

**RESPONSE TO COMMENTS**

**REISSUANCE OF NPDES PERMIT NO. NH0001619  
COLD REGIONS RESEARCH AND ENGINEERING LABORATORY  
HANOVER, NEW HAMPSHIRE**

The U.S. Environmental Protection Agency (EPA) and the New Hampshire Department of Environmental Services, Water Division (NHDES-WD) solicited public comments from March 17, 2004, through April 15, 2004, on the draft National Pollutant Discharge Elimination System (NPDES) permit to be reissued to the Cold Regions Research and Engineering Laboratory (CRREL), Hanover, New Hampshire. This permit is for the discharge of treated non-contact cooling water to the Connecticut River from the CRREL facility.

These responses and associated comments are complementary to the FACT SHEET and Draft Permit. For the reader to fully understand them, he or she should be familiar with the draft permit, the associated FACT SHEET, applicable federal National Pollutant Discharge Elimination System (NPDES) permit regulations and the State of New Hampshire's Water Quality Statutes and Administrative Rules.

**Comments**

**U.S. Army Corps of Engineer Research and  
Development Center (ERDC)  
Vicksburg, Mississippi**

Editorial Note: All ERDC's comments are quoted in full.

**Comment No. 1:** "We request that the required frequency of pH, temperature, and flow measurements be changed from "three times weekly" to "one time monthly".

Reference:

- a. PART I.A., EFFLUENT LIMITATIONS AND MONITORING REQUIREMENT, the table on page 2 of 9.
- b. The last paragraph on page 8 of 19 in the FACT SHEET.
- c. The last sentence in Paragraph E., on page 13 of 19 in the FACT SHEET.
- d. The second and third paragraphs in Paragraph G., on page 15 of 19 of the FACT SHEET and the accompanying table on

page 16.

- e. ATTACHMENT B to the Fact Sheet.
- f. The last paragraph on page 3 of 19 in the Fact Sheet.

These 6 references in the draft permit and the attached Fact Sheet address the required frequency of sampling. The new permit would increase our sampling frequency to three times per week from the current permit requirement of quarterly. While we concur that the current permit requirement of quarterly is probably too infrequent, we believe that 3 times per week is too often. Increasing the sampling frequency by a factor of 39 would not substantially increase the protection of the quality of the water in the Connecticut River. As reference e. indicates and as reflected in our historic data from 1971, our effluent characteristics have remained constant and very rarely exceed permit limits.

We are concerned about the significant increase in expenses and burdens that such a large increase in sampling frequency adds to our operations. Each sample requires about 1 hour of an employee's time and costs us over \$50. Sampling 3 times per week would cost us (and consequently, the taxpayers) over \$7,800 each year in labor costs alone. In the event that any measurement exceeds our permit limits, we would take immediate corrective actions and monitor the parameter continuously until the deficiency is corrected and our effluent is within permit limits."

**Response No. 1:** EPA disagrees with and will not grant ERDC's request that the effluent monitoring frequency be decreased to once per month from the three times per week requirement contained in the draft NPDES permit. The sampling frequency required of CRREL is exactly the same as required of other industrial facilities that employ non-contact cooling water in New Hampshire. This monitoring frequency is consistent with the EPA/NHDES-WD Effluent monitoring Guidance, dated July 19, 1999. It also exactly reflects the monitoring requirements and frequency of New Hampshire's NPDES General Permit for Non-Contact Cooling Water.

**Comment No. 2:** "We request that pH, temperature, and flow measurements be required only on dry days, when there has been less than 0.1 inch of precipitation within the previous 24 hours.

Reference:

- a. Note (1) on page 4 of 9 of the permit.
- b. The last sentence in paragraph E. on page 13 of 19 in the Fact Sheet.
- c. The last paragraph on page 15 of 19 in the Fact Sheet, continued on page 16.

These 3 references address the requirement to exclude rain water characteristics from cooling water pH, temperature, and flow measurements. As the draft permit is currently written, avoiding the commingling of rain water and cooling water would be very difficult and may yield inaccurate, inconsistent results. Furthermore, if we are allowed to sample monthly as requested above, it will not be difficult for us to choose dry days for sampling. As reference c. mentions, our non-contact cooling water flows into our stormwater drainage system in a number of different places. There is no single, common header where cooling water samples can be taken. The cooling water (and commingled rain water if there has been precipitation) then flow into the Connecticut River at Outfall 001.

We fully concur with that portion of the permit that allows us to take samples at a common point in the stormwater system on dry days. We have a very convenient manhole just upstream from Outfall 001 from which to sample.

However, the requirement for us to take separate samples at the various cooling water discharge points and calculate proportional effluent characteristics on rainy days is problematic. Because of the way our piping system is constructed, we have no convenient locations where we can collect such samples.

Obviously, a primary concern is the temperature of the water at the point of discharge into the river. The temperatures of the coolant waters at the various heat exchanger discharges do not accurately reflect the final temperature of the effluent being discharged into the river. i.e., there is considerable cooling effect from evaporation and contact with the manholes and underground stormwater piping system.

Our historical data indicate that temperature measurements taken near the point of discharge are consistently well below permit limits, and we would like to continue sampling at that point, but we can do so only on dry days."

**Response No. 2:** Since submitting these comments, ERDC staff have identified sampling locations at the CRREL facility non-contact cooling water effluent can be sampled without commingling with stormwater. Therefore it is no longer problematic to sample the non-contact cooling water effluent prior to commingling with stormwater. Therefore the sampling requirements in the draft permit will be included in the final permit.

**Comment No.3:** "We wish to point out that our green sand filters must be backwashed periodically and the backwash water is discharged into our storm drain system, and that it is commingled with cooling water in our stormwater drainage system and discharged into the Connecticut River at Outflow 001.

Reference the top paragraph on page 3 of 19 in the Fact Sheet.

As you know, CRREL operates 5 groundwater wells together with a TCE treatment plant. This system serves two purposes: It is a key part of an Army groundwater remediation project, and it also provides CRREL with a source of non-contaminated, non-contact cooling water. As the above referenced text mentions, the TCE treatment plant includes a 2-stage green sand filter to remove iron and manganese oxide.

Twice weekly we backwash each of the 2 sand filters for 7 minutes at a flow rate of 900 gallons per minute. This results in a backwash flow of about 25,200 gallons per week to our stormwater drainage system.

It should be noted that the water used for backwash has been processed through our treatment plant and is not contaminated with TCE.

Additionally, this backwash water is a negligible quantity---less than 3 tenths of 1 percent of the weekly cooling water flow. It is also identical to the cooling water, except slightly cooler and possibly slightly higher in iron and manganese oxide."

**Response No. 3:**

Since the Agency received these comments during the public notice period, CRREL has shifted its filter backwash water discharge from Outfall 001 to the Hanover POTW system effective December 20, 2004. An inspection on January 13, 2005 by an NHDES -WD inspector verified that all filter backwash water is now being discharged

directly into the Hanover sewer system. Therefore because this effluent no longer discharges into the Connecticut River via Outfall 001, there are no Clean Water Act requirements for any limits or monitoring in this permit.

## Other Changes to Draft Permit

### pH

Normally EPA-New England includes a special condition in all reissued permits to allow for a change in the pH limit range outside 6.5 to 8.0 Standard Units (S.U.) due to in-stream dilution of the receiving water which in this case is the Connecticut River. This change will be allowed if the applicant demonstrates to the satisfaction of NHDES-WD that the in-stream NH Standard for pH will be protected. CRREL's public noticed version of the permit did not contain this special condition; however, the Agency is taking this opportunity to include that standard pH limit adjustment language on Page 8 of the final permit, along with the appropriate pH adjustment language needed in the State Permit Conditions section, Item 1 on Page 9. In the final permit, Item 1 is the newly added language to the State Permit Conditions whereas Item 2 was Item 1 in the public noticed version.

These language changes anticipates the situation where NHDES-WD grants a formal approval changing the pH limits to outside 6.5 to 8.0 Standard Units (S.U.) and will allow EPA-New England to modify the pH limit(s) in your permit using a certified letter approach as described in that language. However, the altered pH limit range cannot be less restrictive than 6.0 - 9.0 S.U. which is the pH range consistently applied in the National Effluent Limitation Guidelines.

Should the State approve results from a pH demonstration study, this permit's pH limit range can be relaxed in accordance with 40 CFR §122.44(1)(2)(i)(B) because it will be based on new information not available at the time of this permit's issuance. This new information includes results from the pH demonstration study that justifies the application of a less stringent effluent limitation. EPA-New England anticipates that the limit determined from the demonstration study as approved by the NHDES-WD will satisfy all effluent requirements for this discharge category and will comply with NH Standards with regard to instream conditions.