Characterization of ash from the San Miguel volcano eruption of December 29th 2013 and environmental concerns

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San Miguel or Chaparrastique is one of the several active stratovolcanos (2129 m a.s.l., around 1500 m high, eastern El Salvador) ubicated in the Volcanic Coastal Front, mainly characterized by quick accumulation of lavic and pyroclastic materials ranging from basaltic andesite to basalt in composition [1]. Some evidence of reawakening since summer of 2011 (enhanced SO_2 emission) concluded at December the 29th of 2013 with a short explosive episode leading to an emission of fine ash 5 km over the crater,that then dispersed in E to W direction at distances of around 90 km from the vent, been then deposited and covering a large part of the country. The previous similar eruption (Santa Ana volcano, 2005, W El Salvador) caused a 7-year cicle of damage to coffee plants. A sampling survey completed 2 days after the eruption provided up to 13 samples representative of the area and thickness of ash deposition. The physical and chemical of samples, as well as their leachates has been conducted following a protocol [2] [3] by SEM-EDS, XRF, quantitative XRD, laser granulometer, ICP-MS, and TG-TDA techniques. A widespread in-plume Ca-sulphate aggregation of ash sample, and a pattern of leaching similar to cases in comparable raw chemical composition of magma [3] are the most prominent results of the study.

[1] Chesne *et al* 2004. Physical and chemical evolution of San Miguel volcano, El Salvador. *Geol.Soc. of America Spec. Paper*, **375**, 213-226. [2] Ruggieri et al. 2010. Environmental geochemistry of ancient volcanic ashes, *Journal of Hazardous Materials* **183**, 353-365 [3] Ruggieri *et al 2011*. Environmental geochemistry of recent volcanic ashes from Southern Andes. *Environmental Chemistry*, **8**, 236–247.