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Mapping of mercury contents in soil and air in a decommissioned mining and metallurgical area from the Almadén mercury mining district (Spain): The Almadenejos area.

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Almadenejos is a small town located some 14 km to the East of Almadén, and has been the site of mining and metallurgical activity, linked to the world-class Almadén mercury mining district: the now-abandoned cinnabar (HgS) mines of Vieja Concepción (active in 1699-1800), Nueva Concepción (active in 1794-1861, 1943-1945 and 1960-1967) and El Entredicho (active in Arabs times, and 1981-1997) are located on its neighbourhood, as well as the Almadenejos decommissioned metallurgical precinct (active 1794-1861),what makes the area one of the most contaminated ones of the district. We present here results and maps of a survey including soils sampling with mercury analysis and other pedological parameters, as well as determinations of mercury inmission in the atmosphere, using a common sampling grid. Analysis of soils samples has been carried out using a LUMEX RA-915+ mercury analyser, with RA-91 pyrolysis chamber, and air determinations, using the same RA-915+ device in air analysis mode. The maps have been obtained by means of SURFER 8 software, as well as by ArcGIS software, and puts forward contaminated areas centred inside the metallurgical precinct, with up to 1.5% Hg in soils and up to 20.000 ng Hg•m-3 in the atmosphere.