

Report: re Donald Claims,

Kathleen Lake, Mayo Mining District, Y.T.

By

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Prospectors Airways Company, Ltd  
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Introduction:

"The property, comprising 80 optioned claims, is located approximately 3 1/2 miles north of Kathleen Lake and approximately 41 air miles northeast of Keno Hill.

The staking, which was exceptionally well done, was supervised by Gordon Dickson, the vendor. All location lines were measured by tape, and picket line control was used through heavy buck-brush. A compass and tape survey of the entire group was also made. A map of this survey on a scale of 800 feet to 1 inch accompanies this report. Eight men were employed on various phases of the operation for a period of 39 days.

Picket lines were set up over a length of 800 feet at intervals of 300 feet, for control in mapping. The location line (claim line) which is a picket line across this claim, was used as a base-line and the section lines turned off this. Picket lines were also run on five adjacent claims at 500-foot intervals to give control for mapping.

Thirty-nine trenches in all were completed. Thirty-seven of these are along strike of the central gossan zone on claim Donald No. 3. Only two trenches were dug on the eastern gossan zone. These trenches vary in size but average about 5 x 4 x 3 feet in dimension. Bedrock containing highly oxidized sulphides was reached in nearly all trenches. Permafrost was encountered at a depth of four feet and the ground had thawed out to the maximum extent where this work was done. Unoxidized sphalerite and galena mineralization was reached in one trench only. The accompanying plan shows the location of the trenches and sampling on a scale of 100 feet to 1 inch.

Approximately ninety samples were taken for assay, which represents from two to four from each trench. Nearly all were from highly oxidized sulphide zones and no sample exceeds three feet in length. The results are tabulated in Appendix II.

Overburden was stripped in several localities to ascertain the dip of the mineralized shale horizon. A profile was made from an altimeter survey conducted in the immediate area of the central gossan showing.

Approximately 25 claims were mapped on a scale of 800 feet to 1 inch. The discovery claim was mapped on a scale of 100 feet to 1 inch around the gossan showing. Both maps accompany this report.

### Geology and Structure

The claims are underlain by shale, limestone and ferruginous carbonate. It is believed that tight folding of the limestone and shale resulted in the formation of an intensely brecciated zone of shale which lies above the limestone and inside the fold. The brecciation is most intense around the apex of the fold and is cemented with calcite, followed by replacement with galena and sphalerite mineralization.

Some shearing and drag folding are observed locally in both the shale and limestone.

From bottom to top the sequence of formations is as follows: (1) shale; (2) limestone and shale; (3) ferruginous carbonate and shale. The breccia zone occurs at the apex of the fold in the top shale member.

No evidence of strong faulting was observed on the ground but some movement is indicated between the top shale and lower limestone members by the variable strikes and dips in the top shale. For this reason, thrust faulting is believed to have taken place between formations.

The dips in the uppermost shale horizon along the northeast limb of the fold are nearly all between 20 and 50 degrees. Because most of this formation along the southwest limb is obscured by overburden, very few dips and strikes could be taken. Some exposures along this limb, however, gave dips to the northeast. The structure is therefore described as a synclinal fold plunging to the southeast in the direction of the fold axis. NE

The strike of the mineralization around the nose of the fold is resolved in two directions. One direction is along the northeast limb at nearly 70 degrees and the other is along the southwest limb at nearly 110 degrees. The dip of the mineralized zone along the northeast limb is probably very nearly 40 degrees to the southwest while that of the mineralized zone along the southwest limb is believed to be much flatter at about 20 degrees to the northeast.

### Mineralization:

Some specimens showing massive galena and sphalerite were obtained from the surface of the central gossan showing. An attempt

to trench where these specimens were found was unsuccessful because of the slope and the broken nature of the rock. Oxidation extends well below the 4-foot depth reached in all trenches. Unoxidized samples of galena and sphalerite were obtained from one trench only and at two surface exposures.

Two grab samples of massive galena and sphalerite which ran 19 and 50 ounces respectively in silver were obtained within 100 feet of the contact. An assay of 0.6% cadmium was obtained in the sphalerite. A rusty specimen of limestone containing no visible mineralization, also taken near the contact, ran 0.44% Pb and 0.41% Zn. The mineralization may also extend into the limestone. Trenches 35 and 36 are the closest to the contact at approximately 100 feet and the values here are much better.

The gossan zones are composed of a continuous layer of coarse to medium-sized dark-brown pebbles. Trenching proved this material to be in place. The pebbly nature of the surface layer is the result of frost-heaving of the highly brecciated shale. Calcite is the cementing mineral and calcite mineralization is widespread in the shale member and can be traced for two claim lengths. One sample taken from near the eastern gossan zone shows a little chalcopyrite mineralization.

#### Conclusion:

The results of the sampling indicate a lengthy zone of mineralization lying approximately 200 feet from the contact which contains values of around 3% zinc with low values in lead, silver and manganese.

The contact zone is completely covered with overburden, and it was not possible to put down trenches across it. Nearly all trenching was done on the gossan zones lying parallel to the contact and at a distance of around 200 feet from it.

COPY of assays on Kathleen Lake  
taken by Asbestos Corporation, 1957.  
(Permission of G. Dickson)

Samples taken by P.M. Kavanagh at Donald Claims Group:

- 1) Chip sample across 6' width in Pit #7:  
1.14 oz Ag; nil Pb; 4.6% Zn.
- 2) Chip sample across 8' width in Pit #19:  
0.34 oz Ag; nil Pb; 4.9% Zn.
- 3) Gouge across 2' width at end of Pit #19:  
3.10 oz Ag; 2.0% Pb; 4.9% Zn.
- 4) Grab sample from pit dump of Pit #35:  
1.12 oz Ag; 0.4% Pb; 32.6% Zn.
- 5) Grab sample from pit dump of Pit #35:  
11.36 oz Ag; 19.4% Pb; 15.4% Zn.

Samples taken by A.E. Aho from Donald No. 3 Claim.

1. Zinc float, 50' SE of trench #20  
33.86 oz Ag; — Pb, 44.2% Zn Nil Au.
2. Galena, dump of trench #36  
14.44 oz Ag 13.9% Pb 29.2% Zn tr. Au.
3. Oxidized float 75' E of trench #5  
0.74 oz Ag 1.0% Pb 1.1% Zn tr. Au.
4. New trench, H.W. of limestone etc. between trench #9 & #10  
4.56 oz Ag Nil Pb 6.4% Zn tr Au.