



HARSCO
METALS & MINERALS

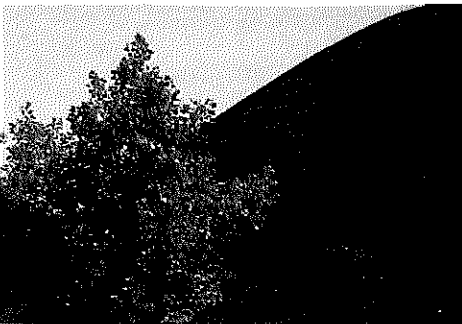
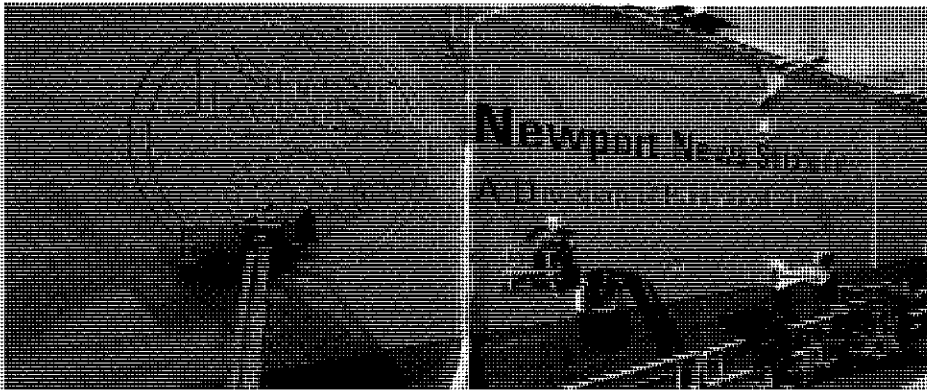
**OSHA PROPOSED RULEMAKING –
BERYLLIUM STANDARD**

Meeting with OIRA

September 30, 2014

Greg Andersen, President Reed Minerals, Harsco Corporation
Russell Hochman, Deputy General Counsel, Harsco Corporation
Mark Mummert, Environmental Health & Safety, Harsco Corporation
Sam Romaninsky, Assistant General Counsel, Harsco Corporation

Harsco: Who we are



Who we are: Harsco is a \$2B publicly traded (NYSE: HSC), diversified, global company serving many vital industries, including:

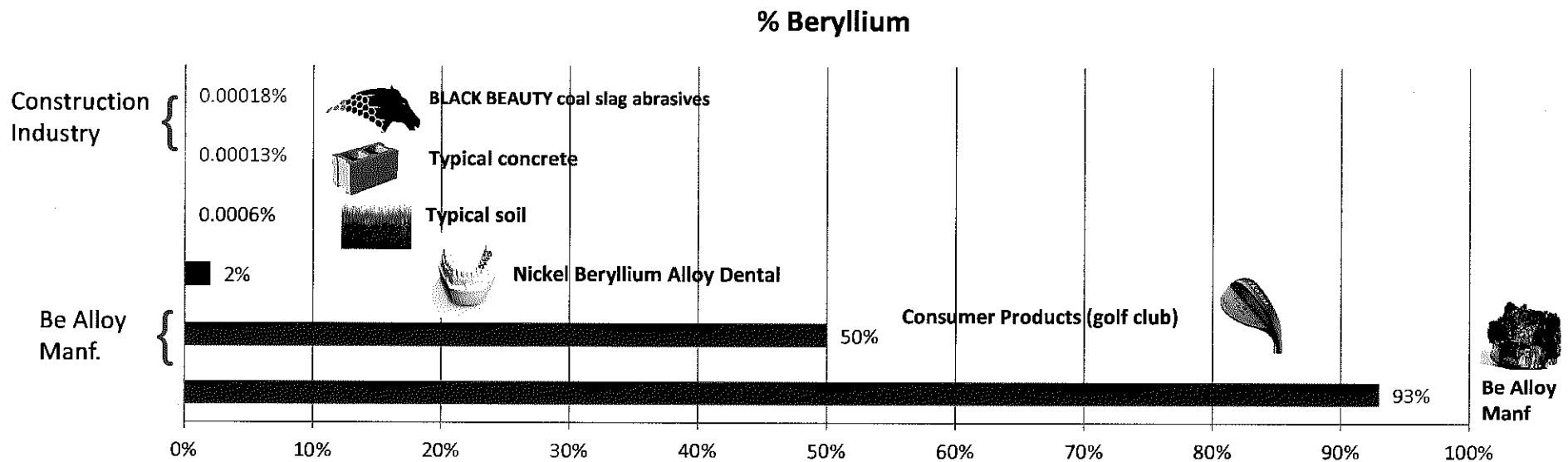
- Environmental Solutions
- Railways
- Energy

Headquartered in Pennsylvania since 1853, we play an important role in the US economy with 12,000 employees.

Black Beauty® is the #1 coal slag abrasive blasting media. **Harsco recycles over 1 million tons** of coal slag annually that would otherwise be landfilled.

Rule for Manufacture of Beryllium Should Not be Extended to Construction

- Proposed rule is the result of a joint effort by industry and labor in the **manufacture of beryllium alloy**. Draft rule submitted by beryllium alloy industry and labor did not include construction.
- Levels of beryllium in coal-slag abrasives: 0.00018%, 3 times lower than typical soil, and 516,667 times lower than beryllium alloy.



The Construction Industry Should Not be Included in the Proposed Rule

Further Supporting Information

- In over 80 years of manufacturing blasting abrasives, Harsco has not identified a single beryllium-related disease associated with coal-slag abrasives.
- At May 8, 2014 ACCSH meeting, OSHA reported they lack evidence that beryllium-related diseases are more prevalent in workers involved in abrasive blasting.
- The form of beryllium matters. Coal slag abrasives contain beryllium in mineral form, rather than beryllium oxide (e.g., beryllium alloys) or other water-insoluble forms.
- Current OSHA respiratory protection standards are sufficient to protect workers the trace amounts of beryllium encountered in the construction industry.

Inclusion of Construction Industry Will Generate Real Costs and Unintended Consequences

- Increased Costs:
 - On American businesses - Will be forced to incur unnecessary expenses. associated with air sampling and medical monitoring, including blood tests.
 - On American utility companies - Will face increased costs for disposal of coal slag.
 - On American taxpayers – U.S. Navy and DOTs are large users of blasting abrasives. Coal slag is the preferred material for many of their applications.

- Unintended consequences:
 - Worker Health - Unnecessary controls on coal-slag abrasives will lead to increased use of silica sand blasting abrasives, which are proven to cause silicosis.
 - Environmental - Coal slag that is beneficially reused today will be landfilled.
 - Delay - Will delay a rule that is needed for the manufacture of beryllium alloy.

Contact

Susan Firey

Harsco Corporation

M 717.836.4659 | T 717.975.3886

sfirey@harsco.com | www.harsco.com

Appendix

2007 NIOSH Study Severely Flawed

- **2007 NIOSH study suggests abrasive blasting creates moderate exposure to airborne beryllium.** Crouch et al., 2007, *Control Technology and Exposure Assessment for Occupational Exposure to Beryllium: Abrasive Blasting with Coal Slag*, NIOSH File Number EPHB 263-13.
- However, the measurement method in the study was severely flawed. The study utilized 37-mm cassettes during air sampling. Researchers noted large particles of blasting abrasives in the 37-mm cassettes. These large particles were non-respirable but nevertheless were counted when measuring the airborne exposure to beryllium.
- **A button sampler should be used to correct these inaccuracies.** Aizenberg et al., 2000, *Metal Exposure Among Abrasive Blasting Workers at Four US Air Force Facilities*, AOEH 15:10, 776-772.

The Form of Beryllium Matters

- Beryllium mine and ore extraction workers have low rates of beryllium sensitization and CBD relative to the level of beryllium exposure. Duebner, et al., AOEH 2001 and JOEH 2011.
- No adverse clinical health effects were found in gemstone cutters working with beryllium. Wenger et al., Occup Environ Med 2000, 57:122-139.
- Even OSHA's analysis states: "It has been suggested that CBD is the result of occupational exposure to beryllium oxide and other water-insoluble berylliums rather than exposure to water-soluble beryllium or beryllium ores." Page 4, OSHA, Report of the Small Business Advocacy Review Panel, January 15, 2008.
- Beryllium found in coal slag abrasives is 100% silicate form, not beryllium oxide or water-insoluble. EPRI, November 2006, Technical Report, Chemical Constituents in Coal Combustion Product Leachate: Beryllium.