

Tekran News

Title: Ambient Mercury Monitoring becoming Routine among US States

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Continuous ambient air mercury monitoring has moved from the realm of research into the mainstream. Standard air pollution contaminants such as sulfur dioxide or ozone require analyzers capable of measuring at parts per billion levels. However, mercury builds to toxic levels in fish and wildlife even when present in air at levels in the *parts per quadrillion* range, one million times lower.

With hundreds of units installed in various government and research institutions worldwide, the Model 2537A mercury analyzer, manufactured by Tekran Inc., in Toronto, has long been the de facto standard for ambient air measurements

One quarter of US States already have Model 2537A units in routine operation at their monitoring sites. Ohio and Kentucky have recently purchased multiple units, with more state orders in the purchasing pipeline. This is in addition to monitoring programs in place by Federal agencies such as the EPA, DOE, NOAA and USGS. Other countries have recognized the toxic effects of mercury and have had monitoring networks in place for years. For example, Environment Canada has CAMNet, a nationwide mercury monitoring network.

In addition to monitoring total mercury in the atmosphere, several states have gone further, adopting the Model 1130 and Model 1135 speciation accessories. These units expand the capabilities of the Model 2537A to simultaneously determine elemental mercury, reactive gaseous (ionic) mercury, and particulate bound mercury. Even though present at levels hundreds of times lower than elemental mercury, the complexed forms are far more active biologically and deposit over shorter distances. In the late 1990's the State of Florida pioneered application of this speciation technology to determine that ionic mercury emissions from local power plants and incinerators were the source of severe mercury contamination previously observed in the Everglades. Remedial actions were taken and mercury levels in the Everglades have already started dropping.

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