Spark Identifies New Pegmatite Zones with Lithium Pathfinders in Brazil's Lithium Valley

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Vancouver, July 28, 2025 - Spark Energy Minerals Inc. (CSE: SPRK) (OTCID: SPARF) (FSE: 8PC) ("Spark" or the "Company") is rapidly advancing toward a potential lithium discovery at its flagship Arapaima Project in Brazil's Lithium Valley. Ongoing fieldwork has continued to uncover widespread evidence of weathered pegmatite (with remnant quartz-feldspar- tourmaline) veins - the primary geological hosts for lithium in this region.

Over 90 samples (surface rock chip and stream sediment) have been collected during the last 5 weeks over areas where tourmaline-bearing quartz gravels and pegmatite veins have been encountered. "This data will help refine priority diamond drill targets within Spark's already extensive footprint of lithium-targeted pegmatites across Brazil's Lithium Valley.

Quartz, Feldspar, and Tourmaline Pegmatite Veins Boost Lithium Exploration Outlook

Figure 1: Pegmatite sample featuring quartz, alkali feldspar, and prominent black tourmaline crystals - classic indicators commonly found in lithium-bearing systems.

To view an enhanced version of this graphic, please visit:
https://images.newsfilecorp.com/files/10093/260399_f9a6e0c2544f1a23_002full.jpg

This particular sample (Figure 1) contains:

- Quartz and alkali feldspar - common building blocks of pegmatite
- Muscovite - a shiny mica mineral often found in evolved pegmatites
- Black tourmaline - an important pathfinder mineral for lithium, found scattered throughout the quartz

These textures and minerals are exactly what geologists hope to see when hunting for lithium-bearing pegmatites, adding strong support to Spark's evolving geological model and the potential for a widespread lithium system at or close to surface. With multiple outcrops returning similar results, confidence is growing that Arapaima may host a scalable, high-value lithium discovery.

"The geological signatures emerging at Arapaima are highly compelling," noted Jon Hill, VP Exploration at Spark Energy Minerals. "We've mapped multiple pegmatite zones at surface, identified key pathfinder minerals and observed structural features consistent with other known lithium-bearing systems in Brazil's Lithium Valley. The scale and consistency of these indicators point to a potentially evolved pegmatite system, and the upcoming assay results will be key to advancing our drill targeting."

Figure 2: A roadside rock wall showing light-colored granite with veins running through it - samples taken because the veins contain quartz and feldspar, minerals often linked to lithium-bearing pegmatites.

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https://images.newsfilecorp.com/files/10093/260399_f9a6e0c2544f1a23_003full.jpg

Rock Sampling Confirms Pegmatite Veins in Key Zones

Last week, Spark's team collected 8 rock samples, including weathered leucogranite - a light-colored granite - cut by pegmatite veins up to 40 cm thick.

The pegmatite veins trend in favorable directions (north-south and northwest-southeast) and contain alkali feldspar, quartz, and traces of black tourmaline. The surrounding granites are foliated with layering formed by aligned mica minerals (biotite and muscovite).

Stream Sediment Sampling

Spark's field team also panned gravel from a dry riverbed to test for heavy mineral pathfinders that could indicate nearby lithium sources. At one key site, they mapped quartz pebbles with black tourmaline (see Figure 3).

Figure 3: Gravel sample from a streambed showing quartz pebbles with black tourmaline which confirms the presence of the targeted pegmatites in this drainage basin.

To view an enhanced version of this graphic, please visit:
https://images.newsfilecorp.com/files/10093/260399_f9a6e0c2544f1a23_004full.jpg

Even more intriguing was the discovery of a buried, hardened gravel layer ("consolidated alluvial gravel") resting directly on granite bedrock. This material likely predates the modern drainage system and could be shedding mineral-rich debris into the current stream - a promising indicator of possible upstream lithium sources.

Together, these findings suggest the area is actively eroding the targeted source pegmatites, helping to pinpoint the most promising zones for follow-up exploration.

"These emerging areas -with widespread pegmatite occurrences and pathfinder mineral associations -are shaping up to be highly promising," stated Eugene Hodgson, Chair and CEO of Spark. "As we finalize sample shipments to the assay lab and begin integrating geochemical data, we are zeroing in on the most compelling drill targets for the next phase of our Lithium Valley campaign. Brazil's Lithium Valley is one of the most exciting battery metals districts in the world, and Spark Energy Minerals is right in the thick of it."

Highlights from July 14-18 Field Campaign:

- 11 new stream sediment samples collected
- 8 new rock samples taken from pegmatite-bearing outcrops, cutting across banded leucogranites and granites with tourmaline and muscovite associations
- 158 total field control points now completed during this phase
- 31 stream sediment samples and 68 rock samples collected in total over 5 weeks
- At least four priority lithium exploration targets identified with confirmed pegmatite presence

Next Steps

- Assay results from current rock and sediment samples expected soon
- Data integration and geological modeling in progress
- Drill targeting and initial exploration schedule nearing completion for Arapaima

With pegmatite veins exposed at surface, lithium pathfinder minerals in both rock and stream sediment samples, and lab results on the way, Spark is hitting all the right exploration milestones. The groundwork laid over the past five weeks has significantly advanced the Company's understanding of the Arapaima Project and sharpened its drill focus.

As global demand for lithium continues to grow and Brazil's Lithium Valley attracts increasing international

interest, Spark provides investors with early-stage exposure to an exploration-stage project in a region emerging as a notable hub for battery metals.

Qualified Person:

The scientific and technical information disclosed in this document has been reviewed and approved by Jonathan Victor Hill BSc Hons, FAUSIMM, a Qualified Person consistent with NI 43-101 and a director of Spark Energy Minerals Inc. Mr. Hill is a Director of Spark Energy Minerals Inc. and is not independent of the Company.

About Spark Energy Minerals Inc.

Spark Energy Minerals, Inc. is a Canadian company focused on the acquisition, exploration, and development of battery metals and mineral assets, with a particular emphasis on its substantial interests in Brazil. The Company's flagship project is the Arapaima Lithium & REE project spanning a combined 91,900 hectares in Brazil's renowned Lithium Valley, one of the most prolific mining regions in the world. This region is rapidly gaining global recognition for its vast deposits of lithium and rare earth minerals, positioning Brazil as a critical player in the global energy transition.

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FOR ADDITIONAL INFORMATION, SEE THE COMPANY'S WEBSITE AT

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