

Field Report 2018

Huancavelica Heavy Metals Remediation Project

The Environmental Health Council

From July 1 to July 5, 2018, The Environmental Health Council (EHC) conducted assessment and remediation work in Huancavelica, Peru. The field work objectives were as follows:

- Assess homes in Sacsamarca using field portable x-ray fluorescence (XRF) for total metals and use field portable atomic absorption spectroscopy for mercury vapor. Sacsamarca homes had not been assessed prior to this event.
- Assess mercury vapor in several un-remediated homes in Huancavelica.
- Remediate 2 homes by covering interior walls with one-half inch gesso (plaster/stucco) and floors with three inches of concrete.
- Coordinate vapor analysis with Mercer University Staff.

Twenty-six homes in Sacsamarca were assessed for total metals with XRF and interior mercury vapor with a Lumex RA915M. Vapor assessment in Sacsamarca and Huancavelica was conducted in collaboration with Dr. Adam Kiefer of Mercer University. Results indicated that homes located in the eastern portion of Sacsamarca had the highest total metals concentrations in adobe walls and floors. Several homes had one or more of the three metals of interest (As, Hg, Pb) above residential screening levels. The eastern portion of town may have had more significant releases from the east end of the plaza where tailings were observed in previous sampling events.

Mercury vapor ranged from 3 to 23 ng/m³ in homes in Sacsamarca, which is roughly the same as the background concentrations identified during the 2018 event as well as background in Huancavelica identified during the 2018 and previous events.

Several homes in Huancavelica that had been remediated in prior events (AS4, AS15, AS28, SC2, and YA11) were assessed for mercury vapor. Mercury vapor was not identified above screening values in these homes during the 2018 event. This is consistent with previous monitoring which took place after the homes remediated, suggesting that the treatment of, provides a long term solution to protecting the inhabitants from exposure to mercury vapor. In addition, the treatment also reduces exposure to heavy metal contaminated dusts derived from the adobe materials.

Several homes (SA3, SC17, YA33) which were in the list of homes needing remediation were assessed for mercury vapor during the 2018 event. Mercury vapor was identified above the screening levels. XRF results from previous events showed one or more of the three heavy metals of concern (mercury, arsenic, and lead) above screening values for incidental ingestion. Therefore, the homes remained on the list needing remediation.

Two homes (SA3 and YA33) were remediated during the 2018 field event. The kitchen and bedroom walls and floors were treated with gesso and concrete, respectively. The work was overseen by engineer Gilmer Cortez Cauchos.

For additional information, sample results, remediation field reports and other details about the 2018 field event, please contact the EHC via the "contact us" link on the EHC website.