



**PRELIMINARY REPORT
LANG BAY GERMANIUM PROSPECT*
(92F/16W)**

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INTRODUCTION

The Lang Bay germanium prospect (MI 92F-137) is located 15 kilometres southeast of Powell River. Renewed industry interest prompted the Geological Branch to re-evaluate this property. The purpose of our seven-day program was to map the area underlain by this small sedimentary outlier and examine the beds with reported anomalous germanium values; the aim was to assess the germanium potential at Long Bay and to suggest other areas with possible germanium concentrations. With the documentation and sampling of available exposures now completed, a further study will concentrate on:

- (1) age determination and detailed petrographic composition of Lang Bay sediments;
- (2) a study of silicate mineral alteration and distribution of germanium within the Lang Bay basin.

PROPERTY HISTORY

In 1949, the British Columbia Ministry of Mines reported results of a reconnaissance examination of coal samples from Lang Bay; germanium values in ash were reported as high as 1 per cent. This report led Dr. F. C. Buckland of Taiga Mines Ltd. to stake 136 claims in the Lang Creek area. Subsequently, the company drilled 7 auger holes and 19 churn holes near the northeast edge of the property to examine the coal strata at depth, and excavated 6 trenches and a few small pits.

Reported results (Skerl, 1959) indicated intersections of:

- 1.4 metres with 68 grams GeO_2 per tonne.
- 1.4 metres with 136 grams GeO_2 per tonne.
- 0.6 metres with 139 grams GeO_2 per tonne.
- 0.7 metres with 90 grams GeO_2 per tonne.

Fargo Oil Corporation of Vancouver acquired the property in 1981 and has carried out laboratory studies and beneficiation tests on samples recovered from two re-opened trenches (Fig. 40-1).

REGIONAL GEOLOGICAL SETTING

The Lang Bay germanium prospect is in a small outlier of sedimentary rocks on the western edge of the Coast Plutonic Complex. The sediments consist of poorly to well-indurated mudstones, siltstones, shales, sandstones, conglomerates and coal. The outlier forms a small basin approximately 3 kilometres wide by 6 kilometres long; thickness is undetermined. The sedimentary rocks are relatively undisturbed; beds strike northwest and dip up to 20 degrees to the southwest.

Preliminary examination of palynomorphs extracted from Lang Bay mudstones suggests the sediments are Late Cretaceous in age (personal communication, Dr. G. E. Rouse), and may be equivalent to the Chuckanut Formation of the Fraser Lowland. The basin is surrounded and underlain by granitoid intrusives of the Coast Plutonic Complex of Jurassic-Cretaceous age.

PROPERTY GEOLOGY

Except along Lang Creek almost all of the claim area is covered by glacial overburden. A traverse along Lang Creek from Highway 101 to the power transmission line, located 1.6 kilometres to the north, provided the best outcrop exposure on the property. A generalized section illustrating the section exposed along this portion of the creek is shown on Figure 40-2. The following sediments were examined along Lang Creek.

- (1) Argillaceous mudstones to siltstones are dark brown to black, form beds up to 5 metres thick, and are moderately to well consolidated. They are calcareous and in places contain thin wisps of coal. Contacts with other units are conformable and well defined. The sediments are crossbedded and often interbedded with medium to coarse sandstones. No remnant fossils or worm burrows were observed in the mudstone or siltstone beds.
- (2) Arkosic sandstones are medium to coarse grained (0.5 to 2.0 millimetres) and consist of re-worked quartz and feldspar. They are moderately to well indurated and form beds up to 5 metres thick. Layers are crossbedded, exhibit soft sediment slumping in places and contain coalified wood fragments. Contacts between beds of sandstone and other, more pelitic units are sharp and conformable. No marine fossils, worm burrows, or remnant grasses were observed in the sandstones.
- (3) Conglomerates form several 2 to 3-metre thick layers approximately halfway between Highway 101 and the powerline along Lang Creek. Chert and quartzite pebbles in the conglomerate are randomly oriented and lenticular to rounded. The largest pebbles measure 15 centimetres long by 3 centimetres wide. The matrix consists of moderately to well-consolidated, medium to coarse-grained, feldspathic brown sandstone.
- (4) Coal comprises infrequent and isolated lenses observed in coarse sandstone and argillaceous siltstone units along Lang Creek. The lenses are generally less than 3 metres in length and range from 1 to 4 centimetres in width. Petrographic determinations using the minimum-maximum reflectance of vitrinite in oil technique established the coal as lignite. Individual coal lenses are probably remnants of isolated logs or branches which were washed into unconsolidated sand and siltstone units and later coalified. According to previous reports, coal is the main carrier of high germanium values (*Minister of Mines, B.C., Ann. Rept., 1949*).

SUMMARY

The Lang Bay outlier consists of interbedded chert-quartzite conglomerates, arkosic sandstones, siltstones, mudstones, and coals. The sediments were deposited in a fluvial environment of varying intensity which is reflected in the generalized geological section illustrated on Figure 40-2.

* This project is a contribution to the Canada/British Columbia Mineral Development Agreement.

British Columbia Ministry of Energy, Mines and Petroleum Resources, Geological Fieldwork, 1985, Paper 1986-.

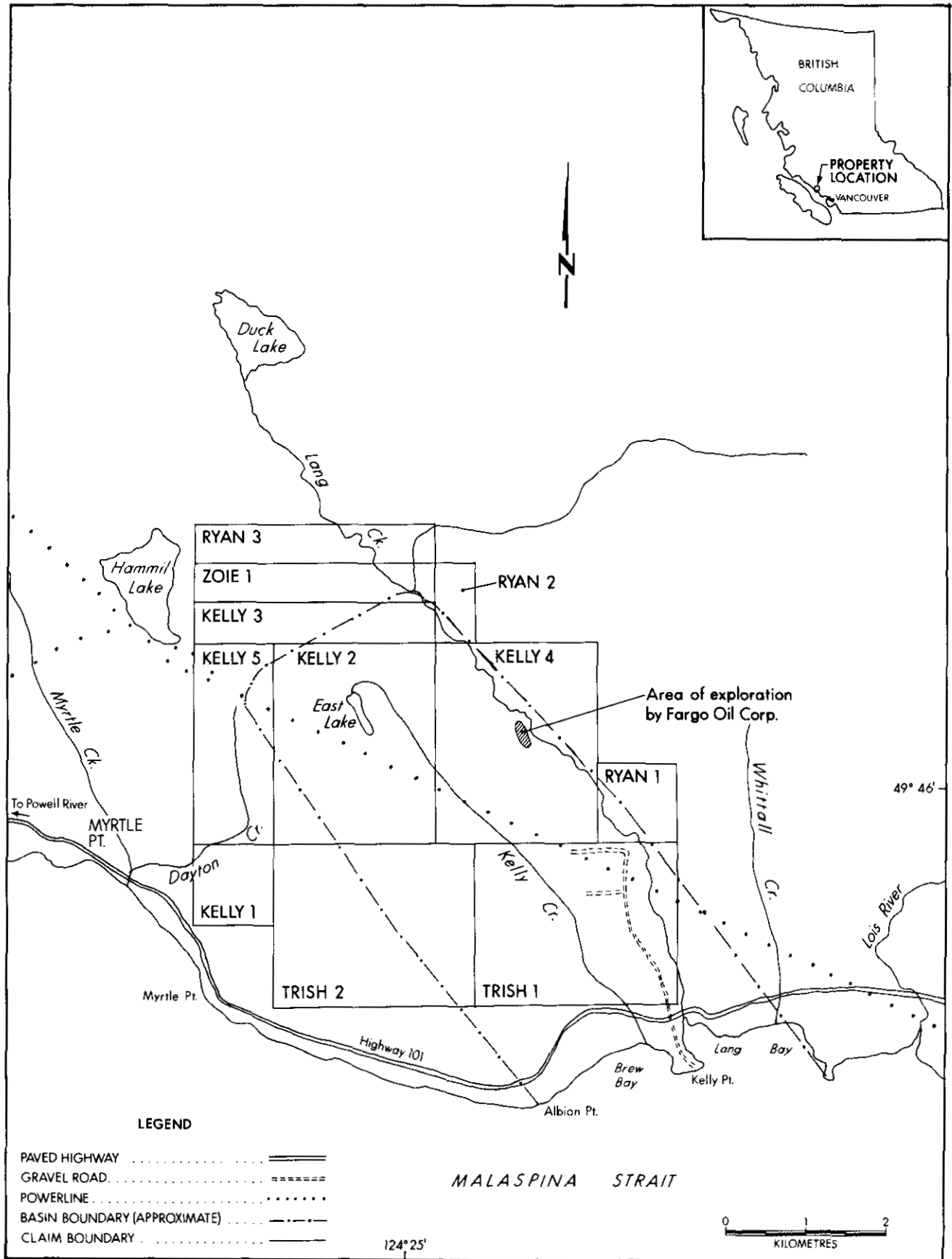


Figure 40-1. Lang Bay germanium prospect.

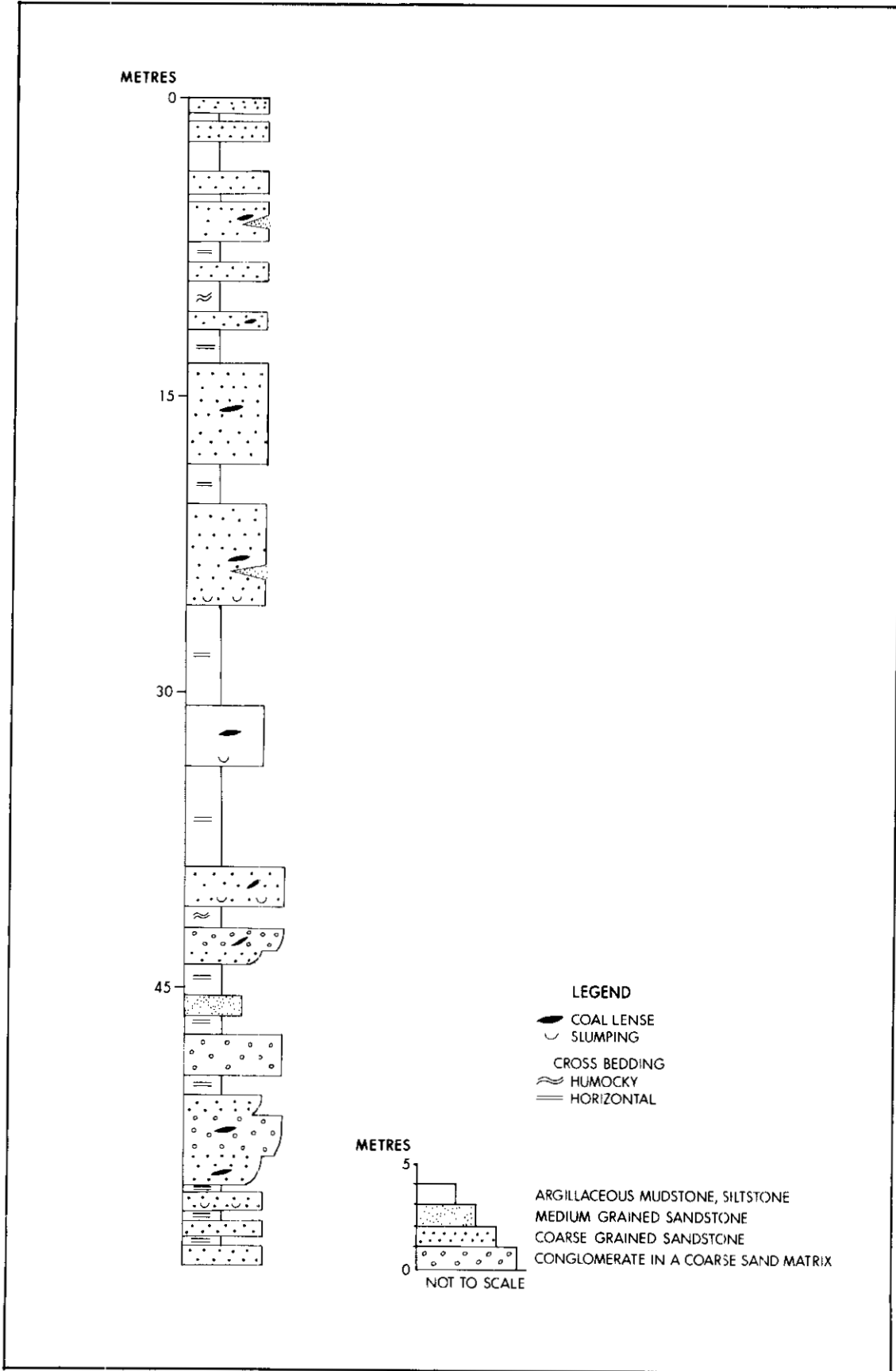


Figure 40-2. Lang Creek, generalized section.

Past exploration near the northeast edge of the outlier has identified coal-bearing sediments of variable thickness, which have anomalous germanium values, and which extend over at least a 350-metre distance.

These beds which lie immediately above basement rocks belonging to the Coast Plutonic Complex have been the main exploration target. If the beds host economic grades of germanium and a successful recovery process can be developed, then excellent potential for expanding the reserves westward exists. Coal-bearing sediments situated stratigraphically above these beds may host significant germanium values as well, although further investigation is required to assess their potential.

Other sedimentary outliers and basins in British Columbia having a similar depositional environment to Lang Bay may also contain sediments anomalous in germanium.

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