REPORT ON THE GEOLOGY AND RESULTS OF GEOCHEMICAL AND GEOPHYSICAL EXPLORATION OF THE MT. TOM PROPERTY; MINERAL CLAIMS UPPER (3834) DOWNER (3633) AND DUCK (3822).

Mt. Tom, Sugar and Hardscrabble Creeks Area
Cariboo Mining Division, British Columbia
N.T.S. Map Area 93H/4E
Latitude 53° 09'N Longitude 121° 42'N

for

CONSOLIDATED ASCOT PETROLEUM CORPORATION
2050 - 200 Granville Street
Vancouver, B.C.
V6C 1S4

and

CANADIAN-UNITED MINERAL INC.
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by

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November 1983

TABLE OF CONTENTS

TABLE OF CONTENTS
(continued)

FIGURES

TABLES

TABLE OF CONTENTS
(continued)

APPENDICES

1 INTRODUCTION

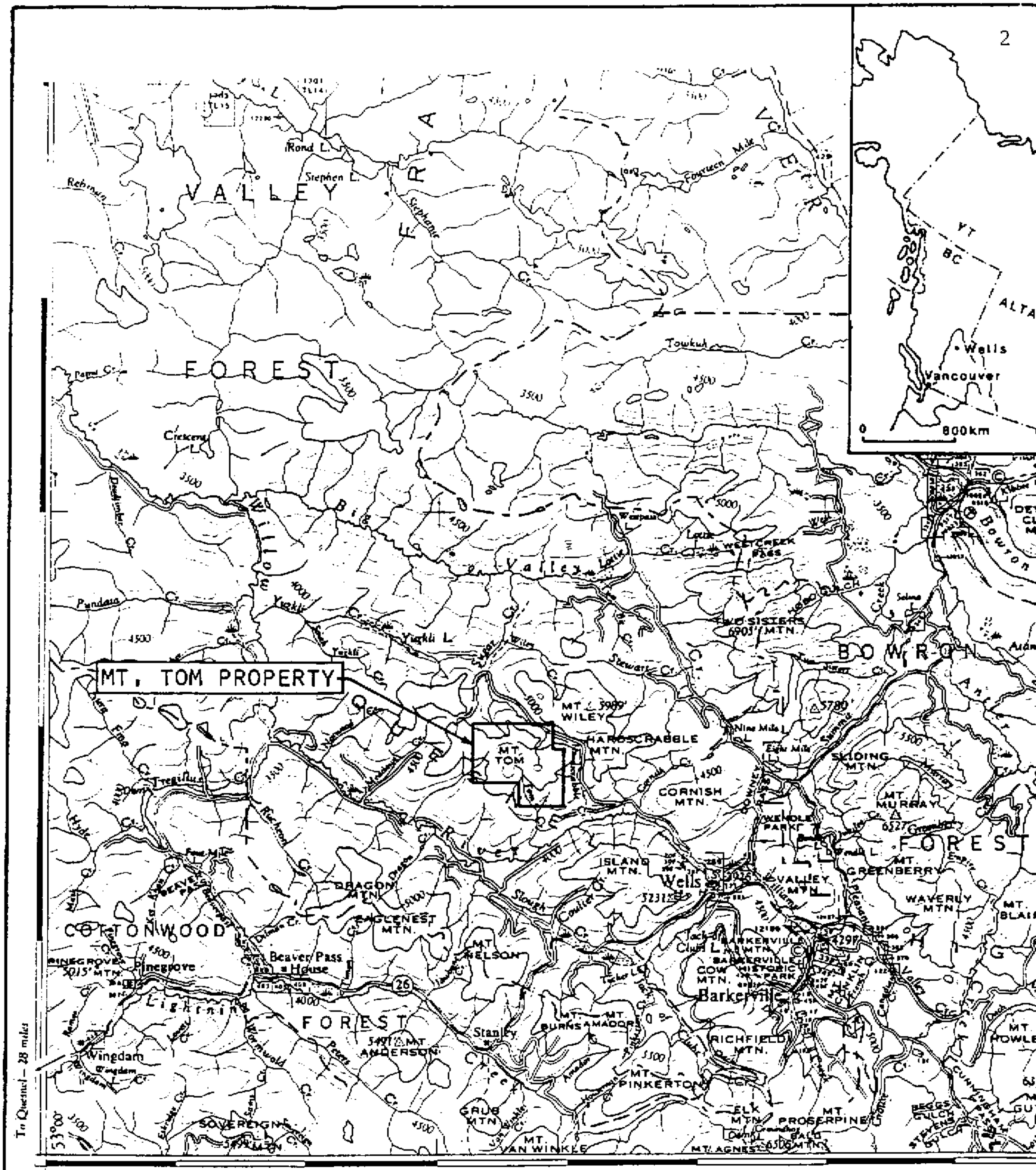
This report presents the results of a geochemical and geophysical exploration program for gold mineralization on the Mt. Tom property located in the Cariboo Mining Division of central British Columbia. The property consists of three mineral claims owned by Canadian Mineral Corporation of Vancouver, B.C. (now Canadian-United Mineral Inc.). Under an Agreement, dated March 3rd, 1983, Consolidated Ascot Petroleum Corporation of Vancouver, B.C. entered into an agreement with Canadian Mineral Corporation to provide for the joint exploration of the property.

Claim staking of the property by Canadian Mineral Corporation took place in June of 1981 as a result of gold, lead and zinc stream sediment anomalies. Throughout the 1981 field season prospecting and reconnaissance geochemical sampling was done. The results of that work are described in an earlier report, dated March 25th, 1981, by K.V. Campbell for Canadian Mineral Corporation entitled 'Report on the Geology and Results of Prospecting of the Mt. Tom Property'. In that report it was concluded that the property warranted further exploration, namely detailed geochemical soil sampling and an electromagnetic conductivity survey (VLF-EM).

The 1983 work program was a follow-up to the findings and recommendations of the earlier work. A total of 71 man-days were spent in 1973 on field work, which consisted of trail and baseline cutting (5.5 line km), establishment of a sampling grid (30.5 line km), soil and silt sample collection (743 samples), a VLF-EM16R survey (30.5 line km) and geological mapping.

1.1 Location and Access

The Mt. Tom property is located 10 km northwest of the village of Wells in central British Columbia (Figure 1). The claims are situated within National Topographic System area 93H/4E and are centered at approximately 53°09'N latitude and



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Mt. Tom Property
LOCATION MAP

Scale 1:250,000 (0 – 5 km)	Nov. 10/83	93H/4E
	FIGURE 1	

121°42' W longitude.

Access to the property is by the Hardscrabble Road which starts from the northwest corner of Wells. This road is suitable for 4-wheel drive vehicles and it is about 10 km to the property. The road is clear of snow from early June to early November. In 1983, a hiking trail was made along the broad ridge leading to Mt. Tom from the height of land between Sugar and Hardscrabble Creeks. Near the top of this ridge a cut baseline runs northwest-southeast to the edges of the claim group. Access to the central part of the property is by a fairly easy hike up the streams on the north side of the claim group. There are two large meadows on the upland part of the claims in which a helicopter could land.

1.2 Ownership and Claims Status

The three mineral claims of the Mt. Tom property, comprising the Mt. Tom Group, are held by the Canadian Mineral Corporation. Figure 2 is a recent claim plan of the area. Table 1 summarizes particulars of the claims.

1.3 References

There are no known public or private reports that specifically reference the Mt. Tom group, apart from regional geological studies. There are however, several publications pertaining to mineral occurrences immediately northwest and southeast of the property and these are included in the Bibliography, Appendix I.

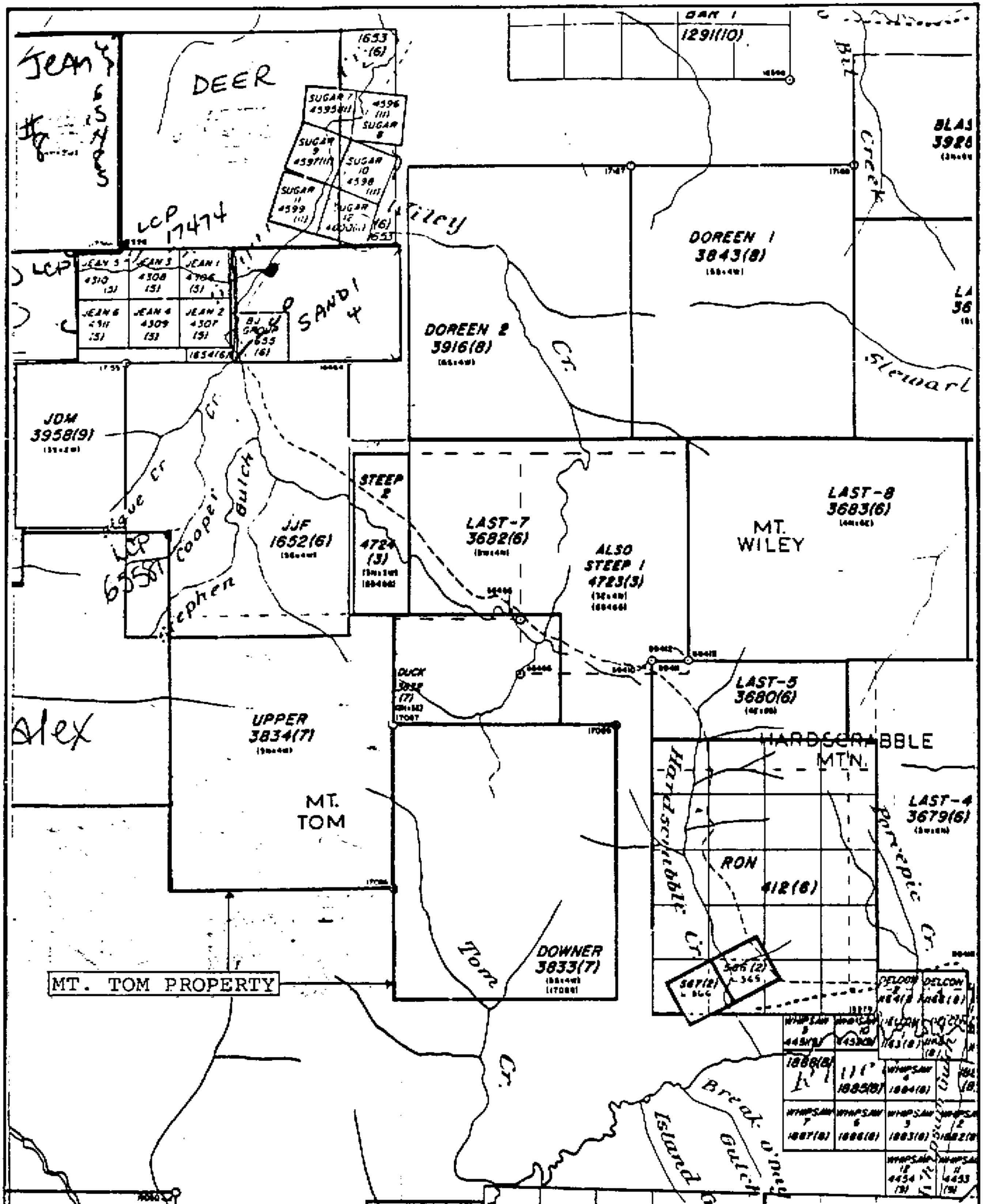
1.4 History

1.4.1 Regional

The Cariboo district is one of the oldest gold mining camps in British Columbia, the first prospectors arriving c. 1858. The early miners focused on placer deposits but by the 1890's gold quartz veins were being mined. Since those early days, prospectors and mineral exploration geologists have continued to search the region, not only for precious metal deposits,

Table 1. Summary of claim information

Claim Name	Record No.	Units	Recording Date	Recorded Holder
Upper	3834 (7)	20	July 17, 1981	Canadian Mineral Corp.
Downer	3833 (7)	20	July 17, 1981	Canadian Mineral Corp.
Duck	3832 (7)	6	July 17, 1981	Canadian Mineral Corp.



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Mt. Tom Property

CLAIM PLAN

Scale 1:50,000

0 1 km

Nov. 10/83

93H/4E

FIGURE 2

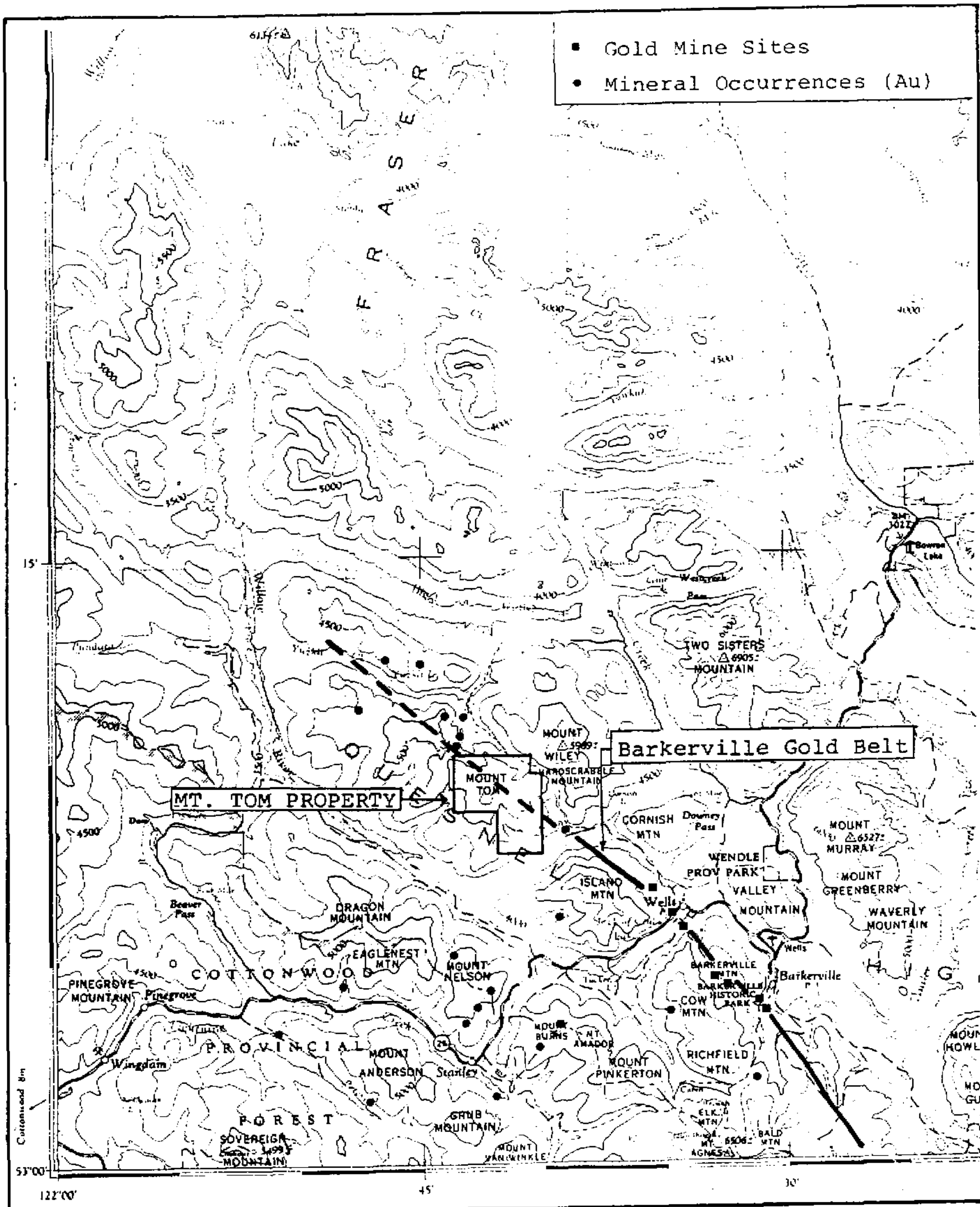
but also for lead and zinc deposits.

The property lies towards the northwest end of the Barkerville Gold Belt, a northwest alignment of gold-quartz veins, gold-bearing pyrite ore bodies and placer deposits. Figure 3 shows the location of gold occurrences and gold mines of the Cariboo district. The axis of the Barkerville Gold Belt is shown on this figure, extending through Mt. Tom, Island Mtn. and Barkerville. The belt extends southeast of the area shown in Figure 3. Most of the gold occurrences shown in Figure 3 were discovered before 1940.

Historical lode gold mines located along this belt, 15 to 30 km southeast of the Mt. Tom Group were the Island Mtn., Cariboo Gold Quartz, Canusa and Williams Ck. Gold Mines. Gold was won from both gold-quartz veins and pyritic replacement bodies in limestone. The only active mine in the area is the Mosquito Creek Gold Mine, 10 km southeast of the property, which has had a continuous production since October 1980 of about 2000 tons per month of replacement ore with a head grade of 0.45 oz gold per ton (Northern Miner, December 16, 1982).

The placer gold production of Sugar and Hardscrabble Creeks is of relevance since the gold is generally considered (eg, Sutherland Brown, 1957) to have been derived from underlying gold-quartz veins. From 1879 to 1895 the combined production of Hardscrabble and Sugar Creeks totalled about 5180 oz and between 1913 and 1945, 486 oz of gold were recorded from Sugar and Cooper Creeks (B.C. Minister of Mines Annual Report, 1947).

Figure 4 shows the known mineral occurrences in the vicinity of the Mt. Tom Group. These are described in Table 2. The occurrence of free-gold immediately north (Sugar Ck.) and south (Hardscrabble Mine) of Mt. Tom, silver assays to 102.5 oz/ton and gold assays to 4.28 oz/ton in sulphide bearing quartz veins along Cooper Creek suggest the Mt. Tom property, which for the most part lacks rock exposures, is well situated with respect to mineralization potential.



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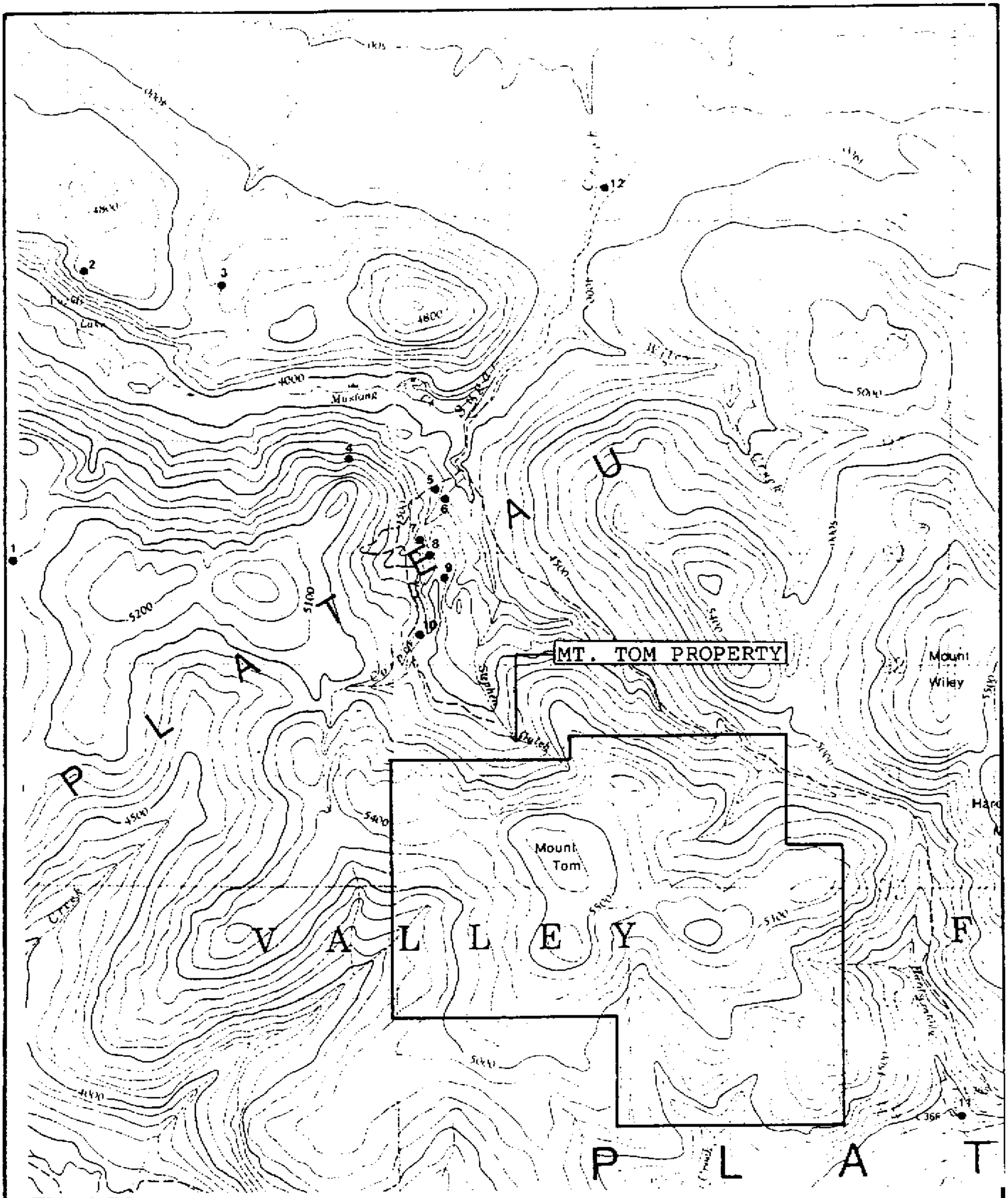
Scale 1: 250,000

0 5 km

Nov. 10/83 | 93H/4E

FIGURE 3

Mt. Tom Property
GOLD OCCURRENCES
(after B.C. Minister of Mines)



•3 mineral occurrences – see Table 2

CAMPBELL & ASSOCIATES GEOLOGICAL CONSULTANTS		CONSOL. ASCOT PETROL. CORP.
Scale 1: 50,000 0 ——— 1 km	Nov. 10/83 · 93H/4E FIGURE **4**	Mt. Tom Property MINERAL OCCURRENCES

Table 2. Known mineral occurrences in the vicinity of the Mt. Tom Group

Reference No. (Fig. 4)	Prospect Name or Location	Publication	Description	Assays
1	South Yuzkli Creek	Hanson, 1938a	located on map only, noted as quartz vein	-
2	Cosalite	BCDM Annual Report 1934	quartz veins in sheared sediments, A and B types, pyrite, galena	Au - trace
3	Moonlight, Comstick, Big Twelve	BCDM Annual Report 1934; Hanson, 1935	quartz veins in schistose sediments, A and B types, pyrite, galena, sphalerite	Au - trace Ag - 10.2 oz/ton Pb - 25.1%
4	K.V.	BCDM Annual Report 1934	quartz vein, A type, pyrite	Au - trace
5	Cooper Creek	BCDM Annual Report 1947	group of quartz veins up to two ft wide crossing foliation, selected galena	Au - trace Ag - 21.9 oz/ton Pb - 53.1%
6	Cooper Creek	BCDM Annual Report 1947	2.5 ft quartz vein narrowing to 6 inches, very little visible mineralization; selected pyrite	Au - 0.01 oz/ton Ag - nil
7	Cooper Creek	BCDM Annual Report 1947	two quartz veins to 16 inches wide mineralized with pyrite and galena; selected pyrite	Au - 0.09 oz/ton Ag - 0.90 oz/ton
			3 inch quartz vein traced 100 ft; selected pyrite	Au - 0.06 oz/ton Ag - 0.60 oz/ton

Table 2. continued. Known mineral occurrences in the vicinity of the Mt. Tom Group

Reference No. (Fig. 4)	Prospect Name or Location	Publication	Description	Assays
8	Cooper Creek	BCDM Annual Report 1947	quartz vein 14 inches wide exposed for 40 ft; sample across 12 inches	Au - 0.07 oz/ton Ag - 4.7 oz/ton
9	SE of Cooper Creek	BCDM Annual Report 1947	quartz vein 15-24 inches wide with disseminations and clots of pyrite and galena; selected sulphide	Au - 0.10 oz/ton Ag - 102.5 oz/ton Pb - 25.7%
			quartz vein 6-12 inches wide sparsely mineralized with scattered galena; selected galena	Au - 0.02 oz/ton Ag - 40.4 oz/ton Pb - 56.7%
10	Cooper Creek	BCDM Annual Report 1948	quartz vein 2-5 ft wide exposed for 50 ft, clots of galena, sphalerite and pyrite seen on dump; electrum (silver-gold alloy) is reported from this occurrence. (J. McKelvie, personal communication, 1981); selected galena	Au - 4.28 oz/ton Ag - 6.1 oz.ton Zn - 39%
			selected galena from dump	
11	Hardscrabble Mine Site	Little, 1959	quartz veins, both A and B types in interlayered limestone, sericite schist and argillite	carried visible gold
12	Lower Sugar Creek	personal observation	visible fine crystalline gold in quartz vein of uncertain width	-?-

1.4.2 Property

The only known work on the claims area prior to 1981 are placer workings of pre-1960 age on Sugar Creek 1 km downstream from the small lake west of Hardscrabble Mtn. No evidence was seen anywhere on the property of prospect pits, soil sampling or line-cutting dating from previous owners of the claims area. Because of the scarcity of outcrop it is thought that the area has been largely bypassed by prospectors.

In 1981, the work performed for Canadian Mineral Corporation on the Mt. Tom Group consisted of three stages of prospecting; (1) reconnaissance silt sampling on the principal streams, (2) silt sampling at 200 m intervals on all streams, and (3) stream prospecting, soil profile sampling, contour soil sampling at 150 m intervals across the claims on the northeast facing slope and additional silt sampling.

Prospecting lead to the discovery of vein quartz float, with no visible sulphides, that contained 0.268 oz/ton gold and 0.36 oz/ton silver. A galena-rich sample of vein quartz float carried 33.2 oz/ton silver with 49.3% Pb. Of eight vein quartz samples, seven contained gold above the detection limit (0.003 oz/ton).

The 1981 geochemical work identified anomalies of lead to 675 ppm, silver to 8.8 ppm, gold to 80 ppb, tungsten to 20 ppm and zinc to 2850 ppm. One silt site near Sugar Creek carried 3000 ppb gold, but it could be argued that its presence was due to placer mining activities.

With the possible exception of some part of the zinc anomalies, the metal accumulations are not considered to be seepage anomalies. Metal contents increase with soil depth, both in meadows and bogs and in soils developed directly on till. For this reason it was recommended that soil samples be collected from as deep a horizon as possible.

The geochemical anomalies were interpreted to be aligned in a northwest - southeast direction which projects to mineral showings on Cooper and Sugar Creeks and the Hardscrabble Mine site. A further projection of this trend to the southeast coincides with the alignment of gold-bearing pyritic replacement ore bodies at the Mosquito Creek Gold Mine and beyond there, along the principal axis of the Barkerville Gold Belt. The geochemical anomaly axis was considered to mark the trace of a mineralized fracture and the source of lead, silver and gold anomalies was thought to be quartz veins. Accordingly, it was recommended that Canadian Mineral Corporation further explore the area by detailed soil sampling. In addition it was recommended that a VLF-EM16 survey be done to test for the presence of fractures.

2 GEOMORPHOLOGY

2.1 Regional

The property lies within the Quesnel Highland physiographic region. A characteristic of this region are upland areas which are remnants of a highly dissected plateau of moderate relief. The plateau was formed in late Tertiary times. Pleistocene ice covered most of the high areas and consequently most summits are rounded, but cirques which developed on northern slopes during late stage glaciation have sharpened the profiles of the highest peaks. Valley glaciers truncated spurs and deposited glacial material over much of the area.

2.2 Property

Figure 4 is a topographic map of the claims area. Relief is about 300 m (1000 ft) from the rounded summit of Mt. Tom (1715 m, 5625 ft) to Sugar Ck. (1400 m, 4600 ft) a tributary of Big Valley Creek, and slightly more in the direction of Tom Ck., a tributary of the Willow River. The principal drainage divide lies along the northwest trending series of knolls that makes up an upland surface that is considered to be a Tertiary plateau remnant. Walkout Ck., east of Mt. Tom, is developed in what was an incipient cirque. It has four main tributaries cut deeply into thick deposits of glacial till. This till is of local origin and represents a ground moraine or lodgement till developed under the ice that lay on the plateau remnant. Towards Sugar Creek there are some glaciofluvial deposits plastered on the side of the Sugar Creek valley.

An unusual feature of the upland area are the several deeply cut, steep-sided and flat bottomed trenches or channels developed in the till. Some cross the watershed divide and are dry, others are developed just above the headwaters of existing streams. They are thought to be meltwater channels developed at the time of wasting of the Pleistocene ice that capped the plateau.

At several places on the northeast slopes, sampling pits revealed surficial layers up to 1 m thick of light colored till material just under the moss and overlying well developed soil profiles. Such deposits are considered to be debris flows of colluvium developed from tills upslope. There are numerous small landslides and slumps along the stream courses. It is reasonable to conclude that the great majority of stream load is contributed by mass wasting along the stream banks. This is of importance when interpreting the geochemical results.

Brilliant orange to red iron-oxide precipitates are found in seeps at the headwaters of Stephens Gulch, Downer Creek and at two sites along Walkout Creek. Analysis of the soil profile at two sites demonstrated increasing metal (Pb, As, Zn) contents with depth. The unoxidized parent tills underlying the red - orange muck at both sites contained about 15 times as much Pb and twice as much Zn as the surface precipitate. For this reason it was concluded that the geochemical anomalies are not hydromorphic in origin (Campbell, 1981).

The valleys are thickly timbered with spruce and hemlock. The upland areas have somewhat fewer trees but have very dense willow and alder thickets. There are few outcrops except along creekbeds and on bluffs.

3 GEOLOGY

3.1 Regional

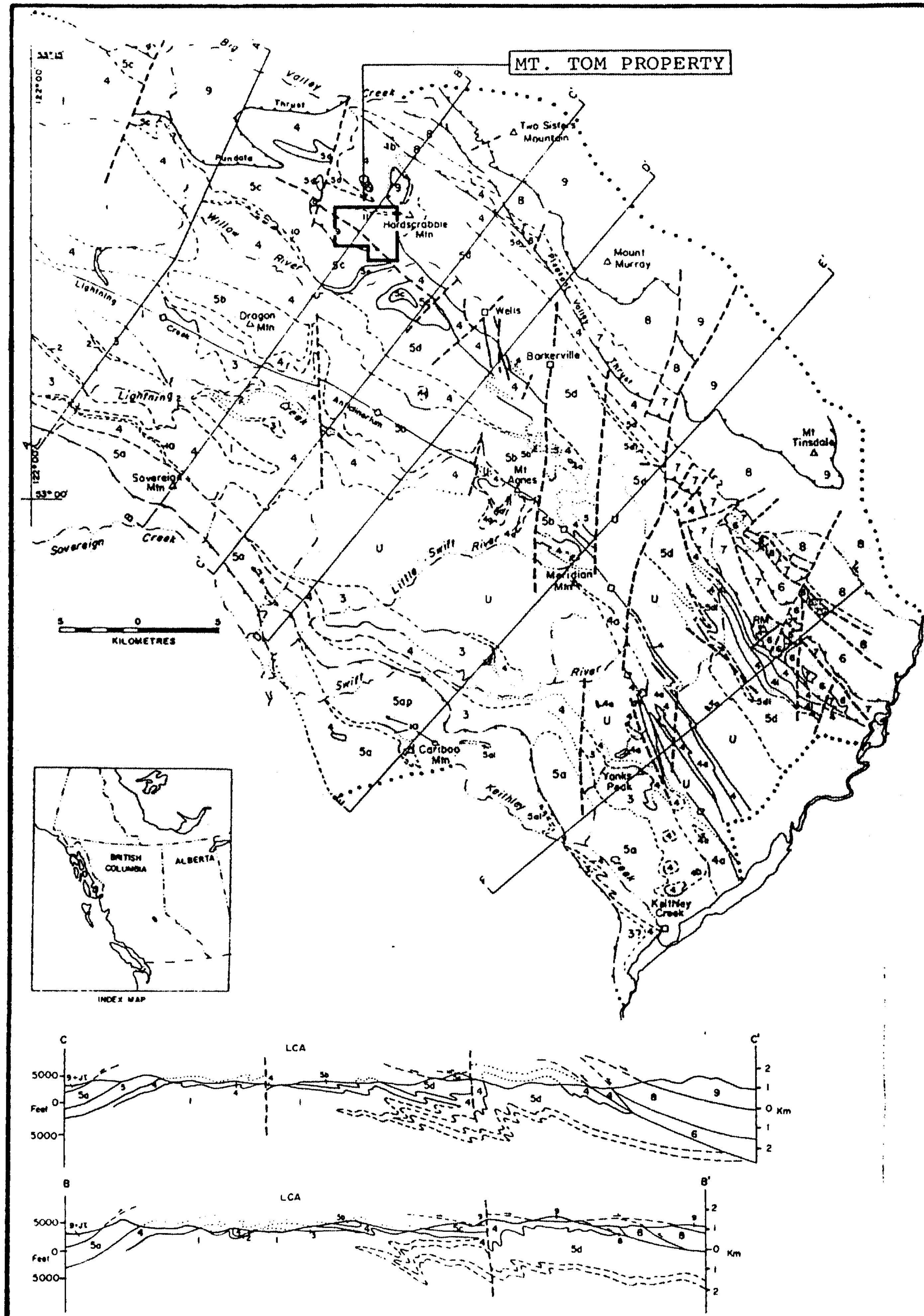
Figure 5 illustrates a recent interpretation of the regional geology (Struik, 1982b) with the stratigraphy outlined in the legend. The area lies along the western part of the Omineca Tectonic Belt, known for its prevalence of gold and tungsten mineral occurrences. Two regional tectonostratigraphic sequences are shown in Figure 5. These are:

1) the largely Paleozoic continental North American sequence consisting of the metasedimentary Western Cariboo Group (units 1 to 5) and the Eastern Cariboo Group (units 6 to 8) which are separated by the Pleasant Valley thrust fault; and
2) the Permian and Pennsylvanian oceanic Antler Formation (unit 9).

The latter sequence, the Antler Formation, has been thrust from the west over the basinal sequence. This thrusting commenced in post-Permain time and predated the folding and regional metamorphism of the Jura-Cretaceous age that affected all rock units in the area (Struik, 1981b).

Most of the area has been regionally metamorphosed to the greenschist facies. The age of the metamorphism is Mesozic (Early Jurassic - Late Cretaceous) and it accompanied the regional folding and cleavage formation. Late-stage muscovite and chlorite development were the result of a second pulse of metamorphism (Struik, 1981b).

The major folds are relatively open. The predominant structure in the area is the Lightning Creek anticlinorium (LCA in Sections B anc C) 10 km southwest of the Mt. Tom property. A broad synclinorium lies to the east of the area shown in Figure 5. The intensity of deformation increases with depth and metamorphic grade throughout the region. Complex refolding



LEGEND

LOWER PERMIAN

11 — bioclastic limestone

PERMIAN

10 — diorite, amphibolite, may include parts of 5e

PENNSLVANIAN AND PERMIAN

9 — *Antler Formation;* diorite, basalt, chert, greywacke, serpentinite, gabbro

CARBONIFEROUS ? AND PERMIAN ?

5 — *a, Ramos Creek Succession;* micaceous quartzite, pelite, limestone, metatuf* ? *al,* limestone, calcareous sandstone *ap,* phyllite, quartzite, amphibolite *b, Dragon Mountain Succession;* micaceous quartzite, phyllite *c, Tom Creek Succession;* micaceous quartzite, phyllite *d, Downey Creek Succession;* micaceous quartzite, slate, limestone, metatuff ? *dl,* marble, limestone, diorite, metavolcanic *e;* amphibolite

DEVONIAN ? AND MISSISSIPPIAN?

4 — black siltite, phyllite, micaceous quartzite, limestone *a;* conglomerate, quartzite *b;* breccia, muddy conglomerate *l;* limestone, may be equivalent to 5dl

HADRYNIAN ?

3 — siltite, quartzite, phyllite *a;* quartzite

2 — marble, calcareous sandstone, quartzite, calcareous phyllite, phyllite

1 — micaceous quartzite, phyllite, schist

U — undifferentiated 1-5, mainly 4 & 5

ORDOVICIAN TO PERMIAN

8 — *Black Stuart and Guyet Formations,* slate, conglomerate, quartzite, greywacke, limestone, dolostone, chert, basalt, metatuff

HADRYNIAN AND CAMBRIAN

Eastern Cariboo Group

Hadrynian and Cambrian

7 — *Yanks Peak, Midas and Mural Formations,* quartzite, phyllite, limestone

Hadrynian

6 — *Isaac, Cunningham and Yankee Belle Formations,* phyllite, limestone, dolostone, quartzite

Geological contact (defined, approx, assumed)
Fault (defined, approx and assumed)
Thrust (defined, approx and assumed)
RM — Roundtop Mountain

CONSOLIDATED ASCOT PETROLEUM CORP.

Mt. Tom Group
Cariboo Mining Division, B.C.

REGIONAL GEOLOGY

(after Struik 1982)

Scales: as shown	Nov. 10, 1983

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FIG. 5

of minor folds is common in the relatively incompetent rocks, for example, in the siltites of unit 4.

Several phases of faulting have affected the area. These are, listed from youngest to oldest, as follows (Struik; 1981b, 1982b):

- northerly and north-northeasterly right lateral strike slip faults,
- transverse northeast trending normal faults,
- east dipping high angle reverse and normal faults, and
- east dipping thrust faults.

Quartz veins are common and widely distributed in the area. In general sulphide content is low, but in certain areas they contain a farily consistent quantity of pyrite with attendant gold (Sutherland Brown, 1957). Previous workers have all noted the pattern of occurrence of quartz veins. Four types of veins are recognized:

(1) transverse veins; northeast strike, smallest and most numerous type; at the Cariboo Gold Quartz mine provided 60-75% of the quartz ore,

(2) diagonal veins; east-northeast strike, larger and fewer than transverse veins; at the Island Mtn. Mine only the diagonal veins were minable,

(3) northerly veins; north-northeasterly strike, occur within faults, commonly crushed and difficult to mine, and

(4) strike veins; northwest strike, subparallel to foliation, largest and fewest type, normally barren.

Earlier workers termed the strike veins 'A veins' and the transverse and diagonal veins 'B veins'.

The principal axis of the Barkerville Gold Belt, passing through Island Mtn. and Barkerville, is located on the overturned limb of a northwest trending fold at or near the contact between Devonian-Mississippian black phyllites (unit 4) and micaceous quartzites (unit 5) containing limestone and dolomite. The gold occurrences consist of auriferous pyrite in quartz veins in the black metaclastic rocks or stratabound, massive auriferous pyrite lenses, termed 'replacement ore', within and at the contacts of limestone beds in micaceous quartzite (Alldrick, 1983).

Struik's structural interpretation along the Barkerville Gold Belt (1982b, Figure 5) is largely hypothetical and attests to the complex structural history of the area. West of the steep northwest fault crossing the Mt. Tom property the near surface stratigraphy is relatively simple. East of this fault the presence of a large nappe is made necessary by the fact that unit 4 structurally overlies unit 5, as shown in Sections B and C. It may very well be that there are more than one black siltite and phyllite or quartzite units.

In summary, the Mt. Tom property lies on a well defined belt of complex overfolding, thrust faulting and dip-slip faulting developed in mid-Paleozoic clastic rocks that is the site of gold mineralization, albeit discontinuous, that extends from north of Mt. Tom southeast at least as far as the Cariboo River, a distance of some 45 km.

3.2 Property

3.2.1 Lithology

Figure 6 shows the distribution of outcrops on and near the claims area. The great majority of the exposures are: (1) black siltite and phyllite; DMs in Figure 6, equivalent to unit 4 in Figure 5, (2) black limestone; DMl in Figure 6, equivalent to unit 11 in Figure 6, and (3) metavolcanic rocks of the Antler Formation; MPa in Figure 6, equivalent to unit 9 in Figure 5. Less common rocks are dolomite, DMd, and quartz sericite schist, DMqs. Descriptions of these rock types are given in Table 3.

The black limestone unit, DMl, is that from which Struik obtained fossils and classified as Middle Pennsylvanian in 1981 (Struik, 1981a) and Lower Permian in 1982 (Struik, 1982b). Both the black limestone and greenish dolomite are very similar in appearance to limestone and dolomite seen in the vicinity of pyritic ore bodies to the southeast. Similar black limestone is also found on the tailings dump at the

Table 3. Description of Lithologies

Rock Unit	Description	Minor Structures
MPa	light greenish gray, fine to medium grained, quartz-sericite-chlorite schist	well foliated
DMs	dark gray to black thin bedded siltite, argillite, slate and phyllite. Locally thinly interbedded with recessive, rusty weathering dark brownish gray limestone or soft, papery, greenish gray quartz-sericite schist. Locally very rusty with iridescent Fe-oxide stains. Commonly has abundant white quartz laminations, lenses or boudins.	bedding, (S_1), predominent schistosity (S_2) and a steeply-dipping crenulation cleavage (S_3) are well developed, but seldom are all three seen in any one exposure. S_1 has been largely transposed to S_2. Intersection of S_1 on S_2 causes mineral lineation. Intersection of S_3 on S_2 causes fine crenulation. Outcrops are well jointed.
DMqs	light gray, fine grained quartz-sericite schist	well foliated
DMl	gray to black finely crystalline marble, thinly laminated with irregular layers to 10 cm thick of white crystalline calcite	well jointed, fractures filled with coarse white calcite
DMd	light greenish gray, fine grained dolomite with an orange-brown weathering rind. Matrix is spotted, with very fine grained green chromium-mica (fuchsite?) clots.	

abandoned Hardscrabble mine just southeast of the property and the author believes the carbonate member could extend in that direction across a set of right lateral faults. Struik (1982a,b), however, has mapped the black limestone (Figure 5) as extending toward Hardscrabble Mtn. in a more easterly direction. It is possible that there is more than one limestone horizon within the black clastic unit. Dolomite was found only at two locations; broken outcrop on the east side of Hardscrabble Road and float on Downer Creek.

Light colored quartz sericite schist is a common occurrence as angular float on the upland part of the claims but little outcrop was found. It is probable that the light colored schists are interbedded within the black clastic unit. An exposure of light gray micaceous quartzite occurs north of the upper reaches of Downer Creek and this could be an exposure of unit 5. This outcrop represents the structurally lowest rock in the northern part of the claims, underlying the black clastic outcrops. If it is part of unit 5 (younger than unit 4) then the rocks could be overturned.

Iron cemented gravel conglomerates are found on Walkout and Downer Creeks (Figure 6). These are considered to be recent, post-glacial formations developed at, or downslope of, seeps of iron oxide.

3.2.2 Geochemistry

Tables 4 and 5 list the rock analyses determined in 1981 and 1983, respectively. Table 6 is a reorganization of the rock analyses so as to summarize the geochemistry of lithologies.

The schistose metavolcanic rock, Unit MPa, contains Pb, An, As, Ag and Au in amounts which closely approximate that of the average abundance of these metals in basaltic rocks.

The black clastic unit, DMs, shows considerable range in metal contents and the ability to contain at least up to 500 ppm Pb, 230 ppm Zn, 110 ppm As and 1.0 ppm Ag. The average values for these rocks, ignoring the maximum analyses, are 8 ppm Pb, 49 ppm Zn, 8 ppm As, and 0.3 ppm Ag.

Table 4. Rock analyses and assays - 1981.

Sample No.	Description	Rock Geochemical Analyses	
R15	black phyllite and argillite, thin bdd, folded	1 ppm Pb, 88 ppb Zn, 0.3 ppm Ag, <10 ppb Au	
R16	black phyllite	10 ppm Pb, 49 ppm Zn, 1.0 ppm Ag, 10 ppb Au	
R21	black phyllite, pyritiferous, Fe-oxide surface stains	1 ppm Pb, 44 ppm Zn, 0.3 ppm Ag, 10 ppb Au	
		Assays	
R6	rusty white vein quartz boulder	0.36 oz/t Ag	0.268 oz/t Au
R6G	rusty white vein quartz boulder with pyrite and galena	33.20 oz/t Ag 49.3% Pb	0.006 oz/t Au
R10	vein quartz float in creek, minor galena	1.00 oz/t Ag 0.71% Pb	0.010 oz/t Au <0.01% Zn
R14	vein quartz float in creek	<0.01 oz/t Ag	<0.003 oz/t Au
R17	rusty white vein quartz boulder, + pyrite	0.05 oz/t Ag	0.006 oz/t Au
R18	rusty white vein quartz boulder, + pyrite	<0.01 oz/t Ag	0.017 oz/t Au
R19	rusty white vein quartz boulder, + pyrite	<0.01 oz/t Ag	0.024 oz/t Au
R20	white vein quartz boulder, + pyrite	0.09 oz/t Ag	0.054 oz/t Au

Table 5. Rock analyses - 1983

Sample No.	Description	Rock Geochemical Analyses
1	fine grained light greenish gray quartz-sericite-chlorite schist, well foliated	1 ppm Pb, 50 ppm Zn 2 ppm As 0.1 ppm Ag, <10 ppb Au
2	black phyllite, siltite, finely laminated, foliated	4 ppm Pb, 36 ppm Zn 6 ppm As 0.4 ppm Ag, <10 ppb Au
3	fine grained light gray quartz-sericite-schist, well foliated	6 ppm Pb, 113 ppm Zn 2 ppm As 0.1 ppm Ag, <10 ppb Au
4	fine grained, dark gray to black marble with coarsely crystalline white calcite in fractures, finely laminated	4 ppm Pb, 44 ppm Zn, 5 ppm As 0.5 ppm Ag, <10 ppb Au
5	fine grained, light greenish gray dolomite, orange brown weathering rind, with fine spots of chromium mica	87 ppm Pb, 86 ppm Zn 11 ppm As 0.6 ppm Ag, <10 ppb Au
8	black phyllite, siltite finely laminated	500 ppm Pb, 32 ppm Zn 9 ppm As 0.1 ppm Ag, 10 ppb Au
10	fine grained, black limestone, finely laminated fine fractures filled with white, crystalline calcite	50 ppm Pb, 44 ppm Zn 4 ppm As 0.6 ppm Ag, <10 ppb Au
11	rusty black argillite	14 ppm Pb, 45 ppm Zn 9 ppm As 0.1 ppm Ag, 10 ppb Au
12	dark gray, finely crystalline marble	14 ppm Pb, 20 ppm Zn 4 ppm As, 0.2 ppm Ag, <10 ppb Au
F6	rusty, black argillite, float	19 ppm Pb, 230 ppm Zn 110 ppm As 0.1 ppm Ag, <10 ppb Au

Table 6. Geochemistry of Lithologies

Unit	Rock type	Sample No.	Pb (ppm)	Zn (ppm)	As (ppm)	Ag (ppm)	Au (ppb)
MPa	light greenish gray quartz-sericite-chlorite schist	1	1	50	2	0.1	<10
DMs	black phyllite siltite	R15	1	88	-	0.3	<10
		R16	10	49	-	1.0	10
		R21	1	44	-	0.3	10
		2	4	36	6	0.4	<10
		8	500*	32	9	0.1	10
		11	14	45	9	0.1	10
		F6	19	230*	110*	0.1	<10
	Average:		8	49	8	0.3	-
DMqs	light gray quartz sericite schist	3	6	113	2	0.1	<10
DMl	black limestone, marble	4	4	44	5	0.5	<10
		10	50	44	4	0.6	<10
		12	14	20	4	0.2	<10
	Average:		23	36	4.3	0.4	10
DMd	light greenish gray dolomite	5	87	86	11	0.6	<10

* deleted from calculation

The one sample of quartz sericite schist analysed is geochemically similar to the average black clastic except for its higher Zn content.

The black limestone rocks, Unit DM1, have a slightly higher average Pb content than the black clastics. The one sample of dolomite shows a marginally higher content of Pb, As and Ag than the other rocks, excluding the more anomalous samples.

3.2.3 Structure

The mid-Paleozoic clastic units have an apparent attitude slightly west of the northwest regional trend. Dips are north to northeast at moderate to steep angles. Locally, bedding in limestone and siltite near Sugar Creek dips to the southwest. This is thought to reflect folding on the scale of the outcrop or juxtaposed fault blocks. Axial plane slaty cleavage has so transposed the bedding that it is parallel or subparallel to the cleavage. S_3, the younger axial plane crenulation cleavage, dips steeply southwest or is vertical. While Struik (1981, 1982) has interpreted the clastic unit to be overturned, the parallel bedding to cleavage relations could not verify this. Lineations caused by $S_1/S_2/S_3$ intersections, parallel to larger fold axes, plunge at shallow angles to the northwest and southeast.

Foliations of the metavolcanic rocks near the grid baseline are discordant to the regional trend and substantiate the opinion (Struik; 1981, 1982) that these rocks are a small klippe on the hilltop. The northeastern edge of this feature is terminated by a steeply dipping northwest fault.

The distribution of the black clastics suggests they both under and overlie the black limestone unit, as shown in Figure 6. The limestone occurring in the Hardscrabble mine could represent a second carbonate horizon, structurally below that along Sugar Creek, or it could be the offset continuation of the same horizon along a hypothetical fault as shown in Figure 6. The black limestone and greenish gray dolomite float on Downer Creek are thought to be locally derived. If this is so then they could represent (1) an overturned limb of a large fold, the other limb being the carbonate along Sugar Creek, (2) a second carbonate horizon or (3) the continuation of the carbonate found in the Hardscrabble mine.

The longest fractures in the area are the northwest fault along Sugar Creek and the north-south fault(s) along Hardscrabble Creek. No evidence was found in the area mapped of thenorthwest fault crossing Mt. Tom, shown in Struik's 1981 and 1982 maps. The majority of the other fractures trend north-northwest or north-northeast. The one exception is the east-west fracture along Downer Creek. Jointing most commonly strikes north-northeast and has a steep dip to the northwest or southeast.

3.2.4 Mineralization

Angular quartz boulders and blocks to 4 m diameter are a common occurrence, particularly in the headwaters of Downer Creek and in the middle stretches of Walkout Creek. Broken quartz veins and quartz boulder trains were found in the upland areas in several places.

The only visible sulphide mineralization observed on the property was in association with vein quartz. Coarsely crystalline fresh appearing pyrite, galena and arsenopyrite are often present as segregations up to 2 cm diameter.

Seventeen vein quartz samples have been assayed (Tables 4 and 7). Of these, nine have more than 0.003 oz/ton gold, the detection limit. The highest assay of gold, 0.268 oz/ton, was from quartz float (R6) with no visible sulphides. Three samples with pyrite (R18, R19, R20) contain 0.017 to 0.054 oz/ton gold. All of these samples were found in the middle stretch of Walkout Creek. Samples F-9 and F-10, north of Downer Creek, had segregations of arsenopyrite and contained 0.020 and 0.028 oz/ton gold, respectively.

Silver was not found in any significant amounts in the quartz samples. The highest silver assay was that of R6G, selected galena in quartz, which contained 33.20 oz/ton silver with 49.3% Pb.

The arsenopyrite-bearing vein quartz samples; 0-1, F-5, 10 and 11, are located in the vicinity of light gray quartzite. Recalling that the contact between a similar quartzite and the black clastic unit controls ore deposition to the southeast at the Mosquito Creek Gold Mine, the conditions required for pyritic replacement ore formation could very well be duplicated on the Mt. Tom property. The presence of black limestone and fuchsite(?)-bearing dolomite float in Downer Creek less than 500 m from the arsenopyrite occurrences is another favorable circumstance for such mineralization, the pyritic ore bodies to the southeast alwyas being in close association with such rocks.

Table 7 Rock assays - 1983

Sample No.	Description	Assays
0-1	broken quartz vein, massive white, ½ cm diameter segregations of arsenopyrite and galena	0.01 oz/ton Ag <0.003 oz/ton Au
0-2	broken quartz vein, massive white, euhedral vugs, minor pyrite, arsenopyrite	0.01 oz/ton Ag <0.003 oz/ton Au
F-1	vein quartz float, rusty white with numerous vugs	0.05 oz/ton Ag <0.003 oz/ton Au
F-2	vein quartz float	0.004 oz/ton Ag <0.003 oz/ton Au
F-3	vein quartz float, minor galena	0.54% Pb 0.40 oz/ton Ag <0.003 oz/ton Au
F-5	vein quartz float, massive, white small segregations of arsenopyrite	0.01 oz/ton Ag <0.003 oz/ton Au
F-9	vein quartz float, massive, white with abundant arsenopyrite, minor pyrite	0.06 oz/ton Ag 0.020 oz/ton Au
F-10	vein quartz float, massive, white with arsenopyrite segregations	0.02 oz/ton Ag 0.028 oz/ton Au
F-11	vein quartz boulder train, white with rusty vugs, abundant arsenopyrite segregations	0.01 oz/ton Ag <0.003 oz/ton Au

4 GEOCHEMISTRY

4.1 Introduction

The geochemical survey was organized as a result of the 1981 reconnaissance work. In 1983 thirty-eight man-days were spent on collecting soil and silt samples along 30.5 line km of grid which was laid out to straddle the northwest trending geochemical anomaly axis interpreted from the 1981 field work. The strike length of this axis across the property is some 3.8 km and the grid, 800 m wide, is centered over the axis. Compass and hip-chain sere used to establish the grid, which also served for the geophysical survey. Grid lines are spaced at 100 m and the geochemical soil sampling was done at 50 m interval intervals. Wherever creeks were crossed on the grid silt samples were taken. In all, 657 soil samples and 86 silt samples were collected.

Earlier work in the area has shown that arsenic, silver, lead and zinc are the best pathfinder elements for gold deposits, particularly the pyritic type, and samples were analysed for these elements. Gold was later analysed in soils on parts of five lines perpendicular to the axis of the principal anomalies.

4.2 Sampling Method

Conventional sampling practices were followed. Samples were collected at grid stations and placed in 3½ x 6" Kraft paper bags. Soil sampling was preceded by digging pits to 1 m deep with a spade and determining the local profile. The geochemical work in 1981 established that metal contents increased with depth and that the highest values occurred in the C horizon. Where horizon C could not be sampled the soil was collected from the BF or BM horizon. Silt samples were collected wherever the grid lines intersected gullies or streams. Only the minus 80 fractions of both silt and soil samples were analysed and therefore coarse gravel and rock fragments were removed before bagging. Samples were air dried before sending to the laboratory.

Observations were recorded on field data cards, examples of which are shown in Appendix II. Appendices III and IV list the soil and stream sediment samples, a few of the more significant particulars on each of the sample sites and the results of the geochemical analysis.

4.3 Analytical Procedure

The geochemical samples were assayed by Chemex Labs Ltd., 212 Brooksbank Ave., North Vancouver, B.C. Conventional procedures, described in Appendix V, were followed on the minus 80 fraction of soils and silts.

4.4 Overburden Origin and Soil Profiles

As described in Section 2.2, the claims area is covered by a thick mantle of locally derived till. In several places along the stream banks there are exposures of till more than 15 m high. On the gently sloping upland area pits were dug in 1981 to 1.5 m exposing compacted tills with angular black phyllite fragments.

Soil profiles are moderately well developed on the till. The organic mat is generally 5-10 cm thick and underlain by a BF horizon 10 to 20 cm thick which in turn overlies the parent material. On the upland areas the BF horizon was not developed, the only discernable layer between the A and C horizons was a BM layer, 10-20 cm thick. On the steep slopes along the northern part of the claims debris slumps of materials derived from till have buried the earlier soil profile. Commonly, up to ½ m of this till-like gray to bluish clayey angular gravel lie on top of a moderately well developed BF horizon overlying parent till material. These slopes are thickly forested so the slumping activity is of some age.

4.5 Data Handling

Site data were transferred from the field cards to a geochemical retrieval, sort and search program on an 64K Apple II Plus computer for subsequent analysis.

Figures 7 to 10 show the analytical results for Ag, As, Pb and Zn in soils. Figures 7 to 15 show the results for silts. Histograms for these metals, both soil and silt data sets, are shown in Appendix VI. Table 8 summarizes statistical parameters of each data set.

The geochemical data were subjected to a modified gradient analysis technique which utilizes A 'Clarke' (KK) units rather than parts per million (or billion). Clarke unit is an estimate of the abundance of an element in the Earth's crust and provides a convenient datum. The Clarke values used here are from Levinson, 1974 (Introduction to Exploration Geochemistry, Applied Publishing Ltd., Calgary). A KK of 1 indicates an average crustal abundance (for example, 12.5 ppm in the case of Pb). A KK of 2 indicates twice the average, and so on. Clarke values and KK intervals are listed in Table 9.

In the case of the soil samples, contours were drawn (Figure (Figures 7 to 10) with a factor of 2 between cell limits. All contours are drawn with the same line weight and the finished soil diagrams are meant to be hand colored at the user's discretion. Contours at Clarke values representing the mean and local threshold (Table 8) are significant. Anomaly axes are shown on the soil diagrams by heavy solid lines drawn through sites of local threshold or higher. Inferred and hypothetical extentions of the axes are shown by the broken and dotted lines.

4.6 Results

4.6.1 Soil Samples

Silver (Figure 7)

Soils have a relatively high silver content, with a mean of 1.2 ppm. Several very high values were recorded, for example 17.4, 20 and 20 ppm. Outside the report area the background silver content of soils is about 0.5 ppm. There are two major anomalous areas; Ag-1 and Ag-2. Ag-1 is of 5 or 6 anomaly satellites to 20 ppm which have a subparallel alignment in a northwest-southeast direction. Ag-2, to 29 ppm, is one pronounced trend with smaller satellites to the northeast and

Table 8. Summary of Geochemical Statistics. Values in ppm.

Element	No. Samples	Range	Mean	Standard Deviation	Statistical Threshold(1)	Local Threshold ppm (KK)	No. Samples Greater than Local Threshold
Soil							
Ag(2)	653	0.1 - 29	1.2	1.2	5	4.5 (64)	30
As(3)	653	2 - 375	21.9	21.3	64	58 (32)	40
Pb(4)	656	1 - 820	42.1	56.0	154	100 (8)	43
Zn(5)	656	6 -1500	95.5	81.7	259	280 (4)	24
Silt							
Ag(6)	78	0.1 - 44	2.2	2.7	8	8 (114)	6
As(7)	79	3 - 185	26	23.3	72	72 (40)	5
Pb(8)	78	6 - 400	50.2	45.1	140	140 (11)	6
Zn(9)	76	22 -2800	241	170.4	582	582 (8)	7

(1) Mean + (2 standard deviations), rounded off to whole unit

(2) Samples with 17.4, 20, 20, 29 ppm Ag deleted from calculations

(3) Samples with 225, 240, 260, 375 ppm As deleted from calculations

(4) Sample with 820 ppm Pb deleted from calculations

(5) Samples with 1300, 1500 ppm Zn deleted from calculations

(6) Samples with 27, 44 ppm Ag deleted from calculations

(7) Samples with 185 ppm As deleted from calculations

(8) Samples with 410, 460 ppm Pb deleted from calculations

(9) Samples with 1000,1150, 1910, 2800 ppm Zn deleted from calculations

Table 9. Clarke values and KK intervals. Average crystal abundances from Levinson, 1974. (-, outside range of Mt. Tom analyses).

KK (Clarke) Unit Intervals	Ag (ppm)	As (ppm)	Pb (ppm)	Zn (ppm)
1024 - 2048	-	-	-	-
512 - 1024	35.84 - 71.68	-	-	-
256 - 512	17.92 - 35.84	-	-	-
128 - 256	8.96 - 17.92	230.4 - 460.8	-	-
64 - 128	4.48 - 8.96	115.2 - 230.4	800 - 1600	-
32 - 64	2.24 - 4.48	57.6 - 115.2	400 - 800	2240 - 4480
16 - 32	1.12 - 2.24	28.8 - 57.6	200 - 400	1120 - 2240
8 - 16	.56 - 1.12	14.4 - 28.8	100 - 200	560 - 1120
4 - 8	.28 - .56	7.2 - 14.4	50 - 100	280 - 560
2 - 4	.14 - .28	3.6 - 7.2	25 - 50	140 - 280
1 - 2	.07 - .14	1.8 - 3.6	12.5- 25	70 - 140
.5 - 1	-	0.9 - 1.8	6.15- 12.5	35 - 70
.25 - .5		-	3.12- 6.25	17.5- 35
.12 - .25			1.56- 3.12	8.75- 17.5
.06 - .12			.78- 1.56	4.37- 8.75
.03 - .06			-	2.18- 4.37
.015 - .03				1.09- 2.18
.0075- .015				.54- 1.09
.00375- .0075				-

southwest.

Arsenic (Figure 8)

Background values are up to 32 Clarkes (58 ppm) and the mean is 12 Clarkes (22 ppm). Most of the arsenic anomalies are single site anomalies. Exceptions are the subparallel anomalies As-1 and As-2 in the southeast part of the grid. As-3 As-3, to 375 ppm, in the northwest part of the grid could be part of a larger trend through 225 ppm on L13N and the east-west anomaly between L9N and L6N.

Lead (Figure 9)

Discontinuous lead anomalies, greater than the local threshold of 8 Clarkes (100 ppm) form an arc from the northwest corner of the Upper claim to the east side of the Downer claim. The more significant anomalies are those with three or more sample sites in the southeast part of the grid; Pb-1, Pb-2 and Pb-3. Pb-4 could be an extension of Pb-1 and Pb-3. Attention is drawn to the three, and possibly five site anomaly at the northeast edge of the grid on L20N to L11N.

Zinc (Figure 10)

There are three major zinc anomalies with values greater than the local threshold of 4 Clarkes (280 ppm). In the northwest Zn-1 could extend from L19N to L10N. Zn-2 (from L6N to L0) covers a wider area than most other anomalies. Zn-3 (from L4S to L8S) has a trend subparallel to Zn-1. All of these have satellite anomalies in their vicinity.

Figure 11 summarizes the geochemical anomalies of Ag, As, Pb and Zn. The anomalies shown are those above the local threshold (Table 8). Anomaly axes, drainageways and the break in slope are also indicated.

After the results of the soil analyses for Ag, As, Pb and Zn were first plotted, gold analyses were performed on selected segments of grid lines so as to cross anomaly trends. The segment profiles selected are shown in Figure 11 and listed in Table 10. Away from the anomalies gold does not exceed the

Table 10. Gold Analyses of soil samples

Sample No.		Gold Analysis (ppb)
L5S	1+50E	<10
L5S	2+00E	<10
L5S	2+50E	20
L5S	3+00E	160
L5S	3+50E	<10
L5S	4+00E	<10
L6S	1+50E	<10
L6S	2+00E	<10
L6S	2+50E	<10
L6S	3+00E	<10
L6S	3+50E	30
L6S	4+00E	<10
L8S	2+00E	<10
L8S	2+50E	<10
L8S	3+00E	10
L8S	3+50E	<10
L8S	4+00E	<10
L8S	4+50E	<10

Sample No.		Gold Analysis (ppb)
L13N	1+00E	<10
L13N	1+50E	<10
L13N	2+00E	<10
L13N	2+50E	<10
L13N	3+00E	<10
L13N	3+50E	<10
L13N	4+00E	<10
L13N	4+50E	<10
L13N	5+00E	10
L13N	5+50E	<10
L15N	2+00E	<10
L15N	2+50E	<10
L15N	3+00E	10
L15N	3+50E	20
L15N	4+00E	<10
L15N	4+50E	20
L15N	5+00E	<10
L15N	5+50E	<10
L15N	6+00E	<10

detection limit (10 ppb). Ten to 160 ppb gold are recorded in the vicinity of the anomalies.

4.6.2 Silt Samples

The results of the silt analysis are shown in Figures 12 to 15. Each data set are divided in these figures into three categories; less than mean, between mean and threshold, and greater than threshold (Table 8). Geochemical gradient plots were also made by separating the data sets into KK intervals with a factor of 2 between cells. These plots are not included in the report but are referred to.

Silver (Figure 12)

The highest silver values occur in western Downer Creek (to 27 ppm), north of Downer Creek (one site of 44 ppm), and southeast of the meadow at the headwaters of Stephens Gulch (11.7 ppm). Many, but not all, of the silts with silver above the mean value (2.2 ppm) are in the vicinity of soil silver anomalies.

The geochemical gradient increases westwards up Downer Ck. and up the northern tributaries of Walkout Ck. Elsewhere the gradient is not as clear, with alternating high and low silver values.

Arsenic (Figure 13)

A gradient analysis of arsenic does not show any clear pattern with two exceptions; the northern tributary of Walkout Ck. and westernmost Downer Ck. In both of these stream segments arsenic increases upstream. Many of the silts with arsenic contents more than the mean (26 ppm) are close to axes of soil arsenic anomalies.

Lead (Figure 14)

On tributaries of Stephens Gulch, Walkout Ck., and Downer Ck. the higher lead analyses occur upstream. Silts with lead contents above the threshold (140 ppm) are on or near axes of soil lead anomalies.

Zinc (Figure 15)

The pattern of increasing metal content in an upstream direction, shown in a general way by silver, arsenic and lead, is somewhat modified in the case of zinc. Several high zinc values occur downstream of lower values. There is a close association along Downer Ck. between silts with more than the mean (241 ppm) and soils with relatively high zinc contents. Elsewhere silts reporting more than 241 ppm zinc are in the vicinity of axes of soil zinc anomalies.

4.7 Discussion of Results and Interpretation

4.7.1 Soil Samples

The points that can be made from the distribution of the soil geochemical anomalies are the following:

(1) There is a marked coincidence of the majority of Ag, As, Pb and Zn anomalies.

(2) Most anomalies occur below the break in slope; i.e. in areas where the depth to bedrock is presumably less and where mass wasting and stream erosion processes are more active.

(3) A few of the major anomaly axes trend into the upland area. The best examples are of silver, but shorter projections of arsenic, lead and zinc anomalies do extend into the upland area.

(4) Several shorter and narrower Ag, As, Pb and Zn anomalies occur on the upland area and these subparallel the larger anomalies downslope.

(5) Whereas several of the major anomalies occur in drainageways (Downer Creek and tributaries of Walkout Creek), there are an equal number of subparallel anomalies that occur away from any drainageway. Therefore, it is concluded that the anomalies are related to mineralization and are not solely related to relative overburden thickness.

(6) Anomalies have a close spatial relation to the northwest-southeast fracture set. Examples are along Downer Creek and the westernmost tributaries of Walkout Creek where four anomaly axes subparallel the northwest fracture zone there.

(7) The majority of anomalies are in areas interpreted to be underlain by black clastics (DMs). Notable exceptions are the arsenic anomaly near the light quartzite on the north side of Downer Creek and the lead anomaly at the northeast ends of L14-15N that possibly are underlain by black limestone (DMl).

(8) Arsenopyrite in vein quartz was found in the vicinity of several arsenic anomalies.

(9) At least some representative rocks in the area do contain metals in excess of the local threshold soil values. Examples are some rusty black phyllites (No. 8) with 500 ppm Pb and 110 ppm As (No. F6), whereas the average Pb and As contents are 8 ppm. No samples were analysed that contained silver or zinc in amounts greater than the local threshold.

(10) Gold does occur in amounts greater than the detection limit (10 ppb) near the axes of some arsenic, silver and lead anomalies.

(11) A tentative conclusion is drawn that the trend of anomalies is slightly discordant to that of the lithology. The best example of this is seen by comparing the interpreted east-west distribution of limestone in the northwest part of the grid with the northwest trending anomaly axes there. Not enough outcrop is exposed to conclusively prove this. If this conclusion is so, then the anomalies are not caused by particular rock members being relatively enriched in metals, since their bedding traces would then parallel anomalies, particularly on the upland areas where slopes are uniform.

From the foregoing it is concluded that the geochemical anomalies are governed by mineralized structures; either fractures or ore-shoots plunging slightly north of the east-west bedding trace.

4.7.2 Silt Samples

Silts reporting more than the threshold metal values are indicated on the geochemical summary diagram, Figure 11. Silt anomalies are concentrated along Downer Ck. and in the north northwestern headwaters of Walkout Ck. Like the soil anomalies the majority of silt anomalies are developed below the break in slope. There are, however, few drainageways on the upland surface. The four silt anomalies on the upland area which line up with Downer Ck. and western Walkout Ck., between L4N and L0, support the conclusion drawn from the soil geochemistry that the zone of anomalies does extend between Walkout and Dwoner Creeks.

There are two other silt anomalies that should be investigated further. The first of these is the 44 ppm Ag site on L8S 7+42E which lies on the axis of a soil silver anomaly and near soil arsenic and lead anomalies. The second area is on the upland surface, L17N 0 to 100E which has silver to 11.7 ppm. Possibly this anomaly is related to a fracture interpreted along the small creek there. No rock exposures were found in either of these areas.

5 GEOPHYSICS

5.1 Introduction

A VLF-EM survey was made along the axis of the geochemical anomaly interpreted in 1981. The purpose of this geophysical work was to delineate the geological trends of the area. It was thought that the VLF-EM method could possibly identify buried fractures and areas underlain by rocks of relatively high electromagnetic conductivity, such as the black clastics. A third reason for the survey was to see if the interpreted geochemical anomaly had an electromagnetic signature.

5.2 Method

Thirteen and one-half man days were spent in surveying 30.5 line km of geophysical grid. The grid, which coincided with the geochemical grid, was established by means of hip-chain and compass. The baseline was oriented N53 W of true north. Traverse lines were run perpendicular to the base line. Grid lines were spaced at a nominal 100 m and stations were read every 50 m. No corrections were made for topography.

The instrument used was a Geonics EM-16 utilizing transmissions from Cutler NAA at 17.8 kHz.

The EM-16 uses military and time standard Very Low Frequency (radio) transmissions as primary fields which are generated as a concentric horizontal magnetic field. When these horizontal magnetic fields encounter conductive bodies in the ground a secondary vertical magnetic field is in turn generated. The total field will then be tilted on either side of a local conductor. This total field is not always in the same phase as the primary field on the ground surface. The EM-16 receiver measures the in-phase and quadrature components of the vertical field.

The VLF raw data was filtered using the standard Fraser Filter operator:

$$F_{2,3} = (O_3 + O_4) - (O_1 + O_2)$$

5.3 Results

VLF data is presented in profile form with a vertical scale of 1 cm=20% and a horizontal scale of 1:5,000 in Figure 16 and in Fraser filtered contour form in Figure 17.

5.4 Discussion of Results and Interpretation

An examination of the stacked VLF profiles indicates there are few well defined discrete conductors in the area surveyed. That is to say, although changes in relative resistivity/ conductivity are certainly present, there are no conducting features apparent that possess the "classic" characteristics of a discrete massive or near massive sulphide body. The basis for this conclusion lies in the profile patterns. The quadrature response is typically very near zero or even slightly positive. This normally indicates surface conductors such as changes in bedrock lithology or even overburden and topographic effects. Also, where there is a well defined in-phase response there seldom occurs a matching well defined quadrature crossover. This is another indication of a lack of high quality discrete conductors.

An examination of the Fraser-filtered contour map reveals two main zones of relative conductivity; A and B, with an intervening and slightly discordant conductive zone, C. Anomaly D, along Downer Ck., subparallels anomaly B. The presence of anomaly C on the upland area establishes that the conductivity anomalies are not due solely to topographic effects or to shallowing bedrock in the stream gullies.

Three interpretations of the origin of the anomalies can be made. The first interpretation is that all the VLF-EM anomalies are due to fractures. The second is that A and B are more conductive lithologies offset by a fault along anomaly C. If this is so then there appears to be right lateral apparent displacement and some drag folding. The third interpretation is that anomaly C is due to a conductive lithology and anomalies A, B and D are faults. There are two reasons for favoring this interpretaion:

(1) Anomaly D lies along Downer Creek which is interpreted to be fault controlled, and anomaly A lies along the Stephens Gulch - Walkout Ck. lineament which is also interpreted to be a zone of fracturing.

(2) The central part of anomaly C subparallels the distribution of limestone, DM1, between Sugar Creek and Stephens Gulch.

Within the contoured anomalies A and B, there are several local fluctuations of VLF response, particularly at lines 4S and 5S about 400E. Local anomalies such as this could be due to a sudden increase in conducting elements (i.e., sulphides) or merely a shallowing of bedrock or even of course a combination of both. Given the limitations of the VLF method, it is difficult to resolve this question.

By superimposing Figure 17, the VLF-EM Fraser Filter contour map, and Figure 11, Geochemical Anomalies, it is readily apparent that the major geochemical anomalies coincide with positive conductivity anomalies A, B and D, which are within 50 m of the axes of geochemical anomalies of Ag, As, Pb and Zn. Conductivity anomaly C, on the upland surface, could be interpreted as tying together isolated silver, arsenic, lead and zinc anomalies there.

The fact that there is a strong correlation between interpreted fractures, positive conductivity anomalies and geochemical anomalies leads the author to conclude that a northwest-southeast zone of fractures, some 100 - 300 m wide, with silver, arsenic, lead, zinc and possibly gold mineralization crosses the Mt. Tom property.

6 CONCLUSIONS

6.1 Geomorphology

A ground moraine or lodgement till covers most of the moderately dissected hilly claims area. The upland area is a remnant of a Tertiary plateau with a gentle rolling topography. It lacks surface drainageways apart from small streams draining its few sub-alpine meadows. At, or below the break in slope marking the edge of the upland surface are numerous springs and seeps, many of which have iron oxide precipitates. The geochemical anomalies, however, are not hydromorphic accumulations.

On the northern slopes streams have cut deeply into the thick till exposing bedrock at a few localities. The till is locally derived and its composition reflects the underlying lithology. Metal contents increase with soil profiles depth.

6.2 Lithology

The rock units underlying the Mt. Tom property make up two Paleozoic tectonostratigraphic packages. The uppermost of these is the Mississippian to Permain Antler Formation, an oceanic assemblage of metavolcanic rocks with minor sedimentary rocks that has been thrust eastwards over older metasedimentary units. On the Mt. Tom property the Antler Formation is represented by klippe of light green, quartz chlorite schist. It is of little exploration interest.

The second package of rock units that underlies most of the northern part of the claims area are Devonian(?) to Permian(?) metasedimentary rocks that originated in a deep, quiet water environment. These include fine grained black limestone and marble, black siltite, phyllite and argillite, gray phyllite and gray, quartz sericite schist and micaceous quartzite. These rock units are the host of gold deposits in the Cariboo district.

Ten km to the southeast of the Mt. Tom property, at the Mosquito Creek Gold Mine, gold-bearing pyritic ore is found in a limestone member of a gray quartzite unit adjacent to the contact with the black siltite unit. A grayish green dolomite with spots of fuchsite(?) is often closely associated with the ore-bearing limestone. All of these rocks; black limestone, grayish green dolomite, black siltite and gray quartzite are found, both as float and outcrop, on the Mt. Tom property.

Representative rocks of the black siltite unit contain up to 500 ppm Pb, 230 ppm Zn, 110 ppm As, 1.0 ppm Ag and 10 ppb Au. The average metal contents of these rocks is 8 ppm Pb, 49 ppm Zn, 8 ppm As, 0.3 ppm Ag and <10 ppb Au. The black limestone rocks have a similar average metal content, whereas the one sample of dolomite analysed had an 87 ppm Pb, 86 ppm Zn, 11 ppm As, 0.6 ppm Ag and <10 ppb Au. Of these rocks, some metal-rich black clastics could explain some of the geochemical anomalies.

There are few outcrops on the claims area. A 200 m wide band of limestone outcrops can be mapped discontinuously from Sugar Creek to Stephens Gulch. It is underlain and overlain by black siltite and argillite. In the Downer Creek area a small outcrop of gray quartzite is structurally below the black siltite unit.

Large, angular vein quartz float is a common occurrence. The largest and most abundant boulders occur along a northwest-southeast trend from Stephens Gulch to Downer Creek. A few quartz veins were found in black siltite and phyllite.

6.3 Structure

The rocks dip at moderate to steep angles to the north and northeast, as does the penetrative foliation, an axial plane slaty cleavage. Lineations indicate larger folds, not observed, plunge at shallow angles to the northwest and southeast.

The distribution of what few outcrops there are has important structural significance. Black limestone occurs at the Hardscrabble Mine, just southeast of the property, and is also found in float on Downer Creek. Gray dolomite outcrops at the north end of Hardscrabble Creek and is also found in float in Downer Creek. Because the overburden is a lodgement till, it is believed that the float is locally derived. If this is so, a structural inference could be made that there are two bands of carbonate crossing the claims area, and that the larger structure could be an overturned fold.

Major fracture zones and their orientations are:

(1) Sugar Creek; N45°W
(2) Hardscrabble Creek; North - South
(3) Stephens Gulch - Walkout Creek; N50°W
(4) Downer Creek; East - West
(5) Tributaries of Walkout Creek; N10°W to N10°E.

6.4 Mineralization

6.4.1 Known

The only visible mineralization seen on the property was in vein quartz which has coarsely crystalline pyrite, arsenopyrite and galena segregations to 2 cm diameter. The highest assay of gold, 0.268 oz/ton, was from quartz with no visible sulphides. The highest silver assay was from a selected sample of galena in quartz which carried 33.20 oz/ton with 49.3% Pb. Samples with arsenopyrite laminations and segregations carried up to 0.028 oz/ton gold and 0.06 oz/ton silver.

The sulphide-bearing samples were all found near the northwest trending axis of geochemical and geophysical anomalies.

6.4.2 Potential

The Mt. Tom property satisfies many, if not all, of the lithological and structural criteria for gold mineralization determined elsewhere along the Barkerville Gold Belt. Lithologies observed at gold ore zones 10 km to the southeast are found on the property. There is a possibility that the larger structure in the Mt. Tom area is an overturned fold and such a structure seems to be a requirement for gold mineralization in the district. Gold-quartz veins often are closely associated with pyritic ore bodies to the southeast. Gold-bearing quartz float and veins are found on the property, near the principal axis of geochemical and geophysical anomalies, lending further support to potential mineralization.

6.5 Geochemistry

Soil and silt surveys were successful in delineating mostly coincident multielement (Ag, As, Pb and Zn) anomalies that cross the property in a northwest direction. The anomalies are believed to be controlled by a zone of fractures that extends at least from Stephens Gulch to Downer Creek.

6.6 Geophysics

A VLF-EM survey was successful in mapping positive conductivity zones that are coincident with, or lie in close proximity to, the major northwest geochemical anomaly trends and to the interpreted major fracture zones along Stephens Gulch and Downer Creek. There are four major anomalies; three northwest trending sections along Stephens Gulch and Downer Creek and an east-west section under the upland area. The latter could be due to a more conductive lithology since it subparallels the east-west distribution of limestone to the north.

7 PROPOSAL FOR DEVELOPMENT

7.1 Recommendations

The author has no hesitation in recommending to Consolidated Ascot Petroleum Corporation and Canadian-United Mineral Inc. that they proceed with gold exploration on the Mt. Tom property.

The 1983 field program of geological, geochemical and geophysical surveys (Stage 2 of the work to date), has demonstrated the existence of largely coincident structural, geochemical and positive conductivity anomalies crossing the claims for a distance of some 3.8 km with a width of 100 - 300 m. In addition, the observable geological conditions are similar to those found at gold-bearing pyritic ore deposits a short distance to the southeast along the regional trend. A two stage program of trenching and exploratory drilling (Stage 3) is recommended.

Stage 3 Advanced surface and subsurface exploration

Stage 3a - Trenching

The location of two proposed trenches to bedrock are shown on the Compilation Map, Figure 18. Trench No. 1, 800 m, and Trench No. 2, 500 m, have been positioned so as to cross the axis of the conductivity anomalies near centers of multielement anomalies as far upslope as possible in order to avoid the deeper stream gullies. Some adjustments to the exact orientation of the trenches will be necessary to accomodate the terrain.

The objective of the trenching is to enable examination of bedrock and structure across the principal northwest trending anomaly axis. Detailed rock sampling and mapping would be a necessary part of Stage 3a.

Stage 3b - Exploratory Drilling

Four proposed wireline BQ diamond drill sites are indicated in Figure 18. Site 1 north of Downer Creek would test for the intersection of the quartzite unit and the source of conductivity anomaly B. Site 2 south of Downer Creek would test for the source of the geochemical anomalies and conductivity anomaly D. Sites 3 and 4, near the western tributaries of Walkout Creek would test for the source of geochemical and geophysical anomalies there.

The author recommends that the drilling proceed whether or not surface mineralization is found during Stage 3a, as leaching along fractures could have removed precious metals. The four drill holes proposed would be some 200 m long plunging 35 - 40° from the horizontal. Longer holes (say 25%) should be anticipated if, during on-site supervision and core logging, mineralization is found. Drill casing should be left in the ground until assay results of the core have been examined.

Before either trenching or drilling can proceed it will be necessary to construct acess tracks to the exploration sites.

7.2 Estimated Costs

Stage 3 - Advanced surface and subsurface exploration

Prepatory work

Permits and reclamation bond	$	2,000
Access track construction; 5350 m long, D8 cat 10 days @ $1,500/day		15,000
Possible remedial work to Hardscrabble road ..		2,000
Supervision, transit surveys		5,000
Total prepatory work	$	24,000

Stage 3a - Trenching

Clearing, hauling	$	2,400
Trenching; 2 trenches totalling 1,300 m, D8 cat 6 days @ $1,500/day		9,000
Supervision and mapping		5,000
Assays		2,000
Total Stage 3a	$	18,400

Stage 3b - Exploratory drilling

Mobilization and demobilization	$	600
4 holes; BQ @ 200m @ $75/m		60,000
Extension contingency of 25% (200m)		15,000
Supervision, core logging, surveys		5,000
Assays		2,000
Total Stage 3b	$	82,600
Total Stage 3	$	125,000
Contingency (weather and access problems) @ 15%...	$	18,750
Administration, documentation @ 10%	$	12,500
Total Estimated Cost	$	156,250

K. V. Campbell, Ph.D.
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8 ITEMIZED COST STATEMENT

In the matter of grid establishment, prospecting, rock sampling, geological mapping, geochemical and geophysical surveys on the Mt. Tom Group on mineral claims; Upper, Downer and Duck, 93H/4, Cariboo Mining Division, B.C. on behalf of Consolidated Ascot Petroleum Corporation of 2050-200 Granville St., and Canadian United Mineral Inc., 543 Granville St. of Vancouver, B.C., I, K. V. Campbell of K. V. Campbell and Associates Ltd., Wells, B.C., do declare that the following expenses were incurred during the course of the work between July 18th and September 23, 1983 and during the ensuing report preparation.

a) Wages paid as per attached Schedule A .... $ 3,880

b) Transportation, Wells to work site, 12 day trips
July 18 - September 20, truck rental ($40.00/day), kilometerage (25¢/km); 25 km round trip .... $ 555

c) Freight, courier charges, expendable materials, maps, photos .... $ 640.50

d) Assays and analyses
Geochemical sample preparation
Soil and silt samples: 724 preparations @ $0.60, ($434.40). 14 preparations @ $2.00, ($28.00); 738 analyses for Pb, Zn, Ag, As @ $6.95, ($5129.10); 45 analyses for Au @ $5.50, ($225.00);
Rock samples: 10 preparations @ $2.50, ($25.00); 10 analyses for Pb, Zn, Ag, As, Au @ $11.95, ($119.50).

Rock assays: 9 preparations @ $3.75, ($33.75). 9 assays for Ag, Au @ $10.50, ($94.50). 1 assay for Ab @ $5.50, ($5.50).

Subtotal of assays and analyses .... $ 6094.75

e) Equipment rental .... $ 920

f) Data computation, computer processing, drafting, report preparation, reprographics .... $ 9,117.17

Total Cost .... $ 17,327.42

I make this solemn declaration conscientiously believing it to be true and knowing it is of the same force and effect as if made under oath and by virtue of the Canada Evidence Act.

November 30, 1983
Wells, B.C.

K. Vincent Campbell
K. V. CAMPBELL AND ASSOCIATES LTD.

ITEMIZED COST STATEMENT - Schedule A - Work Schedule for Mt. Tom Group, C.M.D.

Employee	Dates on Site	Total Days	Rate ($/day)	Total Wages Paid
J. Boutwell General Delivery Wells, B.C.	July 18,19,20, 21, 23 August 15,24,28,30	10	158	$ 1,580
T. Cushman Box 25 Wells, B.C.	July 18,19,20,21, 22,23	6	150	$ 900
H. Carter Box 13 Barkerville, B.C.	July 20,21	2	130	$ 260
K.V. Campbell Box 99 Wells, B.C.	August 28 September 19,20	3	380	$ 1,140
	Total	21		$ 3,880

K.V. CAMPBELL & ASSOCIATES LTD

9 CERTIFICATE

I, KENNETH VINCENT CAMPBELL, resident of Wells, Province of British Columbia, hereby certify as follows:

1. I am a Consulting Geologist with an office at the corner of Dawson and Blair Avenues, Wells, B.C.
2. I graduated with a degree of Bachelor of Science, Honours Geology, from the University of British Columbia in 1966, a degree of Master of Science, Geology, from the University of Washington in 1969, and a degree of Doctor of Philosophy, Geology, from the University of Washington in 1971.
3. I have practiced my profession for 12 years. I have been a member of the Geological Association of Canada since 1969.
4. I have no direct, indirect, or contingent interest in the shares or business of Canadian-United Mineral Inc. nor do I intend to have any such interest.
5. This report, dated November 30, 1983, is based on my field work and my supervision of field work on the Mt. Tom property of Canadian-United Mineral Inc. and my examination of analyses, assays and available reports.
6. Permission is given by the author to use this report, dated November 30, 1983, in any Prospectus or Statement of Material Facts of Canadian-United Mineral Inc. or Consolidated Ascot Petroleum Corporation.

DATED at Wells, Province of British Columbia, this 30th day of November, 1983.

K.V. Campbell, Ph.D.
Geologist

CERTIFICATE

I, CHRISTOPHER J. CAMPBELL, residing at 4505 Cove Cliff Road, North Vancouver, British Columbia, hereby certify as follows:

1. I am a geophysicist.
2. I graduated from the University of British Columbia in 1972 with a degree of Bachelor of Science, Geophysics, and have practiced my profession continuously since that time.
3. I personally conducted the 1983 geophysical interpretation of the VLF-EM16R survey on the Mt. Tom property.
4. I am an active member in good standing of the Society of Exploration Geophysicists, the Canadian Society of Exploration Geophysicists, and the British Columbia Geophysical Society.

DATED at North Vancouver, Province of British Columbia, this 22nd day of November, 1983.

Christopher J. Campbell, B.Sc.
Geophysicist

APPENDIX I

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APPENDIX II

Sample Reports

SOIL REPORT

PROJECT No. ____________ AREA ________________________ SAMPLE No ____________

NTS ____________ ELEVATION ____________ UTM GRID N ____________ E ____________ SAMPLER ____________ DATE ____________

SITE TOPOGRAPHY
- ☐ Hill Top
- ☐ Gentle slope
- ☐ Steep slope >20°
- ☐ Base of slope
- ☐ Valley floor
- ☐ Depression
- ☐ Level
- ☐ Rolling
- ☐ Bog

SAMPLE ENVIRONMENT
- ☐ Tundra-hummocky
- ☐ Tundra-dry
- ☐ Tundra-swampy
- ☐ Grassland, meadows
- ☐ Peat mounds
- ☐ Bog in depression
- ☐ Forest-coniferous
- ☐ Forest-deciduous
- ☐ Forest-mixed
- ☐ Alder or willows
- ☐ Cultivated land
- ☐ Desert, semi-arid
- ☐ Barren
- ☐ Talus fan
- ☐ Bank soil-stream
- ☐ Bank soil-lake
- ☐ Road cut ☐ Logged

SITE DRAINAGE
- ☐ Dry
- ☐ Moist
- ☐ Wet
- ☐ Saturated

WATER MOVEMENT
- ☐ Seepage

OVERBURDEN ORIGIN
- ☐ Till-angular boulders
- ☐ Outwash-sandy, rounded boulders
- ☐ Lake sediment-sand/silt
- ☐ Alluvium-stream deposit
- ☐ Peat-bog
- ☐ Colluvium
- ☐ Lake sediment-clay
- ☐ Talus
- ☐ Residual
- ☐ Frost boil ★
- ☐ Seepage boil ★
- ☐ Boulder field ★
- ☐ Gravel ★
- ☐ Rock chips

★ Use only if formed origin cannot be identified.

BEDROCK
- ☐ Mineralized
- ☐ Present within 100m-200m upslope
- ☐ Present within 100m-200m downslope
- ☐ Underlies sample site
- ☐ Gossan
- ☐ Fe surface stains
- ☐ Radioactivity

SAMPLE TEXTURE
- ☐ Organic muck
- ☐ Fibrous, peaty organic matter
- ☐ Very sandy
- ☐ Sandy
- ☐ Sand-silt
- ☐ Sand-silt-clay
- ☐ Silt
- ☐ Silt-clay
- ☐ Clay
- ☐ Gravel ☐ Rock chips

OVERBURDEN TRANSPORT
- ☐ Local
- ☐ Extensive
- ☐ Unknown
- ☐ Mixed - two sources

SOIL HORIZON
- ☐ LH Leaf, humus layer, undecomposed vegetation lying on the ground surface (do not sample)
- ☐ AH Dark grey to black, organic-rich mineral horizon usually no deeper than 15 cm from the surface (do not sample)
- ☐ AE Grey to white (occasionally brown) leached mineral horizon near ground surface, usually sandy; accompanied by BF or BT horizon at depth (do not sample)
- ☐ BH Black, organic-rich mineral horizon at depths greater than 15 cm (do not sample)
- ☐ BF Red brown, iron-rich horizon
- ☐ BT Brown, clay-rich horizon
- ☐ BG Horizon which is water-saturated most of the year, identified by red brown mottles
- ☐ BM Brown horizon which is only slightly different in appearance from under-lying parent material
- ☐ C1, C2, C3, etc.-Parent material for soil
- ☐ CA White calcium carbonate precipitate in C horizon
- ☐ 01 02, 03 etc.—Bog samples at various depths
- ☐ TF Talus fines

SOIL TYPE
- Chernozem prairie soil usually under grassland or meadow thick Ah 10cm
- CA horizon at depth Solonetz saline soil, high content of NaCl
- Luvisol-BT horizon diagnostic
- Podzol BF horizon diagnostic
- Brunisol-BM horizon is only B horizon of profile
- Regosol-little or no soil development. No B soil horizon, only LH (maybe) and C horizon
- Gleysol-BG horizon diagnostic
- Organic soil-bog vegetation-no mineral matter

CONTAMINATION
- none
- possible
- definite

SHAPE OF COARSE FRAGMENTS
- Angular
- Rounded
- Subrounded, subangular
- Mixed above types

______ % COARSE FRAGMENTS

______ APPROXIMATE SLOPE DIRECTION

______ APPROXIMATE SLOPE ANGLE

______ TOP OF SAMPLE INTERVAL-CM

______ BOTTOM OF SAMPLE INTERVAL-CM

______ LOCAL BEDROCK COMPOSITION
Estimate—use lists 1-4

________________________ COLOUR

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STREAM SEDIMENT REPORT

PROJECT No. ____________ AREA ____________ SAMPLE No. ____________

NTS ____________ UTM GRID N ____________ E ____________ CREEK ____________

ELEVATION ____________ SAMPLER ____________ DATE ____________

SAMPLE ENVIRONMENT
- ☐ Next to bank
- ☐ Behind boulders
- ☐ Among roots below stream bank
- ☐ Middle of stream
- ☐ Among grass or reeds of creek bed
- ☐ Bar in creek
- ☐ Middle-very wide, shallow creek
- ☐ Base of slope
- ☐ Composite across stream
- ☐ Soil

PRECIPITATE

____

OVERBURDEN TRANSPORT
- ☐ Local
- ☐ Extensive
- ☐ Unknown
- ☐ Mixed local & extensive

OVERBURDEN ORIGIN
- ☐ Till-angular boulders
- ☐ Outwash-sandy, rounded boulders
- ☐ Lake sediment-sand/silt
- ☐ Alluvium-stream deposit
- ☐ Peat-bog
- ☐ Colluvium ★
- ☐ Lake sediment-clay
- ☐ Talus
- ☐ Residual
- ☐ Frost boil ★
- ☐ Seepage boil ★
- ☐ Boulder field ★
- ☐ Gravel ★
- ☐ Soil ★

★ use only if former origin cannot be identified

BEDROCK
- ☐ Mineralized
- ☐ Present within 100m-200m upslope
- ☐ Present within 100m-200m downslope
- ☐ Underlies sample site
- ☐ Gossan
- ☐ Fe surface stains

SAMPLE TEXTURE
- ☐ Organic-decomposed
- ☐ Clay
- ☐ Silt and fine sand
- ☐ Sand
- ☐ Gravel
- ☐ Frozen
- ☐ Cemented
- ☐ Precipitate
- ☐ Twigs or undecomposed organic matter

______ AVERAGE WIDTH OF STREAM-M

______ AVERAGE DEPTH OF STREAM-CM

STREAM VELOCITY
- ☐ Dry
- ☐ Stagnant
- ☐ Slow
- ☐ Moderate
- ☐ Fast
- ☐ Turbulent

INDICATE AS TRIBUTARY
- ☐ Stream enters on right looking down main stream
- ☐ Stream enters on left looking down main stream

______ LOCAL BEDROCK COMPOSITION

Estimate - use list 1 - 4

CONTAMINATION
- ☐ none
- ☐ possible
- ☐ definite

ORGANIC FRACTION
- ☐ Minor amount of undecomposed twigs, leaves, etc.
- ☐ Large amount of undecomposed twigs, leaves, etc.
- ☐ Minor amount of well-decomposed vegetation
- ☐ Large amount of well-decomposed vegetation
- ☐ Mosses
- ☐ Some sediment grains coated in organic matter
- ☐ All sediment grains coated in organic matter
- ☐ Looks like lake sediment material

MINERAL FRACTION
- ☐ Primarily light coloured silicate materials
- ☐ Primarily carbonate sand
- ☐ Minor, but notable content of mafic minerals, resistates etc
- ☐ High proportion of mafics, resistates

______ APPROXIMATE SLOPE DIRECTION

______ APPROXIMATE SLOPE ANGLE

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APPENDIX III

Soil Sample Data

MT. [illegible] GRID SOIL SAMPLE DATA PAGE 1

SAMPLE	TOPOGRAPHY	OVERBURDEN	HOR	INTERVAL	AG	AS	PB	ZN
L14S 0+00 E	GENTLE SLOPE	TILL	Bm	35-40 Cm	0.6	59	126	105
L14S 0+50 E	STEEP SLOPE	TILL	BM	30-35 CM	1.1	30	50	140
L14S 1+00 E	GENTLE SLOPE	TILL	Bm	45-50 Cm	0.2	41	58	[illegible]
L14S 1+50 E	GENTLE SLOPE	TILL	BM	35-40 CM	0.1	17	127	74
L14S 2+00 E	STEEP SLOPE	TILL	BM	30-35 CM	0.2	18	30	85
L6S 0+00 E	GENTLE SLOPE	TILL	Bm	30-35 Cm	0.8	23	32	99
L6S 0+50 E	GENTLE SLOPE	TILL	Bm	20-25 Cm	0.9	65	61	152
L6S 1+00 E	STEEP SLOPE	COLLUVIUM	TF	35-40 CM	0.3	46	9	89
L6S 1+50 E	GENTLE SLOPE	TILL	BM	30-35 CM	0.6	43	16	300
L6S 2+00 E	STEEP SLOPE	TILL	BM	35-40 CM	2.5	23	33	91
L6S 2+50 E	STEEP SLOPE	PEAT BOG	BM	45-50 CM	1.0	71	820	320
L6S 3+00 E	STEEP SLOPE	TILL	Bm	20-25 CM	0.8	113	29	98
L6S 3+50 E	STEEP SLOPE	TILL	BM	35-40 Cm	0.4	65	8	65
L6S 4+00 E	STEEP SLOPE	TILL	BM	25-30 CM	0.1	17	1	39
L6S 4+50 E	STEEP SLOPE	TILL	BF	20-25 CM	0.3	35	21	57
L6S 5+00 E	STEEP SLOPE	TILL	BM	45-50 CM	0.7	7	12	88
L6S [illegible] E	STEEP SLOPE	TILL	C	35-40 CM	0.1	3	10	87
L6S 6+00 E	STEEP SLOPE	TILL	BM	30-35 CM	1.1	5	3	27
L6S 6+50 E	STEEP SLOPE	TILL	BF	30-35 Cm	5.2	16	8	77
L6S 7+00 E	STEEP SLOPE	TILL	BM	15-15 CM	0.1	7	6	36
L6S 7+50 E	STEEP SLOPE	TILL	BM	25-30 Cm	0.4	12	4	36
L6S 8+00 E	STEEP SLOPE	TILL/COLLUV	BM	30-35 CM	0.1	7	10	28
L13S 0+00 E	GENTLE SLOPE	TILL	C	45-50 Cm	0.1	15	26	51
L13S 0+50 E	LEVEL	TILL	BF	25-30 CM	0.3	43	112	144
L13S 1+00 E	STEEP SLOPE	TILL	Bm	30-40 CM	0.6	36	72	88
L13S 1+50 E	STEEP SLOPE	TILL	BM	35-40 CM	0.1	79	160	178
L13S 2+00 E	STEEP SLOPE	TILL	C	50-60 CM	0.8	90	176	172
L13S 2+50 E	STEEP SLOPE	TILL	C	60-70 CM	0.1	85	168	174
L13S 3+00 E	STEEP SLOPE	TILL	C	45-50 CM	0.1	23	58	126
L13S 3+50 E	GENTLE SLOPE	TILL	BM	45-50 CM	0.7	100	290	147
L13S 4+00 E	STEEP SLOPE	TILL	C	60-65 Cm	0.3	85	163	113
L13S 4+50 E	STEEP SLOPE	TILL	C	70-75	2.1	30	50	106
L13S 5+00 E	STEEP SLOPE	?	C	70-75 Cm	0.1	22	25	122
L12S 0+00 E	HILL TOP	TILL	BM	30-35 CM	0.3	14	30	74
L12S 0+50 E	GENTLE SLOPE	TILL	BM	35-40 CM	1.6	25	25	116
L12S 1+00 E	GENTLE SLOPE	TILL	BM	35-40 CM	1.3	33	51	142
L12S 1+50 E	GULLY	TILL	BM	35-40 CM	0.8	14	205	135
L12S 2+00 E	STEEP SLOPE	TILL	Bm	35-40 CM	0.1	22	540	142
L12S 3+00 E	LEVEL	TILL	BF	30-35 Cm	0.2	57	114	148
L12S 2+50 E	STEEP SLOPE	TILL	BF	25-30 CM	0.1	53	77	98
L12S3+50 E	STEEP SLOPE	TILL	Bm	40-45 Cm	1.1	38	68	147
L12S 4+00 E	GENTLE SLOPE	TILL	C	40-45 CM	0.8	36	75	19
L12S 4+50 E	GENTLE SLOPE	TILL	C	45-50 Cm	0.2	17	28	153
L12S 5+00 S	STEEP SLOPE	TILL	C	45-50 CM	0.1	22	24	162
L12S 5+50 E	STEEP SLOPE	TILL	Bm	45-50 CM	0.3	20	22	150
L12S 6+00 E	STEEP SLOPE	TILL	C	60-65 CM	0.1	16	22	160
L12S 6+50 E	STEEP SLOPE	TILL	BM	35-40 Cm	0.9	23	40	143
L11S 0+00 E	STEEP SLOPE	TILL	BF	30-35 CM	1.1	11	9	103
L11S 0+50 E	STEEP SLOPE	TILL	BF	35-40 CM	0.1	23	14	105
L11S 1+00 E	GENTLE SLOPE	?	BM	35-40 CM	0.3	19	80	98
L11S 1+50 E	STEEP SLOPE	?	C	40-45 Cm	0.1	25	92	143
L11S 2+00 E	STEEP SLOPE	TILL	BF	35-40 CM	0.5	16	134	98

MT. TOM GRID SOIL SAMPLE DATA   PAGE 2

SAMPLE	TOPOGRAPHY	OVERBURDEN	HOR	INTERVAL	AG	AS	PB	ZN
L11S 2+50 E	GENTLE SLOPE	TILL	BF	35-40 CM	0.1	63	77	107
L11S 3+00 E	GENTLE SLOPE	TILL	BM	35-40 CM	1.0	24	65	127
L11S 3+50 E	STEEP SLOPE	TILL	BF	45-55 CM	1.3	38	110	99
L11S 4+00 E	STEEP SLOPE	TILL	BM	55-60 CM	1.0	24	36	90
L11S 4+50 E	GENTLE SLOPE	TILL	C	40-45 CM	0.6	14	27	200
L11S 5+00 E	STEEP SLOPE	TILL	C	30-35 CM	1.4	24	55	260
L11S 5+50 E	STEEP SLOPE	TILL	C	45-50 CM	1.8	19	35	190
L11S 6+00 E	STEEP SLOPE	TILL	C	35-40 CM	0.1	17	23	160
L11S 6+50 E	STEEP SLOPE	TILL	C	40-45 CM	0.3	15	34	120
L11S 7+00 E	STEEP SLOPE	TILL	C	35-40 CM	1.4	24	19	140
L11S 7+50 E	STEEP SLOPE	TILL	BM	40-45 CM	1.5	23	19	133
L10S 0+00 E	LEVEL	TILL	BM	35-40 CM	0.8	6	9	64
L10S 0+50 E	GENTLE SLOPE	TILL	C	35-40 CM	0.5	24	32	99
L10S 1+00 E	GENTLE SLOPE	TILL	BM	45-55 CM	0.7	20	99	95
L10S 1+50 E	GENTLE SLOPE	TILL	BM	45-50 CM	2.0	25	140	280
L10S 2+00 E	BASE OFSLOPE	TILL	C	40-45 CM	0.2	30	73	285
L10S 2+50 E	GENTLE SLOPE	TILL	BM	35-40 CM	0.6	88	184	210
L10S 3+00 E	STEEP SLOPE	TILL	C	50-60 CM	0.3	24	60	115
L10S 3+50 E	STEEP SLOPE	TILL	BM	50-55 CM	0.1	16	25	98
L10S 4+00 E	STEEP SLOPE	TILL	C	50-60 CM	0.2	150	43	170
L10S 4+50 E	STEEP SLOPE	TILL	BM	25-30 CM	0.7	22	54	166
L10S 5+00 E	GENTLE SLOPE	TILL	BH?	40-45 CM	0.4	27	63	136
L10S 5+50 E	STEEP SLOPE	TILL	C	25-30 CM	0.1	9	46	96
L10S 6+00 E	STEEP SLOPE	TILL	BF	30-35 CM	1.3	12	34	110
L10S 6+50 E	STEEP SLOPE	TILL	BM	40-45 CM	0.2	25	37	142
L10S 7+00 E	GENTLE SLOPE	TILL	BF	25-30 CM	0.7	29	43	81
L10S 7+50 E	LEVEL	TILL	?	25-30 CM	4.1	2	8	16
L10S 8+00 E	STEEP SLOPE	TILL	BM	35-40 CM	6.0	23	31	60
L9S 0+00 E	GENTLE SLOPE	TILL	C	35-40 CM	1.6	29	45	72
L9S 0+50 E	GENTLE SLOPE	TILL	BF	25-30 CM	0.7	38	9	152
L9S 1+00 E	GENTLE SLOPE	TILL	C	30-35 CM	11.8	88	115	480
L9S 1+50 E	STEEP SLOPE	TILL	BM	35-40 CM	2.5	22	25	101
L9S 2+00 E	STEEP SLOPE	TILL	C	35-40 CM	0.2	27	35	106
L9S 2+50 E	STEEP SLOPE	?	BM	50-60 CM	0.1	24	40	96
L9S 3+00 E	BASE OF SLOPE	TILL	BF	30-35 CM	0.3	30	2	77
L9S 3+50 E	STEEP SLOPE	TILL	C	35-40 CM	0.1	22	26	4
L9S 4+00 E	LEVEL	TILL	BF	35-40 CM	0.2	73	100	155
L9S 4+50 E	GENTLE SLOPE	TILL	C	35-40 CM	0.2	20	66	167
L9S 5+00 E	STEEP SLOPE	TILL	BF	30-35 CM	0.1	36	85	103
L9S 5+50 E	STEEP SLOPE	TILL	BF	25-30 CM	0.1	41	100	125
L9S 6+00 E	STEEP SLOPE	TILL	BM	20-30 CM	0.1	11	13	160
L9S 6+50 E	STEEP SLOPE	TILL	BM	20-30 CM	0.1	75	17	76
L9S 7+00 E	STEEP SLOPE	TILL	BM	30-40 CM	1.8	100	285	58
L9S 7+50 E	STEEP SLOPE	TILL	BF	35-40 CM	2.4	73	40	160
L9S 8+00 E	STEEP SLOPE	TILL	BM	35-40 CM	4.7	43	44	160
L8S 0+00 E	GENTLE SLOPE	TILL	C	35-40 CM	0.5	15	36	35
L8S 0+50 E	GENTLE SLOPE	TILL	AE?	30-35 CM	0.1	6	13	18
L8S 1+00 E	GENTLE SLOPE	TILL	BM	30-35 CM	0.7	55	56	360
L8S 1+50 E	GENTLE SLOPE	TILL	BM	35-40 CM	2.5	29	54	85
L8S 2+00 E	STEEP SLOPE	TILL	C	35-40 CM	0.4	22	38	76
L8S 2+50 E	STEEP SLOPE	TILL	BF	30-40 CM	0.5	22	41	88
L8S 3+00 E	STEEP SLOPE	TILL	BF	30-35 CM	2.2	32	30	1300

SAMPLE	TOPOGRAPHY	OVERBURDEN	HOR	INTERVAL	AG	AS	PB	ZN
L8S 3+50 E	STEEP SLOPE	TILL	BM	40-45 CM	2.4	240	34	600
L8S 4+00 E	STEEP SLOPE	TILL	C	30-35 CM	0.4	9	38	155
L8S 4+50 E	STEEP SLOPE	TILL	?	35-40 CM	0.1	55	16	29
L8S 5+00 E	STEEP SLOPE	TILL	BM	35-40 CM	0.8	29	25	92
L8S 5+50 E	STEEP SLOPE	TILL	BM	25-30 CM	0.6	10	54	46
L8S 6+00 E	STEEP SLOPE	?	BF	25-30 CM	0.9	10	33	88
L8S 6+50 E	STEEP SLOPE	TILL	BM	30-35 CM	2.0	25	35	102
L8S 7+00 E	STEEP SLOPE	TILL	C	25-35 CM	4.8	23	25	90
L8S 7+50 E	GENTLE SLOPE	TILL	BM	40-50 CM	9.9	25	23	44
L8S 8+00 E	GENTLE SLOPE	TILL	?	35-40 CM	9.5	3	11	8
L7S 0+00 E	GENTLE SLOPE	TILL	BM	30-35 CM	1.0	16	9	131
L7S 0+50 E	ROLLING	TILL	BF	10-15 CM	1.4	19	26	47
L7S 1+00 E	GENTLE SLOPE	TILL	BM	20-25 CM	0.8	27	61	36
L7S 1+50 E	GENTLE SLOPE	TILL	BM	30-35 CM	1.0	23	53	95
L7S 2+00 E	STEEP SLOPE	TILL	C	35-40 CM	1.0	41	68	26
L7S 2+50 E	BASE OF SLOPE	TILL	BM	20-25 CM	0.7	15	17	82
L7S 3+00 E	STEEP SLOPE	TILL	BF	25-30 CM	0.6	7	27	172
L7S 3+50 E	STEEP SLOPE	TILL	BM	35-40 CM	0.2	11	22	72
L7S 4+00 E	STEEP SLOPE	TILL	C	30-35 CM	0.9	23	68	109
L7S 4+50 E	STEEP SLOPE	TILL	BF	35-40 CM	0.7	43	49	122
L7S 5+00 E	STEEP SLOPE	TILL	BF	25-30 CM	0.5	48	20	64
L7S 5+50 E	STEEP SLOPE	TILL	BM	30-35 CM	1.3	65	35	68
L7S 6+00 E	STEEP SLOPE	TILL	BM	30-35 CM	0.1	20	38	34
L7S 6+50 E	STEEP SLOPE	?	?	35-40 CM	0.1	5	7	17
L7S 7+00 E	STEEP SLOPE	TILL	AE	35-40 CM	0.1	5	13	19
L7S 7+50 E	STEEP SLOPE	TILL	BM	25-30 CM	0.3	16	27	30
L7S 8+00 E	STEEP SLOPE	TILL	AE	25-30 CM	0.2	4	7	14
L5S 0+00 E	GENTLE SLOPE	TILL	BF	30-35 CM	9.5	29	22	101
L5S 0+50 E	GENTLE SLOPE	TILL	BM	25-30 CM	1.1	16	38	66
L5S 1+00 E	GENTLE SLOPE	TILL	C	35-40 CM	1.0	20	49	38
L5S 1+50 E	ROLLING	TILL	C	35-40 CM	1.0	22	15	20
L5S 2+00 E	STEEP SLOPE	TILL	?	35-40 CM	0.5	3	11	28
L5S 2+50 E	BASE OF SLOPE	PEAT BOG	BM?	30-35 CM	29.0	68	273	250
L5S 3+00 E	GENTLE SLOPE	TILL	BM	20-25 CM	1.7	150	59	66
L5S 3+50 E	STEEP SLOPE	COLLUVIUM?	BM	10-15 CM	0.3	30	5	52
L5S 4+00 E	GENTLE SLOPE	TILL/COLL?	BF	15-20 CM	0.7	24	15	61
L5S 4+50 E	STEEP SLOPE	TILL	BM	25-30 CM	0.1	180	4	42
L5S 5+00 E	STEEP SLOPE	TILL	BM	35-40 CM	1.0	4	14	110
L5S 5+50 E	STEEP SLOPE	TILL	BM	30-35 CM	1.2	9	25	114
L5S 6+00 E	STEEP SLOPE	TILL	BM	30-35 CM	0.7	7	53	210
L5S 6+50 E	STEEP SLOPE	TILL	BM	30-40 CM	1.8	16	21	56
L5S 7+00 E	GENTLE SLOPE	TILL	BM	20-25 CM	0.4	6	21	29
L5S 7+50 E	GENTLE SLOPE	TILL	BM	15-20 CM	0.3	10	7	42
L5S 8+00 E	LEVEL	TILL	BM	15-20 CM	0.6	11	17	30
L4S 0+00 E	GENTLE SLOPE	TILL	C	50-55 CM	1.4	36	25	67
L4S 0+50 E	STEEP SLOPE	TILL	C	40-45 CM	2.4	41	51	27
L4S 1+00 E	STEEP SLOPE	TILL	C	40-45 CM	2.8	17	16	87
L4S 1+50 E	STEEP SLOPE	TILL	C	40-45 CM	0.7	10	49	11
L4S 2+00 E	STEEP SLOPE	TILL	?	40-50 CM	1.6	16	2	20
L4S 2+50 E	STEEP SLOPE	TILL	C	50-55 CM	1.1	48	78	64
L4S 3+00 E	STEEP SLOPE	TILL	C	60-65 CM	1.2	160	9	32
L4S 3+50 E	STEEP SLOPE	TILL	C	35-40 CM	0.1	4	6	48

SAMPLE	TOPOGRAPHY	OVERBURDEN	HOR	INTERVAL	AG	AS	PB	ZN
L4S 4+00 E	BASE OF SLOPE	TILL	C	30-35 CM	0.6	14	14	76
L4S 4+50 E	STEEP SLOPE	TILL	C	30-40 CM	4.1	20	80	55
L4S 5+00 E	STEEP SLOPE	TILL	BM	35-40 CM	1.4	6	22	148
L4S 5+50 E	STEEP SLOPE	TILL	C	35-40 CM	1.2	6	21	148
L4S 6+00 E	STEEP SLOPE	TILL	BF	35-40 CM	7.3	22	17	65
L4S 6+50 E	STEEP SLOPE	TILL	BM?	20-25 CM	0.2	10	12	47
L4S 7+00 E	STEEP SLOPE	TILL	BM?	20-30 CM	0.4	7	2	36
L4S 7+50 E	GENTLE SLOPE	TILL	BM?	30-35 CM	0.2	3	10	14
L4S 8+00 E	HILL TOP	TILL	BM	30-35 CM	0.3	6	10	22
L3S 0+00 E	GENTLE SLOPE	TILL	BM	30-35 CM	0.9	23	34	59
L3S 0+50 E	GENTLE/ROLLNG	TILL	C	30-40 CM	1.5	16	19	75
L3S 1+00 E	ROLLING	TILL	BM	25-30 CM	3.3	14	27	56
L3S 1+50 E	ROLLING	TILL	C	35-40 CM	2.2	20	94	43
L3S 2+00 E	GENTLE SLOPE	TILL	C	30-35 CM	1.3	12	15	26
L3S 2+50 E	STEEP SLOPE	PEAT BOG	BM	25-30 CM	20.0	7	33	36
L3S 3+00 E	GENTLE SLOPE	PEAT BOG	BM?	40-45 CM	3.5	4	255	63
L3S 3+50 E	STEEP SLOPE	TILL	C	30-35 CM	1.6	30	40	85
L3S 4+00 E	GENTLE SLOPE	TILL	BM	30-35 CM	0.9	180	30	400
L3S 4+50 E	GENTLE SLOPE	TILL	C	30-35 CM	0.8	11	30	79
L3S 5+00 E	GENTLE SLOPE	TILL	BM	25-30 CM	1.7	17	55	103
L3S 5+50 E	GENTLE SLOPE	TILL	BM	25-30 CM	0.9	15	24	76
L3S 6+00 E	GENTLE SLOPE	TILL	BM	20-25 CM	0.2	12	11	51
L3S 6+50 E	GENTLE SLOPE	TILL	BM	15-20 CM	0.5	11	23	33
L3S 7+00 E	HILL TOP	TILL	BM	15-20 CM	0.4	23	20	56
L3S 7+50 E	HILL TOP	TILL	BM	20-25 CM	0.3	14	52	40
L3S 8+00 E	HILL TOP	TILL	BM	20-25 CM	0.2	10	19	22
L2S 0+00 E	BASE OF SLOPE	TILL	BM	30-35 CM	5.2	27	10	68
L2S 0+50 E	ROLLING	OUTWASH	C	30-35 CM	2.7	35	46	57
L2S 1+00 E	ROLLING	COLLUVIUM	BM?	30-35 CM	6.6	9	32	30
L2S 1+50 E	GENTLE SLOPE	TILL	C	20-25 CM	0.5	7	8	26
L2S 2+00 E	GENTLE SLOPE	TILL	C	20-25 CM	0.3	5	16	
L2S 2+50 E	STEEP SLOPE	TILL	BM	15-20 CM	2.0	30	61	48
L2S 3+00 E	BOG	TILL	C	20-25 CM	2.2	7	30	43
L2S 3+50 E	GENTLE SLOPE	TILL	BF	30-35 CM	1.4	35	100	53
L2S 4+00 E	GENTLE SLOPE	TILL	BM	30-35 CM	0.2	35	37	70
L2S 4+50 E	GENTLE SLOPE	TILL	C	25-30 CM	0.2	24	14	78
L2S 5+00 E	GENTLE SLOPE	TILL	BM	25-30 CM	2.1	83	228	115
L2S 5+50 E	GENTLE SLOPE	TILL	C	30-35 CM	0.8	36	43	53
L2S 6+00 E	GENTLE SLOPE	TILL	BM	10-15 CM	2.0	36	38	62
L2S 6+50 E	GENTLE SLOPE	TILL/COLL?	BM	15-20 CM	0.1	14	20	47
L2S 7+00 E	ROLLING	TILL/COLL?	BM	10-15 CM	0.3	9	8	20
L2S 7+50 E	GENTLE SLOPE	TILL	BM	10-15 CM	0.1	6	5	25
L2S 8+00 E	GENTLE SLOPE	TILL/COLL?	BM	20-25 CM	0.1	7	8	26
L1S 0+00 E	GENTLE SLOPE	TILL	BM	15-20 CM	1.0	20	24	92
L1S 0+50 E	GENTLE SLOPE	TILL	C	25-30 CM	5.8	15	31	125
L1S 1+00 E	GENTLE SLOPE	TILL	C	20-25 CM	0.4	6	7	20
L1S 1+50 E	GENTLE SLOPE	TILL/COLL?	BM	20-25 CM	0.7	7	53	35
L1S 2+00 E	GENTLE SLOPE	TILL	BM	20-25 CM	1.2	15	16	44
L1S 2+50 E	GENTLE SLOPE	TILL	BM	20-25 CM	3.5	16	43	39
L1S 3+00 E	GENTLE SLOPE	TILL	BM	25-30 CM	0.6	5	15	29
L1S 3+50 E	STEEP SLOPE	TILL	BM	30-35 CM	0.5	16	21	83
L1S 4+00 E	GENTLE SLOPE	TILL	BM	30-35 CM	1.8	25	35	58

SAMPLE	TOPOGRAPHY	OVERBURDEN	HOR	INTERVAL	AG	AS	PB	ZN
L1S 4+50 E	GENTLE SLOPE	TILL	BM	20-25 CM	0.4	24	34	62
L1S 5+00 E	LEVEL	TILL	C	25-30 CM	1.0	33	278	85
L1S 5+50 E	LEVEL	TILL	BM	25-30 CM	0.5	39	50	66
L1S 6+00 E	ROLLING	TILL	BM	20-25 CM	1.0	35	59	61
L1S 6+50 E	ROLLING	TILL	BM	15-20 CM	0.5	29	37	72
L1S 7+00 E	ROLLING	COLL/FRST BL?	?	10-20 CM	0.6	17	12	37
L1S 7+50 E	GENTLE SLOPE	TILL/COLL?	BM?	10-15 CM	0.1	11	7	31
L1S 8+00 E	GENTLE SLOPE	COLLUVIUM	BM	15-20 CM	0.3	15	11	33
L0 0+00 E	STEEP SLOPE	TILL	C	40-45 CM	1.5	22	25	127
L0 0+50 E	GENTLE SLOPE	TILL	C	30-35 CM	0.3	6	11	140
L0 1+00 E	GENTLE SLOPE	TILL	C	30-35 CM	0.7	25	23	90
L0 1+50 E	GENTLE SLOPE	TILL	C	25-35 CM	0.9	35	18	122
L0 2+00 E	GENTLE SLOPE	TILL	C	35-40 CM	0.8	12	39	14
L0 2+50 E	GENTLE SLOPE	TILL	C	30-35 CM	1.1	19	34	57
L0 3+00 E	GENTLE SLOPE	TILL	C	40-45 CM	1.0	57	82	57
L0 3+50 E	GENTLE SLOPE	TILL	C	30-35 CM	0.3	20	20	97
L0 4+00 E	BASE OF SLOPE	TILL	C	25-30 CM	0.2	16	47	76
L0 4+50 E	STEEP SLOPE	TILL	C	40-45 CM	1.2	135	198	75
L0 5+00 E	STEEP SLOPE	TILL	C	40-45 CM	0.2	15	77	73
L0 5+50 E	VALLEY FLOOR	TILL	C	30-35 CM	1.9	7	14	130
L0 6+00 E	GENTLE SLOPE	TILL	C	25-30 CM	0.1	15	32	75
L0 6+50 E	GENTLE SLOPE	TILL	C	35-30 CM	0.3	24	24	78
L0 7+00 E	GENTLE SLOPE	TILL	C	35-40 CM	0.2	17	62	80
L0 7+50 E	GENTLE SLOPE	TILL	C	35-40 CM	1.6	22	33	64
L0 8+00 E	GENTLE SLOPE	TILL	C	25-30 CM	0.1	7	13	40
L1N 0+00 E	STEEP SLOPE	TALUS	BM	5-10 CM	0.4	4	3	49
L1N 0+50 E	STEEP SLOPE	TALUS	BF	15-20 CM	0.1	17	1	73
L1N 1+00 E	STEEP SLOPE	TILL	BM	30-35 CM	0.6	19	18	70
L1N 1+50 E	HILL TOP	TILL	BM	20-25 CM	0.8	14	83	68
L1N 2+00 E	GENTLE SLOPE	TILL	BM	25-30 CM	0.7	14	19	34
L1N 2+50 E	GENTLE SLOPE	TILL	C	25-30 CM	0.9	19	45	51
L1N 3+00 E	GENTLE SLOPE	TILL	C	25-40 CM	0.5	10	33	21
L1N 3+50 E	GENTLE SLOPE	TILL	BM	30-40 CM	0.4	10	27	20
L1N 4+00 E	HILL TOP	TILL	C	30-40 CM	0.1	10	27	
L1N 4+50 E	GENTLE SLOPE	TILL	C	30-35 CM	0.1	14	41	48
L1N 5+00 E	GENTLE SLOPE	TILL	C	30-35 CM	0.3	19	45	69
L1N 5+50 E	GENTLE SLOPE	TILL	BF	30-35 CM	0.3	19	25	73
L1N 6+00 E	STEEP SLOPE	TILL	C	30-40 CM	0.8	12	9	680
L1N 6+50 E	GENTLE SLOPE	TILL	BF	25-30 CM	0.1	19	20	55
L1N 7+00 E	GENTLE SLOPE	TILL	C	30-35 CM	0.7	17	23	65
L1N 7+50 E	GENTLE SLOPE	TILL	C	30-40 CM	1.0	25	28	55
L1N 8+00 E	GENTLE SLOPE	TILL	C	30-31 CM	25	19	24	72
L2N 0+00 E	GENTLE SLOPE	TILL	BF	20-25 CM	0.2	15	4	67
L2N 0+50 E	HILL TOP	TILL	BF	20-25 CM	0.1	9	2	50
L2N 1+00 E	STEEP SLOPE	TILL/COLL?	BM	15-20 CM	0.1	3	2	43
L2N 1+50 E	STEEP SLOPE	COLLUVIUM	BM	25-30 CM	0.2	22	11	114
L2N 2+00 E	RIDGE TOP	TILL	C	20-25 CM	0.1	10	15	58
L2N 2+50 E	GENTLE SLOPE	TILL	C	25-30 CM	0.4	10	27	67
L2N 3+00 E	GENTLE SLOPE	TILL/COLL?	BM	20-25 CM	0.3	10	72	36
L2N 3+50 E	STEEP SLOPE	TILL/COLL?	BM	30-35 CM	0.3	5	20	145
L2N 4+00 E	GENTLE SLOPE	TILL/COLL?	BM	25-30 CM	0.1	15	69	98
L2N 4+50 E	GENTLE SLOPE	TILL/COLL?	BF	15-20 CM	0.3	35	19	96

SAMPLE	TOPOGRAPHY	OVERBURDEN	HOR	INTERVAL	AG	AS	PB	ZN
L2N 5+00 E	GENTLE SLOPE	TILL	BM	15-20 CM	0.3	29	43	64
L2N 5+50 E	GENTLE SLOPE	TILL	BM	25-30 CM	0.8	20	43	63
L2N 6+00 E	GENTLE SLOPE	TILL	C	25-30 CM	0.8	17	41	65
L2N 6+50 E	STEEP SLOPE	COLLUVIUM	BM	20-25 CM	0.6	7	19	95
L2N 7+00 E	STEEP SLOPE	COLLUVIUM	C/B	25-30 CM	0.4	16	12	40
L2N 7+50 E	GENTLE SLOPE	TILL	BF	15-20 CM	1.2	29	56	55
L2N 8+00 E	GENTLE SLOPE	TILL	BM	20-25 CM	1.0	25	34	92
L3N 0+00 E	GENTLE SLOPE	TILL	BM	25-30 CM	0.2	4	1	75
L3N 0+50 E	GENTLE SLOPE	TILL	BF	10-15 CM	0.1	4	6	54
L3N 1+00 E	GENTLE SLOPE	TILL	BM	15-20 CM	0.1	3	5	63
L3N 1+50 E	STEEP SLOPE	TALUS	BM	25-30 CM	0.1	3	1	51
L3N 2+00 E	STEEP SLOPE	TILL	BM	30-35 CM	0.2	5	1	59
L3N 2+50 E	STEEP SLOPE	TALUS	?	25-30 CM	7.3	23	2	46
L3N 3+00 E	VALLEY FLOOR	TILL	?	30-35 CM	1.3	7	48	38
L3N 3+50 E	STEEP SLOPE	TILL	C	30-35 CM	0.6	15	63	20
L3N 4+00 E	VALLEY FLOOR	TILL	?	25-30 CM	1.4	16	345	30
L3N 4+50 E	STEEP SLOPE	TILL	C	20-25 CM	0.5	25	95	39
L3N 5+00 E	GENTLE SLOPE	TILL	BF	10-15 CM	7.3	17	60	60
L3N 5+50 E	GENTLE SLOPE	TILL	BM	20-25 CM	0.6	25	50	68
L3N 6+00 E	GENTLE SLOPE	TILL	BM	25-30 CM	1.9	15	50	78
L3N 6+50 E	GENTLE SLOPE	TILL	C	35-40 CM	0.5	17	80	61
L3N 7+00 E	STEEP SLOPE	TILL	C	30-35 CM	5.4	30	50	86
L3N 7+50 E	GENTLE SLOPE	TILL	C	30-35 CM	0.8	15	47	66
L3N 8+00 E	GENTLE SLOPE	TILL	BM	25-30 CM	0.9	27	30	69
L4N 0+00 E	HILL TOP	TILL/OUTWASH?	BM	25-30 CM	0.1	22	27	94
L4N 0+50 E	GENTLE SLOPE	TILL/OUTWASH?	BM	20-25 CM	0.1	14	13	91
L4N 1+00 E	GENTLE SLOPE	TILL	C	20-25 CM	0.1	15	13	98
L4N 1+50 E	GENTLE SLOPE	TILL	C	20-25 CM	0.6	15	20	100
L4N 2+00 E	GENTLE SLOPE	TILL	BM	20-25 CM	0.9	7	2	65
L4N 2+50 E	GENTLE SLOPE	TILL	BM	15-20 CM	0.8	24	20	91
L4N 3+00 E	GENTLE SLOPE	TILL	BM	20-25 CM	1.0	39	48	78
L4N 3+50 E	GENTLE SLOPE	TILL	BM	20-25 CM	0.3	17	30	82
L4N 4+00 E	STEEP SLOPE	TILL	BM	20-25 CM	1.1	30	61	71
L4N 4+50 E	STEEP SLOPE	TILL/OUTWASH?	BM	20-25 CM	1.5	15	45	60
L4N 5+00 E	HILL TOP	TILL	BM	10-15 CM	0.5	65	75	103
L4N 5+50 E	STEEP SLOPE	TILL	BM	20-25 CM	0.9	24	51	63
L4N 6+00 E	STEEP SLOPE	TILL	BM	20-25 CM	0.9	30	57	71
L4N 6+50 E	STEEP SLOPE	TILL	C	20-25 CM	0.9	11	34	82
L4N 7+00 E	GENTLE SLOPE	TILL	BG	20-25 CM	0.8	4	29	71
L4N 7+50 E	STEEP SLOPE	TILL	C	25-30 CM	1.8	15	26	93
L4N 8+00 E	GENTLE SLOPE	TILL	BM	20-25 CM	0.5	24	49	75
L5N 0+00 E	HILL TOP	TILL	C	25-30 CM	0.2	16	9	36
L5N 0+50 E	HILL TOP	TILL	C	20-25 CM	0.4	14	32	38
L5N 1+00 E	GENTLE SLOPE	TILL	C	30-35 CM	2.6	9	45	61
L5N 1+50 E	GENTLE SLOPE	TILL	C	25-30 CM	3.3	25	24	90
L5N 2+00 E	GENTLE SLOPE	TILL	C	25-30 CM	1.0	14	20	76
L5N 2+50 E	GENTLE SLOPE	TILL	C	30-35 CM	0.1	29	11	86
L5N 3+00 E	GENTLE SLOPE	TILL	C	30-35 CM	0.6	16	26	81
L5N 3+50 E	GENTLE SLOPE	TILL	C	30-35 CM	1.0	19	23	103
L5N 4+00 E	GENTLE SLOPE	TILL	BM	25-30 CM	2.2	20	31	104
L5N 4+50 E	STEEP SLOPE	TILL	BM	30-35 CM	1.0	6	20	64
L5N 5+00 E	DEPRESSION	OUTWASH	C	25-30 CM	1.2	30	365	460

MT. TOM GRID SOIL SAMPLE DATA PAGE 7

SAMPLE	TOPOGRAPHY	OVERBURDEN	HOR	INTERVAL	AG	AS	PB	ZN
L5N 5+50 E	STEEP SLOPE	TILL/TALUS?	BF	15-20 CM	0.7	50	73	96
L5N 6+00 E	STEEP SLOPE	TILL	BM	25-30 CM	1.0	6	42	42
L5N 6+50 E	GENTLE SLOPE	TILL/TALUS?	BM	10-15 CM	1.0	57	109	96
L5N 7+00 E	GENTLE SLOPE	TILL/TALUS?	BG	15-20 CM	1.9	7	33	64
L5N 7+50 E	BASE OF SLOPE	LAKE SED?	C	25-30 CM	0.1	17	29	95
L5N 8+00 E	BASE OF SLOPE	TILL	BG	15-20 CM	0.5	19	23	54
L6N 0+00 E	HILL TOP	TILL	BM	20-25 CM	0.7	12	15	42
L6N 0+50 E	HILL TOP	TILL	C	20-25 CM	1.4	12	14	56
L6N 1+00 E	HILL TOP	TILL	BF	20-25 CM	0.6	15	15	63
L6N 1+50 E	GENTLE SLOPE	TILL	C	25-30 CM	1.0	14	32	50
L6N 1+00 E	GENTLE SLOPE	TILL	C	20-25 CM	0.3	14	24	50
L6N 2+50 E	GENTLE SLOPE	TILL	C	30-35 CM	1.5	19	27	70
L6N 3+00 E	GENTLE SLOPE	TILL	BM	25-30 CM	1.6	7	19	44
L6N 3+50 E	GENTLE SLOPE	TILL	C	25-30 CM	1.0	17	25	82
L6N 4+00 E	GENTLE SLOPE	TILL	C	20-25 CM	0.7	14	16	62
L6N 4+50 E	GENTLE SLOPE	TILL	C?	20-30 CM	1.6	10	27	68
L6N 5+00 E	GENTLE SLOPE	TILL	BM	25-30 CM	1.5	17	35	96
L6N 5+50 E	GENTLE SLOPE	LAKE SED?	C	35-40 CM	1.3	17	33	175
L6N 6+00 E	STEEP SLOPE	TILL/ALLUV?	BM	15-20 CM	1.4	59	150	520
L6N 6+50 E	VALLEY FLOOR	LAKE SED	BM	35-40 CM	6.4	46	310	1550
L6N 7+00 E	ROLLING	TILL	BM	20-25 CM	1.0	16	23	70
L6N 7+50 E	VALLEY FLOOR	ALLUVIUM	BM?	15-20 CM	2.5	27	123	235
L6N 8+00 E	STEEP SLOPE	TILL	BM	20-25 CM	2.3	36	52	98
L7N 0+00 E	HILL TOP	TILL	C	25-30 CM	0.6	5	8	18
L7N 0+50 E	LEVEL	TILL	BF	20-25 CM	1.1	14	15	44
L7N 1+00 E	STEEP SLOPE	TILL/TALUS?	C	30-35 CM	2.4	23	23	23
L7N 1+50 E	STEEP SLOPE	TILL/TALUS?	C	20-25 CM	0.6	22	23	73
L7N 2+00 E	STEEP SLOPE	TILL/TALUS?	BF	20-25 CM	1.0	59	14	65
L7N 2+50 E	HILL TOP	TILL	C	25-30 CM	0.5	16	31	69
L7N 3+00 E	STEEP SLOPE	TILL	BF	25-30 CM	1.4	17	13	80
L7N 3+50 E	GENTLE SLOPE	TILL	BF	20-25 CM	1.3	17	28	76
L7N 4+00 E	GENTLE SLOPE	TILL	BM	30-35 CM	0.3	16	15	68
L7N 4+50 E	VALLEY FLOOR	LAKE SED	BM?	30-35 CM	1.1	17	29	97
L7N 5+00 E	BASE OF SLOPE	ALLUVIUM?	BM	25-30 CM	1.9	38	49	81
L7N 5+50 E	GENTLE SLOPE	TILL	BF	25-30 CM	0.6	43	40	89
L7N 6+00 E	GENTLE SLOPE	TILL/OUTWASH?	BM	25-30 CM	1.7	30	33	86
L7N 6+50 E	GENTLE SLOPE	TILL	BM	25-30 CM	0.6	41	53	85
L7N 7+00 E	VALLEY FLOOR	TILL	C	25-30 CM	2.2	41	64	212
L7N 7+50 E	GENTLE SLOPE	TILL	BM	30-35 CM	1.0	23	37	88
L7N 8+00 E	STEEP SLOPE	TILL	BF	25-30 CM	1.8	73	53	91
L8N 0+00 E	STEEP SLOPE	TILL	BF	20-25 CM	0.9	20	17	40
L8N 0+50 E	HILL TOP	TILL	BF	20-25 CM	0.6	16	16	51
L8N 1+00 E	STEEP SLOPE	TILL	BM	25-30 CM	0.9	36	49	26
L8N 1+50 E	STEEP SLOPE	TILL	BM	20-25 CM	1.0	35	26	28
L8N 2+00 E	STEEP SLOPE	OUTWASH	BF	20-25 CM	2.7	22	31	79
L8N 2+50 E	STEEP SLOPE	TILL/OUTWASH?	BF	15-20 CM	1.0	22	27	55
L8N 3+00 E	STEEP SLOPE	TILL/OUTWASH?	BF	15-20 CM	1.3	15	20	44
L8N 3+50 E	HILL TOP	GRAVEL	BM	10-15 CM	0.7	19	22	45
L8N 4+00 E	GENTLE SLOPE	TILL/TALUS?	BM	10-15 CM	0.4	65	35	56
L8N 4+50 E	GENTLE SLOPE	TILL/OUTWASH?	BM	10-15 CM	0.4	69	48	58
L8N 5+00 E	STEEP SLOPE	TILL	?	10-20 CM	1.4	69	65	71
L8N 5+50 E	VALLEY FLOOR	TILL	BM	10-15 CM	2.6	24	102	98

SAMPLE	TOPOGRAPHY	OVERBURDEN	HOR	INTERVAL	AG	AS	PB	ZN
L8N 6+00 E	STEEP SLOPE	TILL/OUTWASH	BF	15-20 CM	1.4	63	62	70
L8N 6+00 E	STEEP SLOPE	OUTWASH	BF	20-25 CM	2.7	48	22	63
L8N 7+00 E	GENTLE SLOPE	OUTWASH	BF	20-25 CM	6.1	27	31	64
L8N 7+50 E	LEVEL	TILL	BM	10-15 CM	0.9	17	7	46
L8N 8+00 E	GENTLE SLOPE	TILL/OUTWASH	BM	10-15 CM	0.6	23	44	45
L9N 0+00 E	STEEP SLOPE	OUTWASH	BM	25-30 CM	0.7	30	21	37
L9N 0+50 E	STEEP SLOPE	ALLUVIUM	C	25-30 CM	0.5	10	14	24
L9N 1+00 E	STEEP SLOPE	TILL/TALUS	BM	20-25 CM	1.5	15	12	44
L9N 1+50 E	STEEP SLOPE	TILL/GRAVEL	C	20-25 CM	0.9	19	68	32
L9N 2+00 E	VALLEY FLOOR	TILL/TALUS?	BF	10-15 CM	1.0	16	27	76
L9N 2+50 E	STEEP SLOPE	TILL	BF	20-25 CM	0.8	16	23	86
L9N 3+00 E	VALLEY FLOOR	ALLUVIUM	BM	10-15 CM	3.1	10	17	84
L9N 3+50 E	STEEP SLOPE	TILL	BF	15-20 CM	3.2	11	23	74
L9N 4+00 E	GENTLE SLOPE	OUTWASH	BF	10-15 CM	1.8	260	375	62
L9N 4+50 E	STEEP SLOPE	TILL	BF	15-20 CM	1.0	83	106	96
L9N 5+00 E	GENTLE SLOPE	TILL/OUTWASH?	BF	15-20 CM	1.2	10	45	112
L9N 5+50 E	GENTLE SLOPE	TILL	BF	15-20 CM	2.7	17	29	90
L9N 6+00 E	GENTLE SLOPE	TILL/TALUS?	BF	25-30 CM	0.7	2	22	62
L9N 6+50 E	GENTLE SLOPE	TILL/TALUS?	BM	10-15 CM	1.1	14	17	50
L9N 7+00 E	GENTLE SLOPE	TILL	C	30-35 CM	0.2	5	4	15
L9N 7+50 E	GENTLE SLOPE	GRAVEL	C	25-30 CM	0.5	7	82	12
L9N 8+00 E	LEVEL	TILL	BM	20-25 CM	1.6	25	45	51
L10N 0+00 E	GENTLE SLOPE	TILL	BM	30-35 CM	0.7	10	13	76
L10N 0+50 E	GENTLE SLOPE	TILL	BM	25-30 CM	1.3	15	16	75
L10N 1+00 E	GENTLE SLOPE	OUTWASH	BM	35-40 CM	0.8	23	17	109
L10N 1+50 E	GENTLE SLOPE	TILL	BM	30-35 CM	1.1	11	12	92
L10N 2+00 E	STEEP SLOPE	TILL	C	35-40 CM	1.0	14	12	119
L10N 2+50 E	STEEP SLOPE	PEAT BOG	C	35-40 CM	6.4	9	14	267
L10N 3+00 E	GENTLE SLOPE	TILL	BG	25-30 CM	0.7	7	16	134
L10N 3+50 E	GENTLE SLOPE	TILL	BM	30-35 CM	0.6	5	14	250
L10N 4+00 E	GENTLE SLOPE	TILL	BG	15-20 CM	0.1	4	7	70
L10N 4+50 E	GENTLE SLOPE	PEAT BOG	C	35-40 CM	2.0	4	22	7
L10N 5+00 E	GENTLE SLOPE	OUTWASH	BM	35-40 CM	0.3	10	20	88
L10N 5+50 E	GENTLE SLOPE	TILL	BM	30-35 CM	0.9	10	17	75
L10N 6+00 E	STEEP SLOPE	TILL	BM	30-35 CM	1.4	2	24	69
L10N 6+50 E	GENTLE SLOPE	TILL	BM	25-30 CM	0.1	5	13	42
L10N 7+00 E	GENTLE SLOPE	TILL	BM	25-30 CM	1.3	12	14	87
L10N 7+50 E	GENTLE SLOPE	TILL	BM	30-35 CM	12.3	17	17	74
L10N 8+00 E	GENTLE SLOPE	TILL	C	30-35 CM	0.8	20	44	64
L11N 0+00 E	GENTLE SLOPE	TILL	BM	30-35 CM	0.9	14	19	81
L11N 0+50 E	GENTLE SLOPE	TILL/OUTWASH	BM	35-40 CM	0.9	10	21	77
L11N 1+00 E	GENTLE SLOPE	TILL	BM	30-35 CM	10.0	14	24	76
L11N 1+50 E	GENTLE SLOPE	?	BG	30-35 CM	3.8	7	14	52
L11N 2+00 E	STEEP SLOPE	?	C	15-30 CM	0.6	15	18	74
L11N 2+50 E	STEEP SLOPE	TILL	BG	20-25 CM	2.3	12	15	270
L11N 3+00 E	GENTLE SLOPE	PEAT BOG	?	30-35 CM	1.5	2	20	78
L11N 3+50 E	GENTLE SLOPE	TILL	C	30-35 CM	1.6	12	32	103
L11N 4+00 E	GENTLE SLOPE	TILL	BM	25-30 CM	0.8	11	14	80
L11N 4+50 E	GENTLE SLOPE	TILL	BM	30-35 CM	0.7	4	17	78
L11N 5+00 E	GENTLE SLOPE	OUTWASH	BM	20-25 CM	0.9	10	31	65
L11N 5+50 E	GENTLE SLOPE	TILL	BF	25-30 CM	0.3	22	17	110
L11N 6+00 E	GENTLE SLOPE	TILL	BM	25-30 CM	1.0	12	13	65

SAMPLE	TOPOGRAPHY	OVERBURDEN	HOR	INTERVAL	AG	AS	PB	ZN
L11N 6+50 E	HILL TOP	TILL	BM	25-30 CM	3.0	10	14	64
L11N 7+00 E	GENTLE SLOPE	TILL	BF	25-30 CM	6.2	9	11	70
L11N 7+50 E	GENTLE SLOPE	TILL	C	30-35 CM	0.7	22	7	14
L11N 8+00 E	GENTLE SLOPE	TILL	C	25-30 CM	4.5	17	158	31
L12N 0+00 E	GENTLE SLOPE	TILL	BM	30-40 CM	1.2	11	10	64
L12N 0+50 E	GENTLE SLOPE	TILL	C	40-45 CM	1.9	9	13	61
L12N 0+00 E	GENTLE SLOPE	TILL	C	40-50 CM	1.4	15	19	81
L12N 1+50 E	GENTLE SLOPE	TILL	C	50-55 CM	2.5	11	14	63
L12N 2+00 E	STEEP SLOPE	TILL	C	50-55 CM	1.5	16	15	75
L12N 2+50 E	STEEP SLOPE	TILL	C	50-55 CM	1.1	22	30	92
L12N 3+00 E	GENTLE SLOPE	TILL	C	40-45 CM	5.2	45	148	550
L12N 3+50 E	GENTLE SLOPE	TILL	C	30-40 CM	1.9	41	165	128
L12N 4+00 E	GENTLE SLOPE	TILL	BM	40-50 CM	0.2	23	25	86
L12N 4+50 E	GENTLE SLOPE	TILL	?	45-50 CM	1.5	5	28	6
L12N 5+00 E	GENTLE SLOPE	TILL	C	40-50 CM	0.2	14	14	80
L12N 5+50 E	GENTLE SLOPE	TILL	C	35-40 CM	0.4	11	12	95
L12N 6+00 E	GENTLE SLOPE	TILL	C	35-40 CM	0.4	11	12	95
L12N 6+50 E	GENTLE SLOPE	TILL	C	35-40 CM	0.7	22	13	58
L12N 7+00 E	GENTLE SLOPE	TILL	C	35-40 CM	1.3	15	15	68
L12N 7+50 E	GENTLE SLOPE	TILL	C	45-50 CM	2.5	25	28	68
L12N 8+00 E	STEEP SLOPE	TILL	C	35-40 CM	1.3	30	22	76
L13N 0+00 E	GENTLE SLOPE	TILL	C	30-35 CM	4.2	16	30	96
L13N 0+50 E	GENTLE SLOPE	TILL	BM	25-30 CM	0.5	14	26	77
L13N 1+00 E	GENTLE SLOPE	TILL	BM	20-25 CM	0.9	6	14	51
L13N 1+50 E	GENTLE SLOPE	TILL	BF	30-35 CM	1.0	11	17	71
L13N 2+00 E	STEEP SLOPE	PEAT BOG	BM	25-30 CM	0.9	17	105	95
L13N 3+00 E	STEEP SLOPE	TILL	BG	15-20 CM	3.4	61	130	185
L13N 3+50 E	GENTLE SLOPE	TILL	C	25-30 CM	7.2	10	31	56
L13N 4+00 E	GENTLE SLOPE	TILL	C	20-25 CM	1.0	10	24	68
L13N 4+50 E	GENTLE SLOPE	PEAT BOG	C	25-30 CM	17.4	6	64	83
L13N 5+00 E	GENTLE SLOPE	TILL	BG	20-25 CM	1.9	22	88	134
L13N 5+50 E	GENTLE SLOPE	TILL	BG	25-30 CM	1.6	10	24	98
L13N 6+00 E	GENTLE SLOPE	TILL	C	30-35 CM	1.2	24	33	116
L13N 6+50 E	HILL TOP	TILL	BM	25-30 CM	0.6	15	21	8
L13N 7+00 E	GENTLE SLOPE	TILL	BM	25-30 CM	1.1	20	19	86
L13N 7+50 E	STEEP SLOPE	TILL	C	25-30 CM	2.3	20	32	78
L13N 8+00 E	STEEP SLOPE	TILL	BM	35-40 CM	2.2	29	17	72
L14N 0+00 E	GENTLE SLOPE	TILL	BM	30-35 CM	0.7	15	18	81
L14N 0+50 E	GENTLE SLOPE	TILL	BM	25-30 CM	1.0	10	14	70
L14N 1+00 E	GENTLE SLOPE	TILL	BM	35-40 CM	7.9	9	15	65
L14N 1+50 E	GENTLE SLOPE	TILL	BM	25-30 CM	1.5	12	19	66
L14N 2+00 E	GENTLE SLOPE	TILL/OUTWASH?	BM	35-40 CM	0.7	11	13	69
L14N 2+50 E	GENTLE SLOPE	PEAT BOG	BM?	25-30 CM	14.5	12	185	67
L14N 3+00 E	GENTLE SLOPE	PEAT BOG	BF	30-35 CM	3.6	51	26	215
L14N 3+50 E	GENTLE SLOPE	TILL	BF	25-30 CM	2.0	59	46	300
L14N 4+00 E	GENTLE SLOPE	OUTWASH	BM	30-35 CM	1.2	45	46	460
L14N 4+50 E	GENTLE SLOPE	TILL	C	30-35 CM	2.2	16	47	85
L14N 5+00 E	GENTLE SLOPE	TILL	C	35-40 CM	0.7	19	32	15
L14N 5+50 E	GENTLE SLOPE	TILL	C	35-40 CM	1.5	17	31	150
L14N 6+00 E	GENTLE SLOPE	TILL	C	35-40 CM	1.2	12	68	62
L14N 6+50 E	GENTLE SLOPE	TILL	BM	35-40 CM	1.4	16	40	88
L14N 7+00 E	GENTLE SLOPE	TILL	?	35-40 CM	0.2	5	18	24

MT. TOM GRID SOIL SAMPLE DATA PAGE 10

SAMPLE	TOPOGRAPHY	OVERBURDEN	HOR	INTERVAL	AG	AS	PB	ZN
L14N 7+50 E	STEEP SLOPE	TILL	C	50-55 CM	0.8	9	18	48
L14N 8+00 E	STEEP SLOPE	TILL	C	50-55 CM	1.8	14	400	44
L15N 0+50 E	GENTLE SLOPE	TILL	BF	10-15 CM	1.1	6	12	78
L15N 0+00 E	GENTLE SLOPE	TILL	C	30-35 CM	3.2	10	14	67
L15N 1+00 E	GENTLE SLOPE	OUTWASH	BM	25-30 CM	12.7	5	25	67
L15N 1+50 E	GENTLE SLOPE	TILL	BM	20-25 CM	2.0	9	13	54
L15N 2+00 E	GENTLE SLOPE	TILL	BM	25-30 CM	1.6	7	25	55
L15N 2+50 E	GENTLE SLOPE	TILL	C	30-35 CM	0.8	9	15	76
L15N 3+00 E	BOG	PEAT BOG	?	30-35 CM	2.9	2	71	38
L15N 3+50 E	GENTLE SLOPE	TILL	C	30-35 CM	1.9	5	32	76
L15N 4+00 E	GENTLE SLOPE	COLLUVIUM	BF	25-30 CM	1.1	375	42	310
L15N 4+50 E	GENTLE SLOPE	TILL	BM	25-30 CM	3.0	15	555	102
L15N 5+00 E	GENTLE SLOPE	TILL	BM	30-35 CM	0.5	14	34	77
L15N 5+50 E	GENTLE SLOPE	TILL	C	25-30 CM	2.3	25	21	95
L15N 6+00 E	HILL TOP	TILL	BM	25-30 CM	0.9	10	15	88
L15N 6+50 E	HILL TOP	TILL	BF	10-15 CM	1.9	19	17	71
L15N 7+00 E	GENTLE SLOPE	TILL	BM	15-20 CM	0.9	17	20	56
L15N 7+50 E	STEEP SLOPE	TILL	BF	25-30 CM	1.6	14	18	69
L15N 8+00 E	STEEP SLOPE	TILL	BM	20-25 CM	1.7	12	123	75
L16N 0+00 E	GENTLE SLOPE	TILL	BM	35-40 CM	0.6	15	13	90
L16N 0+50 E	GENTLE SLOPE	TILL	BM	20-25 CM	1.6	24	6	180
L16N 1+00 E	GENTLE SLOPE	TILL	C	35-40 CM	2.2	11	75	26
L16N 1+50 E	GENTLE SLOPE	TILL	BM?	30-35 CM	1.6	17	153	61
L16N 2+00 E	GENTLE SLOPE	TILL	BM	25-30 CM	1.2	10	55	75
L16N 2+50 E	GENTLE SLOPE	TILL	BM	25-30 CM	1.6	24	28	73
L16N 3+00 E	BOG	TILL	C	25-30 CM	1.0	3	5	30
L16N 3+50 E	BOG	PEAT BOG	?	40-45 CM	0.1	6	1	14
L16N 4+15 E	BOG	PEAT BOG	BG	30-35 CM	0.5	12	14	48
L16N 4+50 E	LEVEL	TILL	BM	25-30 CM	1.8	11	34	72
L16N 5+00 E	GENTLE SLOPE	TILL	C1	35-40 CM	0.1	14	19	68
L16N 5+50 E	GENTLE SLOPE	TILL	C	35-40 CM	8.1	41	47	75
L16N 6+00 E	HILL TOP	TILL	BF	35-40 CM	2.4	12	14	76
L16N 6+50 E	GENTLE SLOPE	TILL	C	30-35 CM	0.5	15	18	90
L16N 7+00 E	GENTLE SLOPE	TILL	C	35-40 CM	0.6	14	15	75
L16N 7+50 E	GENTLE SLOPE	?	BF	35-40 CM	3.3	55	21	84
L16N 8+00 E	STEEP SLOPE	TILL	BM	30-35 CM	1.0	22	140	57
L17N 0+00 E	GENTLE SLOPE	TILL	BM	30-35 CM	0.3	17	13	88
L17N 0+50 E	GENTLE SLOPE	TILL	C	50-55 CM	0.4	4	1	27
L17N 1+00 E	GENTLE SLOPE	TILL	BM	50-55 CM	0.8	32	60	57
L17N 1+50 E	GENTLE SLOPE	TILL	C	25-30 CM	8.2	12	20	136
L17N 2+00 E	GENTLE SLOPE	TILL	C	45-50 CM	1.2	14	12	46
L17N 2+50 E	GENTLE SLOPE	TILL	C	25-30 CM	0.5	41	23	66
L17N 3+00 E	GENTLE/BOG	?	C	60-65 CM	0.8	39	37	69
L17N 3+50 E	GENTLE SLOPE	?	C	55-60 CM	0.3	11	1	375
L17N 4+00 E	GENTLE SLOPE	TILL	BM	40-45 CM	0.2	10	12	104
L17N 4+50 E	GENTLE SLOPE	TILL	C1	30-35 CM	0.1	6	9	60
L17N 5+00 E	GENTLE SLOPE	TILL	BF	30-35 CM	0.1	12	13	79
L17N 5+50 E	GENTLE SLOPE	TILL	BF?	45-50 CM	7.2	43	35	51
L17N 6+00 E	GENTLE SLOPE	TILL	C	35-40 CM	19	-	88	0.1
L17N 6+50 E	GENTLE SLOPE	TILL	C	30-35 CM	0.9	23	23	70
L17N 7+00 E	STEEP SLOPE	TILL	C	30-35 CM	0.5	17	23	68
L17N 7+50 E	STEEP SLOPE	TILL	BF	30-35 CM	1.5	20	18	61

SAMPLE	TOPOGRAPHY	OVERBURDEN	HOR	INTERVAL	AG	AS	PB	ZN
L17N 8+00 E	STEEP SLOPE	TILL	BF	25-30 CM	1.0	22	91	75
L18N 0+00 E	STEEP SLOPE	TILL	BF	40-45 CM	0.4	17	12	86
L18N 0+50 E	STEEP SLOPE	TILL	BF	40-45 CM	0.2	12	11	67
L18N 1+00 E	GENTLE SLOPE	TILL	BF	30-35 CM	1.6	19	47	190
L18N 1+50 E	GENTLE SLOPE	TILL	BF	25-30 CM	0.4	19	28	6
L18N 2+00 E	GENTLE SLOPE	TILL	BM?	55-60 CM	0.3	3	4	96
L18N 2+50 E	GENTLE SLOPE	TILL	BM	45-50 CM	0.7	11	28	132
L18N 3+00 E	GENTLE SLOPE	TILL	C	30-35 CM	0.5	11	18	93
L18N 3+50 E	GENTLE SLOPE	TILL	BM	30-35 CM	0.4	15	9	84
L18N 4+00 E	GENTLE SLOPE	TILL	C	45-50 CM	0.6	11	47	280
L18N 4+50 E	GENTLE SLOPE	TILL	BM	30-35 CM	0.1	12	16	248
L18N 5+00 E	GENTLE SLOPE	TILL	?	40-45 CM	0.1	15	120	160
L18N 5+50 E	GENTLE SLOPE	TILL	C	25-30 CM	0.1	12	18	76
L18N 6+00 E	GENTLE SLOPE	TILL	C	35-40 CM	0.2	15	21	144
L18N 6+50 E	STEEP SLOPE	TILL	C	40-45 CM	0.9	9	9	63
L18N 7+00 E	STEEP SLOPE	TILL	BM	35-40 CM	2.0	35	18	37
L18N 7+50 E	STEEP SLOPE	TILL	C	35-40 CM	0.9	11	12	38
L18N 8+00 E	STEEP SLOPE	TILL	C	45-50 CM	1.4	11	21	71
L19N 0+00 E	STEEP SLOPE	TILL	C	30-35 CM	1.0	22	22	86
L19N 0+50 E	GENTLE SLOPE	TILL	C	45-50 CM	0.2	22	13	85
L19N 1+00 E	GENTLE SLOPE	TILL	BM	40-45 CM	0.1	20	63	137
L19N 1+50 E	GENTLE SLOPE	TILL	BM	40-45 CM	0.9	17	15	74
L19N 2+00 E	GENTLE SLOPE	TILL	C	35-40 CM	0.2	20	34	61
L19N 2+50 E	STEEP SLOPE	TILL	BM	30-35 CM	0.3	17	75	55
L19N 3+00 E	STEEP SLOPE	TILL	C	30-35 CM	0.3	23	23	138
L19N 3+50 E	STEEP SLOPE	TILL	C	45-55 CM	0.3	22	35	87
L19N 4+00 E	STEEP SLOPE	TILL	BM	40-45 CM	3.8	11	54	300
L19N 4+50 E	STEEP SLOPE	TILL	C	45-50 CM	0.3	23	31	98
L19N 5+00 E	GENTLE SLOPE	TILL	BM	35-40 CM	0.8	16	71	100
L19N 5+50 E	GENTLE SLOPE	TILL	BM	35-40 CM	0.9	12	153	143
L19N 6+00 E	GENTLE SLOPE	TILL	BM	45-55 CM	0.2	10	22	51
L19N 6+50 E	GENTLE SLOPE	TILL	C	40-45 CM	1.5	12	23	130
L19N 7+00 E	STEEP SLOPE	TILL	C	50-60 CM	1.2	19	22	580
L19N 7+50 E	STEEP SLOPE	TILL	C	45-50 CM	1.4	5	64	405
L19N 8+00 E	STEEP SLOPE	TILL	C	35-40 CM	0.7	3	23	53
L20N 0+00 E	STEEP SLOPE	TILL	BF	35-40 CM	0.7	16	130	67
L20N 0+50 E	STEEP SLOPE	TILL	C	40-45 CM	0.9	11	17	80
L20N 1+00 E	STEEP SLOPE	TILL	BM	30-35 CM	0.7	14	14	72
L20N 1+50 E	GENTLE SLOPE	TILL	BM	35-40 CM	0.3	23	11	76
L20N 2+00 E	GENTLE SLOPE	TILL	BF	30-35 CM	0.2	19	12	71
L20N 2+50 E	STEEP SLOPE	TILL	C	40-45 CM	1.1	16	19	64
L20N 3+00 E	GENTLE SLOPE	TILL	C	50-60 CM	1.5	10	15	62
L20N 3+50 E	STEEP SLOPE	TILL	C	40-50 CM	0.9	14	21	88
L20N 4+00 E	STEEP SLOPE	TILL	C	50-55 CM	0.4	20	33	83
L20N 4+50 E	STEEP SLOPE	TILL	C	35-40 CM	0.6	19	49	145
L20N 5+00 E	STEEP SLOPE	TILL	C	45-55 CM	0.3	7	25	98
L20N 5+50 E	GENTLE SLOPE	TILL	C	45-50 CM	0.3	20	26	97
L20N 6+00 E	GENTLE SLOPE	TILL	BM	35-40 CM	0.2	17	28	72
L20N 6+50 E	GENTLE SLOPE	TILL	BM	35-40 CM	0.2	27	10	47
L20N 7+00 E	GENTLE SLOPE	TILL	BF	25-30 CM	0.3	17	22	60
L20N 7+50 E	GENTLE SLOPE	TILL	BF	30-35 CM	0.7	27	17	73
L20N 8+00 E	GENTLE SLOPE	TILL	BM	35-40 CM	0.4	20	145	95

MT. TOM GRID SOIL SAMPLE DATA PAGE 12

SAMPLE	TOPOGRAPHY	OVERBURDEN	HOR	INTERVAL	AG	AS	PB	ZN
L21N 0+00 E	STEEP SLOPE	TILL	BM?	45-50 CM	0.9	12	80	82
L21N 0+50 E	STEEP SLOPE	TILL	C	45-55 CM	0.2	12	24	92
L21N 1+00 E	STEEP SLOPE	TILL	C	45-50 CM	0.3	10	22	73
L21N 1+50 E	STEEP SLOPE	TILL	C	35-40 CM	1.5	15	28	84
L21N 2+00 E	STEEP SLOPE	TILL	C	35-40 CM	0.2	14	18	60
L21N 2+50 E	STEEP SLOPE	TILL	C	45-55 CM	0.2	14	16	60
L21N 3+00 E	STEEP SLOPE	TILL	C	40-50 CM	0.5	14	23	85
L21N 3+50 E	STEEP SLOPE	TILL	C	40-50 CM	1.3	15	26	106
L21N 4+00 E	STEEP SLOPE	TILL	BF	30-35 CM	0.1	17	26	70
L21N 4+50 E	BASE OF SLOPE	TILL	BM	35-40 CM	0.5	17	56	94
L21N 5+00 E	STEEP SLOPE	TILL	C	40-45 CM	0.5	7	20	67
L21N 5+50 E	STEEP SLOPE	TILL	C	50-60 CM	0.2	15	27	85
L21N 6+00 E	STEEP SLOPE	TILL	C	40-45 CM	0.1	22	46	102
L21N 6+50 E	GENTLE SLOPE	TILL	C	40-45 CM	0.2	15	42	93
L21N 7+00 E	GENTLE SLOPE	TILL	BF	30-35 CM	0.5	14	43	75
L21N 7+50 E	GENTLE SLOPE	TILL	C	30-35 CM	0.3	10	34	93

SAMPLE	TOPOGRAPHY	OVERBURDEN	HOR	INTERVAL	AG	AG	PB	ZN
L22N 0+00 E	STEEP SLOPE	TILL	BF	35-40 CM	0.6	14	51	63
L22N 0+50 E	STEEP SLOPE	TILL	C	30-40 CM	0.7	11	28	96
L22N 1+00 E	STEEP SLOPE	TILL	Bm	30-40 Cm	1.1	10	25	46
L22N 1+50 E	STEEP SLOPE	TILL	Bm	35-40 CM	0.8	11	17	52
L22N 2+00 E	STEEP SLOPE	TILL	Bm	40-45 Cm	0.7	16	28	76
L22N 2+50 E	STEEP SLOPE	TILL	BM	35-40 CM	0.6	12	22	64
L22N 3+00 E	STEEP SLOPE	TILL	C	45-50 Cm	0.5	11	23	83
L22N 3+50 E	STEEP SLOPE	TILL	Bm	40-45 CM	0.7	16	25	81
L22N 4+00 E	GENTLE SLOPE	TILL	Bm	50-55 Cm	0.7	9	26	81
L22N 4+50 E	STEEP SLOPE	TILL	BM	40-45 CM	0.3	0	22	84
L22N 5+00 E	STEEP SLOPE	TILL	Bm	40-45 Cm	0.4	7	10	67
L22N 5+50 E	STEEP SLOPE	TILL	C	45-50 CM	0.7	10	28	80
L22N 6+00 E	GENTLE SLOPE	TILL	C	40-45 CM	0.1	9	29	82
L22N 6+50 E	GENTLE SLOPE	TILL	BM	30-40 CM	0.1	6	22	75
L22N 7+00 E	GENTLE SLOPE	TILL	Bm	30-35 CM	0.1	4	10	56
L23N 0+00 E	STEEP SLOPE	TILL	BM	45-55 CM	0.7	11	25	59
L23N 0+50 E	STEEP SLOPE	TILL	C	45-55 CM	0.4	9	27	83
L23N 1+00 E	STEEP SLOPE	TILL	C	45-50 CM	0.5	9	22	58
L23N 1+50 E	STEEP SLOPE	TILL	C	40-50 CM	0.8	11	23	70
L23N 2+00 E	STEEP SLOPE	TILL	C	35-40 CM	0.6	17	23	90
L23N 2+50 E	STEEP SLOPE	TILL	BM	30-35 CM	0.4	12	26	81
L23N 3+00 E	GENTLE SLOPE	TILL	BM	35-40 CM	0.2	12	20	88
L23N 3+50 E	GENTLE SLOPE	TILL	BM	30-35 CM	0.6	20	46	100
L23N 4+00 E	GENTLE SLOPE	TILL	BM	30-35 CM	0.8	14	54	107
L23N 4+50 E	GENTLE SLOPE	TILL	BM	40-50 CM	0.6	10	22	79
L23N 5+00 E	GENTLE SLOPE	TILL	C	40-45 CM	0.1	10	34	94
L23N 5+50 E	STEEP SLOPE	TILL	C1	40-50 Cm	0.7	10	45	111
L23N 6+00 E	STEEP SLOPE	TILL	BM	35-40 CM	0.5	7	40	52
L23N 6+50 E	GENTLE SLOPE	TILL	C	40-45 CM	0.2	9	36	79
L24N 0+00 E	GENTLE SLOPE	TILL	BM	15-20 CM	0.9	20	49	92
L24N 0+50 E	STEEP SLOPE	TILL	BM	20-25 Cm	1.5	41	60	91
L24N 1+00 E	GENTLE SLOPE	TILL	C	20-25 CM	1.3	14	23	312
L24N 1+50 E	STEEP SLOPE	TILL	BM	25-30 CM	0.8	32	80	118
L24N 2+00 E	STEEP SLOPE	TILL	C	30-35 CM	0.1	23	30	82
L24N 2+50 E	GENTLE SLOPE	TILL	C	30-35 CM	0.6	16	26	157
L24N 3+00 E	GENTLE SLOPE	TILL	BG	25-30 CM	2.5	23	47	124
L24N 3+50 E	GENTLE SLOPE	TILL	BG	20-25 Cm	0.6	11	29	65
L24N 4+00 E	GENTLE SLOPE	TILL/LAKE SED	C	25-30 CM	0.1	12	37	132
L24N 4+50 E	GENTLE SLOPE	TILL	Bm	30-35 CM	2.4	11	36	86
L24N 5+00 E	STEEP SLOPE	LAKE SED?	BM	25-30 CM	0.2	9	40	93
L24N 5+50 E	STEEP SLOPE	TILL	C	30-35 Cm	0.2	12	33	66
L25N 0+00 E	GENTLE SLOPE	TILL	BF	30-35 CM	0.3	33	80	165
L25N 0+50 E	GENTLE SLOPE	TILL	BM	35-40 CM	0.3	33	80	165
L25N 1+00 E	GENTLE SLOPE	TILL	BF	35-40 CM	0.1	30	36	115
L25N 1+50 E	GENTLE SLOPE	TILL	BM	30-35 Cm	1.8	14	27	346
L25N 2+00 E	GENTLE SLOPE	TILL	?	35-40 CM	0.7	3	30	230
L25N 2+50 E	GENTLE SLOPE	TILL	Bm	35-40 CM	2.5	11	27	260
L25N 3+00 E	GENTLE SLOPE	TILL	?	35-40 CM	0.5	17	39	308
L25N 3+50 E	GENTLE SLOPE	TILL	C	45-50 Cm	0.1	6	25	112
L25N 4+00 E	GENTLE SLOPE	TILL	BM	35-40 CM	0.4	10	23	100
L25N 4+50 E	GENTLE SLOPE	TILL	C1?	30-35 Cm	0.8	12	24	102
L26N 0+0E E	STEEP SLOPE	TILL	Bm	35-40 CM	0.6	15	16	86

SAMPLE	TOPOGRAPHY	OVERBURDEN	HOR	INTERVAL	AG	AS	PB	ZN
L26N 3+00 E	STEEP SLOPE	TILL	C	40-45 CM	0.8	7	21	310
L26N 3+50 E	LEVEL	TILL	C	35-40 CM	0.3	12	23	157
L26N 4+00 E	GENTLE SLOPE	TILL	C	35-40 CM	1.8	12	32	125
L27N 0+00 E	GENTLE SLOPE	TILL	BM	50-60 CM	0.2	12	15	106
L27N 0+50 E	GENTLE SLOPE	TILL	BF	30-35 CM	0.1	16	24	93
L27N 1+00 E	GENTLE SLOPE	TILL	BF	30-35 CM	0.5	22	26	104
L27N 1+50 E	GENTLE SLOPE	TILL	BM	35-40 CM	0.1	25	27	96
L27N 2+00 E	GENTLE SLOPE	TILL	BF	35-40 CM	1.0	10	16	73
L27N 2+50 E	GENTLE SLOPE	?	?	35-40 CM	0.1	7	20	88
L27N 3+00 E	GENTLE SLOPE	TILL	BM	30-35 CM	0.1	7	17	84
L27N 3+50 E	GENTLE SLOPE	TILL	BM	40-45 CM	0.2	19	23	100
L28N 0+00 E	STEEP SLOPE	TILL	BF	35-40 CM	0.1	12	22	95
L29N 0+00 E	STEEP SLOPE	TILL	C	40-45 CM	0.3	9	36	183
L30N 0+00 E	GENTLE SLOPE	TILL	BM	30-35 CM	0.2	9	40	123

APPENDIX IV

Silt Sample Data

MT. TOM SILT SAMPLE DATA   PAGE   1

SAMPLE	OVERBURDEN	WIDTH	DEPTH	VELOCITY	AG	AS	PB	ZN
L12S 5+75 E	TILL	1 M	10 CM	TURBULEN	0.2	33	26	308
L11S 4+57 E	TILL	0.2 M	4 CM	MODERATE	0.4	15	25	163
L11S 4+85 E	TILL	1.5 M	15 CM	TURBULEN	0.1	22	32	500
L11S 6+25 E	TILL	0.2 M	2 CM	SLOW	0.3	22	40	165
L11S 6+65 E	TILL	0.15M	2 CM	FAST	0.4	43	53	497
L10S 2+15 E	TILL	0.2 M	3 CM	SLOW	2.4	15	80	335
L10S 4+30 E	TILL	1 M	15 CM	TURBULEN	0.8	48	52	630
L10S 5+35 E	TILL	0.15M	3 CM	MODERATE	0.1	27	17	1000
L10S 7+98 E	TILL	0.2 M	4 CM	MODERATE	3.9	27	12	143
L9S 3+48 E	TILL	0.2 M	8 CM	FAST	0.7	63	52	690
L9S 3+65 E	TILL	1 M	15 CM	TURBULEN	0.1	41	31	460
L8S 2+98 E	TILL	0.3 M	5 CM	FAST	0.1	12	20	1150
L8S 3+52 E	TILL	0.8 M	10 CM	TURBULEN	0.3	50	47	570
L8S 7+42 E	TILL	0.3 M	5 CM	MODERATE	44.0	16	20	22
L7S 3+30 E	TILL	0.5 M	20 CM	MODERATE	1.8	185	124	570
L7S 4+15 E	TILL	0.5 M	10 CM	TURBULEN	0.3	43	32	200
L6S 3+32 E	TILL	0.5 M	4 CM	MODERATE	12.6	97	160	173
L5S 2+65 E	TILL	?	?	SLOW	10.5	90	67	90
L4S 2+56 E	TILL	0.3 M	10 CM	SLOW	27.0	55	285	70
L4S 3+80 E	TILL	0.3 M	5 CM	FAST	2.3	120	97	348
L0 5+00 E	TILL	0.5 M	5 CM	SLOW	1.4	20	38	2800
L0 5+50 E	TILL	0.4 M	4 CM	SLOW	8.3	15	14	133
L1N 6+15 E	TILL/COLL	0.5 M	5 CM	SLOW	0.1	11	12	90
L2N 6+73 E	TILL/COLL	0.4 M	5 CM	FAST	1.6	24	15	470
L3N 4+10 E	TILL	0.6 M	4 CM	?	7.5	20	174	78
L3N 7+26 E	TILL	0.4 M	4 CM	FAST	5.8	19	20	360
L4N 4+65 E	TILL/TALUS?	0.5 M	4 CM	MODERATE	6.7	32	410	1910
L5N 1+28 E	TILL	0.4 M	2 CM	SLOW	1.9	10	29	130
L5N 7+10 E	TILL/TALUS?	0.2 M	3 CM	MODERATE	1.4	11	21	100
L6N 4+25 E	?	0.2 M	2 CM	MODERATE	2.8	23	58	150
L6N 5+15 E	?	0.2 M	3 CM	MODERATE	2.7	11	26	245
L9N 4+80 E	TILL	1 M	6 CM	MODERATE	3.7	15	116	182
L10N 2+99 E	TILL	0.6 M	4 CM	MODERATE	1.9	14	10	146
L10N 3+71 E	TILL	0.3 M	3 CM	MODERATE	0.2	3	6	260
L10N 4+12 E	TILL	1.5 M	3 CM	FAST	0.7	36	58	304
L10N 4+90 E	TILL	0.8 M	5 CM	FAST	0.3	12	44	158
L11N 3+71 E	TILL	0.5 M	5 CM	FAST	1.5	30	53	510
L11N 4+13 E	?	0.2 M	3 CM	MODERATE	1.3	11	51	107
L11N 4+86 E	?	0.4 M	7 CM	FAST	0.8	12	51	180
L12N 1+83 E	TILL	0.5 M	6 CM	FAST	7.1	43	51	345
L12N 3+53 E	TILL	0.3 M	3 CM	MODERATE	3.1	14	100	83
L12N 4+80 E	TILL	0.6 M	10 CM	FAST	2.4	27	75	860
L13N 0+05 E	TILL	0.5 M	3 CM	MODERATE	3.4	10	32	77
L13N 2+60 E	TILL	0.4 M	4 CM	MODERATE	2.7	57	460	520
L13N 2+95 E	TILL	0.1 M	2 CM	MODERATE	3.9	32	125	327
L13N 4+74 E	TILL	0.5 M	3 CM	MODERATE	3.0	24	98	148
L14N 3+65 E	TILL	0.2 M	3 CM	SLOW	0.9	125	40	161
L14N 4+34 E	TILL	0.4 M	5 CM	MODERATE	4.5	43	165	138
L14N 4+54 E	TILL	0.3 M	3 CM	MODERATE	6.5	11	88	104
L15N 4+02 E	COLLUVIUM	0.1 M	1 CM	STAGNANT	2.7	35	75	82
L17N 0+45 E	TILL	0.3 M	5 CM	MODERATE	3.1	9	36	91
L17N 0+78 E	TILL	0.1 M	2 CM	SLOW	11.7	4	59	44

MT. TOM SILT SAMPLE DATA PAGE 2

SAMPLE	OVERBURDEN	WIDTH	DEPTH	VELOCITY	AG	AS	PB	ZN
L17N 4+10 E	TILL	0.4 M	7 CM	SLOW	0.4	22	12	148
L17+09N0+00E	TILL	0.35M	3 CM	SLOW	0.8	7	13	76
L18N 3+54 E	TILL	0.4 M	7 CM	MODERATE	1.7	19	71	300
L18N 4+70 E	TILL	0.5 M	4 CM	?	0.2	29	30	276
L19N 3+95 E	TILL	0.7 M	10 CM	TURBULEN	1.1	22	49	280
L19N 4+60 E	TILL	0.6 M	12 CM	FAST	0.8	24	33	240
L20N 3+10 E	TILL	0.3 M	5 CM	SLOW	0.8	9	25	72
L20N 4+48 E	TILL	0.5 M	5 CM	FAST	1.1	17	54	270
L20N 4+65 E	TILL	0.6 M	8 CM	TURBULEN	0.4	22	35	210
L21N 2+73 E	TILL	0.2 M	3 CM	MODERATE	1.2	12	81	106
L21N 3+76 E	TILL	0.2 M	3 CM	MODERATE	0.3	16	18	71
L21N 4+10 E	TILL	?	?	FAST	0.2	14	23	63
L21N 4+52 E	TILL	1 M	10 CM	TURBULEN	0.4	20	39	162
L21N 4+75 E	TILL	0.2 M	3 CM	FAST	0.3	10	23	70
L22N 4+30 E	TILL	1 M	12 CM	TURBULEN	0.2	17	41	120
L23N 3+97 E	TILL	1.2 M	15 CM	TURBULEN	0.3	14	38	102
L24N 0+96 E	TILL	0.4 M	3 CM	MODERATE	5.5	11	37	317
L24N 2+43 E	TILL	0.1 M	2 CM	SLOW	1.7	22	25	430
L24N 3+86 E	TILL	1 M	4 CM	FAST	0.4	22	44	136
L25N 1+52 E	TILL	0.3 M	4 CM	FAST	0.3	12	26	330
L25N 2+25 E	TILL	0.2 M	3 CM	?	3.0	5	24	335
L25N 2+65 E	TILL	0.4 M	10 CM	FAST	1.6	11	29	370
L25N 3+70 E	TILL	0.5 M	10 CM	FAST	0.1	15	15	292
L25N 3+83 E	TILL	0.3 M	8 CM	FAST	0.4	15	30	126
L25N 3+85 E	TILL	1.5 M	15 CM	TURBULEN	0.3	24	35	103
L26N 3+02 E	TILL	0.2 M	10 CM	SLOW	0.6	6	15	243
L26N 3+25 E	TILL	0.7 M	10 CM	FAST	0.9	7	15	300
L26N 3+75 E	TILL	1.5 M	20 CM	FAST	0.9	20	37	174
L27N 0+44 E	TILL	1 M	10 CM	TURBULEN	0.1	6	12	96

APPENDIX V

Analytic Procedures

1. Geochemical samples (soils, silts) are dried at 80 C for a period of 12 to 24 hours. The dried sample is sieved to -80 mesh fraction through a nylon and stainless steel sieve. Rock geochemical materials are crushed, dried and pulverized to -100 mesh.

2. A 1.00 gram portion of the sample is weighed into a calibrated test tube. The sample is digested using hot 70% $HClO_4$ and concentrated HNO_3. Digestion time = 2 hours.

3. Sample volume is adjusted to 25 mls. using demineralized water. Sample solutions are homogenized and allowed to settle before being analysed by atomic absorption procedures.

4. Detection limits using Techtron A.A.5 atomic absorption unit are as follows.

Zinc	- 1 ppm
Silver	- 0.2 ppm*
Lead	- 1 ppm*

* Silver and lead are corrected for background absorption.

5. Elements present in concentrations below the detection limit are reported as one half the detection limit, i.e. Ag - 0.1 ppm.

6. Other elements.

PPM Antimony:
A 2.0 gm sample digested with conc. HCl in hot water bath. The iron is reduced to Fe^{+2} state and the Sb complexed with I^-. The complex is extracted with TOPO-MIBK and analysed by A.A. Correcting for background absorption 0.2 ppm $\pm$ 0.2. Detection limit = 0.2 ppm.

PPM Arsenic:
A 1.0 gm sample is digested with a mixture of perchloric and nitric acid to strong fumes of perchloric acid. The digested solution is diluted to volume and mixed. An aliquot of the digest is acidified, reduced with KI and mixed. A portion of the reduced solution is converted to arsine with $NaBH_4$ and the arsenic content determined using flameless atomic absorption. Detection limit = 1 ppm.

PPM Tungsten:

0.50 gm sample is fused with potassium bisulphate and leached with hydrochloric acid. The reduced form of tungsten is complexed with toluene 3,4 dithiol and extracted into an organic phase. The resulting color is visually compared to similarly prepared standards. Detection limit = 2 ppm

PPM Gold:

5 gm samples ashed @ 800 C for one hour, digested with aqua regia - twice to dryness - taken up in 25% HCL HCL^-, the gold then extracted as the bromide complex into MIBK and analyzed via A.A. Detection limit = 10 ppb.

PPM Silver:

a 1.0 gm portion of sample is digested in conc. perchloric-nitric acid ($HClO_4$ - HNO_3) for approx. two hours. The digested sample is cooled and made up to 25 mls with distilled water. The solution is mixed and solids are allowed to settle. Silver is determined by atomic absorption technique using background correction on analyses. Detection limit = 0.1 ppm.

APPENDIX VI

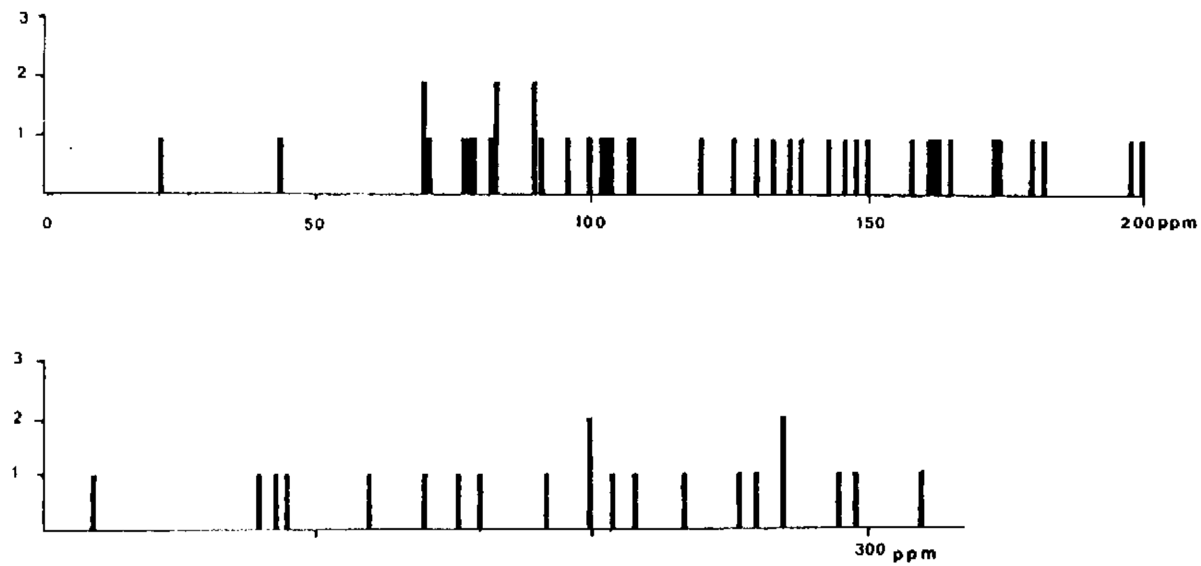
Histograms of Sample Analyses

MT. TOM GROUP - Grid Silt Samples

Histogram of 76 Zn analyses; not included in calculations are four samples containing 2800, 1910, 1150 and 1000 ppm Zn.

Mean = 241
Standard Deviation = 170.4
Range of Analyses = 22 to 860

Note: Samples 2800, 1910, 1150, 1000, 860, 690, 630, 570, 570, 520, 510, 500, 497, 470, 460, and 430 not shown.

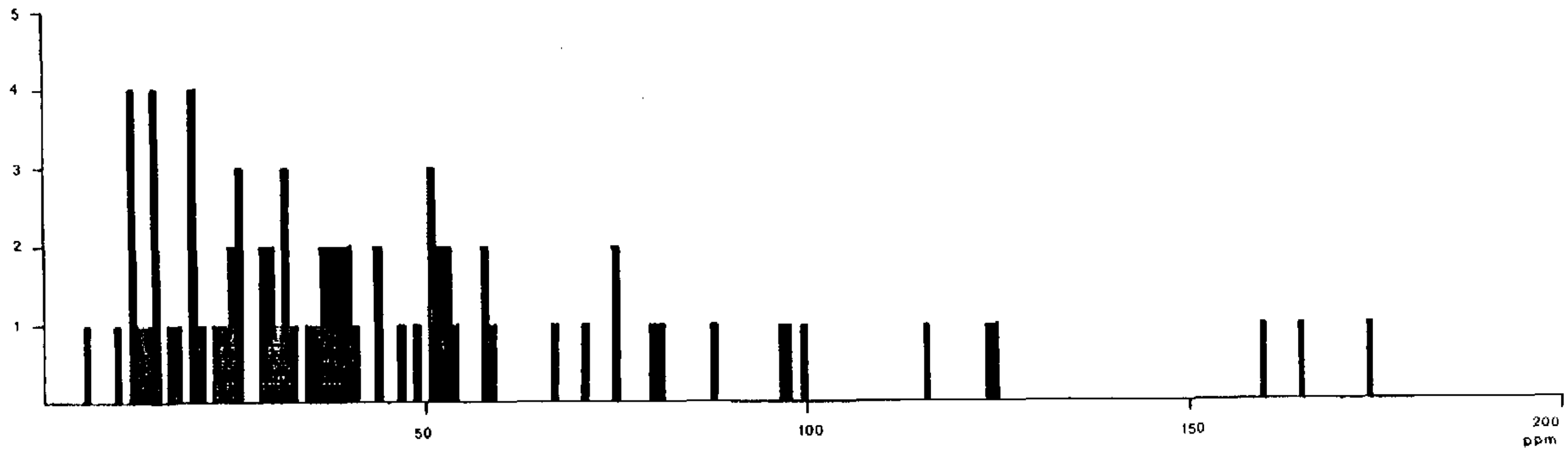


MT. TOM GROUP - Silt Sample Analyses

Histogram of 78 Pb analyses; not included in calculations are two samples containing 410 and 460 ppm Pb.

Mean = 50.2
Standard Deviation = 45.1
Range of Analyses = 6 to 460 ppm.

Note: Samples 285, 410 and 460 not shown.



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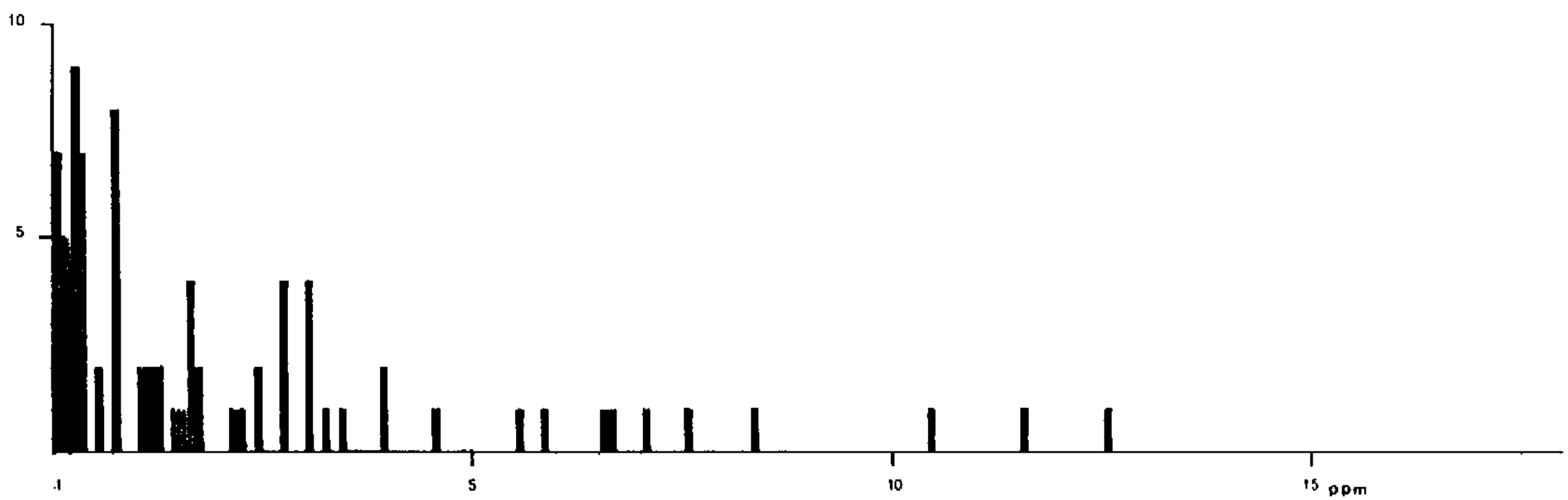
MT. TOM GROUP - Grid Silt Samples

Histogram of 78 Ag analyses; not included in calculations are two samples containing 27, 44 ppm Ag.

Mean = 2.2
Standard Deviation = 2.7
Range of Analyses = 0.1 to 44 ppm

Note: Samples 27 and 44 not shown.



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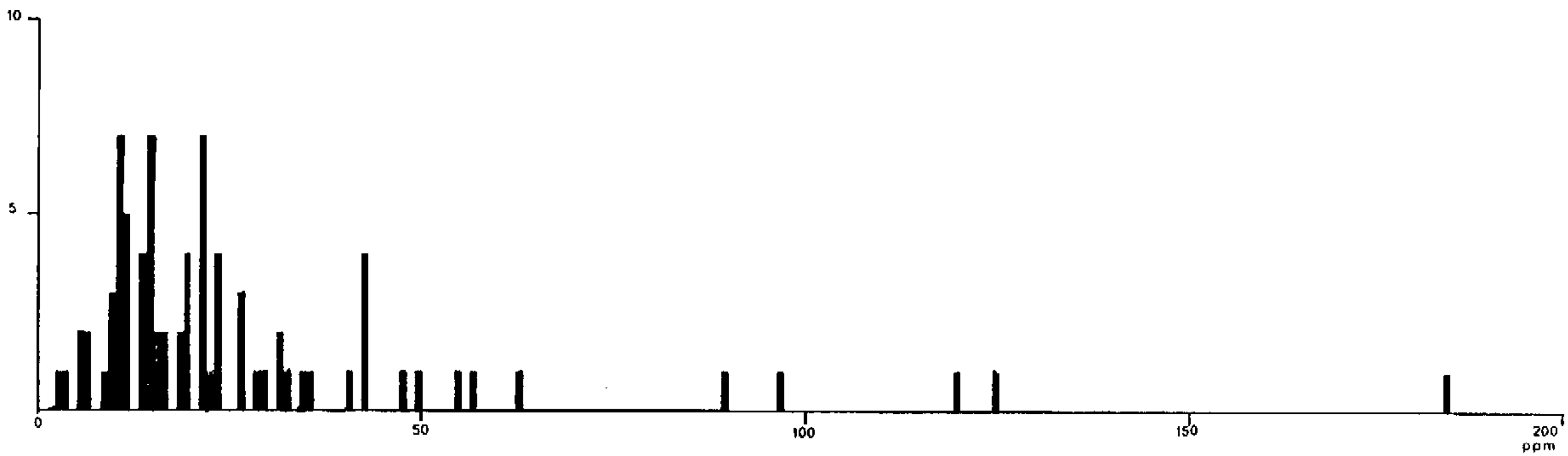
MT. TOM GROUP - Grid Silt Samples

Histogram of 79 As analyses; not included in calculations is one sample containing 185 ppm As.

Mean = 26
Standard Deviation = 23.2
Range of Analyses = 3 to 185



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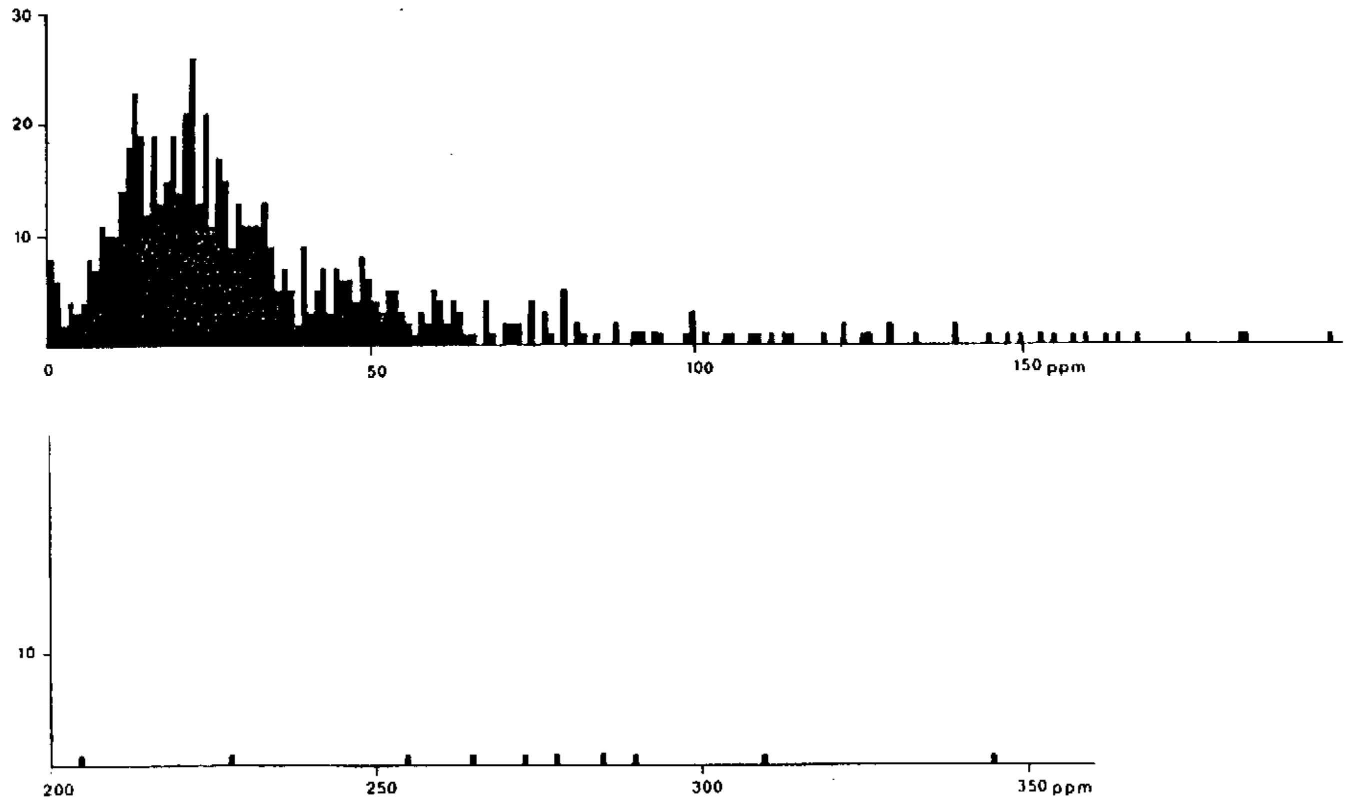
MT. TOM GROUP - Grid Soil Samples

Histogram of 656 Pb analyses; not included in calculations is one sample containing 820 ppm Pb.

Mean = 42.1
Standard Deviation = 56.0
Range of Analyses = 1 to 555

Note: Samples 365, 375, 400, 540, and 555 not shown.

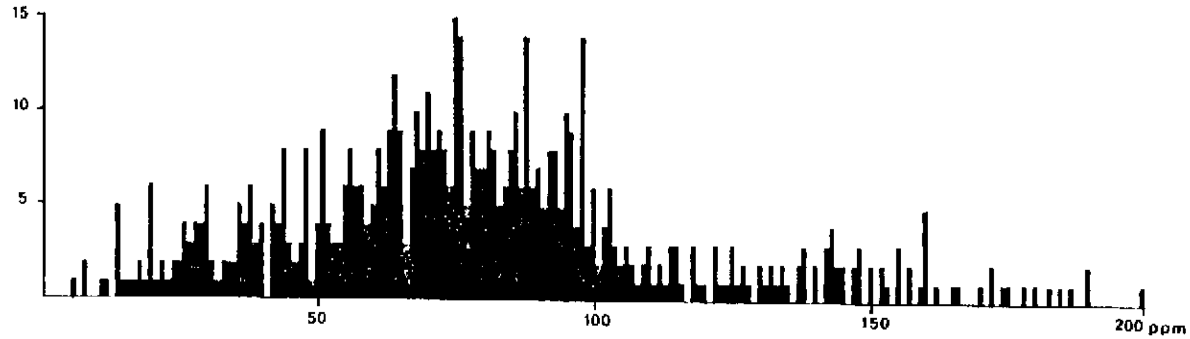


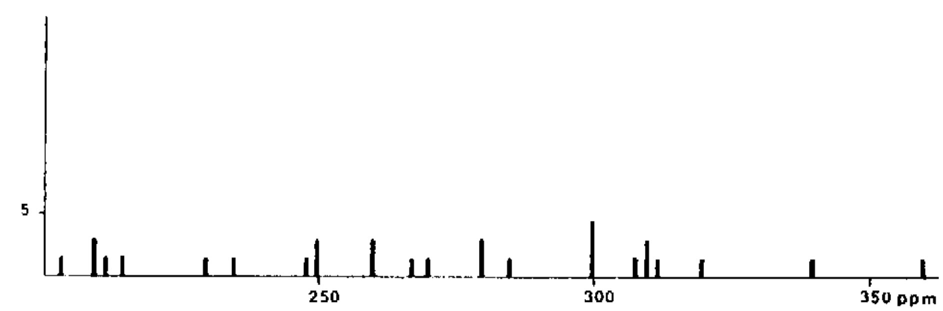
MT. TOM GROUP - Grid Soil Samples

Histogram of 655 Zn analyses; not included in calculations are two samples containing 1300 and 1500 ppm Zn.

Mean = 95.5
Standard Deviation = 81.7
Range of Analyses = 6 to 800

Note: Samples 1550, 1300, 800, 770, 680, 580, 520, 490, 480, 460, 460, 405, 400 and 375 not shown.





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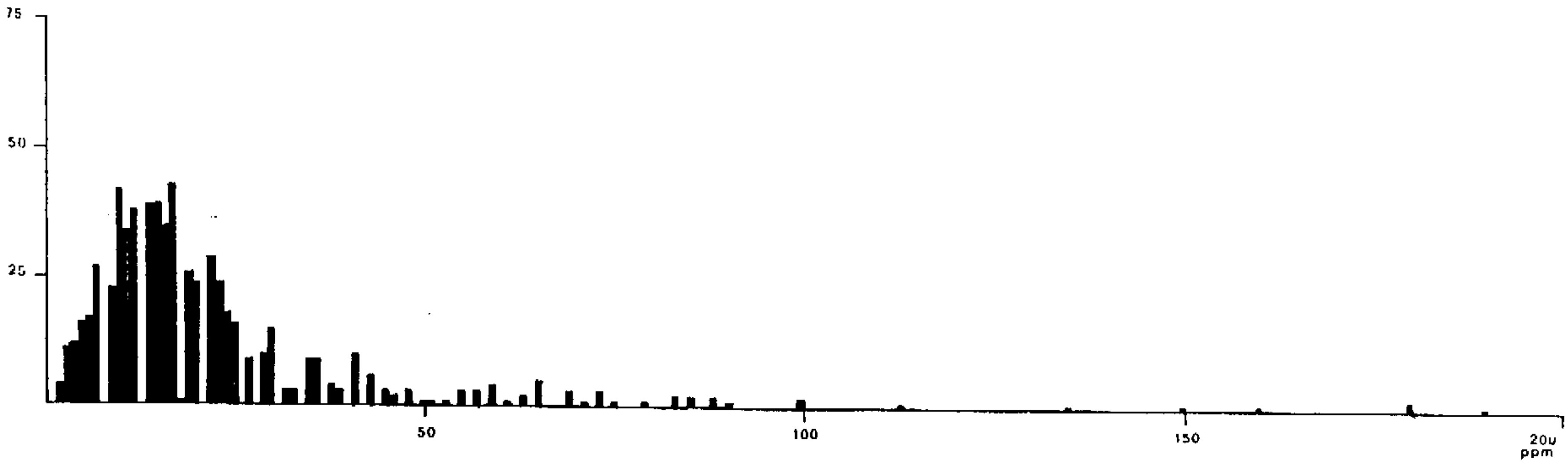
MT. TOM GROUP - Grid Soil Samples

Histogram of 656 As analyses; not included in calculations are four samples containing 225, 240, 260 and 375 ppm As.

Mean = 21.9
Standard Deviation = 21.3
Range of Analyses = 2 to 375

Note: Samples 225, 240, 260 and 375 not shown.

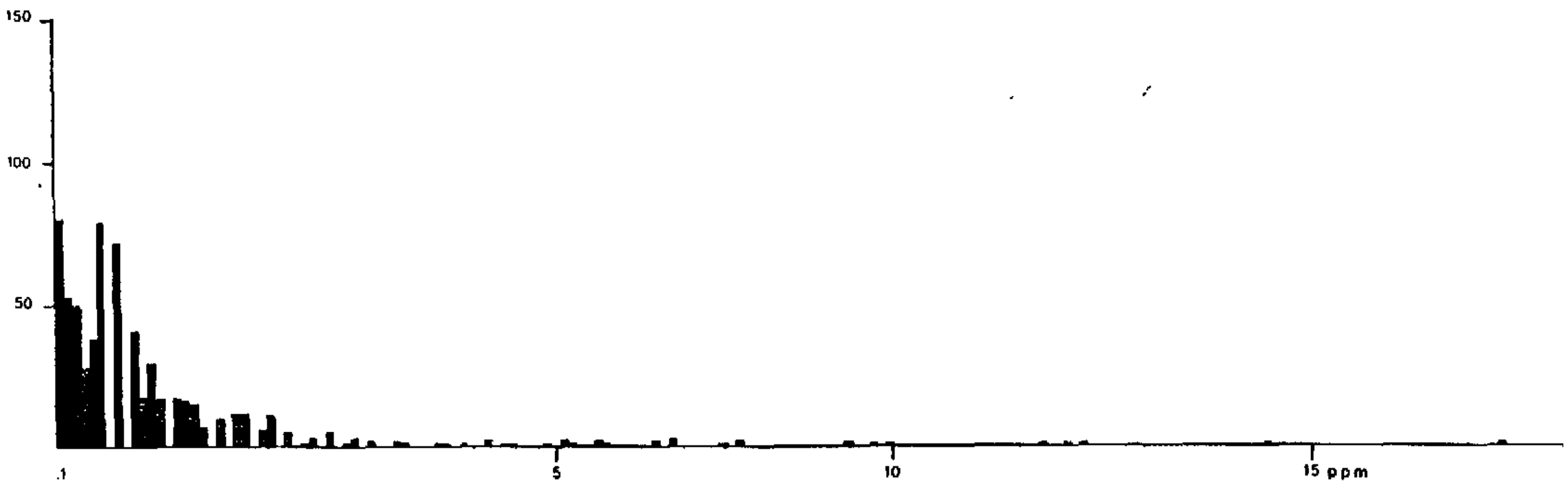


MT. TOM GROUP - Grid Soil Samples

Histogram of 653 Ag analyses; not included are four samples containing 17.4, 20,20 and 29 ppm Ag.

Mean = 1.2
Standard Deviation = 1.7
Range of Analyses = 0.1 to 29 ppm.

Note: Samples 20 and 29 not shown.



Sample Notation
outcrop
vein outcrop
quartz float
geochemical analysis 1983
F-O- rock assay 1983
R- sampled in 1981
sulphide mineralization (•) pyrite, (•) arsenopyrite, (•) galena
Structure
bedding
slaty cleavage
crenulation cleavage
joint
mineral lineation
crenulation
major fault zone
fracture zone
hypothetical fault
thrust fault
Rock Exposures
Fe-oxide cemented gravels
light green quartz sericite schist
dark gray to black siltite, argillite, slate, phyllite, some thinly interbedded brown calcareous siltite, limestone
silvery gray-green phyllite
light gray quartz sericite schist, micaceous quartite
gray to black, fine grained limestone, finely crystalline marble
fine grained pink marble
light greenish gray dolomite with fuchsite(?)
area of outcrop
abundant float
inferred geological contact
Fe-oxide seep
Interpretation of Rock Units
MPa Antler Fm - metavolcanics
DMc Black clastics
DMl Black limestone
DMqs Quartz sericite schist, quartzite
DMd Dolomite
Sugar Ck
DUCK
UPPER
DOWNER
Walkout Ck
Hardscrabble Ck
Downer Ck
Stephens Gulch
Hardscrabble Mine
(VLF interpretation)
Notes:
- distortions of grid due to radial displacement on air photo mosaic
- scale not consistent over entire map
- claim boundaries approximate
0 100 200 m
nominal scale
GEOLOGICAL BRANCH
ASSESSMENT REPORT
12,776
CONSOLIDATED ASCOT
PETROLEUM CORPORATION
Mt. Tom Property
Cariboo Mining Division, B.C.
GEOLOGY (1)
NTS 93H/4E
Nov 3, 1983
FIG 6
CAMPBELL & ASSOCIATES

Contours Drawn at	Clarke Value
0.28 ppm	4KK
0.56 ppm	8KK
1.1 ppm	16KK *
2.2 ppm	32KK *
4.5 ppm	64KK *
9 ppm	128KK *
18 ppm	256KK *

(* approximate)

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ASSESSMENT REPORT

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Cariboo Mining Division, B.C.

SOIL GEOCHEMISTRY
-Ag-
(2)

0 100m | NTS 93H/4E | Aug' 15/83

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FIG. 7

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Contours Drawn at	Clarke Value
3.6 ppm	2 KK
7 ppm	4 KK *
14 ppm	8 KK *
29 ppm	16 KK *
58 ppm	32 KK *
115 ppm	64 KK *
230 ppm	128 KK *

(* approximate)

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Cariboo Mining Division, B.C.

SOIL GEOCHEMISTRY
-As-
(3)

0 100m | NTS 93H/4E | Aug 15/83

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FIG. 8

Contours Drawn at	Clarke Value
12.5 ppm	1 KK
25 ppm	2 KK
50 ppm	4 KK
100 ppm	8 KK
200 ppm	16 KK
400 ppm	32 KK
800 ppm	64 KK

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ASSESSMENT REPORT

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Mt. Tom Property
Cariboo Mining Division, B.C.

SOIL GEOCHEMISTRY
-Pb-

(4)

NTS 93H/4E | Aug 15/83

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FIG. 9

Contours Drawn at	Clarke Value
70 ppm	1KK
140 ppm	2 KK
280 ppm	4 KK
560 ppm	8 KK
1120 ppm	16 KK

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Mt. Tom Property
Cariboo Mining Division, B.C.

SOIL GEOCHEMISTRY
-Zn-

(5)

0 100m | NTS 93H/4E | Aug 15/83

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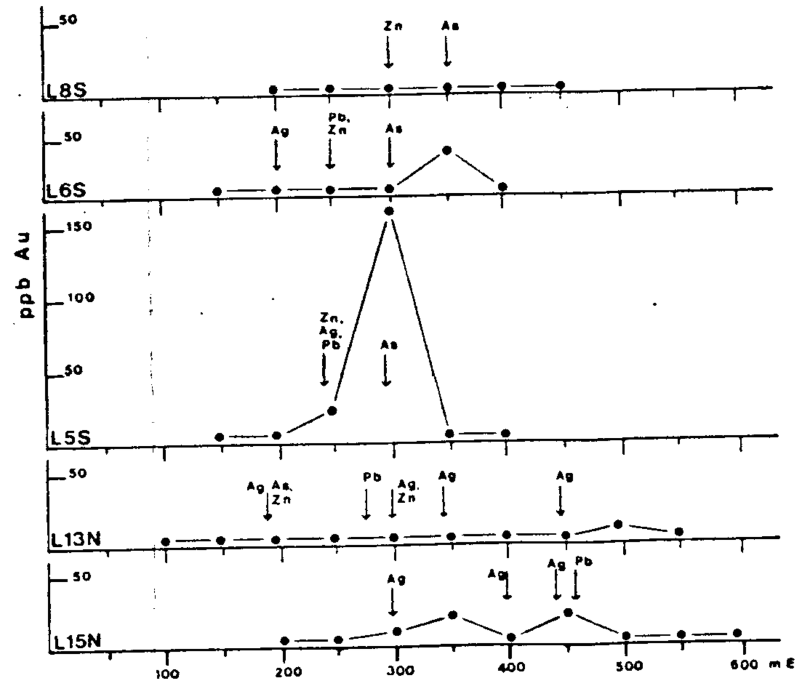
FIG.10

Selected Line Gold Analyses



Zn indicates position of geochemical anomaly axis

Soil Anomalies

Ag	4.5 ppm	———
As	58 ppm	—·—·
Pb	100 ppm	······
Zn	280 ppm	– – –

Silt Anomalies (●)

> 8 ppm
> 72 ppm
> 140 ppm
> 582 ppm

Anomaly axes shown by heavier lines with same pattern as anomaly.

Break in slope

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Geochemical Anomalies (6)

0 — 100m	NTS 93H/4E	Nov. 21, 1983

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FIG. 11

· < mean (2.2 ppm)

• mean - threshold (2.2 - 8 ppm)

● > threshold (8ppm)

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SILT GEOCHEMISTRY
Ag (ppm)

(7)

0 100m | NTS 93H/4E | Aug 24/83

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FIG.12

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SILT GEOCHEMISTRY
As (ppm)

NTS 93H/4E | Aug 24/83

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FIG. 13

· < mean (50 ppm)

• mean - threshold (50 - 140 ppm)

● > threshold (140 ppm)

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Cariboo Mining Division, B.C.

SILT GEOCHEMISTRY
Pb (ppm)

(9)

NTS 93H/4E | Aug 24/83

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FIG.14

· < mean (241 ppm)

• mean - threshold (241-582 ppm)

● > threshold (582 ppm)

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SILT GEOCHEMISTRY
Zn (ppm)

(10)

0 100m	NTS 93H/4E	Aug 24/83

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FIG.15

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VLF Survey conducted with Geonics EM-16 via Cutler NAA, 17.8 KHz.

Positive dip angles (%) denote East dip

Negative dip angles (%) denote West dip

INPHASE ———

QUADRATURE ---------

Vertical scale: 1cm = 20%

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Cariboo Mining Division, B.C.

VLF-EM PROFILES (11)

NTS 93H/4E | Sept.12/83

FIG. 16

VLF Survey conducted with Geonics EM-16
via Cutler NAA, 17.8 KHz.

VLF data filtered using standard Fraser Filter:
$F_{23} = (\theta_3 + \theta_4) - (\theta_1 + \theta_2)$

Contour interval = 10%

A — Conductivity Anomaly axis (approximate, inferred)

GEOLOGICAL BRANCH
ASSESSMENT REPORT

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Mt. Tom Property
Cariboo Mining Division, B.C.

VLF-EM Fraser Filter
Contour Map (12)

0 — 100 m	NTS 93H/4E	Aug. 1/83

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FIG.17

Geology

- Fracture
- Thrust fault
- Geological contact: inferred

MPa Antler Fm.: metavolcanics
DMs Black siltite, phyllite
DMl Black limestone, marble
DMqs Light gray quartzite
DMd Gray-green dolomite

- Break in slope.

Geophysics

A — Axis of positive conductivity anomaly

Geochemistry

Areas with anomalous Ag, As, Pb, Zn soil content (above local threshold)
- see Figures 7-11 for details

Development

No. 1 — Proposed trench alignment

Proposed exploratory drill site

GEOLOGICAL BRANCH
ASSESSMENT REPORT

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Mt. Tom Property
Cariboo Mining Division, B.C.

Compilation Map

(13)

100m	NTS 93H/4E	Nov. 23, 1983

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FIG. 18