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## **Oil Upgrading Technology Eliminates Need for Diluent in Bitumen**

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Auterra Inc., a catalyst and process development company, announced today that it has accomplished a long-standing oil sands industry goal – upgrading bitumen so that it can be transported by pipelines without the use of diluent. Auterra's [FlexUP®](#) process can upgrade bitumen with an API Gravity of 8.5 to an API Gravity of over 19.

Today, every barrel of bitumen that is shipped via pipeline from Alberta, Canada to the United States requires over 30% of it to be made up of an expensive diluent to lower its viscosity and density for transport. Using FlexUP® to upgrade the quality of bitumen improves viscosity and density of the bitumen and eliminates the need for diluent which will have a significant economic impact on the Canadian oil industry. Operating costs go down, transportation costs go down and there will be less need for reverse-pipelines to carry diluent from the US back to Canada.

“Accomplishing this level of upgrading has been a company goal for several years now,” said Eric Burnett, President & CEO of Auterra. “Through the support of our Calgary-based strategic partner, we have accomplished this major breakthrough and look forward to field testing the technology in the near future.”

FlexUP is a two catalyst process that utilizes unique chemistry to first oxidize and then cleave away sulfur, nitrogen and metals from bitumen. As part of this process, large molecules are made smaller which improves overall density and viscosity. By removing over 75% of the sulfur in the bitumen, enough small hydrocarbons are created to eliminate the need for diluent. The sulfur, nitrogen and metals are removed through the process and converted into sellable by-products.

Recent developments with the company's [FlexUp desulfurization process](#) improved performance at a far more economical level than previous upgrading solutions. Engineering models of the process show it is very cost effective, especially when compared to alternative and existing technologies.

“Developing a technology like this with bitumen was definitely a challenge but we always knew the sulfoxidation pathway would deliver this game changing capability to the industry,” said Kyle Litz, Chief Technology Officer of Auterra. “This is arguably the first major technological advancement in the industry in over 30 years. We are now working to a goal of being able to deliver pipeline ready bitumen with less than 1% sulfur.”

Auterra's FlexUP technology is a low-cost, low-energy upgrading process that minimizes carbon dioxide emissions while maximizing oil value. The technology is protected globally by a robust patent portfolio and is ideal for treating heavy-sour crude oil and refinery streams. These recent advances will be tested in the FlexUp Pilot Unit and then tested in the field as part of the commercialization program.

**About Auterra Inc.**

Auterra Inc. is a catalyst and process technology development company for the purification and upgrading of heavy crude oil and oil distillates. The company is located in Schenectady, NY.

For information you can find us at [www.AuterraInc.com](http://www.AuterraInc.com) or call 518.382.9600.