Summary of the March 28, 2003 Nutrient Work Group Meeting

On March 28, 2003, the Nutrient Work Group (NWG) met at EPA's NYC office. The purpose of the meeting was to review the results of three SWEM model simulations, the 2009 loading conditions, the STP nitrogen removal at limit of technology run and the carbon component run. Robin Landeck Miller of Hydroqual, Inc. presented the results of these simulations.

The 2009 loading conditions

The comparison of results from the 2009 loading conditions and the baseline conditions did not show much improvement in the Harbors waters. The comparison plots specified by the Management Committee (spacial plots showing the dissolved oxygen in DO intervals <2.3, <3.0,<4.0,<4.8 and 4.8 mg/l) were unable to discern the differences. A plot of the differences between the two simulations was needed. For the most part the differences in both the instantaneous minimum DO and the 30-day average bottom DO were less than 0.25 mg/l,with large areas showing no change. Bar charts for specific locations in the Harbor showed the same results.

The STP Nitrogen Removal at the Limit of Technology Run

The nitrogen removal at the limit of technology run showed more of an improvement than the 2009 loading run but again the improvements were modest. The difference in the absolute DO minima being for the most part under 1.0 mg/l and the difference in the 30-day average bottom DO being less but within the same range.

The carbon component run

In the carbon component run all of the non-algal carbon loads to the system are set to zero. The run therefore simulates the algal activity impacts on the DO. Since nitrogen is assumed to be the limiting nutrient in phytoplankton production in marine waters, the run also shows the impact of nitrogen on the DO concentrations. The difference between the base line concentrations and the carbon component run concentrations is therefore the impact of the non-algal carbon in the system. The 30-day average DO results showed that carbon (non-algal) was the major contributor to the oxygen deficit through out the Harbor and that in some areas nitrogen added to the oxygen concentrations. However, when looking at the instantaneous minimum DO concentrations (maximum DO deficits) nitrogen was the major contributor in many areas of the Harbor. The significance of the nitrogen component will be dependent on the durations of those minimum DO events. Those durations were not presented.

The three simulations indicate that the planned nitrogen removal projects in the Upper East River and Long Island Sound will not improve the water quality in the Harbor to any great extent. More simulations are required to determine what actions will improve the water quality and the extent of those water quality improvements. However, there is insufficient funding for the project at this time. Limited work can still be done with the remaining $15,000 of the project's

budget. The NWG decided to postpone a decision on how to use the remaining funds. The Long Island Sound Study (LISS) will be running a future conditions run (one of the NWG planned simulations). The LISS modeling contract will be finalized shortly.

The NWG did request that HydroQual present the simulation results in another way. The NWG requested that the results be filtered by the existing water quality standards and the simulation results be presented only for those sections of the Harbor where the water quality standards are not being meet. These plots will hopefully better identify the problem areas in the Harbor and allow the NWG to focus on those areas. The work group also requested that the data be present by the percent of the summer the DO concentrations were below a certain concentration. This should allow us to view the duration of the low DO events. HydroQual agreed to send an email version of these presentations that can be distributed to the NWG. The NWG will review the material and decide on an appropriate medium (teleconference, meeting, etc.) to discuss them. The work group also requested a break down of the loads to the model by category as presented in the model calibration report.

Attendees:

Mick DeGraeve	GLEC/NJHDG
Veronica Hurst	PVSC
Keith Mahoney	NYCDEP
Robin Landeck Miller	HydroQual
Brian Mitchell	IEC
Bob Nyman	USEPA
Kevin O'Brien	Hazen & Sawyer
Philip O'Brien	NYSDEC
Morton Orentlicher	CAC
Dave Rosenblatt	NJDEP
Paul Stacey	CTDEP
John St. John	HydroQual
Mark Tedesco	EPA-LISO
Antony Tseng	USEPA
Chris Villari	NYCDEP
Naji Yao	NYCDEP