

Lima, A.L., Hubeny, J.B., Reddy, C.M. King, J.W., Hughen, K.A., and Eglinton, T.I., *High-resolution historical records from Pettaquamscutt River basin sediments. 1. Chronology and record of <sup>137</sup>Cs released by the Chernobyl accident.*, *Geochemica Cosmochimica Acta*, 2005; v69, 1803-1812

Cesium-137 derived from the explosion of the Chernobyl reactor in 1986 is preserved in anoxic sediments from a coastal environment in southern Rhode Island. Although the radioactive plume was detected in surface air samples at several locations in the United States, this is the first known record of a Chernobyl <sup>137</sup>Cs peak in sediments from North America. The inventory of Chernobyl <sup>137</sup>Cs that was preserved in the Pettaquamscutt River is small compared to European counterparts and should only be detectable for the next 15-20 yr. However, the presence of two <sup>137</sup>Cs peaks (1963 and 1987) identifies a well-dated segment of the sediment column that could be exploited in understanding the decompn. and preservation of terrestrial and aquatic org. matter. Different methods for calcg. the <sup>210</sup>Pb chronol. were also evaluated in this study and checked against independent varve counting. The end result is a detailed chronol. of a site well suited for reconstruction of historical records of environmental change.