

From Surface Clues to Subsurface Systems: Exploration and Discovery in the Emerging Illinois Creek CRD District

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The Illinois Creek District is located in west-central Alaska, approximately 250 miles west of Fairbanks. Originally discovered by Anaconda Copper in the 1980s, the district is now home to five evolving mineral projects under Alaska Silver's land tenure, hosting gold, silver, copper, lead, and zinc mineralization.

Alaska Silver's recent exploration has focused on expanding the known Waterpump Creek resource and evaluating new targets along the broader Illinois Creek–Waterpump Creek Carbonate Replacement Deposit ("CRD") corridor. In 2025, two key areas were drilled: Waterpump Creek South and the newly defined Silver Sage prospect.

At Waterpump Creek South, Alaska Silver conducted a targeted drilling campaign (4 HQ diamond drill holes, 2,057.6m) aimed to extend the high-grade massive sulfide mineralization first discovered in 2021 (75 Moz @ 980 g/t AgEq Inferred; see press release, Feb. 22, 2024). Drilling results provided critical insights into structural offsets and alteration zonation, aiding in vectoring toward potential extensions of the high-grade mineralization, particularly in the South Block.

Approximately 5 km south of Waterpump Creek, the Silver Sage zone represents a significant exploration breakthrough. First identified through anomalous soils and siliceous float, the area has since been trenched and drilled. Trench T45 ("The Galena Trench") intercepted a strongly mineralized breccia with semi-massive galena and cerussite over a 15-meter-wide zone (still open), with a central, higher-grade core approximately 1 meter thick. Nine drill holes (906.5 m) confirmed the presence of multiple mineralized structures, significant indicator element leakage, and pervasive CRD-style alteration.

Trenching also revealed a broader mineralized footprint:

- Trench T48 ("The Indiana Jones Trench"), 380 m SSW of T45, intercepted oxidized breccia with high-grade lead-silver-zinc mineralization.
- Trenches T44, T46–T50 indicate extensive alteration and mineralization continuity over a ~550 m strike length and >1.1 km alteration halo.

These findings suggest a much larger, structurally complex mineralized system, with potential connections to a causative porphyry source hypothesized near Dee's Spring, at the California Creek–Little Mud River confluence.

In addition, interpretation of the 2024 SkyTEM geophysics by the US Geological Survey and Alaska Department of Geological & Geophysical Survey has significantly aided in district structural and stratigraphic understanding, shifting the greater interpretation of the district. The Illinois Creek district and Round Top porphyry are now hypothesized to be in the center of large-scale southeast plunging anticlines, creating the perfect structural trap for CRD mineralization.

The integration of surface geology, geophysics, trenching, and drilling in 2025 has greatly expanded the understanding of the district's CRD potential and has established high-priority targets for the 2026 exploration season.

