

ELLISON, SCHNEIDER & HARRIS L.L.P.

CHRISTOPHER T. ELLISON  
ANNE J. SCHNEIDER  
JEFFERY D. HARRIS  
DOUGLAS K. KERNER  
ROBERT E. DONLAN  
ANDREW B. BROWN  
GREGGORY L. WHEATLAND  
CHRISTOPHER M. SANDERS  
LYNN M. HAUG  
PETER J. KIEL

ATTORNEYS AT LAW  
2600 CAPITOL AVENUE, SUITE 400  
SACRAMENTO, CALIFORNIA 95816-5905  
TELEPHONE (916) 447-2166 FAX (916) 447-3512

ELIZABETH P. EWENS, OF COUNSEL  
BRIAN S. BIERING  
TERESA W. CHAN  
SHANE E. CONWAY  
JEDEDIAH J. GIBSON  
JEREMY D. GOLDBERG  
CHASE B. KAPPEL

March 20, 2009

Mr. Matt St. John  
Regional Water Quality Control Board  
5550 Skylane Blvd., Suite A  
Santa Rosa, California 95403

**RE: Proposed 2008 Clean Water Act Section 303(d) Listings for Microcystin Toxin, Klamath River, from Iron Gate Dam to Scott River and from Scott River to Trinity River**

Dear Mr. St. John:

Pursuant to notice dated January 16, 2009, PacifiCorp Energy (PacifiCorp) hereby submits the following comments on the proposed determination by the North Coast Regional Water Quality Control Board (Regional Board) to list microcystin toxin under Section 303(d)(2) of the Clean Water Act as a cause of impairment of the Klamath River segments from Iron Gate Dam to the Scott River and from the Scott River to the Trinity River ("Proposed Listings"). PacifiCorp repeats many of the same concerns raised in its prior comment letter dated April 28, 2008, enclosed herewith, which was submitted in response to the United States Environmental Protection Agency's determination to place microcystin toxin on the 303(d) list for reach of the Klamath River encompassing the Project area. Specifically, PacifiCorp submits that the listing will do little, if anything, to address the problem of microcystin toxin in the Klamath River beyond ongoing efforts, and perhaps will create an undesirable precedent in other areas of the watershed and State that regularly experience blooms of blue-green algae.

Several other regulatory processes currently underway in the Klamath River basin offer significantly greater promise for addressing microcystin toxin in the Klamath River than the Proposed Listing. The Regional Board should allow these processes, and primarily the ongoing total maximum daily load (TMDL) process for nutrients, temperature and organic enrichment/low dissolved oxygen, to proceed as a means to address these concerns. The Regional Board should reject the Proposed Listings and not divert its attention and limited resources from the principal cause of the problem, namely, nutrient loading from upstream sources.

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Thank you for the opportunity to provide these comments.

Sincerely,



Robert E. Donlan  
Attorneys for PacifiCorp

Enc.

Cc: Mr. Randy Landolt  
Mr. Cory Scott  
Mr. Tim Hemstreet  
Ms. Linda Prendergast

April 28, 2008

Mr. Peter Kozelka  
TMDL Coordinator, Water Division (WTR-2)  
U.S. Environmental Protection Agency, Region IX  
75 Hawthorne Street  
San Francisco, CA 94105

**RE: Proposed 2006 Clean Water Act Section 303(d) Listing for Microcystin Toxin, Klamath River, from Oregon Border to Iron Gate Dam**

Dear Mr. Kozelka:

Pursuant to notice in the Federal Register on March 27, 2008, PacifiCorp Energy (PacifiCorp) hereby submits the following comments on the proposed determination by the United States Environmental Protection Agency, Region IX (EPA) to list microcystin toxin under Section 303(d)(2) of the Clean Water Act as a cause of impairment of the Klamath River segment from the Oregon state line to Iron Gate Dam ("Proposed Listing"). PacifiCorp owns and operates the Klamath Hydroelectric Project (Project) in the stream segment identified in the Proposed Listing, and is in the midst of relicensing the Project before the Federal Energy Regulatory Commission. PacifiCorp was surprised to learn that EPA had reversed its prior "final" determination, a determination which upheld the State of California's decision not to place microcystin toxin on the 303(d) list, particularly in light of the sound logic supporting EPA's prior determination.

PacifiCorp submits that placement of microcystin toxin on the 303(d) list for this limited stream reach will do little, if anything, to address the problem of microcystin toxin in the Klamath River, and perhaps will create an undesirable precedent in other areas of the watershed and State that regularly experience blooms of blue-green algae. As discussed below, several other regulatory processes currently underway in the Klamath River basin offer significantly greater promise for addressing microcystin toxin in the Klamath River than the Proposed Listing. EPA should allow these processes, and primarily the ongoing total maximum daily load (TMDL) process for nutrients, temperature and organic enrichment/low dissolved oxygen, to proceed as a means to address these concerns. EPA should reject the Proposed Listing and not divert its attention and limited resources from the principal cause of the problem, namely, nutrient loading from upstream sources.

#### **A. Background**

California's 2006 Proposed Clean Water Act Section 303(d) List identified "Klamath River HU, Middle HA, Oregon to Iron Gate", "Klamath River HU, Middle HA, Iron Gate Dam to Scott River", and "Klamath River HU, Middle HA, Scott River to Trinity River" as each impaired due to "Nutrients", "Organic Enrichment/Low Dissolved Oxygen", and "Temperature" (SWRCB 2006). It did not include microcystin toxin.

The state held public workshops in December 2005 and January 2006 to solicit comments, and held a public meeting on October 26, 2006, at which it accepted additional public comments. The State Board approved the 2006 Proposed Section 303(d) List at this meeting and transmitted the Proposed List to EPA on November 21, 2006 (SWRCB 2006). The State's 303(d) List did not include microcystin toxin.

EPA approved the majority of State Board's 2006 Section 303(d) List of impaired waters and associated pollutants on November 30, 2006. (Letter dated Nov. 30, 2006, from Alexis Strauss to Tom Howard.) EPA disapproved the State Board's decision not to list certain additional waters and associated pollutants on March 8, 2007. (Letter dated Mar. 8, 2007, from Alexis Strauss to Tom Howard.) On March 15, 2007, EPA published a notice of the Proposed List in the Federal Register and provided the public an opportunity to comment on EPA's March 8, 2007, decision. 72 Fed. Reg. 12175. EPA received several comment letters.

On June 28, 2007, EPA transmitted to the State Board its final list of waters and associated pollutants to be added to the 2006 Section 303(d) List. (Letter dated June 28, 2007, from Alexis Strauss to Dorothy Rice.) EPA explained that the 2006 Section 303(d) List and TMDLs submitted by the State Board would sufficiently address the blue-green algae and microcystin toxin issues in the Klamath River. (*Id.* at Responsiveness Summary, pp. 7, 10.) EPA also identified other efforts in place to address blue-green algae in the Klamath River.

On July 30, 2007, Klamath Riverkeeper filed suit against EPA in Federal District Court, Northern District, to set aside EPA's June 28, 2007 determination not to include the Klamath River and Reservoirs as impaired due to *Microcystis aeruginosa* and microcystin toxin. EPA answered the Complaint on November 5, 2007, and Plaintiff filed a summary judgment motion with supporting material on December 19, 2007. *Klamath Riverkeeper v. US EPA*, Docket No. C 07-3908 (SBA) (N.D. Cal.), Answer and Motion for Summary Judgment.

On January 18, 2008, EPA and Klamath Riverkeeper filed a Stipulation and Proposed Order with the Court requesting remand of the challenged action to EPA for reconsideration. The Stipulation recited that EPA had re-examined the record relating to the State of California's applicable water quality standards and re-examined the designated uses for the Klamath River and Reservoirs. The stipulation further indicated that EPA, in considering the unique circumstances of this case and the particular waters involved, now believed that a reconsideration of its prior determination not to list was warranted. *Klamath Riverkeeper v. US EPA, supra*, Stipulation and Proposed Order. On January 22, 2008, the Court issued the order requested by EPA and Klamath Riverkeeper, and EPA published notice in the Federal Register of its Proposed Listing on March 27, 2008.

**B. Blue-Green Algae and Microcystin Toxin Are Basin-Wide Problems, and Should Be Addressed As Such**

PacifiCorp's primary concern with the Proposed Listing is that it does not effectively address the causes of microcystin toxin in the Klamath River. While PacifiCorp does not dispute that Project Reservoirs and other locations in the Klamath River system have exhibited blue-green algae blooms, the cause of these blooms and microcystin toxin in the Project Reservoirs is nutrient loading from upstream sources, and the Proposed Listing does absolutely nothing to address this critical causal factor.

*Microcystis aeruginosa* ("MSAE"), which can release the toxin microcystin, is one of the most common species of blue-green algae (cyanobacteria) worldwide, and can be dominant in nutrient-enriched ("eutrophic" and "hypereutrophic") waters (Reynolds and Walsby 1975, Reynolds et al. 1981, Carmichael 2007). It is well documented that nutrient enrichment is a key precursor to algae bloom formation, and algae blooms are common in waters that receive high loads of nutrients. Paerl (1988) reports that inorganic and organic nutrient enrichment is integral to stimulation and support of algae bloom formation, and to date most research and management efforts have focused on nutrient loading when addressing bloom formation.

Kennedy and Walker (1990) report that reservoir water quality and algal productivity are controlled to a large extent by external nutrient loadings, and that the nature of these nutrient inputs reflect watershed characteristics, especially land use activities. Welch (1992) reports that blue-green algae require high supply rates of nutrients in order to produce a high biomass. Holdren et al. (2001) report that elevated nutrients are the key to excessive algae production in reservoirs, and that management for nutrient input reduction (potentially involving a variety of watershed or basin management activities) is an essential component of algal control, particularly when inflow nutrient loading is dominated by external (input) sources. Cooke et al. (2005) reports that the principal cause of increased algal biomass is excessive loading of nutrients and organic matter from external (input) sources, and that the first and most effective step towards improving reservoir water quality is to limit, divert, or treat excessive external nutrient loading.

The primary cause of the presence and growth of blue-green algae (including MSAE and microcystin toxin) in PacifiCorp's Project Reservoirs is large loads of nutrients (nitrogen and phosphorus) from the river upstream of the reservoirs. The large loads of nutrients to the Project Reservoirs from the river predominantly originate in Upper Klamath Lake and from other upstream sources, and are not caused by Project operations. Upper Klamath Lake – which is the primary source for Klamath River waters that flow into the Project Reservoirs – is highly-enriched with nutrients and is classified as "hypereutrophic" (Johnson et al. 1985).

Upper Klamath Lake has a long history of excessive algae blooms and water quality impairment (Wee and Herrick 2005). The Project Reservoirs are classified as "eutrophic" (EPA 1978, City of Klamath Falls 1986, PacifiCorp 2004a, PacifiCorp 2004b), which is defined as the excessive addition of nutrients and organic matter, thereby increasing

biological productivity (Holdren et al. 2001, Cooke et al. 2005). In fact, upstream inputs from the Klamath River contribute from 97 to nearly 100 percent of the total loads of nutrients (phosphorus and nitrogen) to Iron Gate and Copco reservoirs (EPA 1978, Kann and Asarian 2005, Kann and Asarian 2007, and PacifiCorp 2006). EPA (1978), which evaluated the nutrient loading and trophic status of Iron Gate reservoir in 1975, stated that “[s]ince most of the load is in the outflow of naturally eutrophic Klamath Lake, it appears little can be done to improve the trophic condition of Iron Gate reservoir.”

If EPA’s goal is to address and control the occurrence of microcystin toxin in Copco and Iron Gate Reservoirs, EPA logically would direct its attention and resources at ongoing TMDL processes for nutrient, organic enrichment/low dissolved oxygen, and temperature. In particular, EPA should focus on bringing about reductions in the organic and nutrient loads discharged from Upper Klamath Lake.

**C. PacifiCorp Is Actively Participating in Ongoing Processes To Address Blue-Green Algae and Microcystin Toxin in Project Reservoirs**

PacifiCorp is concerned about water quality and microcystin toxin in the Project area and the Klamath River. PacifiCorp is actively involved in several water quality processes that specifically address the issue of blue-green algae blooms and microcystin toxin. These processes include the current TMDL process for nutrients, temperature and organic enrichment/low dissolved oxygen, PacifiCorp’s water quality certification process under Section 401 of the Clean Water Act, and active participation in the Klamath Blue-Green Algae Working Group (BGA Workgroup). Each of these processes is designed, at least in part, to assess and better understand the causes of algae conditions and microcystin toxin in the Project Reservoirs.

1. TMDL Process for Nutrients, Temperature and Organic Enrichment/Low Dissolved Oxygen

Section 303(d) of the Clean Water Act, 33 U.S.C. §1313(d), requires states to identify waters within their boundaries for which effluent limits and other pollution control requirements “are not stringent enough to implement any water quality standard.” 33 U.S.C. §1313(d)(1)(A). Once listed, the State must prioritize these “water quality limited segments” based on the severity of the pollution and the type and use of the waterway, and establish a “total maximum daily load,” which is a calculation of the maximum quantity of a given pollutant that may be added to a water body from all sources without exceeding the applicable water quality standard for that pollutant. 33 U.S.C. §1313(d)(1)(C).

A TMDL has two components: a “wasteload allocation” and a “load allocation.” The wasteload allocation is the portion of a TMDL allocated to existing and future point sources (40 CFR §130.2(h)), and a load allocation is the portion of a TMDL attributed to existing and future non-point sources, including natural background sources (40 CFR §130.2(g)). A TMDL must take into consideration seasonal variations in water quality conditions and must include a margin of

safety to account for any lack of knowledge concerning the relationship between effluent limitations and water quality. 33 U.S.C. §1313(d)(1)(C). A TMDL cannot effectively address microcystin toxin, however, without addressing nutrient loads received at Copco and Iron Gate Reservoirs from upstream sources. Nutrients are the primary cause of the blooms and toxin in the reservoirs, and it is at best doubtful that targeting the symptom or manifestation of these problems will provide a meaningful long-term solution.

Ongoing TMDLs for the Klamath River offer greater hope at controlling blue-green algae blooms and microcystin toxin than the Proposed Listing. The North Coast Regional Water Quality Control Board is currently developing TMDLs for organic enrichment/low dissolved oxygen, temperature and nutrients in the California portions of the Klamath River, from the state line to the estuary. This work is being done in conjunction with the Oregon Department of Ecology (ODEQ), which is developing TMDLs for the Oregon portion of the Klamath River. Copco and Iron Gate Reservoirs are nutrient-enriched, eutrophic water bodies as a result of enormous loads of nutrient and organic matter from upstream sources, particularly Upper Klamath Lake. The Regional Board's and ODEQ's TMDLs will presumably target control of these nutrient and organic loads from upstream sources in their respective states. Because nutrients, organic matter and ambient conditions are the primary drivers of algae conditions in Copco and Iron Gate Reservoirs, these TMDLs will provide an opportunity to address all of the factors contributing to these conditions in the reservoirs, rather than the Proposed Listing which would attempt to treat the symptom and not the causes.

The Regional Board and ODEQ should be afforded the opportunity to continue development of the Klamath River TMDLs for nutrients, temperature and organic enrichment/low dissolved oxygen, as EPA stated when it originally determined not to put microcystin toxin on the 303(d) list. If targeted water quality improvements are achieved upon the completion of the Klamath River TMDLs, in the form of reduced nutrient loading to the Project Reservoirs from upstream sources, the primary cause of blue-green algae blooms and microcystin toxin will be addressed. Of course, if load allocations are appropriately assigned to Project facilities (taking into account loading from upstream sources), those allocations would be implemented through the SWRCB's Section 401 water quality certification for the Project.

## 2. Section 401 Water Quality Certification Process

Section 401 of the Clean Water Act requires that PacifiCorp obtain a certification from the SWRCB that the Project will comply with certain enumerated sections of the Clean Water Act, including section 303 (water quality standards). 33 U.S.C. §1341(a)(1). The certification must include a statement that there are reasonable assurances that the activity will be conducted in a manner which will not violate applicable water quality standards (40 CFR §121.2(a)(3)), and the certifying state may condition the certification to ensure compliance with applicable water quality

requirements and standards (33 U.S.C. § 1341(d)). For the Project, the applicable water quality standards include the water quality objectives and designated beneficial uses identified in the North Coast Basin Plan. EPA's documentation supporting the Proposed Listing identifies non-attainment of several of these water quality standards as the basis for the Proposed Listing. The ongoing water quality certification process, in conjunction with the ongoing TMDL process for nutrients, temperature and organic enrichment/low dissolved oxygen, will provide a means to address PacifiCorp's contribution to water quality impairment in the Klamath River, and specifically the issues affected by the Proposed Listing. As such, the Proposed Listing is not likely to result in any additional water quality improvements beyond those that may result from PacifiCorp's water quality certification.

PacifiCorp has been proactive in response to blue-green algae blooms in Copco and Iron Gate Reservoirs through the water quality certification process. As part of its section 401 application for water quality certification, PacifiCorp is proposing reservoir management plans to improve the quality of waters in Copco and Iron Gate Reservoirs and in the Klamath River below Iron Gate dam (PacifiCorp 2006a, 2006b). These plans will evaluate the effectiveness and feasibility of numerous management techniques and actions to address in-reservoir water quality resulting from the nutrients loads and organic material from upstream sources. As a component of the reservoir management plans, PacifiCorp implemented an extensive study and monitoring program in 2007 to better understand the factors that give rise to algae blooms. PacifiCorp has proposed an even more extensive study and monitoring plan in 2008, including pilot studies specifically targeting algal conditions in the reservoirs.

### 3. Blue-Green Algae Working Group

PacifiCorp also is an active participant in the Klamath BGA Workgroup, which includes the EPA, the State Water Resources Control Board, the North Coast Regional Water Quality Control Board, California Office of Environmental Health Hazard Assessment, California Department of Health Services, the Karuk Tribe, the Yurok Tribe, Humboldt County and Siskiyou County. The mission of the BGA Workgroup is to identify the presence, distribution, and possible causes of blue-green algal blooms, including *Microcystis aeruginosa* and any other similar toxigenic algal species and their toxins within the Klamath Basin. To this end, the Klamath BGA Workgroup has contracted a study to identify *Microcystis* growth limitations and growth rates and the factors that promote toxicity of the *Microcystis* blooms. In addition, the Klamath BGA Workgroup has assisted California with its voluntary BGA guidance document and provided templates to the Regional Board and EPA on posting and press releases for blue-green algae blooms.

**D. EPA's Justification For the Proposed Listing Is Disingenuous**

EPA's Proposed Listing reverses a prior final agency action, dated June 28, 2007, in which EPA concluded that the SWRCB's decision not to put the Klamath River on 303(d) list for microcystin toxin was reasonable. In its response to comments on its prior decision not to list, EPA asserted that Klamath River TMDLs currently under development for nutrients, dissolved oxygen, and temperature will be sufficient to address the public health and environmental impacts of the blue-green algae. EPA noted that "based upon the current record, EPA considers California's present listing for the Klamath River are [sic] sufficiently comprehensive, and trigger the requirement to establish TMDLs sufficiently stringent to address those impacts." EPA's original action recognized other ongoing efforts to address blue-green algae in the Klamath River, such as the Klamath BGA Workgroup, Statewide Blue-Green Algae Work Group, the Klamath River and Lower Lost River TMDLs, among other things.

EPA's Proposed Listing does not address these prior findings, and there is nothing in the Proposed Listing and supporting documentation to suggest that EPA's prior findings are no longer valid. Rather, in support of the Proposed Listing determination, EPA identifies several "exceptional" factors that somehow warrant reconsideration and reversal of its prior determination. None of these factors are compelling.

EPA first states that, at the time that the SWRCB acted on the proposed 303(d) list in November, 2006, the SWRCB was not in possession of (and apparently had not seen) raw data that the North Coast Regional Board had gathered as a result of the Regional Board's participation in the Klamath BGA Workgroup. EPA further states that the Regional Board was not an active participant in the 303(d) listing process. Even if this information were relevant to the EPA's action on the 303(d) listing, the facts do not support these assertions. The SWRCB is a participant in the BGA Workgroup and should be in possession of these data. Indeed, for years the SWRCB has funded much of the monitoring and sampling for blue-green algae in the Klamath River.

Moreover, the Regional Board was actively involved in the development of the 303(d) list. The record reveals that the Executive Officer for the Regional Board commented in the 303(d) listing process on three separate occasions (December 1, 2005, January 31, 2006 and October 20, 2006. Moreover, the Regional Board actively participated in a hearing in which the SWRCB adopted the 2006 303(d) list. (See RT at 269, Matt St. John).

EPA next attempts to explain its reversal by stating that it overlooked available data when it upheld the SWRCB's decision not to list the Klamath River for microcystin toxin. This excuse is also without merit. The EPA is an active participant in the Klamath BGA Workgroup and has access to all data and information generated by or submitted to the Workgroup. EPA chairs the Klamath River BGA Workgroup, which at the time was engaged in a two year study of the presence, distribution and possible causes of blue-green algae in the Klamath Basin. (June 28, 2007 letter at 9.)

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EPA's third justification is that it received comments and data during the public comment period that justify the reversal in position. This rationale is disingenuous, as this justification would have supported disapproval of the SWRCB's determination in the first instance. Moreover, the record made available to PacifiCorp does not include any new or material data that was submitted to EPA during the public comment period.

Finally, EPA states that it had, in its June 28, 2007 letter, reserved the option to re-assess its original determination. We are uncertain how this is an exceptional factor. For the reasons stated above, there has been no material new information submitted to EPA since its prior determination that warrants reversal of its prior position that microcystin toxin is best addressed through the ongoing TMDL processes for nutrient, organic enrichment/low dissolved oxygen, and temperature. Indeed, the only changed circumstance was the filing of the lawsuit by Klamath Riverkeeper.

#### **E. Conclusion**

PacifiCorp submits that the Proposed Listing will have negligible if any beneficial effect on water quality in the Klamath River, and will be a distraction from ongoing efforts to address the principal causes of blue-green algae problems in the Klamath River and project area, namely nutrient loading from Upper Klamath Lake and other upstream sources. The EPA's justification for reversal of its prior listing decision is disingenuous to the extent it claims discovery of "new" data, which clearly were in the hands of both the SWRCB and EPA at the time of the earlier listing decisions. Moreover, EPA provides no explanation of how or why its prior rationale is now defective. PacifiCorp respectfully requests that EPA reject requests to list microcystin toxin on the Section 303(d) list, and direct its efforts at ongoing TMDLs and other processes that can bring about meaningful water quality improvements in the Klamath River.

Thank you for the opportunity to provide these comments. Please contact me if you have any questions.

Sincerely,

A handwritten signature in blue ink that reads "Mark Sturtevant for RAL". The signature is written in a cursive, flowing style.

Randy A. Landolt

cc: Alexis Strauss, EPA Region IX  
Catherine Kuhlman, NCRWQCB  
Charlie Hoppin, SWRCB