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International Technical Division

Helium: A light perspective from macro to micro

Presenter: Dr. David D. Johnson

Location: CSPG Classroom, +15 level, 540-5 ave SW, Calgary AB

Date: October 12, 2022

Time: 12:00-1:00pm MST

ABSTRACT

Helium is a unique critical resource, high in demand, short in supply, highly valuable, under explored, and historically less visible in the regulatory space. Helium is unique in that it is: the smallest molecule, has a high heat-capacity (specific heat), the second highest thermal-conductivity, the last element to become a liquid at -272C, is a superfluid, and reacts with nothing. Global demand for helium has increased dramatically as industrial applications have evolved to utilize these properties. Governments and markets have shifted from identifying helium as a niche to a critical commodity. Supply is currently critically limited by, decline of producing assets, pace of exploration and development, transportation and storage limitations, and delivery constraints owed to plant failures and war. The market has historically been oligopolic in nature with four companies dominating control (over 80%) of supply. There is no commodities market for helium and price disclosure is largely limited by non-disclosure agreements. Current retail price estimates range from \$400-\$4000USD/Mcf. Price and demand fundamentals are now driving the market, exploration, research, and government interest. I think we should begin to look forward towards the development of a commodities market for helium. I think we will begin to look forward towards a systems understanding helium source, migration and capture. I think we can begin to look forward towards both federal (tax) and provincial (royalty, securities, production, operations, etc.) views of pore-space use and constituents that addresses helium in a more comprehensive manner.