

Department of Geological Sciences

2015

The Jack Gallagher Visiting Scientist Dr. PETER BRADSHAW, P.Eng.

Chairman, First Point Minerals Corp.



Dr. Bradshaw is a mineral exploration geologist with 45 years international experience in over 30 countries with companies such Barringer Research, Placer Dome and Orvana Minerals. He will be visiting the Department of Geological Sciences and presenting three lectures, beginning with:

Tuesday, October 27, 1:00 p.m., 223 Wallace

Awaruite: A New Bulk Minable Source for Nickel which also has a Low Environmental Impact

Awaruite is a naturally occurring NiFe alloy (Ni₃Fe) which is 75% nickel and contains no sulphur. Awaruite can occur in ultramafics as a result of the serpentinization of olivine where, under very specific conditions of temperature and pressure and low sulphur and oxygen fugacity the nickel liberated from the olivine combines with iron to form this alloy. During the process the nickel moves only a very short distance and so the alloy is well disseminated making it ideal for bulk tonnage open pit mining. If the serpentinization is over a significant volume, the tonnage can be very large. The alloy has a high specific gravity and is extremely magnetic allowing for physical separation without the use of chemicals. Furthermore, the best source rocks are high magnesium ultramafics which, when ground, are well known to sequester CO₂. As a result of these two factors, extraction of this form of nickel will have a much lower environmental impact than traditional sources. This talk will look at occurrences of awaruite and conditions under which it may occur in a grade and size where it could be mined economically. Detailed reference is made to the awaruite occurrence at the Decar deposit in Central British Columbia where work to date has defined 2.1 billion tonnes of indicated plus inferred resource at a grade of 0.124% recoverable nickel, similar in value/tonne to the many operating porphyry copper deposits in BC.

The next lectures are:

Wednesday, October 28, 10:30 a.m., Hochheim Theatre, 5th Floor Wallace

Resource Development and Resolution of Conflict with Indigenous People

Wednesday, October 28, 5:30 p.m., 223 Wallace

The struggle for the Discovery of the Giant Porgera Gold Deposit, Papua New Guinea



Department of Geological Sciences Room 240 Wallace Building,