



# *Appia*

**RARE EARTHS & URANIUM CORP.**

**CRITICAL RARE EARTHS & URANIUM  
EXPLORATION IN THE AMERICAS**

CSE:API | OTCQX:APAAF | FWB:A010 | MUN:A010 | BER:A010

December 2023

# Forward Looking Statement



**U** <sup>92</sup>  
Uranium  
238.029



**Nd** <sup>60</sup>  
Neodymium  
144.24



**Pr** <sup>59</sup>  
Praseodymium  
140.908



**Dy** <sup>66</sup>  
Dysprosium  
162.50



**Tb** <sup>65</sup>  
Terbium  
158.93

This presentation contains forward-looking statements which may include but are not limited to statements with respect to the future financial or operating performance of Appia and its projects, the future price of uranium, capital operating and exploration expenditures, success of exploration activities, permitting timelines, government regulation and environmental risks and costs. Appia has tried to identify these statements by using words such as "plans", "proposes", "expects" or "does not expect", "is expected", "estimates", "intends", "anticipates" or "does not anticipate", or "believes", or variations of such words and phrases or statements that certain actions, events or results "may", "could", "would", "might" or "will" be taken, occur or be achieved.

Forward-looking statements are not based on historical facts and involve known and unknown risks, uncertainties and other factors which may cause the actual results, performance or achievements of the Company, or events, to be materially different from any future results, performance, achievements or events express or implied by the forward-looking statements. These forward-looking statements reflect current expectations of management regarding future events and performance. Such forward-looking statements are based on a number of assumptions which management believes to be reasonable but may prove to be incorrect and involve significant risks, including but not limited to: the general risks associated with the mining industry, lack of operating history, dependence on key personnel, conflicts of interest, the need to raise additional capital, title to properties, competition, speculative nature of the business, acquiring additional properties, uninsured risks, external market factors, government regulation, environmental regulations, exploration risk, calculation of resources, insufficient resources, barriers to commercial production, maintaining property interests, commodity prices, exchange rates, lack of dividends, lack of public trading market, currency risk and controlling shareholder.

Although Appia has attempted to identify important factors that could cause actual results to differ materially from those contained in forward-looking statements, there may be other factors that cause results not to be as anticipated, estimated or intended. Anyone reviewing this Site should not place undue reliance on forward-looking statements. While the Company anticipates that subsequent events and developments may cause its views to change, Appia specifically disclaims any obligation to update these forward-looking statements, except as required by law. The factors identified above are not intended to represent a complete list of the factors that could affect the Company.

The technical information in this Presentation has been prepared in accordance with the Canadian regulatory requirements set out in National Instrument 43-101 Standards of Disclosure for Mineral Projects ("NI 43-101"). The information was reviewed and approved by Dr. Irvine R. Annesley, P.Geo, Vice President Exploration and a Qualified Person as defined by National Instrument 43-101.

# Company Overview

**Appia** is a publicly traded mineral exploration company that aims to strategically position and capitalize on the increasing demand for critical minerals, such as rare earth elements (REE) and uranium. These resources are essential for meeting the high demand for electric vehicles, wind turbines, advanced renewable electronics, and driving the transition towards a greener environment. Appia is committed to advancing multiple rare earths and uranium projects in mining-friendly regions, including Goiás State, Brazil, the Athabasca Basin area in Saskatchewan, Canada and Elliot Lake, Ontario, Canada.

## Ionic Clay Rare Earths

### *PCH, GOIAS, BRAZIL*

- High-grade critical REE (containing MREE & HREE) hosted in ionic clays
- Rare Earths in ionic clays are generally more easily extractable with lower Opex & Capex costs
- **MRE & NI 43-101 Technical Report Underway with SGS**
- *Ongoing exploration & well-developed infrastructure*

## Monazite Rare Earths

### *ALCES LAKE, SASK, CANADA*

- *High-grade **monazite** prospect on surface and near-surface of up to 80% coarse-grained monazite*
- *World-class critical REE with grades up to 50% TREO plus gallium.*
- *Most Attractive Mining Jurisdiction in Canada with access to SRC monazite processing facility*

## Uranium

### *ELLIOT LAKE, ON, CANADA*

- *Holds an extensive **Indicated & Inferred Maiden Mineral Resource Estimate (MRE)***
- *Large Historical Resource (non-compliant)*
- *Well-developed infrastructure & 58 Km from Cameco's uranium refining facility near Blind River, ON*

# Why Appia?

Appia offers a unique opportunity to tap into the growing demand for rare earth elements and uranium, which are pivotal in powering various industries. As the world transitions to cleaner energy sources and advanced technologies, the demand for rare earth elements and uranium is on the rise. Appia's strategic positioning in these markets, coupled with its commitment to environmentally conscious exploration practices, makes it a compelling choice for investors looking to align their portfolios with the future of clean energy, high-tech innovation, and responsible resource development. By investing in Appia, you not only stand to benefit from the potential financial rewards but also contribute to a cleaner and more technologically advanced future

## Appia is exploring for Rare Earth Elements (REE) and Uranium in Canada and Brazil

### Brazil:

- **The PCH REE Ionic Clay Project** located in Goiás State, Brazil – High-grade Critical REE in Ionic Adsorption Clays

### Canada:

- **Alces Lake Project** in Saskatchewan's Athabasca Basin is the highest-grade critical rare earths prospect in North America and one of the highest-grade rare earths prospects in the world.
- **Elliot Lake Property**, in Ontario's historic mining camp, with a large NI 43-101 Uranium and Rare Earths resource.
- **Loranger, Eastside, North Wollaston & Otherside Projects** are located in northern Saskatchewan's Athabasca Basin area and present significant near-surface, high-grade uranium potential with infrastructure nearby.



# Critical Minerals: Rare Earths and Uranium



## Uranium & Clean Energy

- Global transition to clean energy is underway
- US, Europe, Canada and Australia have listed rare earths and uranium as critical materials due to their strategic economic importance for the transition to clean energy
- Uranium is primarily used in the generation of clean energy, medicine, and scientific research



## Rare Earth Elements

- The highest REE demand is for Heavy (Dysprosium and Terbium) and Light (Neodymium and Praseodymium)
- These heavy and light REE are used primarily for permanent magnets, in EV drivetrains, wind turbines, technological, and military applications
- The global rare earth metals market grew from \$6.58 billion in 2022 to \$7.29 billion in 2023, with a 10.8% CAGR. Projections indicate further growth, reaching **\$9.6 billion by 2027 at a CAGR of 7.1%**. Read more [HERE](#).



## Global REE Supply

- China controls up to 90% of the supply of REE and the market for permanent magnets
- Western world is desperately working to build a supply of critical materials (including REE) outside of China
- International REE demand will exceed supply and therefore pricing for REE is forecast to dramatically increase over the coming years



# Rare Earths Producing Deposit Types

	IONIC CLAY	HARD ROCK
Location	Mainly China, Brazil, Africa	China, USA, Australia Canada
Type of REE	Contain both Heavy and Light REE	Mainly Light REE
CAPEX and OPEX	Low CAPEX & OPEX	Same as other hard rock mining deposits – higher costs for drilling and blasting
Exploration and Mining	Quick, inexpensive, simple, shallow drilling in weathered granites; mainly found in top 10-30 metres. Easy mining without drilling or blasting. Environmentally friendly and therefore easier to permit.	More expensive exploration: Deeper, diamond core drilling, blasting, open-pit or underground mining; tailings
Processing	Simple leaching and very little radioactivity	High temperature cracking; tailings; often containing higher radioactivity



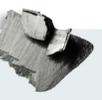
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**Nd** <sup>60</sup>  
Neodymium  
144.24



**Pr** <sup>59</sup>  
Praseodymium  
140.908



**Ga** <sup>31</sup>  
Gallium  
69.723



**Sc** <sup>21</sup>  
Scandium  
44.956

# Executive Leadership & Advisors

Appia's Management and Board has over 250 years combined industry experience



Anastasios (Tom) Drivas  
**CEO & DIRECTOR**

Business entrepreneur with over 30 years of experience in various industries, including over 20 years in the mineral resource industry.



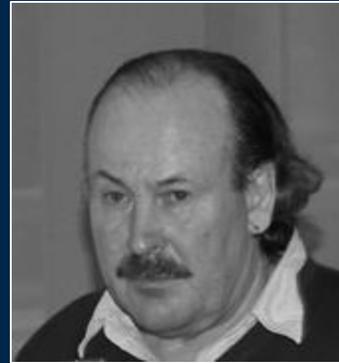
Stephen Burega  
**PRESIDENT**

Brings 16 years of management and operations experience in the international mining and natural resources sectors, plus 15 years of experience in finance & communications.



Frank van de Water,  
B.Com, CPA, CA  
**CFO, SECRETARY,  
DIRECTOR**

Involved in international mining, metals and resource companies in North and Latin America, Europe and Africa for over 40 years.



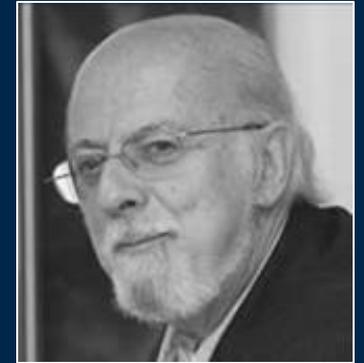
Dr. Irvine R. Annesley,  
Ph.D, P.Geo  
**VP EXPLORATION /QP**

Over 35 years experience in Global Exploration and Applied Research, principally in uranium, REE, thorium, and gold.



Don Hains, P. Geo  
**SR. TECHNICAL  
ADVISOR**

Consulting Geologist and QP, with highly advanced Industrial Minerals and Ionic Adsorption Clay expertise.



Jack Lifton  
**SR. TECHNICAL  
ADVISOR**

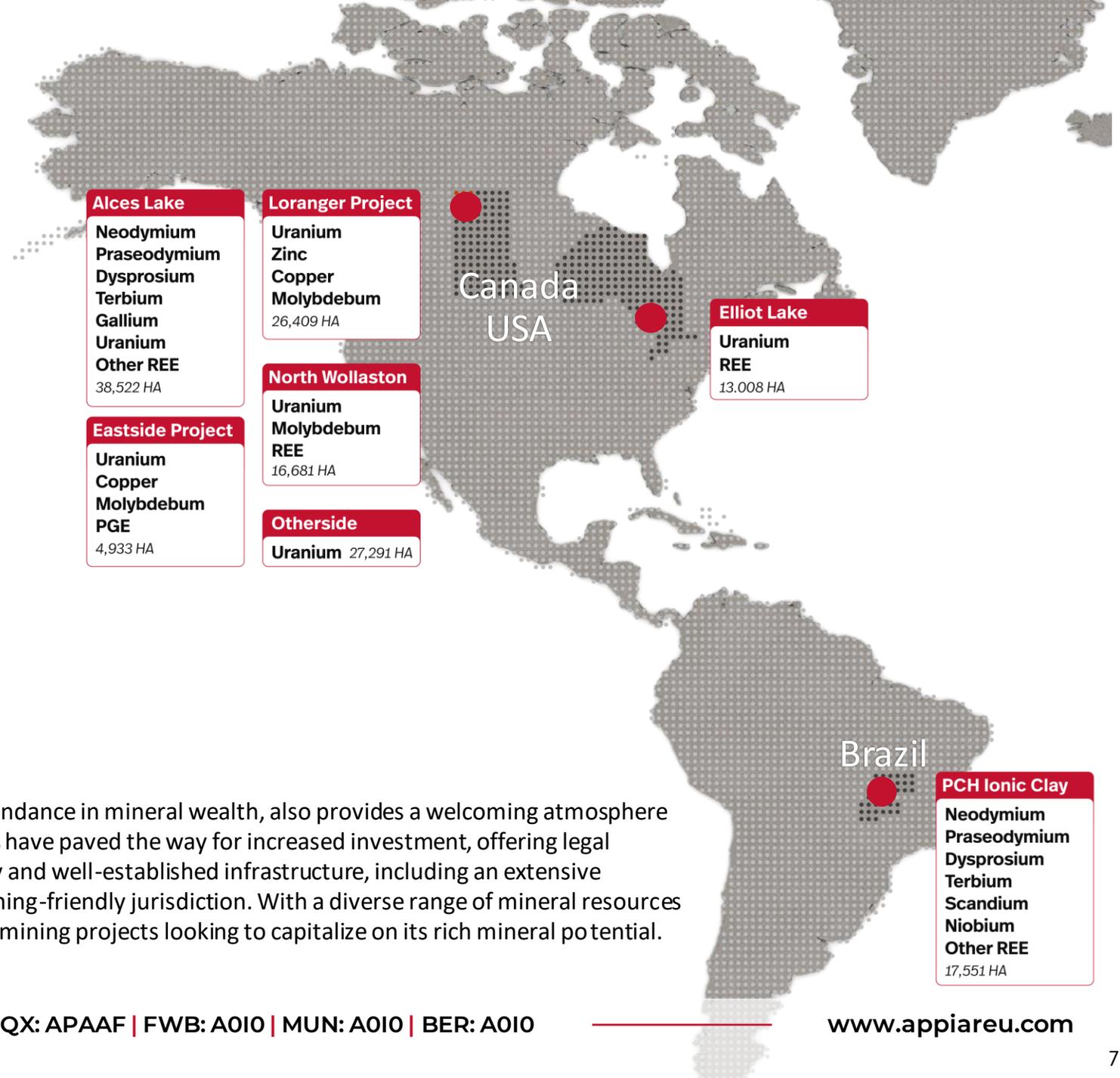
Consultant, author, and lecturer on the market fundamentals of technology metals.

# Our Projects

**Appia** is strategically positioned with mining projects in two of the world's most mining-friendly jurisdictions, Canada and Brazil. These locations offer an array of compelling reasons for our choice.

Canada, renowned for its political stability and robust legal framework, stands as a beacon of security for mining investments. With a rich endowment of mineral resources and a well-established mining industry, Canada provides a secure environment where investor interests are safeguarded. The nation's geological diversity opens up vast opportunities for resource exploration, and its experienced mining workforce ensures efficient project execution. Additionally, Canada's developed infrastructure and skilled labour force create an environment where mining operations can thrive with ease. **The Company holds a large uranium ground position in Elliot Lake and four highly prospective uranium exploration projects in the prolific Athabasca Basin area: Loranger, North Wollaston, Eastside and Otherside.**

In the southern hemisphere, Brazil, while boasting similar abundance in mineral wealth, also provides a welcoming atmosphere for mining endeavors. The country's regulatory improvements have paved the way for increased investment, offering legal certainty for mining operations. Brazil's geological accessibility and well-established infrastructure, including an extensive transportation network, further underscore its appeal as a mining-friendly jurisdiction. With a diverse range of mineral resources and a skilled workforce, Brazil represents an ideal location for mining projects looking to capitalize on its rich mineral potential.



# PCH Project, Goiás, Brazil



**PCH Ionic Clay**

Iporá

Goiânia

GO 060

BR 060

Brasília

Goiás

BRAZIL

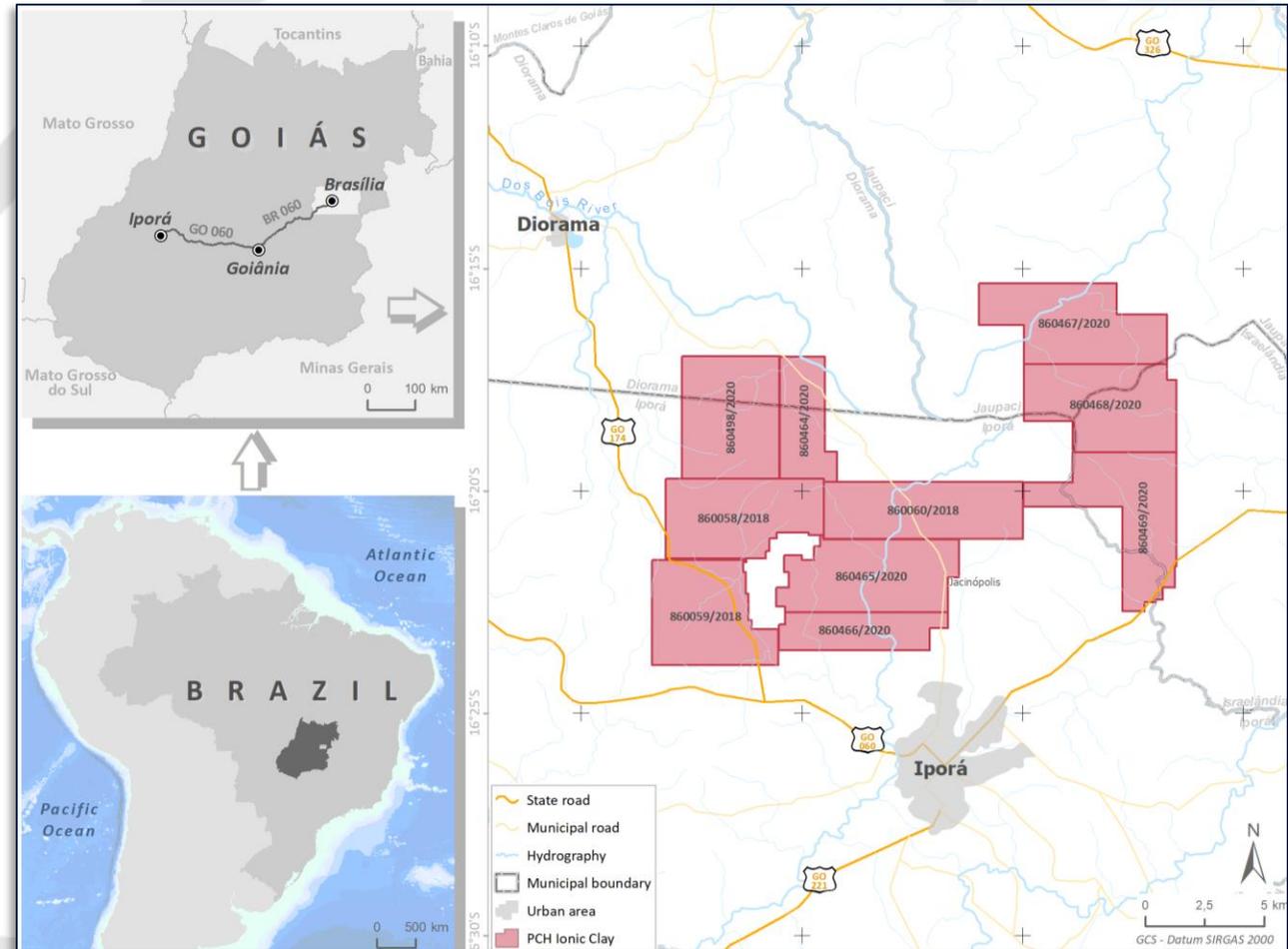


# PCH REE Ionic Adsorption Clay (IAC) Project: Brazil

Magnet Rare Earths (MREO)



The PCH Ionic Clay Project, located in the heart of Goiás state, Brazil, boasts a strategic position just 216 km from Goiânia and 410 km from Brasília. Its proximity to the vibrant city of Iporá ensures access to a skilled labour pool. The project benefits from well-developed regional roads, combining hard and gravel surfaces, ensuring reliable transportation. Internally, a network of gravel and unsurfaced farm roads enhances project accessibility. The presence of power and water further enhances economic significance, supporting long-term resource extraction with a commitment to environmental responsibility and regulatory compliance. The property also hosts valuable scandium, cobalt, and niobium resources, offering a multifaceted opportunity for growth and resource recovery.



\*Target IV covers 193.28 hectares within claim 860058/2018, which spans a total area of 1,874.6 hectares.

# PCH REE IAC Project: Overview

**Earn-in Agreement:** Appia has the option to earn up to 70% of the PCH project within 5 years (See press release – June 9th, 2023)

**Community Support:** Supported by all landowners and the surrounding community.

**Team:** Strong and experienced local Brazilian technical and support team

## **Geology:**

17,551 hectares in Tocantins Structural Province, Brasília Fold Belt, Goiás, Brazil.

South from Serra Verde project (near-term production of REE in 2024, 900 million tonnes reserves at 1200 ppm TREO).

## **Project Features & Infrastructure:**

Ionic Adsorption Clay Project with heavy (Dy/Tb) and light (Nd/Pr) rare earths.

Low radioactivity.

Located within 30 km of a mining town.

Accessible via a well-developed network of roads.

Power and water resources are available on the property.

## Milestones

### **Discovery Details:**

Exceptional 24-metre-deep mineralization zone.

Average of 27,188 ppm or 2.72% Total Rare Earth Oxides (TREO) from the surface and open to depth.

Inclusion of 6,293 ppm or 0.63% Magnet Rare Earth Oxides (MREO) and 1,369 ppm or 0.14% Heavy Rare Earths Oxides (HREO).

### **Target IV:**

Target IV spans 193.28 hectares of the total 17,551-hectare project. Discovery expands the existing area of Target IV, which is within one of 10 claims.

### **Averages to Date:**

Total weighted average of 2,287 ppm or 0.23% TREO across the first 57 holes assayed.

Average depth of mineralized zones exceeds 13 Metres.

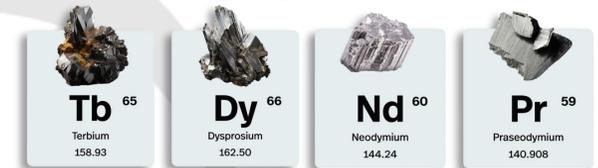
### **Continued Depth and Promise:**

Concentrations at deeper levels include 542 ppm or 0.054% MREO and 167 ppm or 0.017% HREO.

The high-grade find holds promise as mineralization extends deeper into the Earth's crust.

# PCH REE IAC Project: Current Exploration

Magnet Rare Earths (MREO)



**Target IV** encompasses 193.28 hectares within claim number 860058/2018, which encompasses 1,874.6 hectares. This is one of ten claims at PCH.

## Reverse Circulation (RC) Drill Program

- 147 vertical holes
- Total of 2,019 Metres
- Average 13.7 Metres per hole

## Diamond Drill Program

- One drill hole 243.5m

## Auger Exploration Program

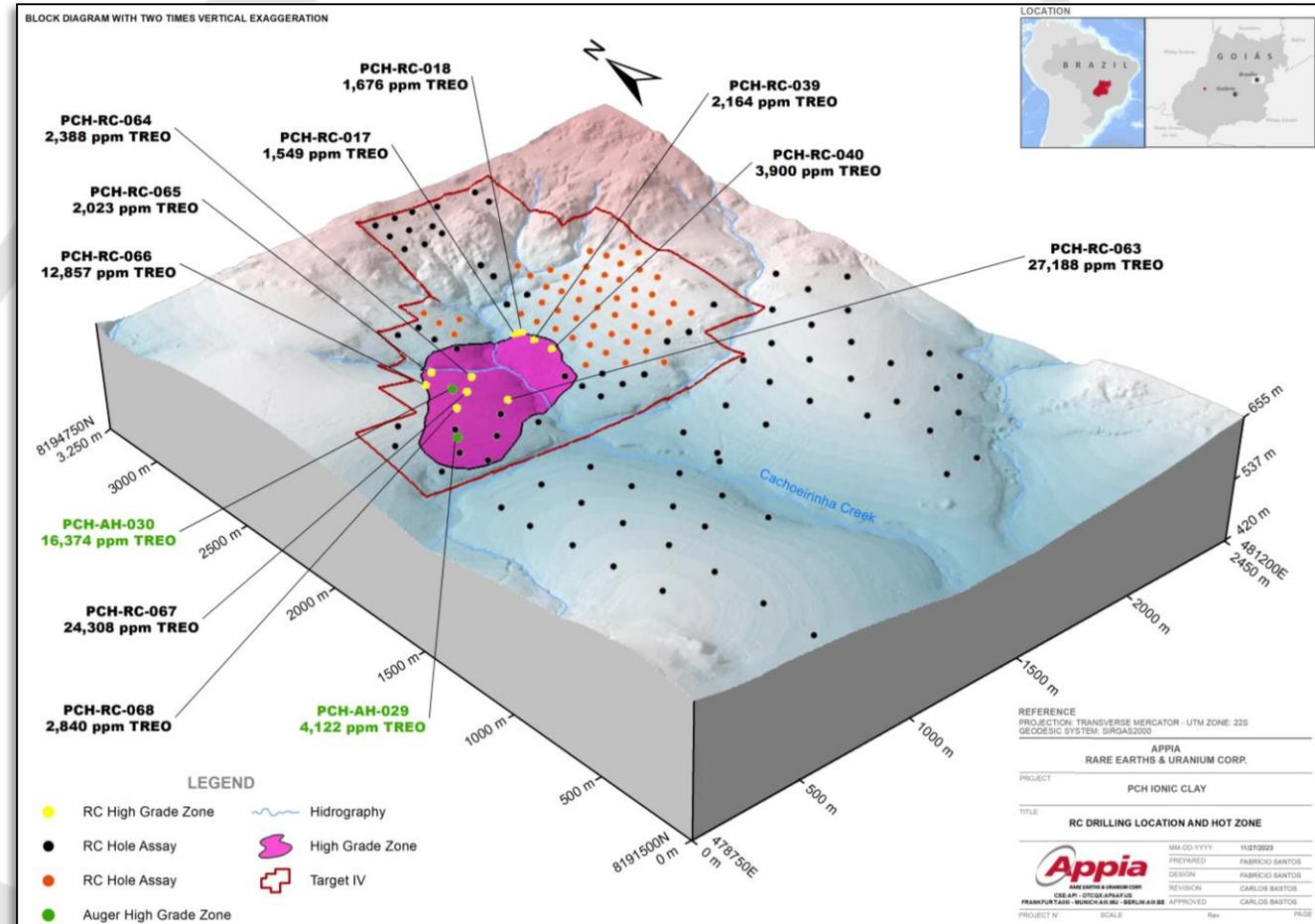
- 84 auger holes
- Total of 585 Metres
- Average 8-10 Metres per hole

## QA/QC

- Sample lengths are 1.0 metre
- QA/QC: implemented control samples: BLK,DUP, and CRM

**MRE & NI 43-101 is under development for Target IV in collaboration with SGS Geological Services.**

The 10-claim PCH Project spans a total of 17,551 hectares

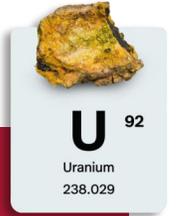


\*Map of RC and Auger drilling locations at the high-grade SW extension zone of Target IV.

# Elliot Lake, Ontario, Canada



# Elliot Lake Uranium & REE Project: Ontario, Canada



## Ownership and Size:

- Appia holds a 100% interest in the Elliot Lake property.
- The property spans approximately 13,008 hectares (32,143 acres).

## Strategic Location:

- Adjacent to Denison Mines Corp. and Rio Algom Limited past-producing uranium and REE mines.

## Historical Significance:

- The Elliot Lake camp has a rich history, having produced over 300 million lbs. of U<sub>3</sub>O<sub>8</sub>.
- Unique distinction as the only Canadian mining camp with significant historical commercial rare earth element production (yttrium).

## Exploration Potential:

- Current resources show substantial potential for expansion.
- Resources are largely open along strike and at depth based on historical drilling data.

## Metallurgical Testing:

- Various process methods employed in metallurgical testing.
- Indications of a high recovery rate, approximately 90% for uranium and most REE falling in the 80% to 90% range.

## Geological Features:

- Uranium and REE metals are hosted within quartz-pebble conglomerate beds.
- These beds are situated in the Matinenda Formation, the basal unit of the Elliot Lake Group.
- The uranium and REE-bearing horizon is characterized as a clean, well-sorted, coarse-pebble conglomerate.

# Elliot Lake Uranium & REE Project: NI 43-101 Mineral Resource Estimate

Indicated Resource				Inferred Resource				
	Tonnage (M Tons)	Average Grade (lbs./ton)	Contained Metal U <sub>3</sub> O <sub>8</sub> (M lbs.)	Contained Metal TREE (M lbs.)	Tonnage (M tons)	Average Grade (lbs./ton)	Contained Metal U <sub>3</sub> O <sub>8</sub> (M lbs.)	Contained Metal TREE (M lbs.)
<b>Teasdale Lake Zone</b>								
U <sub>3</sub> O <sub>8</sub>	14.4	0.554	8.0		42.4	0.474	20.1	
TREE	14.4	3.30		47.7	42.4	3.14		133.2
<b>Banana Lake Zone</b>								
U <sub>3</sub> O <sub>8</sub>					30.3	0.912	27.6	
<b>Total for both zones</b>								
Total	14.4		8.0	47.7	72.8		47.7	133.2

## 2013 NI 43-101 Mineral Resource Estimate (Compliant)

The NI 43-101 Indicated Mineral Resource for the Teasdale Lake Zone stands at 14,435,000 tons with a grade of 0.554 lbs U<sub>3</sub>O<sub>8</sub>/ton and 3.30 lbs TREE/ton, resulting in a total of 7,995,000 lbs U<sub>3</sub>O<sub>8</sub> and 47,689,000 lbs TREE. In the Inferred Mineral Resource category, the Teasdale Lake Zone comprises 42,447,000 tons, grading 0.474 lbs U<sub>3</sub>O<sub>8</sub>/ton and 3.14 lbs TREE/ton, totaling 20,115,000 lbs U<sub>3</sub>O<sub>8</sub> and 133,175,000 lbs TREE. Additionally, the Inferred Mineral Resource for the Banana Lake Zone is 30,315,000 tons, with a grade of 0.912 lbs U<sub>3</sub>O<sub>8</sub>/ton, resulting in a total of 27,638,000 lbs U<sub>3</sub>O<sub>8</sub>. The resources are largely unconstrained along strike and down dip. \*Refer to the NI 43-101 Mineral Resource Estimate page for qualifying notes regarding the Mineral Resource estimates, and individual element grades supporting the reported TREE results.

The Company holds a large ground position in Elliot Lake with a historical resource (non-compliant) totaling approximately 199 million lbs. of uranium at a grade of 0.76 lbs. U<sub>3</sub>O<sub>8</sub>/ton.

Zone	Quantity (tons)	Grade (lbs. U <sub>3</sub> O <sub>8</sub> /ton)	Contained U <sub>3</sub> O <sub>8</sub> (lbs.)
Teasdale Lake	17,458,200	1.206	20,787,200
Gemico Block #3	42,800,000	0.38	16,264,000
Gemico Block #10	20,700,000	0.75	15,525,000
Banana Lake Zone	175,800,000	0.76	133,608,000
Canuc Zone	7,000,000	1.86	13,020,000
<b>Total</b>	<b>263,758,200</b>	<b>0.76</b>	<b>199,204,200</b>

## Notes

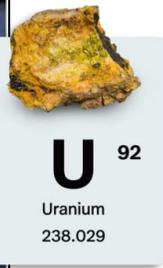
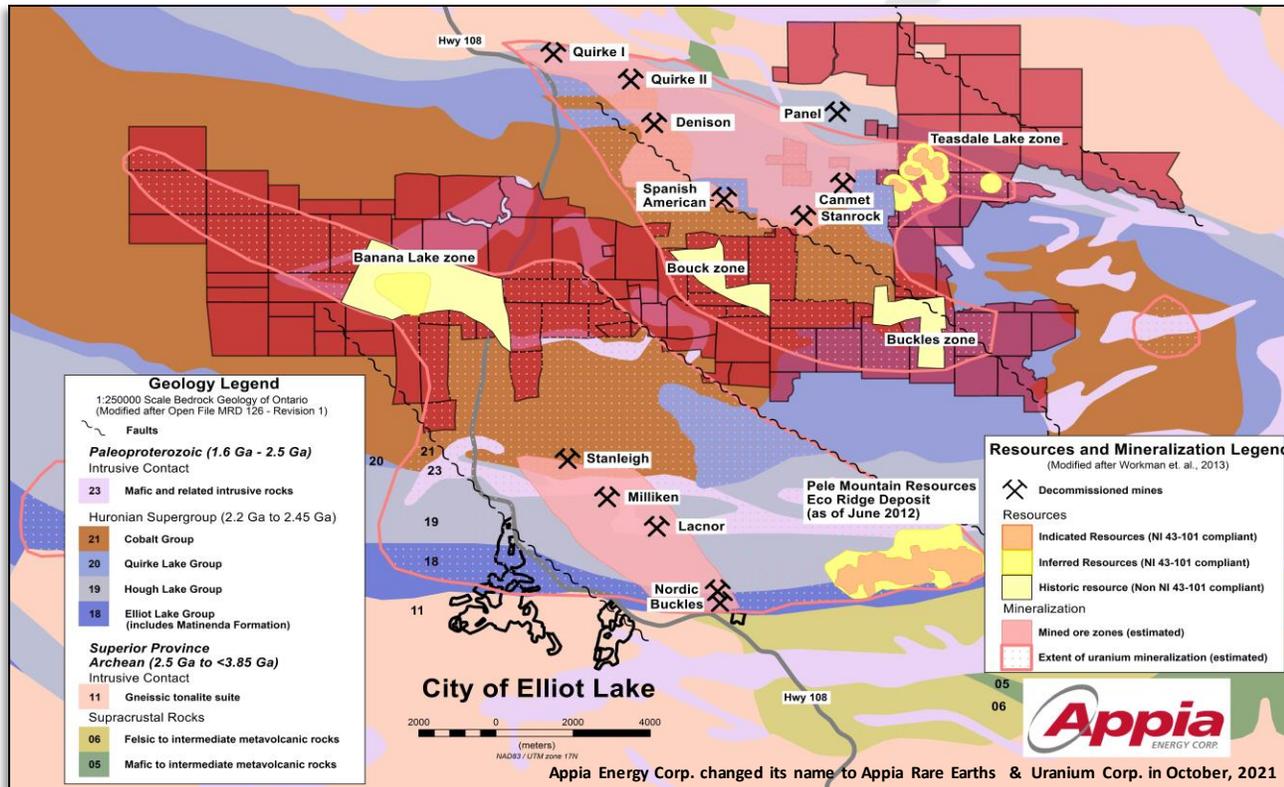
- The historical resource was not estimated in accordance with definitions and practices established for the estimation of Mineral Resources and Mineral Reserves by the Canadian Institute of Mining and Metallurgy ("CIM"), is not compliant with Canada's security rule National Instrument 43-101 ("NI 43-101"), and unreliable for investment decisions.
- Neither Appia nor its Qualified Persons have done sufficient work to classify the historical resource as a current mineral resource under current mineral resource terminology and are not treating the historical resources as current mineral resources
- Most of the historical resources were estimated by mining companies active in the Elliot Lake camp using assumptions, methods and practices that were accepted at the time, and based on corroborative mining experience.

# Elliot Lake Uranium & REE Projects

Located in the historic mining camp of Elliott Lake, Ontario, Canada

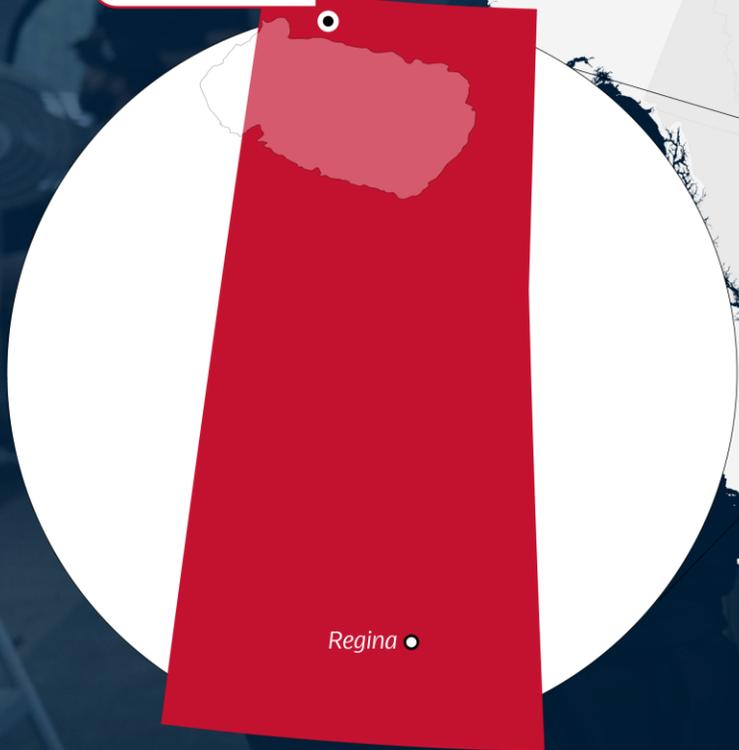
The Elliot Lake uranium-REE property comprises a group of 101 staked mineral claims, approximately 3 km north of the town of Elliot Lake.

Strong potential to increase the size of the current resources as they are largely unconstrained along strike and down dip.



# Alces Lake Project, Saskatchewan, Canada

Alces Lake



Canada

Saskatchewan

USA

Mexico

Regina

# Alces Lake REE Project: Current Exploration

## Resource Characteristics:

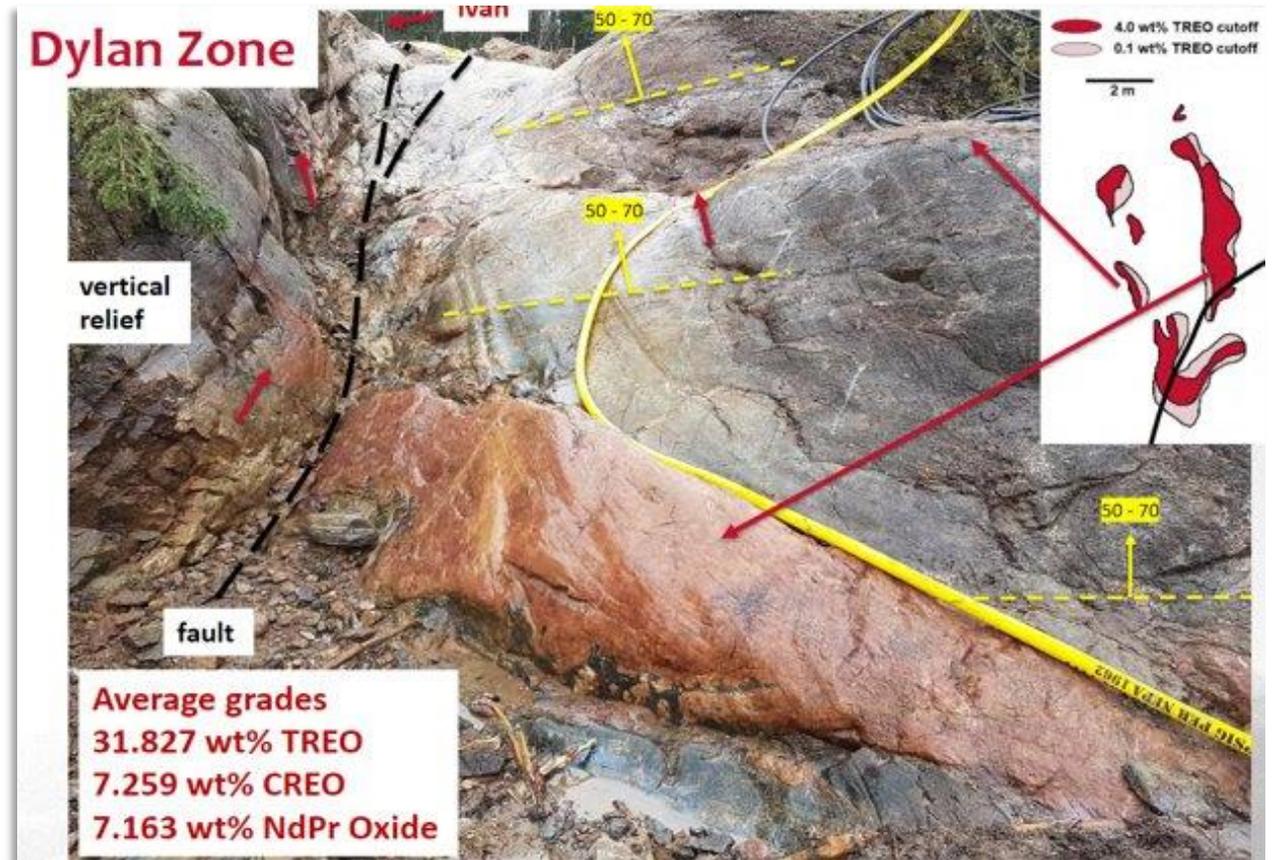
- World-class critical REE with grades up to 50% Total Rare Earths Oxide (TREO) plus gallium.
- Extensive high-grade monazite mineralization.
- Surface and near-surface showings/prospects of up to 80% coarse-grained monazite.
- Simple mineralogy - metallurgical testing confirms processing potential similar to other producing mines.

## Exploration and Discoveries:

- Multiple zones of REE discoveries along geological strike, on sub-parallel trends, and with sub-surface zones open in all directions.
- Awaiting results from the summer 2023 exploration program – 40 diamond drill holes.

## Geographical and Regulatory Context:

- Located in Saskatchewan's prolific Athabasca Basin: the "Most Attractive Mining Jurisdiction in Canada."
- Access to new REE processing facility at Saskatchewan Research Council facility in Saskatoon, Sask.



High-grade monazite outcrop WRCB zone, Alces Lake Saskatchewan

# Alces Lake REE Project: Overview

High-grade monazite outcrop WRCB zone range from 4.209 to 32.17 wt.% total rare earth oxide (TREO)

**2023** - Diamond drill results: **11 drill holes spanning 1,223 Metres completed** in southern extension of Magnet Ridge. Five drill holes showcased substantial mineralization intersections, with **widths up to 19 Metres, indicating a potential increase in grade and thickness.**

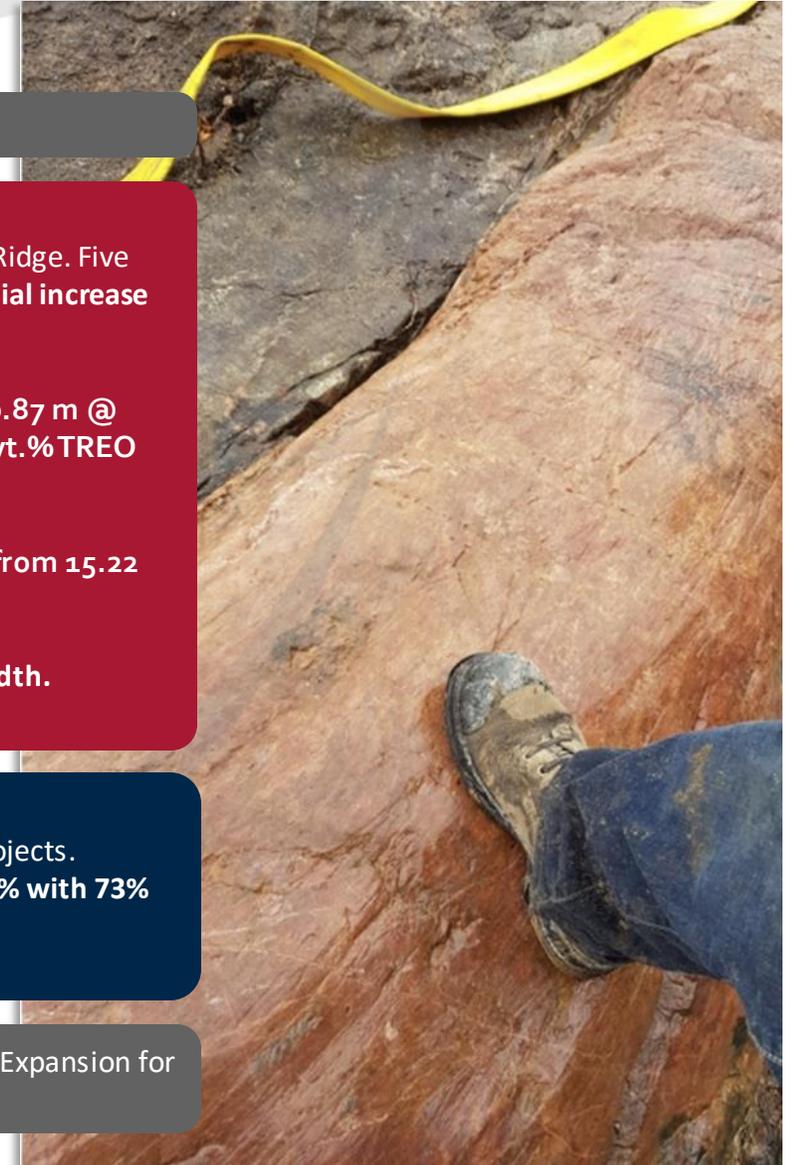
**2022** - Diamond drill results: 17,481 Metres of diamond drilling reported **8.98m @ 9.46 wt.% TREO** including **0.87 m @ 17.1 wt.% TREO** in hole 22-WRC-024 at Wilson Zone & **12.13 m @ 0.33 wt.% TREO** including **5.7 m @ 0.55 wt.% TREO** from hole 22-WRC-016 at AMP Zone in a structural corridor.

**2021** - Diamond Drill results: 21-WRC-015 hole at Wilson North intersected **9.38 metres of 17.53 wt% TREO** from **15.22 m- 24.60 m, including 2.14 Metres of 32.17 wt% TREO** with assays up to **37.92 wt% TREO**

Exploration strategy covers priority zones, extending approximately **20 kiloMetres in length and 5 to 7 km in width.**

Bench-scale monazite processing and metallurgical testing results comparable to other producing rare earth projects. Preliminary work done at the Saskatchewan Research Council (SRC) **achieved flotation concentrate TREO of 48% with 73% TREO recovery.** Improvements are expected from future testing.

**Permanent 35-person camp with year-around accessibility and promoting Work, Resources, and Employment Expansion** for the Local First Nations Community of Fond-du-Lac



# SRC REE Processing Facility: Saskatoon, Saskatchewan, Canada

## **Landmark Initiative**

In August 2020, the Saskatchewan Research Council (SRC), a Provincial Crown Corporation, and the Government of Saskatchewan unveiled ground-breaking plans to finance and establish a unique Rare Earths Processing Facility in Saskatoon, Canada. This strategic move represents a pioneering effort to enhance rare earths processing capabilities and foster regional economic growth.

## **SRC: A Research Powerhouse**

As Canada's second-largest research and technology organization, SRC boasts a global footprint, serving 1,600 clients across 22 countries. This extensive reach positions SRC as a leading force in driving innovation and research in various sectors.

## **Monazite Processing Expertise**

Leveraging existing pilot facilities, SRC has already achieved significant milestones in rare earths processing. By optimizing a monazite processing flow sheet, SRC's facilities have successfully processed monazite sourced from Appia's Alces Lake project. This achievement underscores the practical application of research outcomes in advancing rare earths processing technologies.



SRC Rare Earth Element Extraction Lab

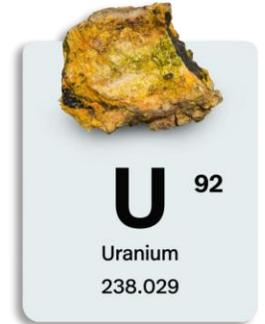
The processing facility is expected to be operational in 2024

# Strategic Development Outlook

Appia Rare Earths & Uranium Corp. will continue to provide timely updates to investors as assay results are received from both PCH (Brazil) & Alces Lake (Canada) 2023 drill programs.

The Company aims to finalize development on its Maiden Mineral Resource Estimate and NI 43-101 Technical Report on Target IV at PCH, in collaboration with SGS Geological Services in Q1 of 2024.

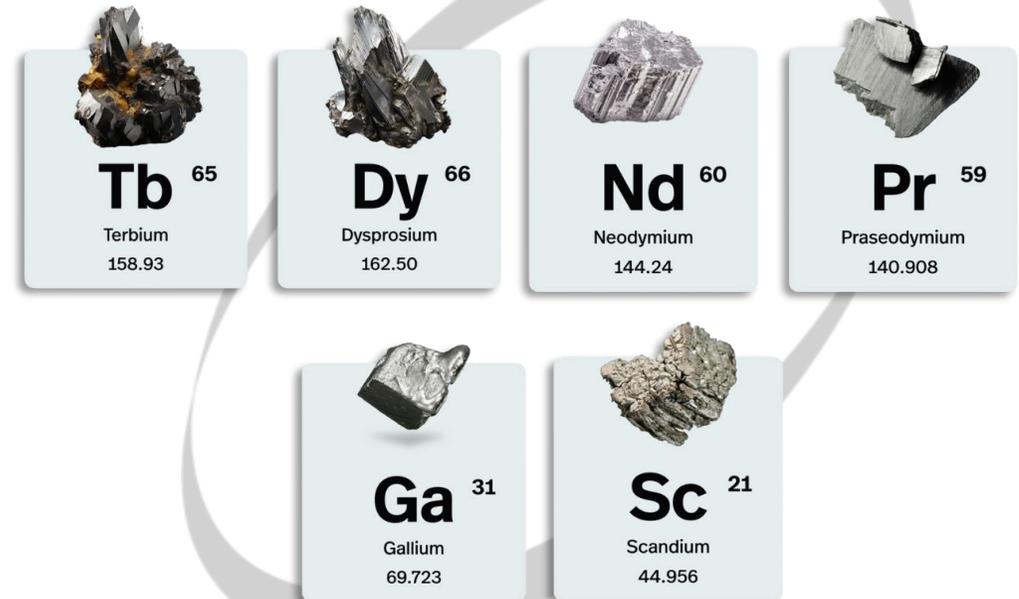
Appia continues to uncover unprecedented mineralization at its PCH & Alces Lake projects.



## Capital Structure

*(at December 11<sup>th</sup>, 2023)*

- Issued: 131.4 million shares (Insiders – approx. 27 %)
- Fully Diluted: 139.3 million shares
- 52 Week Range: \$0.095 - \$0.36 CAD
- Approximate Market Capitalization: \$38 million CAD
- Cash on Hand: Approx. \$2 million CAD
- Debt: None



# Appendix A

## Alces Lake TREO Summary Chart (2017-2020 results)

Zone	Slide #	La <sub>2</sub> O <sub>3</sub> wt%	CeO <sub>2</sub> wt%	Pr <sub>6</sub> O <sub>11</sub> wt%	Nd <sub>2</sub> O <sub>3</sub> wt%	Sm <sub>2</sub> O <sub>3</sub> wt%	Eu <sub>2</sub> O <sub>3</sub> wt%	Gd <sub>2</sub> O <sub>3</sub> wt%	Tb <sub>4</sub> O <sub>7</sub> wt%	Dy <sub>2</sub> O <sub>3</sub> wt%	Ho <sub>2</sub> O <sub>3</sub> wt%	Er <sub>2</sub> O <sub>3</sub> wt%	Yb <sub>2</sub> O <sub>3</sub> wt%	Lu <sub>2</sub> O <sub>3</sub> wt%	Y <sub>2</sub> O <sub>3</sub> wt%	ThO <sub>2</sub> wt%	U <sub>3</sub> O <sub>8</sub> wt%	TREO wt%*	CREO wt%**
Alces Lake Average	5,8	3.873	8.203	0.896	2.896	0.390	0.005	0.214	0.012	0.037	0.004	0.010	0.001	0.000	0.102	2.069	0.057	16.645	3.847
Bell	22	2.394	5.156	0.538	1.647	0.232	0.003	0.137	0.008	0.027	0.003	0.009	0.001	0.000	0.083	1.309	0.038	10.239	2.223
Charles	22	2.250	4.640	0.517	1.601	0.216	0.003	0.125	0.007	0.022	0.003	0.007	0.001	0.000	0.066	1.164	0.036	9.458	2.150
Dante	22	3.794	8.310	0.868	2.999	0.414	0.005	0.215	0.014	0.036	0.004	0.008	0.001	0.000	0.096	2.209	0.056	16.763	3.922
Dylan	22	7.407	15.841	1.719	5.444	0.708	0.010	0.407	0.020	0.066	0.008	0.021	0.001	0.000	0.174	3.842	0.100	31.827	7.259
Ivan	22	5.085	10.961	1.211	4.058	0.546	0.007	0.287	0.018	0.050	0.005	0.011	0.001	0.000	0.128	2.804	0.073	22.369	5.344
Richard	22	1.960	4.225	0.470	1.618	0.228	0.003	0.104	0.009	0.025	0.003	0.005	0.001	0.000	0.074	1.163	0.032	8.725	2.124
Wilson	22	2.267	4.668	0.497	1.535	0.210	0.003	0.121	0.006	0.021	0.002	0.007	0.001	0.000	0.060	1.162	0.034	9.398	2.062
Ivan (Line 4)	16	12.343	26.186	2.875	9.260	1.171	0.016	0.663	0.033	0.110	0.013	0.035	0.002	0.000	0.302	6.179	0.143	53.007	12.293
Dylan (Lines 4, 9 to 13)	16, 18	8.000	17.099	1.861	5.901	0.760	0.011	0.439	0.022	0.071	0.008	0.023	0.001	0.000	0.183	4.182	0.111	34.379	7.865
Ermacre	n/a	0.908	1.965	0.239	0.821	0.128	0.001	0.059	0.005	0.017	0.002	0.004	0.002	0.000	0.057	0.506	0.012	4.209	1.084
Oldman	n/a	0.262	0.535	0.061	0.211	0.029	0.001	0.012	0.001	0.001	0.000	0.000	0.000	0.000	0.003	0.137	0.005	1.117	0.275

	Highlighting Nd grades associated with high-grade Total REOs
	Highlighting Pr grades associated with high-grade Total REOs
	Highlighting "High-Grade" Total and Critical REOs (i.e. >1.897 wt% Total REO)
	Indicates light rare earth elements
	Indicates heavy rare earth elements
	Indicates radioactive elements

\*TREO = Total Rare Earth Oxide =

sum of La<sub>2</sub>O<sub>3</sub>+CeO<sub>2</sub>+Pr<sub>6</sub>O<sub>11</sub>+Nd<sub>2</sub>O<sub>3</sub>+Sm<sub>2</sub>O<sub>3</sub>+Eu<sub>2</sub>O<sub>3</sub>+Gd<sub>2</sub>O<sub>3</sub>+Tb<sub>4</sub>O<sub>7</sub>+Dy<sub>2</sub>O<sub>3</sub>+Ho<sub>2</sub>O<sub>3</sub>+Er<sub>2</sub>O<sub>3</sub>+Yb<sub>2</sub>O<sub>3</sub>+Lu<sub>2</sub>O<sub>3</sub>+Y<sub>2</sub>O<sub>3</sub>

\*\*CREO = Critical Rare Earth Oxide = sum of Pr<sub>6</sub>O<sub>11</sub>+Nd<sub>2</sub>O<sub>3</sub>+Eu<sub>2</sub>O<sub>3</sub>+Tb<sub>4</sub>O<sub>7</sub>+Dy<sub>2</sub>O<sub>3</sub>

Conditions Used for Reporting Composite Summary Average Grades

The Alces Lake Average grade was calculated from 302 combined surface channel and diamond drill hole samples with >4 wt% TREO out of a total of 997 samples with >0.1 wt% TREO.

Individual "Zone" and "Line" grades were calculated from the same 302 combined surface channel and diamond drill hole samples with >4 wt% TREO out of a total of 997 samples with >0.1 wt% TREO, but sorted based on unique "Zone"/"Line" identifier

# Appendix B

## Alces Lake Lithochemical Results for Drill Hole IV-19-012

Zone	DDH	From (m)	To (m)	Interval (m)	La <sub>2</sub> O <sub>3</sub> (wt%)	CeO <sub>2</sub> (wt%)	Pr <sub>6</sub> O <sub>11</sub> (wt%)	Nd <sub>2</sub> O <sub>3</sub> (wt%)	Sm <sub>2</sub> O <sub>3</sub> (wt%)	Eu <sub>2</sub> O <sub>3</sub> (wt%)	Gd <sub>2</sub> O <sub>3</sub> (wt%)	Tb <sub>4</sub> O <sub>7</sub> (wt%)	Dy <sub>2</sub> O <sub>3</sub> (wt%)	Ho <sub>2</sub> O <sub>3</sub> (wt%)	Er <sub>2</sub> O <sub>3</sub> (wt%)	Yb <sub>2</sub> O <sub>3</sub> (wt%)	Lu <sub>2</sub> O <sub>3</sub> (wt%)	Y <sub>2</sub> O <sub>3</sub> (wt%)	ThO <sub>2</sub> (wt%)	U <sub>3</sub> O <sub>8</sub> (wt%)	TREO (wt%)	CREO (wt%)
Ivan	IV-19-012	8.70	24.25	15.55	3.653	7.798	0.889	2.946	0.413	0.005	0.205	0.014	0.036	0.004	0.006	0.001	0.000	0.089	2.081	0.054	16.059	3.890
	includes	9.70	17.60	7.90	7.130	15.219	1.735	5.748	0.805	0.010	0.400	0.027	0.071	0.007	0.012	0.002	0.000	0.173	4.058	0.105	31.339	7.591
	includes	9.70	13.40	3.70	11.233	23.833	2.753	8.996	1.258	0.016	0.626	0.042	0.110	0.011	0.019	0.002	0.001	0.266	6.365	0.164	49.165	11.918

## Elliot Lake's Teasdale Lake Zone REE Resource Summary Chart

Zone	Category	La (ppm)	Ce (ppm)	Pr (ppm)	Nd (ppm)	Sm (ppm)	Eu (ppm)	Gd (ppm)	Tb (ppm)	Dy (ppm)	Ho (ppm)	Er (ppm)	Tm (ppm)	Yb (ppm)	Lu (ppm)	Y (ppm)	TREE (ppm)	CREE (ppm)
Teasdale Lake	Indicated	422.0	745.0	73.8	247.0	41.1	1.7	26.2	3.2	14.3	2.3	5.8	0.8	4.6	0.7	59.4	1647.9	344.1
Teasdale Lake	Inferred	401.0	709.0	69.9	232.0	39.0	1.6	24.6	3.0	13.5	2.1	5.5	0.7	4.4	0.6	56.5	1563.4	323.9

TREE = Total Rare Earth Elements = sum of La+Ce+Pr+Nd+Sm+Eu+Gd+Tb+Dy+Ho+Er+Tm+Yb+Lu+Y

CREE = Critical Rare Earth Elements = sum of Pr+Nd+Eu+Tb+Dy

 Indicates light rare earth elements  
 Indicates heavy rare earth elements

The Teasdale Lake zone Uranium and Rare Earth Element Mineral Resource Estimate is effective as of July 30, 2013

Mineral Resources were prepared from a polygonal model estimated at a cut-off value of \$100/tonne, using a uranium price of US \$70/lb. U3O8, a combined TREE price of \$78/kg, and a C\$:US\$ exchange rate of 1:0.9

A specific gravity (S.G.) of 2.85 tonnes/m3 (or 3.14 tons/m3) was used

Indicated amounts may not precisely sum due to rounding

The quantity and grade of reported Inferred Resources are uncertain in nature and there has been insufficient exploration to define these as Indicated or Measured Mineral Resources

The Mineral Resources were estimated using the CIM Mineral Resources and Reserves Guidelines (December 11, 2015)

# Appia

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