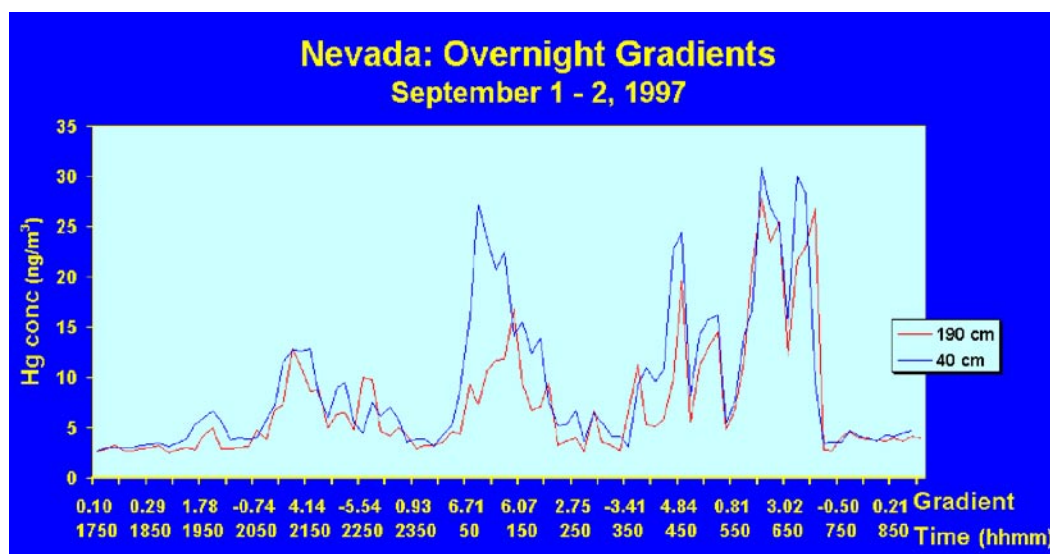


## PRELIMINARY DATA FROM PARTICIPANTS

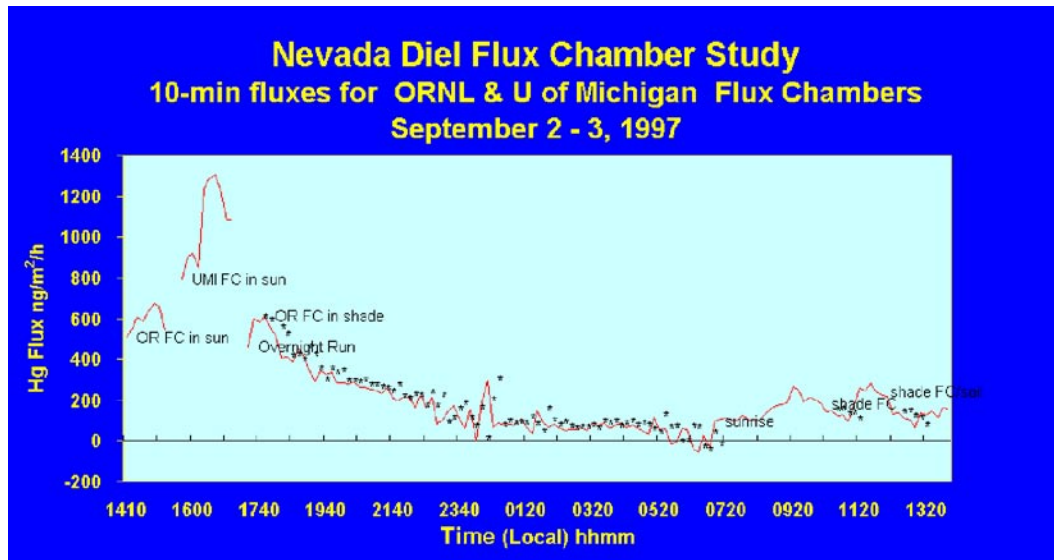
Steve Lindberg, ever keen, had preliminary results graphed while he was still sitting in his tent in the middle of the desert. We would like to thank him and Alan Vette of the University of Michigan for allowing us this preview of their results.

**Notice: This data is preliminary only and is subject to review, adjustment and correction before publication.**

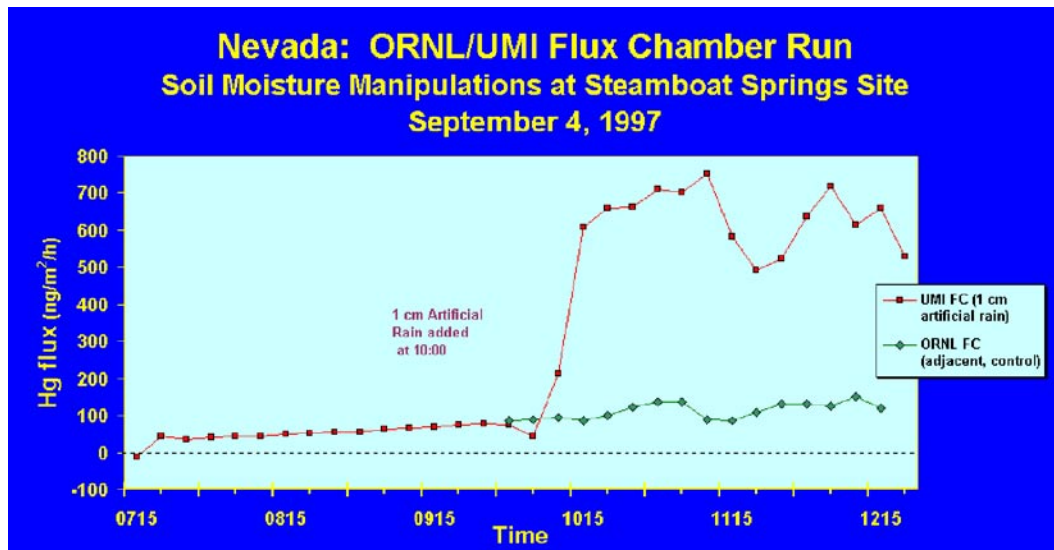


This graph shows the problems caused by advection at night. The two lines show mercury concentrations measured at heights above grade of 40 cm and 190 cm respectively. Each data point represents a 10 minute average, however a single Tekran analyzer was used so the two lines actually have their readings time shifted with respect to each other. The readings at the two levels are subtracted to obtain a mercury gradient. Sample 10 minute gradient values are given every hour as numeric labels on the X-axis. The units are ng/m<sup>3</sup>, the same as the individual plots. The intent of this graph is to illustrate the variability of the night time readings. One hour averaging would likely be applied before reporting final values.

Under relatively stable conditions, the subtractions do not cause appreciable errors. Under the nighttime conditions experienced here, the calculated gradients are subject to large errors due to the natural variance of background values over the measurement period. Even users with two Tekran analyzers performing simultaneous measurements had problems under these conditions. The large nighttime values and rapid variations are probably due to variable winds carrying mercury from localized hot spots coupled with limited vertical dispersion.



This graph shows mercury fluxes measured using the flux chamber technique. A number of experiments were performed over the course of the run. The chambers themselves were shaded using an opaque material to test the effects of sunlight on soil fluxes. The experiment was then repeated shading both the chamber and the surrounding soil for a distance of 30 cm. A pronounced diel cycle was observed, with values during the days being much higher than nighttime fluxes. Portions of the graph annotated with a "\*" indicate dark flux values, either due to artificial shading of the chamber with an opaque material or because it was night.



The high readings observed during the unscheduled rainstorm early in the survey raised considerable questions as to the mechanism(s) responsible for the increase. On the final day of the survey, several groups wet the soils under and around their flux chambers using mercury free deionised water. The subsequent enormous release of mercury clearly demonstrated that the liberated mercury was not carried in with the rain but was already present in the dry desert soil.

The red line indicates the University of Michigan flux values that resulted when 2.4 l of water was added to the soil. The green line shows the Oak Ridge flux chamber that was used as a control. It was of identical design and was located close to the UMI chamber but did not have water added to the soil under it. (Alan had finally received his analyzers by this time.)