Occurrence Details

Occurrence Number: 105F 136
Occurrence Name: Verley
Occurrence Type: Hard-rock
Status: Showing
Date printed: 8/6/2025 1:46:05 AM

General Information

Primary Commodities: rare earths
Secondary Commodities: niobium, zirconium
Aliases: Guano
Deposit Type(s): Unknown
Location(s): 61°29'24.65" N - -132°25'15.43" W
NTS Mapsheet(s): 105F08
Hand Samples Available: No
Last Reviewed:

Capsule

Work History
Staked as Guano, etc. cl (YA00242) in Jul-Sep/76 by Ukon Joint Venture (Chevron and Kerr Addision), which explored with mapping, geochem and radiometric surveys in 1976; in 1977 and soil sampling in 1979. Restaked as PS cl (YB00978) in Aug/87 by Mountain Province Mining Inc, which contour soil sampled in 1988. In 2010, chip sampling was carried out near the occurrence and a helicopter radiometric survey was flown over the entire property.

Regional Geology

The occurrence is located on the Cassiar Platform, a curvilinear shelf that formed in the early Paleozoic, roughly parallel to the western margin of the North American craton but separated from it by the Selwyn Basin. Shallow marine miogeoclinal sediments were emplaced on the platform until Late Devonian time. Block faulting and local uplift during the Late Devonian and Mississippian resulted in deposition of carbonaceous shale and chert pebble conglomerate in the Selwyn Basin and across the platform. Local explosive volcanism produced volcaniclastic material and flows of the Pelly Mountains volcanic belt. The belt comprises localized submarine volcanic centres generated in an extensional environment that are separated by basins in-filled with sediments and volcaniclastic rocks. Several cogenetic syenite and trachyte domes and small stocks are the remains of vent areas. Subsequent deformation is a result of Mesozoic thrust faulting related to the Cordilleran orogeny, emplacement of Cretaceous intrusions and Tertiary strike-slip movement along the major northwest-trending Tintina Fault, 30 km to the northeast.

Property Geology

The property geology shows the Verley occurrence to be underlain by Mississippian meta-volcanics of the Earn Group. This occurrence is characterized by low-grade rare earth element mineralization along strike of the dyke swarms at the Ukon #4 mineral occurrence. At this showing, two types of dykes occur. There is a larger near vertical dyke and a set of smaller dykes which dip steeply toward the west. All dykes, which intrude the Devonian trachytic metavolcanic, are cut by quartz veinlets. The best grab sample (sample 334169) from dyke rock collected in 2010 returned 0.84% TREO, 1.32% ZrO_2 and 0.25% Nb_2O_5.

One sample submitted for mineralogical studies revealed that the vast majority of the rare earth elements occur in zircon, allanite, apatite, thorite, pyrochlore and columbite (Whiteman and Oliveira 2010)

Work History

Date	Work Type	Comment
12/13/2010	Airborne Geophysics	
12/13/1988	Geochemistry	
12/13/1979	Ground Geophysics	
12/13/1976	Ground Geophysics	
12/13/1976	Geology	
12/13/1976	Geochemistry	

Related References

Number	Title	Page(s)	Reference Type	Document Type
YEG1979_80-pg55	Rare earth elements in the Guano-Guayes skarn property Pelly Mountains, Yukon Territory		Indian & Northern Affairs Canada/Department of Indian & Northern Development: Exploration & Geological Services Division	Annual Report Paper
MIR1976	Mineral Industry Report 1976		Indian & Northern Affairs Canada/Department of Indian & Northern Development: Geology	Annual Report
1979Chronic	Geology of the Guano-Guayes rare earth element bearing skarn property, Pelly Mountains, Yukon Territory		University of British Columbia	MSc Thesis