Alluvial basins could contain buried basaltic features, such as volcanoes, lava flows, sills, and dikes. Because potential buried features could be relevant to volcanic hazard assessments at Yucca Mountain, Nevada, numerous geological and geophysical investigations were conducted in nearby basins, including aeromagnetic and ground magnetic surveys, selected borehole investigations, and extensive radiometric dating. This abstract summarizes petrologic, paleomagnetic, and geophysical modeling results from aeromagnetic and ground magnetic data collected in the Crater Flat and Amargosa basins in southwestern Nevada, USA. Basaltic volcanism <12 Ma in these basins is characterized by three temporal clusters. Although eruptive volumes increase with increasing age, basalt petrogenesis between clusters remains essentially unchanged. The most active cluster was in the Pliocene, between 3.6 and 4.7 Ma, and includes 12 to 17 volcanoes. This leads to an episodic recurrence rate of 11 to 16 volcanoes/Myr, which is greater than a longer term average rate of approximately 5 volcanoes/Myr. Additional temporal clusters are recognized for the period between approximately 9 and 11.2 Ma and one since 1 Ma. Methods are presented to estimate uncertainties in recurrence rate estimates for long-lived volcanic fields that have not been characterized extensively.

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