84-#263B - 12207 5

TNT CLAIM GROUP

FORT STEELE MINING DIVISION

PERIOD: AUGUST AND SEPTEMBER 1983

NTS 82G/4

LATITUDE 49°04'

LONGITUDE 116°00'

OWNER: ST. EUGENE MINING CORPORATION LTD.

OPERATOR: CHEVRON CANADA RESOURCES LIMITED

AUTHOR: LARRY DEKKER

DATE: APRIL 1984

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ILLUSTRATIONS

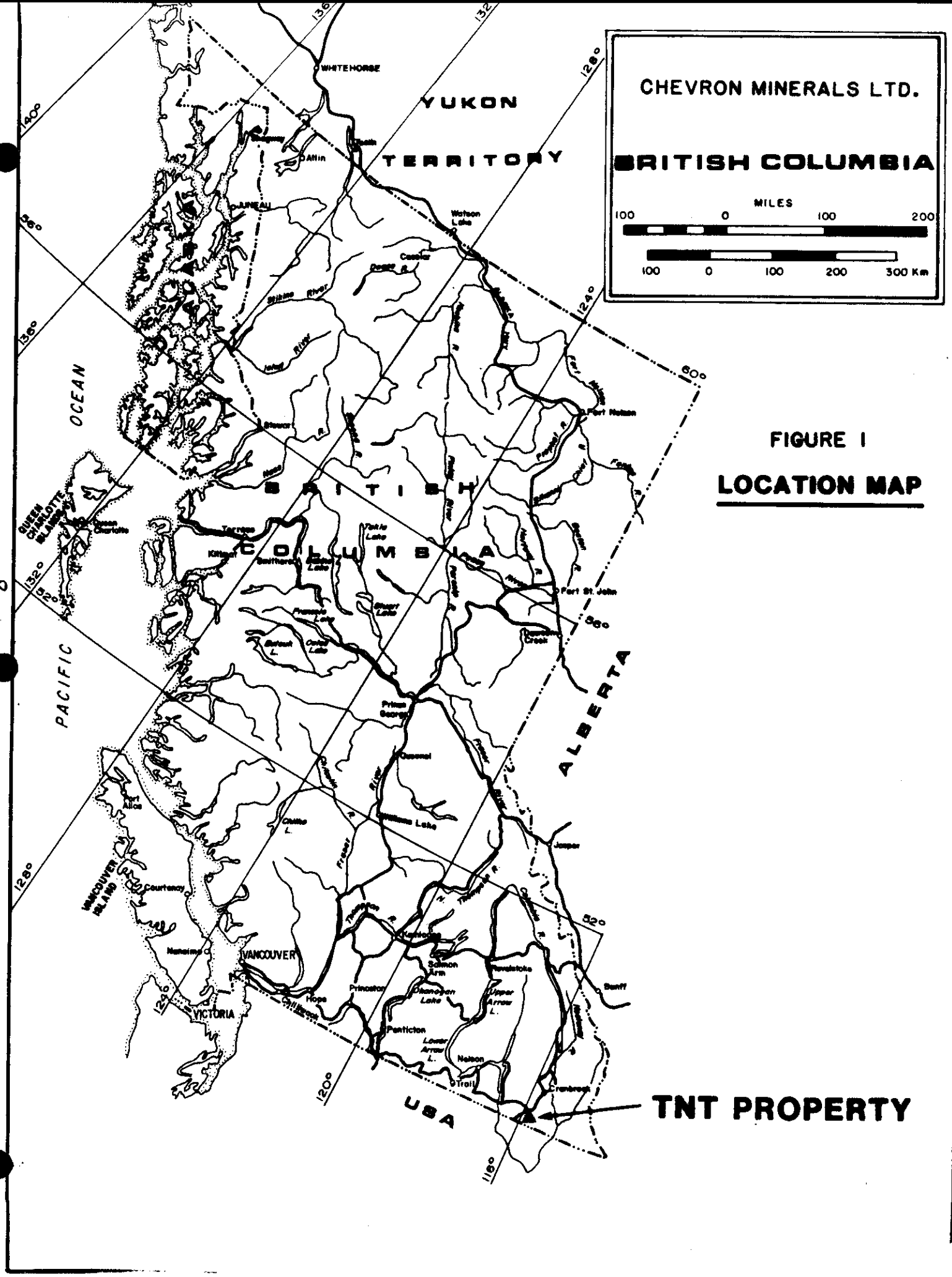


FIGURE I

LOCATION MAP

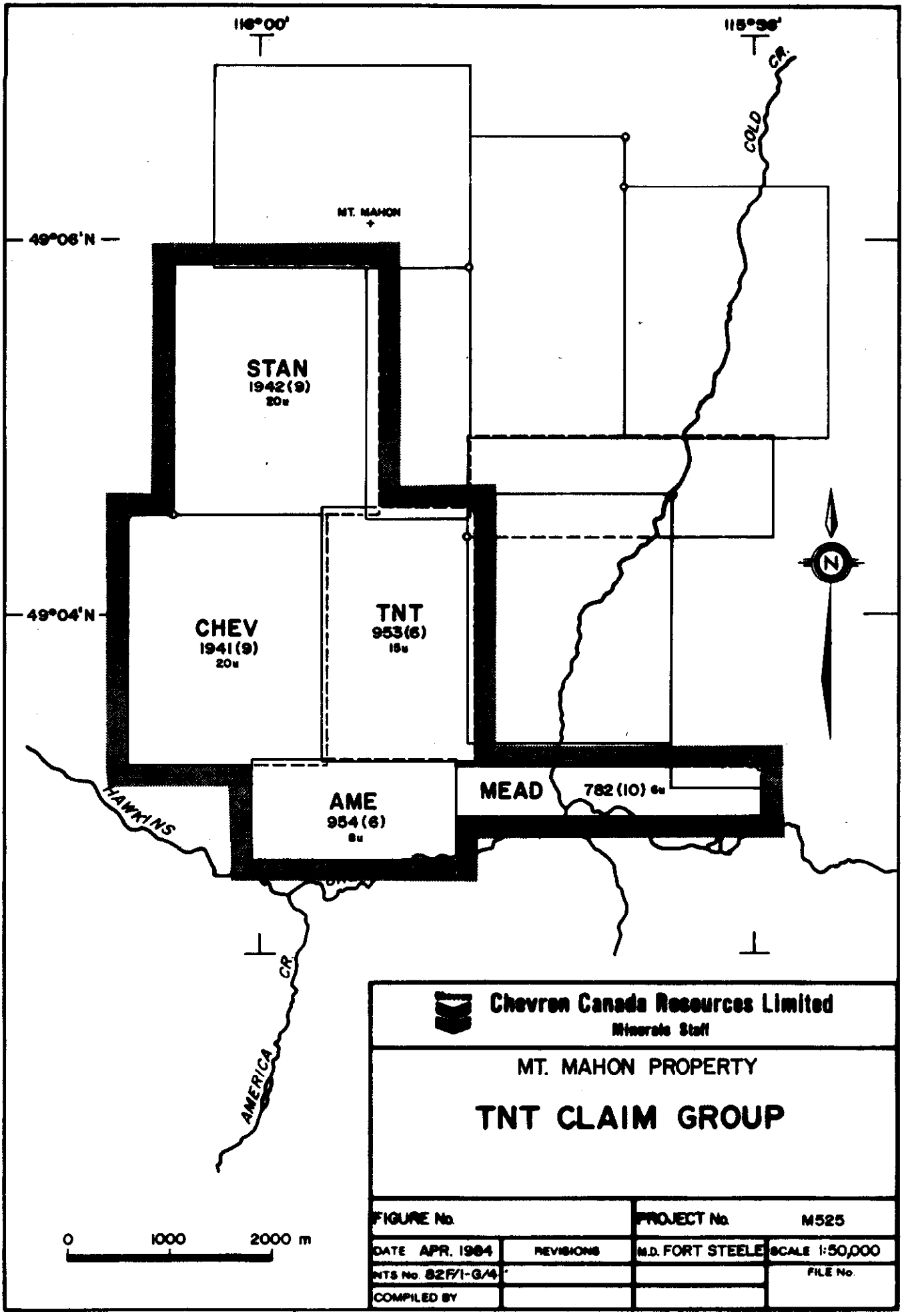
1. INTRODUCTION

The property is located in the Purcell Mountains in southeastern B. C., approximately 8 km east of the town of Yahk (Fig. 1). The property consists of a grouping of 69 units made up of the TNT (15 units), AME (8 units), MEAD (6 units), CHEV (20 units) and STAN (20 units) claims. It is underlain by metasediments of the Proterozoic Lower and Middle Aldridge Formations.

Chevron Canada Resources optioned the TNT, AME and MEAD properties from St. Eugene Mining Corporation Ltd. in 1983 to further explore the possibility for Sullivan-type mineralization. This group of claims form the southern and southwestern portion of a larger block of claims that are located on the east flank of Mount Mahon and which have been grouped as the Mahon claim (100 units). The bulk of the 1983/1984 work concentrated on the Mahon claim the result of which is discussed in a separate assessment report filed together with this report. Work on the TNT claim was restricted to geological mapping and prospecting. The results of this work should be interpreted and viewed in conjunction with the results of the Mahon claim exploration, as the geology extends uninterrupted over both claim groups. The SW corner of a grid established on the Mahon claim groups covers a small portion of the TNT claim, i.e. the NE corner of the STAN claims.

2. LOCATION AND ACCESS

The property can be reached by turning east off Highway #3 onto Hawkins Creek road near the north end of the town of Yahk. This road straddles the south boundary of the claim block starting at approximately kilometre 10. The northern portion of the claim group (STAN claim) is located on the southern extension of the ridge trending southward from the top of Mount Mahon. This ridge drops off moderately


116°00'
115°56'
49°06'N
49°04'N
MT. MAHON
STAN
1942(9)
20u
CHEV
1941(9)
20u
TNT
953(6)
15u
AME
954(6)
6u
MEAD
782(10) 6u
COLD CR.
HAWKINS
AMERICA CR.
N
0
1000
2000 m
Chevron Canada Resources Limited
Minerals Staff
MT. MAHON PROPERTY
TNT CLAIM GROUP
FIGURE No.
PROJECT No.
M525
DATE APR. 1984
REVISIONS
M.D. FORT STEELE
SCALE 1:50,000
NTS No. 82F/1-G/4
FILE No.
COMPILED BY

steep into the Hawkins Creek valley. All exposures were found as mostly bare patches straddling the eastern claim boundary along the eastern flank of this ridge down to an elevation of 4300'. Below this altitude dense spruce forest covering bedrock, gradually gives way to meadows with buckbrush, alder and birch of the Hawkins Creek valley which almost totally lacks outcrops. Access can be obtained by either travelling south from the top of Mount Mahon along the ridge or north up the slopes from Hawkins Creek road.

3. CLAIMS

The TNT claim (Fig. 2) consists of the following group of claims:

Claim No.	Record No.	Units	Date Recorded	Hectares	Expiry Date
TNT	953	15	June 20/1980	375	June 20/1984
AME	954	8	June 20/1980	200	June 20/1984
MEAD	782	6	Oct. 9/1979	150	Oct. 9/1984
CHEV	1941	20	Sept.23/1983	500	Sept.23/1984
STAN	1942	20	Sept.23/1983	500	Sept.23/1984
	Total	69 Units			

The TNT, AME and MEAD claims were staked by St. Eugene Mining Corporation Ltd. and optioned to Chevron Canada Resouces Limited in 1983. The CHEV and STAN claims were acquired by Chevron in the summer of 1983 to cover the tourmalinite float on the ridge trending south of Mount Mahon summit.

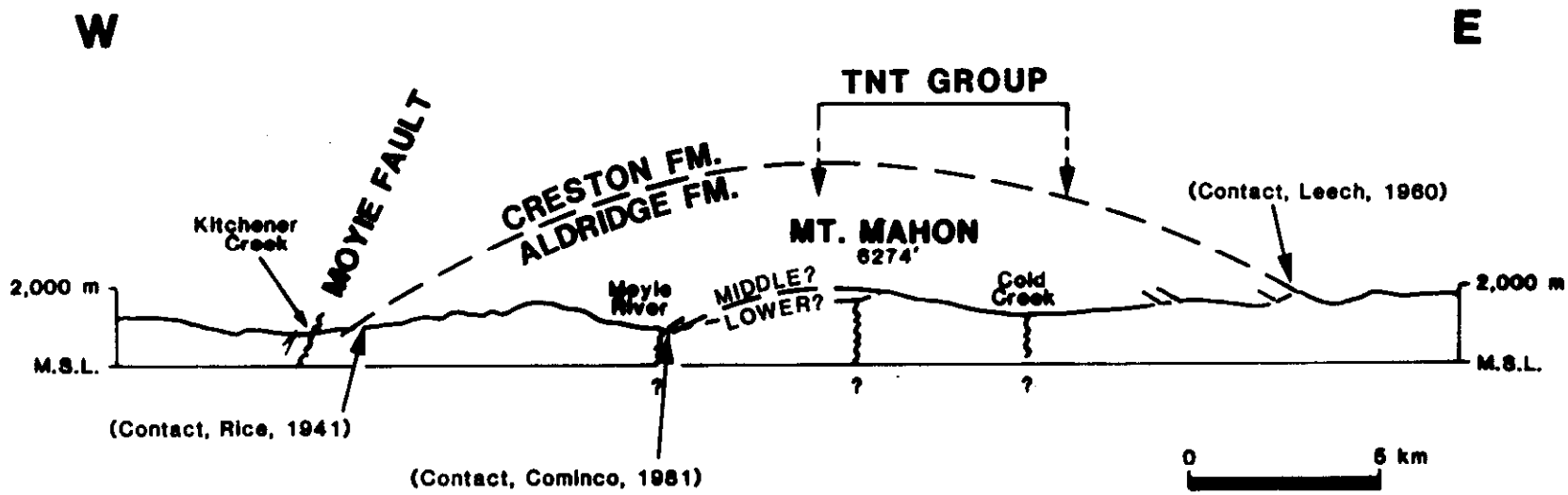
4. GEOLOGY

4.1 REGIONAL GEOLOGY

The TNT claims group is located on the southern extension of Mount Mahon ridge on the eastern flank and near the hinge zone of the Moyie Anticline, a

FIGURE 3

STRUCTURAL CROSS-SECTION
MOYIE ANTICLINE



M525

broad, extensive regional structure (Fig. 3). Strata exposed on the east flank of the ridge dip gently to moderately east near the northern claim boundary, but the dip direction changes to more southeasterly further south along the ridge, suggesting a slight shift in the trend of the anticlinal axis from a southerly to more southwesterly direction (Fig. 4, Pocket #1). Dips remain relatively shallow suggesting little or no change in plunge. The outcrops are virtually all dip slopes so that very little stratigraphy could be studied. It is estimated that only about 200 m of stratigraphic section is represented in the outcrop examined.

4.2 GEOLOGY OF THE CLAIM BLOCK

The claims are underlain by metasediments of the Middle Proterozoic (Helikian) Aldridge Formation of the Lower Purcell Super group. The claim area and the immediately surrounding area were mapped on a scale of 1:5000 (Figs. 4 & 5).

The Aldridge Formation sediments within the claim block consist mainly of sandstone, but also include siltstone and argillite. The rocks within the area have been recrystallized under upper greenschist facies metamorphic conditions, and the metasediments are characterized by a quartz-muscovite-biotite-garnet assemblage. Despite this metamorphism, the primary sedimentary structures within these Aldridge Formation rocks are very well preserved. The sandstones are generally fine to very fine grained. They weather typically light grey, are light to medium grey on fresh surface and are composed mainly of quartz (70 - 85%) along with biotite, muscovite and occasionally garnets. Beds range in thickness from a few cms to slightly more than a meter and are most commonly from 10 to 70 cm thick. These

sandstone beds are for the most part massive, lacking internal structures. Commonly, however, they have graded tops and pass upward into 1 to 3 cm thick intervals of dark grey argillite. Load casts, flame structures, and rare flute casts are locally present on the bases of these graded beds. These beds are interpreted to represent A-E turbidites of the Bouma (1962) turbidite sequence. Intervals of parallel laminated, very fine grained sandstone to siltstone occasionally occur in the upper portions of these beds. The silty to argillaceous tops of these beds are typically darker coloured, less quartzose, and are correspondingly more micaceous than the massive lower portion of the beds. The micas are commonly aligned to define a weakly to moderately well developed cleavage.

Outcrop within the claim group is mainly restricted to one area along the east flank of the ridge near the western boundary of the TNT claim (Fig. 3). These outcrops present portions of an extensive dip slope that extends along the E. flank of the mountain. No outcrops or float of tourmalinized rocks or intraformational conglomerate, such as found further north along the ridge and in the vicinity of the top of Mount Mahon, were encountered. The estimated projected traces of the four tourmalinite zones on Mount Mahon have, however, been projected southward onto the claims (Figs. 4 & 5). None of the rocks showed sulphide mineralization although small, rusty specks in the the sandtones could be indicative of now oxidized Fe sulphides.

Tourmalinite was not observed in places along the ridge, however, abundant tourmalinite float occurs on and adjacent to the ridge crest along the northern most 1.5 km of these exposures and probably indicates tourmalinization at approximately this stratigraphic level. The abundance

of the float and its distribution on the ridge suggests it is almost in place (Fig. 4). It is estimated that these tourmalinite occurrences are about 250 m lower in the section than the lowest tourmalinite zone exposed near the top of Mount Mahon (Fig. 6). Most of the tourmalinite occurs as finely banded and laminated, hard, dark grey to black weathering thin beds, or as finely bedded, laminated siltstone/tourmalinite couplets. The tourmalinite layers are typically a few mm's to a few cm's thick. No mineralization was found either associated with the tourmalinite or the metasediments.

5. CONCLUSIONS

The lack of exposures and the limited thickness of the stratigraphic interval that could be studied in detail in whatever outcrops are present makes it difficult to assess the mineral potential of the claim group. There certainly are no indications of sulphide mineralization in the very thin stratigraphic level exposed. As much of the claim is covered by overburden, more geology and prospecting is not recommended. Also geochemical soil sampling does not seem a very good tool for the reasons mentioned above. Without having a specific target, drilling is out of the question. For now, our work should concentrate on the area in the vicinity of Mount Mahon to the north where tourmalinite, intraformational conglomerates and massive sulphide mineralization do exist. If results from that area are encouraging, then possible geophysical techniques such as airborne EM with ground follow-up or gravity work should be conducted as the next step to identify possible drill targets.

L. Dekker

April 1984

PROFESSIONAL GEOLOGIST ALBERTA
LARRY DEKKER
May 2/1984
LICENSED TO PRACTISE

APPENDIX I

EXPENDITURE STATEMENT

TNT CLAIM GROUP

FORT STEELE MINING DIVISION

1) GEOLOGICAL MAPPING AND PROSPECTING

Labour	Position	Period	Days	Amount
Larry Dekker	Sr. Geologist	Aug./Sept./83	20 at $242./day	$4,840.00
A.Paul Schiarizza	Geologist	Aug./Sept./83	20 at $120./day	$2,400.00
				$7,240.00

2) OTHER EXPENSES

Travel (incl. truck, gas, etc.) 20 days at $30/day	$ 600.00
Food and Lodging 20 days at $60./day	1,200.00
Equipment	823.10
Report preparation (incl. drafting)	950.00
	$3,573.10

TOTAL	$10,813.10
ADD PAC	2,986.90
TOTAL	$13,800.00

APPENDIX II

CHEVRON PERSONNEL EMPLOYED ON THE TNT CLAIM GROUP

Larry Dekker
950 Cardero Street
Vancouver, B. C.
V6G 2G5

A. Paul Schiarizza
c/o B.C. Ministry of Energy, Mines and Resources
Geological Branch
Mineral Resources Division
Parliament Buildings
Victoria, B. C.
V8V 1X4

APPENDIX III

STATEMENT OF QUALIFICATIONS

L. DEKKER

I, Larry Dekker, have worked as a geologist since graduation from the University of Amsterdam, the Netherlands, with a B.Sc. Degree in Geology (1965) and a M.Sc. Degree in Stratigraphy and Sedimentology (1969).

I am a licensee (P.Eng.) of the Association of Professional Engineers, Geologists and Geophysicists of the Province of Alberta, a Fellow of the Geological Association of Canada, a member of the American Association of Petroleum Geologists and a member of the Canadian Society of Petroleum Geologists.

I am currently employed as a senior geologist by Chevron Canada Resources Limited, 1900 - 1055 West Hastings Street, Vancouver, B. C., V6E 2E9 and have been with this company for 15 years.

The exploration program on the TNT claim group was performed under my direction and supervision.

APPENDIX IV

STATEMENT OF QUALIFICATIONS

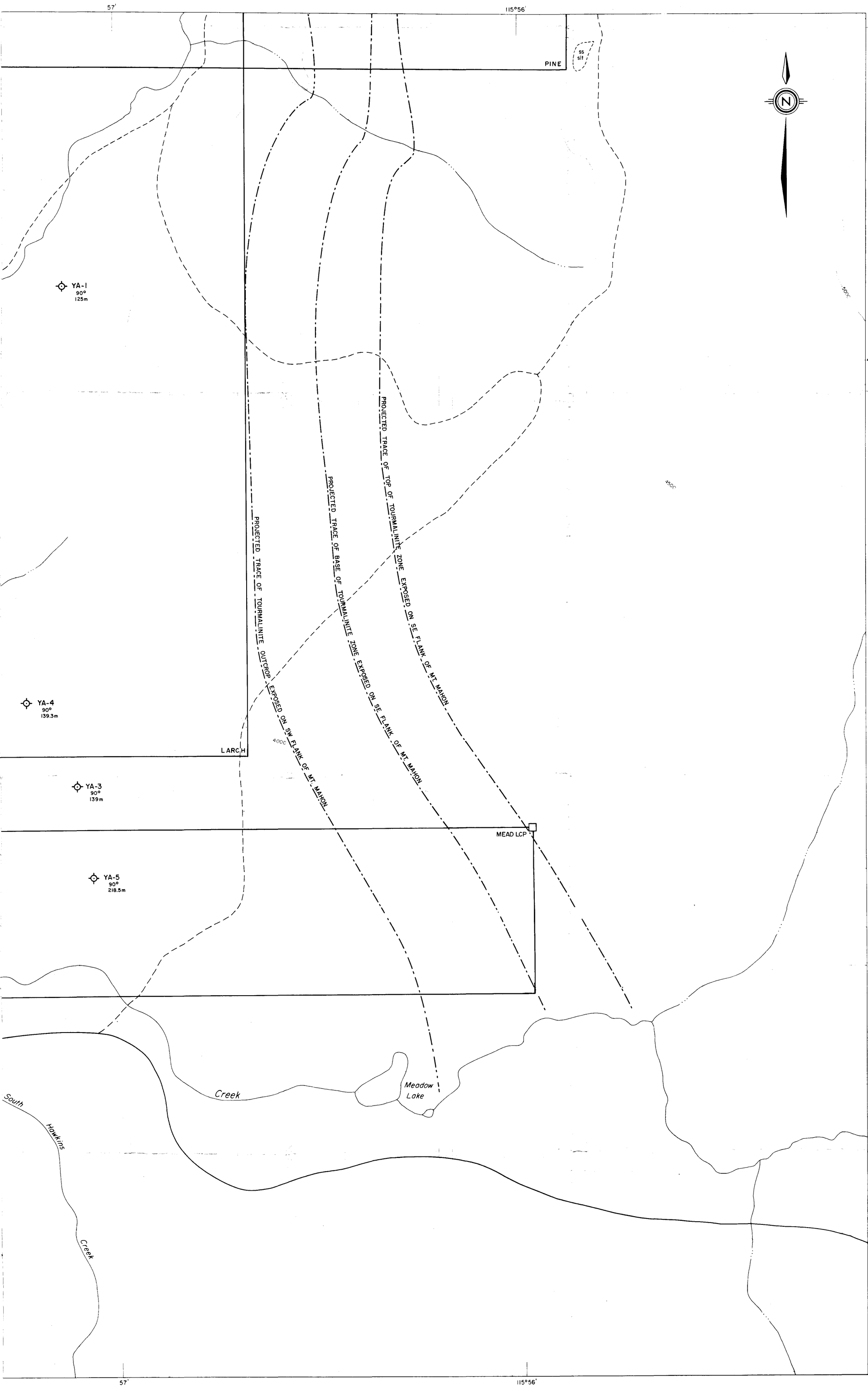
A. PAUL SCHIARIZZA

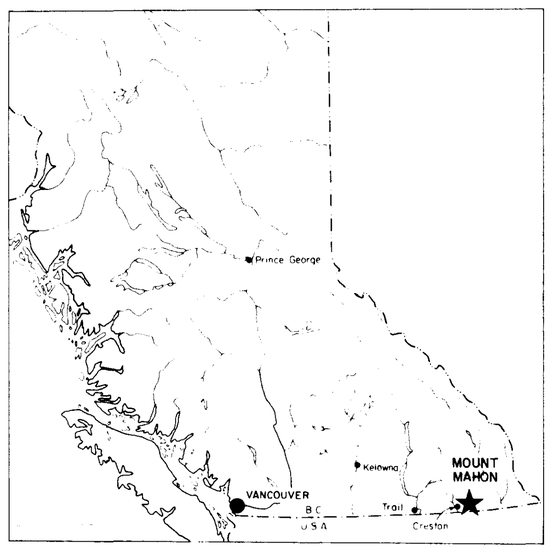
A. Paul Schiarizza holds a B.Sc. (Honours) Degree in Geology (1975) from Queen's University, Kingston, Ontario.

He has been employed as a research assistant at Queen's University (1974 and 1975), by Cominco (1978) and as a senior field assistant to Dr. V. A. Preto of the B.C. Ministry of Energy, Mines and Petroleum Resources (1978, 1979 and 1983). During the 1983 field season he worked as a senior field assistant for Chevron Canada Resources, Minerals Staff.


116°02'
01'
LCP CHEV
LCP STAN
4000
49°04'
5000
3500
4500
4000
CHEV
Hawkins
COMINCO HAWK 2
49°03'
3500
Creek
Creek
Canuck
3500
3500
116°02
01'


YA-9
92°
92°
YA-2
90°
183.5 m
Cold Creek
Hawkins
America Creek
LCP PINE
LARCH
TNT
MEAD
AME LCP
TNT
CHEV
AME
PROJECTED TRACE OF TOURMALINITE HORIZON (seen only in float)
ALONG RIDGE SOUTH OF MT MAHON
LINE OF CROSS SECTION
B
58'
59'
116°00'





LEGEND

MOYIE INTRUSIONS

GABBRO AND DIORITE

g — dark grey to green-grey, medium to coarse grained

ALDRIDGE FORMATION

SANDSTONE

ss — light grey weathering, light to medium grey, fine to very fine grained, occasionally argillaceous. Beds generally 10 to 70 cm thick; sedimentary structures include graded bedding; also load casts, flame structures, and rare flute casts at base. Intervals of 1 to 10 cm thick laminated siltstone and/or dark grey argillite at top (AE, AB and ABE turbidites?). Occasional thin-bedded, cross-bedded very fine grained sandstone alternating with ≈1cm thick beds of dark grey argillite and/or tourmalinized argillite

SILTSTONE

slt — rusty weathering, light to medium grey, finely laminated; also dark grey to rusty weathering, laminated; couplets of medium grey siltstone and dark grey carbonaceous and/or argillaceous siltstone

ARGILLITE

arg — medium to dark grey. Typically as thin beds or laminae within argillite/siltstone couplets, or as relatively thin horizons at the tops of graded sandstone beds. Commonly tourmalinized in the vicinity of Mt. Mahon. Porphyroblasts of biotite and/or feldspar often present

CONGLOMERATE

● cgl — typically consists of angular to subrounded flat fragments (up to 18 cm long) of dark grey argillite, tourmalinized argillite, and/or laminated siltstone/argillite within a fine to very fine grained sandstone matrix; conglomerate is intraformational

TOURMALINITE

T — black weathering, dark grey to black tourmalinized rock. Most commonly occurs as ≈2 cm thick layers of aphanitic "cherty" rock, comprised of 40 to 60 % very fine, felted tourmaline crystals, which replaces argillite at the tops of graded sandstone beds, or in thinly bedded sandstone/tourmalinized argillite couplets. Similar tourmalinite occurs as fragments within intraformational conglomerate. Less commonly it occurs in thicker sandstone beds as very fine felted tourmaline between sand-sized quartz grains

- ▼ TOURMALINITE, float
- · po PYRRHOTITE, disseminated, ≤2%
- Bedding (inclined, horizontal)
- Cleavage or Schistosity (inclined)
- Joints (inclined, vertical)
- qtz Quartz Vein (parallel to joint set)
- qtz qtz Quartz Vein (inclined, vertical)
- c Current Direction (from cross bedding)
- R Current Trend (from ripple marks)
- S Current Trend (from sole marks)
- x Outcrop
- Claim Boundary and Legal Corner Post
- YA-3 90° 139m Diamond Drill Hole (inclination, total depth)
- Grid Line
- Road
- 4500 Topographic Contour (100 foot contour interval)
- Stream
- B Line of Cross Section

0 100 200 300 400 500
metres

Chevron Canada Resources Limited
Minerals Staff

MOUNT MAHON GEOLOGY (SOUTH HALF)

FIGURE No. 5		PROJECT No. M525	
DATE 1983	REVISIONS		SCALE 1:5000
NTS No 92G/4W			FILE No.
COMPILED BY	L. DEKKER / P SCHIARIZZA		

GEOLOGICAL BRANCH
ASSESSMENT REPORT

12,207


116°02'
01'
49°06'
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3500
4000
4500
5000
5500
5600
LCP CHEV
LCP STAN

116°00'

59'

58'

5500

5000

6000

6200

4500

Y-12-81
300°/55°
215.5 m

Y-13-81
90°
154.5 m

Mt. McMahon

YA-7
270°/75°
90.5 m

YA-6
90°
124 m

YA-8
90°
100.3 m

A

A'

B

B'

C

C'

D

D'

LINE OF CROSS SECTION

PROJECTED TRACE OF TOURMALINITE HORIZON (seen only as float) ALONG RIDGE SOUTH OF MT. MAHON

PROJECTED TRACE OF TOURMALINITE OUTCROP EXPOSED ON SW FLANK

TOURM LCP

TOP LCP

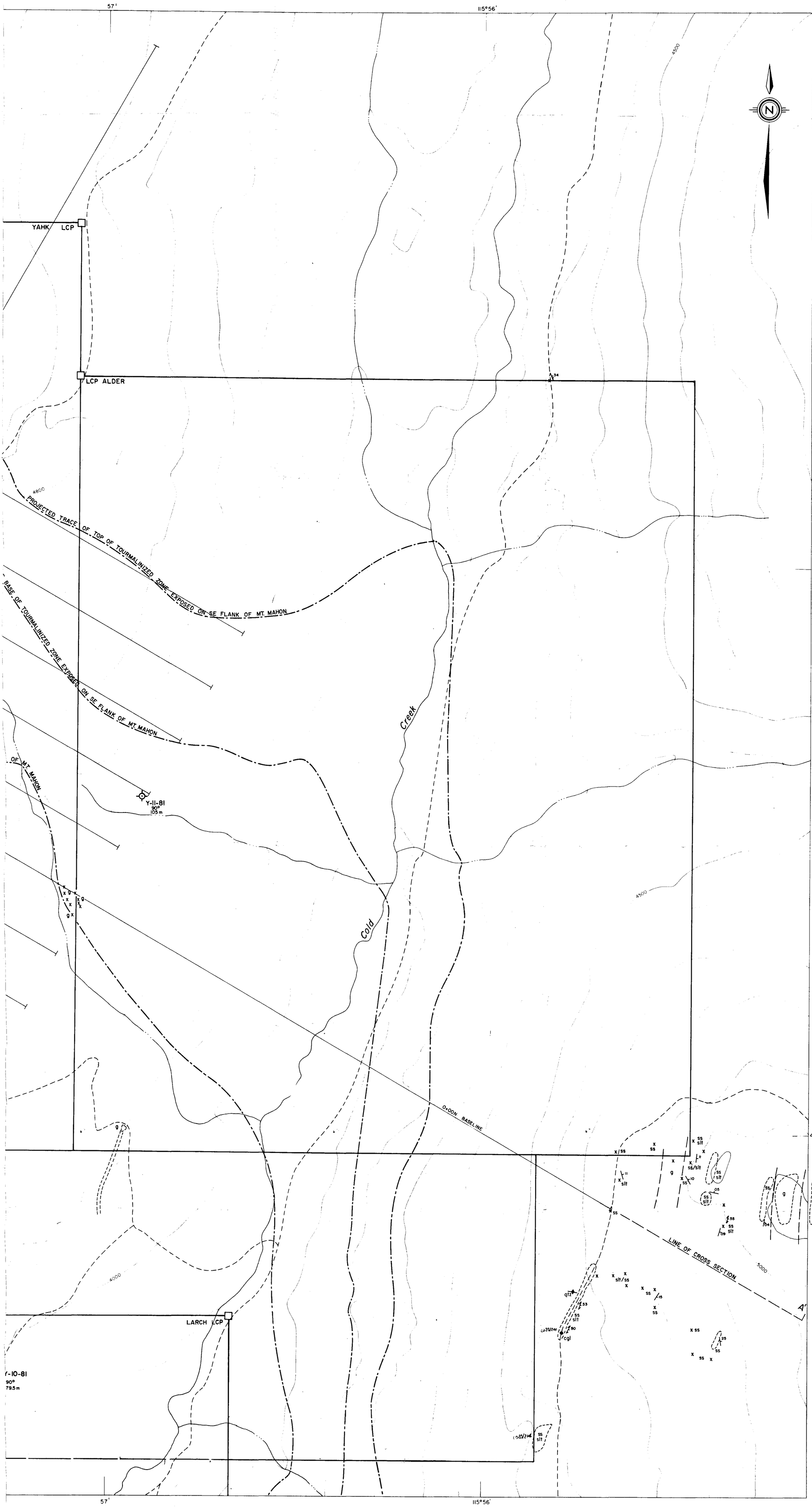
TNT LCP

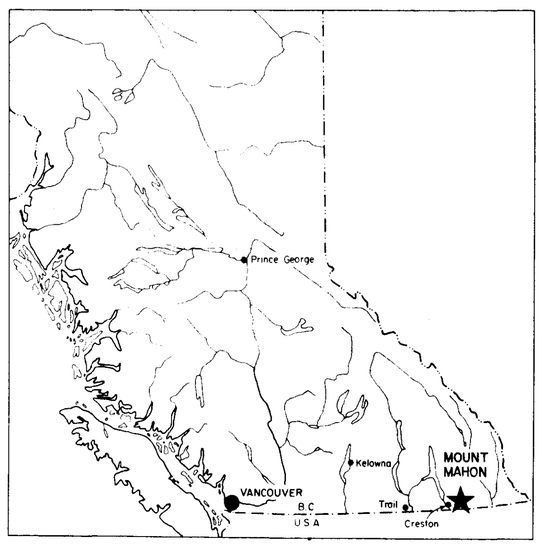
LCP PINE

0+00E BASELINE GRAVITY AND GEOCHEM GRID

SS/T float

ss float





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Grid Line
Road
4500 — Topographic Contour (100 foot contour interval)
Stream
A — Line of Cross Section

GEOLOGICAL BRANCH
ASSESSMENT REPORT

12,207

0 100 200 300 400 500
metres

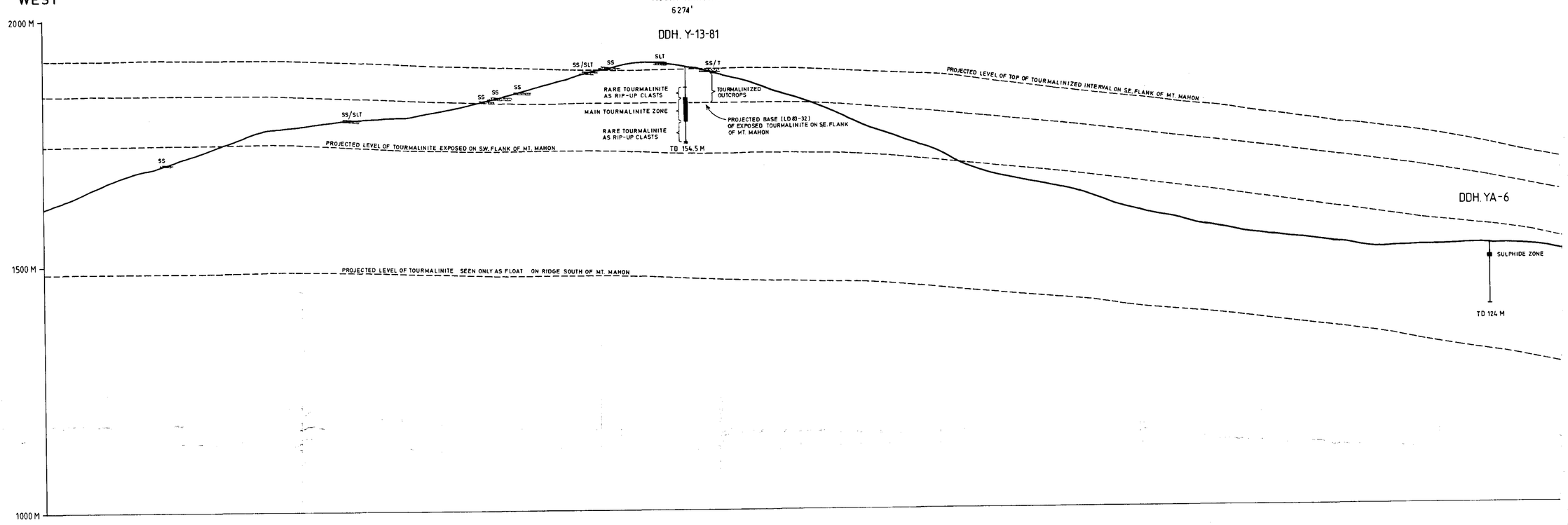
Chevron Canada Resources Limited
Minerals Staff

MOUNT MAHON GEOLOGY (NORTH HALF)

FIGURE No. 4		PROJECT No.	M525
DATE 1983	REVISIONS		SCALE 1:5000
NTS No. 82G/4W			FILE No.
COMPILED BY	L. DEKKER / P. SCHIARIZZA		

A

WEST



STRUCTURAL CROSS SECTION

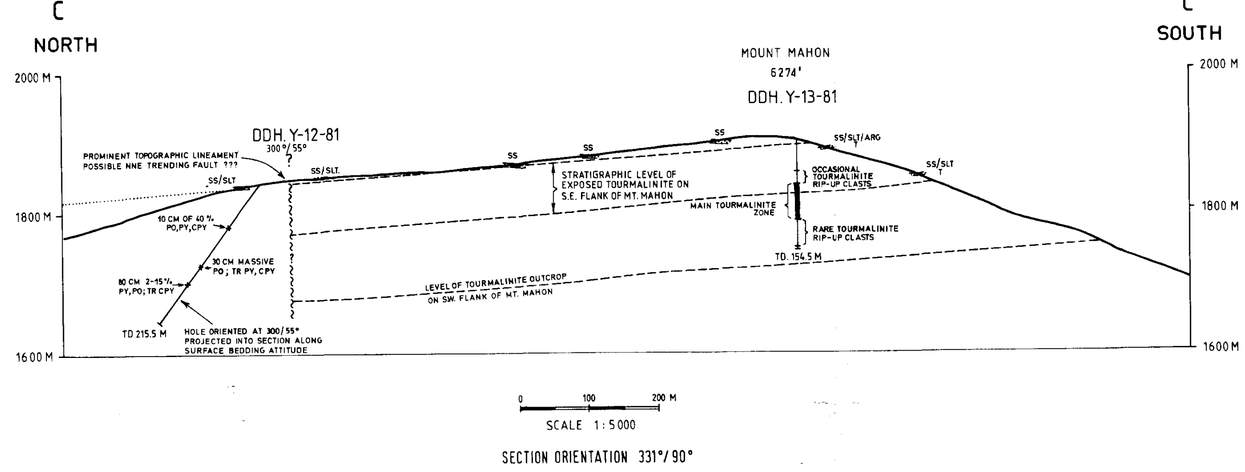
DDH Y-12-81 TO DDH Y-12-81

C

NORTH

C'

SOUTH



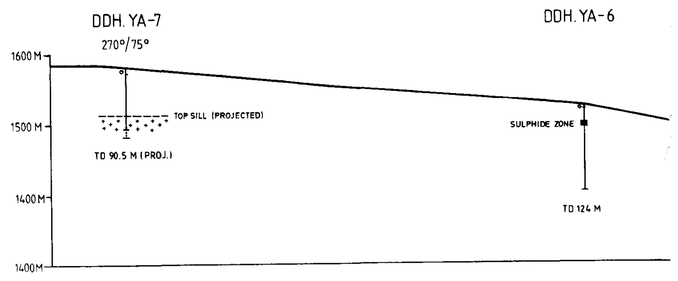
0 100 200 M

SCALE 1:5000

SECTION ORIENTATION 331°/90°

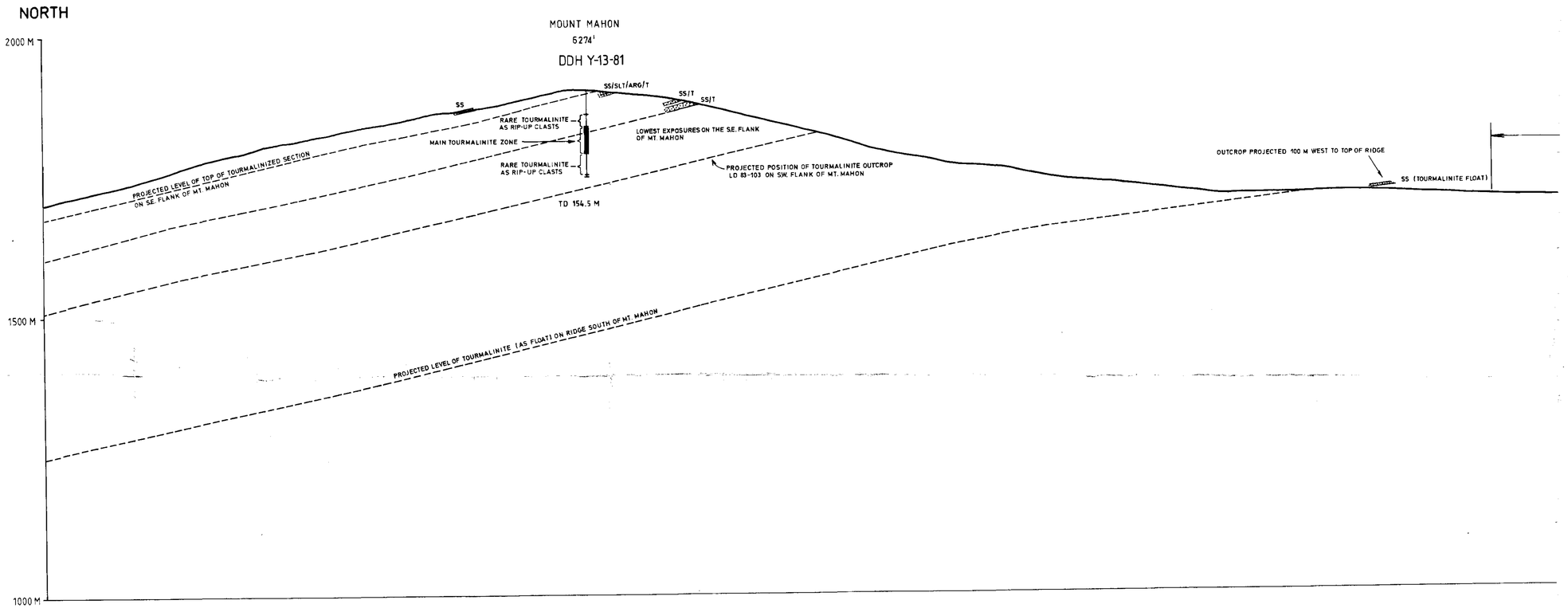
D

NORTH



B

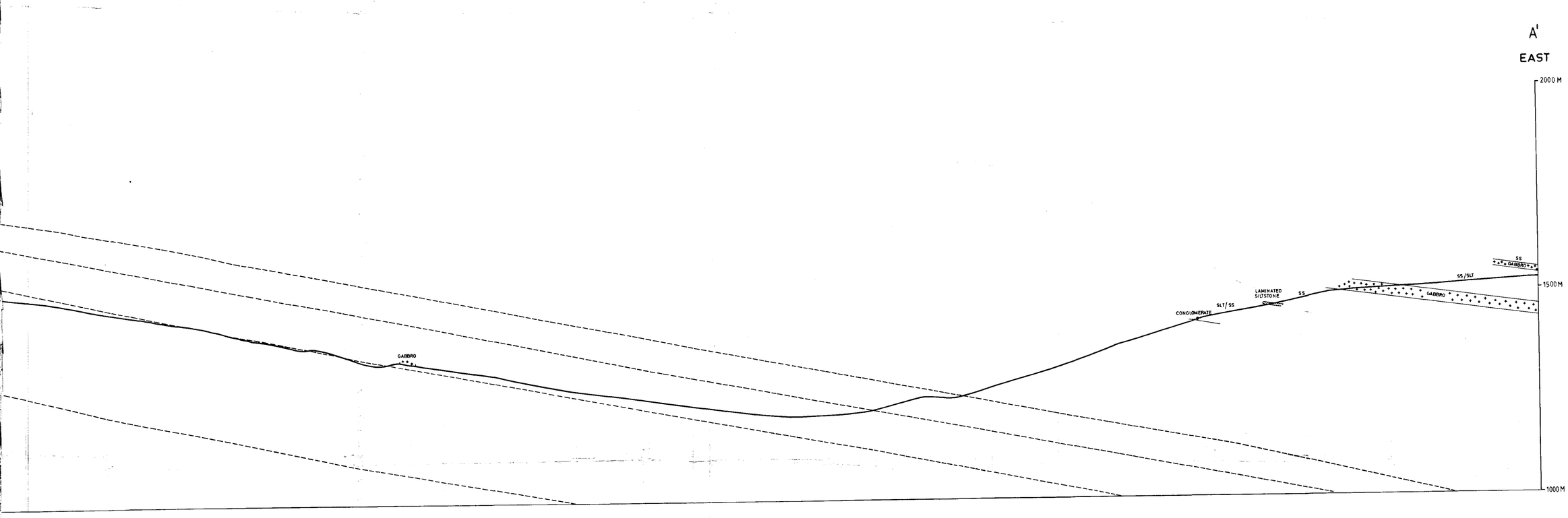
NORTH



LO

AL

STRUCTURAL CROSS SECTION
ALONG 0+00 N BASELINE



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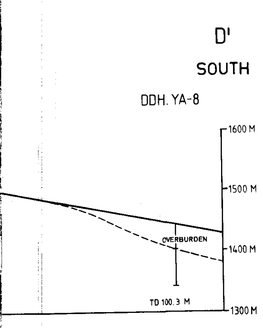
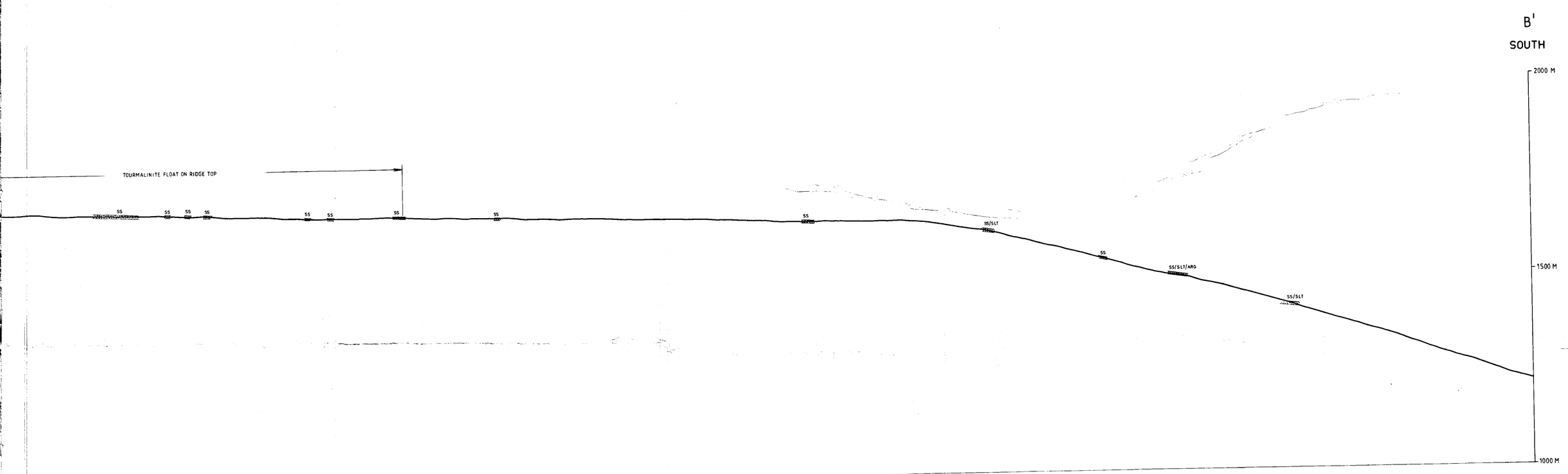
SCALE 1:5000

SECTION ORIENTATION 300°/90°





NGITUDINAL STRUCTURAL CROSS SECTION
LONG RIDGE SOUTH OF MT. MAHON SUMMIT

0 100 200 300 M
SCALE 1:5000

SECTION ORIENTATION 009°/90°

Chevron Canada Resources Limited
Minerals Staff

MOUNT MAHON

STRUCTURAL CROSS SECTIONS

FIGURE No. 6		PROJECT No. M 525	
DATE DEC. 1983	REVISIONS		SCALE 1:5 000
NTS No. 82G4/SW			FILE No.
COMPILED BY L.G.			

GEOLOGICAL BRANCH
ASSESSMENT REPORT

12,207