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Donner Summit Public Utility District

Pollution Prevention Plan Work Plan and Time Schedule for Aluminum

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Prepared for
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1.0 INTRODUCTION

On April 24, 2009 the California Regional Water Quality Control Board, Central Valley Region (Regional Water Board) adopted Waste Discharge Requirements for the Donner Summit Public Utility District Wastewater Treatment Plant (Order No. R5-2009-0034, NPDES No. CA0081621) (Order) and Cease and Desist Order No. R5-2009-0035 (CDO). The Order contains final aluminum water quality based effluent limitations for the protection of freshwater aquatic life. Compliance with these final effluent limitations is not immediately achievable. Therefore, interim effluent limitations for aluminum, and a schedule for achieving compliance, are included in the Order. Compliance with the final effluent limitations for aluminum is required after the expiration of the Order (April 1, 2014).

The Order, in Special Provisions VI.C.3.b and VI.C.7.a.iii specifies that the Donner Summit Public Utility District (District) is required to prepare and implement a Pollution Prevention Plan (PPP) for aluminum pursuant to Section 13263.3 of the California Water Code (CWC). Furthermore, within six months of adoption of the Order, the City is required to prepare and submit a Work Plan and Time Schedule for preparation of the PPP. This document serves to fulfill the Pollution Prevention Work Plan and Time Schedule requirement of the Order. Special Provision VI.C.3.b also specifies that the District is required to prepare and implement a PPP for manganese. The District has already fulfilled the PPP requirement for manganese by submitting a PPP to the Regional Water Board on July 23, 2009 pursuant to the requirement in the CDO. Thus, manganese is not addressed in this work plan.

2.0 EFFLUENT DATA AND LIMITATIONS

The Order contains interim effluent limitations for aluminum effective through April 1, 2014. Compliance with final effluent limitations will be required from this date forward. A comparison of effluent monitoring data, collected and used to support the Report of Waste Discharge, with interim and final effluent limitations is presented in Table 1.

Table 1
Donner Summit PUD Effluent Limitations for Aluminum (µg/L)

Sample Date	Total Recoverable Effluent Concentration	Interim Effluent Limitation (Daily Maximum)	Final Effluent Limitations	
			Average Monthly	Maximum Daily
November 2003	620	1,930**	71**	143**
February 2004	1,310*			
December 2005	38.4			
December 2006	127			
January 2008	952			
June 2009	<0.1			

*Datum suspect as effluent and receiving water results were reported at the same concentration on the same day.
**Compliance with effluent limitations can be demonstrated using either total or acid-soluble aluminum.

The limited available historical WWTP effluent data, presented in Table 1, appear to demonstrate that the WWTP is capable of complying with interim effluent aluminum limitation of 1,930 µg/L. However, all but two historical effluent aluminum concentrations exceed final limitations.

Further, the Donner Summit PUD 2008 Consumer Confidence Report contains a single aluminum drinking water result, collected in 2004, of 829 µg/L. This result is below the Maximum Contaminant Level of 1,000 µg/L. However, the result is significantly higher than the final average monthly aluminum effluent limitation of 71 µg/L. Although this is only one result, it would appear that the drinking water supply is the major source of aluminum in the service area, either because of aluminum in the raw surface water supply or aluminum added (e.g., alum) as a coagulate during water treatment.

3.0 POLLUTION PREVENTION PLAN REQUIREMENTS

CWC Section 13263.3 describes a Pollution Prevention Plan as containing the following elements:

1. An estimate of all of the sources of a pollutant contributing, or potentially contributing, to the loadings of a pollutant in the treatment plant influent;
2. An analysis of the methods that could be used to prevent the discharge of the pollutants;
3. An estimate of load reductions that may be attained through the methods identified in item 2;
4. A plan for monitoring the results of the pollution prevention program;
5. A description of the tasks, costs, and time required to investigate and implement elements in the pollution prevention plan;
6. A statement of pollution prevention goals and strategies, including immediate, short and long term action;
7. A description of existing pollution prevention programs;
8. An analysis, to the extent feasible, of any adverse environmental impacts that may result from pollution prevention actions; and
9. An analysis, to the extent feasible, of the costs and benefits that may be incurred to implement the pollution prevention program.

The District will address each of these required elements in a final PPP for submittal to the Regional Water Board.

4.0 POLLUTANT PREVENTION STRATEGY

Initial strategies for complying with final effluent aluminum limitations are summarized briefly below. These strategies will be more thoroughly evaluated and developed during the development and implementation of the final aluminum pollution prevention plan.

IMPLEMENT MONITORING PROGRAM

Because only limited data exist, the District will develop an aluminum water quality monitoring program for inclusion in the final pollution prevention plan. The monitoring plan is expected to include monitoring the water supply, WWTP influent, WWTP effluent, and use of aluminum-

based coagulants at both the water and wastewater treatment plants. In the development of the monitoring plan, sampling for acid-soluble versus total recoverable aluminum will be evaluated. Prior to the completion of the final pollution prevention plan, the District will continue to implement monthly effluent monitoring for aluminum during times of surface water discharge. The results of this monthly effluent sampling for aluminum will be summarized in the final pollution prevention plan.

EVALUATE WATER AND WASTEWATER TREATMENT PROCESSES

Given the apparent high aluminum concentration in the water supply, relative to the final effluent limitations, an evaluation of chemical used in the treatment of drinking water and wastewater would be appropriate. The District will propose in the final pollution prevention plan an evaluation of chemical additions made during the treatment of drinking water as well as wastewater.

PUBLIC OUTREACH AND EDUCATION

If after the implementation of the pollution prevention monitoring program, it is determined that there may be controllable sources of aluminum within the service area, the District may develop and implement a targeted public education and outreach program.

CONDUCT A WATER EFFECT RATIO STUDY

Because the final aluminum effluent limitation is significantly lower than water supply and WWTP effluent aluminum concentrations, the most practical and cost effective approach for achieving consistent compliance with final aluminum effluent limitations is likely the implementation of a water effect ratio study to determine the appropriate site-specific water quality objective for aluminum. Following the determination of an appropriate site-specific water quality objective for aluminum, which is protective of a freshwater aquatic life, the District would request that the Order be reopened and amended to include an aluminum effluent limitation based on the water effect ratio study derived site specific water quality objective for aluminum.

5.0 TIME SCHEDULE

The Order requires submittal of this Work Plan within six months of adoption of the Order, and submittal of the pollution prevention plan within two years following approval of this Work Plan by the Executive Officer. A schedule for achieving compliance with these requirements is presented in Table 2, assuming a four month period for Regional Water Board review and approval of the Work Plan. If the Work Plan is approved sooner or later than assumed, the schedule will be adjusted accordingly. The pollution prevention plan will provide a schedule for achieving compliance with the final effluent limitations for aluminum by April 1, 2014. Following approval of this Work Plan by the Executive Officer of the Regional Water Board, annual progress reports will be submitted December 1 annually to the Regional Water Board.

Table 2
Donner Summit PUD Pollution Prevention Plan Time Schedule

Task	Approx. Completion Date
Implement Effluent Monitoring Program	Ongoing
Submit Pollution Prevention Work Plan	12/13/2009 (within 6 mo. of Order effective date)
Approval of Work Plan	4/13/2010 (assumed)
Implement Pollution Prevention Plan	4/13/2010 (after approval of Work Plan)
Submit Annual Progress Reports	12/1 annually (2010 forward)
Evaluate Monitoring Program Data	4/13/2011 (1 yr. after approval of Work Plan)
Prepare and Submit Pollution Prevention Plan	4/13/2012 (2 yrs. after approval of Work Plan)