



MINFILE NTS 094D – McCONNELL CREEK

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Researched and compiled by: D.M. Melville and E. Van der Flier-Keller

The McConnell Creek map area, located in north-central British Columbia approximately 370 kilometres northwest of Prince George, contains 175 documented mineral occurrences. The eastern half of the area lies within the Omineca Mountains and the western half lies within the Skeena Ranges. A small portion of the Spatsizi Plateau (Tatlatui Park) overlaps the map area in the north-central part. In the south-central portion of the map area, the Takla trench separates the Skeena Ranges from the Omineca Mountains. Road access, provided by the Omineca resource road, is limited to the northeast part of the map area.

The map area is divided by two main north-northwest trending faults. The Ingenika-Findlay fault separates the Stikine Terrane to the west from the Quesnel Terrane to the east. The Quesnel Terrane is separated from the para-autochthonous Cassiar Terrane, to the east, by the Swannell fault.

The Cassiar Terrane is represented by Upper Proterozoic clastic rocks assigned to the Ingenika Group. Quesnellia rocks comprise a volcanic and sedimentary assemblage assigned to the Middle Triassic to Lower Jurassic Takla Group, and a poorly defined sedimentary and volcanic suite belonging to the Pennsylvanian to Permian Lay Range assemblage which is believed to be part of the Harper Ranch subterrane. The Stikine Terrane is an aggregate of allochthonous Paleozoic and Mesozoic magmatic arc assemblages and overlying sedimentary sequences. Within the Stikine Terrane, volcano-sedimentary arc successions of the Permian Asitka Group and the Upper Triassic Takla Group are considered basement in this area for the overlying volcanic and sedimentary sequences of the Lower to Middle Jurassic Hazelton Group. Coarse clastic rocks of the Middle to Upper Jurassic Bowser Lake Group unconformably overlie the arc assemblages. The Bowser Lake Group is unconformably overlain by a continental clastic sequence, the Upper Cretaceous to Eocene Sustut Group. Strata of the Bowser Lake and Sustut groups predominate in the unmapped western portion of the map area.

Intrusions in the area include: Late Paleozoic alpine ultramafics; Late Triassic Alaskan-type ultramafics and mafics; the Early Jurassic Hagem batholith and contemporaneous felsic rocks (from recent mapping to the south these rocks have been redefined as the Late Triassic to Early Cretaceous Hagem Intrusive Complex); Early Cretaceous quartz monzodiorites to granodiorites; the Late Cretaceous Axelgold gabbro; and the Eocene Kastberg intrusions. A detailed geological base map for the 094D East Half was compiled by T. A. Richards in 1976 (Geological Survey of Canada, Open File 342).

The map area has been intermittently explored since 1899 when the **McConnell Creek** (094D 007) placer gold deposit was first discovered at the mouth of McConnell Creek. Placer activity on the entire length of McConnell Creek flourished during the mid-1960s. At this time, two benches, the **Dahl and the Jensen** (094D 007), were discovered. The Dahl bench contains an indicated 152,910 cubic metres at 80.56 cents per cubic metre (1965 gold price) and the Jensen bench contains an indicated 229,366.5 cubic metres at 56.24 cents per cubic metre (1965 gold price).

Prior to 1971, other mineral exploration was minimal and focused on lode gold deposits. One of the larger vein prospects, the **Gerle Gold** (094D 006) deposit, contains an estimated 90 700 tonnes grading 6.8 grams per tonne gold in the main zone. The more recently discovered **Gold Gerle North** (094D 080) prospect is similar to the Gerle Gold deposit. Other vein deposits are the **Mot 1** (094D 001) and **Tommy Jack** (094D 031). The **Sustut** (094D 063) basaltic copper deposit, containing unclassified reserves of 50 million tonnes grading 1.25 per cent copper, was discovered in 1971. This discovery, combined with the search for copper and molybdenum porphyry deposits, led to widespread exploration in the early 1970s. Since that time, the majority of the exploration has been concentrated in the Johanson Lake (094D/9), the **Moosevale Creek** (094D/10) and the **Motase Lake** (094D/03) 1:50 000 scale map areas.

The majority of the occurrences are predominantly mineralized fracture fills, shears and disseminations. Examples of mineralized shear deposits are the **Marmot** (094D 005) and the **Forks** (094D 123) occurrences. Disseminated mineralization hosted in sedimentary rocks occurs at the **Mar** (094D 093) and the **Fred** (094D 032) occurrences. Carbonate hosted copper mineralization occurs at the **Red (Sping)** (094D 104) prospect. Porphyry mineralization occurs at the: **Bear Lake** (094D 068); **Red** (094D 034); **Jake North** (094D 061); **Kliyul** (094D 113); and **Hat** (094D 158) occurrences.

Other exploration targets include: copper-magnetite skarns such as the **Kennco** (094D 023) and **Old Soup** (094D 025) prospects; coal deposits such as the **Sustut Coal** (094D 039) and **Coal Bowl** (094D 040); industrial minerals (titanium, beryllium and chromium); paleo-placer gold and petroleum.