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Acting Agency Secretary

# California Regional Water Quality Control Board

## San Francisco Bay Region

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Arnold Schwarzenegger  
Governor

MAY 16 2006  
File No. 2199.9488 (RS)

U.S. Fish & Wildlife Service  
Attn: Mr. Clyde Morris  
P.O. Box 524  
Newark, CA 94560

Subjects: Review of 2005 Annual Self-Monitoring Report, and Revisions to Self-Monitoring Program, South San Francisco Bay Low Salinity Salt Ponds, Alameda, Santa Clara, and San Mateo Counties

Dear Mr. Morris:

As indicated in its 2005 Annual Self-Monitoring Report (ASMR), the U.S. Fish & Wildlife Service (USFWS) is in noncompliance with Order No. R2-2004-0018 for discharging oxygen depleted waters to San Francisco Bay and tributaries to the Bay. The ASMR includes a summary of discharge data, management practices USFWS implemented in 2005, and management practices it proposes to implement in 2006 to improve oxygen levels in pond discharges. This letter requests that, by no later than June 30, 2006, USFWS (1) revise its ASMR to include updated management strategies for increasing oxygen levels (e.g., at our April 24 meeting, USFWS indicated that it proposes to extend the baffles at Pond A3W), (2) ensure appropriate cross-referencing between its ASMR and Operation Plans, and (3) provide all data from 2005 in electronic format. Additionally, this letter revises USFWS Self-Monitoring Program to eliminate (a) receiving water monitoring for Pond System A2W, and (b) the annual metals monitoring requirement in Table 1B – Continuous Circulation Monitoring for Alviso Ponds.

### Dissolved Oxygen Compliance and Adaptive Management

The Annual Self-Monitoring Report (ASMR) acknowledges that discharges from Pond Systems A2W, A3W, A7, A14, and A16 did not meet the dissolved oxygen limit prescribed in Order No. R2-2004-0018. As in 2004, significant algal growth and decomposition in these ponds continues to be the cause of low dissolved oxygen levels.

In a letter, dated March 25, 2005, the Water Board recognized that it will not be feasible for a well-operated lagoon system to continuously meet an instantaneous dissolved oxygen limitation of 5.0 mg/L. The March 25, 2005, letter went on to indicate that triggering of reporting and best management practice implementation should occur when dissolved oxygen concentrations are observed in the discharge outside the natural range of what is observed in relatively unimpacted, functional slough and lagoon environments of the South San Francisco Bay. For this reason, in evaluating compliance with the dissolved oxygen limit contained in Order No. R2-2004-0018, the March 25, 2005, letter indicated that USFWS should consider it a trigger for reporting and action, if at the point of discharge, the 10<sup>th</sup> percentile falls below 3.3 mg/L (calculated on a calendar weekly basis). The table below indicates the percentage of weeks that dissolved oxygen met or exceeded a 10<sup>th</sup> percentile of 3.3 mg/L. This shows that overall compliance with the reporting trigger appears to have improved between 2004 and 2005:

**Table 1: Dissolved Oxygen – Compliance with Weekly 10<sup>th</sup> Percentile of 3.3 mg/L**

Year	A2W	A3W	A7	A14	A16
2004	77%	6%	17%	N/A	N/A
2005	36%	76%	45%	17%	69%

**Pond System A2W.** In Pond System A2W, compliance with the dissolved oxygen trigger deteriorated between 2004 and 2005. The cause for this is unknown since the pond system operated in a continuous circulation mode in both these years. To improve oxygen levels in 2006, USFWS proposes to operate this system as a partially muted system. This will allow for better control of water levels than a full muted tidal system, and therefore, decrease the risk for flooding nesting birds.

**Pond System A3W.** On Pond System A3W, compliance with the dissolved oxygen trigger improved considerably between 2004 and 2005. This is because USFWS installed baffles to route more oxygenated water towards the discharge point. For 2006, baffles will remain in Pond A3W, and USFWS will operate this system as partially muted tidal to help improve water quality. Additionally, at our April 24 meeting, we learned that USFWS also plans to extend the baffles at Ponds A3W, which it believes will further increase oxygen levels.

**Pond System A7.** On Pond System A7, compliance with the dissolved oxygen trigger improved slightly. As a corrective measure, USFWS installed solar powered aerators on June 24, 2005, to improve oxygen levels. The effect of solar powered aerators on dissolved oxygen was disappointing, and USFWS does not propose to continue using them in this pond system. For 2006, USFWS proposes to install baffles and operate Pond A7 as partially muted tidal.

**Pond System A14.** The initial release of waters from Pond A14 commenced on March 31, 2005, and therefore, no comparisons could be made between the last two years. The performance of Pond A14 with regard to oxygen levels was poor. To improve oxygen levels in Pond A14, USFWS attempted to increase flow through, but this action did not significantly increase oxygen levels. The ASMR explains that the limiting factor to improving water quality for this system appears to be the channel that discharges water from Pond A14 to Coyote Creek. This channel, approximately 800 feet in length, was excavated with a small width to reduce impacts to native species. The channel does not appear to be scouring naturally. For 2006, USFWS indicated at our April 24 meeting that it plans to install baffles, solar powered aerators, and dredge the channel between Pond A14 and Coyote Creek.

**Pond System A16.** The initial release of waters from Pond A16 also commenced on March 31, 2005, and therefore, no comparisons could be made between the last two years. While Pond A16 met the dissolved oxygen trigger about 70% of the time, it went through a period in July and August when dissolved oxygen levels were depressed. In order to protect Artesian Slough, USFWS closed the intake and discharge gates to this pond system. This caused oxygen levels to become more depleted, and resulted in a within pond fish kill on August 10, 2005. To address low oxygen levels, USFWS switched Pond A16 to a muted tidal system, which improved oxygen levels considerably. For 2006, USFWS indicates that it will operate Pond A16 under muted tidal conditions. While muted tidal systems appear to increase oxygen levels when compared to ponds operating in a continuous circulation mode, we are concerned with USFWS operating Pond A16 as a muted tidal system over an extended period of time. This is because intake of waters at Pond A16 instead of Pond A17 could increase nutrient levels, and therefore, algal growth since Artesian Slough is dominated by effluent from the San Jose Water Pollution Control Plant. For this reason, we request that USFWS conduct monitoring once this year for nitrogen and phosphorus within Pond A16 to provide baseline information on these two nutrients.

**Dissolved Oxygen and Receiving Waters**

In order to develop a better understanding of dissolved oxygen dynamics in slough systems, the ASMR indicates that USFWS conducted additional sampling in areas that were relatively unaffected by pond discharges. Transect monitoring in Newark Slough showed that sloughs unaffected by former salt pond discharges contain dissolved oxygen levels less than 5.0 mg/L. To develop a better understanding of dissolved oxygen dynamics in such sloughs, USFWS indicated at our April 24 meeting that it plans to conduct additional transect or continuous monitoring in Newark or Mowry Slough. At this point, we believe that temporal variations in dissolved oxygen need to be better understood since oxygen levels will be significantly dependent on the time of collection, and the status of the tidal cycle. As such, we recommend continuous monitoring, and would like to discuss specifics with USFWS in the near future.

**Self-Monitoring Report and Operation Plans Cross-Referencing**

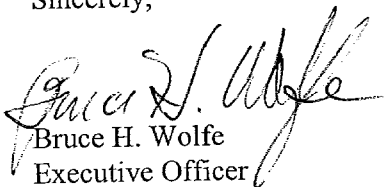
This letter requests that USFWS ensure appropriate cross-referencing between its ASMR and Operation Plans. For example, the Operations Plan for Pond System A2W indicates that if oxygen levels fall below the trigger value of 3.3 mg/L, USFWS will open A2W to become a muted tidal system. However, in the ASMR, USFWS indicates that A2W can only be partially muted tidal to protect nesting birds, and that it will implement this corrective measure at the beginning of this summer. Additionally, USFWS indicates that annual metals monitoring will occur in August/September, but requests that we delete this requirement in its ASMR. Further, USFWS indicates that if summer water levels are found to increase methyl mercury levels it will notify the Water Board to consult on the best approach to deal with this issue. Yet, the ASMR recommends that all methyl mercury monitoring funds be directed towards Pond A8 and Alviso Slough. We realize that the ASMR is the direction that USFWS intends to pursue, and therefore, request that it update Operation Plans to be consistent with that direction.

**Revisions to Self-Monitoring Program**

This letter modifies the self-monitoring program for Order No. R2-2004-0018 by eliminating (a) receiving water for Pond System A2W, and (b) the annual metals monitoring requirement in Table 1B – Continuous Circulation Monitoring for Alviso Ponds. The reason for eliminating receiving water for Pond System A2W is that it discharges over an exposed 1.5 kilometer mudflat before it reaches the receiving water, and monitoring data does not show adverse affects from the pond A2W discharge at the closest receiving water monitoring locations. On annual metals monitoring, this is because the results from 2005 monitoring show that all metals concentrations were well below their respective water quality objectives. Additionally, the salinity limit contained in Order No. R2-2004-0018 should act as an adequate surrogate for metals since the mechanism for both salinity and metals to increase in Alviso Ponds is by evaporation. Furthermore, while not a revision to the self-monitoring program, this letter supports USFWS efforts to direct mercury monitoring funds towards the study centered on Pond A8 and Alviso Slough.

We thank USFWS for taking the time to meet with us on April 24, 2006, to discuss how best to manage pond systems in this transitional phase. If you have any questions concerning this communication, please contact Robert Schlipf at (510) 622-2478 or via email at [rschlipf@waterboards.ca.gov](mailto:rschlipf@waterboards.ca.gov)

Sincerely,

  
Bruce H. Wolfe  
Executive Officer

Mr. Clyde Morris

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cc: Eric Mruz, U.S. Fish & Wildlife Service, Newark,  
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