Hughes-Owens
313 1102

Legend - Springdale Map-Area

CARBONIFEROUS

C Reddish-brown to greyish-red conglomerate and sandstone.

DEVONIAN or LATER

Dg Pale reddish-brown to light brownish-grey, fine to medium grained granite, syenite and quartz syenite.

Dp Light brown to greyish-red quartz-feldspar porphyry.

DTg Topsails Granite. Pale red equigranular granite, quartz monzonite and granodiorite.

DgT Pale red to grey equigranular quartz-rich granite and quartz monzonite; similar to Topsail's Granite.

DgH Halls Bay Pluton. Grey-green to greyish-pink, massive and foliated granodiorite, quartz monzonite and granite.

Db Light grey to light greenish grey, medium grained diorite, quartz diorite, granodiorite and gabbro.

SILURIAN OR DEVONIAN

SPRINGDALE GROUP (Ssa, SSb, SSs)

Sss Brownish-grey to reddish-brown conglomerate, medium to coarse sandstone, fine sandstone, siltstone and mudstone.

Ssb Grey to red and purple, amygdaloidal andesite and basalt flows.

Ssa Pale red and greyish-red rhyolite and trachyte flows, tuff and agglomerate.

Sm MIC MAC GROUP (undivided). Light grey to pale red, coarse to fine conglomerate and sandstone; Grey to red and purple, amygdaloidal andesite and basalt flows; Pale red and greyish-red rhyolite and trachyte flows, tuff and agglomerate.

SL LOON POND PLUTON: Pink to pinkish grey, very fine to medium grained granite, hornblende monzonite granodiorite and aplite.

Sb Medium to fine-grained gabbro and diabase sills. (Intrude Roberts Arm Group).

UPPER ORDOVICIAN AND SILURIAN

ROBERTS ARM GROUP (OSRp, OSRa, OSRs)

OSRa Greyish-green to grey and white rhyolite and dacite flows, agglomerates, tuffs and sills.

OSRs Reddish brown to grey bedded tuff, chert and greywacke.

OSRp Dark greenish-grey to reddish brown and black pillowed basalt, pillow breccia and massive flows; thin lenses and beds of chert, tuff and greywacke.

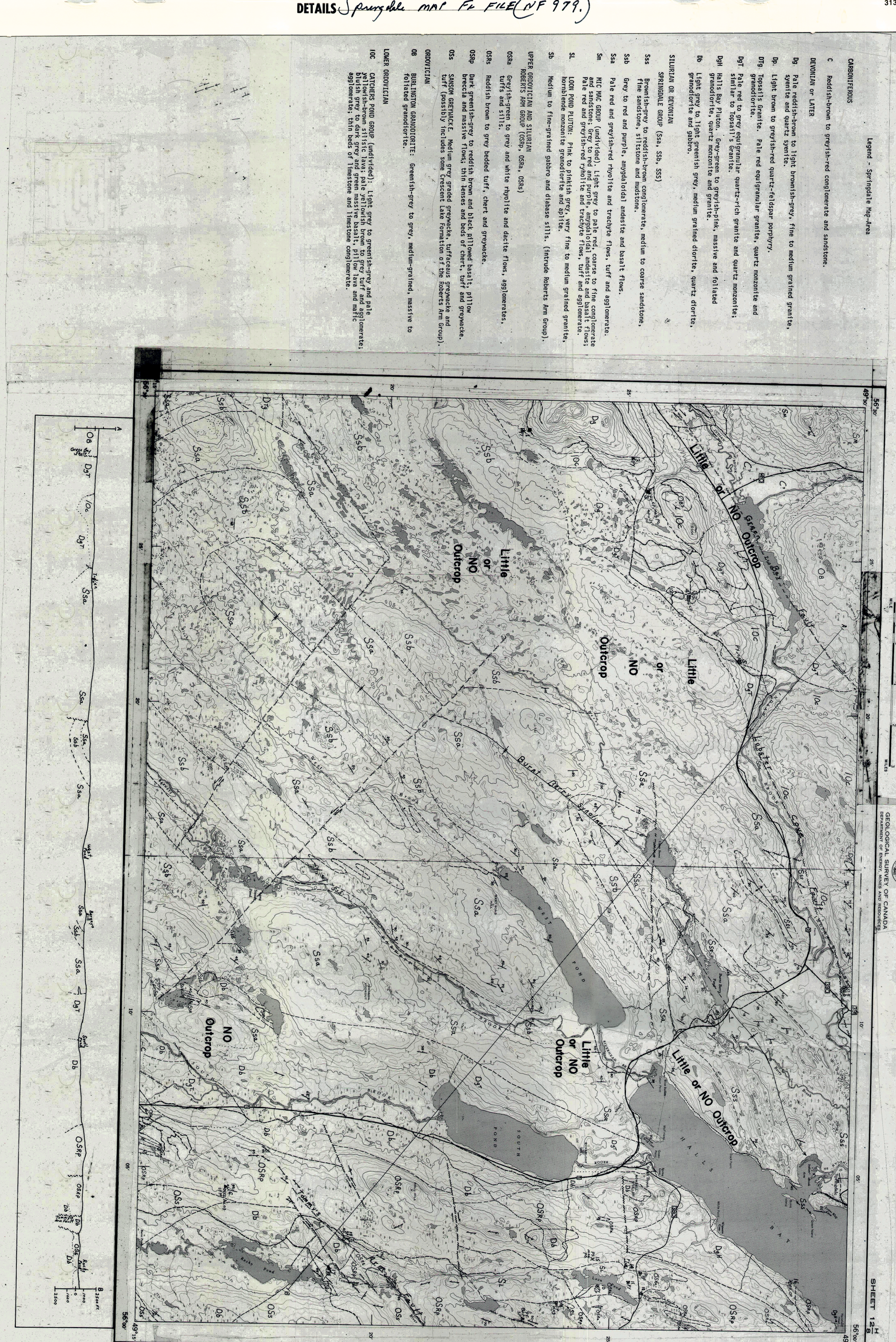
OSs SANSON GREYWACKE. Medium grey graded greywacke, tuffaceous greywacke and tuff (possibly includes some Crescent Lake Formation of the Roberts Arm Group).

ORDOVICIAN

OB BURLINGTON GRANODIORITE: Greenish-grey to grey, medium-grained, massive to foliated granodiorite.

LOWER ORDOVICIAN

IOC CATCHERS POND GROUP (undivided): Light grey to greenish-grey and pale yellowish-brown siliciclastic lava; pale yellowish brown to grey tuff and agglomerate; bluish grey to dark grey and green massive basalt, pillow lava and mafic agglomerate; thin beds of limestone and limestone conglomerate.



Mineral Occurrences and Prospects

1. Cecil's Showing: Pyritic gossan zone near contact between volcanics and granite.
2. West Silverbrook: Massive pyrite in basalt.
3. Indian Pond Area: Large boulders containing massive to disseminated pyrite, magnetite, chalcopyrite and pyrrhotite.
4. White Horn Brook: Pyrite and chalcopyrite near contact with granite and basalt.
5. Indian Pond: Pyrite and chalcopyrite in metamorphosed basalt and sericite schist.
6. Handcamp: Stringer and disseminated sulphides in thin acidic volcanic unit within mafic pillow lavas.
7. Camp 11: Pyrite and sphalerite in sheared chloritic basalt and tuff.
8. Knife Pond: Disseminated sulphides in metabasalt.
9. Marsh Pond: Blebs of chalcopyrite and magnetite in a thin rhyolite unit.
10. Loon Pond East: Pyrite and chalcopyrite disseminations and stringers in acidic volcanics. 11,12, & 13 Loon Pond North: Heavily disseminated pyrite in acidic volcanics.
14. Boot Pond: Disseminated pyrite and malachite near contact between acidic volcanics and pillow basalt.
15. Loon Pond West: Massive and stringer pyrite, magnetite and pyrrhotite in chloritic metabasalt.
16. Halls Bay: Heavily disseminated pyrite and chalcopyrite in granite.
17. Rocky Pond: Pyrite stringers and veinlets in a shear zone in metamorphosed sedimentary rocks.

Note: The mineral symbols key and a mineral classification table is contained in the accompanying report.

Geological boundary (defined, approximate and assumed).....

Bedding, tops known (horizontal, inclined, vertical, overturned).....

Bedding, tops unknown (inclined, vertical).....

Dyke trend (inclined, vertical).....

Schistosity, gneissosity, cleavage, foliation (horizontal, inclined, vertical).....

Fault (defined, approximate, assumed).....

Anticline (upright, overturned).....

Syncline (upright, overturned).....

Fossil locality.....

Mineral occurrence.....

Mineral prospect, test pit or trench.....

Shaft or quarry (exploration, abandoned production, production, producing).....

Adit or tunnel.....

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MINERAL DEVELOPMENT DIVISION
DEPARTMENT OF MINES AND ENERGY
GOVERNMENT OF NEWFOUNDLAND AND LABRADOR

Geological Survey of Canada open file no. 379
was used as the base map.

Explanatory Notes - Springdale Map-Area

The oldest rocks in the map-area are the undivided volcanic rocks of the Lower Ordovician Catchers Pond Group (IOc). Fossils from thin limestone beds to the north (12H/9) were reported by Neale et al., (1960, 1963) as Silurian but have since been shown to be Lower Ordovician (Dean 1970). The Catchers Pond Group possibly overlies the Cambro-Ordovician oceanic crust represented by the Lushs Bight Group to the north (12H/9) and probably represents part of a Lower Ordovician island-arc sequence overlying the oceanic crust. The great abundance of felsic volcanism in this group possibly reflects proximity to a volcanic centre. The Catchers Pond Group is faulted to the south against the Silurian-Devonian Springdale Group along the Lobster Cove Fault.

The Burlington Granodiorite (OB) intrudes the Cambro-Ordovician Baie Verte and Lushs Bight Groups to the north (12H/9) and a small body of similar granodiorite and diorite intrudes the Catchers Pond Group south of Indian Pond. The main body of Burlington Granodiorite is faulted against the Catchers Pond Group and Devonian granite (DgT) along the Green Bay Fault.

The Samson Greywacke (OSs) overlies fossiliferous mid-Ordovician shales to the east (2E/5) and contains conglomeratic horizons in its upper part which are lithologically identical to the Lower Silurian Goldson conglomerates of eastern Notre Dame Bay. Material comprising the greywacke and conglomerate appear to have been derived from the northwest, possibly from such intrusions as the Burlington Granodiorite (OB). Tuffaceous greywacke and tuff at the top of the Sansom Greywacke possibly represent part of the Crescent Lake Formation of the Roberts Arm Group, but these lack the red cherts and slates which characterize the Crescent Lake Formation and are difficult to distinguish from the greywackes in the field.

The Sansom Greywacke is overlain conformably by mafic volcanics of the Roberts Arm Group (OSRp) north and south of Rocky Pond. The Roberts Arm Group (OSRp, OSRa, OSRs) is a steeply dipping, west-facing sequence of dominantly submarine volcanics. These volcanics are mainly basaltic pillow lavas with thin cherty lenses and beds. Acidic volcanics (OSRa) generally are absent in the lower 1 to 2 km. of the group but are intercalated with basaltic volcanics above this level. Large acidic domes are best developed in the Loon Pond area where they were apparently fed by the sub-volcanic Loon Pond Pluton (SL). Roberts Arm volcanism is essentially a bimodal basalt-dacite assemblage with a marked lack of andesites. Deformation of these volcanics increases southward along strike with pillows becoming increasingly more flattened and metamorphosed.

The Roberts Arm Group is intruded by gabbro and diabase sills which are definitely pre-Acadian and are perhaps contemporaneous with the volcanism.

The Mic Mac Group (SM) of dominantly subaerial volcanic rocks unconformably overlies the Burlington Granodiorite (OB) (Neale and Nash, 1963) and is possibly unconformably overlain by Carboniferous red sandstones (C) west of Route 410 north of Indian Brook. A Rb/Sr whole rock isochron on a suite of Mic Mac mafic and silicic volcanic rocks has yielded an age of 393±24 m.y. (Neale and Kennedy, 1967).

The Springdale Group (Ssa, Ssb, Sss) consists of thick units of subaerial acidic volcanic rocks (Ssa) alternating with units of mafic volcanic rocks (Ssb) and intercalated thin sandstone units (Sss). This dominantly volcanic section is overlain by 5,600 feet of red conglomerate and sandstone (Sss) (MacLean, 1947) which form the top of the Springdale Group and which disconformably overlie the Roberts Arm Group on Sunday Cove and Pilleys Islands to the north. The base of the Springdale Group is unknown but it possibly unconformably overlies the Cambro-Ordovician Lushs Bight Group to the north (12H/9) (McGonigal, 1970). The main structural feature of the Springdale Group is the gently plunging Burnt Berry syncline which extends from Springdale to north of Buchans where it is intruded by the Topsails Granite (DTg).

All pre-Carboniferous units in the map-area are intruded by various rocks of supposed Devonian age, with the more mafic intrusives (Db) generally being the oldest. The diorites and gabbros (Db) are intruded by more quartz-potash-rich granitic rocks of the "Topsails Granite type" (DTg, DgT). This type of quartz-potash-rich granite appears to be restricted to the general area west of South Brook valley and is uncommon east of this part of central Newfoundland. The Halls Bay Pluton (DgH) is much less rich in potash than the "Topsails type".

Quartz-feldspar porphyry (Dp), which intrudes the Catchers Pond Group (IOc) and the Springdale Group (Ssa, Ssb) is intruded in the area to the north (12H/9) by syenitic granites (Dg). The relationship between these syenitic granites and the "Topsails type" granite (DgT) is unknown.

Flat-lying Carboniferous red sandstone and conglomerate (C) unconformably overlie and contain fragments of "Topsails type" granite south of Gull Brook. Similar beds are exposed west of Route 410 north of Indian Brook. Large areas of "Little or No Outcrop" may be underlain by other small Carboniferous "basins" which are covered by thick deposits of glacial outwash. Carboniferous rocks are generally exposed in river valleys which have cut through these thick deposits of glacial outwash. Possibly these less resistant Carboniferous rocks were ready sites for glaciofluvial spillways.