Plan Prohibition 1.

If you have any questions regarding these comments, please contact me at 415-442-6654 or by email at [aramo@ggu.edu](mailto:aramo@ggu.edu). You may also contact CBE's attorney Shana Lazerow or CBE's staff scientist at 510-302-0430.

Sincerely,

A handwritten signature in cursive script, appearing to read "Alan Ramo", with a small mark to the right.

Alan Ramo, Director, Environmental Law and Justice Clinic  
Attorney for CBE and BVHPCA

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Attachments

I. INTRODUCTION

Communities for a Better Environment (CBE) and Bayview Hunters Point Community Advocates (BVHPCA) submit the following comment on the revised tentative order issuing an NPDES permit for the Potrero Power Plant. This joint comment supplements the comments CBE and BVHPCA submitted regarding the prior version of the permit. Unfortunately, the new revision makes only cosmetic changes to the prior tentative order, with the sole exception that a PCB prohibition has been restored to the permit, though with qualifications that practically undermine it. Therefore the prior comments remain applicable and are incorporated herein by reference.<sup>1</sup> The staff, however, has provided new rationales, failed to respond to many of our prior comments, and refused to accept or respond to supplemental comments submitted more than a year ago, necessitating our submitting additional comments.

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In the latest proposed permit, the Water Board staff has again placed preservation of Mirant's antiquated once-through cooling system ahead of Bay protection. Rather than begin the process of removing the power plant's discharge from the Bay, and in the meantime require interim upgrades to minimize harm to the Bay, the staff leaves the cooling system operating as it has for decades. Staff ignores mandates from state and federal law to improve this technology. It ignores data from its own consultant and the discharger that demonstrates ongoing harm to the Bay from the existing technology. It ignores reams of regulatory documents describing feasible better cooling technologies. It calls this sad state of regulatory incompetence its best professional judgment.

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<sup>1</sup> BVHPCA submitted comments on December 29, 2004. CBE submitted comments on January 10, 2005. These comments are incorporated herein by reference, as is prior correspondence submitted to the Board regarding this permit.

Federal law requires the staff to use its best professional judgment for this permit and require the best technology available for minimizing adverse environmental impacts. 40 C.F.R. 125.95(ii). Federal law also encourages the States to impose more stringent requirements where appropriate. 40 C.F.R. 125.94(c). See In re Dominion Energy Brayton Point, L.L.C., E.P.A. Environmental Appeals Board, NPDES Appeal No. 03-12, p. 19 (Feb. 1, 2006).

Staff's permit review process illustrates its single-minded attempt to avoid requiring new technology and instead protect ancient technology at all costs. It first delayed reviewing the expired permit for at least 5 years (review should have begun at least 6 months before expiration of the 1999 permit). Initial tentative orders released in 2001 and 2004 were rescinded without public hearings. Embarrassed by the revelation it had ignored existing data on entrainment, the staff pulled the 2004 draft permit and spent at least six months getting an analysis of the data. It then seemed intent as recently as December, 2005, in delaying the permit entirely, calling that a serious option.<sup>2</sup>

The staff's outside consultant, UC Santa Cruz Professor Dr. Peter Raimondi, determined that aquatic life was destroyed by the facility's once-through cooling system to an extent equivalent to impairing 393-939 acres of habitat. See Attachment 1, (where CBE's expert concludes entrainment impacts may actually be worse).<sup>3</sup> Yet, after delaying this process for more than a year to determine whether this data reveals ongoing damage caused by this discharge, the staff has chosen to leave the original proposed

<sup>2</sup> Staff announced this at a "stakeholder" meeting convened by San Francisco after the staff failed to follow through on its prior commitment to convene this meeting. Staff considered as a serious option not issuing a permit at all until studies lasting years would be completed.

<sup>3</sup> Although additional sampling and analysis that could document this is not needed to demonstrate significant impacts, as shown in Attachment 1.

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COMMENT 4.

permit largely untouched, allowing continued once-through cooling water utilization of Bay water without any interim improvements or long term solution.

Staff's response to comments is indicative of its approach to this permit. Staff's response specifically ignores past comments suggesting that until the discharge is removed from the Bay, existing technology should be upgraded using variable speed control pumps, a technique addressed by US EPA in its new federal regulations for existing power plant cooling water systems. See BVHPCA's December 29, 2004 comments. Staff's response also ignores its own consultant's advice announced at the December, 2005, stakeholder meeting, that interim measures may be deployed without interfering with more aggressive upgrades if further studies deemed them warranted.

There is more than enough data now to determine that the cooling system is harming the Bay. The data now available supports the contention that the existing discharge violates the State Water Resources Control Board's Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California ("Thermal Plan"). Influent and effluent sampling at the site also demonstrates that pollutants of concern including toxic metals, PCBs and dioxins are present in the effluent and mobilized by the cooling system's impact on nearby sediments. There is data which provide a basis for concluding that the facility remains a source of these pollutants. See Attachment 2.

Staff's unwillingness to restrict pollution resulting from this cooling system, and its failure to address the data documenting that the cooling system mobilizes pollutants buried in nearby sediment, is demonstrated by the staff's introduction of pollutant credits for PCBs in the intake. Just as removing the PCB discharge prohibition constituted

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backsliding from the 1994 Potrero permit,<sup>4</sup> staff's new intake credits for PCBs are prohibited backsliding. Allowing credits for PCBs stirred up by the outfall and intake of this cooling system and deposited into the Bay makes a mockery of any prohibition of PCBs in the discharge. Unless and until the discharger demonstrates that the PCBs in the intake are not from the effect of the flow through the cooling system sucking up the facility's sediment pollution, pollution credits should be denied.

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COMMENT 15.

The TO literally exempts the discharge from compliance with the PCB discharge prohibition for the life of the permit. After the staff told the community for a year it was restoring the PCB prohibition to the permit, its TO's compliance requirements seem to only require sampling twice a year, and require at least 12 samples before compliance will be determined. Simple math suggests PCB violations could continue for six years before the staff would deem enforcement appropriate.<sup>5</sup>

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Further, as a result of the presence of pollutants of concern in the cooling water, Basin Plan Prohibition 1 applies to this discharge. This Prohibition wisely prohibits discharges with characteristics of concern in shallow water with inadequate dilution. The discharge has characteristics of concern. It receives inadequate dilution. Yet staff refuses to apply Prohibition 1.

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COMMENT 28

This region has had a checkered history of enforcing its Discharge Prohibition 1, repeatedly being chastised by the State Board. See In the Matter of the Petition of Citizens for a Better Environment, et al., State Water Resources Control Board, Order No. WQ 90-5, October 4, 1990; In the Matter of the Petition of Citizens for a Better Environment, State Water Resources Control Board, Order No. WQ 86-4, February 20,

<sup>4</sup> See BVHPCA 2004 Comments.

1986. Once again, the staff is trying to protect a facility's discharge into shallow water even in the absence of any shadow of a claim of qualification for an exception. There is no fundamental difference between Chevron's cooling water discharge that had to be taken out of shallow water, in the case cited above, and Mirant's discharge.

In fact, staff proposed to apply Prohibition 1 to Potrero's existing shoreline discharge, in a 2001 draft revision of the permit, before staff reversed its position in the 2004 and 2005 permit drafts. There has been no change in the plant's antiquated cooling technology or shoreline outfall conditions since 2001. The evidence demonstrating this discharge has characteristics of concern to beneficial uses of the Bay has only grown stronger since 2001. The only difference is that the plant owner proposed to remove the shoreline discharge in 2001 and has now reversed its position on this issue. The only consistency in staff's position on this issue is that it proposes what the discharger wants.

The staff seems to have spent more time evolving a convoluted explanation of why Discharge Prohibition 1 does not apply than determine what technology would protect the Bay. It works very hard to discount the very data it required the discharger to provide and ignores its own consultant's entrainment data. It does this for a facility that the California Independent System Operator anticipates will no longer be required for electrical reliability and may then simply be looking for opportunities to make a profit at a significant cost to the environment.

The staff's position is also unreasonable in light of the availability of alternatives that would protect the Bay. The California Energy Commission staff found that dry cooling was a technically feasible alternative, as did the San Francisco Bay Conservation

<sup>5</sup> Staff has indicated, by email to council for CBE and BVHPCA received the day comments were due, that it intends to clarify that sampling for PCBs should be more frequent.

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C-9.



and Development Commission. This alternative avoids air and water pollution from the cooling system. Hybrid cooling is another alternative that has been deemed cost effective for the proposed Unit 7 facility at this same site. In addition, there is no reason that has been provided why variable speed control pumps cannot be implemented on a timely basis to reduce the flow of water into the cooling system. Doing so would reduce ongoing impacts while an upland cooling system is designed and constructed.

In lieu of actually protecting the Bay, the staff commissions additional studies. These lengthy studies alone are not harmful and if done properly may add still more confirming information. The permit language could be improved to assure the staff obtains the data it needs. The staff, however, has more than adequate data to protect the Bay now and determine what will be needed over the long run to protect the Bay. Studies are no substitute for action when the Bay is undisputedly being harmed now.

This Board's obligation is to enforce environmental laws and protect the Bay, not to give Mirant an unfair competitive edge by allowing it to use a decades-old cooling system while others comply with environmental laws. CBE, BVHPCA, and the City and County of San Francisco presented the staff with a proposed permit which provided ample time for the facility to design a long term solution to cooling while employing upgraded technology to minimize harm to the Bay. See CBE and BVHPCA letter to the Regional Board requesting issuance of a permit for this facility, mailed December 6, 2005, incorporated herein by reference. The staff has completely rejected that proposal without compromise or equivalent protection to the Bay. CBE and BVHPCA urge the Regional Board to reject the staff's proposal and require removal of the discharge and interim technology upgrades while removal is designed and implemented.

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COMMENT 10

II. THE TENTATIVE ORDER BY FAILING TO IMPOSE MEASURES AVAILABLE NOW THAT WOULD MINIMIZE ENTRAINMENT UNTIL UPLAND COOLING WAS DESIGNED AND IMPLEMENTED VIOLATES THE BEST TECHNOLOGY AVAILABLE REQUIREMENT OF CLEAN WATER ACT SECTION 316(b).

The Tentative Order (TO) does not comply with the requirement that the plant implement the best technology available based on the staff's best professional judgment ("BPJ") to minimize the adverse impacts of entrainment and impingement of aquatic organisms in the Bay. 33 U.S.C. § 1326(b), 40 C.F.R. § 401.10. A technology cannot be BPJ and also violate the requirements of any applicable laws. See Riverkeeper, Inc. v. U.S.E.P.A., 358 F.3d 174, 186 (2<sup>nd</sup> Cir. 2005) (observing that best professional judgment under 316(b) could not require a restorative measure that conflicted with 316(b) itself), 358 F.3d at 200 (emphasizing that any permit under the CWA is contingent on compliance with all state law requirements). By failing to recognize available technology for mitigation of adverse environmental impacts, the current TO is not in compliance with federal law.

Section 316(b) of the CWA requires the decision-maker to rely on a suite of studies when drafting NPDES permits for power plant cooling systems. See 33 U.S.C. 1326(b); 40 C.F.R. § 125.95(a), (b); 40 C.F.R. § 122.21(r). For the first few years after the adoption of the Phase II regulations for existing power plants, a permit writer, in lieu of studies not yet being completed, must use best professional judgment to demand the best technology available for minimizing adverse environmental impacts when issuing permits for cooling water intake structures. 40 C.F.R. 125.95(ii), 33 USCA 1326(b). The TO does not comply with 316(b) because the staff failed to exercise its professional

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judgment regarding available cooling water technology and require technologies now known to be available to minimize the intake's known significant adverse impacts.

- A. The staff's own report and other evidence documents that the power plant's existing cooling water technology causes significant environmental impact due to entrainment.

The TO requires no new technology. The Regional Board staff admits that Mirant has not submitted the new comprehensive federal studies, satisfying the first prong of 40 C.F.R. 125.95(ii). Yet the staff has refused to use its best professional judgment as required under this federal regulation to determine the required technology to minimize impacts or analyze existing information about available technology.

Staff, prior to the issuance of the TO, recognized that its own outside consultant, Dr. Peter Raimondi, determined that the Potrero intake causes significant adverse impacts. See Analysis of Potrero Unit 3 Entrainment Impact Evidence, Communities for a Better Environment, March, 2006, appended hereto as Attachment 1. Entrainment of aquatic life in the existing Potrero Unit 3 cooling system causes significant adverse impacts on the beneficial uses of San Francisco Bay. *Id.* Independent analyses of substantial recent data by several expert reviewers strongly support this conclusion. *Id.* Hundreds of millions of larval fish are entrained and killed in the plant each year. *Id.* Total entrainment including fish, fish eggs and invertebrates is much greater and could be in the billions of organisms annually. *Id.* The entrainment impacts can be characterized as destroying the equivalent of 390-940 acres of habitat spread throughout this uniquely important, already-impacted ecosystem. *Id.*

The TO, however, does not mention this evidence. It does not mention the Regional Board's expert advice that impacts are significant. It calls for more study

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without analyzing studies providing evidence showing there are entrainment impacts now that ought to be minimized with available technology.

- B. Technology options exist that can be implemented now in order to minimize adverse environmental impacts of the Potrero intake on the Bay, but the TO ignores them.

There exists a full spectrum of technological options that the Potrero plant can use to minimize the adverse impacts of impingement and entrainment while the required studies are being completed. These technologies include variable speed control pumps and dry-cooling and closed-cycle cooling options. See Technical Development Document for the Proposed § 316(b) Phase II Existing Facilities Rule, Attachment A to Chap. 3, United State Environmental Protection Agency (Apr. 2002). See <http://www.epa.gov/waterscience/316b/devdoc/>.

Intake impacts of the Potrero plant can be minimized by installing variable-speed drive pumps now and replacing the old once-through cooling system with dry cooling as soon as practicable thereafter. These modern cooling technologies are established and widely used elsewhere. All recent government reviews at Potrero have found that alternatives to once-through cooling are available. In 2003, Mirant Corp. specifically proposed and deemed feasible a cooling tower at Potrero. Dry cooling or a cooling tower could eliminate intake impacts of the Potrero plant. These alternatives could also eliminate all thermal and toxic discharges from shoreline outfall E-001. Alarming, the TO and fact sheet fail to mention any of the evidence for this readily available solution, even though BVHPCA and CBE submitted comments describing these technologies and proposed them with the City of San Francisco in its own alternative permit. More

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specific discussion regarding these technologies is provided below as the staff seems to have ignored the earlier comments.

**1. Upland cooling is established, widely used technology.**

Upland cooling technology—in this case, dry or wet/dry cooling—dissipates waste heat to the atmosphere, in contrast to once-through cooling technology, which dissipates heat to the water body providing the cooling water. Two different upland cooling designs can be applied to the Potrero plant. The first is a “dry” air-cooled design with no visible plume or new particulate matter (PM<sub>10</sub>) or any other kind of air emission. The second is a “hybrid” wet/dry design that could use reclaimed municipal water. Wet/dry towers reduce visible plumes, and PM<sub>10</sub> emissions associated with traditional cooling towers. Either design could eliminate the intake of Bay water for cooling Unit 3.

Upland cooling is a common technology throughout the world for removing waste heat. Appendix 17 to CBE’s 2005 Comments at pages 9-13. Wet/dry cooling has been proven technology since the 1970s. *Id.* Dry cooling was first used in 1938; 14 power plants worldwide used dry cooling by 1971; about 40 plants greater than 100 MW used it by 1991, and an estimated 15-20 Gigawatts of generation<sup>6</sup> used dry cooling by 2002. *Id.* Examples of dry-cooled plants include the 240-MW Crockett Cogen plant in Contra Costa County, the 540-MW Sutter Power Plant and the 480-MW El Dorado Energy Project in Nevada. *Id.* Eight operating power plants used dry cooling in California as of June 2005. CEC, 2005 at 41.<sup>7</sup> The 540-MW Otay Mesa Project was under construction with dry cooling at that time. *Id.* In 2003, Mirant proposed a wet/dry cooling tower using

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<sup>6</sup> 15 GW of generation is equivalent to 71 power plants the size of 210-MW Potrero Unit 3.

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reclaimed water, as an alternative to once-through cooling using Bay water, for its proposed new Potrero Unit 7. Attachment 25 to CBE's 2005 Comments.

Cooling towers are in widespread use in the oil refining industry as well. The Chevron Richmond Refinery replaced its once-through cooling system with cooling towers after the Regional and State boards applied Basin Plan Discharge Prohibition 1, and thus prohibited Chevron's cooling water discharge from continuing at the shoreline, in 1986. See e.g., Attachment 2.

**2. All recent government reviews of Potrero cooling technology have concluded that a cooling tower is an available technology at this site.**

Four government agencies and one major city reported reviews of upland cooling at the Potrero plant since 2001. In 2002, the California Energy Commission (CEC) staff concluded that a wet/dry cooling tower is feasible at the Potrero site, can fit into the site without causing significant environmental impacts, and is an available alternative to once-through cooling there. Attachment 17 to CBE's 2005 Comments. Also in 2002, the Bay Conservation and Development Commission (BCDC) found that both dry and wet/dry cooling are available alternatives to once-through cooling at Potrero. Attachment 23 to CBE's 2005 Comments. The City and County of San Francisco (CCSF) showed that dry cooling could be physically and logistically accommodated on the site to cool effectively at a reasonable cost. *Id.* In 2003 the National Marine Fisheries Service (NMFS) recommended a cooling tower as a feasible and available alternative at Potrero. Attachment 7 to CBE's 2005 Comments. The Regional Board concurred in the CEC staff's conclusion that a cooling tower is available technology for this site in 2002,

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<sup>7</sup> CEC, 2005. Issues and Environmental Impacts Associated With Once-through Cooling at California's Coastal Power Plants. California Energy Commission. June 2005 Staff Report, See:

and—at that time—supported a cooling tower as the right approach to reduce intake *and* discharge impacts.<sup>8</sup>

The CEC, BCDC, CCSF, NMFS and Regional Board findings above, made in reviews of proposed Potrero Unit 7, are relevant to Unit 3. The two units' cooling flows are equivalent. Attachment 1 at 17. A similarly sized cooling tower could replace the Unit 3 flow. The engineering and logistical analyses were done at the same site.

NMFS and CCSF explicitly applied their cooling alternatives analyses to Unit 3. In its Essential Fish Habitat Consultation for proposed Unit 7, NMFS recommended a cooling tower for Unit 3. Attachment 7 to CBE's 2005 Comments at 16. In a November 2005 meeting with Board staff scheduled by the City and held at City Hall, CCSF joined CBE and Advocates in proposing permit findings that a cooling tower is BTA for Unit 3.

**3. A dry cooling tower can fit into the Potrero site footprint.**

The evidence that dry cooling is feasible is stronger for Unit 3 than for Unit 7. First, the cooling tower can be located closer to the steam generator than in either of the configurations CEC staff analyzed for Unit 7. Attachment 17 to CBE's 2005 Comments. This is important because one of the CEC configurations might place the tower too far from the Unit 7 steam turbine, and the other configuration relied on use of adjacent PG&E property. *Id.* It resolves the final outstanding question about the technical feasibility of dry cooling at the site that was raised by the CEC staff's 2002 analysis.

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<http://www.energy.ca.gov/2005publications/CEC-700-2005-013/CEC-700-2005-013.PDF>

<sup>8</sup> "By using an alternative technology that does not withdraw from and discharge to San Francisco Bay, Mirant can eliminate most of the impacts to biological resources." May 1, 2002 letter from Loretta K. Barsamian, Executive Officer, RWQCB, to the CEC regarding support for CEC staff's Final Staff Assessment for proposed Potrero Unit 7.

Second, in 2002 large areas of the site were needed for Fuel Oil tanks 3 and 4 or reserved for Unit 7. Id. Now, these areas are available. Licensing proceedings for Unit 7 have terminated as of March 1, 2006.<sup>9</sup> Tanks 3 and 4 were dedicated to Unit 3, which can no longer burn fuel oil due to its SCR emission controls installed in 2005. The additional on-site space greatly increases flexibility to build the least-impact cooling tower configuration.

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**4. Immediately available Variable Speed Drive pumps are part of BTA at Potrero.**

The old single-speed intake pumps at Potrero are either “on” or “off” and pump full speed when on. Attachment 1 at 7-8. They are on and pumping at full impact nearly all the time, due to other constraints of the old cooling technology and grid reliability requirements. Id. Modern pump technology, however, includes the industrial equivalent of a “dimmer switch.” Variable-speed drive (VSD) pumps are proven technology. Mirant uses them elsewhere. Mirant, 2006 at 3-8.<sup>10</sup> VSD might cut intake flow by as much as half at times when power requirements allow (Id.) such as late at night when the plant runs at idle. VSD conversion can occur more quickly than conversion to a cooling tower, as it is a smaller, more easily scheduled project. Use of both technologies in series will result in the minimum intake impact from ongoing operation of the plant.

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The TO does not mention this evidence. It does not disclose that the staff gave one second of thought, or performed one second of research, concerning what technology was available now to address the proven entrainment impacts. The staff thus appears to have failed to evaluate substantial evidence that the best technology available to

<sup>9</sup> CEC Docket 00-AFC-4. Order Denying Continued Suspension and Terminating Proceeding.

<sup>10</sup> Mirant’s proposal for 316(b) information collection submitted to RWQCB in February 2006.



minimize significant adverse impacts of the intake can be determined and deployed now. Therefore, it completely failed to exercise its duty to use its best professional judgment to employ technology to minimize impacts. Adoption of the TO without this judgment would be improper and contrary to law.

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III. THE TENTATIVE ORDER IMPROPERLY FAILS TO REQUIRE THAT THE DISCHARGE OCCUR IN WATER WITH A 10:1 DILUTION PURSUANT TO BASIN PLAN PROHIBITION 1.

A

Federal regulations for existing power plant discharges encourages the states to impose more stringent requirements where appropriate:

More stringent standards. The Director may establish more stringent requirements as best technology available for minimizing adverse environmental impact if the Director determines that your compliance with the applicable requirements of this section would not meet the requirements of applicable State and Tribal law, or other Federal law.  
40 C.F.R. 125.94(e). See PUD No. 1 of Jefferson Cty. Washington Dept. of Ecology, 511 U.S. 700, 705 (1994).

Even where analysis under federal law would not necessarily mandate an end to once through cooling, where a state water quality requirement would, NPDES permits for dischargers should require a technology that achieves the state water quality requirement. See In re Dominion Energy Brayton Point, L.L.C., E.P.A. Environmental Appeals Board, NPDES Appeal No. 03-12, p. 19 (Feb. 1, 2006).

In the recent Brayton Point decision, an EPA appeals board affirmed that an NPDES permit could effectively mandate conversion from once through cooling to closed-cycle cooling. Brayton Point, E.P.A. Environmental Appeals Board, NPDES Appeal No. 03-12 (Feb. 1, 2006). There, the final NPDES permit significantly curtailed the amount of water the power plant, BPS, could withdraw and discharge. To comply with the new restrictions, BPS would have to change all of its four units from once-

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through, open-cycle cooling systems, to closed-cycle cooling systems that recycle the cooling water. Id. at 19. The Appeals Board denied the power company's appeal of the permit decision, holding that under CWA 316(b), permits must not only require best technology available, but also whatever else "is necessary to meet state water quality standards. Thus, in certain cases, even if the technology standard does not require closed-cycle cooling, a state's water quality standard may." Id. at 8. In essence, the Brayton Point decision held that an NPDES permit could properly require a facility to comply with the state's more stringent water quality standards by mandating an end to once through cooling. See id. The Regional Board has the authority and the responsibility to issue a permit that restricts Potrero's options to a non-Bay cooling alternative where applicable laws require that result.

The State of California does have laws that do require cooling system upgrade. The Regional Board's Basin Plan, under Table 4-1 entitled Discharge Prohibitions, at section one prohibits the discharge of "[a]ny wastewater which has particular characteristics of concern to beneficial uses at any point at which the wastewater does not receive a minimum initial dilution of at least 10:1, or into any non-tidal water, dead-end slough, similar confined waters, or any immediate tributaries thereof." ("Prohibition 1.")

Prohibition 1 was upheld for existing facilities by the State Water Resources Control Board (State Board) in In the Matter of Petition of Citizens for a Better Environment, Order No. WQ 86-4. Feb. 20, 1986, 1986 WL 25504 (Cal.St.Wat.Res.Bd.), appended hereto as Exhibit C of Attachment 2. The State Board found that Prohibition 1 applies to once-through cooling water that was drawn from the Bay and discharged at the shoreline with toxic pollutant and toxicity characteristics of concern. Prohibition 1 was

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again upheld in In the Matter of the Petition of Citizens for a Better Environment, et al., State Water Resources Control Board, Order No. WQ 90-5, October 4, 1990, appended hereto as Exhibit D of Attachment 2. Order 90-5 also found that toxic pollutants are constituents of concern to which Prohibition 1 applies.

The Regional Board proposed to apply Prohibition 1 to Potrero discharge E-001 in a draft of this permit issued in 2001. The 2001 draft permit is appended hereto as Exhibit F of Attachment 2. The TO reverses this proposal.<sup>11</sup> The Board's 2001 proposal to apply Prohibition 1 was correct. The TO's proposal to allow a massive discharge flow with potentially toxic concentrations of known pollutants to continue without the minimum initial dilution required by the Basin Plan has no valid basis; it is arbitrary, harmful and contrary to law.

A. The Board's 2001 draft permit correctly applied Basin Plan Discharge Prohibition 1 to the Potrero Unit 3 discharge E-001.

Potrero Power Plant Unit 3 discharges approximately 226 MGD of once-through cooling water mixed with smaller amounts of process water and storm water from outfall E-001 which is located at the shoreline. See Order 94-056. Effluent E-001 receives little or no initial dilution. CBE's 2005 Comments at 35-38. The Regional Board staff acknowledges that "the discharge does not receive initial dilution." TO Finding 67.

Toxic pollutants and toxicity are found in this discharge, as detailed in the second part of this section. Among other problems with this discharge, certain toxic pollutants in Potrero effluent E-001 have the potential to cause or contribute to violations of applicable water quality standards as a result of this discharge. Regional Board staff itself makes

<sup>11</sup> The 2001 draft permit included a requirement stating: "Discharge of Wastes E-001 and E-002 at any point where it does not receive an initial dilution of at least 10:1 is prohibited. See Attachment 2, Exhibit F, Discharge Prohibitions. No such requirement appears in the current TO.

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this finding for specific toxic pollutants including copper and mercury. TO Finding 48. The applicable water quality standards are established to protect beneficial uses. Water Code § 13241. Thus, these pollutants that threaten to cause or contribute to violations of the standards are characteristics of concern for beneficial uses. Therefore, Prohibition 1 applies to Potrero effluent E-001.

- B. Regional Board staff's rationale for reversing the Board's 2001 proposal to apply Basin Plan Discharge Prohibition 1 to this discharge due to the presence of toxic chemicals in the effluent is contrary to the Basin Plan, inconsistent with State Board actions and factually wrong.

The TO claims that although the discharge at E-001 at the Potrero plant “does not receive initial dilution, it complies with the discharge prohibition because it is not wastewater with particular characteristics of concern to beneficial uses.” Finding 67. This claim is bogus on its face. The discharge is waste water; thus the reissuance of waste discharge requirements. The TO itself names specific pollutants in it as “characteristics of concern.” Id. The TO names at least two of these pollutants—copper and mercury—as having the potential to cause or contribute to violations of water quality standards set to protect beneficial uses. Finding 48. The plain language of Prohibition 1 applies to “any” waste water with such characteristics, and it applies at Potrero.

The Regional Board applied this prohibition against discharge receiving less than 10:1 initial dilution to the Crockett Cogeneration plant in Order R2-2004-0026.

However, instead of following the plain language of the prohibition, the TO fundamentally misinterprets its purpose, ignores relevant State Board decisions, grossly mischaracterizes the discharge, and ignores the role of Prohibition 1 in relation to the Thermal Plan.

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- 1. The TO's claim that Prohibition 1 does not apply to E-001 because it does not contain a treatment system subject to upset misinterprets the purpose of the Prohibition, ignores relevant State Board decisions, and is factually inaccurate.**

The TO claims the dilution requirement only protects against treatment malfunctions and minimizes public contact with undiluted waste. It states, "This discharge does not contain treated sewage and does not contain wastewater from a treatment process subject to upset. Therefore the prohibition does not apply in this context." Finding 67, second paragraph. This attempt to limit the applicability of Basin Plan Prohibition 1 is incorrect.

First, the explicit language of Prohibition 1 provides no such limitation. Instead, the Basin Plan has made clear that Prohibition 1 is intended to protect against harm from continuous discharge. The Plan states that one of the purposes of Prohibition 1 is to: "provide an added degree of protection from the *continuous* effects of waste discharge." Basin Plan Table 4-1, emphasis added. TO Finding 67 simply omits this requirement for protection against continuous discharges (as well as treatment upsets) by ensuring minimal dilution requirements.

In addition, whatever staff lore may exist regarding the sewage plant origins of the Prohibition, this attempt to limit Basin Plan Prohibition 1 has already been rejected by the State Board in the Chevron matter. In that case the State Board applied the Prohibition to the once-through cooling water discharged by an oil refinery. The Board never amended the Basin Plan Prohibition after that decision, though the staff seeks to implicitly do so through the TO. See Chevron, discussion in Attachment 2 page 8.

Further, the TO's statement in Finding 67 that the discharge "does not contain wastewater from a treatment process subject to upset" is factually incorrect. The Potrero

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Unit 3 cooling system includes a system to detoxify the chlorine added to the system before discharge. CBE's 2005 Comments at 42. The potential for malfunction of this treatment to cause acute toxicity is discussed below. The Basin Plan makes clear that an additional purpose of Prohibition 1 is "to provide a buffer against the effects of abnormal discharge caused by temporary plant upsets or malfunctions." Basin Plan, Table 4-1

**2. The TO's claim that E-001 has "minimal characteristics of concern" mischaracterizes the discharge and ignores serious toxic pollution.**

Any suggestion that Potrero effluent E-001 is as clean as a new power plants' non-contact cooling water discharge, such as the claim in TO Finding 67 that it has only "minimal characteristics of concern except thermal waste," is a gross mischaracterization. Evidence shows the Potrero plant's continued use of 40-year-old cooling technology causes toxic pollution that contributes significantly to impacts on beneficial uses of the Bay and to violations of water quality standards. This evidence is downplayed—or, in many cases, ignored completely—by the TO.

*a. The TO ignores evidence that the old plant causes substantial pollution.* The TO ignores evidence of pollutant sources within the Potrero cooling system. The cooling system is 40 years old. Pipes under the property may be disintegrating. Corrosion of approximately 13,000 condenser tubes in the cooling system, which must be replaced often due to corrosion, is a likely source of copper and other toxic metals in the discharge. CBE's 2005 Comments at 42; Attachment 2 at 3. CBE, Mirant, and PG&E reported this evidence. Id. Nowhere in the TO is this evidence mentioned.

The TO improperly discounts storm runoff contamination of effluent E-001. The runoff is of concern because it has the potential to collect toxins already present in the soil. Contamination of the site and adjacent Bay sediment with PAHs, PCBs and other

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toxic pollutants indicate a potential for significant runoff pollution of E-001. CBE's 2005 Comments at 43; Attachment 2 at 3, 5, 6. TO Finding 67 suggests this discharge is of "minimal concern" but cites no evidence demonstrating such a finding.

The TO ignores evidence that the outfall design itself causes toxic pollution. Evidence from site-specific bathymetric, sediment, temperature, intake, effluent, Bay water and tide measurements demonstrates that the shoreline discharge re-mobilizes buried sediment contamination which is sucked into the adjacent cooling intake, causing the discharge of mercury, PCBs, and other toxic pollutants from outfall E-001. See Attachment 2 at 3-7. Analysis for PCBs in 2005 adds to this already-substantial evidence. These PCBs data are appended hereto as Attachment 3. See Table 1 below.

**Table 1.** Polychlorinated biphenyls (PCBs) measured at Potrero Unit 3 intake I-001 and outfall E-001: grab samples taken on two days in January 2005. In picograms per liter (pg/L).

Data in picograms/liter	High tide sample			Low tide sample		
	I-001	E-001	Change	I-001	E-001	Change
PCB 105	< 20	32	+ 12	41	31	- 10
PCB 118	32	54	+ 22	42	34	- 8
PCB 138	< 200	260	+ 60	< 200	< 200	—
PCB 149	< 200	220	+ 20	< 200	< 200	—
PCB 170	97	150	+ 53	79	67	- 12
PCB 180	200	310	+ 110	100	93	- 7
<b>Sum of these PCBs</b>	<b>&lt; 749</b>	<b>1,026</b>	<b>+ 277</b>	<b>&lt; 662</b>	<b>&lt; 625</b>	<b>- 37</b>

Analysis of grab samples taken 11:20-11:25 am 1/11/05 and 8:10-8:15 am 1/13/05 reported by Mirant to the Regional Board on 3/23/05. See Attachment 3. Shows all PCBs detected (undetected values shown as < x where x = detection limit). PCBs 105 and 118 also detected in the method blank. Co-eluting isomer flag for all PCBs detected except PCB 180.

Review of Table 1 reveals higher effluent levels at high tide, and higher influent levels at low tide. This is consistent with the greater discharge-driven mobilization of pollutants from sediment at lower tides, when there is less Bay water to cushion the impact of the discharge on the bottom, which is documented in Attachment 2.

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The Regional Board's own consultant suggested this impact of the cooling system. Attachment 2 at 6. The TO ignores this evidence. It claims there is no known source of mercury at this facility (TO Finding 43) without noting this evidence showing the opposite is true. It grants a PCBs "intake credit" prohibited by State Board policy given this impact of the outfall location. TO Eff. Lim. B.5.b, note 1; SIP §1.4.4.

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The TO ignores the potential for an acutely toxic catastrophic chlorine spill. Potrero's once-through cooling design requires twice-daily chlorine shocks, has no failsafe to avoid discharge if its batch-treatment dechlorination system malfunctions, and discharges with little or no dilution at the shoreline. CBE's 2005 Comments at 42. The TO ignores the engineering data revealing this vulnerability.

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Staff's claim that "excellent compliance with effluent limits for chlorine ... demonstrates excellent reliability of its treatment system" (Finding 67) is beside the point. This claim is also contradicted by suggestions elsewhere in the TO<sup>12</sup> that compliance monitoring was inadequate and chlorine compliance is questionable. The Staff cites no exception to the Prohibition 1 nor relies on any that states that if an accident has not occurred yet, a facility can continue to discharge into shallow water. One of the purposes of Prohibition 1 is to avoid the impacts from that first catastrophic accident.

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b. *The TO does not identify discharges of highly toxic pollutants and toxicity.* The TO finds many toxic metals detected in effluent E-001, but it finds, wrongly, that dioxins<sup>13</sup> were not detected: "The data set is all non-detect." TO Finding 51.d. Dioxins were detected in discharge E-001. CBE's 2005 Comments at 41 and Attachment 21 thereto. It wrongly states "PCBs were not detected in the effluent." Fact Sheet, Basis

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<sup>12</sup> Increased monitoring frequency (Finding 66) suggests inadequate existing monitoring. A 0.09 mg/L chlorine residual value (Finding 10, Table A) approaches the 0.0 mg/L effluent limit B.1.b.



9.h. PCBs were detected in E-001. Attachment 3. It reports PAHs and DDD were not detected by poor effluent analysis, then ignores evidence showing PAHs and DDD are re-mobilized from nearby sediment, sucked into the intake, and thus discharged.

Attachment 2 at 5, 6.

It even omits mentioning chronic toxicity in the discharge—though the previous TO made this finding. Chronic toxicity has been observed in effluent E-001. CBE's 2005 Comments at 43 and Attachment 22 thereto. The TO's conclusion that there are no pollutants of concern is easily made if one ignores the relevant data.

c. *The TO fails to evaluate the amounts of pollutants discharged adequately.* The maximum concentration of dioxins detected in effluent E-001 that was reported during July 2001 was 0.195 picograms per liter (pg/L), expressed as TCDD TEQ. See CBE's 2005 Comments at 41 and Attachment 21 thereto. PCBs were measured in E-001 at 1,026 pg/L, expressed as the sum of PCBs detected. See Table 1 above; Attachment 3. Mass discharges of copper, mercury, lead, selenium and zinc may be within an order of magnitude of the maximum discharge allowed from the Chevron Richmond Refinery, and the dioxins loading *may be higher than allowed from Chevron*. This preliminary estimate is based on the difference between effluent and Yerba Buena Island "background" concentrations as of January 2005. Attachment 2. The TO, however, does not quantify maximum effluent concentrations for dioxins or PCBs detected, and does not even attempt to quantify the toxic mass loading.

d. *The TO fails to evaluate available evidence of toxic discharge impacts.* The TO's analysis of dioxin and PCB discharge compliance with water quality standards is not accurate. It finds that "pursuant to the SIP there is no reasonable potential for TCDD

<sup>13</sup> Chlorinated dibenzo-*p*-dioxin and dibenzofuran congeners with additive toxicity.

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TEQ." TO Finding 51. This is wrong. The TCDD TEQ of dioxins detected in the effluent cited above (0.195 pg/L) exceeds the applicable water quality criterion set forth in Finding 51 (0.014 pg/L as TCDD TEQ). Thus there is a reasonable potential that the discharge of dioxins may cause or contribute to violations of water quality standards. Similarly, the sum of PCBs detected in the effluent that is cited above (1,026 pg/L) exceeds the applicable water quality criterion (170 pg/L). Again, there is a reasonable potential that the discharge may cause or contribute to water quality violations. Again, at least parts of the TO<sup>14</sup> wrongly indicate no "Reasonable Potential" for PCBs.

Potrero discharge threats to human health are understated as a result of the TO's incomplete analysis. TO Finding 35 says that dioxins, PCBs and mercury violate Bay water quality standards, but fails to say why this is so. In fact, contamination of Bay fish with dioxins, PCBs and mercury was found to pose disproportionately elevated risks of cancer and developmental neurotoxicity in subsistence anglers and their children. See e.g., Karras, 2001, cited in CBE's 2005 Comments. Mass loading of these pollutants, caused by Potrero's high discharge flow coupled with pollutant concentrations exceeding water quality criteria, indicates cause for concern about human health. The TO fails to articulate this concern.

The TO also fails to evaluate evidence the discharge may be toxic to aquatic life. First it fails to evaluate the chronic toxicity observed in the discharge in light of the potential for toxicity in Bay aquatic life exposed to the inadequately diluted shoreline discharge. Second, combinations of the same toxic pollutants detected in the effluent may cause additive or synergistic toxicity to aquatic life at concentrations below the

<sup>14</sup> Table B of the Fact Sheet and the text of Finding 47 suggest no PCBs "Reasonable Potential." Other parts of the TO appear to contradict this finding but the analysis remains unclear.

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pollutants' respective water quality criteria. Spehar and Fiandt, 1986, appended hereto at Attachment 4. Yet the TO dismisses toxicity concerns for some of these pollutants<sup>15</sup> simply because they were below their chemical-specific water quality criteria.

Further, the TO does not evaluate the potential extent of aquatic toxicity impacts from a possible chlorine spill resulting from a catastrophic dechlorination system failure. This could be done based on the well-known acute toxicity of chlorine to aquatic life and a worst case estimate of habitat vulnerability. By not performing this straightforward screening, the TO again further downplays the toxic discharge threat.

*e. The staff errs in assuming that the cooling water has no contact with process water.* In responses to comments on the 2004 T.O. and in the current T.O., the Regional Board states that the Basin Plan Prohibition 1 refers to discharges of wastewater that have been processed through a treatment plant and does not regulate non-process cooling water. T.O. at 19-20. This characterization implies that the Potrero plant does not cause any pollution with its cooling water; this implication is simply not true.

By ignoring condenser corrosion, storm runoff contamination, shoreline discharge sediment remobilization, and the potential for an acutely toxic chlorine spill, the Regional Board is frustrating the purpose of this discharge prohibition. CBE's 2005 Comments at 42. Prohibition 1 is meant to provide added protection for the Bay regarding any permitting discharge, address cumulative impacts from continuous discharges, and guard against the most severe impacts when there is an upset or other abnormal discharge resulting from an accident. In short, Basin Plan Prohibition 1 is a precautionary measure meant to guard against pollutants being discharged to the Bay.

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<sup>15</sup> Arsenic, cadmium, chromium and lead. See TO Table 3. Spehar and Fiandt measured additive and synergistic toxicity of arsenic, cadmium, chromium, lead, mercury and copper.

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The TO states that "if the [studies ordered for Copper and Mercury] show that these processes do constitute a substantial source of these pollutants to the Bay, the Board may consider imposing an initial 10:1 dilution." Finding 67. By delaying action until studies for Mercury and Copper, two hazardous metals, the Board is turning the Basin Plan from a precautionary law into a reactionary remedy and thus ignoring its purpose. There is no "study exception" to the Basin Plan. The permit issued should require 10:1 dilution without waiting for further study of already-known pollution threats.

C. Basin Plan Prohibition 1's applicability to heated water is not preempted by the State Thermal Plan.

The TO states that the discharge at E-001 at the Potrero plant "complies with the discharge prohibition because it is not wastewater with particular characteristics of concern to beneficial uses." It adds, however, that the cooling water outflow contains minimal characteristics of concern, except for thermal waste.

As discussed below, the TO fails to acknowledge that the Potrero power plant's discharge violates the Thermal Plan. However, even if it complied, the discharge remains heated, heat is a pollutant of concern, and therefore should not be discharged in shallow water in violation of Basin Prohibition 1.

The staff ignores heat under its analysis of the Prohibition by simply assuming that the Thermal Plan preempts Prohibition 1. It states, the "Basin Plan, aside from requiring that the receiving water temperature not be altered if doing so adversely affect beneficial uses, defers its regulation of thermal waste to the State Thermal Plan." Finding 67. That is legally incorrect.

First, nothing in the Basin Plan states that it preempts Prohibition 1. Secondly, the text of the Thermal Plan only explicitly preempts regulations for interstate and coastal

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waters (not enclosed bays like San Francisco Bay). Water Quality Control Plan For Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California, State Water Resources Control Board, Implementation, Para 2, p. 7. Policies for enclosed bays such as San Francisco were thus specifically excluded from this rescission. See definition for "coastal waters" and "enclosed bays." *Id.*, p. 1.

The State Thermal Plan may create a floor for protection of the Bay, but by its terms more stringent requirements may be required. *Id.*, Water Quality Objectives, para. 1, p. 6. Thus the Regional Board has included both the Thermal Plan and Prohibition 1 in its Basin Plan without any language suggesting that one modified the other. In addition, both the Basin Plan and the Thermal Plan have been approved by the State Board and there has been no suggestion by the State Board that the Thermal Plan preempts Basin Plan Prohibition 1.

Further there is indeed no conflict between the two. The Thermal Plan generally addresses routine discharges. Prohibition 1 addresses upsets as well as the cumulative continuous impacts associated with shallow water discharges.

Finally, both in this case achieve the same purposes. As discussed below, the Thermal Plan's proper application to this permit would require the discharge to be relocated, as indeed Prohibition 1 also requires. Therefore the Thermal Plan neither by express language, implication or its application preempts Discharge Prohibition 1.

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COMMENT 27

IV. THE TO FAILS TO PROPERLY ADDRESS THERMAL IMPACTS AND REQUIRE THE ONLY APPROPRIATE MEASURE THAT WOULD ELIMINATE THOSE IMPACTS – ONCE THROUGH COOLING.

The Thermal Plan requires that when cooling water discharges have temperatures higher than the natural temperature of the receiving water, permits impose “limitations necessary to assure protection of beneficial uses.” Thermal Plan, Specific Water Quality Objectives, 4A. “Additional limitations shall be imposed in individual cases if necessary for the protection of specific beneficial uses and areas of special biological significance.” Thermal Plan, General Water Quality Provision 1. Such additional limitations can include limitations on the location of discharge. Thermal Plan, Definition 13. Further:

When additional limitations are established, the extent of surface heat dispersion will be delineated by a calculated 1 1/2°F isotherm which encloses an appropriate dispersion area. The extent of the dispersion area shall be: A. Minimized to achieve dispersion through the vertical water column rather than at the surface or in shallow water.  
General Water Quality Provision 1.

The TO does state that the thermal plan applies at Finding 16. Thermal discharge triggers such additional limitations on the location of the discharge.

The Unit 3 discharge threatens specific beneficial uses of water in critically important Bay habitat. Mirant itself found that the Unit 3 thermal discharge impacts the Bay. Mirant’s consultant identified impacts on animal communities near the discharge and predicted that these impacts would be reversed by abandonment of the shoreline outfall. Attachment 16 to CBE’s 2005 Comments at 5-8, 5-9. Mirant and CEC staff concluded that the thermal discharge is linked to noticeable changes in aquatic plant communities near the discharge. CBE’s 2005 comments at 38-40 and Attachment 17 thereto at 44. CEC staff concluded that the thermal waste may adversely impact the

C-30  
COMMENT. 29

development of herring eggs deposited near the discharge. Id. Among other impacts on herring hatched from these eggs, NMFS found that this could further exacerbate the plant intake's impacts by prolonging the period when larval herring are subject to entrainment. CBE's 2005 comments at 40 and Attachment 7 thereto.

The Department of Fish and Game has reported evidence that the shoreline at Potrero is crucially important spawning habitat for Pacific herring in the Bay. CBE's 2005 Comments at 40. Pacific herring support the Bay's major remaining commercial fishery. Id. The National Marine Fisheries Service ("NMFS") concluded that the "facility, Unit 3, is impacting the ecosystem of the San Francisco Bay due to the ... discharge of heated effluent." Attachment 7 to CBE's 2005 comments at 16.

Thus, substantial evidence including evidence provided by the plant owner and other agencies shows that the Potrero Unit 3 thermal discharge E-001 causes adverse impacts on estuarine habitat and fish spawning and threatens commercial fishing. "Additional limitations shall be imposed" on the discharge because this is "necessary for the protection of specific beneficial uses." Thermal Plan, General Water Quality Provision 1. Further, when these additional limitations are established, "[t]he extent of the dispersion area shall be: A. Minimized to achieve dispersion through the vertical water column rather than at the surface or in shallow water." Id.

However, the shoreline discharge cannot achieve such dispersion. Mirant concluded that the discharge fails to achieve dispersion through the vertical water column rather than at the surface or in shallow water. "The existing Unit 3 surface plume creates an extensive area of surface water and shoreline contact where heated discharge water exceeds the ambient intake water temperature by greater than 4° F." See Cooling Water

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Comment 17 20

System Improvements and Thermal Impacts Evaluation at 16, Mirant, 2001, attached to CBE's 2005 Comments as Attachment 10. Evidence from Mirant and PG&E studies demonstrates this conclusion. See CBE's 2005 comments at 35-38. Therefore, the Thermal Plan requires removal of the discharge from the shoreline.

V. UNTIL THE COOLING WATER DISCHARGE IS REMOVED FROM THE BAY THE TO FAILS TO IMPLEMENT THE FEDERAL REQUIREMENTS FOR A TRUE PCB PROHIBITION OR TO ADDRESS THROUGH A PROPER STUDY THE ACTUAL PCB PROBLEM AT THE SITE.

As the TO states, federal regulations require a PCB prohibition in this permit. 40 CFR 423.13(a). The TO mimics this rule with its language of prohibition at Discharge Prohibition A(3): "There shall be no discharge of polychlorinated biphenyl compounds such as those commonly used for transformer fluid." If the TO had stopped at this point, at least this permit would have been consistent with minimum federal requirements.

However the staff appears to have undermined its prohibition on PCB discharges by inventing a compliance standard and authorizing intake credits that significantly undermines the prohibition. It is bad enough that the staff has chosen to be cute and run around a federal regulation. However the staff repeatedly stated in public and to BVHPCA that the PCB prohibition was being restored by using the language in the federal regulation, without reference to a compliance standard, betraying the affected community and undermining this agency's credibility.

A. Intake Credits are inappropriate where the intake mobilizes chemicals from nearby sediment.

In the TO at section #5(b), addressing toxic substances effluent limitations, the TO states as to PCBs: "The discharge of Polychlorinated Biphenyl compounds (PCBs) at concentrations greater than intake concentrations is prohibited." The language is very

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different than the previously stated discharge prohibition. Which applies, the prohibition or the effluent limitation? The TO is confusing if not intentionally misleading. The staff only explains that the facility is entitled to use an "Intake Water Credit" pursuant to the State Board's SIP.

As discussed above and in prior comments, the cooling system intake mobilizes pollutants from sediment, sucks these pollutants into the facility's intake, and discharges these pollutants into the Bay. See attachments 2 and 3. The PCB data report documents PCBs in both intake I-001 and outfall E-001, and provides further evidence of unusual remobilization effects in the near-shore areas adjacent to the plant. Thus, in addition to likely land-based sources to the discharge, the facility pollutes its discharge by polluting its intake with its past sediment pollution.

In these circumstances, the SIP does not allow intake credits as indeed the cooling system is causing the release of these chemicals. Intake credits are only allowed if certain conditions are demonstrated. One such condition is that the "facility does not alter the intake water pollutant chemically or physically in a manner that adversely affects water quality and beneficial uses." SIP at §1.4.4 (4). Another such condition is that 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." SIP at §1.4.4 (5). These conditions are not met.

B. PCB Compliance evaluation is a recipe for permitting violations of the discharge prohibition for years to come.

The TO's seemingly most aggressive trick comes with its definition of compliance with the PCB prohibition. Under section 5(b)(3) of the toxic substances effluent limits, the TO states that compliance shall be evaluated by comparing effluent

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samples using a 12-sample moving average of the pollutant concentrations in the intake water samples. Intake samples are taken the same day as the effluent samples.

How often is this sampling conducted? According to the Self Monitoring Program at Table 1, attached to the TO, sampling is to occur as specified in Table 1 of the August 6, 2001, letter referenced in the TO. That letter specifies that PCBs are to be sampled once in the summer and once in the winter.

Amazingly, the impact of the compliance section would be that until there is a moving average of 12 samples, which would take 6 years to achieve, there is no basis for compliance with the discharge prohibition. The TO in effect appears to have exempted the discharger from any compliance with the prohibition for one year longer than the actual 5 year permit and yet, claims this complies with federal law requiring a prohibition on discharge.

If the TO indeed is attempting to nullify a federal required prohibition by making it impossible to enforce, it is preempted by federal law because it frustrates its application in this case. It is also a violation of the federal Clean Water Act's prohibition on backsliding for all of the reasons discussed in BVHPCA 2004 comments, as it replaces a real prohibition with a phony. If it is a mistake, then the TO needs to be modified to clarify its requirements, and if CBE and BVHPCA have misinterpreted it, the staff should state clearly exactly how it can evaluate compliance within the term of the permit because it is not clear.<sup>16</sup>

C. The PCB study needs to be refined as the study description is too vague.

BVHPCA presented in its prior comments and correspondence evidence that PCBs contaminate the Potrero plant site and that these pollutants may be washed by

C-32.

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C-33.  
C-34.

storm water into the effluent. In recognition of this evidence, the Regional Board's Tentative Permit for the Potrero Power Plant calls for a PCB storm water study and schedule. Section D(8) of the Tentative Order is vague and ambiguous. It states in whole:

The Discharger shall conduct a Polychlorinated Biphenyl (PCB) Stormwater Study to determine if there is compliance with the prohibition on PCB discharges. Oils containing PCBs were historically used at the facility, and PCB-contaminated soil has been detected and may be in storm drain sediments that could be discharged to the Bay. A work plan was submitted to the Water Board on February 1, 2006. The study shall be completed no later than May 1, 2007 with quarterly progress reports submitted within the self-monitoring reports

Section 8. SFBRWQCB Tentative Order (2006) Pg. 28.

The tentative order calls for a stormwater sediment study of PCBs without adequately articulating what is to be studied. CBE and BVHCA object to this ambiguity on the grounds that the Section D(8) study seems to be limited in scope to the stormwater system, yet the PCB discharge prohibition contained in section A(3) of the TO is not limited to the stormwater system but applies to all discharges to the Bay.

Mirant, pursuant to a letter from the California Regional Water Quality Control Board, San Francisco Region, and State Water Code § 13267 has submitted a "work plan" which focuses on the stormwater drainage system and outfall E-003. Mirant's work plan fails to adequately articulate or define an appropriate scope of the PCB study in compliance with Section A(3). The plan fails to address all possible sources of PCB contamination, and the TO fails to specify requirements that address all potential sources.

First, Mirant and the TO assume that the area in which historic PCB contamination occurred has been paved over, thus preventing migration of PCBs into stormwater. BVHPCA have presented evidence that significant PCB sites were a few

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<sup>16</sup> See footnote 5 above.

C-33

years ago not paved over in the drainage area leading to the cooling system. There is no evidence that Regional Board staff have inspected these sites or obtained photographic evidence that sites that were once not paved over are now paved over. This issue needs to be resolved. An unsworn denial by Mirant is insufficient to rebut this evidence.

Secondly, in order to determine to what extent land or bay sources of PCB are in the influent, the Board should redraft section D(8) to require Mirant to conduct a PCB sediment sample study of the near shore area along the entire length of the Potrero Power Plant shoreline to study the effects of PCB remobilization effectuated by outfall E-001. (See the proposed permit attached to BVHPCA's and CBE's December 6, 2005 letter.) By doing so, the study can measure the PCBs re-mobilized from sediment by the cooling system, and distinguish the contribution from this source from any contribution of PCBs from potential soil contamination and runoff sources.

Further, there are no specifics about the land-based study. BVHPCA and CBE are aware the staff sent out a letter requesting a study, however that letter and any promise to study is unenforceable by the public. Its specific terms should be incorporated into the permit as a minimum. It is also unlikely that the staff, whose inability to review studies is documented in reports presented to the Board earlier this year and online at its website, have actually reviewed seriously the studies proposed by the dischargers. As Lila Tang, the supervisor handling the TO, stated in January in her report to the Board:

[W]e have often deferred review and comment on study proposals and reports. To avoid being a regulatory bottleneck, we will start allowing the permittee to proceed with any necessary studies if we do not comment within a set timeframe. We believe this is an acceptable approach so long as the permit provisions are clearly spelled out, which we endeavor to do. (Emphasis added). See <http://www.waterboards.ca.gov/sanfranciscobay/Agenda/01-11-06/1-11-06-9ssr.doc>.

C-33

The TO's provisions are not clearly spelled out, to use the words of the staff. It is critical that sediment in all relevant storm drains be tested before the first rains, before these drains are cleaned, and later, as sediment build up again during the rainy season. In this way, it can be determined if PCBs continue to be mobilized from the facility's soils before they go into the Bay.

Finally, the TO should clearly require specific steps to be taken for compliance with the PCB discharge prohibition. These steps should include analysis of each source the PCBs found in the discharge, the isolation of that source from stormwater, and ultimately, remediation of any source of contamination by a date certain. These steps should be required for known sediment re-mobilization of PCBs now, and should be required if and when any additional source of PCB discharge, such as runoff scouring of contaminated soil, is identified. None of these requirements are in the permit.

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COMMENT 12

VI. CONCLUSION


The TO seeks to avoid the one remedy, upland cooling, that will address the real environmental impacts of this facility. It does so by violating federal, state and regional laws. It ignores entrainment, toxic and thermal impacts and refuses to make a reasonable effort to identify technology available to minimize impacts while upland cooling is designed and implemented. The TO deceptively seems to allow continued discharges of PCBs into the Bay in violation of federal law and staff's promises to the local community.

BVHPCA and CBE urge the staff to rewrite the TO and protect the Bay. They urge the staff to give fair consideration to the proposed permit offered by the City, BVHPCA and CBE and finally address the environmental impacts of this facility.

Dated: March 20, 2006

Golden Gate University School of Law  
Environmental Law and Justice Clinic  
Alan Ramo, Attorney  
Jake Lubarsky, Certified Law Student  
Nate Worthington, Certified Law Student  
James Minor, Certified Law Student  
On behalf of Bayview Hunters Point Community  
Advocates and Communities for a Better  
Environment

Shana Lazerow, Attorney  
Greg Karras, Senior Scientist  
Communities for a Better Environment

  
\_\_\_\_\_

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## List of Attachments

Attachment 1. Analysis of Potrero Unit 3 entrainment impact evidence. Communities for a Better Environment (CBE). March 2006.

### APPENDICES THERETO:

Appendix i. Mirant, 2005. 316(b) Entrainment Characterization Report for Potrero Unit 3, March 2005; and 2001-2002 Entrainment Source Water Data used to Prepare the 316(b) Entrainment Characterization Report for Potrero Unit 3. Two documents submitted in March and July, 2005, by Mirant Potrero LLC. Prepared by TENERA.

Appendix ii. Raimondi, 2005. Review of Mirant-Potrero 316B Determination. September 2, 2005 draft report to the Water Quality Control Board, San Francisco Bay Region.

Attachment 2. Supplemental Technical Comments of Advocates and CBE. Originally submitted January 2005. Resubmitted March 2006.

### ATTACHMENTS THERETO:

Exhibit A. Regional Board 1974 Internal Memorandum  
Exhibit B. Regional Board 1986 Internal Memoranda  
Exhibit C. State Board Order WQ 86-4  
Exhibit D. State Board Order WQ 90-5 and Final Staff Report  
Exhibit E. Regional Board Correspondence Documents  
Exhibit F. 2001 Tentative Order and Fact Sheet, Permit CA0005657

Attachment 3. Low Level PCB Analysis Required Under 13267 Letter. Mirant Potrero LLC. Results of analysis. March 23, 2005.

Attachment 4. Spehar and Fiandt, 1986. Acute and Chronic Effects of Water Quality Criteria-based Metal Mixtures on Three Aquatic Species. Environmental Toxicology and Chemistry, Vol. 5 pp. 917-931.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
 REGION IX  
 75 Hawthorne Street  
 San Francisco, CA 94105-3901

CALIFORNIA REGIONAL WATER  
 MAR 29 2008  
 QUALITY CONTROL BOARD

MAR 21 2008

✓ Lila Tang, Chief  
 NPDES Permits Division  
 California Regional Water Quality Control Board  
 San Francisco Bay Region  
 1515 Clay Street, Suite 1400  
 Oakland, CA 94612

Dear Ms. Tang:

Thank you for the opportunity to comment on the tentative order for the proposed NPDES permit reissuance for the Mirant Potrero Power Plant (permit number CA0005657). EPA appreciates Regional Water Board staff efforts to update and reissue this permit. The purpose of this letter is to present EPA's comments on the draft permit for your consideration.

In the recent discussions between EPA and the Regional Board regarding NPDES backlog reduction, the Regional Board has recognized that timely reissuances necessitate that permits with unresolved policy issues be taken before the Board for the purpose of decision making. EPA supports Regional Board staff efforts to bring forward a Potrero permit at this time; the permit expired in 1999, and it has not been possible for Regional Board staff to bring an uncontested permit before the Board.

In order to facilitate this permit reissuance, we recommend that Board staff present Board members with several feasible policy options. While the 316(b) phase II rule does contain specific performance standards and study requirements, the CWA 316(b) requirement has been implemented through best professional judgement in NPDES permits for decades. The Board may determine that implementation of 316(b) warrants additional measures to minimize adverse impacts prior to completion of the comprehensive demonstration study (e.g., variable frequency pumps, cooling towers). Although the 316(b) Phase II rule represents the minimum Federal requirements under the CWA, the Board may wish to impose requirements beyond those included in the 316(b) rule.

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 E-1  
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The language in the permit (finding 20) and the fact sheet (page 7) describing the 316(b) Phase II regulations, while not technically incorrect, is somewhat misleading. The opening statement of the preamble of the final Phase II 316(b) rule characterizes the rule as implementing section 316(b) of the Clean Water Act (CWA). The purpose of the rule is not to provide new, more stringent requirements, but to implement the existing requirements of the CWA. We recommend changing the permit language (finding 20) and the fact sheet to include narrative similar to the following.

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 Editorial  
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"Section 316(b) of the CWA requires 'the location, design, construction, and capacity of cooling water intake structures reflect the best technology available for minimizing adverse environmental impact.' On July 23, 2004, EPA promulgated a new rule implementing section 316(b) of the Clean Water Act (CWA) for certain existing power producing facilities. This rule, commonly referred to as "316(b) Phase II," requires existing dischargers of a certain size to adopt new technologies to reduce impingement mortality and entrainment to within a targeted range, or demonstrate a reasonable alternative for compliance."

EDITORIAL

Findings 48 and 49 appear to need editing. Table 3 in finding 49 shows the reasonable potential (RP) analysis showing RP for mercury, copper, and PCBs. This is not consistent with the narrative in findings 48 and 49. Please proofread the narrative and make edits as necessary.

EDITORIAL

Section 5(b) of the permit provisions (page 24) prohibits the discharge of PCBs at concentrations greater than the intake concentrations. Part (3) of that section specifies that compliance shall be determined using a 12 sample moving average. However, it is unclear how often samples will be collected. If a 12-sample moving average is to be used, enough samples should be taken to determine compliance within a reasonable timeframe, for example, sampling on a monthly basis may be appropriate.

E-2

Page 15 of the fact sheet shows copper as a basin plan objective. This is incorrect, as the objective used in this permit is the saltwater copper number, a CTR number. Please change Table C of the fact sheet to reflect this correction.

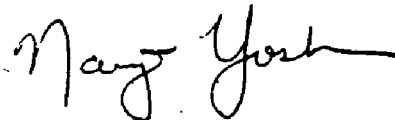
EDITORIAL

Regardless of the final decisions regarding requirements for this permit, we look forward to the submittal of the comprehensive demonstration study in November 2007. We anticipate that Regional Board staff will solicit public input at that time, and EPA hopes to be involved and to provide technical assistance as needed. Depending on the requirements of the final permit and the results of the comprehensive demonstration study, we recognize it may be necessary to reopen the permit in late 2007 or early 2008.

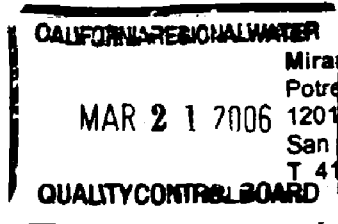
E-3

Thank you for your consideration of these comments. If you have any questions, please contact me at (415) 972-3535.

Sincerely,



Nancy Yoshikawa  
Environmental Scientist



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Potrero Power Plant  
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March 20, 2006



Mr. Derek Whitworth  
San Francisco Bay Regional Water Quality Control Board  
1515 Clay Street, Suite 1400  
Oakland, California 94612

**Subject: Comments on Tentative Order  
NPDES Permit No. CA0005657  
Potrero Power Plant**

Dear Mr. Whitworth:

With this letter, Mirant Potrero, LLC, provides its comments to the February 15, 2006 Tentative Order and Fact Sheet for the Potrero Power Plant issued by the Regional Water Quality Control Board ("Regional Board" or "RWQCB"). This submittal includes the following attachments: 1) Summary Table of Comments on Tentative Order and Fact Sheet; 2) Redline Tentative Order; 3) Redline Fact Sheet; 4) Updated State Implementation Plan ("SIP") data through January 2006; 5) Updated ambient background data; 6) Updated Reasonable Potential Analysis for selected constituents; and 7) Technical Memorandum from ERM-West, Inc. ("ERM") regarding Statistical Variation/Intake Credits. Most of the editorial comments on the attached redlines and summary comment tables are self-explanatory. Some of Mirant's comments require more elaboration, as follows:

**Comment 1: Use Current Data**

The draft Tentative Order is based on data from June 2002 through April 2004. Mirant believes the final permit should be based on the most current data available; therefore, Mirant recommends that the intake and effluent characterization data, the ambient water quality data and the Reasonable Potential Analysis be updated to use the most recent data collected. Attachment 4 updates the Mirant monitoring data collected under the SIP program through January 2006. Attachment 5 is a complete summary of all current data representing the ambient background data collected at the Yerba Buena station by the San Francisco Estuary Institute. In addition, Attachment 6 provides an update to the Reasonable Potential Analysis.

M-1  
COMMENT 1

**Comment 2: Update the Reasonable Potential Analysis**

**1. Adjust Analysis to Assess Outfall Data Relative to the Intake**

As the first step to the Reasonable Potential Analysis, Mirant asks that the Regional Board assess any Outfall (effluent) data relative to corresponding levels at the Intake to account for high constituent levels in the Intake. Without this analysis, the Outfall data are not representative of the *facility's* contribution of pollutants to the Bay and are irrelevant to the question of whether the *facility* has the reasonable potential to cause or contribute to an exceedance of a water quality objective. The Outfall data must be adjusted by deducting corresponding Intake data to determine the net *addition* of pollutants, if any, by the facility, before undertaking the remainder of the Reasonable Potential Analysis. If particular Outfall data do not have corresponding Intake sample data, and other data show that Outfall data are not representative of the facility's "performance," that Outfall data should be disregarded.

The Federal NPDES program regulates the "discharge of pollutants" by point sources to navigable waters. Clean Water Act ("CWA") § 402, 33 USC § 1311. The CWA defines "discharge" as the "*addition* of any pollutant to navigable waters." CWA §502(12), 33 U.S.C. § 1362(12) (emphasis added). The Porter-Cologne Water Quality Control Act ("Porter-Cologne"), like the CWA, regulates the "*discharge* of waste." Water Code § 13263. In fact, Porter-Cologne expressly incorporates the CWA's definition of "discharge" for NPDES permitting purposes. Water Code § 13373. (The terms "discharge" and "point source" as used in chapter 5.5 of the Porter-Cologne Act shall have the same meaning as in the federal Clean Water Act ("CWA")). Thus, under both federal and state law, it is the *addition* of pollutants to water that is regulated.

Under the CWA, Water Quality Based Effluent Limitations ("WQBELs") are required when the discharge (*i.e.*, the *addition* of pollutants), "will cause, or have the reasonable potential to cause, or contribute to an excursion above any State water quality standard." 40 CFR 122.44 (d)(1)(i). Effluent limits are not required if there is no "reasonable potential." *In the Matter of Los Coyotes and Long Beach Reclamation Plants*, SWRCB WQO 2002-012 at 16. *See also, In the Matter of Napa Sanitation District*, SWRCB WQO 2001-16, at 50-51 (effluent limits are improper if there is no basis for finding reasonable potential).

The purpose of the Reasonable Potential Analysis is expressly incorporated into the SIP: "The RWQCB shall use all available, valid, relevant, representative information, as described in section 1.2, to determine *whether a discharge may: (1) cause, (2) have a reasonable potential to cause, or (3) contribute to an excursion above any applicable priority pollutant criterion or objective.*" SIP, section 1.3 (emphasis added). Thus, the pertinent inquiry under the CWA and Porter-Cologne is whether the facility's *addition* of pollutants has the reasonable potential to cause or contribute to an exceedance.<sup>1</sup>

<sup>1</sup> The Regional Board's attention is drawn to the Court of Appeal's decision in the Tosco/Ultramar/Tesoro permitting process that began several years ago before this Board. That appellate decision upheld this Board's decision to not hold the refinery "responsible" for dioxins that entered the facility's outfall as a result of general air deposition into an open trans-refinery canal as opposed to arising from refinery operations. As the court noted, "The Refinery's wastewater thus became a 'conveyance[]' of dioxins

M-2  
COMMENT 22

While performing a Reasonable Potential Analysis based solely on effluent data may be appropriate in most situations, evaluating the "reasonable potential" for once-through cooling water presents a special situation. "Effluent" data derived solely from sampling at an outfall (i.e., do not take into account constituent levels at the intake structure) and do not accurately reflect the facility's *addition* of pollutants to the receiving water. Outfall data, standing alone, is not representative of the facility's "discharge" (i.e., its *addition* of pollutants) and therefore are not relevant to the purpose of the Reasonable Potential Analysis. Outfall concentration data must be "corrected" or adjusted by deducting the concentration of the constituent in corresponding intake samples. It is these adjusted sampling data that provide the information that is relevant to the Reasonable Potential inquiry: does the facility "discharge" (*add*) pollutants to the once-through cooling water that have the reasonable potential to cause or contribute to an exceedance of a water quality objective?

This approach is consistent with the SIP. First, as noted above, the SIP directs the Regional Board to use, "all available, valid, *relevant, representative* information, as described in section 1.2" when performing the Reasonable Potential analysis. SIP, section 1.3 (emphasis added). Section 1.2 specifically gives the Regional Board, "discretion to consider if any data are inappropriate or insufficient for use in implementing this Policy." SIP, section 1.2. Adjusting the outfall data to reflect corresponding intake concentrations is consistent with the SIP and is necessary to make the SIP conform with the CWA's definition of "discharge." Regulations must be interpreted and implemented consistent with their authorizing statutory underpinnings. *Yamaha Corp. of America v. State Bd. of Equalization*, (1998) 19 Cal. 4th 1, 16 (J. Mosk, concurring) ("no regulation adopted is valid or effective unless consistent and not in conflict with the statute.")

Consistent with the CWA and Porter-Cologne, the Reasonable Potential Analysis must be performed on data that is relevant and representative to the question of whether the facility is reasonably likely to add pollutants that may cause or contribute to an exceedance of water quality objectives. Simply passing pre-existing pollutants through the once-through cooling water tunnel of the facility does not constitute an addition of pollutants to the Bay.

Mirant recognizes that for some of the existing Outfall data there is no corresponding Intake data. The SIP recognizes that, after adjusting a data set as required by Section 1.2, data may be insufficient to perform the Reasonable Potential Analysis. See SIP, section 1.3, "Step 8." In this case, the Regional Board is directed to "require additional monitoring for the pollutant in place of a water quality based effluent limitation."

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... from other sources." *Communities for a Better Environment v. State Water Resources Control Board*, (2003) 109 Cal. App. 4th 1089, 1099. Similarly, Mirant's once-through cooling water tunnel is simply a "conveyance" of pollutants that already exist in the Bay, returning them to back to exactly the same water body.

M-2  
COMMENT 23

In conclusion, Mirant urges the Regional Board to use its discretion under the SIP to find that the only constituent in the discharge with a reasonable potential to cause or contribute to an excursion above any applicable WQO/WQC is copper. Pursuant to the SIP, the Regional Board "shall use all available, valid, relevant, representative information . . ." to determine whether a discharge will have such reasonable potential. The Tentative Order currently includes findings that the constituents mercury and PCBs also trigger the Reasonable Potential Analysis. However, an analysis of the intake data is relevant to the Reasonable Potential Analysis. As discussed above, when paired intake/effluent data sets are analyzed, the maximum effluent concentrations that exceed the applicable WQO/WQC in the current Reasonable Potential Analysis correspond to similarly heightened intake concentrations. This comparison demonstrates that the facility itself does not contribute mercury and PCBs, or any other constituent, to the discharge, and that these values reflect the content of the water withdrawn from the Bay. For mercury, dioxins, and PCBs (see Comment 3 below for further discussion of PCBs), heightened intake levels likely reflect higher near-shore sediment concentrations that will generally be higher than those at Yerba Buena.

**2. Revise Reasonable Potential Analysis to Reflect Accurate, Updated Data**

Mirant has updated the analysis included in the Reasonable Potential Analysis spreadsheets prepared by the Regional Board. The selected constituents discussed below are those for which the Regional Board found a reasonable potential to contribute to an excursion above applicable limits, or those for which the updated data altered the Reasonable Potential Analysis.

**a. Copper**

Pursuant to the SIP, the Regional Board "shall use all available, valid, relevant, representative information..." Mirant reanalyzed the reasonable potential and interim effluent limitation using the current data for copper in Attachments 4 and 5. As a result of the updated data, new maximum concentration values for the ambient background, 2.549 µg/L from February 8, 2001, and effluent, 32.8 µg/L from November 3, 2004, were entered into the Reasonable Potential Analysis. The Reasonable Potential Analysis in the Tentative Order and the Fact Sheet previously showed maximum concentrations of 7.17 and 2.45 µg/L, respectively. Consequently, Mirant has recalculated the interim effluent limitation for copper. Mirant recommends the Regional Board adopt this new interim effluent limitation of 24.3 µg/L.

**b. Mercury**

As discussed above, Mirant believes that the mercury should not trigger the Reasonable Potential Analysis, based on an analysis of paired intake and outfall data. If the Regional Board nonetheless finds that mercury triggers the Reasonable Potential Analysis, Mirant requests that the interim performance-based limits for mercury be updated to reflect updated data, as follows.

M-3  
COMMENT. 23

M-4  
COMMENT. 24

The Tentative Order and Fact Sheet state interim effluent limitations are required for mercury since Mirant has demonstrated and the Regional Board verified that the final effluent limitations calculated according to SIP will be infeasible to meet. The Regional Board calculated an IPBL of 0.056 µg/L based on effluent concentrations from mid-2002 through mid-2004 ranging from 0.00303 to 0.0505 µg/L (14 samples). However, Mirant recalculated the interim effluent limitation for mercury with the updated data in Attachment 4. Based on 34 samples and updated data for mercury through January 2006, a new interim effluent of 0.035 µg/L was calculated. Mirant recommends the Regional Board adopt this latest interim effluent limitation.

M-4  
COMMENT 27,

**c. Dioxins (2,3,7,8-TCDD and 2,3,7,8-TCDD TEQ)**

As presently written, the Tentative Order finds there is no Reasonable Potential for either 2,3,7,8-TCDD or 2,3,7,8-TCDD TEQ, based primarily on the fact that neither 2,3,7,8-TCDD nor dioxin congeners resulting in a TEQ for 2,3,7,8-TCDD were detected at the Outfall. Using the more recent monitoring data, this conclusion remains unchanged for 2,3,7,8-TCDD. Dioxin 2,3,7,8-TCDD remains undetected at the facility outfall, and there is no Reasonable Potential for 2,3,7,8-TCDD under the SIP.

Dioxin 2,3,7,8-TCDD TEQ ("dioxin TEQ") presents a slightly different situation. There is no "Dioxin TEQ" criteria established in the CTR. Instead, the Regional Board has traditionally relied on the Basin Plan's narrative toxicity objective establish a numeric Water Quality Objective for dioxin TEQ of  $1.4 \times 10^{-8}$  µg/L.<sup>2</sup>

Previously, all dioxin congeners were non-detect, so there was no dioxin TEQ. The most recent data, however, does contain some detections of various congeners. All are near or below the quantification limit for the analysis, however, so the calculated "TEQ" is a rough estimate, at best. Moreover, for all samples with intake/outfall pairs, the intake TEQ is calculated as higher than the outfall TEQ, suggesting that the facility is not, in fact, adding dioxins to the water. This is consistent with other information, since there are no sources of dioxins in the facility. Mirant recommends that, based on the fact that calculated dioxin TEQ at the outfall is less than dioxin TEQ at the intake, and the net result is well below any quantification limit, these results should be treated as "non-detects" for purposes of the Reasonable Potential Analysis.<sup>3</sup>

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<sup>2</sup> Since there is no adopted federal Water Quality Standard for dioxin TEQ, the Regional Board is required to undertake a Water Code § 13421 analysis, including an evaluation of economic considerations, before establishing a numeric Water Quality Objective for dioxin TEQ. In addition, under section 13263, this analysis must be performed at the permitting stage as well. See *City of Burbank, et al., v. State Water Resources Control Board* (2005) 35 Cal. 4th 613; 108 P.3d 862, (Regional Board must perform a § 13241/13263 analysis when imposing effluent limits more stringent than mandated by federal law). Mirant reserves the right to challenge the imposition of effluent limits based on numeric dioxin TEQ WQO of 0.00000017 µg/L, since the Regional Board has conducted no section 13241/13263 analysis, either at the time it first adopted this *de facto* water quality objective, nor in the process of issuing this permit.

<sup>3</sup> There is one sample result with a "TEQ" detection at the outfall, May 5, 2004, for which there is no corresponding intake sample. Based on subsequent paired sample results, and the lack of any dioxin source in the facility, however, the Regional Board should conclude that this "detection" is most likely the result of elevated intake levels, as well. The Regional Board should disregard this datum as not representative for purposes of the Reasonable Potential Analysis. (SIP, section 1.2 and 1.3)

The SIP includes special provisions for dioxin TEQ. (SIP, section 3). These provisions require each permit holder to collect samples over a three year period, at which time "the SWRCB and the RWQCB will assess the data (a total of six samples each from major POTWs and industrial discharger, and a total of two samples each from minor POTWs and industrial dischargers), and determine whether further monitoring is necessary." *Id.* Mirant has now collected at least six sets of data pairs, all of which are either non-detect for dioxin TEQ or calculate a higher TEQs at the intake than at the outfall. A TMDL for dioxins and furans is scheduled to be completed and final limits, if any, will be established by that TMDL. Mirant suggests that the available data does not support the establishment of either an interim or final effluent limit for dioxin TEQ at this time (nor is there sufficient data to calculate either an interim or final limit). Moreover, in light of the existing monitoring results, no further monitoring at this or other individual facilities should be required until the Regional Board assesses all available monitoring results and concludes that a comprehensive, Bay-wide monitoring plan is appropriate and necessary for TMDL development of the dioxin TMDL.

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**Comment 3: Revise PCB Reasonable Potential Analysis and Proposed Compliance Methodology**

**1. Reconsider PCB Reasonable Potential Analysis**

The current Tentative Order finds reasonable potential for PCBs under both SIP "Trigger 1" (effluent MEC exceeds WQO) and SIP "Trigger 2" (ambient exceeds WQO and constituent detected in effluent). Mirant requests the Regional Board review the report submitted on March 23, 2005 and the information below and reconsider its Reasonable Potential Analysis. The Low-Level PCB analysis results do not support a conclusion that the once-through cooling water is a source of PCBs, and there is no "other information" that would suggest a WQBEL is required. Mirant has performed the 13267 sampling required to support development of a PCB TMDL and is already conducting an additional monitoring study looking for possible PCBs in stormwater sediments. These activities, combined with the preparation of the PCB TMDL (TO, Findings 36-38), are sufficient to comply with the SIP.<sup>4</sup>

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COMMENT 11

Low level PCB data was collected on two occasions, January 11 and January 13, 2005. Analysis was performed for two hundred and nine (209) PCB congeners. All but six congeners were non-detect. The results for these six congeners were reported as follows:

<sup>4</sup> See *Communities for a Better Environment v. State Water Resources Control Board*, (2003) 109 Cal. App. 4th 1089, 1106 (effluent limitations need not be numeric).

Table 1. Low-Level PCB Sample Results: Mirant Potrero - Intake and Outfall

Parameter	Units	Detection Limit	Sample Date January 11, 2005				Sample Date January 13, 2005			
			Intake		Outfall E-001		Intake		Outfall E-001	
			Results		Results		Results		Results	
PCB 105	pg/L	20	ND		32	C, B	41	C, B	31	C, B
PCB 118	pg/L	20	32	C, B	54	C, B	42	C, B	34	C, B
PCB 138	pg/L	200	ND		260	C	ND		ND	
PCB 149	pg/L	200	ND		220	C	ND		ND	
PCB 170	pg/L	20	97	C	150	C	79	C	67	C
PCB 180	pg/L	20	200		310		100		93	
Notes:										
B Method blank contamination.										
C Co-eluting isomer										
ND Non Detect										

Of the six that were detected, all but two results (PCB-138 and PCB-149 on January 11) are either associated with method blank contamination or are found at similar levels in both the Intake and Outfall. On only one of the two sample events (January 11) did the laboratory analysis result in a higher value at the Outfall than at the Intake. All detections on January 13 were lower at the Outfall than at the Intake. The differences between Intake and Outfall results on January 11 are most likely attributable to the very low level of detection, random variability in laboratory analytical results (see discussion below), and the lack of representativeness of the Intake sample compared to the thoroughly mixed Outfall sample.

The results for both PCB-138 and PCB-149 were reported at levels minimally above the detection limit of 200 pg/L (260 and 220, respectively) and were reported on only one of the sample dates. This is consistent with the expected random variability of laboratory analysis discussed above. In addition, both of these congeners, along with PCB-170, were qualified in the report as "co-eluting isomers". According to the laboratory, the sample method (EPA14-1668) measures 209 isomers and since there are not 209 individual known isomers, some of the isomers are co-eluting. When two or more isomers elute off of the column at the same retention time, the laboratory conservatively reports the results for all of these isomers combined. Thus, the results for PCB-138, PCB-149 and PCB-170 are likely over-reported. With regard to the January 11 PCB-180 measurement, this may well be the result of incomplete mixing at the intake structure resulting in a non-representative sample being taken at that point. Mirant's intake structure is near-shore and is influenced by wind, wave and storm action. These actions can stir up sediments, resulting in a non-uniform water column at the intake structure. Stormwater runoff from other locations around the Bay can also suspend sediments at the Intake structure. As the Tentative Order notes, PCBs are hydrophobic and tend to be associated with sediments. Since the sampling method was to take a grab sample from just one spatial location in the intake structure, it is likely that spatial variations in the suspended sediments at the intake structure will come into play at the

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very low levels being analyzed. Mirant is proposing to address this variability by evaluating the feasibility of relocating its sampling point to a location in the intake where full mixing is more likely to be complete (see Comment 4, below).<sup>5</sup>

As the Tentative Order notes, there are no sources of PCBs likely to be contributed to the once-through cooling water. (TO, Findings, page 15, paragraph 52, "Trigger 3: (Other information)") There are no transformers or other equipment containing PCBs currently in the facility. PCBs have been characterized in soil, but the site is paved in the locations where PCBs have been found. Furthermore, PCBs have not been detected in groundwater. Mirant is conducting a PCB stormwater study to determine whether the facility is potentially discharging PCBs above ambient levels.

When all available information is considered, the Low-Level PCB sample results do not support the conclusion that the facility is adding PCBs to the water. At the very least, Mirant suggests that "Step 8" of Section 1.3 of the SIP applies because there is inadequate data to establish an actual contribution of PCBs by the facility or to establish appropriate numeric effluent limitations, either interim or final.

## 2. **Revise Compliance Methodology to Account for Random Variability**

Mirant is concerned that high levels of constituents at its Intake could result in violations of effluent limitations applied at the Outfall, even though Mirant's facilities have not added any of the constituent of concern to the once-through cooling water. Mirant has suggested that allowing "intake credits," as authorized by the SIP (Section 1.4.4) would be an appropriate way to avoid creating a permit that would be violated any time the concentrations exceed the WQO at the Intake. Mirant appreciates the Regional Board's granting of "intake credits" for PCBs (Discharge Prohibition, Provision B.5.b: "The discharge of Polychlorinated Biphenyl compounds (PCBs) at concentrations greater than intake concentrations is prohibited.")

Mirant has additional concerns, however, with respect to the methodology for compliance with the PCB discharge prohibition and the calculation of intake credits. Laboratory analytical results are subject to normal random variability. As a result, two analyses of exactly the same sample will yield two slightly different values, through no fault or inattention of the laboratory, but simply due to this normal analytical variability. As noted in the attached Technical Memorandum:

Laboratory analytical procedures designed to measure the level (e.g., concentration) of constituents in fact produce only a numeric approximation of the level actually present. No matter how precise this measurement is, it is subject to random fluctuation or variation, so that two identical samples may

<sup>5</sup> It should also be noted that to be consistent with other constituents, the "ambient" value considered for "Trigger 2" should be PCB data from the Yerba Buena monitoring station, not the Intake value. The Yerba Buena data should be used as the ambient value in the Reasonable Potential Analysis, in which case the "background" does not exceed the WQO and there is no Reasonable Potential under Trigger 2.

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result in two measurements that are numerically close, but not necessarily numerically identical. This phenomenon is reflected in the "margin of error" associated with particular analytical procedure.  
(See Attachment 7)

As the attached Technical Memorandum shows, the consequence of these small differences is significant, when one is subtracted from the other and compared to "zero" (the standard in the current Tentative Order). Even though the concentrations of constituents at the intake and the outfall are identical, laboratory analyses will show that the intake value is slightly higher than the outfall value approximately half the time (no "violation"), and will show the outfall value as slightly higher the other half of the time (a "violation"). In other words, approximately half the time Mirant is likely to violate a standard that prohibits an outfall analytical value that is greater than the intake analytical value.

Recognizing this concern, the Regional Board has proposed comparing the outfall value to a 12-sample moving average of the intake value for determining compliance. (TO Provision B.5.b.3). Unfortunately, the method proposed by the Regional Board does not correct the problem. As again demonstrated in the Technical Memorandum, even without the effect of random laboratory variability, the "12-sample moving average" method will result in "violations" approximately half the time. Comparing moving averages of both the intake and the outfall does not solve the problem of random analytical variability. It will require a statistical analysis of the actual data to determine whether an apparent increase at the outfall is real or just an artifact of laboratory variability.

The Regional Board has addressed this issue in the past by delegating to the Executive Officer the task of determining whether an exceedance of the standard is a violation. (See Order R2-2002-0072 (Mirant Pittsburg NPDES Permit, at footnote 1(a) to Table on page 23). Mirant suggests a similar approach here, by replacing Provision B.5.b.3 with the following:

(3) Compliance Evaluation: Compliance shall be evaluated by comparing the sample result from the outfall to the result of the sample taken from the intake on the same day. If the outfall monitoring sample's analytical results indicate that the pollutant concentration is greater than the sample's analytical results at the intake then the discharge is not in compliance, unless the discharger demonstrates to the satisfaction of the Executive Officer that the difference is within the expected statistical variability of sampling and there is no substantial evidence the discharger's operations have added the pollutant to the effluent. [See Redline Tentative Order and Summary Table]

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**Comment 4: Revise Finding 67 (Basin Discharge Prohibition 1)**

**1. Suggested Language**

Mirant suggests replacing current Finding 67 (Basin Discharge Prohibition 1) with the following language:

The Basin Plan (Table 4-1, Item 1) prohibits the discharge of any wastewater that has particular characteristics of concern to beneficial uses at any point at which the wastewater does not receive an initial dilution of at least 10:1. This discharge prohibition does not apply to this permit because it is not a wastewater with particular characteristics of concern to beneficial uses, nor is it a discharge to "non-tidal waters, dead-end sloughs, or similar confined waters" as that term is used in the Basin Plan.

Virtually all of the once through cooling water discharge consists of Bay water taken from the Bay. Upon discharge, the water has minimal characteristics of concern except thermal waste. The water is used for condensing steam through heat exchangers and is returned to the Bay at a temperature higher than that of the intake. The Basin Plan defers its regulation of thermal waste to the State Thermal Plan (see Finding 16 of this Order).<sup>6</sup>

Discharge Prohibition 1 applies primarily to discharges of treated sewage and other discharges containing particular characteristics of concern from treatment systems that are subject to upset for which initial dilution is desirable. The Basin Plan states: "This prohibition will .... Provide a buffer against the effects of abnormal discharges caused by temporary plant upsets or malfunctions ..." The dilution requirement is to provide a contingency in the event of temporary treatment plant malfunction and to minimize public contact with undiluted waste. This discharge prohibition does not apply to non-process once-through cooling water that does not contain characteristics of concern contributed to the discharge by treatment systems that are subject to upset.

The characteristics of concern in the discharge resulting from facility treatment processes other than heat are chlorine and pH. The discharger has excellent compliance with its permit limits for chlorine and pH, which demonstrates excellent reliability of its treatment system for these parameters. The facility's dechlorination system contains numerous safeguards to minimize the risk that constituents of concern will be released to the Bay in the event of a treatment

<sup>6</sup> As noted in the Summary Comment Tables and Redline Tentative Order, the current language in this finding the Tentative Order states: "The Basin Plan, aside from requiring that the receiving water temperature not be altered if doing so adversely affect beneficial uses, defers its regulation of thermal waste to the State Thermal Plan." Mirant agrees that the Basin Plan defers its regulation of thermal waste to the State Thermal Plan but notes the requirement that receiving water temperature not be altered is specific to "inland surface waters." The Potrero Plant is located on an enclosed bay and therefore this provision of the Basin Plan is inapplicable.

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COMMENT 4 /

system upset. Other potential constituents of concern, (e.g., copper, mercury, Selenium, 4,4'-DDE, Dieldrin, dioxins, and PCBs, among others), are not contributed to by any treatment process that might be subject to upset. Existing information does not suggest that the discharge is a substantial source of these pollutants and this Order requires the discharger to determine whether its processes contribute these pollutants to the discharge. The Board additionally finds that if the discharge prohibition does apply, there would be an undue burden relative to the beneficial uses to be protected and the risk to those beneficial uses created by the discharge, and therefore, the discharge qualifies for an exception to the discharge prohibition, as allowed under the Basin Plan, page 4-5. If the investigations show that these processes do constitute a substantial source of these pollutants to the Bay and that they constitute a threat to beneficial uses, the Board may consider requiring an initial 10:1 dilution, at which time the Board will consider whether the non-process once-through cooling water provides such initial dilution.<sup>2</sup> Discussion

The Basin Plan includes several waste discharge prohibitions pursuant to section 13243 of the state Water Code. Basin Discharge Prohibition 1 (Prohibition 1) prohibits the discharge of:

Any wastewater which has particular characteristics of concern to beneficial uses at any point at which the wastewater does not receive an minimum initial dilution of at least 10:1, or into any nontidal water, dead-end slough, similar confined waters or any immediate tributaries thereof.<sup>7</sup>

The Basin Plan's "Discussion" of Prohibition 1 is as follows:

Waste discharges will contain some levels of pollutants regardless of treatment. This prohibition will require that these pollutants, when of concern to beneficial uses, be discharged away from areas of minimal assimilative capacity such as nontidal waters and dead-end sloughs. This prohibition will accomplish the following: (a) provide an added degree of protection from the continuous effects of waste discharge; (b) provide a buffer against the effects of abnormal discharges caused by temporary plant upsets or malfunctions; (c) minimize public contact with undiluted wastes; and (d) reduce the visual (aesthetic) impact of waste discharges.

<sup>7</sup> Though the Basin Plan has been amended several times since it was first adopted in 1975, Prohibition 1 has been essentially unchanged. Exceptions to Prohibition 1 may be allowed when (a) an inordinate burden would be placed on the discharger relative to the beneficial uses protected and an equivalent level of environmental protection can be achieved by alternate means, such as an alternative discharge site, a higher level of treatment, and/or improved treatment reliability; (b) a discharge is approved as part of a reclamation project; (c) it can be demonstrated that net environmental benefits will be derived as a result of the discharge. In reviewing exceptions, the Regional Board will consider the reliability of the discharger's system in preventing inadequately treated wastewater from being discharged to the receiving water and the environmental consequences of such discharges.

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Only the first prong of Prohibition 1 is relevant to the Potrero discharge. The discharge is to open, tidal water that does not possess any of the attributes upon which Prohibition 1 is largely based (i.e. nontidal water, dead-end sloughs and/or similar confined waters). Notably, Prohibition 1 applies only to discharges of wastewater that have "particular characteristics of concern to beneficial uses at any point at which the wastewater does not receive a minimum initial dilution of at least 10:1."

For the purposes of the Potrero discharge, it is particularly important to recognize the regulatory distinction between process wastewater and non-process cooling water. Process wastewater is defined as "any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product." 40 CFR 122.2. Process wastewater is distinct from cooling water, which is defined as "water used for contact or noncontact cooling, including water used for equipment cooling, evaporative cooling tower makeup, and dilution of effluent heat content. The intended use of the cooling water is to absorb waste heat rejected from the process or processes used, or from auxiliary operations on the facility's premises." 40 CFR 125.80. EPA has specifically regulated cooling water through the issuance of Clean Water Act section 316(b) regulations for existing cooling water intake structures (69 Fed Reg. 41576 (the "Phase II Rule")), stating that "water used in a manufacturing process either before or after it is used for cooling is process water for both cooling and non-cooling purposes and would not be considered cooling water for purposes of determining" whether the cooling water is an existing facility under the thresholds defined in the Phase II Rule. See 40 CFR 125.91(a)(4); see also 69 Fed. Reg. 41580 (Phase II Rule adopting the definition of "cooling water" in 40 CFR 125.80). The Potrero discharge does include streams of process wastewater, i.e. water that has been withdrawn from the Bay and used for both cooling and non-cooling purposes. The vast majority, however, is non-process water that has been used for cooling purposes only.

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**a. Regional Board's Historical Interpretation of Prohibition 1**

The Regional Board's historical interpretation of Prohibition 1 is instructive. A 1974 Regional Board memorandum reviewed the then-proposed waste discharge prohibitions, including what became Prohibition 1: "any wastewater which has particular characteristics of concern at any point at which the wastewater does not receive an initial dilution of at least 10:1 [or] into any nontidal water, lake, dead-end tidal slough or similar confined water area or their immediate tributaries." Memorandum from Griffith L. Johnston, Chief of Planning, San Francisco Bay Regional Water Quality Control Board, to Fred H. Dierker, Executive Officer: "Interpretation and Application of Proposed 10:1 Prohibition," May 28, 1974, at p.1. The memorandum stated that domestic and industrial discharges should be considered separately with respect to the 10:1 dilution requirement. For domestic discharges, the memorandum noted that the "primary pollutants in domestic waste discharges are degradable constituents and their detrimental effect on water quality is directly related to the concentration of the pollutants in the receiving water. The requirement for 10:1 dilution of the effluent provides an added degree of protection from the continuous effect of discharge by requiring wastes to be discharged into areas of higher assimilative capacity." *Id.* at 2.

With respect to industrial waste discharges, the memorandum stated that the "primary intent of the 10:1 dilution requirement is to provide added protection against those degradable wastewater constituents whose detrimental effects are directly related to their concentration in the receiving water. This requirement provides an added degree of protection from the continuous effect of discharge by requiring wastes to be discharged into areas of higher assimilative capacity and also provides a buffer against the effects of a temporary upset or malfunction." *Id.* at 3. This explanation of the rationale behind the dilution requirement is very similar to the Basin Plan's "Discussion" of Prohibition 1. The memorandum distinguished between degradable and non-degradable constituents, stating that "those components of industrial waste discharges which are non-degradable (i.e. heavy metals) should be removed by treatment to the maximum extent practicable. Unlike degradable components, additional dilution provides little additional protection against those components. Therefore, the requirement of 10:1 dilution would not be an effective means of protection for non-degradable components and should not be used where those are the sole components of an industrial discharge." *Id.* at 3. Finally, and most relevant to the Potrero discharge, the memorandum stated that the "10:1 dilution requirement should not be applied to cooling waters." *Id.* at 3.

The 1974 interpretation of the Prohibition 1 is consistent with the regulatory distinction between process wastewater and non-process cooling water. Non-process cooling water, by definition, does not pose the same types of concerns as wastewater that has been in contact with manufacturing processes. The principal pollutant added to cooling water is heat, which is specifically regulated under CWA section 316(a) and the State Thermal Plan. Viewing the Basin Plan as a whole, it is clear that Prohibition 1 is not intended to apply to cooling water, as the 1974 memorandum made clear. The Basin Plan explicitly defers regulation of temperature as a constituent of concern to the State Thermal Plan, implicitly making the same distinction between process water and non-process cooling water as EPA's regulations discussed above.

Moreover, the SIP also clearly contemplates the dilutive effect of cooling water in its discussion of effluent limitations monitoring methodology, noting that pollutants may be "so diluted by cooling water as to make monitoring impractical." SIP at p. 13.

At the time the memorandum was written and the original 1975 Basin Plan was adopted, the Potrero Power Plant operated Units 1-3. Units 1-2 had been operating since 1931, and Unit 3 had been operating since 1965. The Regional Board Chief of Planning was clearly aware of the Potrero facility when he wrote in the 1974 memorandum that "it is not anticipated that this requirement will have a widespread impact on industry. Discussion with the Permit Branch indicates that the industries which could be affected are the refineries, C & H Sugar, and the Hercules, Inc [sic]. Of the refineries, only Standard Oil and Union Oil do not already have deep water discharges. Both these refineries however, do have large cooling water flows which could be used for dilution if it were decided that this would be allowed." *Id.* at 4.

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**b. Potrero Power Plan Compliance with Prohibition 1**

The proposed language reflects the intent of Prohibition 1 and the historical interpretation in the 1974 memorandum. The Potrero facility's compliance with Prohibition 1 is twofold: (1) the vast majority of the discharge is non-process cooling water, and the relatively small amount of process wastewater in the discharge does not pose a concern to beneficial uses; and (2) constituents of concern in the cooling water itself, such as copper, are already addressed through by water quality-based effluent limitations imposed pursuant to the SIP.

The Tentative Order establishes effluent limits pursuant to the Basin Plan and other statutory authorities for the various constituents of concern in the discharge, ensuring that beneficial uses will be protected. In complying with the limitations, as the Potrero facility has consistently and reliably done over time, the Tentative Order ensures that these constituents do not pose the particular concerns to beneficial uses that Prohibition 1 aims to combat. Virtually all of the discharge consists of once-through cooling water flows that are representative of intake flows into the plant and receive no pollutant other than heat, which is already addressed through limitations established pursuant to the State Thermal Plan. If the Discharge Prohibition were to apply, Mirant would qualify for an exemption as the cost of compliance would greatly exceed any additional benefit to beneficial uses.

It is important to note that the Regional Board has *never* applied the 10:1 dilution requirement to the once-through cooling water discharges from the existing power plants that discharge into the Bay. As the 1974 memorandum made clear, the 10:1 dilution requirement should not be applied to the Potrero discharge because it consists almost entirely of cooling water that does not contain constituents of concern discharged from treatment systems subject to upset.

**c. Application of Prohibition 1 to Other Facilities**

Examples of the Regional Board's application of Prohibition 1 at other facilities support the finding that the Potrero discharge is in compliance with the prohibition. The Regional Board's application of Prohibition 1 has consistently reflected the circumstances envisioned in the 1974 memorandum: where primarily degradable components are discharged and where constituents of concern to beneficial uses receive low initial dilution and/or are discharged to confined water bodies. For example, the Morton Salt Facility discharge (Regional Board Order No. R2-2005-0010) was found not to be prohibited by Prohibition 1 because it was "considered a non-process wastewater discharge that does not contain characteristics of concern to beneficial uses, provided the discharge limitations contained in the Order [i.e. the WQBELs for individual constituents included in the Order] are met." At the Kobe Precision facility (Regional Board Order No. R2-2005-0040), the discharge was not subject to Prohibition 1 because the reasonable potential for copper indicated in the discharge was triggered by ambient background considerations, and the Order established a compliance schedule for copper WQBELs that were "protective of beneficial uses." Examples of the application of

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Prohibition 1 abound in the context of sewage treatment facilities, which process the kind of degradable constituents at which Prohibition 1 is squarely aimed.<sup>8</sup>

**Comment 5: Conduct Intake Credit Study**

Mirant supports the requirement of an Intake Credit Study set forth in the TO, provision D.7. As part of this study, Mirant proposes to evaluate the feasibility of relocating its intake sample point to a location where more complete mixing of the intake water will have occurred. One source of variability between the intake and the outfall may be spatial variability within the cross-section of the intake structure from which samples are taken. For example, if the sample happens to collect a non-representative amount of suspended sediment, it may show higher (or lower) results of certain sediment-related constituents than at the outfall. If relocating the intake sample point is feasible, this should reduce the spatial variability that now occurs with intake sampling.

Any questions on these comments can be directed to me either at [steve.bauman@mirant.com](mailto:steve.bauman@mirant.com) or (925) 427-3381.

Sincerely,



**Steven J. Bauman, P.E.**  
Sr. Environmental Engineer

cc: Electronic copy sent as pdf file to SWRCB - FTP Site, Region 2 staff folder: Whitworth, Derek

Attachments:

- 1 - Summary Table of Comments on Tentative Order and Fact Sheet
- 2 - Redline Tentative Order
- 3 - Redline Fact Sheet
- 4 - Updated SIP Data through January 2006
- 5 - Updated Ambient Background Data
- 6 - Updated Reasonable Potential Analysis for selected constituents
- 7 - ERM Technical Memorandum

<sup>8</sup> E.g., City of American Canyon Wastewater Treatment Facility, Order No. 00-003; Sonoma Valley County Sanitation District, Order No. R2-2002-0046; Fairfield-Suisun Sewer District, Order No. R2-2003-0072.

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CITY AND COUNTY OF SAN FRANCISCO



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March 20, 2006

Derek Whitworth  
California Regional Water Quality Control Board  
San Francisco Bay Region  
1515 Clay Street  
Suite 1400  
Oakland, CA 94612

Re: Tentative Order - NPDES Permit No. CA0005657; Waste Discharge Requirements For  
Mirant Potrero, LLC Potrero Power Plant, San Francisco, San Francisco County

Dear Mr. Whitworth:

Please find attached the comments of the City and County of San Francisco to the above  
referenced Tentative Order.

Very truly yours,

DENNIS J. HERRERA  
City Attorney

/s/

Paula Fernandez  
Legal Secretary  
for Theresa L. Mueller

Attachment

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**BEFORE THE CALIFORNIA REGIONAL WATER QUALITY CONTROL  
BOARD  
SAN FRANCISCO BAY REGION**

Tentative Order  
NPDES Permit No. CA0005657  
Order No. R2-2006-00XX

Waste Discharge Requirements For:  
Mirant Potrero, LLC  
Potrero Power Plant  
San Francisco, San Francisco County

**Comments Of The City And County Of San Francisco On The Tentative Order  
Granting a Waste Discharge Permit For The Potrero Power Plant**

The City and County of San Francisco (San Francisco or City) submits these comments on the Tentative Order (TO) of the California Regional Water Quality Control Board, San Francisco Bay Region (Regional Board) renewing the National Pollution Discharge Elimination System (NPDES) permit for the Mirant Potrero, LLC Potrero Power Plant. (Potrero Plant). The TO would permit the Potrero Plant to continue operating under conditions established in 1993, with no significant changes to address new water quality standards or evidence of the substantial harm to the Bay caused by this plant. The City urges the Regional Board to reject the TO because it fails to enforce the water quality standards that protect the San Francisco Bay. The City also has reviewed and supports the comments on the TO prepared by Communities for a Better Environment (CBE) and Bayview Hunters Point Community Advocates (BVHPCA).

The City has participated actively in the Regional Board's review of the NPDES permit for the Potrero Plant and has made every effort to work with the Regional Board staff. City representatives have attended numerous stakeholder meetings and submitted comments and letters urging the Regional Board to meet its obligations to protect the San Francisco Bay and the communities who live around it. In January 2005, the City submitted comments on the previous tentative order recommended by staff. (See Attachment 1.) In February 2005, the San Francisco Board of Supervisors unanimously adopted a resolution urging the Regional Board to require Mirant to comply with water

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S-2  
COMMENT 9

the Potrero Plant once it is not needed for electric reliability; however, it does provide for termination of the reliability contract under which the ISO pays Mirant to operate the Potrero Plant. In other words, the Action Plan makes it clear that the ISO will not subsidize the operation of the old, dirty, inefficient Potrero Plant once it is not needed for electric reliability.

The City urges the Regional Board to protect the San Francisco Bay by requiring the Potrero Plant to immediately comply with water quality standards. Mirant has avoided compliance for far too long due to the delays in this process. The Regional Board should not allow Mirant to avoid the costs of compliance with current water quality requirements. Allowing the Potrero Plant to continue operating without complying with water quality standards, even after it is not needed for electric reliability, would constitute in effect a defacto subsidy. Such a defacto subsidy is particularly inappropriate once the plant is no longer needed for reliability.

5-5.  
COMMENT 3.

March 20, 2006

Respectfully submitted,

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By: \_\_\_\_\_ /s/

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**APPENDIX C**  
**RESPONSES TO COMMENTS**

**San Francisco Bay Regional Water Quality Control Board  
San Francisco Bay Region**

**Responses to Comments**

Public Hearing on the Mirant Potrero Power Plant Tentative Order (NPDES Permit)  
May 10, 2006

The Water Board received over 65 pages of comments (not including attachments) on this item from five organizations and public agencies. Comments were both substantive and editorial. Only substantive comments, those that would change the content of the Tentative Order, are addressed here. Generally, with exceptions noted, editorial comments were incorporated into a Revised Tentative Order. Some of the information submitted involved statements or opinions rather than specific comments on the Tentative Order. This information is recognized as statement, but is not responded to as comment.

Comments were received from the following organizations:

- B San Francisco Baykeeper
- C Golden Gate University Environmental Law and Justice Clinic, incorporating comments of Communities for a Better Environment and Bayview Hunters Point Community Advocates.
- E U.S. Environmental Protection Agency
- M Mirant Corporation
- S City and County of San Francisco

On November 14, 2004, Water Board staff circulated an earlier Tentative Order for public comment, but did not bring it to the Water Board for consideration. This November 2004 Tentative Order is significantly different from the one circulated on February 17, 2006, but comments submitted in response to that the November 2004 Tentative Order were attached to the City and County of San Francisco letter. Since Water Board staff had already responded to them and all other comments on the November 2004 Tentative Order, those comments and responses are not repeated here. They can be found at:

[http://www.geotracker.waterboards.ca.gov/reports/site\\_documents.asp?global\\_id=SL18380800&assigned\\_name=SLICSITE](http://www.geotracker.waterboards.ca.gov/reports/site_documents.asp?global_id=SL18380800&assigned_name=SLICSITE) .

Comments on the February 2006 Tentative Order are summarized below. Some of the comments that share a common theme were combined into a single set of comments. The original comment letters have been annotated alphanumerically and cross-referenced to these summarized comments. A Water Board staff response follows each summary comment.



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## COMMENTS ON THE USE OF MOST CURRENT DATA

### **Comment 1: The Order should reflect the most current monitoring data**

*The commenter notes that the requirements in the Tentative Order are based on sampling data collected between June 2002 and April 2004. More recent sampling data, submitted with the comments, has been collected since then and should be incorporated into the Tentative Order through the reasonable potential analysis.*

M-1

### **Response**

Water Board staff concur that, when possible, the most current data should be incorporated into permits. While the analysis set forth in the original Tentative Order was sufficient, using additional data increases the number of data points available for analysis. The new data are now included as an attachment to the Fact Sheet. The additional data set included analytical data of samples collected on November 3, 2004, which Water Board staff determined were anomalously high and rejected the data from reasonable potential analysis. Had the data been included, effluent limits for copper and mercury would have increased because data variability is a factor in calculating limits. By rejecting these data, the effect of these changes is to reduce the effluent limits for copper (from 10.3 µg/L to 8.6 µg/L) and mercury (from 0.056 µg/L to 0.032 µg/L). Also rejected were high levels of chromium and nickel detected in the November 3, 2004, data set. In case these high values were not anomalies, the Tentative Order was revised to require monitoring for these two constituents.

### **Comment 2: Mirant will be operating under a ten year old permit**

*The commenter states that the Tentative Order would permit the Potrero Plant to continue operating under conditions established in 1993 with no significant changes to address new water quality standards; there is no substantive change in the permit since it was issued in 1994. The commenter argues that the Board has delayed too long in renewing the permit.*

S-1

### **Response:**

We disagree. The revised Tentative Order implements all current water quality standards, which in some cases result in requirements that are significantly more demanding and stringent than the 1994 Permit. For example, the revised Tentative Order specifies new effluent limits and monitoring requirements for toxic pollutants that were not in the previous permit. It also requires studies in compliance with new 2004 federal requirements applicable to cooling water intake structures ("CWA 316(b)") that were not required in the previous permit.

With regard to the concern about delays in renewing the permit, we believe any delay has not compromised water quality, and was due in part to Water Board staff's diligent efforts in seeking stakeholder input above and beyond what is required by regulations. In

1999, when the previous permit expired, the Water Board extended the permit for 5 years in accordance with federal regulations and U.S. EPA's watershed permitting strategy. This administrative extension was based on the fact the Potrero plantit was classified as a minor discharge at that time, and that there were no new substantive regulations or policy changes since the last reissuance that would have led to significant changes to existing requirements. As this 5-year extension was coming to an end in 2003, Water Board staff promptly initiated the reissuance process first by requiring a permit application from Mirant, and compiling a list of interested stakeholders. Since that time, we have held four stakeholder meetings in the evenings in the community, released three draft permits for comment, made changes to the draft permits, incorporated the requirements of the new federal regulations to address adverse environmental impacts, required Mirant to conduct further data analysis, issued a §13267 information requirement letter and have worked to incorporate extensive comments received from the stakeholders and the commenters into the revised Tentative Order.

### **COMMENTS ON COMPLIANCE WITH 316(b) PHASE II RULING**

#### **Comment 3: Mirant, by avoiding compliance, is being subsidized**

*A commenter claims that Mirant has been avoiding compliance by taking advantage of delays in the NPDES permit reissuance process. The Water Board should not allow Mirant to avoid the costs of compliance with current water quality requirements as this would constitute, in effect, a de facto subsidy.*

*Another commenter states that the Water Board has allowed the antiquated Potrero Plant to operate as-is for too long. With adoption of a new permit the Water Board must require Mirant to upgrade the Potrero facility and bring it into compliance, or require the plant to close.*

S-5, B-1

#### **Response:**

Under the existing NPDES permit, Mirant has an excellent compliance record and has not avoided any costs of compliance. The revised Tentative Order, if adopted, would put in place new enforceable requirements based on new existing water quality standards and available information. A California Water Code §13267 letter has already been sent to Mirant to ensure timely compliance with the new federal regulations intended to reduce adverse environmental impacts on the Bay. This Order, if adopted, will not allow Mirant to avoid the costs of CWA §316(b) compliance if it is to continue discharging water into the Bay.

Mirant complies with the existing NPDES permit. A new permit based on the revised Tentative Order would update requirements based on the most recent water quality standards. For example, it would also ensure that Mirant is on a timeline to meet the CWA 316(b) Phase II Rule requirements to reduce the adverse environmental impacts due to the intake of cooling water. The Water Board may not, however, specify the

method or means of permit compliance; therefore, it cannot order the closure of the plant. The age of the plant is immaterial.

**Comment 4: There must be immediate application of mitigating technology**

*A commenter noted that, according to 40 CFR §125.98(a)(2)(ii), the permit issued by the Water Board must specify the best technology available for reducing impingement/entrainment impacts and that the discharger must immediately implement such measures even if compliance alternatives have not yet been evaluated. The commenter disagrees with Board staff that immediate, though partial, mitigation would take time to implement and may not be consistent with the subsequent final findings. They state that every effort should be made to determine what technologies can be implemented now.*

B-4, C-2, C-3, C-11, C-13

**Response**

The solution to address the regulatory requirement of reducing adverse environmental impacts due to entrainment and impingement will be determined in the Comprehensive Demonstration Study (CDS) that must be submitted to the Water Board by November 2007. 40 CFR §125.98(a)(2)(ii) states, “Between the time your existing permit expires and the time an NPDES permit containing the requirements consistent with this subpart is issued to your facility, the best technology available to minimize adverse environment impact will continue to be determined based on the Director’s best professional judgment.” Water Board staff do not read this as stating that technology must be implemented immediately before a reasonable range of alternatives is evaluated and the best alternative is selected.

Water Board staff’s professional judgment remains that the most cost-effective and lasting solution should be implemented after a thorough consideration of the alternatives. Thoughtful efforts to provide the best mitigation possible should not be thwarted by efforts to implement temporary alternatives that may not fully satisfy water quality needs. A thorough study will take four seasons (i.e., one year) to complete, to determine the baseline from which to measure the reductions in adverse environmental impact that must be achieved. Without this information, it would be impossible to determine if the goals specified in the regulations can actually be achieved. Although an entrainment study has already been completed, this has not been finalized, and a baseline Impingement Study is also necessary as part of the Comprehensive Demonstration Study.

One possible measure that has already been examined is the installation of a variable speed pump in the plant’s intake. Implementation of such a measure would not only take longer than the time to complete the Comprehensive Demonstration Study but would also interfere with the baseline study. It is, however, one possible outcome of the study. The Tentative Order has been revised to reflect that the solution will be implemented starting in January 2008 and will be completed expeditiously.

**Comment 5: Mirant using phase II studies to avoid installing technology**

*The commenter alleged that Mirant is using the Phase II study requirements to delay selecting and implementing entrainment and impingement reducing technologies since many believe the plant is nearing the end of its useful life and the studies are a mechanism to avoid the expenses of installing the technology. The commenter also stated that Mirant should select alternatives and narrow the scope of the Comprehensive Demonstration Study.*

B-5

**Response**

The regulations establish clear dates when alternatives to mitigate adverse impacts should be determined. As indicated in the response to comment on the implementation of mitigating technology, a major time component of the Comprehensive Demonstration Study is the one year necessary to establish a baseline on which to set reduction goals. Pre-selecting an alternative would not reduce the time to complete and analyze this component of the study and would not significantly accelerate implementation. The revised Tentative Order is based on available information and existing regulatory requirements. It does not consider any possible motives Mirant may have for preferring one outcome over another in advance of completion of the Comprehensive Demonstration Study

**Comment 6: The facility should install cooling towers**

*There are alternatives to once-through cooling that would protect the Bay. Dry cooling is a technically feasible alternative that would avoid air and water pollution. Another is hybrid cooling. Variable speed pumps should be installed on the cooling water intake until cooling towers are installed.*

C-9, C-34

**Response:**

Board staff acknowledges that many alternatives, including cooling towers (either hybrid or dry systems), could reduce the adverse environmental impacts of once-through cooling. Mirant has the responsibility, as required under CWA §316(b), to propose a compliance alternative. A detailed Comprehensive Demonstration Study, as required in the revised Tentative Order and CWA §316(b), will determine if a cooling tower is the most appropriate alternative. See also responses to comments 4 and 5.

**COMMENTS ON PUBLIC INVOLVEMENT****Comment 7: Staff should include options for the Board**

*The commenter recommends that Board staff present Board members with several feasible policy options to address the adverse environmental impacts caused by impingement and entrainment. The commenter states that the Board should require measures, such as variable speed pumps and cooling towers, to minimize adverse impacts*

*prior to completion of the Comprehensive Demonstration Study called for under Clean Water Act §316(b).*

E-1

***Response:***

It is Water Board staff's responsibility to analyze the policy options and present a recommendation to the Water Board for their consideration. Staff's recommendation is embodied in the revised Tentative Order. Through the hearing process, the Water Board is presented with different policy options, and at its discretion, may select one that is different than the one staff recommends or even direct staff to develop another option. The interim measures proposed by commentators (e.g., the installation of variable speed intake water pumps or cooling towers) would take at least a year to implement and would very likely predetermine a permanent solution before all impacts (such as from impingement) are fully understood and quantified. This could provide Mirant grounds to challenge the imposition of such measures or challenge the imposition of any additional measures once impingement impacts were known, thus delaying the goal of complying with the intent of the regulations. A better approach to expedite implementation of necessary permanent measures is to require Mirant to examine options and recommend permanent solution to reduce the adverse impacts on the Bay in advance of the mandated CWA 316(b) deadlines. Water Board staff did this with a California Water Code (CWC) §13267 letter requirement sent on December 21, 2005, requiring the results by November 2007. These requirements are restated in the revised Tentative Order. Water Board staff proposes that the process now in place, as described in the revised Tentative Order, will address any adverse impacts in the shortest possible time. (See also the response to Comment 4)

**Comment 8: There should be public participation during the period of the permit**

*The commenters request that Board staff solicit public input when the Comprehensive Demonstration Study is completed in November 2007. EPA specifically notes that it may be necessary to reopen the permit in late 2007 or early 2008. Baykeeper urged that the permit include public participation requirements to foster transparency around this issue.*  
E-4, B-9

***Response:*** To the extent resources allow, Water Board staff plans to establish a Technical Working Group to review work related to the Comprehensive Demonstration Study and to advise Mirant and Water Board staff. It is anticipated this group will meet every one to three months until the study is completed. Water Board staff intend to invite all the organizations that submitted comments on the revised Tentative Order to participate. That being said, no specific public participation requirements exist in the revised Tentative Order for the Comprehensive Demonstration Study as there is no regulatory basis for such requirements. If it is necessary to reopen the permit to implement the findings of the Comprehensive Demonstration Study, the Water Board must comply with public participation requirements for amending permits (i.e., a minimum 30-day public comment period).

**Comment 9: Compliance with the City and County of San Francisco Resolution**

*A comment noted that the San Francisco Board of Supervisors unanimously adopted a resolution urging the Water Board to require Mirant to comply with water quality standards that protect the Bay. It stated that the current Tentative Order does little to stop what they claim is the continuing degradation of the Bay that results from the operation of the Potrero Plant.*

S-2

**Response:** We disagree that the revised Tentative Order does little to stop degradation of the Bay. The Water Board seriously takes its responsibility and mandate to protect the water quality of San Francisco Bay. The revised Tentative Order requires Mirant to comply with water quality standards through established legal processes and applicable regulations. To reduce the adverse environmental impacts caused by the use of cooling water, we have gone beyond federal requirements by requiring that Mirant fully assess intake impacts and develop alternatives for addressing the impacts in advance of the mandated CWA 316(b) deadlines. The revised Tentative Order also requires a 316(a) thermal study to determine if the impacts of the thermal discharge and requires Mirant to analyze alternatives, select, and implement the measures that would most effectively reduce adverse impacts to the Bay.

**Comment 10: Implementation of a community permit and electric reliability**

*A commenter noted that the City of San Francisco, Communities for a Better Environment and Bay View Hunters Point Community Action (City/CBE/BVHPCA) drafted a Proposed Tentative Order that would begin immediately to mitigate what they claim is damage to San Francisco Bay without putting an undue burden on Mirant or jeopardizing electric reliability.*

S-3, C-10

**Response**

We appreciate the efforts and comments of these parties. However, after review of their proposal, Water Board staff determined that their draft permit is based on flawed interpretation of the Thermal Plan and Basin Plan Discharge Prohibitions as further discussed in our responses to Comments 27 and 29.

**COMMENTS ON THE DISCHARGE OF CONTAMINANTS****Comment 11: Use of 12 point moving average for PCB intake measurements**

*Commenters questioned the requirements in the Tentative Order that the intake concentration of PCBs in the cooling water intake be determined by calculating the average of the 12 most recent data sets. Since samples are only collected every six months it would be six years before a determination could be made. The outfall would then be compared with the inflow to determine if the facility was in fact discharging PCBs. Commenters stated that the data should be collected over a much shorter time period.*

*In addition the commenter states that Federal regulations require there be no discharge of PCBs and that Board staff has undermined the prohibition of PCB discharges by authorizing intake credits.*

*Commenters also stated that the Tentative Order fails to prohibit PCB discharges as required by law. They state that it contains a loophole that would allow collection of 12 samples over six years before compliance with the PCB discharge prohibition is evaluated. They also state that the plant's previous permit, issued in 1994, contained a blanket prohibition on the discharge of PCBs, and the Clean Water Act prohibits backsliding with less stringent effluent limitations.*

*Another commenter noted that the Tentative Order finds reasonable potential for PCBs under Trigger 1 and Trigger 2 of the State Implementation Policy and requests that the Board reconsider the finding since it is based on low-level detection PCB analysis not approved by EPA for compliance purposes. The commenter notes that the low-level PCB analysis was required by Water Board staff to support development of the San Francisco Bay PCB TMDL.*

B-2, E-2, C-31, M-6

***Response***

To address the concern over the time that it would take to accumulate 12 samples, the Tentative Order has been revised to require monthly monitoring of inflow and outflow samples for the first year of the permit. Using the data already collected, 12 sets of monitoring data will be available within ten months of the effective permit date..

Regarding the comment that the intake credits for PCBs undermines the PCB prohibition, we disagree. We believe the two requirements are consistent and not in conflict. The intake credit essentially requires that Mirant not add any PCBs to the discharge. They are only allowed to discharge the ambient PCBs that come into the plant from the intake water. The PCB prohibition effectively requires the same thing. Though the prohibition's wording is slightly different than what was in the previous permit, this change is not backsliding as alleged by the commenter, but is instead identical to the PCB prohibition from federal regulations. As regards to the appropriateness of the intake credits, it is appropriate. The low detection data, though more qualitative than quantitative in nature, clearly indicate the presence of PCBs in both the intake and discharge. It is not surprising that PCBs are in the intake because San Francisco Bay is impaired by PCBs. Mirant's discharge qualifies for intake credits because it meets all the criteria specified in the SIP for intake credits.

Regarding the concern that the low level PCB data are not approved for NPDES purposes and, thus, should not be used to trigger reasonable potential and the resulting need for a limit, we disagree. Though we agree that the low level analysis cannot be legally required for NPDES compliance determination, the SIP does allow it to be used for reasonable potential analysis. At section 1.2, the SIP states "...the RWQCB shall use all available, valid, relevant, representative data and information, as determined by the RWQCB."

Though the low detection limit method may not provide accurate enough data for compliance determination, its results are reliable qualitative evidence that PCBs are likely in the discharge (and intake) at levels above the criteria. We believe its results are credible because it is an USEPA developed and published method. It is also over 10,000 times more sensitive than the higher detection limit method. If its results were higher by as much as five times, the one result that shows a level of 1026 pg/l, when divided by five would still be above the water quality criteria (170 pg/l). Thus, in our judgment, an effluent limit is appropriate.

**Comment 12: The power plant is old and dirty**

*Commenters state that the Potrero Power Plant is among the oldest and dirtiest plants in California and that the negative effects of these plants on air, water and human health cannot be ignored. They state that the plant employs outdated technologies that are known to have significant impacts on aquatic life and that it is time for Mirant to invest in the upgrades necessary to protect the Bay and to bring the plant into compliance with federal and state laws.*

S-4, B-10

**Response:**

The Water Board directly regulates water quality, not air quality and not how old the facilities are allowed to be. Air emissions are regulated by the Bay Area Air Quality Management District, who currently permits this power plant. The revised Tentative Order addresses only the discharge of water to the Bay, and, based on the available information, the proposed effluent limits are protective of human health. Effluent limits ensure that any constituents of concern released due to aging plant components are regulated. Regardless of the age or condition of the plant, the facility complies and must continue to comply with discharge limits and prohibitions and federal regulations. The revised Tentative Order requires that the facility comply with federal regulations by investigating and implementing measures to quantifiably reduce, to specified goals, the adverse environmental impacts caused by its use of cooling water.

**Comment 13: Implementation of the proposed PCB Stormwater Study**

*A commenter strongly recommends that the Water Board require Mirant to provide a detailed PCB Stormwater Study design in addition to the vague work plan submitted on February 1, 2006. The commenter also recommends that the Board have the plan evaluated by independent technical experts and that Mirant make the study plan available to the public for comment.*

B-3, C-19, C-33

**Response**

We disagree that the PCB Study work plan is vague. We believe the level of detail is appropriate. Although there is no formal public participation process for this study, all workplans for this site, including the one for the PCB stormwater study, are posted on an Internet web site that is readily accessible by the public. Informal comments are



incorporated into plans, proposals and findings as appropriate. Water Board staff actively seeks input and comment from technical staff of other government agencies. Also, as mentioned earlier, as resources allow, Water Board staff plans to establish a Technical Advisory Group to review and comment on all workplans.

**Comment 14: The Order should establish WQBELs for nickel and selenium**

*The commenter states that the Board should establish water quality based effluent limitations (WQBELs) for nickel and selenium since limits must be established for all pollutants that have reasonable potential to cause or contribute to an excursion above any water quality standard. The commenter also states that the permit should include an interim limitation for nickel and selenium because the Bay is currently listed as impaired for both pollutants and power plant cooling water is known to be a source of metals, especially nickel. In addition, the commenter states that more data are needed to complete a reasonable potential analysis and additional monitoring should be completed.*  
B-8, C-13

**Response:**

The reasonable potential analyses for selenium and nickel in the Tentative Order originally submitted for public comment, and the revised Order that incorporates most recent data that was submitted during the public comment period, concluded that no effluent limits are necessary. This is to be expected because the cooling water is not exposed to selenium when pumped through the heat exchange system. Additional monitoring beyond what is required by the Tentative Order cannot be justified.

For nickel, however, along with copper and chromium, very recent sampling data indicate that these metals were present at unusually high levels in one particular discharge sample. This particular data set was not incorporated into the revised reasonable potential analysis because the data were anomalous and inclusion would have significantly increased the effluent limits for copper.

Nickel and chromium are metals that are probably present in the piping and equipment that comes into contact with the cooling water. If corrosion were to occur, then these metals could be discharged to the outflow cooling water. These metals are, however, highly corrosion resistant, hence their use in alloys for such applications. To determine if there is any corrosion, Board staff revised the Tentative Order to require monthly sampling for nickel and chromium for a twelve-month period. In order to determine if there is any net discharge, both influent and effluent samples are to be collected and analyzed in the same manner.

**Comment 15: Pollutants are being mobilized by the action of the intake**

*The commenter states that the influent and effluent sampling data at the site indicate that pollutants of concern are mobilized by the cooling system's impact on nearby sediments. The commenter also states that until the discharger demonstrates that these pollutants in the intake do not result from the flow through the cooling system sucking in polluted*

*sediment, pollution intake credits (e.g., for PCBs) should be denied. The commenter, Golden Gate University and Communities for a Better Environment provide a table (Table 1) with data from samples collected at high tide and low tide, claiming that these data support the position that the facility is causing mobilization.*

C-4, C-20

**Response**

The system has been in place for over 40 years, so it can be reasonably assumed that it is in equilibrium and that settled sediments are not being disturbed. Board staff do not agree that the information provided in the commenter's table shows that sediment is being mobilized. The data simply show that sediment levels relate to the tides, as one would expect. The normal suspension and deposition of sediment on a daily cycle does not suggest any ongoing disruptions of buried sediment.

The revised Tentative Order contains effluent limits for pollutants added to the discharge by the facility, not pollutants that already exist in Bay sediment. The issue of allowing for intake credits for PCBs, has been examined in Comment 3.

**Comment 16: Tentative Order finds, wrongly, that dioxins were not detected in the outfall**

*The commenter notes that the Tentative Order does not identify discharges of highly toxic pollutants and toxicity. It notes the presence of many toxic metals, but finds that dioxins were not detected. The commenter states that elsewhere the Tentative Order shows the presence of dioxins in the outfall.*

C-22

**Response:**

Inconsistencies within the Tentative Order have been corrected. The assessment of dioxins is complex. Dioxins are a group of chemicals, one of which (2,3,7,8-TCDD) is considered the reference dioxin and is the most toxic. Other dioxin and furan compounds are compared to this one in terms of their toxicity by what is termed toxicity equivalency. For example, one dioxin chemical may have one hundredth or one thousandth the toxicity of 2,3,7,8-TCDD. To account for these differences between the various dioxins and furans, the toxic effects are weighted and added to see what the total would be equivalent to in 2,3,7,8-TCDD. This is known as the dioxin Toxicity Equivalent or TEQ.

At this site, 2,3,7,8-TCDD has not been detected. Other dioxins have been detected, so dioxin TEQ was found. When detected, outfall concentrations were less than intake concentrations. There is no reason to expect that dioxins are created in the cooling water system at this facility. The Tentative Order has been revised to reflect that reasonable potential exists for dioxin TEQ, but because the available data are insufficient to calculate an effluent limitation, no limitation is set forth. Instead, the revised Tentative Order requires continued monitoring of these chemicals.

**Comment 17: The Tentative Order does not address chronic toxicity**

*The commenter states that the Tentative Order omits chronic toxicity in the discharge though the previous Tentative Order made this finding.*

C-23

**Response:** The revised Tentative Order addresses the requirements for chronic toxicity monitoring in Finding 60 and in the Self Monitoring Program, which is part of the Order.

**Comment 18: The Tentative Order does not set mass discharge limits**

*The commenter notes that the Tentative Order does not set mass limits or even attempt to quantify toxic mass loading for PCBs, dioxins or metals.*

C-24, C-27

**Response:**

The revised Tentative Order references Total Maximum Daily Loads (TMDLs) that are being developed that will establish allowable mass loadings for this and all other discharges in the region for impairing pollutants. Mass limits are not specified in the revised Tentative Order because either mass limits are not required, or not practicable. The standards for toxic pollutants are concentration-based, and, following the SIP, results in a concentration-based limit that is adequately protective. For toxic pollutants that are bioaccumulative, however, mass-based limits may be needed. PCBs, dioxins and mercury are bioaccumulative. Unfortunately, because of detection limit issues with the approved U.S. EPA analytical methods, it is impracticable to calculate a meaningful mass-based limit for these compounds.

**Comment 19: The Tentative Order does not evaluate available evidence of toxic discharge.**

*The commenter states that the Tentative Order's analysis of dioxin and PCB discharge compliance with water quality standards is not accurate. The commenter claims that the statement "pursuant to the SIP there is no reasonable potential for TCDD TEQ" is wrong and that the TCDD TEQ exceeds applicable water quality criteria and thus there is reasonable potential for dioxin TEQ. The commenter states a similar situation exists for PCBs.*

C-25

**Response:**

For dioxins, there is no evidence of a discharge of 2,3,7,8- TCDD and no reason to expect that it would be discharged. For dioxin TEQ, or TCDD TEQ, these have been detected in the influent and effluent at extremely low levels. Similarly, for PCBs, using new experimental low-detection methods, PCBs have been detected in influent and effluent at similar levels. For the dioxins analysis, the data indicate that Mirant does not contribute

dioxin TEQ to the discharge. Similarly, for PCBs, using accepted compliance monitoring methods, there is no discharge of PCBs. Using low-detection methods, PCBs can sometimes be detected. The revised Tentative Order finds reasonable potential for both PCBs and dioxin TEQ (but not 2,3,7,8 TCDD). The available data are insufficient to calculate effluent limitations for dioxins TEQ. PCB discharges are prohibited, but provisions allowing for intake credits are included. The revised Tentative Order requires continued monitoring of both these components. Please also see our response to Comment 16.

**Comment 20: Potrero discharge threats to human health are understated**

*The commenter states that mass loadings of these pollutants (dioxins, PCBs and mercury) caused by Potrero's high discharge flow, coupled with pollutant concentrations exceeding water quality criteria, indicate cause for concern about human health.*

C-26

**Response:**

Effluent limits for all pollutants, including those stated, are based on water quality standards intended, in part, to protect human health. At this facility, the concentrations of the noted pollutants in the effluent, when detected, are effectively the same as in the influent. This is to be expected, since the plant would not be expected to generate or discharge any of those contaminants. Although these pollutants may be a threat to human health, there is no evidence to indicate that the effluent from this plant is contributing to that concern. This issue of the sources of these pollutants within the Bay Area is a regional problem and cannot be associated with this facility in isolation.

**Comment 21: Staff errs in stating that the cooling water has no contact with the process**

*A commenter claims that the characterization that the Potrero plant does not cause any pollution with its cooling water is simply not true. The commenter also claims that the facility pollutes the cooling water through several routes, including equipment corrosion, storm water runoff, potential chlorine spills, and sediment remobilization. The commenter states that the purpose of the discharge prohibition is to protect the Bay from discharges containing such pollutants.*

C-28, C-29

**Response:**

The flow of water at Potrero is essentially for cooling purposes only; it has virtually no contact with process operations and is not industrial process water. The commenter has not provided specific information to show that the discharger is contributing pollutants. Any incidental contamination due to material contact is addressed through the reasonable potential analyses, effluent limitations, and monitoring requirements. See also the responses to Comment 27.

**Comment 22: Discharge data should be the difference between outflow & intake**

*The commenter states that, in the Reasonable Potential Analysis, outfall data should be assessed relative to the corresponding levels at the intake so that the facility's contribution to the outflow can be calculated. The commenter recommends that outfall data without corresponding intake data be disregarded.*

M-2

**Response:**

Water Board staff concur that a closed once-through cooling system is different than a typical discharge of treated industrial or domestic wastewater. However, the State Implementation Policy, on which the reasonable potential analysis is based, does not clearly call for intake concentrations to be considered in the analysis. The reasonable potential analysis is to be based on the actual effluent discharge. However, the evaluation of compliance with effluent limits may take into account constituents in the intake, and the revised Tentative Order includes intake credits for some constituents.

**Comment 23: The Reasonable Potential Analysis for copper should be changed**

*The commenter notes that more data are now available for use in the reasonable potential analysis; the number of sampling events has increased from around 11 or 12 depending on the constituent, to around 25. As a result, the new performance-based interim limit for copper should be 24.3 µg/L instead of 10.3 µg/L in the Tentative Order and Fact sheet.*

M-3

**Response:**

After careful consideration, staff agreed to incorporate the additional data, except for the data collected on November 3, 2004,(see also the response to Comment 1). The concentrations of several constituents on that day is two or three orders of magnitude greater than the constituents collected on all other sampling days and appears to represent some anomaly. Introducing such high levels distorts the calculation of the effluent limits. The effluent limit for copper, without the anomalous data, is 8.6 µg/L.

**Comment 24: If the Board finds reasonable potential for mercury, new limits should be set**

*The commenter proposes that mercury should not trigger the reasonable potential analysis if the analysis is based on paired intake and outfall data see comment 28, above). The commenter notes, however, that if the Board finds reasonable potential for mercury, then the performance based limit for mercury should be based on the most recent data.*

M-4

**Response:**

The Water Board staff does find there is reasonable potential and have imposed effluent limitations. Water Board staff concur that all current data should be incorporated (after discarding the November 3, 2004, samples which are considered anomalous, see response to comment 1). Incorporating these data, the effluent limitation for mercury is reduced from the originally proposed 0.056 µg/L to 0.032 µg/L.

**Comment 25: Effluent limits for dioxin TEQ should not be required**

*The commenter states that, at this site, 2,3,7,8 TCDD has never been detected. The commenter notes that other dioxin congeners have been detected and then the equivalent toxicity, TEQ, has been calculated. Moreover, the Board has traditionally based its effluent limitations for dioxin TEQ on the Basin Plan's numeric Water Quality Objective for 2,3,7,8 TCDD ( $1.4 \times 10^{-8}$  µg/L), but the discharger asserts that doing so is inappropriate because this value has not been promulgated as a numeric water quality objective for dioxin TEQ. Recent analysis of paired samples for TCDD TEQ taken from the inflow and outflow data indicate that they are present at equal amounts in both the intake and outfall. In addition, the commenter notes that Mirant has collected six data points over three years, thus complying with SIP requirements and no further sampling is required.*

M-5

**Response:**

Water Board staff concur that the data indicate there is apparently no evidence of net contribution of dioxin TEQ to the cooling water since, when dioxin TEQ is found in the discharge, it is also detected at similar concentrations in the inflow. However, since it has been detected in the outfall, a reasonable potential for the discharge exists per the Basin Plan. Because the data are insufficient to calculate an effluent limitation, the revised Tentative Order simply requires continued semiannual sampling at this time at both the inflow and the outfall.

The comment regarding basing effluent limitations for dioxin TEQ on the numeric objective for 2,3,7,8-TCDD is moot because no effluent limitations are proposed. However, an effluent limitation for dioxin TEQ would be based on the narrative water quality objective in the Basin Plan for bioaccumulation. The narrative objective is not in question; it was adopted legally. To develop an effluent limitation based on the narrative objective, however, requires a numeric translation of the narrative requirement. Because dioxin TEQ is defined as the amount of dioxin congeners equivalent to 2,3,7,8 TCDD, it is reasonable to use the 2,3,7,8-TCDD numeric objective to translate the applicable narrative objective.

**Comment 26: Request for change in the Intake Credit Study, Provision 7**

*The commenter, Mirant, supports performance of the Intake Credit Study identified in Provision 7 in the Tentative Order and, as part of this, proposes to relocate its intake sampling point to a place with better mixing of the intake water. The commenter notes that the present location could lead to non-representative results.*

M-8

**Response:**

Water Board staff recognizes that investigations should be conducted to establish an appropriate sampling point at the intake, samples from which truly represent the intake water. Based on the results of Mirant's study the Water Board will consider relocating the sample points to obtain more representative samples.

**COMMENTS ON THE BASIN PLAN DISCHARGE PROHIBITION****Comment 27: Basin Plan Prohibition 1 must be applied to this discharge**

*Commenters stated that the permit must incorporate the Basin Plan's prohibition on undiluted discharges. They state that the Basin Plan prohibits discharges that contain "characteristics of concern to beneficial uses" unless those discharges receive a minimum initial dilution of 10:1, and that this is for protection against abnormal discharges and the continuous effect of discharges from treatment processes. Commenters state that the Water Board assertion, as written in the Tentative Order posted, that this prohibition applies only to sewage or other treatment processes, is incorrect. They state, "Mirant chlorinates and dechlorinates its cooling water. If an upset occurs in the dechlorination process, the resulting undiluted chlorinated discharge to shallow Bay waters would be devastating ... the dilution requirement exists to protect against upsets, which by their nature are unreliable." They also state that the plant's discharges contain many "constituents of concern," including mercury and copper, and the Bay lacks the capacity to assimilate these pollutants. To them, the recognition that there may be discharges from the plant, by definition, means that the outflow cooling water is a discharge and thus subject to the 10:1 dilution requirement. Commenters also state that the chlorination-dechlorination of the cooling water (used intermittently to prevent biofouling) could be upset, and there could be a release of chlorine that would require the mitigating effects of a 10:1 dilution. A commenter asserted that the discharge prohibition should be applied to thermal discharges. Another comment references Board Order R2-2004-0026 that applies the discharge prohibition to the Crockett Cogeneration Plant and that this should be applied to the Mirant facility.*

B-6, C-8, C-14, C-17, C-21, C-29

**Response:**

The Basin Plan Discharge Prohibition 1 does not apply in this situation. The Tentative Order has been revised to clarify findings related to Discharge Prohibition 1. There are several reasons to support this position:

- (a) The discharge is water taken from the Bay, pumped through pipes and heat exchangers for approximately three minutes, and then returned to the Bay at an average temperature 10 degrees Fahrenheit higher than the intake. It is virtually all (>99.99%) Bay water and not process water.

- (b) The facility has been in operation since before the 1975 Basin Plan containing the discharge prohibition was adopted. The discharge prohibition has never been applied to any cooling water discharge in the past 30 years, and nothing has changed to require application now. Though we recognize that staff memorandums do not establish Water Board policy, we note that in a memo written at the time (May 28, 1974), the Chief of Planning wrote to the Executive Officer referring to industrial waste discharges, "The 10:1 dilution requirement should not be applied to cooling waters."
- (c) The chlorination process referenced is not a continuous operation as in a sewage treatment plant. It is used intermittently to treat each of the two heat exchangers for less than one hour each, five days a week, specifically to prevent biofouling of the heat exchanger tubes. Before chlorine (as 12 to 14% sodium hypochlorite solution) can be added to the cooling water and pass through the heat exchanger tubes, sodium bisulfite is injected to the outflow from the heat exchanger stream. Such systems are used extensively throughout industry and are highly reliable. Such application does not change the nature of the water from cooling water to process waste water.
- (d) The discharge is water that has been taken directly from the Bay and is being returned to the Bay, with no known sources for the addition of mercury or copper. However, as the comment states, since the Bay cannot absorb any more of these constituents, it does not matter if there is or is not initial dilution. Effluent limitations in the permit ensure that these constituents do not pose a threat to beneficial uses.
- (e) The Basin Plan Discharge Prohibition does not apply to thermal discharge. The Basin Plan Water Quality Objectives for temperature provides that temperature objectives for enclosed bays and estuaries are specified in the Statewide Thermal Plan. While there are thermal provisions in the Basin Plan related to inland surface water and fresh water, there are no provisions specific to the Bay.

In addition, the section in the Basin Plan, Discharge Prohibitions Applicable Throughout the Region (Section 4-5), states that "Exceptions to Prohibitions 1, ...will be considered where: An inordinate burden would be placed on the discharger relative to beneficial uses protected, and an equivalent level of environmental protection can be achieved by ...improved treatment reliability;" This section further states that "In reviewing requests for exceptions , the Regional Board will consider the reliability of the discharger's system in preventing inadequately treated wastewater from being discharged to the receiving water ..." These statements clearly indicate that the Prohibition 1 is dependent on circumstances and not intended to be absolute. Therefore, because the Potrero plant's treatment system is extremely reliable, and construction of a deepwater outfall would result in very little benefit by diluting a discharge consisting of 99.99% Bay water with essentially the same Bay water, even if Prohibition 1 applied to this discharge, we believe it appropriately qualifies for an exception to the Prohibition.

Regarding the Crockett Cogeneration Plant, where the Prohibition applies, that plant does not predominantly discharge once through cooling water. The discharge has some



cooling water, but is primarily conventional wastewater from a demineralizer that is treated in a treatment system. Thus the Prohibition in this case is correctly applied.

**Comment 28: A Chevron-related case supports applying the Discharge Prohibition**

*The commenter claims, “Staff refuses to apply Prohibition 1. This region has had a checkered history of enforcing its Discharge Prohibition 1, repeatedly being chastised by the State Board. See In the Matter of the Petition of Citizens for a Better Environment, et al., State Water Resources Control Board .... Once again the staff is trying to protect a facility’s discharge into shallow water .... There is no fundamental difference between Chevron’s cooling water discharge ... and Mirant’s discharge.”*

C-7

**Response:**

The commenter misrepresents the true facts related to the petition referenced. In that matter, the Water Board, in permit actions going as far back as 1978, had imposed Prohibition 1 on Chevron’s discharge. The Water Board was not “chastised” by the State Board for not enforcing Prohibition 1. In fact, the State Board upheld the Water Board’s imposition of Prohibition 1 in that case but did direct the Water Board to impose stricter interim effluent limits on the discharge until Chevron constructed a deepwater outfall. There are, however, two fundamental differences between the Chevron situation and this one that do not support the application of Prohibition 1:

- (a) Chevron was disposing of process wastewater (approximately 18.5 mgd) that had been mixed with cooling water (28 to 59 mgd). The State Board determined that the discharge was predominantly process water and that the initial dilution of process water with cooling water from the facility, was less than 10:1. The only discharge from the Potrero plant, directly into the receiving water, is >99.99% cooling water.
- (b) Chevron’s discharge to Castro Creek, a confined water body similar to a dead end slough. The Basin Plan Prohibition prohibits discharges to dead-end sloughs, regardless of dilution. The Potrero plant’s discharge is not to a dead-end slough.

Therefore, Water Board staff concludes that the Chevron case does not support the application of the Basin Plan’s Discharge Prohibition to the Potrero plant.

**Comment 29: The permit must incorporate thermal waste limitations**

*Commenters stated that the permit must incorporate thermal waste limitations that are protective of beneficial uses. They state that the State Thermal Plan, which is incorporated into the San Francisco Bay Basin Plan by reference, requires that existing discharges of thermal waste to enclosed bays comply with limitations necessary to ensure protection of beneficial uses. They also allege that it is specious for the permit to rely on an outdated study that finds there are no impacts to beneficial uses.*

B-7, C-30

**Response:**

The State Thermal Plan states, “A. Existing discharges: (1) Elevated temperature wastes shall comply with limitations necessary to assure protection of the beneficial uses and areas of special biological significance.” The existing thermal study found no impact on beneficial uses caused by the elevated temperature wastes from this facility. There is no other evidence to refute this. However, as described in the revised Tentative Order’s findings, because the existing thermal study (completed by the previous owner of the facility, PG&E) may be outdated and may not reflect current conditions, the revised Tentative Order (Provision D.5) requires a thermal effects study to re-affirm that the discharge is not harming beneficial uses.

**Comment 30: The Board’s 2001 draft permit correctly applied the discharge prohibition, while this Tentative Order does not**

*The 2001 draft permit included a requirement stating, “Discharge of wasters ... where it does not receive an initial dilution of 10:1 is prohibited.” No such requirement appears in the current Tentative Order.*

C-7, C-15, C-16, C-17

**Response:**

The comment refers to a draft permit not currently under consideration. It was an administrative draft permit prepared for Mirant’s new Unit 7 project, which Mirant has withdrawn from consideration. The draft was never brought to the Water Board, and was not adopted by the Water Board. Draft documents are works in progress and frequently contain statements that are changed before documents are finished. They are not recognized as reference sources.

**Comment 31: Additional reasons why Basin Plan Prohibition 1 does not apply**

*A commenter proposed additional text to be used in the Tentative Order to support the original finding that Basin Plan Prohibition 1 (described in Table 4.1, Discharge Prohibitions of the Basin Plan) does not apply. The commenter emphasized the difference between process wastewater and non-process cooling water and the Board’s previous interpretations of this prohibition. The commenter cites a Board policy memo (from 1974, after the Potrero plant began operations in 1965), stating that the prohibition did not apply to discharge of cooling water.*

M-7

**Response:**

Water Board staff acknowledge the supporting statements provided by the commenter and the Tentative Order has been revised, with one exception. Contrary to the commenter’s assertion, Prohibition 1 applies, regardless of dilution, to non-tidal water and dead-end sloughs. The commenter argued that the required 10:1 dilution only applies to non-tidal water and dead-end sloughs. However, Prohibition 1 reads, “It shall be

prohibited to discharge any wastewater which has particular characteristics of concern to beneficial uses at any point at which the waste water does not receive a minimum dilution of at least 10:1, **or** into any nontidal water, dead end slough, similar confined water, or any immediate tributaries thereof.” (Emphasis added.) Therefore, the Prohibition applies to either dead-end sloughs, or certain discharges with less than 10:1 dilution, not just dead-end sloughs.