

1048044 (1E) Unicorn

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UNICORN PROJECT - TOURNIGAN

MINING EXPLORATIONS LTD.

D.R. Cochrane

October 1974

PROPERTY FILE

PROPERTY FILE

Report on the
UNICORN PROJECT

(10 Crown Granted Claims and Fractions)

Situated

19 miles north of the town of

Stewart, British Columbia

Cassiar Mining Division

N.T.S. 104B/1 (E $\frac{1}{2}$)

on behalf of

TOURNIGAN MINING EXPLORATIONS LTD.
704-535 Thurlow Street,
Vancouver, V6E 3L2
B.C.

UNICORN PROPERTY

October 1, 1974.
Delta, B.C.

Report by:
D.R. COCHRANE, P.Eng.



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Geotechnical Consulting / Exploration Services

geology
geophysics
geochemistry

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PART A

A-1. INTRODUCTION:

On September 5, 1974, the author examined the Unicorn Prospect in the company of Mr. J.N. Hembling president of Tournigan Mining Explorations Ltd. Tournigan has optioned the three Unicorn claims and seven additional Crown Grants and these lie immediately north of the Big Missouri Mine, which produced 58,000 ounces of gold and 52,000 ounces of silver between the years 1927 and 1942.

The purpose of the examination was to re-evaluate the potential of the Unicorn in view of recent increased gold and silver prices. This report describes the general setting and mineralization and contains recommendations and a cost estimate for additional exploration work.

A-2. SUMMARY AND CONCLUSIONS:

1. Tournigan Mining Explorations Ltd. of Vancouver, B.C. holds title by option to ten (10) Crown Granted mineral claims collectively known as the Unicorn Group. The claims are located some 20 miles north of the town of Stewart in North Western British Columbia.

2. The claims are accessible with a 4x4 truck from Stewart by proceeding northerly along the Granduc road to the Premier Mine, then uphill on a switchback road to the Big Missouri Mine. The Unicorn property adjoins the Big Missouri on the north.

3. Several quartz veins and silicified zones are exposed on the Good Hope claim (lot 4538) by various pits, trenches and adits. The author sampled several of these veins with results as follows. (Bondar Clegg certificate of assay # A24-696)

Sample	Location	Au(oz./ton)	Ag(oz./ton)
5' chip	Unity Zone, 301XC	0.11	0.02
Grabs	"A" vein	0.14	13.5
Grabs	"H" vein	0.18	75.0
2" chip	#4 tunnel face	0.29	1.7

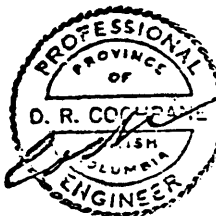
4. The last major exploration program on the property was in 1929 and was the driving of #3 tunnel northerly with the objective of intersecting the "A" vein. The "A" vein is a 40 foot wide quartz vein striking east and dipping southerly at approximately 60 degrees. The 400 foot tunnel however fell about 200 feet short of the estimated intersection.

5. Previous sampling and check sampling by the author indicates the presence of significant gold and silver values in the various veins and further work is strongly recommended.

6. The recommended program includes geological mapping and sampling, and 1800 feet of large core diamond drilling to further test the "A" vein and the area where the "A" vein and Unity Zone should intersect.

7. The estimated cost of the program is \$50,000.

Respectfully submitted,



D.R. Cochrane, P.Eng.

October 1, 1974.
Delta, B.C.

PART B

B-1. LOCATION AND ACCESS:

The Unicorn property is situated on Big Missouri ridge, some 20 miles north of the towns of Stewart B.C. and Hyder Alaska. Facile road access from Hyder is via the Granduc road which proceeds northerly up the Salmon River to the Premier Mine site. A 4x4 access road continues north-east from the Premier and switch backs up the ridge to the Big Missouri Mine and the Unicorn group.

Vancouver Island Helicopters maintain a base at Stewart and Stewart itself is served by Trans-Provincial Airlines.

The N.T.S. code reference for the area is 104B/1; the longitude is 130° west and latitude 56° N.

B-2. CLAIMS AND OWNERSHIP:

The Unicorn property consists of 10 Crown Granted mineral claims comprising a single block of some 268 acres in total. The following table lists pertinent claims data (see also figure two, claims sketch).

Name	Lot No.	Acres
Unicorn	4534	34.32
Unicorn 2	4535	49.99
Unicorn 3	4536	43.75
Unity	4537	17.62
Good Hope	4538	50.38
Snow King	4539	38.56
Silver Creek Fraction	4540	12.66
H & W Fraction	4541	19.28
Unity Fraction	4542	1.54
V. Fraction	4543	0.72
		<u>268.82</u>

Title to the above listed claims is held by option by Tournigan Mining Explorations Ltd., 535 Thurlow Street, Vancouver, B.C. Application for title to additional adjacent Crown Granted claims has been made by Tournigan.

B-3. GENERAL SETTING:

The Stewart area, and adjacent southern Alaskan Pan handle is a rugged and spectacular mountainous region lying within the Boundary Ranges of the northern Coast Mountains. Relief varies from sea level to peaks in excess of 6000 feet and glaciers and permanent snow fields cover many of the high-ridges-and-upland-valleys.

The Stewart area lies immediately east of the Coast Crystalline Belt and on the west edge of the Bouser Basin. The important host rocks are members of the Stewart complex consisting of metavolcanic and metasedimentary rocks of Triassic and Jurassic age that have been deformed and intruded by dikes, sills and other plutons. The area is a major metal mining district with a significant production record including gold, silver, copper, lead and zinc. The area has had a long and cyclical mining history which has been well described by E.W. Grove in B.C. Department of Mines Bulletin #58 (1971), and the history of the Unicorn has been reported by R. Stokes, P.Eng.

B-4. HISTORY:

(From a report by R. Stokes, P.Eng., see appendix II for reference).

Claims were established in the vicinity of the Unicorn property as early as 1904, being the earliest recorded in the area. The Silbak Premier Mines, roughly 5 miles south of the Unicorn is by far the best known gold mine in this vicinity, being one of the major producers in British Columbia. It has many geological similarities to the Unicorn property. The Big Missouri Mine on the property adjoining Unicorn to the southwest produced 58,384 oz. of gold, 52,677 oz. of silver, 2,800 lbs. lead, and 4,000 lbs. zinc from a total of 847,000 tons of ore mined between 1927 and 1942. Maps of the workings are included in this report.

The Unicorn property itself was staked in 1918, and initial work began there in 1919. Work across the next three years included open cutting, trenching, diamond drilling and tunnelling. Only sporadic work was then reported until the period 1932-1935, when another phase of stripping, cross-cutting, trenching, tunnelling and diamond drilling were carried out. Again in the period 1948-1950 there were similar operations, including the completion of 600 feet of tunnel to investigate the Unity Zone. Results were generally disappointing and no further work is reported until 1966 when a program was undertaken by Falconbridge to explore the possibility that the Missouri and Unicorn properties together with some adjacent ground might be viable as a large, low grade deposit.

In the course of this work they took 600 rock samples for analysis and 26 channel samples in cuts and adits. Their investigation was largely concerned with parts of the Big Missouri property, as it was believed that evaluation of showings on the Unicorn claims and the immediately adjacent workings on Missouri ground would require underground techniques. Their conclusions are quoted below from Assessment Report 912 by D.H. Brown.

"The following conclusions are based on the premise that a sufficient tonnage of ore grade material should be outline on the Province and Buena Vista sections of the Big Missouri ridge where the stripping ratio is low and mining costs are estimated to be a minimum before any operation could be considered feasible.

1. Mapping suggests that significant mineralization is confined to four north-trending, west-dipping tuff horizons which occur at intervals approximately 800 feet horizontally or 560 feet (true distance) apart.
2. Detailed mapping of the test area on the Province and Buena Vista claims shows that significant mineralization is confined to irregularly spaced flexures in the tuff horizons which contain less than 30,000 tons of mineralized tuff each. The number of such zones is insufficient to aggregate more than 200,000 tons of ore-grade material.
3. Assays of channel samples from sixteen cuts in the test area gave no values of significance except at two locations on the Buena Vista and Province claims involving a very minor tonnage. The average gold value of all channel samples is less than 0.10 oz. per ton; the silver value is less than one (1) oz. per ton.
4. Mineralization at other locations on the project ground but outside the test area are locally interesting but of no economic significance individually.
5. The mercury dispersion survey method used appears to be valid for the area and confirms the writer's conclusions from geological mapping that the sulphide mineralization which is found to carry the better gold and silver values occurs locally in pods at intervals along tuff horizons and within zones of visually high silicification".

The geology and mineral deposits of this region are dealt with by G.S.C. Memoir 132 (S.J.Schofield and G. Hanson) and Memoir 175 (G. Hansen), and by U.S.G.S. Bulletin 807 by A.F. Buddington.

In 1971, however, B.C. Department of Mines Bulletin 58, titled Geology and Mineral Deposits of the Stewart Area, was published. In this, E.W. Grove updates and reclassifies the economic geology to the extent that the previous reports are of only limited value. Several Annual Reports to the B.C. Minister of Mines give specific information on the Unicorn Property, and a list of the more informative ones follows:

Year	Page	Year	Page	Year	Page
1919	N77	1925	A103	1935	G48
1920	N63	1928	C115	1948	A70
1922	N84	1932	A60	1949	A75
		1933	A59	1950	A78

PART C

C-1. GEOLOGY AND MINERALIZATION:

The Unicorn property straddles the contact between Hazelton volcanics and sediments, and an assemblage of metamorphic rocks believed to be Hazelton derivatives. This complex is cut by an east-west trending dike swarm. Dikes are of both the lamprophyre and acidic varieties. Major northwest trending faults further complicate the geological picture.

At the present time, the main center of economic attention is the Good Hope claim (lot 4538) upon which four adits and extensive trenching and pitting have revealed the presence of several quartz veins and silicified zones which are both gold and silver bearing. The Unity Zone is exposed in a total of four cross-cuts in tunnel #3 on the Good Hope, and this 20 to 40 feet silicified zone is steeply dipping and trends northerly. It is well mineralized with pyrite and arsenopyrite. One five foot chip sample in #301 cross-cut taken by the author and Mr. J.N. Hembling ran 0.11 oz. Au/ton and 0.22 oz. Ag/ton.

The "A" vein as exposed in several trenches just north of tunnel #3 is an east/west striking quartz vein, approximately 40-50 feet thick and dipping southerly at 60 degrees. Sulphide mineralization appears to be quite erratic within the vein and consists primarily of coarse cubic pyrite and massive blebs of pyrite. A composite grab sample along the vein, taken by the author ran 0.14 oz. Au/ton and 13.5 oz. Ag. The "H" vein lies some 800 feet east of #3 tunnel and is exposed by several pits and a short adit. It is relatively flat lying and is between 6 and 30 inches thick. A composite sample of 12 or so grabs collected by the author ran 0.18 oz. Au per ton and 75.0 oz. Ag per ton. This quartz vein is well mineralized with pyrite, galena, sphalerite, tetrahedrite and native silver. Many other veins exposed by old workings exist on the property and these veins and systems will require further investigation.

C-2. DISCUSSION:

A brief visit to the property, and check sampling of exposed veins and silicified zones has shown that the Good Hope claim and remainder of the Unicorn Group must be re-evaluated in the light of increased gold and silver prices. The No. 3 tunnel was driven northerly with the intention of intersecting the "A" vein at depth, however the slated goal of #3 tunnel fell short by two hundred or so feet.

Rather than rebuilding the #3 tunnel portal, and commencing tunnelling, it seems more expedient to test the "A" vein and the area where the Unity and "A" vein intersect, by diamond drilling. This drill information can then be used to aid in the decision of whether or not to drive the adit further. In conjunction with this program, surface mapping and sampling of the other veins and vein systems can be made in order to re-appraise the entire property.

PART D

RECOMMENDATIONS AND COST ESTIMATE:

1. Geological mapping and surface and underground sampling of the Unicorn Group.	\$ 4,000
2. 1800 feet of large core diamond drilling @ \$18 per foot.	32,400
3. Drill access work with D-7 Bullozer 80 hrs. @ \$50/hr.	4,000
4. Surveying drill sites, supervision	<u>3,100</u>
Sub total	43,500
5. Contingencies @ 10%	4,350
6. Reclamation	<u>2,000</u>
Total	\$49,850
Say	\$50,000

Respectfully submitted,

DR 
 D.R. Cochrane, P. Eng.

October 1, 1974.
 Delta, B.C.

APPENDIX I

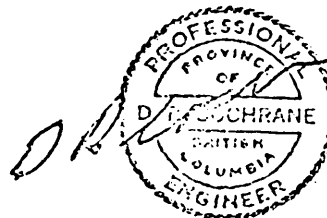
Certificate:

I, Donald Robert Cochrane, of the Municipality of Delta, British Columbia, do hereby certify that:

1. I am a consulting geological engineer with an office at 4882 Delta Street, Delta, B.C.
2. I am a graduate of the University of Toronto (1962) with a degree in Applied Geology (B.A.Sc.) and a graduate of Queen's University (1964) with a degree in Economic Geology (M.Sc.Eng.)
3. I have practiced my profession continuously since graduation and while being employed by such companies as Noranda Exploration Co. Ltd., Quebec Cartier Mines, and Meridian Exploration Syndicate. During the last four years I have consulted on an independent basis.
4. I have no interest, either direct or indirect in the properties or securities of Tournigan Mining Explorations Ltd., nor do I expect to acquire any such interest.
5. That I have personally examined portions of the Unicorn Group and that this report is based on that examination and on references listed in appendix II (bibliography).
6. This report, in its entirety may be used by Tournigan Mining Explorations Ltd., in any official or unofficial communications they may have, but excerpts from this report to be used for any communications whatsoever must be reviewed by the author.
7. I am a member in good standing of the Association of Professional Engineers of the Province of British Columbia, and also a member of the A.P.E. in the provinces of Ontario, Saskatchewan and the Yukon Territories.

October 1, 1974.
Delta, B.C.

(signed) D.R. Cochrane, P.Eng.



APPENDIX II

BIBLIOGRAPHY.

R.B. Stokes-(April 5,1974) Report and Compilation on
the Unicorn Group near Stewart B.C. (Private
company report).

W.V. Smitheringale - personal communication

E.W. Grove - B.C. Dept. of Mines Bulletin #58, Geology
and Mineral Deposits of the Stewart Area.

Various Reports of the Minister of Mines, B.C.

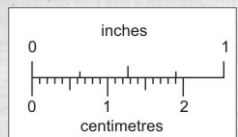
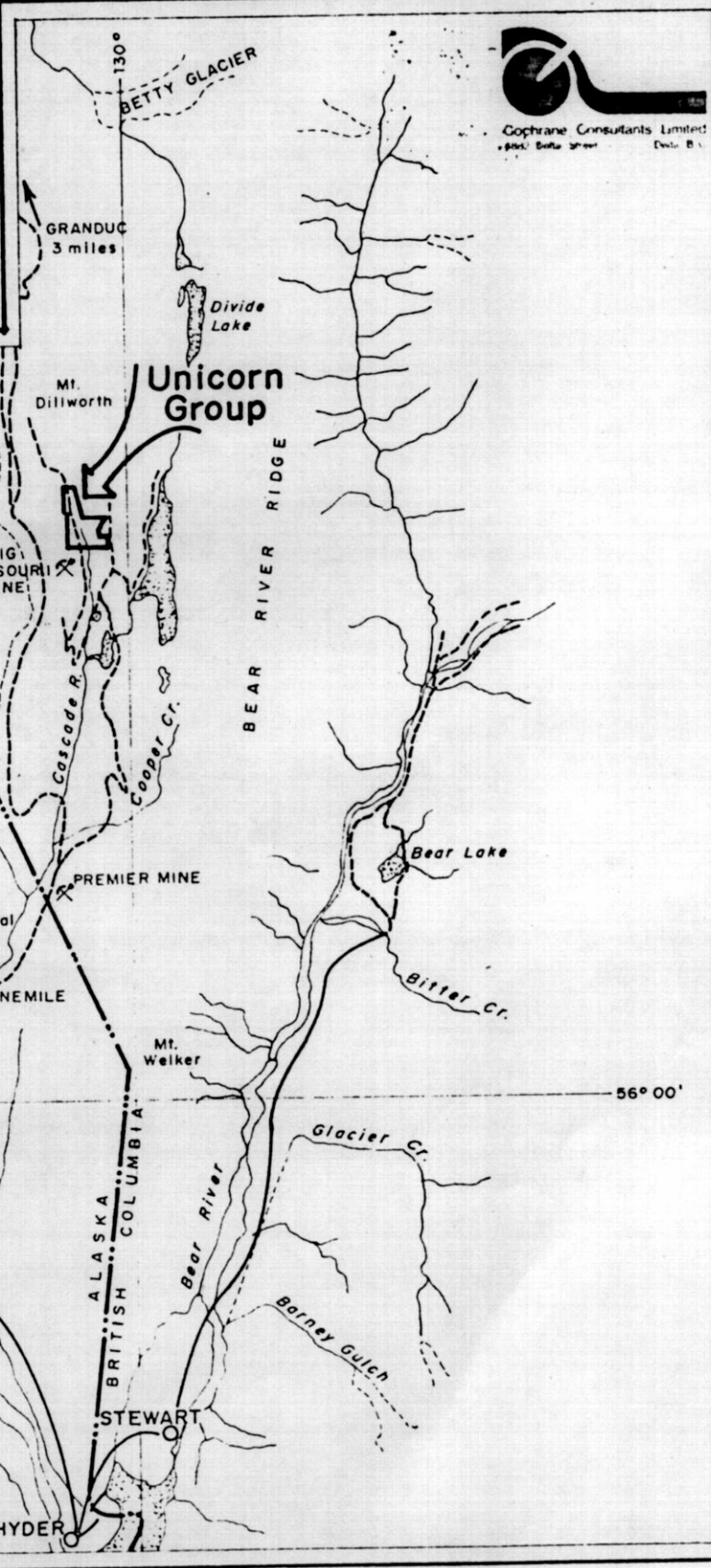
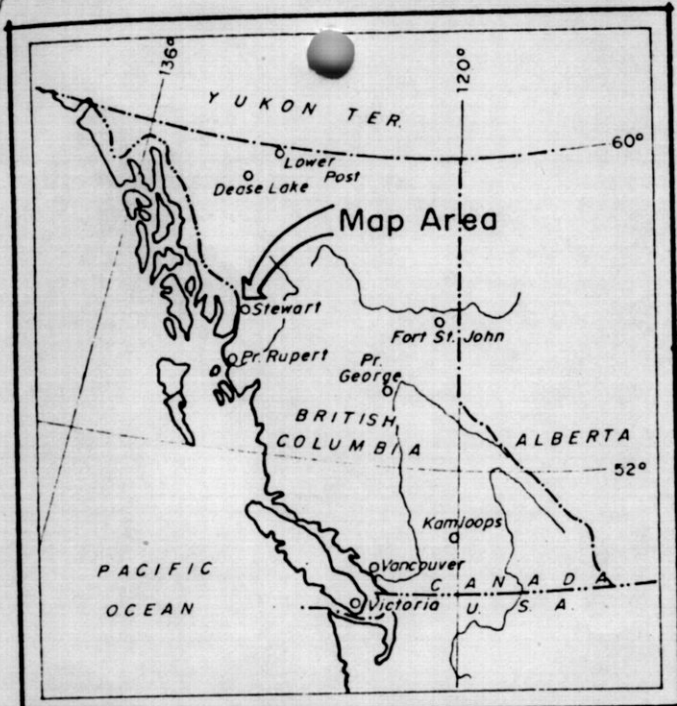
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Unicorn Group
 Portland Canal, B. C.
 Skeena Mining Division

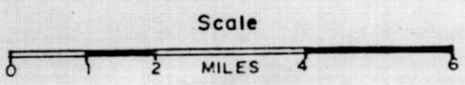
LOCATION MAP

Figure 1

N.T.S. 104 B
 Drawn: October 1974



This reference scale bar has been added to the original image. It will scale at the same rate as the image, therefore it can be used as a reference for the original size.



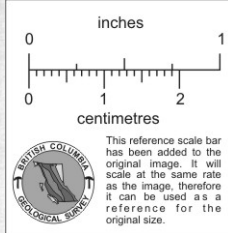
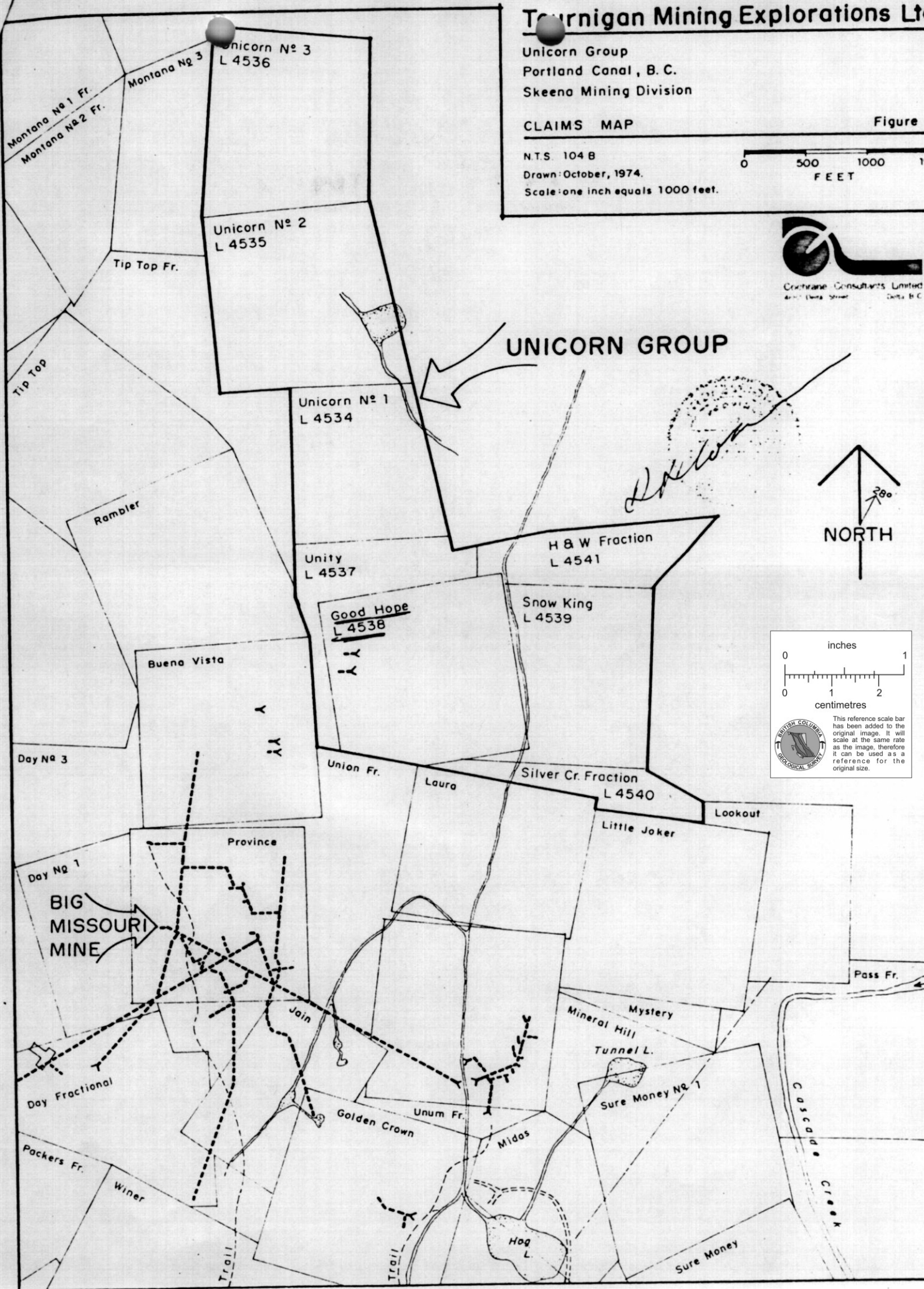
Tournigan Mining Explorations Ltd

Unicorn Group
Portland Canal, B. C.
Skeena Mining Division

CLAIMS MAP

Figure 2

N.T.S. 104 B
Drawn: October, 1974.
Scale: one inch equals 1000 feet.



Tournigan Mining Explorations Limited

Unicorn Group
Portland Canal, B.C.
Skeena Mining Division

[Signature]

ASSAY PLAN & PROPOSED DRILLING

Figure 3

N.T.S. 104 B
Drawn: October, 1974.

Scale: one inch equals 10 feet.



est. 600,000 tons to be bulk sampled 1975 Joo

Small tonnage i.e. 4-5,000 tons Joo.

