RESPONSE TO COMMENTS

NPDES PERMIT No. MA0000671
Crane & Company, Inc.

On August 1, 2005, the U.S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (DEP) released for public notice and comment a draft National Pollutant Discharge Elimination System (NPDES) permit developed pursuant to an application from Crane & Company, Inc. in Dalton, Massachusetts for the reissuance of a permit to discharge wastewater to the designated receiving water, the East Branch of Housatonic River. The public comment period for this draft permit expired on August 31, 2005. Comments were received from Ms. Cindy Delpapa, Steam Ecologist, of the MA Riverways Program in a letter dated August 29, 2005.

After a review of the comments received, EPA has made a final decision to issue the permit authorizing this discharge. The following are the comments and EPA's response to those comments, including changes that have been made to the final permit from the draft as a result of the comments. The comment letters are part of the administrative record and are paraphrased herein. A copy of the final permit may be obtained by writing or by calling Mark Malone, EPA NPDES Permits Program (CMP), 1 Congress Street, Suite 1100, Boston, MA 02114-2023; telephone: (617) 918-1619.

Comments received from Ms. Cindy Delpapa, MA Riverways Program:

Comment 1

The Fact Sheet notes that there are issues regarding the attainment of water quality standards, including aesthetics, of the receiving water. Potentially some of these issues are related to the discharge of TSS and BOD to the receiving water. Despite the commendable compliance record of the permittee, the receiving water has been observed to have particulate material and floc present. The water quality based permit limits for BOD and TSS are based upon a wasteload allocation completed over 20 years ago. The current conditions suggest that increased monitoring without a reassessment of the wasteload allocation will not achieve water quality standards.

Response 1

The permit limits are established using the best available information which, in this case, includes the wasteload allocation cited in the Fact Sheet. Until a more current wasteload allocation is completed, the increased monitoring will provide additional information regarding the permittee's compliance with the permit limits. In addition, the more stringent phosphorus limits included in this permit are expected to improve the water quality of the receiving water in this regard.

Comment 2

What is the basis for the using 150% of the daily limits for BOD and TSS as the daily maximum load?

Response 2

The 1981-1983 wasteload allocation established the maximum daily limits which have been carried forward to the current permit.

Comment 3

Observed algal growth downstream of the discharge supports the finding of reasonable potential for impacts associated with nutrients. The phosphorus limit in the draft permit reflects the Gold Book instream criteria of 0.1 mg/l. As discussed in the Fact Sheet there is an order of magnitude between the Gold Book and Ecoregion instream criteria of 0.01 mg/l for phosphorus. It is recommended that instream monitoring of nutrient levels be added to the permit. Instream monitoring of concentrations along with monitoring of water quality status of the receiving water will help further refine appropriate phosphorus permit limits.

Response 3

EPA and DEP do not believe that routine ambient monitoring for phosphorus is an effective way to determine whether the discharge is causing or contributing to eutrophication in the receiving water. Such a determination is better made through a coordinated, focused sampling and analysis effort which would include both indicator parameters (i.e. phosphorus) and water quality parameters (i.e. dissolved oxygen, chlorophyll *a)*. Any additional sampling required of Crane & Company to complete this effort may be made pursuant to Section 308 of the Clean Water Act.

Comment 4

The draft and current permits contain a pH limit range different than the range in the Massachusetts Class B water standards. The Fact Sheet states that a determination had been made that the river has sufficient buffering capacity for the proposed pH range although no supporting information was given. Given the low dilution factor and the ability of the facility to achieve that standard, it is not clear why pH limits outside of the water quality standard are justified.

Response 4

The water quality standards for pH are instream criteria and not necessarily those of the discharge. EPA has the authority to impose technology-based effluent limits or more stringent limits if necessary to achieve water quality standards. The technology-based pH limits for the Crane facility is 5.0 - 9.0 s.u., in accordance with *40 CFR 430 Subpart K ‘’Fine and Lightweight Papers from Purchased Pulp Subcategory.”* The pH limits of 6.0 -9.0 were carried over from

the current permit; the lower limit is more stringent than the technology-based requirement, to ensure that the discharge does not cause or contribute to a water quality violation. Ambient pH data collected in conjunction with WET testing shows that upstream pH is well within the range of 6.5-8.3 s.u. required by the water quality standards, and pH data collected downstream of the discharge as part of water quality assessments also shows that pH is well within the water quality criteria.

Comment 5

The draft permit contains a one year color monitoring requirement. If the data is inconclusive or suggests more monitoring, will the permit be reopened require additional sampling?

Response 5

As discussed in the Fact Sheet, the State water quality standards specify that the waters shall be free from color that is aesthetically objectionable. The inclusion of the color monitoring requirement is to acknowledge the observation of color in the discharge as noted in the Fact Sheet. It is anticipated that information gathered from this color monitoring may be used with other discharge data to revise or add quantifiable permit limits in the future. Consequently, it is not anticipated that additional monitoring will be required during the term of this permit.

Comment 6

The permit does not contain ammonia limits. Has an assessment been made to determine that no reasonable potential to exceed the acute or chronic toxicity level?

Response 6

The *Housatonic River Basin 1997/1998 Water Quality Assessment Report* indicated low ammonia concentrations (<0.02 – 0.84 mg/l) in this segment and at the USGS NAWQA study site near the confluence of the main stem of the Housatonic River. Paper mills are typically nutrient deficient and require the addition of nutrients for process control of the biological wastewater treatment facilities. The current permit requires the reporting of total nitrogen concentrations only. An examination of the 2003 and 2004 WET test results indicated compliance with the acute and chronic toxicity limits. However, in order to address the commenter's concerns, we examined the ammonia criteria and the WET chemical analyses results for the same time period.

Since the chronic ammonia criteria are both temperature and pH dependent, criteria are established for the summer and winter seasons. The 30Q10 flow is used to establish dilution factors for the ammonia criteria in accordance with the ammonia criteria published in the Federal Register, Volume 64, No.245, on December 22, 1999. The 30Q10 summer flow is 15.9 cfs and the 30Q10 winter flow is 25.3 cfs. The resulting dilution factors are 3.43 and 4.89, respectively.

For the summer limits, a temperature of 24° C and a pH of 7.8 yield a chronic criteria of 1.73 mg/l. Using the 30Q10 summer dilution factor, the permit limit would be

$$1.73 \text{ mg/l} * 3.43 = 5.93 \text{ mg/l}$$

The discharge ammonia concentrations in the 4 summer WET test samples of July and October, 2003 and 2004, were 1.25 mg/l, 13.3 mg/l, 1.9 mg/l and 6.7 mg/l.

For the rest of the year, a temperature of 0° C and a pH of 7.8 yield a chronic criteria of 3.18 mg/l. Using the 30Q10 winter dilution factor, the permit limit would be:

$$3.18 \text{ mg/l} * 4.89 = 15.5 \text{ mg/l}$$

The discharge ammonia concentrations in the 4 winter WET test samples of January and April, 2003 and 2004, were 4.27 mg/l, 2.08 mg/l, 7.0 mg/l, and 1.6 mg/l.

As discussed earlier, the presence of ammonia in the discharge is largely due to its addition as a nitrogen source to support the activated sludge treatment process. The presence of quantities which seem to occasionally reach concentrations which have the potential to contribute to violation of water quality criteria is most likely due to these additions, and can most likely be resolved through better process control. Consequently, a weekly reporting requirement for ammonia has been added to the final permit to ensure that the facility adequately controls the addition of ammonia. Also, because ammonia is more toxic to the fathead minnow than ceriodaphnia, the final permit reinstates WET testing of the minnow. The quarterly WET testing shall alternate use of the minnow and the daphnid as test species. Based upon any additional information, the permit could be modified under the reopener language to include an ammonia limit in the future, if necessary.

Comment 7

The monthly monitoring requirement for Total Residual Chlorine indicates the addition of chlorine in the manufacturing process. If there is significant variability in the effluent TRC concentrations, more frequent monitoring is recommended.

Response 7

Based upon the discharge monitoring report data, variability in the effluent TRC concentrations is not an issue. Therefore, the weekly monitoring frequency in the permit is sufficient.