

A Geological Report
on the
OX 1 - 3 Claims
situated
1 km South of Aspen Grove
in the
Nicola Mining Division
N.T.S. 92-H/15(E)
Lat: 49°54' N Long: 120°37' W

by

D.R. Morgan, P. Eng

Dates of Work: 16 April 1981 -
5 May 1982

Date of Report: 7 June 1982

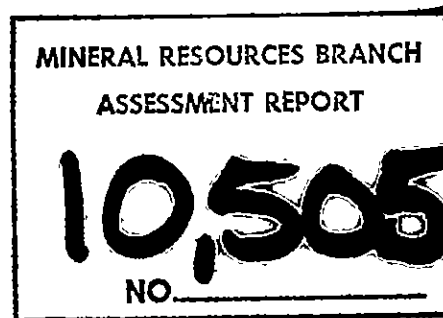
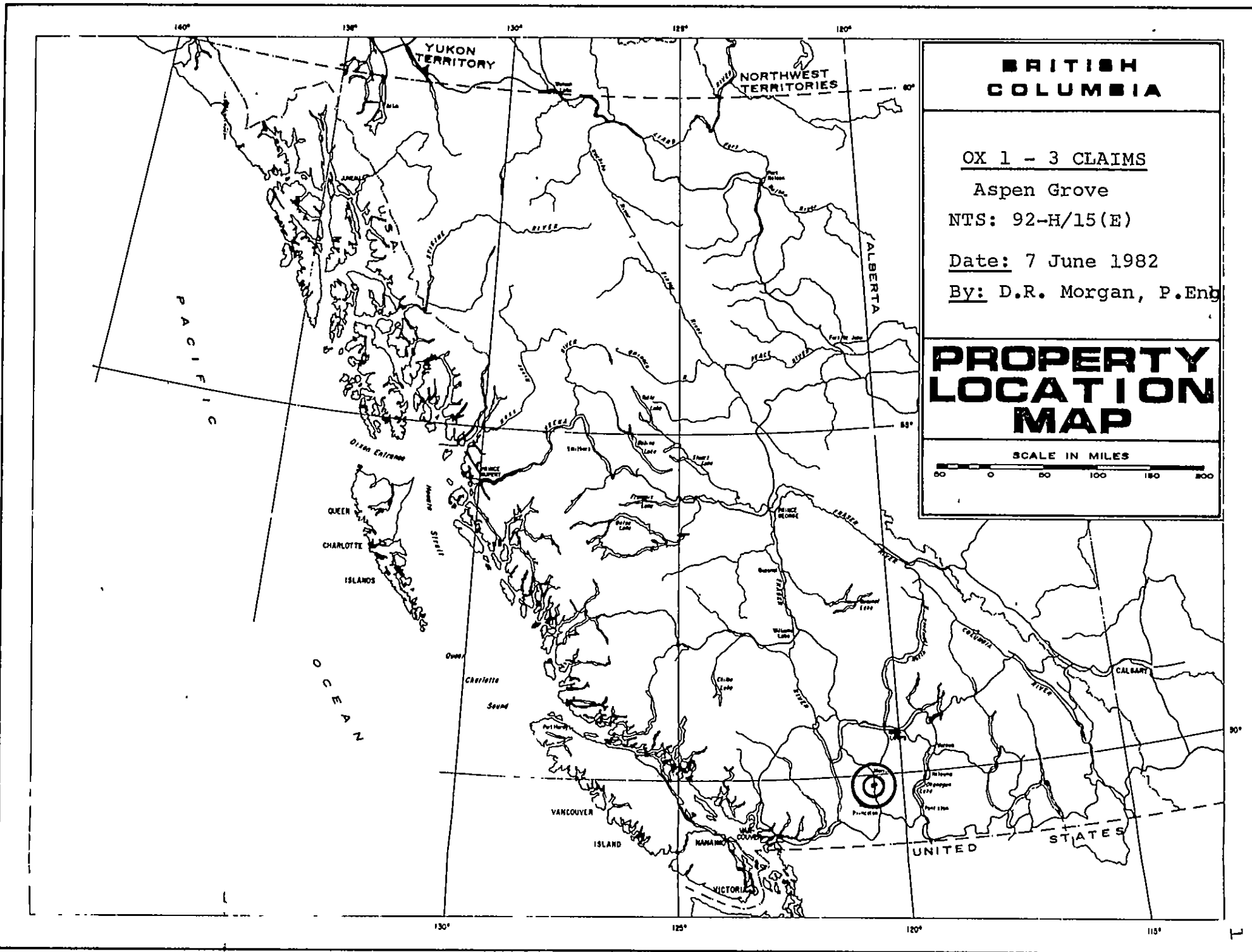


TABLE OF CONTENTS

	page		
1 - 0	SUMMARY	2	
2 - 0	CONCLUSIONS	2	
3 - 0	INTRODUCTION	3	
	3 - 1	Scope & Dates of Report	3
	3 - 2	Title	3
4 - 0	GEOGRAPHY	3	
	4 - 1	Location	3
	4 - 2	Access	3
	4 - 3	Topography	5
5 - 0	HISTORY	5	
6 - 0	REGIONAL GEOLOGY	5	
7 - 0	GEOLOGY OF THE PROPERTY	6	
	7 - 1	Mapping Procedure	6
	7 - 2	General	6
	7 - 3	Rock Types	7
	7 - 4	Structures	8
	7 - 5	Mineralization	8
8 - 0	REFERENCES	10	
9 - 0	STATEMENT OF COSTS	11	
10 - 0	STATEMENT OF QUALIFICATIONS	12	

Maps Accompanying this Report:

1.	Property Location Map	1
2.	Claim Map	4
3.	OX 1 - 3 Claims - GEOLOGY	(pocket)



**BRITISH
COLUMBIA**

OX 1 - 3 CLAIMS

Aspen Grove

NTS: 92-H/15(E)

Date: 7 June 1982

By: D.R. Morgan, P.Eng

**PROPERTY
LOCATION
MAP**

SCALE IN MILES



1 - 0 SUMMARY: (Fact)

1. The OX claims (24 units) lie at the western margin of the "Central Belt" of Nicola volcanics in the Aspen Grove area, B.C.
2. Detailed geological mapping (1:2500) was carried out between 16 April 1981 and 5 May 1982.
3. This mapping showed that the property is largely underlain, in outcropped areas, by volcanic breccias - especially the green variety.
4. These rocks have been faulted, fractured and mineralized with chalcopyrite, bornite, chalcocite and native copper in two northerly trending zones which were partly trenched and drilled in 1972.

2 - 0 CONCLUSIONS: (Opinion)

1. The exploration potential of the OX property is seen to lie:
 - (a) At depth and adjacent to the areas previously drilled.
 - (b) Adjacent to trenches 48 - 50 where the copper mineralization has not been drilled.
 - (c) Adjacent to the strongly sheared areas at outcrops 43 and 44.
 - (d) Adjacent to the Allison Fault along the western margin of the property.

3 - 0 INTRODUCTION:

3 - 1 Scope & Dates of Report: This report describes geological mapping carried out by the writer on the OX - 1 & 2 claims between the 16th April 1981 and the 5th May 1982.

The writer is currently the sole owner of these claims and also of the OX - 3 claim staked on the 2nd May 1982 and recorded 6 May 1982.

3 - 2 Title: The writer, David R. Morgan, 3424 West 6th Avenue, Vancouver, B.C., V6R 1T3, is the full and undivided owner of the OX claims as follows:

<u>Units</u>	<u>Claim</u>	<u>Record #</u>	<u>Recorded</u>	<u>Expiry</u>	<u>Mining Division</u>
9	OX-1	1071 (5)	7 May '81	7 May '85	Nicola
12	OX-2	1072 (5)	7 May '81	7 May '84	"
3	OX-3	1246 (5)	6 May '82	6 May '85	"
<u>24</u>					

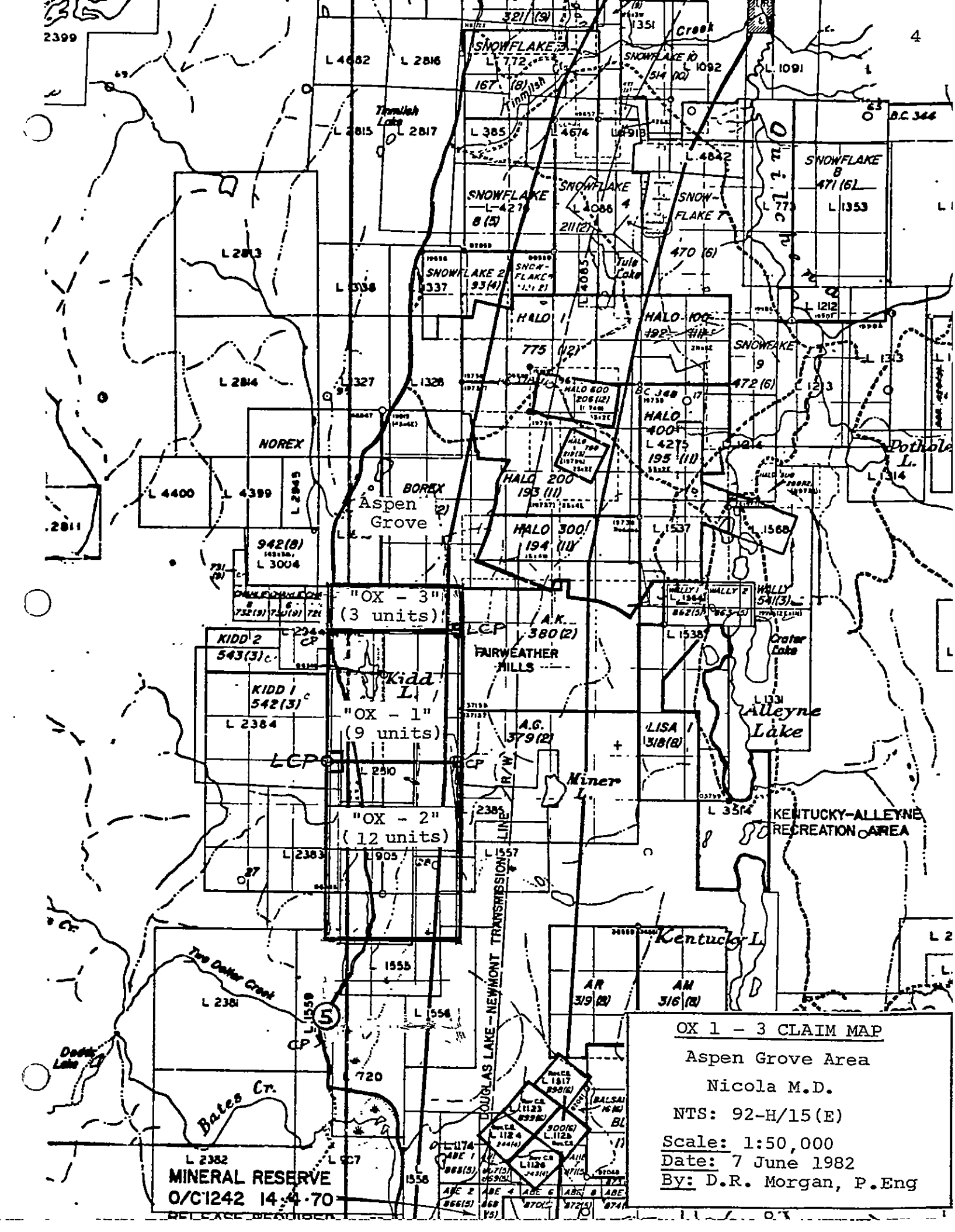
Acceptance of the work described in this report will put these claims in good standing until the expiry date shown above.

A Statement of Exploration & Development was filed at the Sub-Recorder's office in Vancouver on 6 May 1982.

4 - 0 GEOGRAPHY:

4 - 1 Location: The Legal Corner Post of OX - 1 & 2 lies 2.5 km south of Aspen Grove and 350 m west of Highway 5 in south central British Columbia. The claims are in National Topographic System area 92-H/15(E), are in the Nicola Mining Division and have a latitude of 49°55' N and a longitude of 120°37' W.

4 - 2 Access: The claims lie 32 km south of Merritt on Highway 5 which runs through the western part of the property. Logging and other roads in the eastern part of the property give good access. Surface rights are held by the Douglas Lake Cattle Company.



OX 1 - 3 CLAIM MAP
 Aspen Grove Area
 Nicola M.D.
 NTS: 92-H/15(E)
 Scale: 1:50,000
 Date: 7 June 1982
 By: D.R. Morgan, P.Eng

L 2382
MINERAL RESERVE
 O/C1242 14-4-70

DOUGLAS LAKE - NEWMONT TRANSMISSION LINE
 L 1174
 ABE 1
 868(3)
 ABE 2
 866(5)
 L 1123
 899(6)
 L 1124
 844(4)
 L 1125
 845(4)
 L 1126
 846(4)
 L 1127
 847(4)
 L 1128
 848(4)
 L 1129
 849(4)
 L 1130
 850(4)
 L 1131
 851(4)
 L 1132
 852(4)
 L 1133
 853(4)
 L 1134
 854(4)
 L 1135
 855(4)
 L 1136
 856(4)
 L 1137
 857(4)
 L 1138
 858(4)
 L 1139
 859(4)
 L 1140
 860(4)

4 - 3 Topography: The claims cover the valley of south-flowing Otter Creek. The valley sides have gentle slopes and elevations range from 3,400 to 3,900 feet.

5 - 0 HISTORY:

The Aspen Grove area has been prospected intermittently for copper since the discovery of Copper Mountain around 1900.

Most of the previous work on the ground now covered by the OX claims was carried out by White River Mines in 1972 when the property was known as the "DAGO - OPEN" claims. In that year magnetometer, I.P., gravity, geochemical and geological surveys were carried out, followed by 6,318 feet of diamond drilling in 14 holes. The best results from this drilling were as follows:

<u>Drill Hole</u>	<u>From</u>	<u>To</u>	<u>Intersection</u>	<u>Cu %</u>
72-2	50'	85'	35'	0.38
	305'	320'	15'	1.45
72-5	50'	102'	52'	0.83
72-7	95'	125'	30'	1.40
	205'	230'	25'	0.78

In 1977, 255m of percussion drilling were carried out in two holes. No results were indicated in the assessment report.

Besides this work described above, numerous bulldozer trenches have been dug on the property. These appear on the accompanying geological map.

The assessment reports covering this work are numbered as follows: 3787, 3788, 3789, 4089, 6215 & 6642

In the spring of 1981 the DAGO claims lapsed and the ground was staked by the writer.

6 - 0 REGIONAL GEOLOGY:

The OX claims lie in a 40 km wide belt of Upper Triassic volcanics, sediments and intrusives known as the Nicola Group. This belt extends from the U.S. border to Kamloops Lake.

"The dominating geological elements in the map area are two northerly trending high-angle fault systems which divide the Nicola rocks into 3 sub-parallel belts. These large structures represent deep seated crustal fractures which dominated the geology of the region in late Triassic time and caused volcanic centres to be aligned in a northerly direction, thus producing a Central Zone of dominantly volcanic rocks flanked to the east and west by basins of deposition.

The prominent northerly geological fabric of the map area is also apparent in the distribution of mineral deposits. The Central Belt, being the richest in intrusive rocks and the most intensely fractured and faulted of the three contains by far the largest number of prospects, particularly those of porphyry type which occur within sub-volcanic intrusions and their associated extrusive rocks."
(Preto, ref.3)

The OX claims lie in this Central Belt.

7 - 0 GEOLOGY OF THE PROPERTY:

7 - 1 Mapping Procedure: It was possible to use enlarged air photos for most of the mapping as only the N.E. corner of the property, amounting to about 18% of the area, is forested. Enlargements (x4) of air photos 79124: 91 & 153 were obtained from the Surveys and Mapping Branch in Victoria. These photos were cut and matched and the scale was accurately determined using a topographic map. A 2.14 times enlargement positive on film was then made by Pacific Survey Corporation, from which ozalid prints could be made. These prints with a scale of 1:2500 were used for mapping in the field. In the forested area mapping was done by using a combination of airphoto and topofil thread chain and compass for survey control.

Outcrops were numbered consecutively and specimens taken from each outcrop were marked with these numbers. A complete set of specimens from the 121 outcrops mapped is retained in Vancouver.

7 - 2 General:

Areas of outcrop on the OX claims are confined to the eastern part of the property formed by the westerly slopes of the Fairweather Hills. The western part of the property covers the broad valley bottom of Otter Creek and the lower slopes of the hills to the west; it is devoid of outcrop.

Most of the outcropped area is underlain by steeply dipping, northerly striking green volcanic breccia, dark green andesites and to a lesser extent red volcanic breccia and narrow limestone beds.

The argillites and siltstones shown to occur on the area covered by the OX claims on government maps (refs. 2 & 3) were not observed.

There are three zones on the property, associated with northerly striking shears, that are mineralized with copper. This mineralization appears to become more intense moving northward, the northernmost zone having been drilled.

7 - 3 Rock Types: The writer has adopted the rock groupings used by Preto (refs. 2 & 3) as follows:

Massive Red Augite Andesite & Basalt (MRA): A massive maroon coloured aphanitic volcanic with prominent, tabular, dark green phenocrysts of augite and scattered pin-head-sized hematite fragments.

Red Volcanic Breccia and Lahar (RVB): A maroon coloured volcanic containing dark green and red volcanic fragments. It is not abundantly represented.

Green Volcanic Breccia: (GVB): A dark green volcanic fragmental containing dark green and dark red volcanic fragments. Also, in places, containing fragments of white and pink syenite. Fragments are typically in the 5 to 20 mm size range and forming 35% of the rockmass. This is by far the most abundant rock type.

Massive Green or Grey Andesite (MGA): A dark green or grey, massive aphanitic volcanic. Feldspar laths are usually visible with a lens. This rock type is fairly widespread, especially in the southeastern quarter of the property.

Limestone (LST): Dark grey, massive limestone in N.W. striking beds from 10 to 25 m thick were mapped at outcrops 61 and 100. Coral fossils were observed at outcrop 100.

Micro-Syenite (MS): This is a very fine grained, grey, equigranular rock with 80% subhedral feldspar, 18% very fine grained biotite flecks and minor epidote and pyrite. It is possibly a dyke of

trachyte or latite. It is much finer in grain size than the syenite fragments seen in the green volcanic breccia. It was observed only in outcrops 97 and 116.

Tuffs: These were not grouped separately since they were observed only in narrow beds enclosed in green volcanic breccia (outcrop 5) and in massive green andesite (outcrop 89).

7 - 4 Structures: Generally speaking, strikes are north to northwesterly and dips are close to vertical, but the rocks in the map area show the sudden breaks in continuity and attitude typical of a strongly faulted area.

The clearest indication of the attitude of the volcanics is provided by the tuff beds (ocps. 5 & 89), the limestone beds (ocps. 59 & 61), the green volcanic breccia - andesite contacts (ocp. 87) and by the western contacts of the massive red augite andesite (ocps. 105, 120 and 121).

Fracturing in the area was most strongly represented by a 20 m wide ankeritic shear striking 318° and extending northwesterly from outcrop 75 to outcrop 112 and probably beyond. Another strongly sheared zone, approximately 40 m wide, striking 065° and dipping 70° N occurs in the vicinity of outcrops 43 and 44. Other important fracture systems have been exposed by trenching at outcrops 48-54 and at outcrop 48. Finally, a master fracture set striking 025° is widely revealed at outcrops 9 - 13.

7 - 5 Mineralization: The mineralization of economic interest on the OX claims consists of chalcopyrite, bornite, chalcocite and native copper (refs. 4 & 5). The most important copper mineralization found to date on the property was revealed by diamond drilling in 1972. This is described in ref. 4 and a summary of the results from that source appears on page 5 of this report. Some of the bulldozer trenches dug in 1972 have partly sloughed in. The mineralization noted by the writer was as follows:

1. Trench at Ocp. 99: Malachite staining of rusty fragments dug from this trench is widespread. Chalcopyrite was seen in

rusty sheared green volcanic breccia across an exposed width of 25 cm.

2. Outcrop 92: Chalcopyrite and malachite are exposed across 50 cm in an ankeritic shear in green volcanic breccia. Mapping indicates that this shear, striking 318° , has a width of about 20 m.

3. Trenches 48 - 50: A 25 m wide, northerly striking ankeritic shear is mineralized sparsely with chalcopyrite.

8 - 0 REFERENCES:

1. Rice, H.M.A. "Geology & Mineral Deposits of the Princeton Map Area," Memoir 243, G.S.C., 1947.
2. Preto, V.A. "Geology of the Aspen Grove Area," Map 15, B.C.D.M., 1974.
3. Preto, V.A. "Geology of the Nicola Group Between Merritt, and Princeton," Bul 69, B.C. Min. of E.M. & P.R.
4. Assessment Reports, B.C. Min. of E.M. & P.R.: 3787, 3788, 3789, 4089, 6215 & 6642.
5. G.E.M. 1972 (p.137) & 1977 (p.135) B.C. Min. of E.M. & P.R.

9 - 0 STATEMENT OF COSTS:

I hereby certify that the following costs were incurred in carrying out the geological mapping of the OX 1 - 3 claims in the Aspen Grove area, B.C. between 16 April 1981 and 5 May 1982:

GEOLOGIST: (D.R. Morgan)

Mapping: 16.-18 April 1981, 26 - 30 April 1982,
1,3-5 May 1982 (12 days)

Preparing Base Maps: 14, 19 April 1982 (2 days)

Report Writing: (7 days)

Total: 21 days at \$250/day: 5,250.

ROOM & BOARD:

Motel: 12 days at \$26/day: 312. 312.

Meals & Food: 12 days at \$15/day: 180.

492.

TRANSPORTATION:

1,440 miles at 25¢/mile: 360.

AIR PHOTO MAPS:

Enlargement of A/Ps:

Victoria: 42.86

Pacific Survey Corp: 145.81

194.57

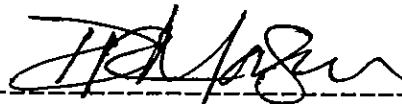
DRAFTING, PRINTING, XEROXING:

25.00

TOTAL EXPENSES:

6,321.57

Signed,



David R. Morgan, Geologist, P. Eng

Vancouver, B.C.

7 June 1982

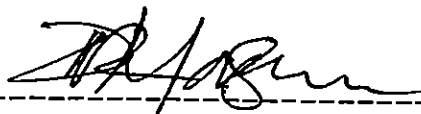


10 - 0 STATEMENT OF QUALIFICATIONS:

I, David R. Morgan of 3424 West 6th Avenue, Vancouver, B.C., V6R 1T3, do hereby certify that:

1. I am a 1954 graduate of McGill University, Montreal with a B.Sc degree in Honours Geology.
2. I am a registered member of the Association of Professional Engineers of the Province of British Columbia.
3. I personally carried out the geological mapping of the OX claims near Aspen Grove B.C. as described in this report.

Signed,



David R. Morgan, Geologist, P. Eng



OX-3

LCP

KIDD LAKE

DDH 72-12

DDH 72-8

OX-1

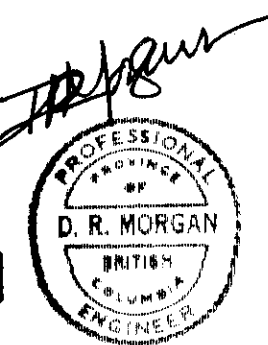
OX-2

LCP

5

OTTER CREEK

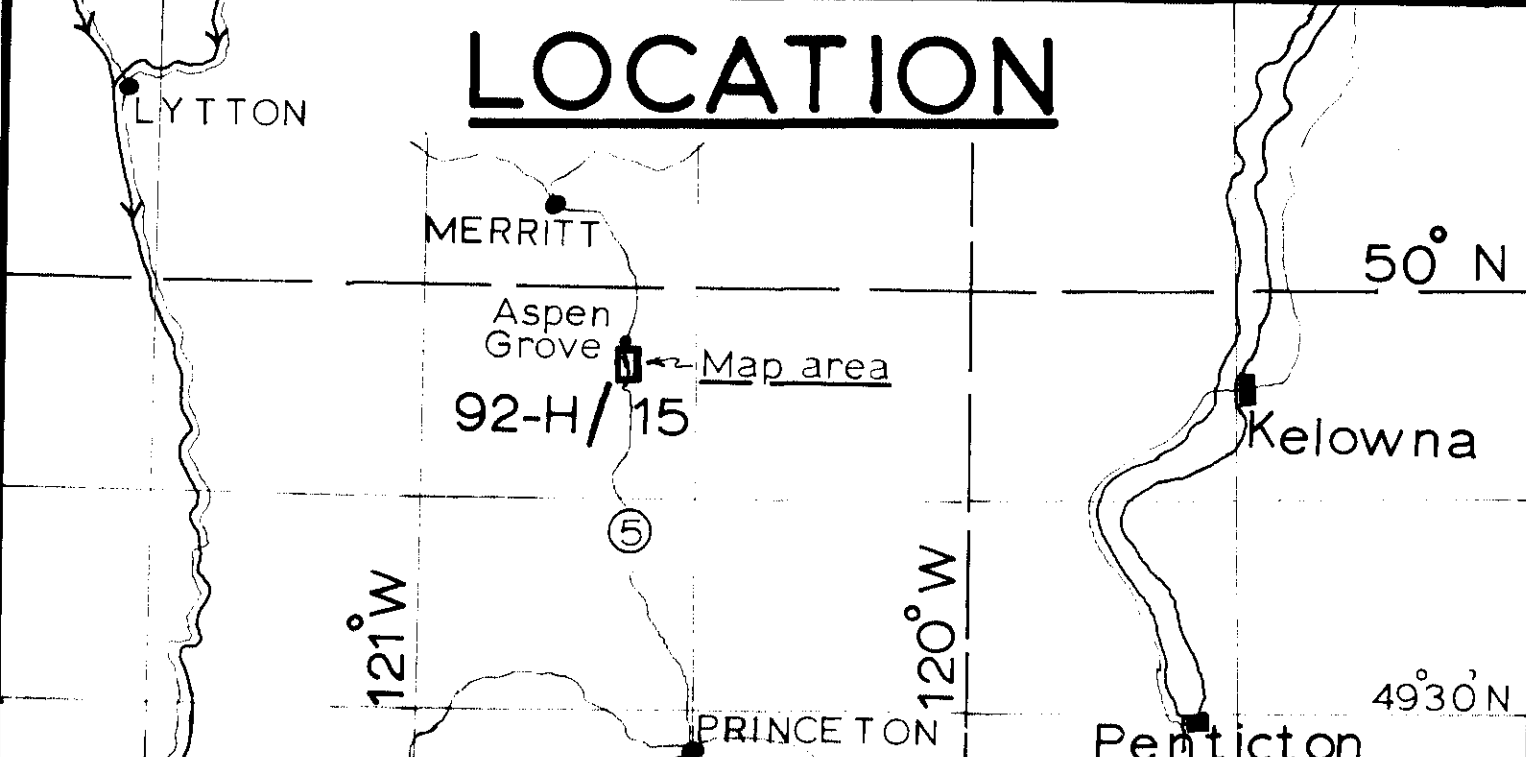
MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
10,505
NO.



LEGEND

- MRA Massive red augite andesite & basalt
- RVB Red volcanic breccia & lahar
- GVB Green " " "
- MGA Massive green or grey andesite
- LST Limestone - grey, reefoid
- MS Micro syenite

LOCATION



OX 1-3 CLAIMS
Aspen Grove Area, B.C.
GEOLOGY

Scale: 1:2500
Date: 7 June 1982
By: DR. MORGAN P.Eng.

REVISIONS	

100m 200m 300m 400m 500