North Deep and South Deep Comparison

There are two basins in Onondaga Lake, identified as North Deep and South Deep. Overall, the analysis of the lake's water quality presented in the AMP annual report is based on the higher-frequency data collected at South Deep rather than quarterly data collected at North Deep. The rationale for this approach is that conditions in both basins are very similar. Paired sample analysis of both basins is conducted each year as part of the AMP in order to verify that water quality in both basins is similar.

Paired sampling was conducted on these dates in 2009, for the parameters shown below. The sample dates were grouped into four events.

Paired sample dates for 2009 AMP.

Event	Sample Date	List of 48 parameters*	Ultra-low level Mercury***
1	April 9	X	April 21
2	June 16	X	June 29
3	September 22	X**	August 25
4	November 17	X**	October 8

List of 48 parameters:
ALK-T, As, BOD5, Ca, Cd, Chloride, Chlorophyll-a, COND-field, Cr, Cu, DO-field, ECOLI-MF, FCOLI-MF, Fe, Hardness, K, Mg, Mn, Na, NH3-N, Ni, NO2, NO3, ORG-N, Pb, Phaeophytin-a, pH-field, Salinity-field, Se, Secchi Disk, SiO2, SO4, SRP, TDP, TDS, Temp-field, TIC, TKN, TKN-F, TOC, TOC-F, TP, TS, TSS, Turbidity, TVS, VSS, Zn

** TVS and VSS were not analyzed in September and November.

*** Total and methyl mercury were sampled on different dates as shown.

Based on 2009 paired sampling results from the North Deep and South Deep stations, the lake is laterally well-mixed. With minor exceptions, there does not appear to be a strong gradient in water quality conditions from the south, where most of the inflows enter the lake, to the north.

The statistical analysis indicates that, for most parameters, measured water quality conditions at North Deep and South Deep are comparable. However, there are several slight, but statistically significant, differences in average concentrations of certain parameters. Most of the differences can be attributed to the effect of the location of inflows of Metro and the major tributaries.