Appia Receives Promising Results from Initial Metallurgical Tests on a Composite Sample from Alces Lake Rare Earth Property, Northern Saskatchewan

written by Raj Shah | February 1, 2022

February 01, 2022 (Source) – **Appia Rare Earths & Uranium Corp. (CSE: API) (OTCQB: APAAF) (FSE: A0I.F) (FSE: A0I.MU) (FSE: A0I.BE) (the "Company" or "Appia")** is pleased to provide a progress report on bench-scale monazite processing and metallurgical testing (the "**Test**") on representative sample materials from Appia's high-grade rare earth element ("**REE**") and gallium Alces Lake property (the "**Property**"), located in northern Saskatchewan.

- Laboratory heavy liquid separation tests recovered 95% of the total rare earth oxide ("**TREO**") in 45% of the mass of a deslimed feed sample
- Preliminary locked-cycle flotation tests yielded a concentrate containing 48% TREO at 73% recovery
- Two preliminary caustic cracking/acid leach tests on a 45% TREO flotation concentrate extracted 87% and 78% TREO.
- Appia will be conducting further laboratory testwork and expects improved flotation performance and in excess of 90% REE extraction from concentrates.
- Preliminary data results show that the gallium concentration follows the rare earths through the beneficiation process and reports to the concentrate.

Appia President Frederick Kozak stated, “These preliminary bench scale testing results are excellent for the Alces Lake rare earths discovery. TREO recoveries and the percentage of TREO in concentrate are comparable to other producing global rare earths projects, supporting the potential for Alces Lake as a future monazite rare earths supply. We continue to work with the SRC and are confident that future testing will improve TREO recoveries and TREO concentrates.”

As announced in a News Release dated February 25, 2021, Appia engaged the Saskatchewan Research Council (SRC) to undertake metallurgical testwork on mineralized material from Appia’s Alces Lake high-grade REE property, Athabasca Basin area, northern Saskatchewan. The testwork was performed at SRC in Saskatoon on a 50 kg representative composite of mineralized material from the WRCB zone of the Property with a grade of approximately 9 % TREO. Prior studies have shown that the Alces Lake REEs are hosted exclusively in monazite.

Experimental work commenced in March 2021 with magnetic and heavy liquid separation tests followed by flotation testwork starting in April 2021. Initial magnetic separation tests were performed on the -0.5+0.038 mm screen fraction of material crushed to -5.6 mm representing 36% of the whole sample. The results showed limited rejection of barren material with 98% TREO recovery into 83% of the test feed mass. Initial heavy liquid tests were performed on screen fractions between 0.5 and 5.6 mm and representing 51% of the of whole sample. Some promise was noted with the sink fraction at a specific gravity of 3.0 having a mass of 37% of the feed and containing 92% of the REE. At a specific gravity of 2.9, the mass of the sink fraction increased to 45% and TREE recovery increased to 95%.

Most of the experimental effort was spent on froth flotation. Numerous factors were investigated including grind size, slimes

removal, regrind, circuit configuration, and reagents. The circuit and procedure that was developed included a grind to 80% passing 106 µm, no desliming, oleic acid collector with sodium silicate as a gangue depressant in roughing and initial cleaning, and with reverse cleaning final stages. This was tested in preliminary locked cycle tests and shown to deliver a concentrate containing 48% TREO at 73% recovery. Additional beneficiation work is planned to confirm and improve upon these initial test results. Beneficiation tests are also planned for new samples representing other mineralized zones of the Alces Lake

Two preliminary caustic crack tests were performed on a lower grade flotation concentrate generated early in the beneficiation program and containing 45.5% TREO. Test CC-1 was done on the as-received flotation concentrate, test CC-2 on the same concentrate after grinding to pass 45 µm. Each caustic crack residue was leached with HCl acid. TREO extractions in these two preliminary tests were 87% and 78% respectively. It is fully expected that recoveries in the excess of 90% will be attained with further testing on higher grade flotation concentrates.

ALCES LAKE HIGH-GRADE REE PROJECT

Appia drilled a total of 100 core holes and collected approximately 8,075 meters of diamond drill core in its 2021 drilling program. Initial assay results from the Wilson North and Richards drill holes were announced on November 19, 2021 and confirmed some of the highest recorded rare earth grades discovered to date on the Alces Lake property. In addition, high-grade REE mineralization has now been identified throughout an area covering approximately 27 km^2 of the Alces Lake block. Initial assay results have been returned from channel and grab samples but the Company is still awaiting further drilling core and channel sample assay results from the 2021 program.

With the largest exploration and diamond drilling program in the Company's history completed, exploration results will be released as received and analyzed by the company. Analysis of the summer exploration and drilling program will follow and may lead to the preparation of an NI 43-101 (Technical Report with 3D Geophysical-geological Models) report expected in 2022. The Alces Lake project encompasses some of the highest-grade total and critical* REEs and gallium mineralization in the world, hosted within a number of surface and near-surface monazite occurrences that remain open at depth and along strike.

The Alces Lake project is located in northern Saskatchewan, the same provincial jurisdiction that is developing a "first-of-its-kind" rare earth processing facility in Canada (currently under construction by the Saskatchewan Research Council, it is scheduled to become operational in early 2023). The Alces Lake project area is 35,682 hectares (88,173 acres) in size and is 100% owned by Appia.

* Critical rare earth elements are defined here as those that are in short-supply and high-demand for use in permanent magnets and modern electronic applications such as electric vehicles and wind turbines (i.e: neodymium (Nd), praseodymium (Pr), dysprosium (Dy) and terbium (Tb)).

To ensure safe work conditions are met for the workforce, the Company has developed exploration guidelines that comply with the Saskatchewan Public Health Orders and the Public Health Order Respecting the Northern Saskatchewan Administration District in order to maintain social distancing and help prevent the transmission of COVID-19.

The metallurgical content in this news release was reviewed and approved by Mr. John Goode, P.Eng, Consultant to Appia's Board of Directors, and a Qualified Person as defined by National

Instrument 43-101. The geologic content in this news release was reviewed and approved by Dr. Irvine R. Annesley, P.Geo, Advisor to Appia's Board of Directors, and a Qualified Person as defined by National Instrument 43-101. SRC Geoanalytical Laboratories' management system operates in accordance with ISO/IEC 17025:2005 (CAN-P-4E), General Requirements for the Competence of Mineral Testing and Calibration Laboratories.

About Appia

Appia is a Canadian publicly-listed company in the uranium and rare earth element sectors. The Company is currently focusing on delineating high-grade critical rare earth elements, gallium and uranium on the Alces Lake property, as well as exploring for high-grade uranium in the prolific Athabasca Basin on its Otherside, Loranger, North Wollaston, and Eastside properties. The Company holds the surface rights to exploration for 105,026 hectares (259,525 acres) in Saskatchewan. The Company also has a 100% interest in 12,545 hectares (31,000 acres), with rare earth element and uranium deposits over five mineralized zones in the Elliot Lake Camp, Ontario.

Appia has 119.6 million common shares outstanding, 142.2 million shares fully diluted.

Cautionary Note Regarding Forward-Looking Statements: *This News Release contains forward-looking statements which are typically preceded by, followed by or including the words "believes", "expects", "anticipates", "estimates", "intends", "plans" or similar expressions. Forward-looking statements are not a guarantee of future performance as they involve risks, uncertainties and assumptions. We do not intend and do not assume any obligation to update these forward- looking statements and shareholders are cautioned not to put undue reliance on such statements.*

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