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GEOLOGICAL REPORT

ON THE

SILENCE LAKE MINING LEASE NO: 16 Kamloops Mining Division 82M/13E Latitude 51° 50.2, Longitude 119° 41-54 BY

JAMES S: FALCONER, P: ENG:

FOR

Owner/Operator: TROUDOR RESOURCES INC.

Work competed during period

JUNE 11 TO JULY 14, 1986

OCTOBER 20, 1986

FILMED

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SUMMARY

The Silence Lake Tungsten Mine, owned by Troudor Resources Inc., is located 38 kilometres northeast of Clearwater, British Columbia. Access to the mill site is via a 40 kilometre main haulage logging road from Clearwater. An open pit is located 500 metres north of the mill site and it is accessed by a mine haul road.

From June 11 to July 14, 1986 a small crew varying between 2 and 3 men conducted a geological survey on Mining Lease 16. The data collected from that work and documentation from previous operations form the bulk of this report.

A total of 1,954 metres of exploration diamond drilling and 1,897 metres of exploration percussion drilling were conducted on the property during the period 1972 to 1982. This work established 38,625 tonnes of proven and probable reserves in 1981. A production decision made in March 1981 by Dimac Resource Corp., the former owner, was followed by the construction of a 100 tonne per day mill. The mill, commissioned in October 1981, processed 18,350 tonnes of ore from a nearby open pit before operations ceased in November 1982. The mine and mill complex was sold to Troudor Resources Inc. during 1983.

Current reserves available at the property are:

	Reserve	Grade <u>% WO3</u>	Category	Short <u>Tonnes</u>
A	Tailings	. 3	Proven	16,500
В	Mill Stockpile	1.4	Proven	1,450
С	Pit Bottom	1.0	Probable	4,500

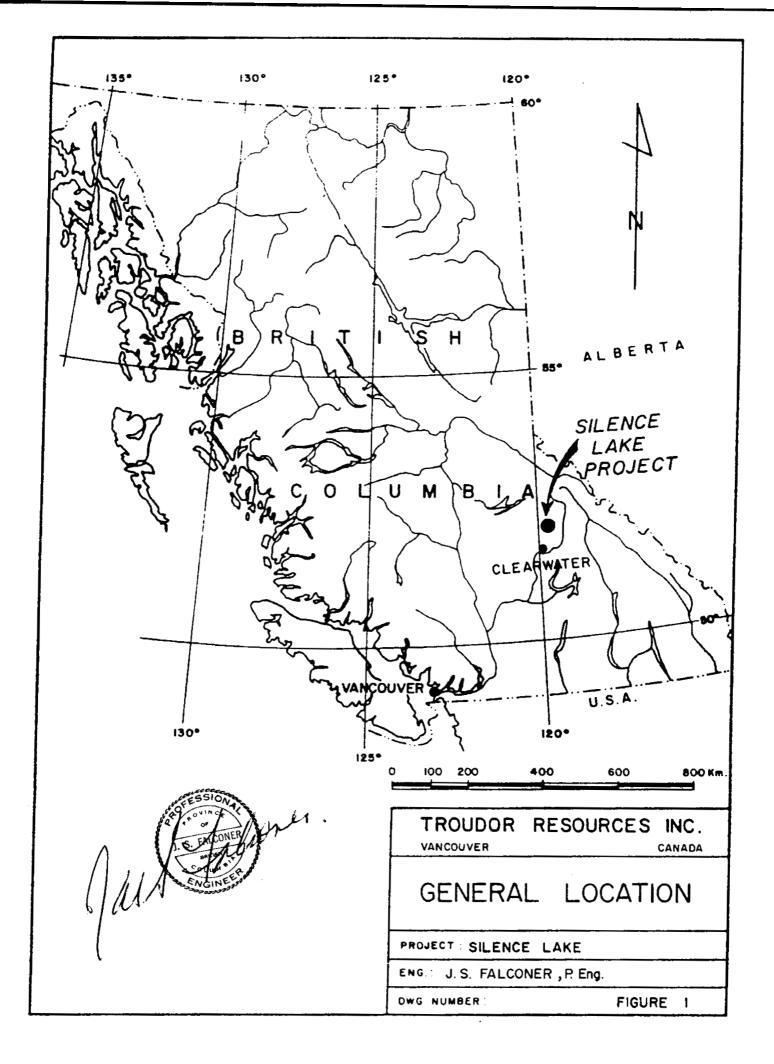
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Two high priority exploration targets exist immediately west of the present open pit. Underground ore reserves within these areas could most effectively be tested by driving an exploration drift from the pit floor (at an azimuth of $210^{\circ} - 215^{\circ}$) along the Lower Band of ore, which is exposed on the west face of the pit wall for a distance of approximately 50 metres. The drift would greatly facilitate drill access to the two priority targets and could potentially develop ore along the Lower Band as it is driven. Eight NQ diamond drill holes (for a total length of 583 metres) fanned out from a drill station cut at the end of the drift would test the two prority target areas.

A further two areas require surface exploration follow-up by prospecting, geochemical, geophysical and trenching surveys.

INTRODUCTION

The Silence Lake property was first staked in 1972 and exploration work was conducted through to 1982. During this period a total of 1,954 metres of diamond drilling and 1.897 metres of percussion drilling were completed. This work established 38,625 tonnes of proven and probable reserves in 1981. A production decision made in March 1981 by Dimac resource Corp., the former owner of the Mine, was followed by construction of a 100 tonne per day process mill. The plant was commissioned in October 1981 and 18,350 tonnes of ore as processed from a nearby open pit before operations ceased in late November 1982. A total of 10,000 metric ton units of high quality gravity scheelite concenttate were produced and sold. Operations ceased due to rapidly falling tungsten prices at that time combined with the lack of sufficient quantities of ready ore to continue operations through the winter months.



LOCATION AND ACCESS

The Silence Lake Mine is located 38 kilometres northeast of Clearwater, British Columbia (see Figure 1). Access to the Silence Lake Mine is via a main haulage logging road which connects the property and Clearwater, B.C. This logging road joins the Yellowhead Highway approximately 6.5 Km east of Clearwater and follows the Raft River for 40 Km to the property. A network of roads provide access to the properties explored area which is located on the west flank of Maxwell Creek some 4 Km above its confluence with the Raft River. The open pit mine site lies approximately 500 metres to the north of the mill site and it is accessed by a gravel haulage road.

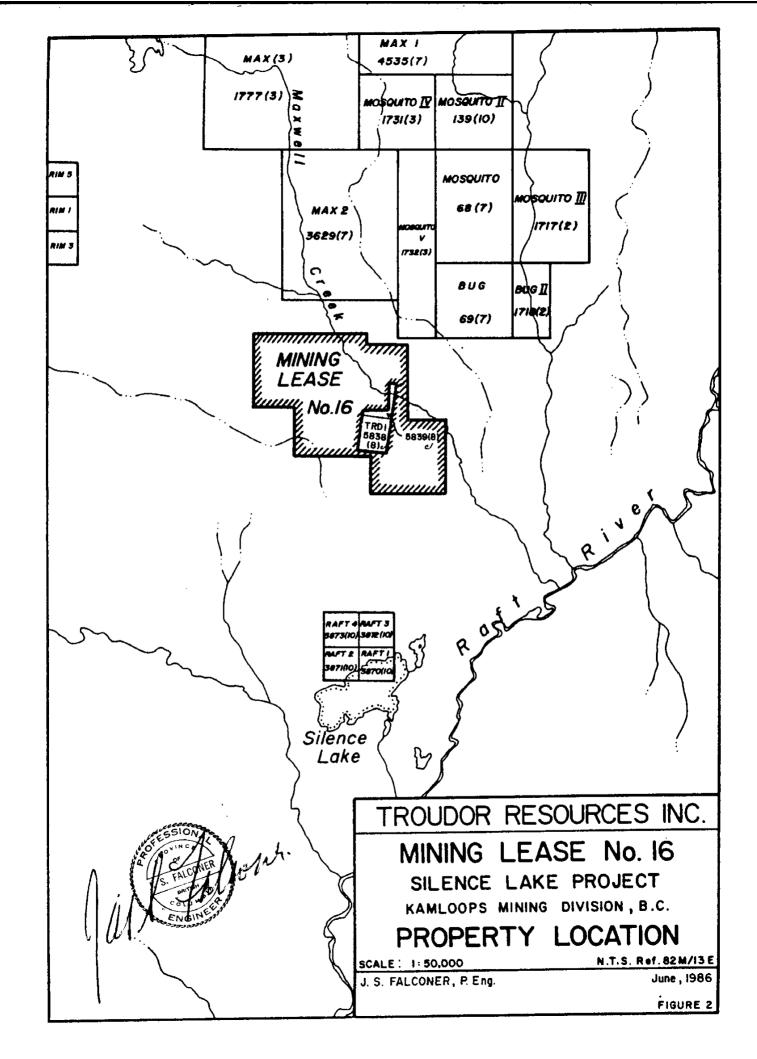
PROPERTY AND OWNERSHIP

The property acquired by Troudor Resources Inc. consists of a single mining lease having Record No. 16. The lease encompasses 346.9 hectares and was established July 20, 1981. The mining lease is shown on B.C. Department of Mines claim map 82M/13E (see Figure 2).

PHYSIOGRAPHY

The property area lies on the eastern border of the Interior Plateau which is a highly dissected upland, with broad rounded summits having uniform elevations of about 2,400 metres, with isolated peaks rising a further 300 metres. The streams within the general area occupy valleys 1,200 metres deep. The timber line ends abruptly at about 2,130 metres above sea level. The main physical feature enroute to the property is the Raft River. It is relatively youthful in appearance and its valley is narrow with steep

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sided flanks. Maxwell Creek which crosscuts the property is one of the numerous creeks that drain the surrounding upland via steep sided drainage cuts.

PAST EXPLORATION SUMMARY

1) During 1972. Union Carbide Exploration Corp. staked the Boulder Group of mineral claims to cover an area of float containing scheelite. In the same year they completed a program of geological mapping and 8 diamond drill holes totalling 540 meters of drilling. Two holes intersected scheelite mineralization.

A further 3 holes were drilled in 1973 for a total of 438 meters. These diamond drill holes were exploratory in nature and all were unsuccessful in locating additional scheelite bearing skarn. Union Carbide dropped the claims, and the area was re-staked in 1976 by United Mineral Services Ltd.

2) In 1977 United Mineral Services Ltd. carried out a trenching program and established the presence of tungsten mineralization in at least two distinct skarn bands. These were termed Upper Band and Lower Band.

3) In 1978, N.C.A. Minerals Corporation, under an option agreement with United Mineral, drilled 18 percussion holes for a total length of 287 metres within the Upper Band and Lower Band area. These holes confirmed high grade tungsten mineralization within the skarn bands.

4) In the summer of 1978 United Mineral Services removed some 1800 tonnes of ore for stockpiling. Metallurgical investigations were carried out by Bacon, Donaldson and Associates Ltd. and 180 tonnes of ore were trucked to and processed through a flotation mill located at Lumby, B.C.

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5) In 1979, United Mineral Services Ltd. sold the property to Dimac Resources Corp. Dimac completed 20 drill holes totalling 500 metres in the latter part of 1979 and early 1980. Nineteen of these holes intersected scheelite mineraliation. This work was followed by a technical analysis and ore reserve calculation by Brian Mountford and Associates Ltd. During 1982 and open pit or quarry was developed measuring 250 metres by 115 metres. From this pit 18,350 tonnes of ore was removed and sent to a 100 ton per day processing mill located nearby on the property.

6) In 1982 an exploration program was carried out during August and September by Dimac Resource Corp. During August, eight diamond drill holes totalling 476 metres of drilling were located in the general area of the developed pit (see Plate 1A for locations). This diamond drill program was followed by a percussion drill program consisting of 1,609 metres in 15 holes. The percussion holes locations (see Plate 1A and 1B) were determined by the availability of pre-existing road access.

RESULTS OF DRILLING PROGRAMS

1) The 1972 Union Carbide drill program outlined the general geological setting in which skarn lithologies on the Silence Lake property occurred. These lithologies were found to occur within an area 50 metres wide and are known to extend approximately 600 metres to the southwest of their most easterly exposure near Maxwell Creek. Two diamond drill holes located within a 50 metre by 150 metre area intersected scheelite mineralization. Union Carbide did not follow-up on this area.

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2) The 1978, NCA percussion drill program was concentrated within the 50 metre by 150 metre area where previous Union Carbide drilling had indicated scheelite mineralization. Of the 18 holes drilled, 11 of these holes were drilled on what is termed the Lower Band and the remainder were drilled on what is termed the Upper Band. Results from the percussion drilling of the Lower Band indicated the presence of a minimum of 5,200 tons of material in the range of 2.0% WO₃ content. Results from the percussion holes placed in the Upper Band were inconclusive and no realistic tonnage or grade figures could be calculated.

3) Dimac's late 1979 and early 1980 drill program was again conducted within the 50 metre by 150 metre area as originally outlined by Union Carbide's holes. Twenty diamond drill holes were located and 19 of these holes intersected scheelite mineralization. The results of a technical study indicated 21,230 tonnes at 1.64% WO₃ (proven and probable) within the Upper Band and 17,395 tonnes at 1.75% WO₃ (proven and probable) within the Lower Band for a total of 38, 625 tonnes at 1.69% WO₃. A pit was developed which encompassed the mining of both the upper and lower bands. A process mill was constructed nearby and a total of 18,350 tonnes of ore was mined and delivered to it.

4) Dimac's August, 1982 drill program was designed to confirm the potential for western strike extensions of the Lower and Upper Bands. Diamond drill holes 82-1 and 82-2 were located at the 1174 bench elevation (see Plate 1A) and intersected mineralization of significant widths and grades (see Appendix C) for portions of the Lower Band but poorer than expected results for the Upper Band. Diamond drill holes 82-G2, 82-G4 and 82-G5 were located on the 1190 bench

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elevation. Diamond drill hole 82-G2 crosscut the upper band at a 45° angle and encountered limited tungsten mineralization suggesting that the limit of mineable ore for the Upper Band, in the pit area, is to the front of the 1190 bench.

Diamond drill 82-G4 and 82-G5 were encumbered by the problem of establishing adequate diamond drill set-ups. Of the two holes drilled only one encountered mineralization of a low grade nature. These holes, however, did not adequately test the lower band and the nature of the strike extensions of the lower Band are poorly known.

Three diamond drill holes (82-G1, 82-G3 and 82-3) (see Plate 1A) were drilled from an area south of the present pit location and were intended to test two exploration target areas. Two of the diamond drill holes were stopped short of the intended target due to diamond drilling difficulties while the third hold (82-G1) remained within intrusive rocks along its entire length of 110 metres.

The most significant results of this drill program were to show that tungsten mineralization of limited economic significance occurred in the immediate area where strike extensions of the Upper Band were deemed possible. Ore reserves potential of economic significance was confirmed to exist for the Lower Band in the area of the present pit floor and as far back as the present 1190 bench level. Total ore reserves cannot be accurately determined for this particular block of the lower Band with certainty due to the fact that a portion of this block has been mined and backfilled from about the 1190 elevation to the 1183 elevation.

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5) Dimac's percussion drill program which was carried out during September, 1982 consisted of 1,609 metres of drilling in 15 holes. The program was designed to be an attempt to quickly locate any previously unknown tungsten bearing zones immediately west of the open pit. The program was hampered by the fact that only vertical holes could be drilled and drill locations were determined by road access availability. Due to the tabular nature of the known ore zones which have generally steep attitudes $(55^{\circ} - 70^{\circ})$ the program could be expected to meet with limited success. In addition to previously described constraints, the apparent nature of the tungsten mineralization to lie close to the underlying granitic floor would further reduce the chances of intersecting a mineralized lense. This program, because of economic constraints, was necessary for Dimac Resource Corp. to undertake in the hope of quickly finding additional ore reserves.

Although unsuccessful at locating any ore zones many sections of well developed skarn lithologies were located. Skarn intersections were particularly evident in percussion drill holes S.2. S.3, S.4, S.6, S.11 and S.12 (see Appendix D). In addition to locating areas of greater skarn abundance the percussion drill program indicated that the pendant-intrusive floor contact (the area of apparent major tungsten deposition) may be at a deeper level within the western portion of the property than at which it is found in the present pit area. In the pit area the pendant-intrusive contact lies within the 1165 to 1175 metre elevation. Percussion drill results suggest that the pendant-intrusive contact may lie approximately within the 1140 metre elevation at a distance of 190 metres southwest of the pit. Future exploration should take into account the apparent variability in elevation of what appears to be an irregular intrusive floor.

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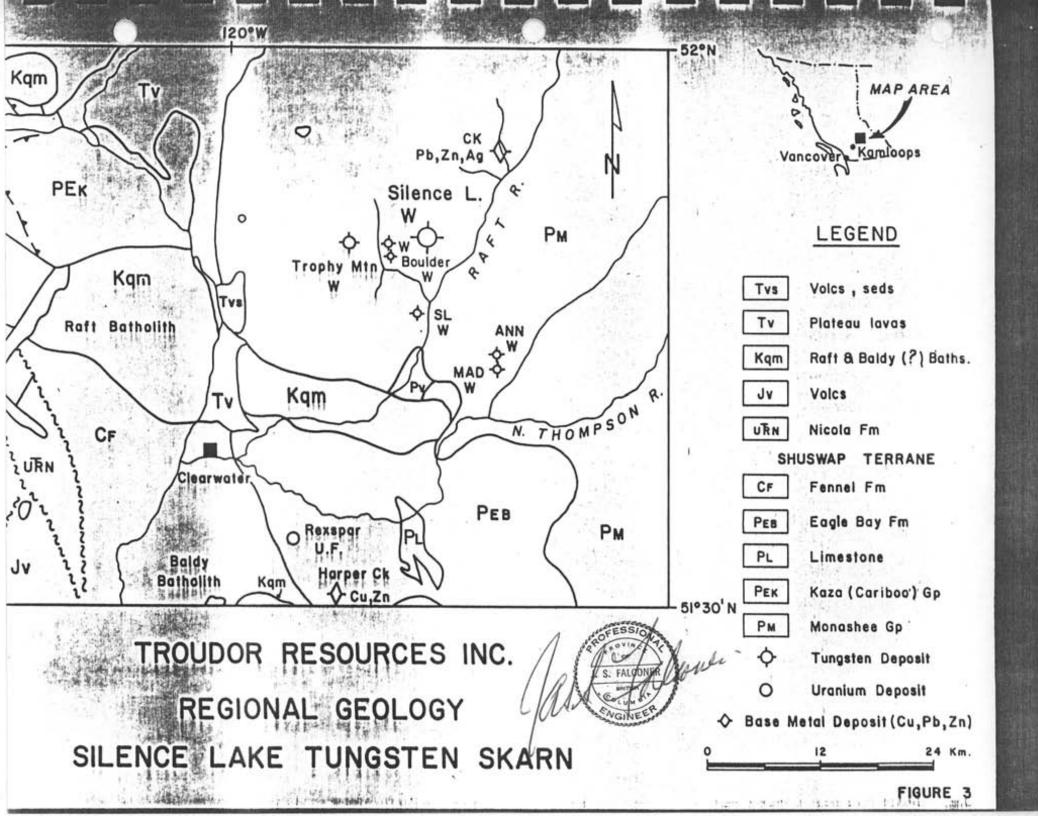
GEO LOGY

General

The Silence lake tungsten skarn is situated within metasedimentary rocks probably correlative with the late Proterozoic Snowshoe Formation of the Cariboo District (see Figure 3). This pelite-carbonate sequence is regionally metamorphosed to upper amphibolite facies, isoclinally folded about north west axes and intruded by mid-Cretaceous(?) quartz monzonite and early Tertiary (64 + 2 Ma) alaskite. A synformal metasedimentary pedant exposed over a 50 X 50 meter area (pit location) is underlain by biotite quartz monzonite similar to that of the adjacent Raft Batholith, cored by pegmatitic alaskite, and converted to scheelite bearing calcic skarn (see Figure 4). Skarn assemblages reflect original rock compositions and the varying metasomatic influences of two plutons. Pure limestone of the Upper Band has been converted to wollastonite-grossularite skarn whereas calcareous pelite of the Lower Band has been converted to a less calcic skarn assemblage of actinolitevesuvianite-diopside-pyrrhotite. A siliceous, tungsten-rich skarn formed at the expense of earlier formed assemblages may be the result of emplacement of pegmatitic alaskite.

Description of the Property

The Silence lake area is underlain by calcareous and noncalcareous biotite schists, marble and quartzo-feldspathic biotite gneisses, that have been thermally and metasomatically altered by intrusive rocks of predominately quartz monzonitic composition. The metasedimentary series has been deformed by at least one phase of folding. Dynamothermal metamorphism has created an amphibolite grade of metamorphism which is particularly evident in kyanite bearing quartzo-feldpathic gneisses. Some evident suggests that the metasedimentary



series has been folded into tight, overturned, isoclinal folds that locally strike northwesterly.

Metasedimentary rocks have been intruded by granodiorite, quartz monzonite, alaskite and pegmatitie. Quartz monzonite is the predominant granitic lithology and surrounds the northeasterly striking metasedimentary pendants. Alaskite and pegmatite intrude and are possible a late stage differentiate of the quartz monzonite. Greisen alteration if found over printing all granitic lithologies but is best developed in the alaskite and pegmatite phases. Quartz veins associated with late stage hydrothermal activity crosscut all lithologies and are related to the alaskite and pegmatite phase of intrusion.

Contact metamorphism has created a variety of hornfelsic lithologies of the albite epidote and hornblende hornfels facies of metamorphism.

Contact metasomatism followed contact metamorphism and resulted in a variety of skarn assemblages. The skarn assemblages display a metasomatic zonation which indicates that the replacement of various skarns may result in the most calcic minerals being consumed and the calc-silicate minerals remaining in the replacing skarn more abundant and richer in total iron content.

Scheelite mineralization is found to be distributed within particular skarn assemblages in such a manner to form tabular masses. Of the variety of skarn assemblages that occur on the property three important assemblages predominate,

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1) Siliceous Garnet Skarn

This skarn type consists of coarsely crystalline, garnet (andradite-grossularite), diopside, idocrase, scheelite and quartz. This assemblage is widespread on the property, as evidenced in both outcrop and drill hole intercepts. Within the Upper Band(see Figure 4) this assemblage hosts the economic scheelite mineralization and replaces a more calcic wollastonite skarn assemblage.

2) Pyroxene Skarn

This skarn type consists of medium to coarsely crystalline, garnet (FE and Mn rich grossularite), actinolite, vesuvianite, diopside and pyrrhotite. It has been best developed within the lower Band and appears to be limited in its distribution to the explored area of the Lower Band. Pyroxene skarn hosts economic scheelite mineralization and it may replace siliceous garnet skarn lithologies.

3) Wollastonite Skarn

This skarn type consists of medium to coarsely crystalline, garnet (grossularite), diopside and relict calcite. This assemblage has formed at the expense of pre-existing marble lithologies and is found to be replaced by siliceous garnet skarn. Wollastonite skarn has a widespread and variable distribution throughout the property. Although it does not host any tungsten mineralization it may lie within sharp contact to areas in which siliceous garnet skarn may host scheelite mineralization.

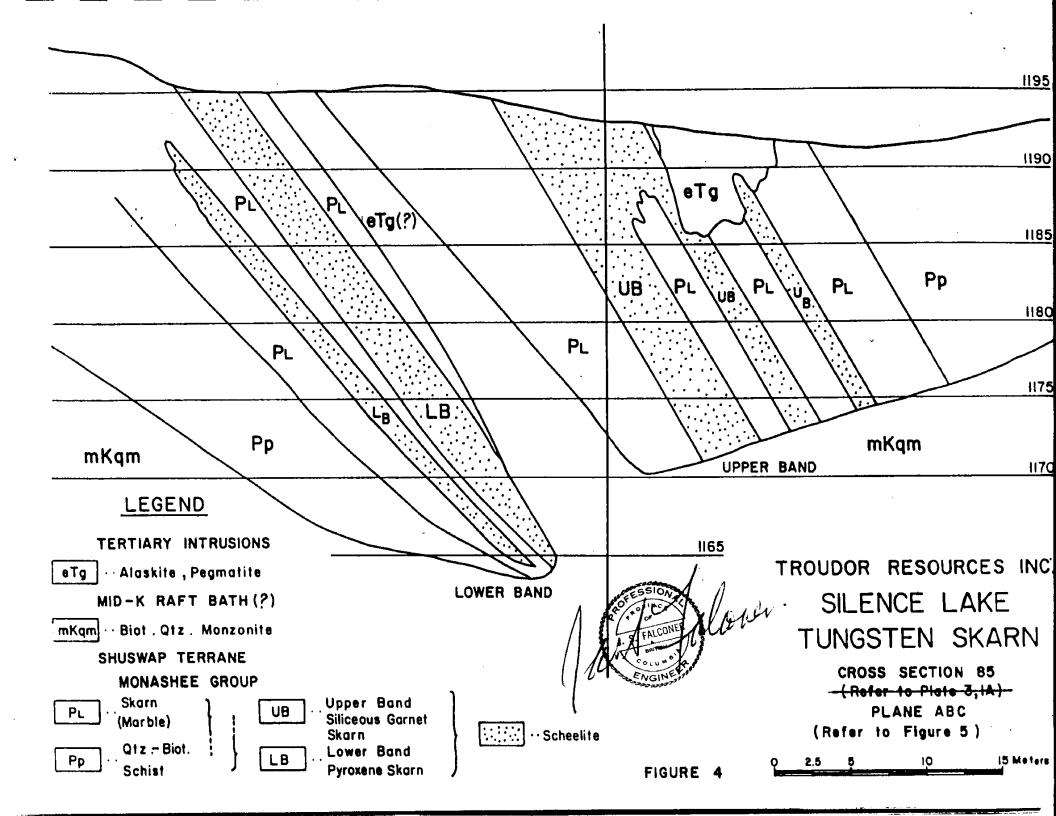
Zones of contact metasomatism that have been delineated are commonly composed of varying proportions of the these three skarn assemblages. These zones have widespread horizontal and vertical distribution as seen in both outcrop and diamond drill intercepts. Within these zones varying amounts of scheelite mineralization can be observed. Siliceous garnet skarn and pryoxene skarn host the most significant concentrations of scheelite while wollastonite skarn has not been found to contain any appreciable amount of scheelite. Quartz segregations are frequently noted to occur as irregular masses within and bordering siliceous garnet skarn and pyroxene skarn. The quartz bodies have as yet, yielded no scheelite, however, in other parts of the same zone scheelite may be found to be concentrated. In areas of siliceous garnet skarn, it has been noted that the most abundant concentration of scheelite is found where quartz is also abundant. The garnetquartz-scheelite association appears to be the most productive skarn assemblage, however, the actinolite, vesuvianite, diopside and pyrrhotite association of pyroxene skarn does contain unusually high grade concentrations of scheelite.

The formation of the silicates of the garnet and minerals of the pyroxene and amphibole groups, when accompanied by abundant excess quartz, indicates an environment in which scheelite mineralization may be expected to form. This environment appears to be best developed in areas where calcareous lithologies. This trough geometry (see Figure 5) may have also influenced the distribution of the alaskite and pegmatite intrusive rocks with wich the known tungsten bearing skarns are spatially related.

EXPLORATION POTENTIAL

Past exploration programs have shown that tungsten mineralization is localized within siliceous garnet skarn and appears to be preferentially located near the base of a trough-like feature within the surrounding granitic rocks. The proximity of tungsten mineralization to alaskite-pegmatite lithologies suggests a possible genetic relationship.

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Two first priority target zones exist for further exploration. The area between DDH UC 9 and DDH UC 10 (see Plate 1) displays similar characteristics to the area mined. This area is re ferred to as Piority Area No. 1 Significant widths of wollastonite skarn along with lesser amounts of garnet skarn were cut by DDH UC 9 (see Figure 6B). These skarn lithologies are in turn cut by quartz segregations and veins. It is probable that the area in the vicinity of DDH UC 9 and DDH UC 10 represents an area of significant silica introduction which may have been associated with the deposition of tungsten at depths closer to the underlying granitic floor. Any interpretation of the underlying intrusive geometry in this region is unreliable due to the relative lack of data.

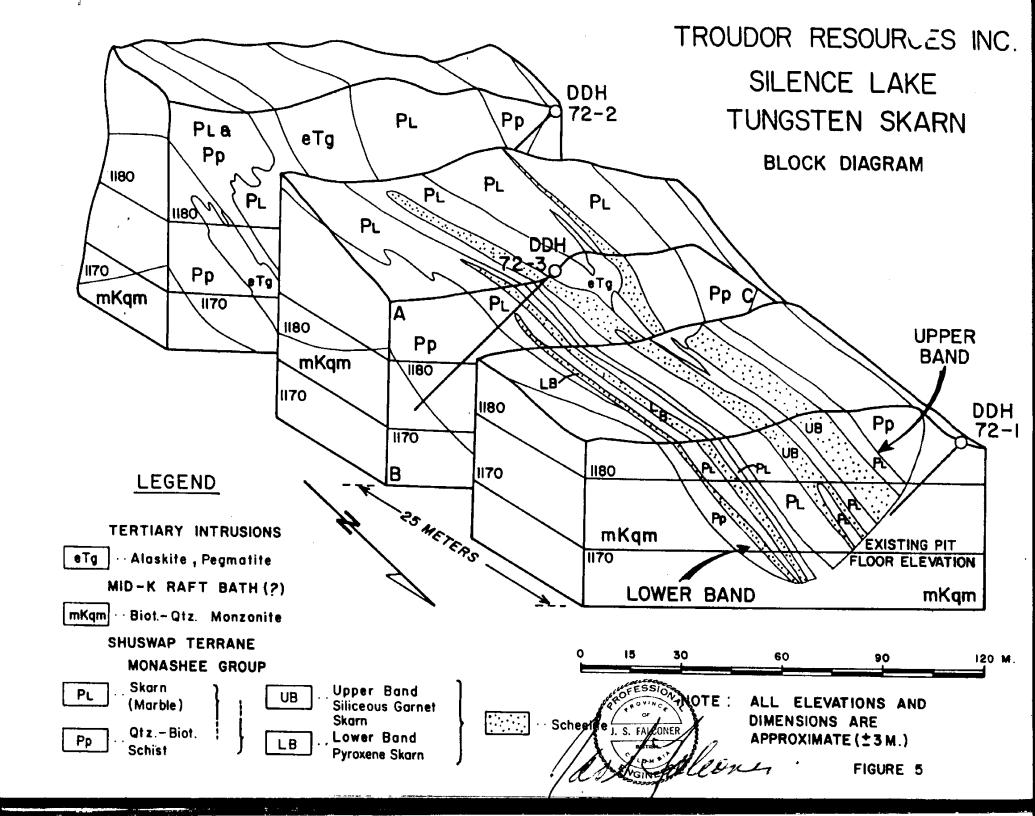
Priority Area No.2 is expressed by the results found in DDH UC 8 and DDH UC 4 (see Figure 6A). In general it has been found that for the mined orebody, the scheelite mineralization extended up from the granitic floor for a distance of 20 ± 3 meters (see Figure 4). It can be seen in Figure 6A that DDH UC 4 could have easily passed over a mineralized zone. At the same time, DDH UC 8 which consisted of altered contact metamorphosed hornfels lithologies shows there is a significant facies change in a vertical sense from lithologies found in DDH UC 4 and nearer to the underlying intrusive contact.

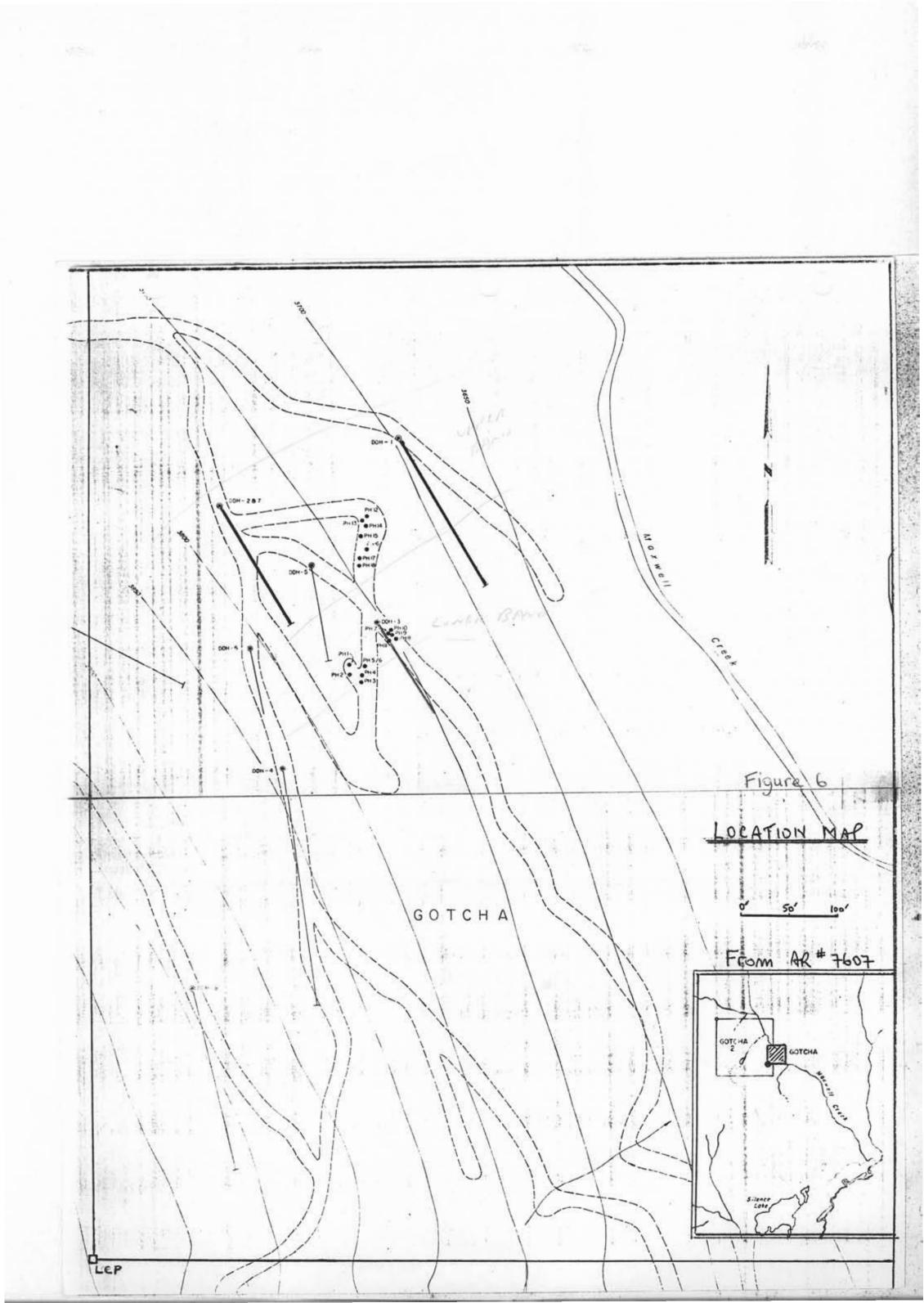
RECOMMENDED EXPLORATION PROGRAM

Av Stage One

It is recommended that a 2.7m X 2.4m (9'X8') tunnel be driven at a +0.5% grade along the most upper portion of the Lower Bank beginning at the present pit floor elevation of 1171.8 meters. The exploration drift should be developed along the ore of the Lower Band at an approximate azimuth of $210^{\circ}-215^{\circ}$

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for a distance of 50 meters. At the point in which ore appears to diminish (presently indicated by DDH UC 5) a diamond drill station should be established from which a series of inclined and horizontal holes with varying aziumths sould be drilled. The diamond drill holes located at this drill station will test both Priority Target No. 1 and Priority Target No. 2 for their tungsten content. The holes, as outlined in the following summary, are intended to crosscut and test the priority target areas as outlined on Plate 3. Eight holes for a total length of 583 meters (1,912 feet) should be allowed for in the exploration budget.

DDH	#1	6 5	m	300°	Horizontal	
DDH	#2	70	m	280°	Horizontal to - 2	5 °
DDH	#3	70	m	265 ⁰	Horizontal to - 2	5 °
DDH	#4	60	m	2 5 0 °	Horizontal to - 25	50
DDH	#5	80	m	210 [°]	Horizontal	
DDH	#6	100	m	195°	Horizontal to - 25	50
DDH	#7	80	m	185 ⁹	Horizontal to - 25	5 °
DDH	#8	58	m	175°	Horizontal	-

NQ drill core should be employed in order to ensure good core recovery and successful completion of the diamond drill holes. The varying dips of the holes reflect the infield decisions that will be required in order to test the skarn lithologies at varying distances from the underlying granitic basement rocks.

As has been suggested, there are indications that the granitic floor lies at an elevation of 1,140 metres in the general location of the target areas, which is lower thatn the pit area. If this is the case, then caution must be taken in determining deviations from the horizontal plane to intersect the appropriate lithologies in what may be the more favourable geological environment.

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B. Stage Two

During past exploration of the Silence Lake Property six Scheelite bearing skarn float samples and two areas of scheelite bearing soils were found (<u>see Plate 2B</u>). The source of the scheelite in this area has not been located to date. It is suggested that a grid be establised over this general area and that a systematic collection of silt and soil samples be undertaken. The panning down to the heavy mineral fraction of these samples could give an indication of the direction and source of the scheelite dispersal train that has been established. Trenching of selected sites could follow to locate the source of the float scheelite occurrences.

Another area for exploration is indicated by percussion hole S11 (1982) which intersected anomalously high tungsten results (.03% WO₃ to .06% WO₃) in an area generally considered outside the immediate area of exploration interest. This area should be carefully prospected in order to ascertain whether or not another pendant with skarn lithologies can be found. Past exploration efforts to delineate areas of metasedimentary rocks have been hampered by the lack of outcrop. If, as indicated by percussion hole S11, other pendants exist within the local area geophysical techniques might be useful in determing areas of metasedimentary lithologies in contrast to areas of intrusive lithologies. STATEMENT OF COSTS

LABOUR

J. Krone - Geologist - 9 days @ 210.00 per day
R. Lally - Prospector - 9 days @ 185.00 per day
H. Connors - Prospector -9 days @ 185.00 per day

Total wages	\$	6,670.00
4 X 4 Rental (10 days @ \$55/day)		550.00
Room & Board (22 man-days @ \$65/day)		1,430.00
Report Preparation		2,567.00
	<u>\$</u>	8,842.00

BIBLIOGRAPHY

.

 TRM Engineering Ltd. Report on the Silence Lake Project, 1983.

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CERTIFICATE

I, JAMES SELKIRK FALCONER, of Vancouver, British Columbia, hereby certify as follows:

- 1. I am a mining engineer residing at Suite 203, 1049 Chilco Street, Vancouver, British Columbia.
- 2. I am a Registered Professional Engineer in the Provinces of Alberta, Ontario and British Columbia.
- 3. I graduated with a degree of Engineer of Mines from the Colorado School of Mines in 1969.
- 4. I have practiced my profession for seventeen years.
- 5. I have no direct, indirect or contingent interest in the Silence Lake Property, subject of this report, or Troudor Resources Inc. nor do I intend to have any interest.
- 6. This report, dated October 20, 1986 is based upon information gathered from available maps and reports.
- 7. Permission is granted from the author to publish this report dated in any Prospectus or Statement of Material Facts.

DATED at Vancouver, Province of British Columbian this 20th day of October, 1986.

Mining Engineer