

Reference: 005228

August 14, 2008

Ms. Lisa Bernard  
California Regional Water Quality Control Board  
North Coast Region  
5550 Skylane Boulevard, Suite A  
Santa Rosa, CA 95540

**Subject: Humboldt Creamery, Fernbridge Facility, Humboldt County, California; Comments on Draft Waste Discharge Requirements (Order No. R1-2008-0020, NPDES No. CA0005584, WDID No. 1B80185OHUM)**

Dear Ms. Bernard:

On behalf of Humboldt Creamery, SHN Consulting Engineers & Geologists, Inc (SHN) is submitting these comments regarding the proposed NPDES Waste Discharge Requirements (Tentative Order No. R1-2008-0020).

### **Permit Renewal Summary**

On June 27, 2002, the RWQCB adopted the National Pollutant Discharge Elimination System (NPDES) Permit No. CA0005584 and Waste Discharge Requirement (WDR) Order No. R1-2002-0041 for the HC Fernbridge facility (WDID No. 1B80185OHUM).

On October 10, 2006, the required Report of Waste Discharge (ROWD), for renewing the facility NPDES permit, was submitted 180 days prior to the permit expiration date. SHN submitted additional information with the permit application and ROWD, which included; a summary of the California Toxic Rule (CTR) sample results for the receiving water and the NPDES discharge to the Eel River (CTR Report of Findings, SHN September 23, 2002); records of discharge quantities to the Eel River and to the pond, from December 2003 to December 2005; a special mixing zone study for the discharge of non-contact cooling water; a special groundwater study for the discharge of process water to the fields; and a special study regarding the facility septic system and leach field operations.

On June 3, 2008, the RWQCB indicated that the permit application was complete.

On July 1, 2008, the RWQCB released a draft of the proposed WDRs (Tentative Order No. R1-2008-0020), which was received by Humboldt Creamery on July 7, 2008. The cover letter of the permit indicated that SHN was to receive a copy; however, SHN did not receive a copy for review until Humboldt Creamery forwarded a copy on July 17, 2008. The cover letter also indicated that comments, objections, or other evidentiary material concerning this permit must be submitted by 5:00 p.m. on July 30, 2008. On September 11, 2008, there is to be a public meeting at the RWQCB office in Santa Rosa, to

consider comments and objections to the proposed permit.

On July 28, 2008, Rich Ghilarducci, President and Chief Executive officer (CEO) of Humboldt Creamery sent an E-mail to the RWQCB requesting a 30-day extension to continue review of the new proposed permit. The reason stated was because of the significant changes from the old permit and the complexity of the new proposed permit. SHN and Humboldt Creamery both required additional time to review and respond to the proposed permit conditions, to provide additional information on the waste discharges, and to review the effluent limitations that will be specified in the new permit. Additional time was also needed to evaluate potential facility changes that may be necessary to meet the new effluent limitations, as specified in the new proposed permit.

On July 29, 2008, the RWQCB granted an extension to Humboldt Creamery for submitting comments on the draft permit until the close of business on August 14, 2008.

## Comments

Because of the significant new permit conditions and requirements that are proposed in the draft permit, and because Humboldt Creamery received the draft permit only in July, we recommend that additional time be provided to evaluate what steps will be needed to comply with the permit once it is adopted. This can most simply be achieved by adopting the permit only after the required evaluation is complete in three to four months. If the permit must be adopted before the evaluation is complete, the permit should allow for scheduled compliance.

The following are more specific comments based upon our preliminary review of the new proposed permit (Tentative Order No. R1-2008-0020). We reserve the right to provide additional comments at the hearing before the Board.

**Waste Discharge to Land (LND-001)** - Process waste water generated at the facility consists of milk tanker truck washout, acid and caustic cleaning solutions, boiler blow down, and waste products from the wash down process, including but not limited to cleaning dairy processing equipment. This process waste water is discharged from the facility into the aeration/settling pond, and then spray irrigated onto the fields. The permit would require that this process water be sampled for specific constituents prior to being sprayed onto the fields. A composite sampler will be required for collecting these samples, since the permit is requiring a 24-hour composite sample be collected for analysis.

SHN is recommending that samples be collected for analysis on a monthly basis at LND-001 until the end of the year (2009), which should provide enough information to change the proposed monthly monitoring to quarterly monitoring at LND-001, and only for the constituents of concern.

There have been few Effluent samples collected from the outlet end of the pond (LND-001). Based on this limited data, some of the constituents required for analysis may not

meet the water quality limits as specified in the new WDR. For example, sodium and manganese limits may be high due to facility specific activities or uses.

Sodium concentrations may be high due to the facility using sodium hydroxide (a caustic cleaning solution) in the daily equipment cleaning, sterilizing, and disinfection process, which is extremely important in facilities such as a creamery. If changes need to be made in the cleaning process or cleaning solutions, then these changes will need to be evaluated to determine their potential impact on the facility. Research indicates that sodium hydroxide is widely used as a disinfectant in creamery operations, since it is an ideal disinfectant, cheap and readily available, offers sterilization without harming other forms of life, does not add odors or taste into the products, easily penetrates materials to be disinfected without damaging it, and is fast acting. Research also indicates that if changes are made in the disinfectant process, they could affect other factors, such as: taste and odor problems; corrosive waste materials that could deteriorate the systems; or be too costly to install and operate. Therefore, if changes are required to meet the new permit conditions, further evaluation will be necessary to ensure that the facility operations and creamery production would not be impacted.

Manganese concentrations may be high due to the naturally occurring manganese concentrations that exist in the well water, which is being used at the facility and in the cleaning process. There is no other domestic water supply available in this area. Well water information and sample results will be needed to determine if facility changes can be made to achieve the permitted limits, and what will be the cost to implement these changes.

We request that Humboldt Creamery be allowed time to evaluate whether it can meet the draft permit's land discharge effluent limitations under current operations. If not, additional time will be needed to evaluate what steps it can take to meet the proposed limits. If the permit must be adopted at the September 2008 hearing, the permit should include a compliance schedule (e.g., interim limits based on field data and evaluation to determine alternatives for complying with final limits).

**Ground Water/Receiving Water (GWR-001 through GWR-005)** - Treated process water from the pond is spray irrigated onto the fields. Groundwater will be monitored and sampled at the groundwater monitoring wells, which will be located in the fields to determine if the receiving water is meeting the water quality objectives for groundwater, as set forth in the basin plan.

Based upon the proposed permit requirements, five (5) ground water monitoring wells are required to be sampled on a quarterly basis, and the water analyzed for the constituents of concern, as specified in the permit.

SHN is recommending that the existing five (5) temporary wells be removed or reused for other purposes, and up to five (5) new monitoring wells be installed. The new wells will be 2-inch diameter, have the proper surface seals, and will be installed deeper into the aquifer. The temporary wells were used during the special study for collecting groundwater samples, and for measuring depth to groundwater. Some of the temporary wells were dry and could not be sampled during all months of the year.

Additionally, the temporary wells were installed to assist in determining the groundwater flow direction so that the new wells would be positioned properly.

As discussed further at Item 8 below, SHN is recommending that five (5) ground water monitoring wells be installed, and that four (4) downgradient wells will be sampled, as specified in the permit, on a quarterly basis. Well MW-5 will be installed in the upgradient direction, and will be used for determining background concentrations and for statistical comparisons. All wells that are in place will also be measured for depth to groundwater, on a quarterly basis.

**NPDES Discharge to the Eel River (EFF-002) or (SN-002) --** Condensate and non-contact cooling water has been discharged to the Eel River during the wet season from September 30<sup>th</sup> to May 15<sup>th</sup>, if the river flows are more than 1% of the discharge.

Humboldt Creamery is in the process of evaluating whether or not this non-contact cooling water discharge can be land applied during the wet season (i.e., all year round), thereby reducing the requirement for sampling this discharge. The permit would require that an integrated composite sampler be installed on the discharge, and samples collected when discharging to the river. Additionally, when discharging to the Eel River, the receiving waters upstream (SWR-001), and downstream (SWR-002 or -003) of the facility would also be required to be sampled monthly and/or quarterly for the constituents of concern, as listed in the permit. Fish bioassays and CTR testing would also be required if discharge occurs to the river, as specified in the permit.

SHN is recommending that these NPDES requirements be implemented only when discharge is occurring directly to the Eel River at EFF-002. If the facility is not discharging to the Eel River, then no sampling should be required for that specific monitoring period.

The proposed permit also includes several constituents of concern that are required to be analyzed for in the receiving waters (monthly or quarterly), when discharge is occurring from SN-002 (EFF-002) to the Eel River. SHN requests that monitoring for Ammonia Nitrogen, Nitrate Nitrogen, Sodium, and Manganese be removed from the receiving water monitoring requirements at SWR-001, since these constituents are related to the discharge at LND-001, and are already monitored for receiving water impacts at groundwater wells GWR-001 through GWR-005.

## **Proposed Modifications to the Draft Permit**

Enclosed with this letter is a "redline" draft of the proposed permit. The redline shows changes that are required if the permit must be adopted at the September 2008 hearing. The following paragraphs discuss the substantive changes reflected in the redline.

### **Item 1. Table 4: Facility Information**

The facility design flow at SN-002 (condensate and non-contact cooling water) discharged to the Eel River is listed at 63,000-gallons per day (gpd), which was the previous average. SHN is not sure where this design number came from; however, the actual gallons per day (metered between December 2007 and June 2008) was 110,000

gpd. SHN is proposing that the previous design flow be increased to the current or estimated future flow rates.

**Item 2. Section III. H: Discharge Prohibitions**

Clarify this first sentence to read; “During the period of October 1 through May 14, discharges of wastewater shall not exceed one percent of the flow of the receiving water as measured in the Eel River at the Scotia gauging station (USGS Station 11477000). The total volume discharged to the Eel River in a calendar month shall not exceed, in any circumstances, one percent of the total volume of the Eel River passing the Scotia gauging station in the same calendar month.

**Item 3. Section IV: Effluent Limitations and Discharge Specifications**

SHN suggests that wording be included, under the Final Effluent Limitations - Discharge Point SN-002, to clarify that if no discharge occurs to the Eel River from SN-002, then sampling will not be required during that specific monitoring period.

**Item 4. Table 7: Land Discharge Effluent Limitations**

The facility well water has reportable manganese concentrations, and the land discharge effluent limits should not be set any lower than the naturally occurring background levels; therefore, we suggest including an asterisk behind the 200(\*), indicating that the proposed effluent limit take into consideration that manganese background concentrations exist in the well water, and that any limits be set at or above the existing background concentration. Background concentrations should also be determined for the other constituents of concern, and new proposed limits should not be lower than existing background concentrations.

**Item 5. Section VI: C. Special Provisions. 1(e) Special Studies**

Please note that a special mixing study was completed and submitted with the permit application (SHN, September 28, 2006). Additionally, a septic and leachfield study was completed (SHN, September 2006), and based upon recommendations the tanks were cleaned and sealed from groundwater infiltration, and the leachfield systems were hydro-flushed.

**Item 6. Section VI: C.6(b) Storm Water**

To the extent Humboldt Creamery obtains coverage under the State Water Board’s General Industrial Storm Water Permit, discharges of non-contact cooling water and condensate from the dry condensed milk manufacturing process may be appropriately permitted as authorized non-storm water discharges.

**Item 7. Section VI: C.7 Compliance Schedules**

As discussed, to the extent the permit must be adopted in September, we believe it is imperative that compliance schedules be incorporated into the permit as allowed by State Water Resources Control Board Resolution No. 2008-0025.

**Item 8. Attachment E - Monitoring and Reporting Program (MRP)**

Table E-1, Monitoring Locations, describes each monitoring location; however, we are recommending that up to five (5) new permanent monitoring wells be installed. Four (4) of the wells will be used for collecting samples for analysis to determine impact from the

waste discharge to land, and the fifth well should be used for statistical comparison and determining background concentration limits. Additionally, all wells will be used for obtaining groundwater elevations. Locations and depths of the wells need to be determined based upon the previous special study, which utilized the temporary wells. The proposed permit should have a specified time schedule that will allow the permitting and installation of wells to occur.

**Item 9. Attachment E - Section IV, Effluent Monitoring Requirements, (A)  
Monitoring Location EFF-002**

SHN suggests changing the first sentence to read, "When discharging to the Eel River at EFF-002 (SN-002), the Discharger shall monitor Effluent, from the non-contact cooling water and evaporative condensate processes, at EFF-002 as follows..."

Table E-3 Effluent Monitoring Location EFF-002, indicates that daily flow readings will need to be recorded, and that weekly BOD, TSS, and pH samples need to be collected for analysis utilizing a 24-hour composite sampler. Additionally, acute toxicity analysis will be required twice annually, chronic toxicity analysis will be required annually, and CTR testing will be completed once during the life of the permit (every 5-years).

The draft permit should be revised to provide that if EFF-002 is not discharging to the Eel River, then sampling will not be required at SN-002, SWR-001, SWR-002 during that specific reporting period. Analyzing for acute and chronic toxicity, and the CTR testing will be required when discharging to the river during that specific monitoring and reporting period. In addition to monitoring and sampling at EFF-002, when discharging to the river, the receiving water upstream and downstream of the facility will also require sampling and monitoring. If required to monitor and sample at these locations, the analytical costs could be very expensive, unless this discharge to the river is used only minimally or not at all. Please note that Humboldt Creamery still wishes to keep this NPDES discharge point in the permit active, but anticipates that sampling at these locations will be minimal.

**Item 10. Attachment E - Section VI, Land Discharge Monitoring Requirements (A)  
Monitoring Location LND-001**

Table E-4 indicates that monthly (24-hour) composite samples are to be collected for analysis at discharge point LND-001 (discharge from the treatment pond). To reduce sampling costs, SHN is recommending that monthly samples be collected for analysis during the first year of the permit (2009), and then quarterly monitoring and sampling be initiated beginning in 2010. Please note that the groundwater samples are required to be collected only quarterly to evaluate the potential impacts from the land irrigation system.

**Item 11. Attachment E - Section VIII, Receiving Water Monitoring Requirements -  
Surface Water and Groundwater, (A) Monitoring Location SWR-001**

Table E-5 shows the proposed up-stream Eel River receiving water monitoring sample frequency and constituents of concern. As noted above, the draft permit should be clarified to require that SWR-001 will only be sampled when discharging to the river at SN-002 (EFF-002) during that specific monitoring and reporting period. Additionally, we recommend that Ammonia Nitrogen, Nitrate Nitrogen, Sodium, and Manganese be

removed from the constituent list, since the groundwater monitoring wells will be sampled quarterly to evaluate the receiving water impacts of these constituents.

**Item 12. Attachment E - Section VIII, Receiving Water Monitoring Requirements - Surface Water and Groundwater, (B) Monitoring Location SWR-002**

Table E-6 shows the required downstream Eel River receiving water monitoring sample frequency and constituents of concern. As noted above, the down stream receiving waters should only be sampled when discharging to the river at SN-002 (EFF-002) during that specific monitoring and reporting period. In addition, the permit needs to clarify that SWR-001 is the upstream sampling location; SWR-002 is the sampling location downstream of EFF-002; and the facility downstream sampling location is SWR-003, which is located downstream of the waste discharge to land area.

**Item 13. Attachment E - Section VIII, Receiving Water Monitoring Requirements - Surface Water and Groundwater, (C) Monitoring Location GWR-001 Through GWR-005**

Table E-7 shows the Receiving Water Monitoring Requirements for GWR-001 through GWR-005.

SHN is recommending that five new 2-inch diameter monitoring wells be installed, with the proper surface seals, and that the wells be installed deeper into the aquifer. Also, only four (4) monitoring wells should be sampled quarterly for analysis, and the fifth well be used for determining background concentrations. Once background concentrations have been determined then this fifth well may not need sampling on a quarterly basis; therefore we recommend sampling GWR-005 quarterly for the first year, and then annually thereafter. All monitoring wells will be monitored for depth to groundwater on a quarterly basis.

**Item 14. Attachment E - Section IX, Other Monitoring Requirements - (A) Monitoring Locations INT-North, INT South, GWR-North, and GWR-South.**

Table E-8 indicates that depth to groundwater measurements will be collected on a quarterly basis from these existing wells, which were previously installed to measure function of the facility's leachfield trench distribution system. SHN is recommending that these well be evaluated, and if they are to remain then the top of casings be surveyed to the same datum as the new proposed wells top of casing.

**Item 15. Attachment E - Section X, Reporting Requirements - (D) Other Reports, (2) Annual Report**

The proposed permit requires that annual reports be submitted by March 1 of the following year.

Since this permit will not go into effect until December of 2008, the first annual report will need to be submitted by March 1, 2009. SHN is recommending that the effective date of the permit going into effect be changed to January 1, 2009, and that the annual report be due by March 1 of 2010.

**Item 16. Attachment F - Section I, Permit Information**

Table 1. Facility Information has the WDID wrong, and should read 1B80185OHUM

**Item 17. Attachment F - Section II, Facility Description (B) Discharge Points and**

### **Receiving Waters**

The first paragraph indicates that between October 1<sup>st</sup> and May 15<sup>th</sup> of each year, condensate from the dry condensed milk manufacturing process and non-contact cooling water is discharged directly from the Facility Discharge point SN-002 to the Eel River, a water of the United States, within the Ferndale hydrologic subarea of the Eel River watershed.

Humboldt Creamery wishes to keep this NPDES discharge to the Eel River active; however, we are suggesting that this paragraph read as follows; "During the period between October 1<sup>st</sup> and May 15<sup>th</sup> of each year the condensate from the dry condensed milk manufacturing process and non-contact cooling water will either be discharged to the Eel River at SN-002 or to the southern fields or to the treatment pond. Between May 16<sup>th</sup> and September 30<sup>th</sup> of each year, the condensate from the dry condensed milk manufacturing process and non-contact cooling water will be either treated with the rest of the process waste water generated at the Facility or discharged to the southern fields."

### **Item 18. Attachment F - Section II, Facility Description (D) Compliance Summary**

This section states "Discharger has demonstrated overall compliance with conditions of Order No. R1-002-0041; however, monitoring data shows that the Discharger has exceeded permit criterion for flow at both SN-001 and SN-002. Based upon the available file information, it is unclear how the design flow criteria were developed. Section VI.C.2.c of this Order requires a special study to evaluate appropriate design criteria applicable to the Humboldt Creamery facility."

The time schedule proposed in the permit appears to be appropriate; however, the work scope required to study and evaluate the waste streams could be significant. SHN believes that while the technical information is important, the actual loading rates and treatment system capabilities will best be determined by actual field data and test results. It is critical that this work scope be better defined prior to the permit being approved.

### **Item 19. Attachment F - Section III, Applicable Plans, Policies, and Regulations, (E) Other Plans, Policies and Regulations, (1) Stormwater**

The Order requires the Discharger to seek authorization to discharge under and meet requirements of the State Water Board's Water Quality Order 97-03-DWQ, NPDES General Permit No. CAS000001, Waste Discharge Requirements for Discharges of Storm Water Associated with Industrial Activities, Excluding Construction Activities, if applicable.

To the extent Humboldt Creamery has obtained coverage under the General Industrial Storm Water Permit before adoption of the Tentative Order (as we expect), SHN is recommending that the permit indicate that this facility has such coverage.

### **Item 20. Attachment F - Section IV, Rational for Effluent Limitations and Discharge Specifications, (F) Land Discharge Specifications, (3) Determining the Need for WQBELs.**

The effluent limitations on LND-001 are for the protection of drinking water and

agricultural water supply; however, there are cows grazing on the fields where the groundwater monitoring wells are installed. Therefore, there is some concern there may be additional impacts to groundwater from the grazing activities taking place within the land discharge areas.

Sodium has an effluent limitation established at 60,000 mg/L, which is based upon the secondary maximum contaminant level (MCL) for taste and odor; however, sodium hydroxide is used in the cleaning and disinfectant process, which could cause this limit to be exceeded. Evaluating the need for changing to a cleaning solution that does not contain sodium may be necessary; however, these changes may be costly and could impact creamery production. SHN recommends that an interim limit be set, until compliance can be achieved.

Manganese has an effluent limitation of 200 ug/L, which is based on water quality objectives for the protection of agricultural supply; however, manganese is present in the groundwater that is pumped from the on-site wells (over 100-foot deep). SHN is recommending that the water quality limits be set at or above background levels.

Additionally, SHN is recommending that the water quality limits be set at or above background levels for other constituents of concern.

**Item 21. Attachment F - Section VII, Rational for Provisions, (C) Special Provisions, (2) Special Studies and Additional Monitoring Requirements, (b) Land Disposal Evaluation.**

As indicated in the draft permit, "This Order allows for year round disposal of wastewater. These discharges are prohibited from creating a condition of pollution or nuisance, adversely impacting the beneficial uses of water, or statistically changing groundwater conditions. In order to ensure compliance with applicable regulations, some facilities may need to implement modifications. It is appropriate to provide a reasonable time schedule for the proper evaluation of potential discharges, possible alternatives, and implementation for any necessary modifications. "

Based upon this statement and current Water Board policy, SHN suggests that compliance schedules are appropriate and should be incorporated into the permit.

**Item 22. Attachment F - Section VII, Rational for Provisions, (C) Special Provisions, (2) Special Studies and Additional Monitoring Requirements, (c) Effluent Disposal Evaluation.**

As indicated in the draft permit, "This Order limits wastewater disposal above previously permitted effluent design flows. It is unclear from the file record how these design flows were developed and whether they are the most appropriate design flows for the current facility conditions. Any increase in permitted flows would require appropriate anti-degradation analyses. In order to ensure compliance with applicable regulations, some facilities may need to implement modifications. It is appropriate to provide a reasonable time schedule for the proper evaluation of potential discharges, possible alternatives, and implementation for any necessary modifications."

Based upon this statement and current Water Board policy, SHN suggests that

compliance schedules are appropriate and should be incorporated into the permit.

## **Conclusion**

Humboldt Creamery appreciates the obvious effort that has gone into the draft permit. However, because it is significantly more complex and potentially much more burdensome than the current permit, Humboldt Creamery needs more time to evaluate what steps may be needed to comply with the permit once adopted. Accordingly, our strong preference would be postpone adoption of the permit until this initial evaluation is completed in three to four months. If the Board feels the permit must be adopted at the September 2008 hearing, it is imperative that the permit be revised to incorporate the time and flexibility necessary to achieve the permit's objectives.

If you have any questions, please call Lisa Stromme or me at 707-441-8855.

Sincerely,

**SHN Consulting Engineers & Geologists, Inc.**

Patrick N. Barsanti  
Project Manager

Lisa Stromme, P.E.  
Project Engineer

Enclosure

copy: Catherine Kuhlman, Executive Officer RWQCB  
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