

Title: Realtime versus conventional sampler comparison study

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With the increasing sophistication of real time sampling devices, research to objectively assess their performance is a priority. The International Sampling Comparison Group has embarked on a series of projects in association with other research groups. In Australia, a workplace sampler comparison study has commenced the collection of conventional and real time samples of inhalable and respirable dust, from host sites in the West Australian iron ore mining industry. The selected samplers are placed on a specially designed Workplace Atmosphere Multisampler (WAM) device which can host up to 12 samplers simultaneously, rotating at 3 revolutions a minute to reduce sampling biases. In this paper we report on the initial findings of matched pairs of each sampler, run for a minimum of 6 hours, over 28 sample days, which generated 168 matched pair data points. In addition, a particle size impactor, and bulk dust samples were collected to determine the particle size fraction. Data was collected with a trained and experienced occupational hygiene technician in accordance with recognised standards. Results will be presented from a series of conventional versus real time or near real time devices including HazDust 7204 with Inhalable Inlet, TSI AM520 with Respirable dust Cyclone, IOM + Foam plug PVC, Zephon disposable + Foam plug PVC, UPAS v2+ direct reading sampler + 37mm filter, and the Marple 8 stage Impactor.