

GEOLOGICAL REPORT on Jumbo Mines Ltd (N.P.L.)
TATLER GROUP, approx. 22 miles s.w. of
Invermere, Farnam Creek Area, Golden
Mining Division, B.C.
Lat. $50^{\circ} 30'$ N; Long. $116^{\circ} 20'$ W.

Name of Claims:

Worlds Fair	5356	Imperial	9993
Great Northern	5358	Copper King	9988
Wilderness	5357	White Bear	9987
Iron Mask	9991	Master	9990
Broken Hill	9992	Butler	9989
North Light	9994		

Total: 11 C.G. claims, Mineral Lease M-15.

Plus: 77 claims held by location:-

D, 1 & 2

J, 1 & 2

K, 1-5 incl., 7, 17-30 incl.

M, 1-32 incl.

P, 1-8 incl., 13-21 incl., 23, 25, 27, 29

Holder of Claims: Jumbo Mines Ltd (N.P.L.)

Author: E. Percy Sheppard, P. Eng.

Consulting Geologist

Dates: Sept. 16-21, 1967; June 16-17, 1968.

Date of Report: July 12, 1968.

$50^{\circ} 116^{\circ} SE$

JZK 8/9

1614

1614

GEOLOGICAL REPORT

On The

TATLER GROUP

Farnam Creek Area

Golden Mining Division, B.C.

Of

JUMBO MINES LTD (N.P.L.)

By

E. P. Sheppard, P. Eng.
Consulting Geologist

July 12, 1968
Vancouver, B.C.

I N D E X

	<u>Page</u>
SUMMARY & RECOMMENDATIONS	
INTRODUCTION	1
LOCATION	1
ACCESS	1
TOPOGRAPHY	1
CLIMATE	1, 2
HISTORY	2
PROPERTY	2
GENERAL GEOLOGY	3
GEOLOGY	3
STRUCTURE	4
MINERAL DEPOSITS	4, 5
GEOCHEMICAL SURVEY AND GEOLOGICAL MAPPING	6
ESTIMATED COST OF EXPLORATION PROGRAM	6
CERTIFICATE	
APPENDIX:	
Geochemical Sample Results	
Invoice	
MAPS:	
Location Map	
General Geology, Scale: 1" = 200'	
Claim Map " 1" = 600'	
Geochemical Survey, " 1" = 200'	

TATLER GROUP

SUMMARY

Early work on the Tatler Group of claims, consisting of trenching, drifting and shaft sinking, indicated the presence of mineralized vein material containing appreciable amounts of silver, copper, lead and zinc.

A mineralized zone some 700 feet long and up to 30 feet in width was also outlined.

The occurrences indicate the presence of a fairly widespread mineralized zone or zones. This is substantiated by the results obtained from the geochemical survey and preliminary geological mapping. It is felt, therefore, that the work should be expanded beyond the original surveys, in an attempt to outline large, low grade Manto-type ore deposits which are peculiar to the Purcell Range.

Diamond drilling should be started on the geochemical anomalies as soon as the road to the property is completed.

RECOMMENDATIONS

It is recommended that the sum of \$155,000 be allocated for a concerted exploration program on the Tatler Group. This amount is estimated to cover the cost of geological mapping, a geochemical survey, and diamond drilling, as outlined in the following report.

GEOLOGICAL REPORT

TATLER GROUP

INTRODUCTION

The Tatler group of claims was visited by the writer during the period June 16th and 17th, 1968. An examination was made of significant parts of the property which had been mapped geologically, and over which a geochemical survey had been conducted by Mr. T. R. Tough, Geologist, during the period September 16 to 21, 1967.

A review of the work performed and an examination of the claims indicates that a continuing work program is warranted for this property.

LOCATION

The Tatler group of mineral claims is located at 116° 20' West Longitude and 50° 30' North Latitude, in the Purcell Mountain Range, Golden Mining Division, southeastern British Columbia. It is approximately 22 miles southwesterly from Invermere which is situated on Highway 95.

ACCESS

Access is by an all-weather gravelled logging road, with no adverse grades, which extends westward from Invermere for approximately 30 miles to the confluence of Farnam Creek and Horsethief Creek. This road is maintained by the Department of Public Works and the Forest Service.

Jumbo Mines Ltd is constructing a good gravelled road, presently 75% completed, from the end of the logging road to the property.

Helicopter service is available from either Golden or Invermere.

TOPOGRAPHY

The topography is precipitous with peaks of over 10,000 feet and aproned with snowfields and receding alpine glaciers. The valley of Farnam Creek has an altitude of 6,000 feet and the campsite is at 6900 feet. Much glacial debris covers the valley floors. Spruce, fir, balsam and pine grow to the 7500 foot elevation with larch predominating above 6500 feet. Above the timberline large angular rock fragments occur caused by frost action.

CLIMATE

The annual snowfall is considerable, with relatively mild but long winters. Summer rainfall is scant and temperatures range from 60° to 80°.

Sufficient water for all phases of operation is obtainable from Farnam Creek and its tributaries. Diesel power will be required.

HISTORY

A reference to the Tatler Group was made in the 1920 Annual Report of the Minister of Mines for British Columbia. The report was written by A. G. Langley, Resident Engineer. Mr. R. S. Gallop of Wilmer, B.C., intermittently worked on the property from the late 1890's to 1924. He dug several trenches, drove three drifts varying from 15 feet to over 500 feet in length, and sunk a 50-foot shaft.

Mr. L. Hemmelgarn obtained the Mineral Lease and staked the surrounding ground in 1966. Trenching and some sampling of the old workings was carried out by Mr. Hemmelgarn. Mr. R. E. Renshaw, Consulting Geologist, reported on the property in August 1966.

PROPERTY

The Jumbo Mines Ltd. Tatler Group of claims consists of 11 Crown Grants under Mineral Lease M-15, as follows:

<u>Name</u>	<u>Lot Number</u>
Worlds Fair	5356
Great Northern	5358
Wilderness	5357
Iron Mask	9991
Broken Hill	9992
North Light	9994
Imperial	9993
Copper King	9988
White Bear	9987
Master	9990
Butler	9989

77 mineral claims held by location are included in the group:-

D, 1 & 2
J, 1 & 2
K, 1-5 incl., 7, 17-30 incl.
M, 1-32 incl.
P, 1-8 incl., 13-21 incl., 23, 25, 27, 29

The claims have been staked over the Crown Grants to avoid fractions. They have not been surveyed.

All claims have been properly staked and are in good standing. They are held by Jumbo Mines Ltd (N.P.L.) on a long-term Option Agreement.

GENERAL GEOLOGY

The regional geology as compiled by J. E. Reesor is shown on Map No. 12, 1957, Geological Survey of Canada.

The area to the northwest of the Columbia River is one of unmetamorphosed, folded and faulted Paleozoic sediments which truncate along the eastern flank of the Purcell Mountains.

The eastern and central portions of the Purcells are characterized by the weakly metamorphosed sediments of the Purcell and Windermere Systems. The strata are generally folded into a broad north-plunging geanticline with minor folds superimposed on the major structure. Normal faulting is common and some thrust faults are present on the eastern flank of the Purcells. The major fault is the Purcell Fault which strikes northwesterly and dips approximately 40° West. Many short faults trend east-west in an en echelon pattern.

Along the western portion of the Purcell Range lie the highly deformed and metamorphosed rocks of the Horsethief Creek, Hamil and Lardeau Series. To the south lie the older rocks of the Purcell System: the Aldridge, Creston, Kitchener-Siyeh, Dutch Creek and Mt. Nelson Formations.

There are a few minor, concordant, syntectonic quartz diorite bodies. The East Kootenay Batholith, the Bugaboo and Starbird Ridge stocks are the three major intrusives in the area.

GEOLOGY

The rock types of the Farnam Creek are those of the Toby and Mt. Nelson Formations of the Lower Windermere and Upper Purcell Ages, respectively. The Toby Formation is comprised of polymictic pebble, cobble and boulder conglomerate with a matrix of quartzite, argillite, and limestone. Deformation of the beds has produced an elongation of the pebbles. Sericitization is a common alteration in the unit. The conglomerate overlies, with a slight angular unconformity, the Mt. Nelson Formation on the southern portion of the property. The Mt. Nelson Formation consists of buff weathering, grey, dolomitic limestone; purple, grey, and black argillite and slate, and green and white quartzite. A dolomitic matrix forms up to 90% of the rock. Green and white quartzite occurs interbedded with the dolomitic limestone and varies in thickness from less than one inch to several feet.

To the west a 50 to 100-foot thick bed of black argillaceous limestone occurs within interbedded quartzite and dolomite. Few of the limestone beds contain fragments of dolomite and quartzite near contact zones. A black argillaceous slate with much syngenetic pyrite lies a couple of hundred feet further west. The unit is highly contorted within a tight anticlinal fold and is heavily stained with iron oxide.

STRUCTURE

The main structure is anticlinal and covers the eastern and central portions of the property. On the western flank the strata are intensely contorted into a series of chevron and recumbent folds which strike northwesterly. Several near vertical fissures formed by the folding and associated faulting are present but, although mineralized, they are relatively narrow. Sparsely mineralized joints trending N 60° E are filled with quartz-barite gangue. The veins are short, lentic, and very irregular. Faulting is prominent, with two relatively close normal faults which are traceable southward to the Mineral King Mine four miles distant. The faults are the main source of mineralization in the Mineral King deposit. Replacement bodies tend to form wherever the mineralized veins intersect favourable horizons within the Mt. Nelson dolomite.

MINERAL DEPOSITS

Two tunnels were driven on a well mineralized 15-inch vein in the northwest corner of the Copper King Crown Grant; 10 feet and 20 feet long, respectively. The vein strikes N 30° W and is nearly vertical.

The 1920 report of the Minister of Mines gave assays of the vein on surface as a trace of gold and silver, and 2.3% copper across 15 inches. A sample taken across the vein in the southern tunnel, by R. E. Renshaw in 1966, assayed 7.2 oz. silver, 3.00% copper, 0.50% Pb and 1.26% zinc over 18 inches. The workings are at the 8000 ft. elevation.

At the 7500 ft. elevation, a tunnel 350-400 feet long has been driven with the intention of crosscutting the vein at depth. Work was stopped prior to reaching the vein. The portal has caved and it was impossible to examine the workings. The above-mentioned Minister of Mines report gave assays of a sample taken across a zone in the tunnel as, a trace of gold, 13.8 oz. silver, and 3.6% copper. The adit is located on the Butler-Master C. G. boundary.

A 3 to 4-foot wide quartz-barite vein containing some tetrahedrite and azurite occurs in the middle of the Imperial C. G. The vein strikes northwesterly, dips about 75-80° W, and has been exposed for over 100 feet in length. In the central portion of the eastern half of Imperial C. G., at about 8000 ft. elevation, four nearly vertical fissure veins were discovered over a width of approximately 300 feet. The veins strike N 25° W. They were traced over a strike length of 50 to 75 feet, and appear to be lenses. Sulphide mineralization is sparse and azurite predominates.

In the vicinity of the northwest corner of the Broken Hill C. G., recent trenching has revealed several narrow, irregular, short veins. Vertical joint fillings trending N 60° E are sparsely mineralized with tetrahedrite and azurite. No mineralization was noted in the dolomitic limestone.

There are two trenches about 200 feet apart near the summit of the mountain on the Copper King C. G. The southernmost trench is 30 feet long and 3 feet wide, exposing a vein which dips 20° E. Azurite and fine tetrahedrite fill fractures in the quartzite. Samples across three feet of the zone assayed 2.2 oz. silver, 1.22% copper, 0.25% lead, 1.08% zinc, 3.65 oz. silver, 2.17% copper. The northern trench is 20 feet long and 8 feet deep. Azurite, frieborgite, malachite and some galena occur in quartzite in near-vertical fractures. The quartzite beds have been exposed for approximately 6 feet, and dip 20° E and strike northwesterly. The actual thickness of the zone has yet to be determined. The mineralization appears to be caused by a bedding vein but actual evidence of this is elusive due to the adjacent surfaces being covered by loose rock fragments.

Three chip samples were cut across the beds at 5-ft. intervals over a length of 15 feet. The results were as follows:

<u>Location</u>	<u>Width</u>	<u>Ag oz/ton</u>	<u>Cu%</u>	<u>Pb%</u>	<u>Zn%</u>
East end	3'	2.80	0.85	0.63	Tr
Centre	5'	8.90	5.15	Tr	Tr
West end	6'	8.00	4.05	0.40	0.12

A grab sample from the ore dump, taken by A. G. Langley, ran 10.2 oz. silver and 4.50% copper.

Insufficient work has been done in this area to determine the continuity of the mineral occurrences.

On the Great Northern C. G., to the north, several trenches and a shaft 50 feet deep comprise workings on a mineralized zone some 700 feet long. The zone lies along the same fault which passes through the Mineral King deposit to the south. Vertical fissure veins up to one foot in width strike N 30° W, and are mineralized with frieborgite, galena, chalcopryrite, pyrite, azurite and malachite. The gangue minerals are quartz and barite. Low grade disseminated mineralization occurs in the silicified dolomitic limestone on both sides of the veins and has been traced over a width of 30 feet in the area of the 50-foot shaft. The 4' x 4' shaft is located at 5+ 70' W on L 26 + 00N.

A grab sample from the ore dump assayed 57.60 oz. silver, 5.25% copper, 15.65% lead and 2.10% zinc. A chip sample across five feet adjacent to the shaft collar ran 1.70 oz. silver, 0.40% copper, 0.80% lead, and a trace of zinc. 30 feet north of the shaft, a chip sample across four feet assayed 10.45 oz. silver, 1.05% copper and 4.37% lead. A chip sample from 5+55' W on L 24 + 00N, across 3 feet, gave 8.40 oz. silver, 1.15% copper and 2.65% lead. A chip sample across 7 feet in a trench located at 5+80' W on L 23 + 50 N, ran 3.10 oz. silver, 0.90% copper, and 5.35% lead.

GEOCHEMICAL SURVEY AND GEOLOGICAL MAPPING

In the course of examining the property, a grid system was established with a base line 5800 feet long trending N 35° W. Cross-lines were established at intervals of 400 feet. The grid covers portions of the Master, Butler, Wilderness, Great Northern and Worlds Fair claims as well as some of the mineral claims to the west of M-15. The grid provided control for geochemical and geological mapping.

A total of 50 geochemical samples were taken at intervals of 400 feet along the grid lines and, where warranted, at 200 foot intervals.

In view of the satisfactory results obtained from the geochemical survey and preliminary geological mapping, it is felt that the work should be expanded beyond the original surveys. Diamond drilling should be started on the geochemical anomalies as soon as the road to the property is completed.

ESTIMATED COSTS FOR EXPLORATION PROGRAM

Road Construction	\$ 25,000.00
5000 ft. drilling @ \$10/ft.	50,000.00
Geochemical Survey	3,000.00
Sampling & Assaying	3,000.00
Plane table Survey & Mapping	5,000.00
Assaying	2,000.00
Core Shack	2,000.00
Equipment hire & transporting	4,000.00
Engineering & Supervision	8,000.00
Living Expenses	5,000.00
Travel	5,000.00
Legal & Head Office Expense	10,000.00
Option Payments	1,000.00
Contingency Fund	<u>22,000.00</u>
Total	<u><u>\$155,000.00</u></u>

The program must start immediately, to take advantage of the summer season. Work must also be undertaken to winterize the buildings and equipment in order that operations may be carried out during the winter months.

Respectfully Submitted,

E. Percy Sheppard
E. Percy Sheppard, P. Eng.
Consulting Geologist



C E R T I F I C A T E

I, E. PERCY SHEPPARD, of the City of Vancouver, in the Province of British Columbia, hereby certify:

1. THAT I am a Consulting Geologist with offices at 402 West Pender Street, Suite 314, Vancouver, B.C.;
2. THAT I am a graduate of Dalhousie University with a B. Sc. in Geology, and have been active in mining exploration and geophysics for thirty years;
3. THAT this report is based on my examination of the property on June 16 and 17, 1968; a study of pertinent data; and the geological mapping and geochemical survey conducted by Thomas R. Tough, B.Sc., Consulting Geologist, during the period September 16 to 21, 1967, under my supervision;
4. THAT I have no direct or indirect interest whatsoever in the property or mining claims covered by this report, nor have I any direct or indirect interest in the shares of Jumbo Mines Ltd. I do not expect to receive any direct or indirect interest in the shares or mining claims of Jumbo Mines Ltd as a result of writing this report;
5. THAT I am a member of the Professional Engineers Association of British Columbia, the American Institute of Mining Engineers, the Society of Exploration Geophysicists, and a Fellow in the Geological Association of Canada.

DATED AT VANCOUVER, B.C., this 12th day of July, 1968.


E. Percy Sheppard, P. Eng.





GEOCHEMICAL SAMPLE RESULTS

<u>SAMPLE #</u>		<u>LOCATION</u>	<u>RESULT Cu P.P.M.</u>
68551	1	BASELINE 0 + 00	
52	2	" 1.4 + 00N	50
53	3	" 1.8 + 00W	25
54	4	" L12 + 00N	15
55	5	" L16 + 00N	35
56	6	" L20 + 00N	150
57	7	" L24 + 00N	20
58	8	" L28 + 00N	20
59	9	" L32 + 00N	30
68560	10	" L36 + 00N	55
61	11	" L40 + 00N	10
62	12	" L44 + 00N	10
63	13	" L47 + 50N	15
64	14	L30 + 00W, 1 + 00E	70
65	15	L28 + 00N, 4 + 00W	75
66	16	L28 + 00N, 6 + 00W	265
67	17	L26 + 00N, 6 + 00W	70
68	18	L24 + 00N, 6 + 00W	80
69	19	L24 + 00N, 4 + 00W	15
68570	20	L20 + 00N, 4 + 00W	60
71	21	L20 + 00N, 6 + 00W	60
72	22	L20 + 00N, 8 + 00W	15
73	23	L20 + 00N, 10 + 00W	40
74	24	L16 + 00N, 8 + 00W	45
75	25	" 6 + 00W	35
76	26	" 4 + 00W	10
77	27	" 2 + 00W	60
80	28	L0 + 00 4 + 00W	35
81	29	" 6 + 00W	40
82	30	" 10 + 00W	10
78	31	L0 + 00 8 + 00W	55
79	32	" 12 + 00W	50
83	33	L4 + 00N 10 + 00W	30
84	34	" 8 + 00W	15
85	35	" 5 + 50W	30
86	36	" 4 + 00W	20
87	37	" 2 + 00W	40
88	38	L0 + 00 2 + 00E	35
89	39	" 4 + 00E	45
68590	40	L2 + 00N 4 + 00E	40
91	41	L4 + 00N 4 + 00E	40
92	42	" 2 + 00E	10
93	43	L8 + 00N 2 + 00E	40
94	44	" 4 + 00E	30
95	45	L12 + 00N 4 + 00E	30
96	46	" 2 + 00E	20
97	47	" 4 + 00W	45
98	48	" 8 + 00W	35
99	49	L8 + 00N 8 + 00W	20
68600	50	" 4 + 00W	10
			45

E. P. SHEPPARD & ASSOCIATES LTD.

CONSULTING GEOLOGISTS

314-402 WEST PENDER STREET,
VANCOUVER 3, B.C.

June 15, 1968

I N V O I C E

In Account With:
Jumbo Mines Ltd, (N.P.L.)
617-402 West Pender Street
Vancouver, B.C.

Professional Services:

Geological Mapping, 200 hrs @ \$21/hr.....	\$4200.00
Geochemical Survey, 200 hrs @ \$17/hr.....	3400.00
Research & Report preparation, 20 hrs @ \$17..	340.00
Travel (Vancouver-property & return).....	170.00
Casual Labor (1 man) 200 hrs @ \$3/hr....	600.00
Drafting & clerical	79.00
Printing Costs	40.00
TOTAL	<u>\$8,829.00</u>

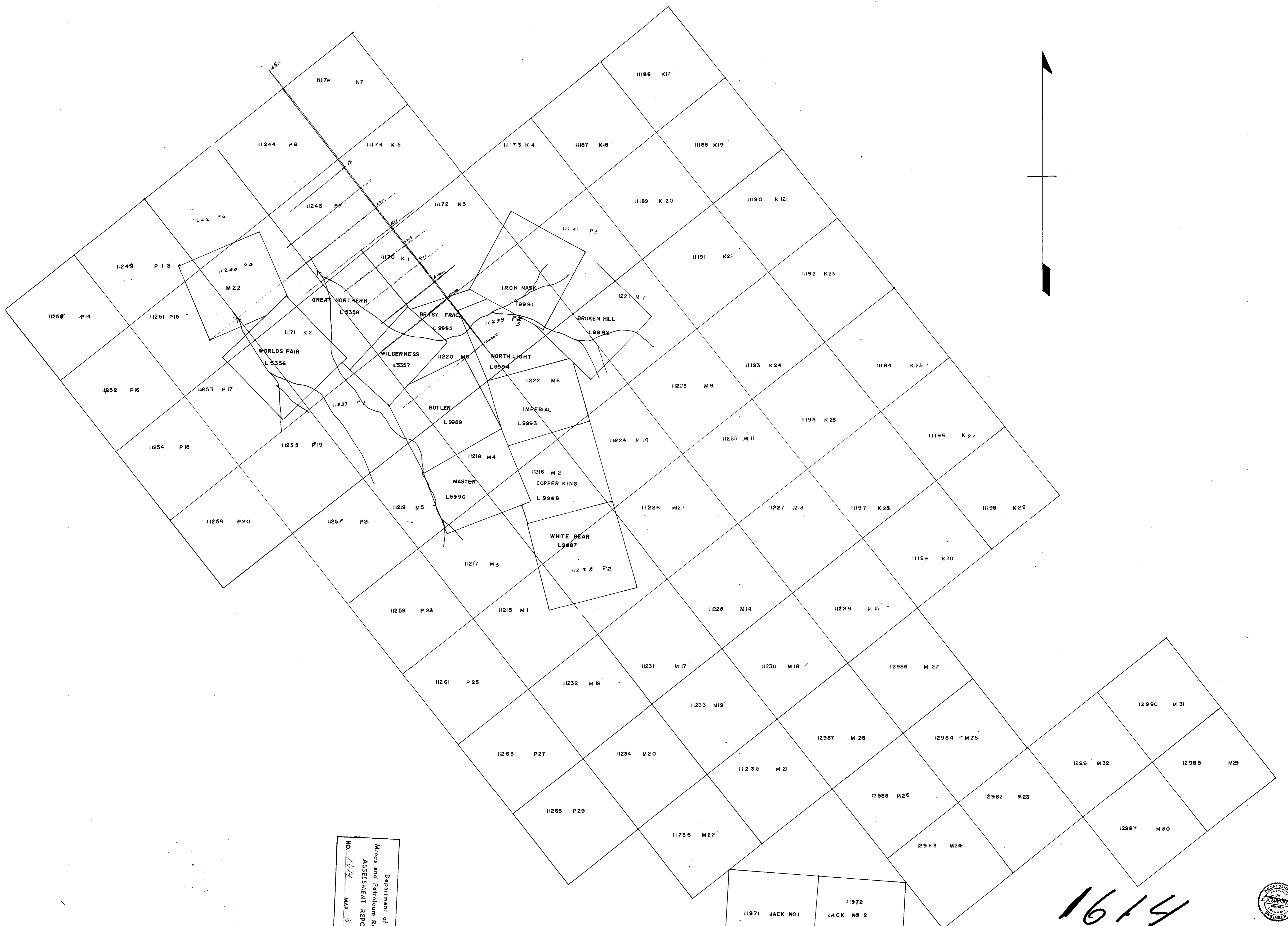
* * *

Declared before me at the *city*
of *Vancouver*, in the
Province of British Columbia, this *22nd*
day of *July*, *1968*, A.D.

R. L. Kane

L. Strickler
A Commissioner for taking Affidavits within British Columbia or
A Notary Public in and for the Province of British Columbia.

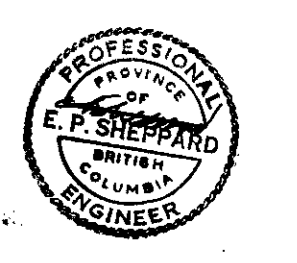
Sub-mining Recorder



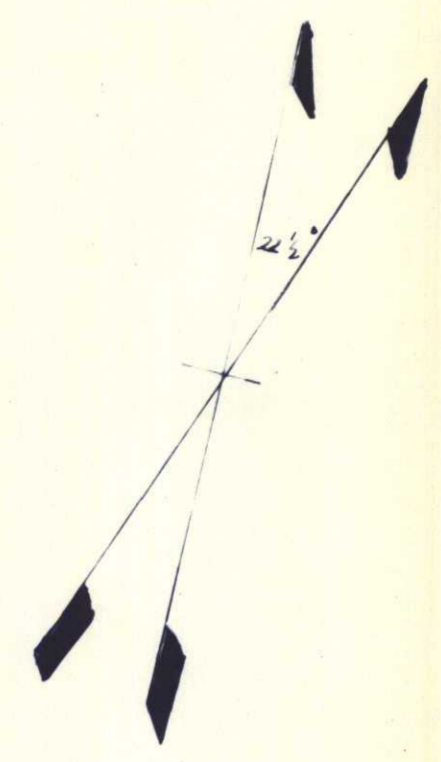
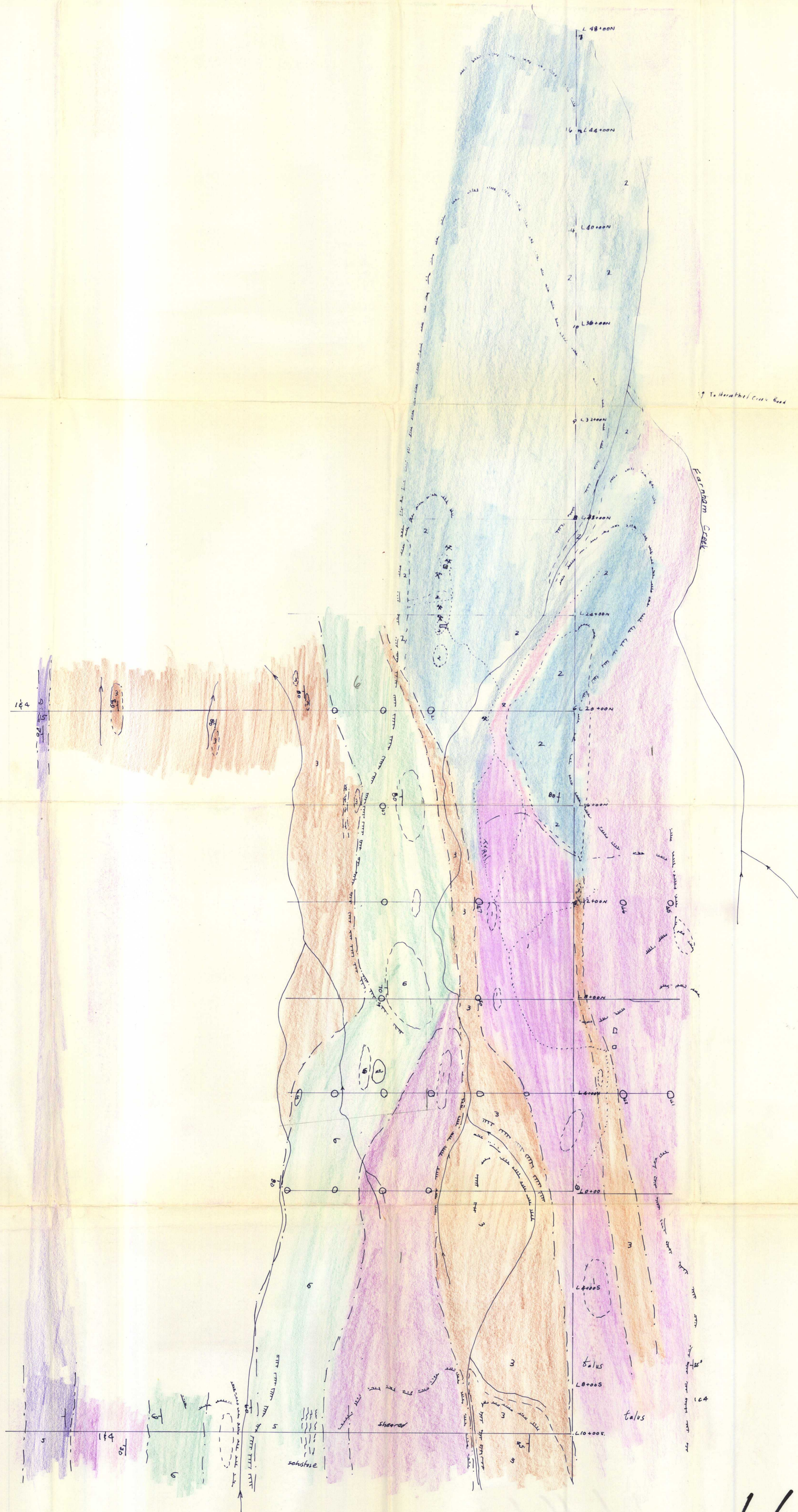
Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 1614
MAP 3

11971 JACK NO1	11972 JACK NO 2
12974 D1	12975 D 2

1614



JUMBO MINES LTD (NPL)
TATLER GROUP
GOLDEN MINING DIVISION BC
SCALE: 1" = 600', JULY 1968
E.P. SHEPPARD ASSOCIATES LTD



LEGEND

- 729 TOBY FORMATION - PEBBLE, COBBLE BRICKLER CONGLOMERATE
- 722 MT NELSON, BLACK ARGILLACEOUS LIMESTONE
- 723 MT. NELSON BUFF WEATHERING GREEN & WHITE QUARTZITE
- 724 MT NELSON, BLACK SLATE, THINLY BEDDED
- 725 MT NELSON, BUFF WEATHERING PEBBLE CONGLOMERATIC DOLOMITE
- 752 MT. NELSON, BUFF WEATHERING, GREY DOLOMITE

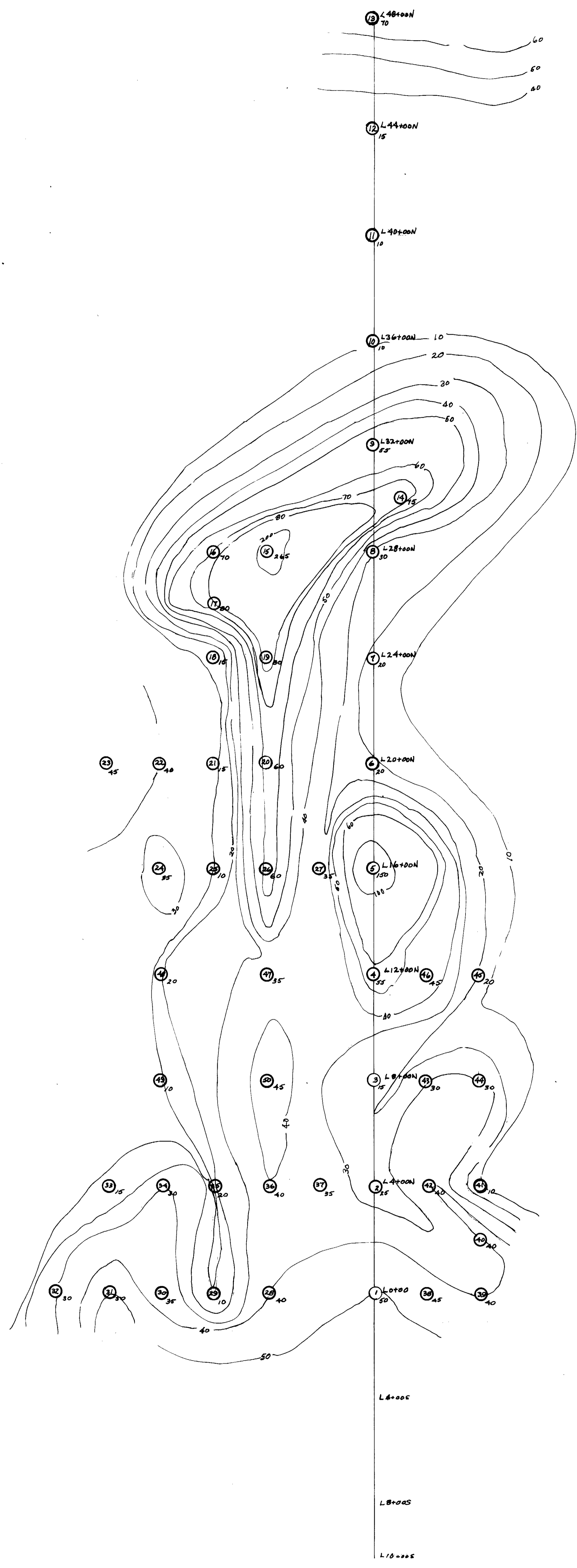
SYMBOLS

- GEOLOGIC CONTACT
- CLIFF
- 80 DIP & STRIKE OF BEDDING
- ③ GEOCHEMICAL SAMPLE LOCATION
- CLAIM LINE & POST
- STREAM
- OUTCROP
- ✕ TRENCH
- SHAFT
- BUILDING
- TRAIL

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 1614 MAP 2



1614



Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 1614 MAP 4



1614

JUMBO MINES LTD (NPL)
TATLER GROUP
GEOCHEMICAL SURVEY
SCALE 1"=200'
DATE: SEPT 30 1967
E. P. SHEPPARD & ASSOCIATES LTD. DRAWN T.R. TONG