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REPORT ON THE SEVEN SIS[illegible]
PROPERTY BY
M.K. LORIMER, P. ENG.

REPORT

ON THE

SEVEN SISTERS PROPERTY

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FOR

MAGNETRON MINING LTD. (N.P.L.)

by

M. K. Lorimer, P.Eng.

14th. August 1969.

L. J. Manning & Associates Ltd.

L. J. MANNING & ASSOCIATES LTD.
CONSULTING MINING ENGINEERS

610–890 WEST PENDER STREET VANCOUVER 1, B.C.

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August 14th. 1969.

The President and Directors,
Magnetron Mining Ltd. (N.P.L.)
2020 - 777 Hornby Street,
Vancouver 1, B.C.

Dear Sirs:

The following report is based on a visit to the Magnetron property in the period 28 - 30 July, 1969, and on a study of the reports acknowledged in the Bibliography.

SUMMARY:

Magnetron Mining Ltd. (N.P.L.) holds a block of 51 located mineral claims on Seven Sisters Mountain about 35 miles northeast of Terrace. An unimproved road gives access from Highway 16 near Cedarvale.

The property covers two widely-separated mineralized zones on which some work was done 40 years ago. One zone in particular, the Jackal, shows significant values in silver, copper, lead and zinc in scattered exposures over a length of 500 feet and a width of up to 35 feet. The possibilities of extending these dimensions appear good.

On the basis of present knowledge further exploration appears to be justified.

It is recommended that a phased exploration programme be undertaken. Phase I, to consist mainly of geophysical surveys, is estimated to cost $22,700. Phase II, dependent on the results of Phase I, would consist mostly of diamond drilling. The estimated minimum cost of this phase, provided results were sufficiently encouraging to carry it to its conclusion, is $113,000.

LOCATION:

The Magnetron claims are located about 35 miles northeast of Terrace on the south-western flanks of Seven Sisters Mountain, a prominent topographic feature of the area. Elevations range from about 4000 feet to over 6000 feet above sea level. Map 1.

The geographic location of the centre of the property is about 54° 57' N, 128° 15' W. The area is covered by Sheets 103 I 16 E and W of the National Topographic System.

ACCESS:

The Camp and western portion of the property are accessible by an unimproved road about 10 miles long which branches off Highway 16 near Cedarvale. From the end of the road a bulldozer track has been carried another two miles across talus to near the southern boundary, an area formerly known as the Caledonia Group. A short branch road gives access to the old workings on the former Seven Sisters Group.

Because of the lack of trees access by helicopter is easy. However, there are no lakes sufficiently large to accommodate float planes.

The Prince Rupert branch of the Canadian National Railways passes along the Skeena Valley within eight miles of the property.

TITLE:

The property consists of 51 claims and fractions as listed below. The pertinent information was obtained at the Vancouver Mining Recorder's office on 8th. August, 1969.

Claim	Record No.	Expiry Date	Owner
NIILO 1 - 12	68257-68	20 March 1969	N. K. Lindroos
JACKAL 1 - 4	16742-45	15 Oct. 1969	Mrs. A.E.Collier
5	16746	15 Oct. 1971	"
6	22841	1 Oct. 1969	"
REGA 1 - 22	55979-56000	8 Sep. 1969	Magnetron Mining & Investment Corp.Ltd.
23 - 26	54751 - 4	14 Sep. 1969	A. J. Ager
27 Fr.	54755	14 Sep. 1969	A. J. Ager
28 - 33	59473-78	3 Jun. 1969	A. J. Ager

Titles to all the claims are reported to be in process of transfer to Magnetron Mining Ltd. (N.P.L.)

Several of the claim posts were checked by the writer and found to be in accordance with the provisions of the Mineral Act and in approximately the described locations. Map 2.

TOPOGRAPHY:

The topography within the claims area is mountainous. It embraces three cirques and the spurs between them with a general slope towards the Skeena River valley to the west. Although there are a few precipitous spots along the spurs, the area is not difficult to traverse on foot.

TOPOGRAPHY: Continued

Most of the property is above timberline. Trees grow along the western boundary only, but shrubs and grasses are to be found at higher elevations in the cirques. The greater part of the area is covered by talus and bare rock. The eastern boundary approaches the larger glacier on the southern slope of the mountain.

Two branches of Flint Creek and one of Oliver Creek originate on the property, probably fed from the glacier above. Several small streams cross the rock and talus areas and these are two small lakes. Generally speaking, water is not plentiful but enough could be obtained for exploration work without difficulty.

CLIMATE:

The climate is typical of mountainous areas in a region of high precipitation. The winter snowfall is heavy and the occasional snowstorm can be expected even in the summer months. Low clouds often blanket the mountain in thick fogs. The exploration season can be considered to last from July to October although with suitable equipment and procedures there is no reason why mining operations could not be carried out all year. The area is not subject to slides.

HISTORY:

The present property covers two old properties previously known as the Seven Sisters Group and the Caledonia, or Waverley, Group.

The Seven Sisters Group was actively explored by surface pits and underground workings in the period 1926 - 29. The work was initiated by D W Mines Limited and later taken over by Consolidated Mining and Smelting of Canada Limited. An inclined shaft was sunk for about 175 feet and from it about 350 feet of drifting and cross-cutting was done on two levels. An adit 120 feet in length was driven to connect with the upper level and a second inclined shaft of unknown depth is located only 20 feet away. These workings are in poor condition and many are caved or water-filled. Several pits and trenches were dug in efforts to trace the mineralized zone across the cirque in which it occurs. At a point about 2500 feet north of the main shaft and 200 feet higher, an adit 75 feet long with a 31 - foot branch was driven in an oxidized zone on a bluff. No work of any consequence appears to have been done since 1929.

The Caledonia Group, or Waverley, as it was first called, was staked in 1929. A number of trenches and short adits were cut exposing a zone of silver-lead-zinc mineralization but little seems to have been done since the initial effort.

RECENT WORK:

In the last two years the present owners have concentrated on road-building, surface exploration of the area as a whole, a limited amount of trenching and the establishment of a camp at the site of the old Seven Sisters camp. Some geophysical work has also been done.

GEOLOGY:

The claims are located in an area of mainly sedimentary rocks known as the Bowser Group. To the northeast of the property the sediments have been intruded by a stock which forms the core of the Seven Sisters Mountain. This intrusion has resulted in folding and faulting of the surrounding strata and the emplacement of quartz veins and mineralized zones. It also undoubtedly accounts for the prevailing westerly dips of the strata underlying the Magnetron claims.

Within the claims area the sediments consist of conglomerate, sandstone, argillite, arkose and greywacke, with interbedded tuffs. These rocks have a general northerly strike and a dip to the west. Mechanical disintegration is far advanced with the result that much of the bedrock is obscured by talus and other overburden.

There are two areas of interest on the property. One is the Niilo Group, formerly known as the Seven Sisters Group; the other, about $1\frac{1}{2}$ miles away, is the Jackal Group, formerly called the Caledonia Group. Since the geology in the two areas varies considerably, they will be discussed separately.

NIILO GROUP:

In the area of the old workings the strata strike north and dip easterly into the hillside. Since the strata farther down the mountain have westerly dips, the structure has been interpreted as an anticlinal fold, the mineralization being in the eastern limb. Farther north the structure becomes more complex with the existence of a second anticline and much faulting and fracturing.

The mineralization consists of veins and lenses in faults which run parallel to the enclosing strata. It is of two types: 1) pyrrhotite veins and lenses containing also pyrite, chalcopyrite, gold and silver; 2) sphalerite and galena lenses, with gold and silver. In both types the gold and silver values are low. It is believed that the failure to obtain more encouraging precious metal results led to the abandonment of the property.

JACKAL GROUP:

In this area the strata strike roughly north and dip at about 30 degrees to the west. On the same strike, but dipping at about 70 degrees to the west, is a zone or zones characterized by a rusty appearance across talus and solid alike. Carbonaceous material is common, particularly near the argillites. The most easterly appearance of this zone is on the west side of a narrow valley where former owners cut a series of trenches and short adits. Their efforts revealed a zone averaging about 8 feet wide with fairly good values in silver, copper, lead and zinc along the hanging wall. Farther to the west there appears to be a parallel zone of similar material but of greater width. This zone can be traced across the talus for about 2000 feet and wherever bulldozer trenches have been cut across it the existence of high-grade pods, lenses and veins has been proven. In one case the zone has a width of at least 35 feet.

The metallic minerals replace the host rock, quartz being virtually absent. They occur as massive concentrations of galena and sphalerite with pyrite, pyrrhotite, chalcopyrite and arsenopyrite. The samples are often magnetic, sometimes so strongly that the presence of magnetite is suggested although none was observed in hand specimens.

SAMPLING:

A total of 14 samples was taken on this examination. They were cut or selected by the writer and assayed by J. R. Williams and Son Ltd. of Vancouver.

The following samples were taken on the Niilo Group from the old Seven Sisters workings:

No.	Place	Width (ft)	Gold oz/ton	Silver oz/ton	Copper %	Lead %	Zinc %
5240	Shaft collar	1.5	0.005	14.35	0.16	3.60	24.80
41	S.drift face	2.0	Trace	0.50	0.05	0.45	20.50
42	Sorted ore	Grab	Trace	0.55	0.12	1.30	14.90
43	Adit portal	2.5	Trace	0.15	0.10	2.75	2.92
44	Trench on road	0.5	Trace	0.45	0.50	0.40	14.80

These results confirm the earlier statement that precious metal values are low. Zinc is generally high over narrow widths. The particularly high assays in the first sample indicate that the shaft was probably collared on a high-grade section which did not persist to depth.

The following tabulation is of samples taken from showings on the Jackal Group. The first two are from old workings on the former Caledonia; the remainder are from cuts and trenches opened up by the present owners.

No.	Place	Width (ft)	Gold oz/ton	Silver oz/ton	Copper %	Lead %	Zinc %
5232	Vein above adit	2.0	0.005	8.90	0.52	6.70	24.10
33	Dump below adit	Grab	Tr	3.90	Tr	3.30	8.20
34	Trench	1.0	Tr	14.15	0.12	14.20	11.50
35	Trench	2.0	Tr	2.65	0.15	3.00	9.40
36	Trench	4.0	0.005	0.10	0.04	0.60	1.10
37	Trench	1.5	0.01	3.90	0.18	5.60	3.55
38	Trench	35.0	0.005	7.60	0.85	4.50	13.20
39	Bluff	13.0	0.005	1.70	0.55	1.00	23.30
45	Trench	2.0	Tr	7.20	0.25	10.70	5.10

The results of sample 5238 should be considered with reservations. The sample was collected from a trench which was partly filled with water and mud. Chips were taken across four or five exposures protruding above the water level. Even if not continuous, a zone of considerable width is indicated.

Sample 5245 was taken from the end of a trench which had just been blasted. The mineralization continued into a talus-covered slope and may have width of more than 2.0 feet.

CONCLUSIONS:

Two extensive mineralized areas are known to occur on the Magnetron property. The possibility that they are connected and form part of a larger whole cannot be resolved at this time.

The Niilo exposures have been thoroughly explored from surface with disappointing results. If economic deposits exist in this area, they will probably be at depth. Unfortunately, the locating of target areas would be difficult because the masking effects of pyrrhotite and sphalerite would limit the usefulness of geophysical surveys. The best that could be done would be to drill a few magnetic highs and lows in the hope that silver and copper values in the pyrrhotite would improve with depth or, alternatively, that these values would be found in lead-zinc zones where pyrrhotite was less prominent.

The Jackal claims contain the zone of most immediate interest and efforts should be concentrated here for the present. The assay values are sufficiently high and the zone is potentially large enough to constitute an economic deposit. In addition, the fact that much of the mineralization is magnetic makes the use of a magnetometer feasible.

RECOMMENDATIONS:

In accordance with the foregoing discussion and conclusions, it is recommended:-

1. That initial exploration efforts be confined to the Jackal area.

2. That the work be done in phases, each phase to be dependent on the results of preceding phases, as follows:

PHASE 1:

1. Carry out road repairs and maintenance to improve access to the Jackal claims.

2. Conduct a ground magnetometer survey over an area centred on the known mineralized zone. The area to be covered will depend somewhat on results noted during the course of the survey but provision should be made for covering an area equal to six full-sized claims. Readings should be taken at 50 - foot intervals on lines 100 feetapart by an operator of recognized ability using an instrument with an accuracy of one percent or better.

3. Conduct a test induced polarization survey over selected portions of the same area in order to determine the suitability of this method for this property.

4. Have an aeromagnetic survey made of the region, flying on lines 1/8 mile apart and at a ground clearance of 300 feet. This survey would indicate other areas for detailed ground work if they existed, and it would help eliminate local effects due to overburden. Since the minimum cost would cover 100 line-miles, the area flown would be much greater than that of the property. It might indicate the advisability of staking more ground. This survey is not a high priority project but it should be done when equipment becomes available and weather conditions are favourable.

PHASE 11:

1. Continue road building and maintenance, and prepare drill sites.

2. Continue geophysical surveying if this is considered advisable from the results of Phase 1.

PHASE II Continued

3. Diamond drill target areas located by geophysical surveying. The amount of drilling required cannot be estimated at present but an allowance for 5000 feet should be made. Have core logged and sampled by a competent geologist.

4. Collect ore samples for metallurgical testing.

5. Prepare geologic maps, plans and sections, and make preliminary ore reserve calculations if success has been achieved to this stage.

PHASE III

This would be an advanced exploration phase possibly combined with development work. It would probably involve more diamond drilling from surface and the driving of an adit for bulk testing and underground drilling.

PHASE IV

This phase would involve development work in preparation for mining operations. No estimates of the work required can be made at present.

COSTS:

The costs of the recommended programme can only be roughly estimated at present although the costs for Phase I can be regarded as fairly firm. The costs for Phase II are presented as a probable minimum. No attempt is made at estimating the costs of succeeding phases.

Phase I

Road repairs and maintenance		$ 5,000.00
Magnetometer survey: 8 days @ $200 =	1,600.00	
Mobilization	500.00	
Interpretation	500.00	2,600.00
I.P. Survey: 7 days @ $250 =	1,750.00	
Mobilization	750.00	2,500.00
Regional aeromag survey		5,000.00
Engineering and supervision		3,000.00
Camp Costs		2,500.00
Miscellaneous and contingencies @ 10%		2,100.00
Total Phase I		$ 22,700.00

COSTS: Continued

Phase II

Roads, drill sites, transportation	$ 5,000.00
Geophysical surveying (rough estimate)	3,000.00
Diamond drilling. Allowance for 5000 feet @ $15.00 per foot including mobilization, supervision, core logging, assaying, room and board, etc.	75,000.00
Metallurgical testing	5,000.00
Engineering and supervision	10,000.00
Camp costs	5,000.00
Miscellaneous and contingencies @ 10%	10,000.00
Probable minimum phase II	$113,000.00
Probable minimum phases I & II	$135,700.00

L. J. MANNING & ASSOCIATES LTD.

M. K. Lorimer, P.Eng.

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Duffell, S. and Souther, J.G. : Geological Survey of Canada, Memoir 329, "Geology of Terrace, Map - Area, British Columbia", 1964

Crosby, R. O. P.Eng : Seigel Associates Ltd., Personal communication.

CERTIFICATE OF QUALIFICATIONS

I, MALCOLM KEITH LORIMER, of the City of Vancouver, Province of British Columbia, Mining Engineer, hereby certify:

1. THAT I am a practicing Mining Engineer and reside at 3082 West 27th Avenue, Vancouver, B. C.

2. THAT I am a graduate in Mining Engineering of the University of British Columbia, Bachelor of Applied Science, 1950 and have been practicing my profession for over sixteen years.

3. THAT I am a member of the Association of Professional Engineers of the Province of British Columbia.

4. THAT I am a member of the Canadian Institute of Mining and Metallurgy.

5. THAT I am an associate of the firm of Hill, Manning & Associates Ltd., Consulting Mining Engineers, of 610 - 890 West Pender Street, Vancouver 1, B. C.

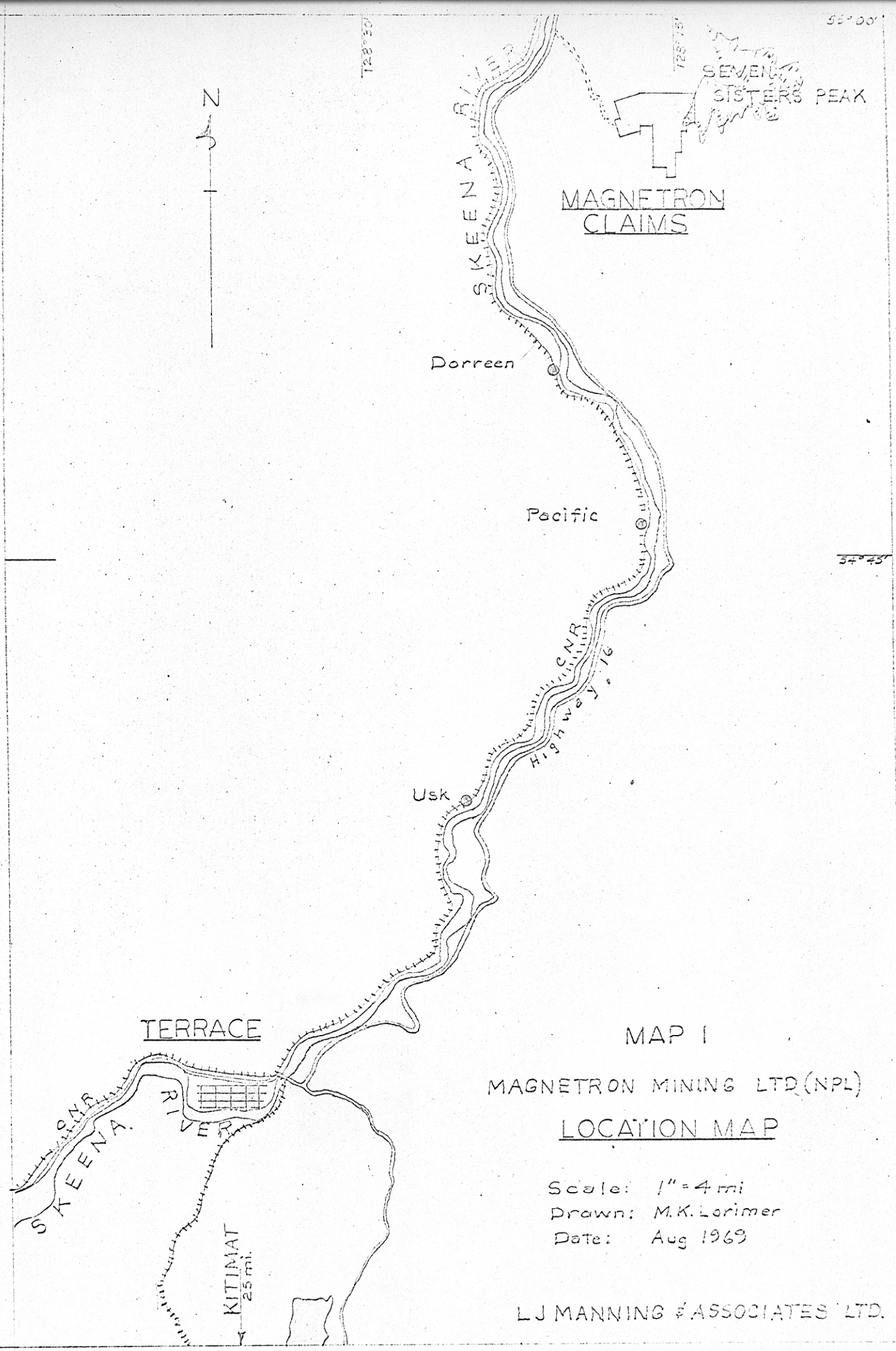
6. THAT the following is a true record of my employment and experience:

1950 - 52	General engineering, Consolidated Mining and Smelting Company of Canada Limited, Kimberley, B.C.
1952 - 56	Chief Engineer, Pioneer Gold Mines of B. C. Ltd., Pioneer Mines, B. C.
1956 - 57	Chief Engineer, Buchans Mining Co. Ltd., Buchans, Nfld.
1957 - 59	Chief Engineer and Mine Superintendent, Cowichan Copper Co. Ltd., Cowichan Lake, B. C.
1959 - 65	General Exploration work for various companies mostly in southern British Columbia.
1965 - 69	Associate, Hill, Manning & Associates Ltd., Vancouver.

7. THAT I have no direct or indirect interest in the properties or securities of Magnetron Mining Ltd. (N.P.L.) nor do I expect to acquire any.

DATED at Vancouver, British Columbia, this 14th. day of August ,19 69

M. K. Lorimer, B.A.Sc., P.Eng.



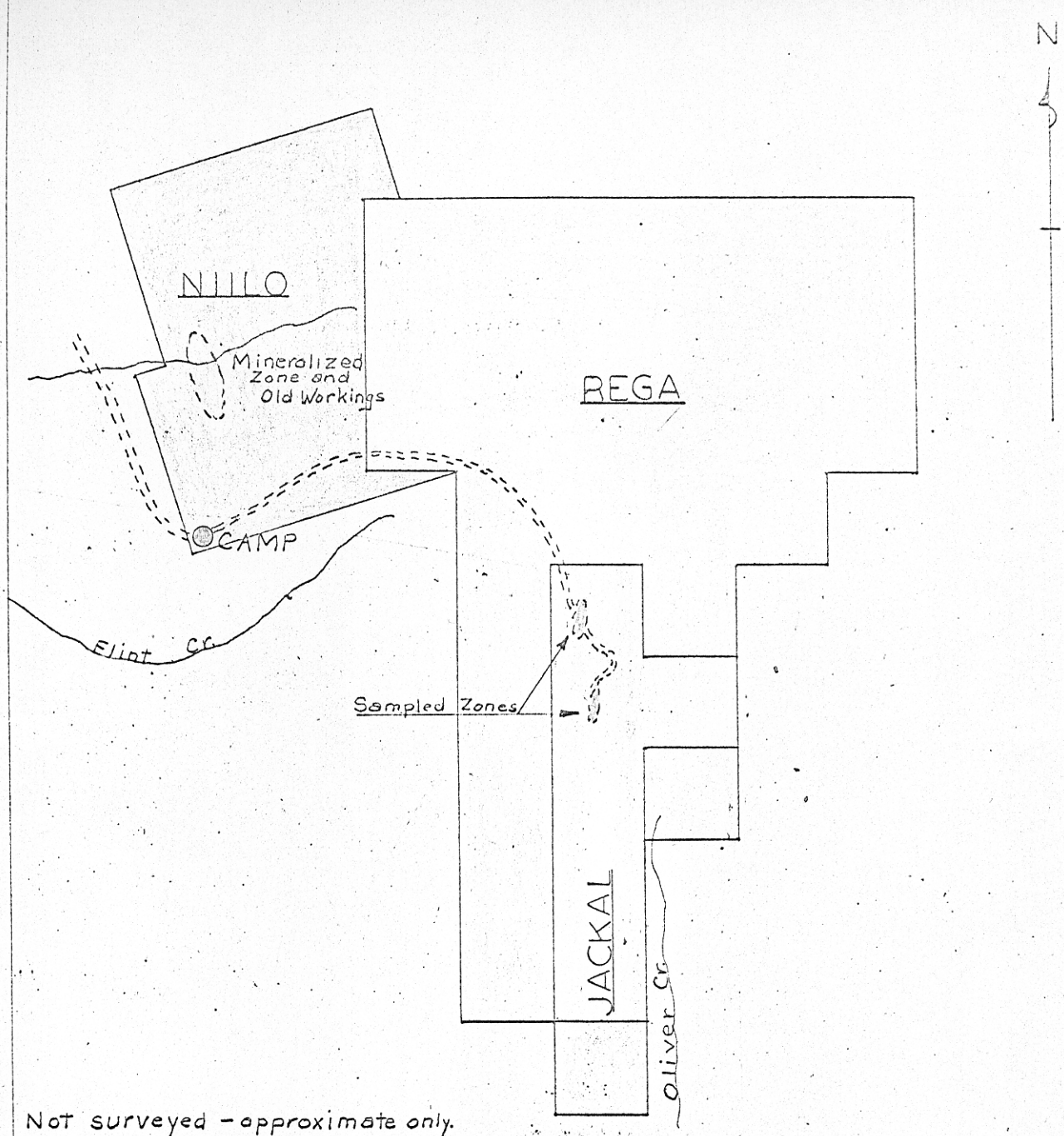
MAP 1

MAGNETRON MINING LTD (NPL)

LOCATION MAP

Scale: 1" = 4 mi
Drawn: M.K. Lorimer
Date: Aug 1969

LJ MANNING & ASSOCIATES LTD.



Not surveyed - approximate only.

MAP 2

MAGNETRON MINING LTD (N.P.L.)

PROPERTY MAP

Scale: 1" = ½ mi
Drawn: M. K. Lorimer
Date: Aug 1969

L.J. MANNING & ASSOCIATES LTD.