

## Response to Written Comments

### **In Consideration of Waste Discharge Requirements Order No. R1-2014-0026, Renewal of National Pollutant Discharge Elimination System (NPDES) Permit for the Foster Dairy Farms dba Humboldt Creamery Wastewater Treatment Facility**

**Regional Water Quality Control Board, North Coast Region  
November 20, 2014**

#### **Comment Letters Received**

One comment letter from SHN Consulting Engineers and Geologists was received timely on behalf of Foster Dairy Farms regarding the draft Waste Discharge Requirements/NPDES permit for the Foster Dairy Farms dba Humboldt Creamery Facility. The correspondence identified as A. below is attached to this response (Attachment A). Attachment B presents a subsequent special study conducted by Humboldt Creamery for consideration in adoption of Order No. R1-2014-0026. Some comments resulted in clerical edits or clarifications. Significant comments and clarifications received are summarized and followed by staff response in this document.

- A.** Comments on Draft NPDES Permit, Foster Dairy Farms, Inc. dba Humboldt Creamery, Fernbridge Facility; Order No. R1-2014-0026; NPDES Permit No. CA0005584; WDID No. 1B80185OHUM, June 27, 2014.
- B.** Manganese and Total Dissolved Solids Special Study, Humboldt Creamery WDR Order No. R1-2014-0026, Prepared for Foster Dairy Farms, Inc. dba Humboldt Creamery by SHN Consulting Engineers and Geologists, August 22, 2014.

#### **A. Comments Humboldt Creamery**

**Comment 1:** *Table 5 in Section IV.B.1 of the permit includes a new maximum daily land discharge specification of 100 lbs/acre/day for biological oxygen demand (BOD<sub>5</sub>). The fact sheet located in Section F.IV.F.3.a (page F-22) does not give a rationale for introducing this additional land discharge specification. Please provide a rationale for this new land discharge specification.*

**Response 1:** In response to your comment, Regional Water Board staff has re-evaluated the land application rates for BOD<sub>5</sub> and determined that inclusion of a daily application rate at this facility is not technically supported as necessary for the protection of water quality at this time. Therefore, land application specifications shall be evaluated only in accordance with average monthly limitations. Tables 5 and E-3 have been revised to reflect this change.

**Comment 2:** *Since the issuance of the last NPDES permit, a land disposal evaluation was performed in September 2011 (SHN 2011). The salinity of the land applied process water from Humboldt Creamery was further investigated during a TDS special study, which was performed in January 2013 (SHN, 2013a). The results of the SHN, 2011 and SHN, 2013a studies indicate that salt composition is largely comprised of minerals that are found beneficial to plant growth in small amounts and that salts are not building up to unacceptable levels in site soils.*

*The draft permit requires that the facility's effluent at LND-001 be limited to a TDS concentration of 450 mg/L, which is based on agricultural water quality goals used to protect agricultural water supply. However, the land disposal evaluation and TDS special studies conducted at the site indicate that this level is not necessary to protect waters of the state: the process water from the Humboldt Creamery facility is not causing salinity issues in the soil, and is largely contributing beneficial mineral salts to the irrigated area. The state's secondary maximum contaminant levels (MCLs) include constituent levels not to be exceeded in drinking water supplied to the public by community water systems.*

*The state's secondary MCLs of TDS are recommended to be limited to 500 mg/L with an upper limit of 1,000 mg/L and a short term limit of 1,500 mg/L. The discharger requests that the final effluent limitation for TDS be changed to 1,000 mg/L, which is the upper limit of the state's secondary MCL for TDS.*

**Response 2:** The Regional Water Board is obligated by statute to protect the beneficial uses of water. In accordance with the North Coast Region Water Quality Control Plan (Basin Plan), although municipal supply is a beneficial use of areal groundwater associated with the facility, the most sensitive beneficial use to be protected in groundwater associated with the Facility waste discharge to land is agricultural supply. An increase of land discharge limitations that does not protect the most sensitive beneficial use would not be appropriate.

Furthermore, the Regional Water Board is bound to application of the statewide policies in individual permitting actions, including but not limited to Resolution 68-16 Maintaining High Quality Water (Antidegradation Policy [http://www.waterboards.ca.gov/board\\_decisions/adopted\\_orders/resolutions/1968/rs68\\_016.pdf](http://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/1968/rs68_016.pdf)). In Order to reissue a permit allowing the requested increase in the concentration of total dissolved solids (TDS), compliance with the Antidegradation Policy requires a complete antidegradation analysis. Based upon the results of such an analysis the Regional Water Board would need to find that the proposed increase in the allowable discharge would protect the most sensitive beneficial use and be consistent with Resolution 68-16.

While Regional Water Board staff appreciate the efforts Foster Dairy Farms has undertaken to evaluate TDS as summarized above and further described in Attachment A, neither of these studies is consistent with all the elements that would be necessary for an antidegradation analysis. At this time, documentation submitted does not support an increase in the discharge specification limitation for TDS.

**Comment 3:** *Table 5 in Section IV.B.1 of the permit includes a discharge specification of 0.20 mg/L for manganese. This discharge specification is retained from the previous NPDES permit*

*issued for the facility in 2009. Historical laboratory analytical results from Humboldt Creamery's source wells, however, indicate manganese concentrations that range from 0.87 to 1.50 mg/L (Figure 1 of Attachment A), which are well above the proposed discharge limit. Historical discharge concentrations of manganese are similar in range and magnitude to the source well concentrations.*

*Historical laboratory analytical results from groundwater monitoring wells GWR-1 and GWR-5, which are background wells that are not irrigated as part of Humboldt Creamery's land application system, also show elevated manganese concentrations in the upper aquifer underlying the irrigation fields (Figure 1). The manganese concentrations from these two wells ranged from 0.35 to 7.37 mg/L during the previous NPDES permit cycle. Natural variation throughout any aquifer is an expected, normal condition. As such, monitoring wells GWR-1 and GWR-5 should be used to establish background, naturally occurring conditions in the upper aquifer. The discharger requests the removal of the final effluent limitation for manganese, or, if it is retained, that it be changed to the maximum historical source well background concentration of 1.50 mg/L.*

**Response 3:** Staff has reviewed the data submitted for the source well as well as the groundwater monitoring data submitted during the 2008 permit cycle. While staff may be willing to consider an effluent limitation that is no more stringent than background, review of the entire data set indicates the following: 1) source water is derived from a deeper portion of the aquifer and does not necessarily represent background concentrations in shallow groundwater in the receiving areas; 2) based on groundwater elevation data and other monitoring parameters, monitoring well GWR5 has been questionable as an appropriate background location since the initial installation; 3) monitoring wells GWR-2, GWR-3, and GWR-4 located in the primary area of waste discharge, are consistently an order of magnitude or more below effluent limitations for manganese at 200 ug/L which has been established for the protection of agricultural supply.

Additional data would be necessary to support a finding that areal background concentrations of manganese in shallow groundwater exceed the level of 200 ug/L established for beneficial use protection. Given the available information, which shows that portions of the shallow aquifer are well below a manganese concentration of 200 ug/L, Regional Water Board staff does support the request to remove limitations for manganese at this time. Our response to additional information submitted August 22, 2014 is found under item No. 6 below.

**Comment 4:** *Table 5 in Section IV.B.1 of the permit includes a discharge specification of 1.5 mg/L for ammonia nitrogen. The fact sheet located in Section F.IV.G.3 (page F-24) does not provide a rationale for retaining this land discharge specification, which was requested to be removed in the report of waste discharge (ROWD; SHN, 2013b).*

*Since the implementation of the original NPDES permit for the Humboldt Creamery facility in 2009, the effluent standard of 1.5 mg/L for ammonia nitrogen has never been violated. Furthermore, reasonable potential analysis demonstrates that the maximum effluent concentration (MEC) is less than the most stringent applicable water quality criterion (C), and the maximum background concentration (B) is not greater than the most stringent applicable water quality criterion (C). Therefore, Ammonia nitrogen does not pose a reasonable*

*potential to degrade waters of the state, and an effluent limitation is not required. The discharger requests the removal of the effluent limitation for ammonia nitrogen*

**Response 4:** Regional Water Board staff concur. In addition, staff observed that nitrate also has no reasonable potential, but was not previously removed from the Land Discharge Specifications. Therefore ammonia nitrogen and nitrate have both been removed from Table 5, Land Discharge Specifications. These constituents have also been removed from Tables E-3 and E-6 of the Monitoring and Reporting Program (MRP) and section IV.F of the Fact sheet.

**Comment 5:** *Table 5 in Section IV.B.1 of the permit includes a discharge specification of 1.0 mg/L for nitrite which is retained from the previous NPDES permit for the site. Historical laboratory analytical results from Humboldt Creamery's land discharge location (LND-001) show a single violation of this limit from January 2011 to February 2014. The single nitrite effluent limitation exceedance of 2.3 mg/L, which occurred in November 2012, means that the MEC for the site is greater than the proposed effluent limit concentration (C) of 1.0 mg/L. Thus, according to RWQCB reasonable potential analysis, the site poses a reasonable potential to degrade waters of the state.*

*However, the historical data demonstrates that the land application of the facility's process water does not pose a risk to waters of the state. The single land discharge exceedance shows that Humboldt Creamery has a 98% compliance rate with nitrite final effluent limitations (Figure 2). Nitrite was also detected only twice since January 2011, (most recently in November of 2012) and was not detected in any groundwater monitoring well during the same time period.*

**Response 5:** While Regional Water Board staff can recognize that exceedance of the nitrite limitation is rare, data collected has shown that this constituent has potential to exceed water quality criterion. In recognition of the lesser threat to water quality posed by this constituent, staff has modified the Table E-3 in the MRP to reduce monitoring frequency for nitrite from monthly to quarterly.

## **B. Special Study Humboldt Creamery**

*SHN Consulting Engineers & Geologists, Inc. is submitting this manganese (Mn) and total dissolved solids (TDS) special study on behalf of FDF/HC in response to a draft NPDES permit (Order R1-2014-0026) issued by the North Coast Regional Water Quality Control Board (RWQCB). We believe the new order to be more conservative than is necessary to be protective of water quality. The designated level study for Mn and TDS indicates that up to 3,359 mg/L of Mn and 6,660 mg/L of TDS could be discharged in conjunctions with land application at the Humboldt Creamery site without exceeding water quality objective values for the protection of beneficial uses of 0.2 mg/L and 450 mg/L respectively.*

**Response 6:** Based upon review of the special study for Mn and a comparison to groundwater quality in the primary area of discharge, Regional Water Board staff have determined the effluent limitations for manganese are not necessary as the data show no reasonable potential to exceed values protective of the most sensitive beneficial use and therefore will be removed from this Order. This decision is consistent with Resolution 68-16. Manganese has been removed from Table 5, Land Discharge Specifications and section

IV.F of the Fact sheet. Manganese has also been removed from Tables E-3 and E-6 of the MRP. However, despite the presence of environmental attenuation factors for TDS, groundwater monitoring in GWR-2, GWR-3, and GWR-4 do not support the conclusions of the special study. Therefore, the effluent limitation of 450 mg/L will be retained for TDS. Regional Water Board staff are prepared to develop a cease and desist order to allow for more study of the TDS issue, develop and implement feasible alternatives to mitigate the issue and bring the Facility into compliance.

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