AIR SAMPLING SOLUTIONS & EXPERTISE

July 28, 2023

Mine Safety and Health Administration
Office of Standards, Regulations, and Variances
201 12th Street South
Suite 4E401
Arlington, Virginia 22202-5452

RE: Docket No. MSHA–2023–0001, Proposed Rule, Lowering Miners' Exposure to Respirable Crystalline Silica and Improving Respiratory Protection

SKC Inc. requests the addition of the **impactor-based Parallel Particle Impactor (PPI) Sampler** to the Proposed Rule, *Lowering Miners' Exposure to Respirable Crystalline Silica and Improving Respiratory Protection*, as a third suitable sampler to collect the respirable fraction. Currently, **cyclone** and **elutriator** are listed in the Proposed Rule, which states, "Mine operators could use any type of sampling device they wish for respirable crystalline silica sampling, as long as it is designed to meet the characteristics for respirable-particle-size-selective samplers that conform to the ISO 7708:1995 standard …" (page 44908). However, the document mentions only **cyclones and elutriators**, implying that only those two types of samplers are suitable for use.

SKC Inc. wishes to inform MSHA about another commercially available personal sampling device that conforms to the ISO/CEN respirable particle size selection criteria with an acceptable level of bias. The impactor-based PPI Sampler (*https://www.skcinc.com/pages/ppi-sampler*) is neither a cyclone nor an elutriator. Here are the facts:

-SKC holds a patent on the PPI Sampler design (*U.S. Patent No. 7,073,402*).

-SKC and a number of ISO 17025-certified laboratories offer several commercially and readily available PPI models.

-A peer-reviewed publication describes PPI operation and performance, including when challenged with 6.4 mg of coal mine dust. (*http://iopscience.iop.org/1742-6596/151/1/012060*).

-Rutgers, The State University of New Jersey tested commercially available PPI Samplers (*see Resources at https://www.skcinc.com/pages/ppi-sampler*)**.** Data shows that disposable PPIs closely follow ISO 7708 and have bias within ± 5% for the vast majority of aerosols when operated at their recommended respective flow rates (2, 4, and 8 L/min).

-The OSHA Final Silica Rule includes the impactor-based PPIs on page 16439. (*https://www.govinfo.gov/content/pkg/FR-2016-03-25/pdf/2016-04800.pdf*). I

-SKC introduced reusable PPIs into the market in 2006 and eventually offered disposable versions.

- PPI Sampler models are available for use at flows from 2 to 8 L/min.

-PPI Samplers are manufactured in the USA.

-Disposable PPIs are widely used as a replacement for cyclones due to their ability to accurately follow the respirable convention and to operate in any orientation – an especially important feature in mining operations where there is significant risk of voided samples due to cyclones being inverted.

-Disposable PPI deployment is very simple because they are available already preloaded with filters, which means the user receives a ready-to-use sampler – no assembly and no cleaning are needed.

Commercially available PPI Samplers are ISO-conforming samplers that are commercially and readily available, including from labs, meeting the requirements stated in the Proposed Rule. In addition, PPI Samplers are listed in the OSHA Final Silica Rule, have been in wide use on the market for over 15 years, have validated performance, and offer a solution to tipping sample invalidation. We feel that PPI Samplers are a valuable addition to the ISO-conforming samplers listed in the Proposed Rule as an acceptable device.

Sincerely and respectfully submitted,

Susan G. Walton
President & CEO