

For Immediate Release

## Rio Tinto creates a new \$10 million centre at CEMI

Sudbury, ON – On November 25<sup>th</sup>, 2010, Rio Tinto announced the establishment of the Rio Tinto Centre for Underground Mine Construction (RTC-UMC) at the Centre for Excellence in Mining Innovation (CEMI) located in Sudbury, Ontario, Canada. Rio Tinto will be investing \$10 million dollars over five years to undertake research at the centre.

Rio Tinto is focusing on mechanized excavation including a shaft boring system (SBS) and tunnel boring systems (TBS). Rio Tinto has selected CEMI as the agent for collaborative research leadership in support of high speed construction associated with underground mine construction. For Rio Tinto, this investment reflects the company's long term commitment to science, engineering and innovation, and is central to its approach to research partnerships. This is the fifth global long-term research centre to be established by Rio Tinto.

The Rio Tinto Centre for Underground Mine Construction at CEMI will undertake research with respect to ground and machine performance. For this purpose, prototype test sites will be instrumented to improve ground characterization techniques and to develop innovative support systems to facilitate high speed, mechanized tunnel and shaft development technologies for underground mines in highly stressed ground and at depth.

Researchers will work within a global network to learn from prototype test sites wherever Rio Tinto's TBS and SBS are deployed. This will include monitoring of rock performance to better understand strainburst potential, the integration of innovative support systems to accelerate advance rates, and in situ testing to better and more reliably anticipate the rock behaviour. Furthermore, research will be undertaken to improve construction logistics and to optimize machine performance to properly select and implement these innovative construction technologies from an equipment and ground management perspective. Smart engineering approaches will be developed to observe and control both equipment and ground to minimize risks and uncertainties and to facilitate flexibility in matching construction to conditions encountered in complex ore bodies.

As new mechanized excavation techniques open innovative mine layouts, the work at the Centre will also include projects related to pillar design and underground excavation stability, including projects on rock fracture modelling and engineering design for economic mine layouts at depth.

John McGagh, Head of Innovation at Rio Tinto, states that, "In order to satisfy the increasing global demand for minerals Rio Tinto is seeking a step change improvement in the construction of the next generation of large underground mines. In announcing the formation of the Rio Tinto Centre for

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Underground Mine Construction we confirm our commitment to supporting the development of advanced technologies to help Rio Tinto turn the mine of the future into reality.”

Dr. Fred Delabbio, General Manager Underground Innovation at Rio Tinto commented that, “CEMI provides an opportunity to combine experts from both the Civil and Mining industries. This combination has provided the basis for successful development of step change technologies based on the future requirements of Rio Tinto such as our mechanized tunnelling and shaft sinking systems.”

“CEMI was invited to assist in the development of innovative support systems and in minimizing the risks for such technologies because of its outstanding track record in building successful solution teams. In collaboration with Rio Tinto, CEMI will be able to expand its Research and Development programs and expand its global reach. CEMI will also be able to enhance its solution teams to tackle research related to the implementation of mechanized tunnelling and shaft sinking technologies.”

Dr. Peter K. Kaiser, President/CEO of CEMI remarked, “I’m excited about this development as it demonstrates that CEMI has established the means to tackle industry’s most challenging problems. It also shows that the vision of CEMI’s founding partners was correct and that the early investment by the Ontario provincial government and the founding industrial partners, Xstrata Nickel and Vale with the support of Laurentian University, was strategic for the development of excellence in mining innovation.

“This work recognizes CEMI’s role in promoting Canada as a centre for excellence in the areas of ground characterization and ground support. It will provide opportunities for home grown researchers, who are the best minds in these fields, who will work on solutions for the construction challenges that the next generation of underground mines will bring.”

With the support of Rio Tinto, CEMI will be collaborating with recognized researchers to address ground control and machine performance issues. With eventual test sites, possibly on three continents, CEMI has matured to handle industry’s most strategic problems and to strengthen collaborations with expertise beyond our immediate boundaries. This program will utilize homegrown expertise and benefit Ontario universities and small-medium enterprises alike. The program will also develop highly qualified personnel for the mining sector.

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## About CEMI

The Centre for Excellence in Mining Innovation (CEMI), located in Sudbury, Ontario, is continuing its R&D efforts to facilitate the delivery of step-change research initiatives which are deemed critically important to the mining industry. It strives to establish excellence in strategic areas of research: deep mining, mineral exploration, integrated mine engineering, environment and sustainability. Please visit our website at [www.miningexcellence.ca](http://www.miningexcellence.ca) to review CEMI's 2010 Annual Report and project catalogue highlighting the achievements of its team of innovators.

## About Rio Tinto

Rio Tinto is a leading international mining group headquartered in the UK, combining Rio Tinto Plc, a London and NYSE listed company, and Rio Tinto Limited, which is listed on the Australian Securities Exchange.

Rio Tinto's business is finding, mining, and processing mineral resources. Major products are aluminium, copper, diamonds, energy (coal and uranium), gold, industrial minerals (borax, titanium dioxide, salt, talc) and iron ore. Activities span the world but are strongly represented in Australia and North America with significant businesses in South America, Asia, Europe and southern Africa. [www.riotinto.com](http://www.riotinto.com)

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