



Brush Wellman Beryllium Chosen for New Space Telescope Mirror

CLEVELAND, Sep 11, 2003 (BUSINESS WIRE) --

The 18 segment, 6.5-meter primary mirror of NASA's new James Webb Space Telescope (JWST) will be made of beryllium to be produced by Brush Wellman Inc.

Brush Wellman announced today that Northrop Grumman Space Technology has selected beryllium following an extensive evaluation and testing process. A material review board, comprised of scientists and industry experts, recommended beryllium over the competing glass mirror proposal. The board made its selection based on technical performance and other criteria.

Brush Wellman engineers prepared their presentation in conjunction with Beryllium Team members; Ball Aerospace of Boulder, Colorado, Axsys Technologies of Cullman, Alabama and SSG Tinsley Laboratories of Richmond, California. Ball is the lead contractor for the optical system, Axsys will handle machining and Tinsley will conduct the final polishing and testing of the mirror. The prime contractor for the \$825 million space telescope project is Northrop Grumman Space Technology, in support of NASA's mission.

For Brush Wellman, the selection means approximately \$15 million in sales of its O-30 optical grade beryllium. Shipments are currently expected to occur in the 2004 and 2005 calendar years. Further, it allows the Company to join in the prestige of contributing to one of the most exciting scientific adventures of the new millennium. For the Company's Elmore, Ohio plant the decision means the promise of additional beryllium production.

The state-of-the-art lightweight beryllium mirror on the JWST will allow scientists to see 10 billion to 11 billion light years away. At that distance, astronomers believe they may be viewing the first light of the universe and perhaps even the origins of the elements that were needed to create life on earth.

The beryllium mirror assembly will consist of 18 individual hexagonal mirrors. The strength-to-weight and stiffness-to-weight ratios of beryllium are well suited to the demanding performance requirements of the JWST. Brush Wellman's O-30 optical grade beryllium was previously selected for the secondary and tertiary mirrors and supporting structure for the Webb telescope.

Commenting on the selection, Gordon D. Harnett, Chairman, President and Chief Executive Officer of Brush Engineered Materials Inc., the parent company of Brush Wellman Inc., said, "We always believed that beryllium was the perfect material for this application, but it was up to the talented group of Brush employees, in support of the Beryllium Team, to compile a compelling presentation for beryllium to the selection board. Brush is proud to be associated with this remarkable peacetime application for our materials. We consider this an honor and an important milestone for Brush Engineered Materials."

The Brush Wellman Elmore plant is gearing up to begin production soon on the mirror blanks, which will then be machined, polished and tested before installation in the telescope in the 2008/2009 time frame. Brush Wellman will require no significant modification to its Elmore operations to produce the beryllium mirror segments.

Mike Anderson, Vice President, Beryllium Products, Brush Wellman, said, "We were confident going in that our material would do well in this competition because beryllium has become the standard for precise cryogenic optical applications. We've already built devices to more exacting standards than are called for on the JWST. This selection further demonstrates that Brush is continuously looking for new markets and new applications for beryllium products. We've proven that our material, and Brush Wellman as a supplier, are up to very tough technical challenges. It is an honor to have gained the confidence of both NASA and Ball Aerospace."

NASA scientists are working toward an August 2011 target launch date for the spacecraft.

Brush Wellman Inc., is the world's only fully integrated producer of beryllium, beryllium alloys and beryllia ceramic.

Brush Engineered Materials Inc. (NYSE-BW) is headquartered in Cleveland, Ohio. The Company, through its wholly-owned subsidiaries, supplies worldwide markets with beryllium products, alloy products, electronic products, precious metal products,

and engineered material systems. Around the world, the company's engineered materials can be found in technically demanding end-use products with the telecommunications and computer, automotive electronics, industrial components, optical media, aerospace and defense, and appliance markets.

SOURCE: Brush Wellman Inc.

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