EXPLORATION – Ray Roussy

Mineral exploration in unconsolidated material has always been a risky proposition, primarily because, in the past, there was no economical, versatile or accurate method of determining where to mine. With the advent of game-changing sonic drilling technology, that all changed. Canadian Ray Roussy, President of Sonic Drilling Ltd and the Sonic Drill Corp is the patent holder and the developer of modern day sonic drilling technology – a technology that has made a signicant impact on the mining industry. Today, seven out of 10 sonic rigs are purchased for mining exploration. Although the diamond drill has long been the preferred tool for mineral exploration in hard rock, in unconsolidated material, it has two unfortunate drawbacks. First, it doesn't drill well in unconsolidated materials and, secondly, it can't provide accurate core samples from those kinds of formations. Only a sonic drill can recover a continuous core including boulders, clays, silt, sand and gravel and lay it in its stratigraphic sequence – from the surface all the way down to 100 m and deeper. Using Roussy's innovative sonic drill head, samples, ranging from 76 to 203 mm in diameter, can be obtained from a wide variety of mineral deposits including hard-to-extract oil sands, slag piles, mine tailings and heap leach pads. Extruded into clear plastic sleeves and then neatly laid out, these core samples can be subjected to a detailed visual examination and analysis, followed by sampling, photographing and archiving for a permanent record of the existing mineral conditions and a comprehensive evaluation. Building his rst sonic drill rig in his backyard more than 30 years ago, Roussy's lifetime work has resulted in four prestigious awards, thanks to the unique features of his sonic drilling technology. The Roussy sonic drill head can: • Drill three to ve times faster (some users report 10 x faster) • Produce 70% less mess on site • Drill without the use of drilling mud • Drill through mixed soils with ease • Produce continuous core samples to 100 m+ • Use 50% less power • O-er many environmentally-friendly benets including less noise, less waste, lighter engines, reduced fuel consumption, a smaller footprint and "green" hydraulic oil. Roussy's sonic drill has overcome all of the traditional hurdles to cost-e-ective mineral exploration in unconsolidated material. Roussy is an alumni of The Northern Ontario Institute of Technology (NOIT) where he was rst introduced to mechanical engineering before continuing onto Lakehead University where he graduated with a Bachelor of Mechanical Engineering degree in 1974. Today, 40 years later, Roussy holds dozens of patents involving sonic drilling technology and has largely been responsible for the successful commercialisation of it when others failed to make it work. Today, award-winning sonic drill rigs, patented and built by the Sonic Drill Corp, are in use on six continents and in every application imaginable. Due to its non-intrusive abilities, sonic drilling technology has often been used (and specically requested in government contracts) for sensitive projects such as dam remediation, nuclear site investigations and hazardous waste site reclamation. Because vibrations from the drill bit are not transmitted very far beyond the drill, penetrations can occur into very sensitive areas such as critical eco-systems, unstable terrain or vulnerable situations where traditional drilling would cause more harm or be impossible to complete. Initially, sonic drilling technology was seen as a powerful environmental investigation drill due to its ability to provide undisturbed core samples but, now, the technology has broadened in use to excel at geothermal installations, piling and

mineral exploration. This Hall of Fame induction becomes the fourth award since 2008 Roussy has won for his technology. Previous awards include: • 2012 – Technology Award from the National Ground Water Association (USA) • 2010 – Manning Innovation Award (Canada) • 2008 – Best New Drilling Technology award from the Canadian GeoExchange Coalition (Canada). The Sonic drilling technology was recently nominated for another award. The Northern Ontario Institute of Technology (NOIT) nominated Roussy for an Ontario Premier's award, but it was unsuccessful.