Box 12

104 G/11 Hel Claims

104/G/11

REPORT ON THE

HEL CLAIMS, BRITISH COLUMBIA

FROM THE PROGRAM OF 1979

OF THE AQUITAINE-DOME JOINT VENTURE

MAP SHEET 104G/11

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BY: H.P. SALAT
J.D. NOAKES

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APPENDICES

I INTRODUCTION

During the course of an exploratory survey in the summer of 1978 over several basins consisting of Cretaceous Sustut Group rock, several radiometric anomalies were detected on the south flank of Mount Helveker. Investigations showed that the sources of radioactivity were located in conglomeratic and sandy beds lying some ten to twenty metres under a cap of Tertiary (Sloko Group) volcanic rocks, mainly andesite and dacite.

Shortly after, a crew was sent over the area and worked toward staking a block of 7 claims, which encompasses 132 units; the area covers 3300 ha and includes most of the sedimentary clastic unit outcropping around and near Mount Helveker. The claims are located about 22 km south of Telegraph Creek and 230 km southwest of Watson Lake.

A crew, whose members are listed below, was sent to examine the claims early in July of 1979.

Personnel in the field:

Party Chief - Doug Noakes - July 8-20
Junior Geologist - Mike Corey - July 8-20
Junior Geologist - Mike Mann - July 8-31
Senior Prospector - Bill Heshka - July 10-25
Assistant - Gary Dearing - July 8-21
Assistant - Keith Wade - July 8-31
Supervision - H. Salat - in field between July 23-29

In summary, the surveys carried out during that period of time consisted of systematic airborne radiometric coverage of the claims to check for other anomalous areas, radiometric prospecting of outcrop on Mount Helveker and reconnaissance stream geochemical samples. A grid was surveyed over the area of the occurrences. Soil sampling and radon emanometry surveys were located on a grid surveyed over the area of the occurrences. In addition, several zones of high radioactivity were exposed and sampled for assay. A description of each survey and the results obtained are presented in the following chapters.

II CLAIM LOCATION, ACCESS AND PHYSIOGRAPHY

The HEL Claims are located on Mount Helveker (topographic map 1:50,000 scale NTS 104 G/11), and cover an area 4 km wide by 8 km long in an east-west direction, between the stikine River to the west and Yehiniko Creek to the east. Air photo coverage is provided by the B.C. compilation numbers: B.C. 5199 - 81/82 and 100/101. The centre of the claim would be approximately 34 km in a southwest direction from Telegraph Creek as the crow flies.

From the end of the driveable road to Terrace, one can still carry on another 15 km along a four-wheel drive road down to the river crossing, where there used to be an old settlement known as Glenora; from there, one has to use a boat to go across the Stikine River and get a ride to the Glenora Ranch, 2 km away. From there or from Telegraph, the only access to the property is by pack-horse train or by helicopter.

Mount Helveker is part of the Coast Mountains, but physiographically is more akin to the Tertiary Plateau of the Stikine than to the Westward Coast Plutonic complex with its jagged, frost-wedged, glacier covered peaks.

The property itself encompasses mainly alpine tundra on the slope of Mount Helveker and extends over sparse fir forest on lower slopes. Fauna is relatively poor, with mountain goats, bears and marmots the only mammals seen while conducting exploration; many birds of prey (eagles, falcons, etc...) nest in the area.

List of claims:			
	Claim 1	16 units	Record number 614
	Claim 2	20 units	Record number 615
	Claim 3	20 units	Record number 616
	Claim 4	20 units	Record number 617

Claim 5	20 units	Record number 618
Claim 6	20 units	Record number 619
Claim 7	16 units	Record number 620

(See figure 2)

III GEOLOGY

1. Introduction

The general geological picture of the area is derived from GSC Paper 71-44 by J.G. Souther and its accompanying geological map GSC 11-1971 of Telegraph Creek quadrangle (NTS 104 G). On a basement of Triassic and Jurassic undifferentiated volcanic and sedimentary rocks folded during Mid-Jurassic time, basins were formed and filled in by huge amounts of clastic rock, known as part of the Sustut Group (Cretaceous age); minor open folding took place after this clastic wedge was deposited in probable relation to Laramide granitic intrusions. Then the area became overlain by a blanket of Tertiary volcanics (the Sloko Group) consisting of pyroclastics and flows.

In this area, part of the Stikine Arch, the Sustut Group has been stripped away by erosion and only local remnants have been preserved, such as on Mount Helveker dissected from the main basin of the Spatzizi Plateau to the east.

2. Stratigraphy

For the most part the formations dealt with and detailed in the following paragraph belong to the Sustut Group, as they host the uranium mineralization discovered on the property. Several sections of the outcropping Sustut sediment have been studied and are reported in Appendix I; many others were made as an attempt to map in some detail the ground under claims.

In the course of this work, the underlying and overlying units or groups were observed with no great emphasis, as they serve as basement or cap to the formation of interest.

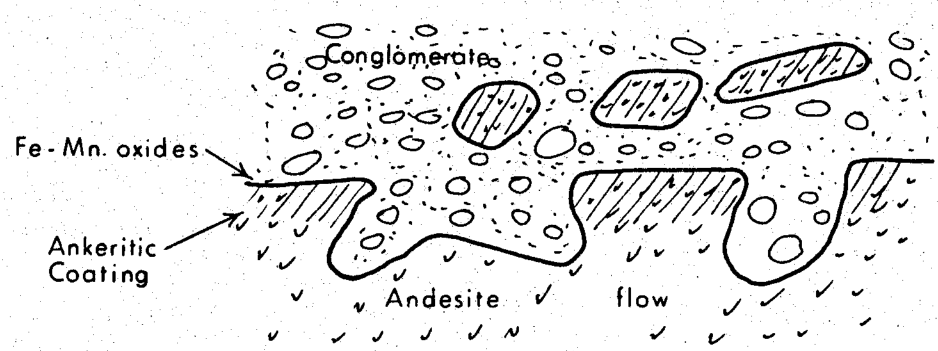
a) The Underlying Unit

The base of the Sustut group has mainly been observed on the southern flank of Mount Helveker where the slope dies off into flat alpine meadows and swamps. There, toward the Stikine River, a tributary of Helveker Creek starts to cut into the bedrock and discloses mainly poorly bedded maroon pyroclastics containing large fragments (up to 1 cm in diameter) in some beds, others being sand size. Beds strike N 80^{o} E and plunge 12^{o}N.

Below these beds, in a small gorge, we found a maroon volcanic conglomerate with fragments of maroon basalt, and andesite up to 4 to 10 cm in diameter and a few rare granite boulders.

These beds can be related to unit 13 of GSC Map 11-1971 Lower Jurassic but a stratigraphic section is difficult to make on this side of the mountain; indeed, from the creek south, the side of the next ridge is gentle, grass covered with few outcrops. Outside the claims, this ridge drops off very abruptly into a big cliff down toward Helveker Creek. As one walks up the grassy slope, he can discover well re-crystallized dacitic, pyroclastics with big basaltic fragments up to 1 cm in diameter in a chlorite, epidote matrix, topped by increasingly finer pinkish tuffs, with biotite and feldspar and on top of the ridge, an assemblage of maroon tuffaceous siltstone and greenish white chloritized spotted tuffs.

On two other occasions, this underlying unit, the basement, was observed in contact with the mineralization-hosting entity. On the north side of Mt. Helveker (re: B.C. Geological Section, Appendix 1), a normal contact is seen between the clastic sediments of that formation and the basement volcanics; there, the contact is very irregular in the sense that erosion and weathering has taken place at the top of the volcanic flows. The surface is pervasively coated by ankerite or iron manganese oxides and broken up; some fragments of this volcanic flow surface are immersed in the overlying conglomerate, only a few centimetres above it. These features suggest a strong erosional diastem but no indication of time lag can be drawn except that deposition of the above conglomerate took place under high energy conditions, after a period of emersion and oxidation.



SKETCH 1
EROSIONAL CONTACT BETWEEN BASEMENT AND CONGLOMERATE

At this particular place, the underlying unit consists of massive andesite flows on top of a red-brown rhyo-dacitic unit. Although the GSC map indicates these outcrops belong to Unit 9 (Upper Triassic), it is irrelevant to our purpose to try to differentiate it from the above described Unit 13, both being lumped together as basement unit for the sake of simplicity and lack of more observations.

The next place where the basement is reported, is located to the northwest of Mt. Helveker where the gently sloping alpine plateau is deeply cut by small creeks and drops off toward Arrival Creek. There, we have a fault contact on the eastern limb of the anticline and the overlying clastic sediments are resting right against a maroon tuffaceous siltstone with interlayers and lenses of black chert conflomerate containing basalt fragments; all the elements are very granular and the quantity of chert and volcanic fragments is such that the beds can better be described as a pyroclastic, the matrix being tuffaceous. The angular black chert pieces and the lack of granitic clasts clearly differentiate this unit from the above and make it resemble the rocks described as Unit 13 in the southern part of the property.

b) <u>The Capping Unit or Sloko Group</u>

Seemingly in conformable contact with the mineralization-hosting sediments, a thick pile of volcanic rock of Upper Cretaceous to Tertiary age caps these sediments and forms a resistant unit which makes up the high, steep cliffs of Mount Helveker.

A short volcanic stratigraphy of the lower part is given in geological section SS (Appendix I); the base is underlined by a greenish or dark-brown to yellowish pyroclastic tuffs, somewhat coarse and very chloritic. Then a dacitic flow with flattened pumice fragments overlap the pyroclastic and is followed by a white laminated rhyolitic welded tuff. This white tuff and the greenish pyroclastic are very indicative of the base of the Sloko Group and can be recognized at a fair distance all around the Mount Helveker.

Then above, begins a whole series of jointed dacite, red visicular dacite and columnar, hornblende white feldspar trachyte which is succeeded by a thick pile of trachytic andesite. These flows are eroded into steep cliffs and create a good impervious cover to the underlying sediments; they outcrop only in western central part of the claims forming the bulk of Mount Helveker as well as the east-west trending ridge, an extension of Mount Helveker toward the Stikine River.

c) <u>The Mineralization-hosting Sediments - The Sustut Group</u>

Between the two preceeding units rests a 500-metre thick accumulation of mainly conglomeratic material as measured along one creek on the northwest side of Mount Helveker. This sequence of sediment can be sub-divided into two distinct formations, first on the basis of morphology and secondly according to color and composition.

The Basal formation displays its most outstanding outcrops along the northeastern and northwestern faces of Mount Helveker, down from the gently sloping plateau or steps between the high volcanic crest of Mount Helveker and lower forested approaches. The main characteristics of the formation are the overall maroon to wine color along with the sheer size of the pink granitic boulders encountered in the conglomeratic members. Some of the boulders have been measured to be over 50 centimetres across and very well rounded.

The conglomeratic horizons make more than 75% of the whole formation and is very poor in matrix content. The matrix itself is identical to the bigger elements and consists of medium to coarse sand size fragments, fairly well rounded; rarely fine-grained matrix has been reported.

From the bottom to top, there seems to be an increase in percentage of boulders and also in size of the cobbles and boulders; however the maximum sizes are found in the middle conglomeratic units. Granule to pebble size components are varied in composition; they include chert, volcanic rocks, quartz, chloritic schist and grey siltstone; however all cobble to boulder-size elements are mostly of a pink, coarse grained granite type along with a few red-brown dacite to andesite.

The conglomeratic units of the lower cycles are fairly thick (15 to 25 metres), structureless and show a violet-grey hue to light maroon color; they are fining upward into greenish greywacke, with a very rapid transition. These greywacke are planar-bedded with ripple marks at the base then nicely trough-cross bedded at the top beneath the upper cycle. Several current measurements point toward an eastward direction (around N 60^{o} E).

Up section, the maroon or wine color becomes more prominent due to greater amount of red to pink dacite and granitic particles in matrix compare to more chloritic andesite and siltstone further down. Also the percentage of sandstone to siltstone increases noticeably in the terminal phase of the cycle as well as sandy lenses or channels into the conglomeratic units; these units themselves appear better graded bedded and cross-bedded on a large scale, representing small divergent channels. Contacts between cycles show many loading features.

Near the top of that formation, a very distinctive unit crops out above the last conglomerate-sandstone cycle and contrasts markedly with the maroon prevailing color of this mega-sequence. Indeed, this bed between 3 to 5 metres thick appears as a very light greenish white color and has a generally fine grained matrix. From place to place variations are encountered and go from a limy tuffaceous siltstone to a real tuff containing flattened chloritic fragments, probably pumices completely replaced by chlorite. In some localities, this tuff contains coarse grains of quartz, and volcanic glass (0.5 to 1 mm) and a few flakes of biotite, elsewhere it is a very fine almost cherty looking silt. It also contains in a few places, large flat voids.

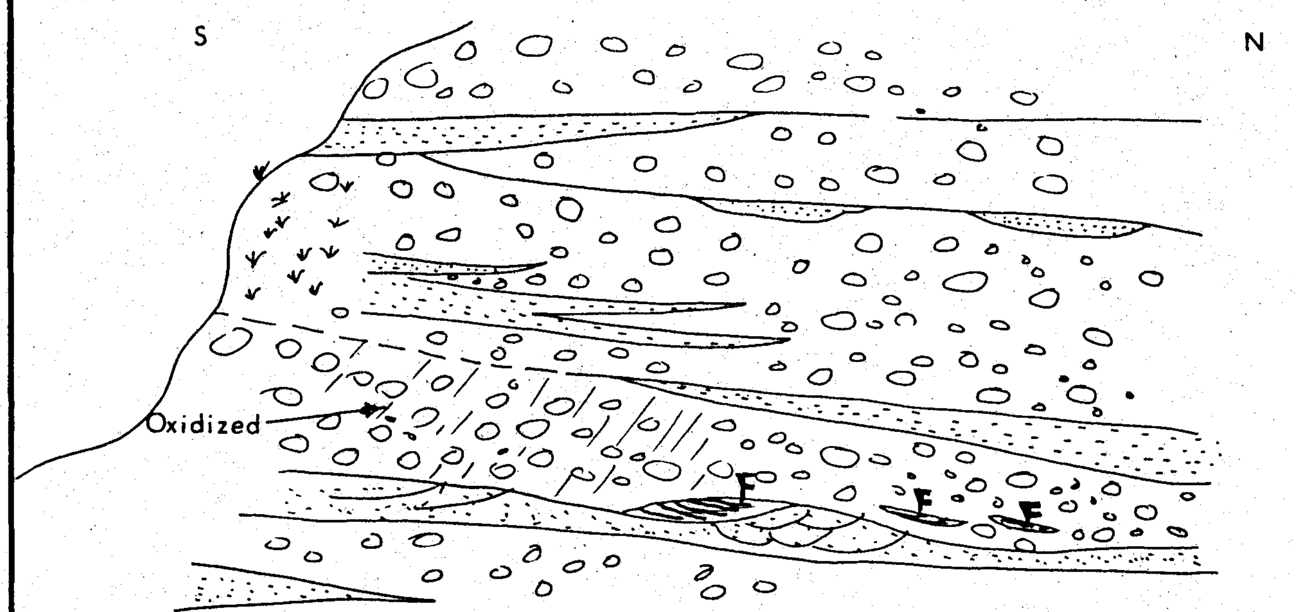
This unit can be used as a marker, indicative of the top of the basal formation as it appears to be the last resistant member and outcrops in several localities around the eastern plateau. Above it the transition zone to the upper formation is highly recessive and consists of 20 metres of wine colored greywacke grading from a coarse grained sand-size at bottom to a very fine grained one at the top with a silt size matrix.

This greywacke contains an equal amount of rounded quartz grains and angular feldspar with some chloritic and lithic fragments, as seen along the creek on the northwest side of Mount Helveker (see: B.C. section in Appendix I)

The Upper Conglomeratic formation can be distinguished by its beige to tan weathering. It outcrops all around Mount Helveker under the capping of volcanic flows which protect it from erosion. Indeed this formation and the top part of the preceeding one above the greenish white tuff marker is very weather recessive and the base is seen in a few topographic steps along the gently sloping plateau.

The unit contains 90% conglomerate, the remaining being sandstone; but contrary to the underlying formation, there is no fining upward cycles at least at the scale of the outcrops. Here sandstones are restricted to lenses, some extending several tens of metres, most having a crescent shape or channel. Also the boulder size components are missing but the amount of pebbles and cobbles represent generally up to 80% of the rock. The majority of the pebbles are volcanic origin, schist or chert or quartzite; on the other hand, the cobble-size fraction is 75% granitic. Here a white feldspar rich porphyry type prevails over the pink, medium grained granitic cobbles observed previously. The matrix is visually medium to coarse grained angular sandstone of identical composition to pebbles. Variation in the conglomeratic fraction (above 4 mm) does not follow any distinctive pattern either upward or laterally.

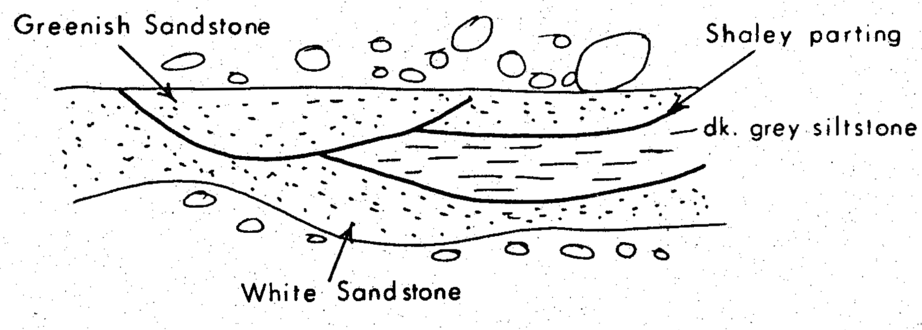
Numerous lensy intervals of sandstone streak across the conglomerate but in volume they do not count for more than 10% (see Sketch 2). They are discontinuous, often have a channel-shape. These interlayers are eventually composed of the same material as the conglomerate matrix, including much feldspar and quartz grains. However a few sedimentological features are apparent in some units, especially near the top of each one: such as trough-cross-bedding, planar-cross-bedding, graded bedding, load and rip-up features. From them many current directions were deducted with an average measurement around N 50^{o} E. These sandstones are medium to coarse size (.200 to .710 mm) and poorly sorted.



SKETCH 2 UPPER CONGLOMERATIC FORMATION WITH SANDY LENSES AND FOSSILIFEROUS SHALE (F: FOSSIL)

NOTE: THE OXYDIZED HORIZON IS CORROLATED WITH THE OCCURRENCE HORIZON.

The sandy horizons tend locally to evolve into very fine grained (.08 - .125 mm) sandstone with silty matrix and on rare occasions into a dark grey siltstone or grey to greenish sandstone contrasting with the overall light beige to tan hue. In a few places, clay partings separate stacked sandy lenses as shown in Sketch 3.



SKETCH 3 STACKED SANDY LENSES WITH SHALE PARTING

Also, at least on two occasions, in grey or greenish-grey sandy siltstone, pieces of organic material were found, especially on the one near the south end of the NW-SE trending rock face (see Sketch 2) where recognizable well printed fossils of leaves and plant stem can be easily collected. One should also mention the lignitic material associated to mineralization right around the corner; this would suggest that the organic material could be concentrated in the same horizon or at least during the same depositional episode.

d) Dykes

Many cross-cutting dykes are observed throughout the property intersecting the sediments. Their more resistive nature make them stand out and create small spurs and promontories. Their composition varies from dark grey very fine grained andesite to dark greenish grey porhyritic trachyte and relates to the volcanic flows of the Sloko Group, capping the Sustut sediments.

The dykes strike fairly constantly from N 50^{o} E to N 110^{o} E and are generally more or less vertical. Locally they can flatten to 50^{o} and have also been reported to be somewhat conformable to the sedimentary layers in a sill-like manner. These dykes belong to two dyke-swarm systems related to volcanic-cones of the capping Sloko Group and are compositionally associated with two volcanic episodes or regimes.

Right against most of these dykes a strong reddening of the sediments took place along with hardening of the matrix. This reddening should be differentiated from the independent oxidation of beds seen near the mineralization, some of that oxidation being somewhat separated from the dyke.

3. Structure

Over most of the claims and all around Mount Helveker the beds are lying in a near horizontal position dipping between 5° and 15° to the north or northwest. Although many steeper measurements were recorded, they all are related to increased dips associated to sides of channel-shaped features.

For the capping volcanic units many higher dips were found but here again it is hard to recognize the irregularities of volcanic flows. Despite some slight visible warping of beds, the general attitude is for the whole sedimentary sequence to gently dip toward the northwest.

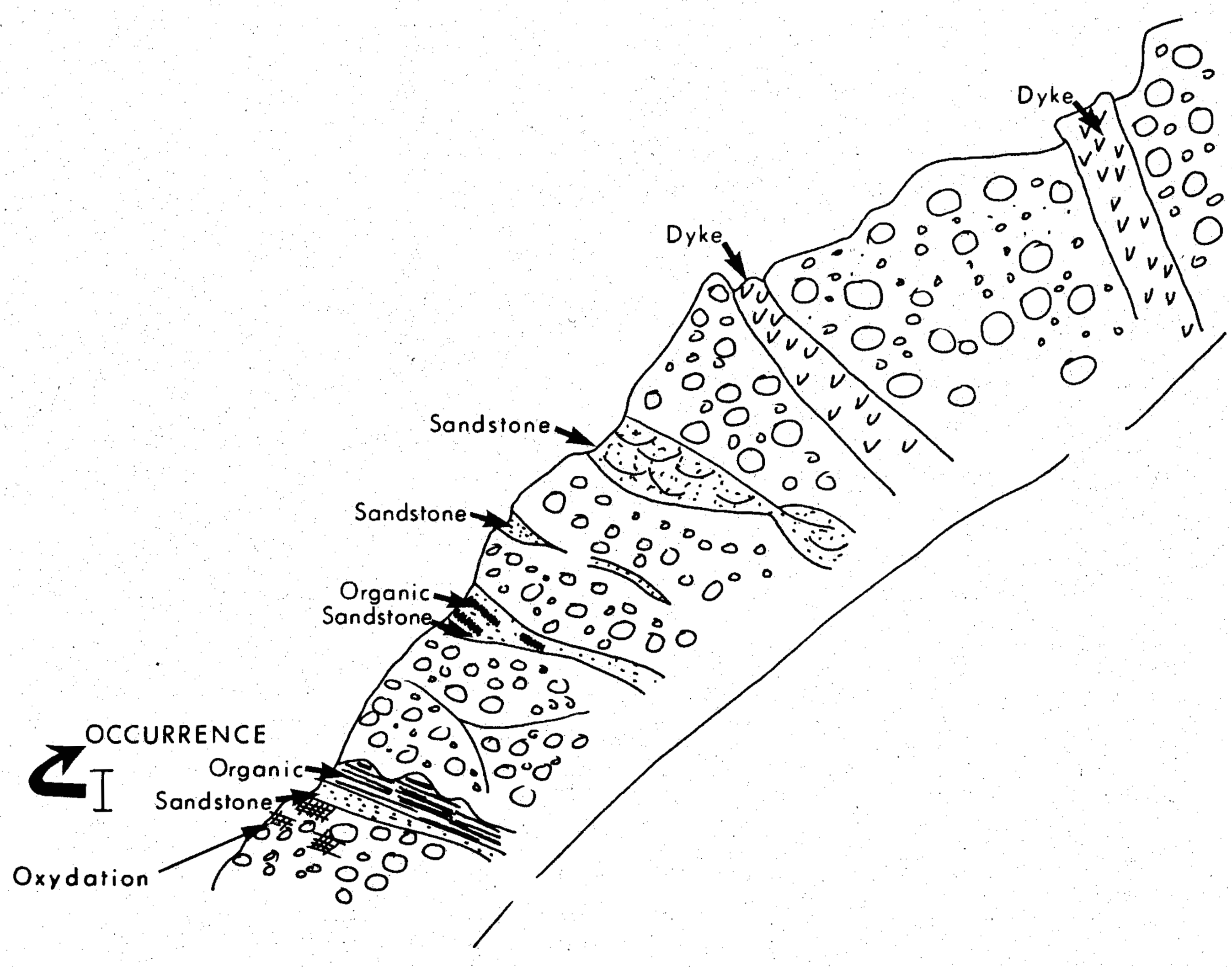
However, on the northeast corner of the property where Mount Helveker plunges in the forested slopes and weedy swamp towards Arrival Creek, several creeks run parallel and one of them, the farthest to the southeast, incised deeply into the plateau creating a large bowl at its head. There, the beds striking N 30° E and 10° W at the head of the creeks, regularly start to bend towards the northeast into an open anticline which axis is N 120° E (NW-SE direction); on its eastern limb, beds are dipping 75° to 80° to the northeast.

Along the side of the last parallel creek to the north, the anticline butts again a NW-SE trending reverse fault bringing the tuffaceous siltstone and angular fragmented pyroclastic of Unit 13 against the massive featureless layers of maroon conglomerate and the greenish-white limy tuff marker above some wine colored siltstone. This fault is a high angle feature dipping at 75° NE and is remarkably visible on the air-photo.

4. Mineralization

Uranium oxide occurrence is found on the south flank of Mount Helveker and is confined to the Upper Conglomeratic formation of the Sustut Group. Along the "Discovery Creek" where horizons have been displaced by about 20 m, (the west side is down dropped), one conglomeratic layer shows a few oxidized sandy zones (1 m x .50 m) and locally fragments of organic material (lignite) which give up some radioactivity. (See sketch 4).

At the base of this layer, a thin interlayer, 13 to 15 cm thick is strongly oxidized and includes, resting over the conglomerate, a 3 cm reddened arkosic sandstone and a 10 cm lignitic bed. The top of this layer shows loading feature from above and indicates probable pinching out of the lignite laterally.



SKETCH 4 DIAGRAMMATIC CROSS-SECTION AT SIDE OF OCCURRENCE ("DISCOVERY CREEK")

Underneath, the conglomerate is somewhat reddened and reveals an increase in matrix content, as well as better sorting of the pebbles (3 to 5 cm in diameter).

On the west side of "Discovery Creek", along the grassy slope, some high radioactive zones had been stripped down to bedrock; these hand scrapes showed the presence of organic material in sandy matrix to which uranium is associated probably in the form of pitchblende. Two of these small trenches were sampled and also the readings on the spectrometer were very high (above 15,000 c/s on SRAT-SPP2 and 45,000 on URTEC), assays do not return expected value (see below).

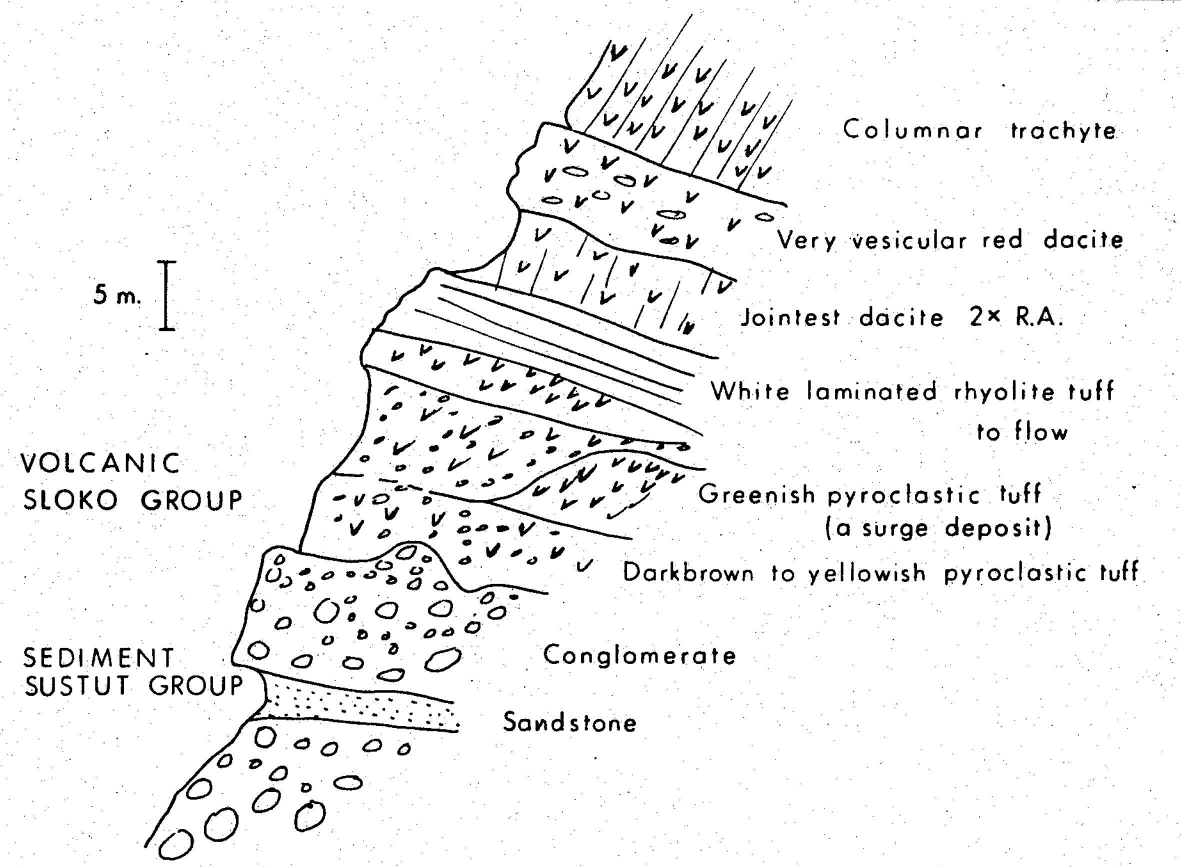
Trench at 0 + 70W - 0 + 25N = .041% U_3O_8
Trench at 0 + 75W - 0 + 30N = .468% U_3O_8

Further study on mineralogy should be undertaken to precise nature of the mineralization and to reveal any desequilibrium.

The anomalous zones seem to be well aligned and along with the above geological observations we can be fairly confident that the organic matter and correlatively uranium concentration is contained within the same horizon which may correspond to a lower energy deposition and a period of quiescence.

Sedimentological implication of the observed geology, suggest that after a time of alluvial fan sedimentation which characterize the Lower Basal formation and a tuffaceous episode, the basin was invaded by a braided river system. At one time, the braided stream moved away to laterally give place to some levies occupied by vegetation or vegetated islands. From what can be seen, this stage did not last very long and rapidly gave way to another flood deposition.

The source of the uranium remains highly speculative at this time; however a suggestion can be made based on the above stratigraphy. In the overlying volcanic sequence (see Sketch 5), which contact is



SKETCH 5 DIAGRAMMATIC SECTION OF THE VOLCANIC ABOVE OCCURRENCE ("DISCOVERY CREEK")

only 25 to 30 m away, brownish dacitic flow, about 5 m thick, shows a radioactivity constantly at twice the background. Water percolation through this flow, as well as others too, could leach some uranium and solutions would flow through the very porous conglomerate layers. As soon as an impervious layer along with some reducing agent, the uranium (uranyl ion) would be trapped readily. It will remain to be seen whether or not such traps really exist and have some extension and make a reservoir of economic size.

5. Conclusions and Recommendations

At the outcome of the surveys and field observations, the problem of uranium concentration can be circumscribed to one horizon associated to lignitic sandy bed seemingly at a little distance away from the overlying volcanic rocks. Indeed, all radioactive occurrences and the mineralized zones (see geological map) are stratigraphically no more than 30 m away; however, the discontinuous nature of channels, levies and point-bar deposition make it difficult to correlate from one point to the other and allocate without doubt, the uranium concentration to only one horizon.

Sedimentological considerations do not indicate any variations laterally and depositional regime has been constant in space and time with the exception of a short vegetated vertical accretion interval which has acted as a favorable enviornment for trapping available uranium ions. The whole matter now rests with the solution of that problem: whether or not, out of the reach of direct observation, we can expect an increase in the size and extent of the sedimentary trap.

Recommendations for the future work would tend to solve this primary question; that if the trap itself, i.e. the organic-rich horizon, does not reach any size or thickness, although the uranium concentration process is proven, than it would be futile to persevere, at least within the perimeter of the present claims. Talus slope should be stripped of vegetation and talus debris and the selected portions of mineralized horizon exposed. A series of trenches should be dug along the mineralized trend, if possible, using mechnical means to ensure proper removal of surficial deposits.

IV AIRBORNE RADIOMETRIC SURVEY

1. Introduction

Aquitaine Company of Canada performed a systematic helicopter-borne gamma-ray spectrometer survey over a major portion of the Hel claims in July of 1979. It had been decided that this method of exploration was suitable in the circumstances and should be attempted. Mineralization was exposed on outcrop of flat-lying sediments in an area where rock was well exposed on steep slopes.

2. Description of Survey and Equipment

The survey was flown over the area shown in figure 4 in two patterns as necessitated by topography. On relatively flat ground parallel lines were flown at a spacing of 100 meters at an altitude of 30 meters and a ground speed of 60 kilometers per hour. In steep areas contours were flown with a vertical spacing of approximately 30 meters. The distance from the spectrometer to the nearest ground averaged about 30 meters but the resulting horizontal spacing of these flight lines varied from 25 meters on steep slopes to nearly 200 meters on the flattest slopes where this method was utilized.

The following equipment was used in the survey: Exploranium GR410 spectrometer, Exploranium GRC-100, 2 channel recorder and Exploranium GPX-112, 112 cubic inch NaI thalium activated crystal. Total count and uranium values were recorded. All survey equipment was mounted in a Bell 47 AJ2 helicopter and powered by a battery pack. The instrument was operated during the survey by one man while the navigator manually plotted the flight path.

3. Results

A 2 channel recording of uranium and total count values and flight path plot were recovered from the survey. Values of speed and height above terrain of detector were assumed to be constant. The data produced was analyzed manually and anomalies and a numerical and written description are listed in Table 1. These anomalies have been plotted on the flight lines on figure 4.

None of the anomalies were judged to be significant but all deserved checking during geologic mapping, stream sediment sampling and prospecting. From such investigations which covered all areas producing anomalies, no scintillometer anomalies were noted.

4. Conclusions and Recommendations

No significant anomalies were detected by the airborne spectrometer survey. Ground examinations of a number of minor anomalies failed to reveal significant scintillometer results, thus it must be concluded that these interpreted anomalies were due to such factors, ranked in decreasing order of significance, as variations in amount of outcrop, instrument height above ground and helicopter speed.

While anomalies present in exposed bedrock in the survey area probably would have been noted by this instrument package, it is probable that anomalies whose surface expression is muted by even a thin overburden cover would not be detected by this instrument due to it's limited capabilities. Thus, it is concluded that bedrock in the area surveyed was examined sufficiently and no anomalies were detected. It is noted that a survey utilizing a larger detector coupled to a multi-channel recorder in a more powerful helicopter would be of value.

V PROSPECTING AND STREAM SEDIMENT SAMPLING

1. Description and Location of Survey

A uranium occurrence was discovered by Aquitaine Company in 1978 and the area of the occurrence was staked. The field program of 1979 was designed to examine the type of occurrence and to prospect and stream sediment sample the Hel claims to determine if mineralization was present elsewhere on the claims.

Field personnel were assigned traverses over the claims to systematically examine the area by prospecting utilizing scintillometer and stream sediment sampling surveys. Stream sediment samples were collected at 25 and 50 meter intervals depending on terrain, exposure and the availability of sediment.

2. Results

The results of prospecting and the resultant geologic mapping are illustrated on figure 3. No significant scintillometer anomalies were detected outside the immediate area of the initial discovery, while several were found within it. Scintillometer measurements were variable due to the variability of lithologies encountered.

Stream sediment samples were taken from most drainages on Mt. Helveker. Survey results, as analyzed fluorimetrically by Loring Laboratories of Calgary, have been plotted as shown on figure 5. The background uranium concentration was determined to include all levels up to 2 ppm U_3O_8. Most of the anomalies illustrated are located on drainages downslope from the occurrences. Anomalous values increase downstream over several hundred meters from 2 ppm U_3O_8 to nearly 20 ppm.

Several other isolated anomalies are indicated in other drainages where information is scanty.

3. Conclusions and Recommendations

Major anomalies indicated from stream sediment surveys are present downstream from located occurrences. The nature of these anomalies should be further investigated to determine if they are simply the result of displaced erosional uranium-rich material from the known occurrence or if they are due to uranium occurrences in horizons below that in which occurrences are known. Trenching and soil surveys are warranted in the anomalous area.

Areas where isolated anomalies have been found should be subjected to resampling and detailed scintillometer surveys. It is felt though, that organic-rich sediments have produced these anomalies.

In light of the major anomalies illustrated, an extended survey is warranted to complete coverage of the Hel claims including secondary drainages on presumed extensions of the horizon in which occurrences have been found.

VI WORK PERFORMED ON THE URANIUM OCCURRENCES

1. Soil Sampling

a) Location and Description

A soil sampling survey in conjunction with a radon survey was performed in an attempt to detect uranium concentrations in soil that were not detected by scintillometry.

A grid was surveyed over a uranium occurrence, as located in figure 3. The survey was performed by augering samples from the C horizon at a depth of approximately 40 cm. Sample stations were located at 5 and 10 meter intervals on lines 25 meters apart as shown in figure 6. Samples were analyzed fluorimetrically by Loring and Chemex Laboratories of Calgary.

b) Results

Results of the survey are presented on figure 6. The background uranium level has been determined to include all levels up to 1 ppm U_3O_8. Anomalies are scattered and are occasionally single isolated values, but most are in well defined groups. Trends are not clearly defined laterally across more than 3 or 4 lines (75 to 100 meters).

c) Conclusions and Recommendations

Soil sampling on a grid over an area on the Hel claims shows a number of well defined anomalies. A known uranium occurrence at 25 meters north, 100 meters west, is represented by an anomaly of moderate value thus it can be expected that most anomalies do represent other occurrences. Anomalies are scattered and are present primarily over the southern portion of the sample area. This may indicate that uranium occurrences are irregularly distributed throughout a certain zone. Some anomalies appear to taper to the south (downslope) showing the movement of mineralized soil or uranium in groundwater.

Anomalies occur where no significant scintillometer anomalies have been detected. Since uranium occurrences buried under 30 to 50 cm of soil were detected as only subtle anomalies it is thought that most anomalies must represent uranium occurrences. Good correlation was observed between soil and radon survey results thus confirming the value and reliability of each survey under the given conditions.

It is recommended that anomalous areas be trenched and sampled by deep augering to determine if all anomalies detected represent uranium occurrences. Further sampling is warranted to cover lateral extensions and zones underlying the anomalous horizon.

2. Radon Emanometry Survey

a) Location and Description

Alphameters were used to measure soil radon concentrations. It was hoped that this method could detect uranium concentrations lying beneath a thin soil and colluvium cover. Sampling sites were located on the same grid used during the soil sampling survey. This grid was located over a number of small known uranium occurrences. Approximately 130 sites were sampled on 5 lines as shown in figure 7.

b) Equipment and Modes of Operation

Alphameters, made by Alpha Nuclear Company and designed for soil gas radon measurements, consist of a tube approximately 5 cm in diameter and 35 cm in length containing a silicon diffused junction alpha detector and the necessary electronics to measure and record pulse counts and elapsed time. The survey was carried out by planting these meters in holes about 30 cm deep. Care was taken to minimize the disturbance of soils of sampling sites while augering holes, so that soil gas radon concentrations would rapidly reach equilibrium. Experimentation revealed that a 24 hour counting period was sufficient to allow duplication of results. Anomalous observations were re-checked with a different meter. Of the total of 40 meters available, between 2 and 6 of the meters were not functional at any one time.

c) Results

Results of the radon survey are shown on figure 7. Background values were determined to be those which did not exceed 100 counts per hour. Several significant anomalies are therefore displayed on the contoured map of results and the largest values exceed 200 counts per hour. Most anomalies are well defined by small groups of anomalous values and are not simply isolated values.

Continuity of anomalies along lines is poor but apparent lateral continuity between lines (horizontally) is good. Mineralization found at 25 meters north, 100 meters west appears to be represented by an anomaly of moderate value. Significant observations are noted when company radon survey results with those of the soil survey. The same major anomalous trends are represented on both plots but appear to be displaced downslope in the radon survey. Some anomalies located on each survey are not indicated by the other but in general, correlation appears to be good.

d) Conclusions and Recommendations

Significant anomalies are indicated by the radon survey and the major trends can be correlated with those of soil surveys.

A uranium occurrence was found near one anomaly thus it may be assumed that other anomalies indicate other uranium occurrences. Lateral continuity between anomalies is uncertain. Radon anomalies may be located downslope from soil anomalies as a result of groundwater flow.

It is recommended on the basis of the results presented that soil cover be removed where anomalies are indicated to determine if uranium occurrences are present. It is also recommended that radon surveys in conjunction with soil surveys be extended to cover areas as conditions warrant, to the east, west and south of the present grid.

VII CONCLUSIONS

Investigations in 1979 by the Aquitaine-Dome Joint venture have demonstrated that significant uranium occurrences are present on the Hel claims. Occurrences are probably limited to one finer-grained horizon in the generally conglomeratic Sustut Group rocks, as evidenced by detailed geological and geochemical surveys. It was verified that uranium concentrations are associated with carbonaceous inclusions and sulphide concentrations in arkosic sandstones, conglomerates and siltstones adjacent to lignitic beds. Overlying units of volcanic origin are thought to be sources for the uranium concentrations which approach 0.5% U_3O_8.

Soil geochemical, scintillometer and radon surveys conducted on a grid surveyed about the initial discovery show many anomalies implying the presence of many occurrences or uranium concentrations. Stream sediment surveys disclosed that covered units underlying the mineralized horizon may be anomalous and thus are a target for further exploration. An insufficient number of these occurrences, however, have been exposed by trenching to allow full examination of their stratigraphic location. As well, the extent of favourable lithologies, both laterally and underlying the horizon where mineralization was found, is unknown due to the presence of surficial cover. The vegetation, soil and colluvium cover is generally less than 1.5 meter thick facilitating trenching to bedrock.

Favourable host lithologies were noted, but not evaluated, at two localities on the claims. A wedge of fine-grained sediments, possibly fault-bounded, lies about a kilometer west of the discovery site, while anticlinal repetition of the horizon hosting the uranium occurrences is present on the northeastern flank of Mount Helveker. An airborne gamma-ray spectrometer survey over the western portion of the claims failed to produce significant results. It was concluded that this survey was adequate over the rocky cap of Mt. Helveker but lacked sufficient sensitivity and control to be effective over the remainder of the area. As well, stream sediment geochemical surveys revealed no significant anomalies save those which show increasing values downstream from the uranium occurrences noted.

RECOMMENDATIONS

Recommendations for further work on the Hel Claims are based on the preceding conclusions which outline a uranium prospect having important showings and latitude for the presence of a significant deposit.

Foremost, the precise nature of occurrences and the stratigraphy and distribution of host and favourable lithologies must be determined in the immediate vicinity of the discovery site. This will be accomplished by extensive trenching of the site including all significant anomalies indicated by radon, scintillometer and geochemical surveys. This will allow the formation of conclusions regarding the potential of the mineralized horizon to contain large uranium concentrations and thus the favourability of other target areas.

Examination should include evaluation of those units covered by overburden which underlie the horizon known to be mineralized. Investigative techniques should include soil geochemistry, radon and trenching to expose stratigraphy and anomalies on an enlarged gird. Surveys can then if warranted be extended to lateral extensions of favourable horizons.

Several other targets outside the immediate area of the showings have been noted. These areas should be subjected to detailed geological, geochemical survey and sophisticated airborne gamma-ray spectrometer.

TABLE 1

SPECTROMETER ANOMALIES HEL CLAIMS, B.C.

LINE	ANOMALY LOCATION WITH RESPECT TO FIDUCIAL	VISUAL DESCRIPTION	ANOMALY VALUE PEAK U /BACKGROUND VALUE / U VALUE
LINE 1	4.8	U+TC; several spikes	U=30/15
	18.0	U+T.C.; increased background	U=25/17
	23.5	several sharp T.C. & U spikes	U=22/15
	28.0	several sharp U spikes	U=25/15
	30.0	U+T.C. narrow peaks	U=23/15
	35.2	U+T.C. spikes	U=22.16
LINE 2	1.8	U spike	U=24/10
	6.7	U+T.C. spikes	U=22/10
LINE 3	1.3	Single U spike higher T.C. background	U=23/15
	16.2	U spike sharp higher T.C. background value	U=30/18
	17.3	U spike sharp higher T.C. background value	U=35/15
	22-23	several U spikes T.C. hackground higher	U=23/15
	26.5	several U spikes	U=25/15
	32	U+T.C. wide peaks	U=30/18
	33.3	U+T.C. wide peaks	U=32/22
	34+	U+T.C. wide peaks	U=30/18
	37	U spikes, T.C.stable	U=23/15
	41.8-43	U spikes, T.C.sl. higher	U=32/17
	50.2	U+T.C. spikes	U=30/18
	52.5	single U+T.C. spikes	U=30/15
	53.2	single U+T.C. spikes	U=30/13
	54.3	single U+T.C. spikes	U=23/18
	56	single U+T.C. spikes	U=30/19
	59.5	several U+T.C. spikes	U=22/17
	61	U+T.C. spikes	U=25/15
	63.6	single U spikes	U=23/15
	65.3	U spike	U=20/18
	67	small U spike	U=23/15
	68.2	small U spike	U=23/18
	69.3	sharp U spike	U=20/5
	77.5	sharp U spike	U=30/18
LINE 4	2-	U+T.C. spikes	
	2.9	U spike small	
	6.4	U spike small	
	6.7	U spike small	
	10.0	U spike small	
	14-	U spikes small	
	18.3	U spike sharp, small	
	26.2	U spike sharp, small	

APPENDIX I

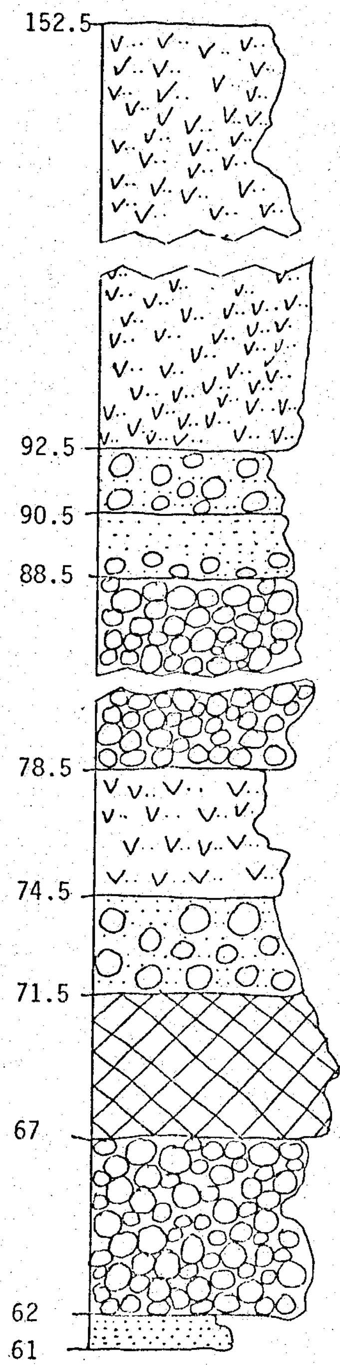
Measured Geological Sections

Stratigraphic Measured Section

SW - Section on southern face of Mt. Helveker,
on Southwest Creek toward western edge of claims

(Mike Mann)

Elevation at top of section 1633 metres



60m Trachy-andesite with some coarse textured green tuffs (Sample of tuff 79-SW-LEH-1)

2 m Baked conglomerate, sandy matrix (Sample 79-SW-LEH-2)

Elevation 1570 m

2 m Green sandstone with minor pebbles. No pebbles at upper part (Sample 79-SW-LEH-3)

10m Conglomerate (Sample 79-SW-LEH-4)

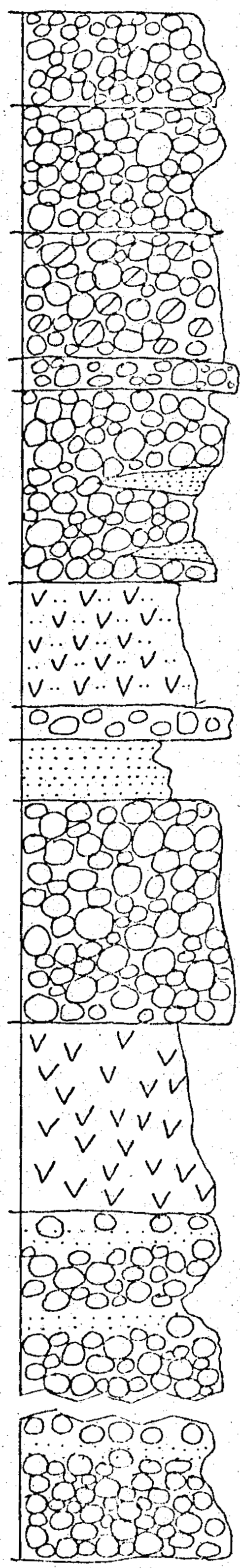
4 m Green, tan weathering tuff (Sample 79-SW-LEH-5)

3 m Greyish conglomerate, sandy matrix, unsorted pebbles 1 cm to large boulders (Sample 79-SW-LEH-6)

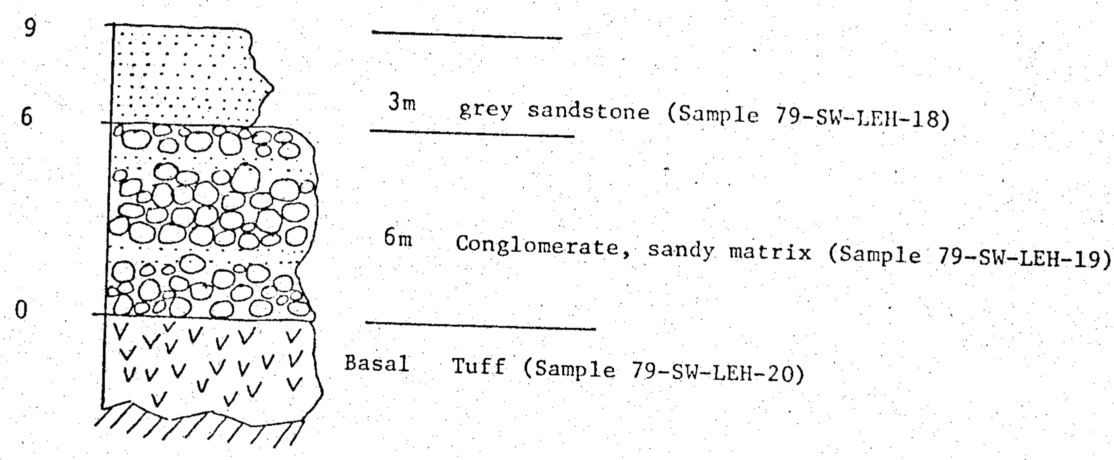
4.5m Greenish andesite dyke (sample 79-SW-LEH-7)

5 m Conglomerate (sample 79-SW-LEH-8

1 m Sandstone bed (300^{o}, dip 10^{o}NE) (SAMPLE 79-SW-LEH-9)



61		
	3m	Stained, oxidized conglomerate (Sample 79-SW-LEH-10)
58		
	4m	Stained, oxidized conglomerate (Sample 79-SW-LEH-9)
54		
	4m	Polymictic conglomerate, maroon tinged matrix (Sample 79-SW-LEH-11)
50		
49	1m	Conglomerate
	6m	Conglomerate with minor grey sandy lenses (Sample 79-SW LEH-12)
43		
	4m	Tuff, volcanic, green with orange weathering (Sample 79-SW-LEH-13) Elevation: 1468 m
39		
38	1m	Grey colored conglomerate (Sample 79-SW-LEH-14)
	2m	Grey sandstone
36		
	7m	Conglomerate (Sample 79-SW-LEH-15)
29		
	6m	Green tuff Elevation: 1463 m
23		
	14m	Conglomerate, some beds with sandy matrix (Sample 79-SW-LEH-16), others conglomeratic matrix (Sample 79-SW-LEH-17)
9		



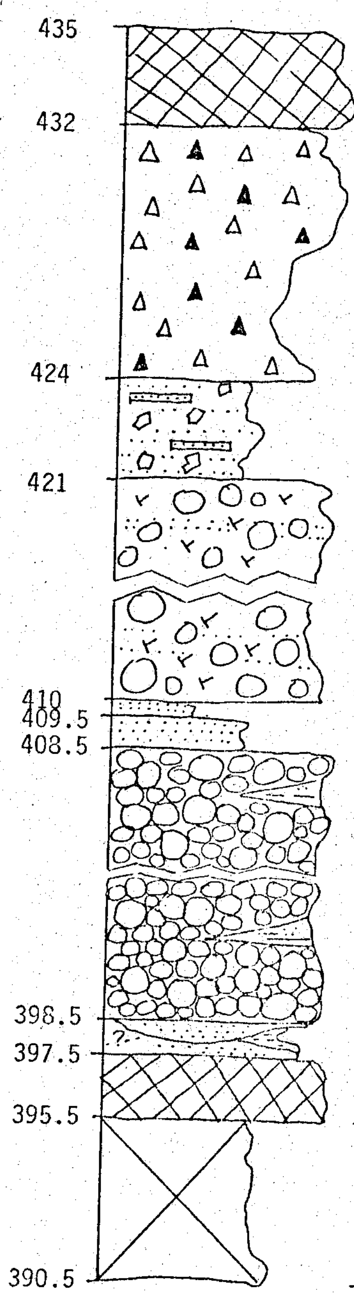
Elevation at base of section = 1420 m

Stratigraphic Measured Section

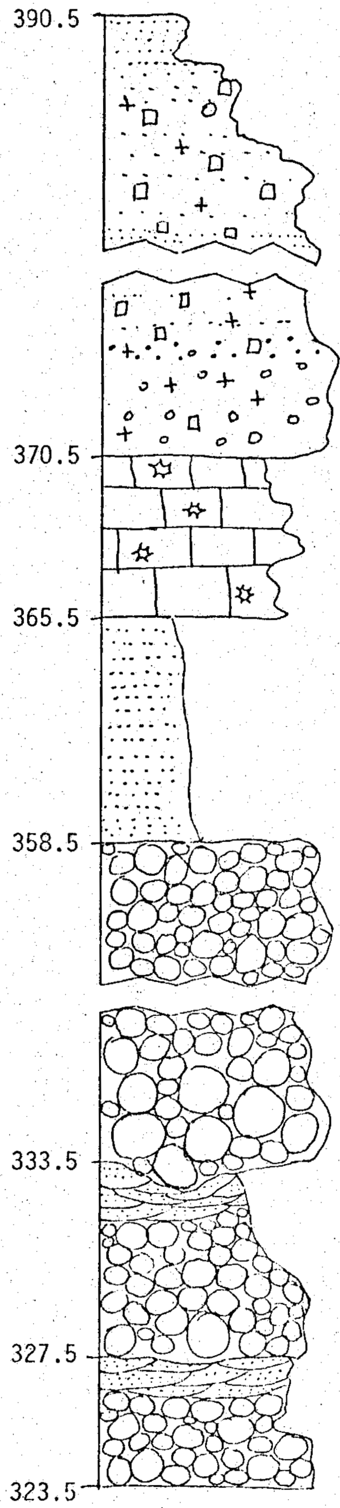
B.C. - Section along "Big Creek" on the northwest face of Mt. Helveker
- Thicknesses are approximate

(H. Salat)

Top of Section



3m	Thick trachytic dyke cutting across pyroclastic and sediment - strike 70^{o}E, near vertical
8m	Greenish chloritic, eutaxitic pyroclastic
3m	Grey medium size (500-350 u), well indurated sandstone, quartzitic, sub-angular with siltstone and clay partings
11m	Typical beige-brown conglomerate, with lesser amounts of big cobbles, pebbles prevailing, with arkosic matrix, somewhat limy. Many sandly layers, graded- bedded, often reverse although vague. The big cobbles of conglomerate are always on top between 2 sandstone layers.
0.5m	Fine grained (88-125 μ) grey sandstone
1 m	Whitish-beige, regular size (350-750 μ) sandstone
10m	Tan to beige conglomerate with pebbles and cobbles; partings and lenses of dark grey silt (Sample HEL-1) with a few quartz grains (88-125 μ)- strike 110^{o}, 10^{o}NE.
1m	Beige to greenish sandstone with many silty partings and silt lenses
2m	Dyke
5m	Recessive, no outcrop



20 m Wine color greywacke, volcanic elements (25% rounded quartz, 25% angular feldspar, 50% chloritic fragments and lithic fragments). That unit is coarse at base and fine upward to a very fine grained sandstone with silt size matrix (Sample HEL-2)

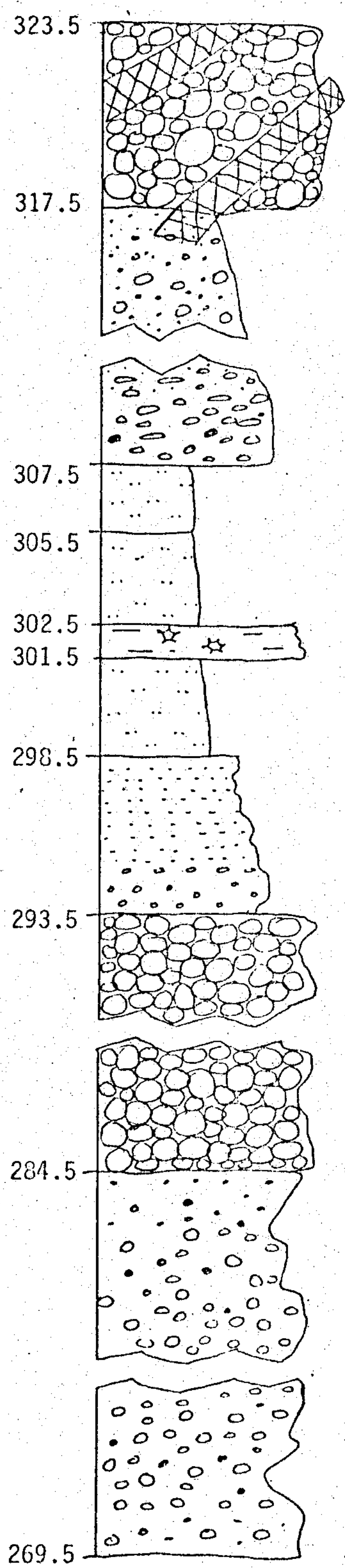
5 m White tuffaceous limestone, somewhat greenish with many large elongated voids, locally pure, most of time very coarse clast (mainly sub-rounded quartz grains but also chloritic fragments and biotite) (fine grained Sample HEL-3F, coarse grained HEL-3C)

7 m Maroon fine grained (300-88 u) sandy siltstone. Strike N 30° E - 25° NW dip (Sample HEL-4) grading into:

25m Well graded-bedded conflomerate, the base contains very big well rounded cobbles of pink granite (up to 50 cm), little matrix and material of pebble size = 75% (Sample HEL-5)

6 m One cycle of greenish grey conglomerate, same as above terminating in cross-bedded sandstone to greywacke consisting of chloritic and feldspar fragments (Sample HEL-6). At base: load features.

4m Same cycle as above



6m Same as above - conglomerate is reddened and hardened (cooked) nearby many small dykes cutting across. These cycles are channel shaped on a large scale and do not form long continuous beds but grades into each other.

10m Greenish-grey greywacke, rythmically bedded, grading into a wine colored siltstone (the last 2 to 3 metres) some worm-like features (Sample HEL-7)

2m Whitish light green siltstone with chloritic fragments (a very fine tuff?)

3m Maroon to wine colored siltstone

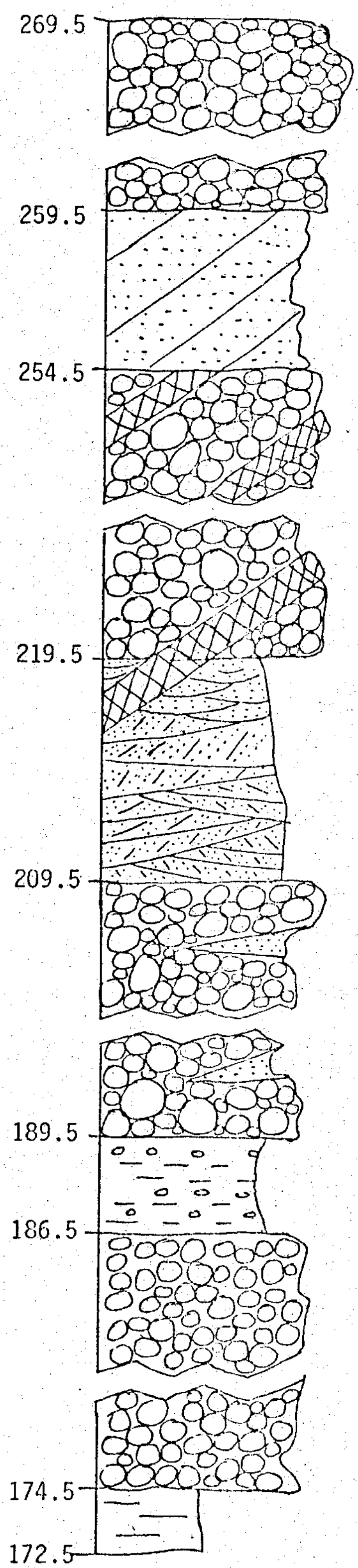
1m Whitish green silty, limy tuff

3m Wine colored siltstone

5m Maroon sandstone to greywacke

9m Conglomerate

15m Greenish chloritic greywacke



10m Grey-green conglomerate (upper waterfall)

5m Green trough cross bedded greywacke (Sample HEL-8)

35m Grey green conglomerate (the big waterfall). These dykes cutting across

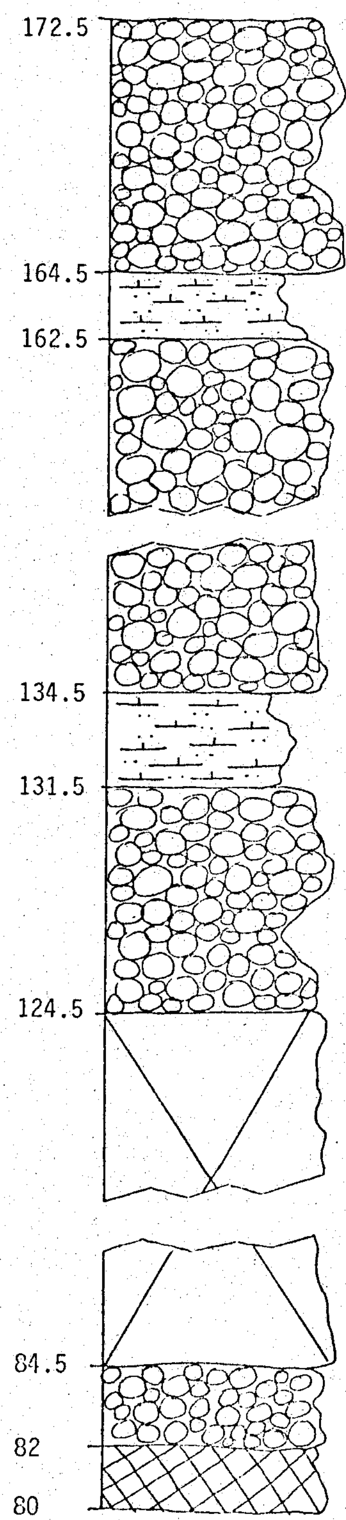
10m Greenish greywacke, nicely trough cross-bedded at top 2 metres (current direction N 60°E)
Then planar cross-bedded
Many sub-rounded quartz grains

20m Grey green conglomerate (lower waterfall), only a few sandy layers (10-50 cm thick). These conglomerates forming the 3 waterfalls are not graded, bedded, contains few sandy lenses, 50% of cobbles are 5 - 10 cm in diameter, little matrix.

3m Greenish silty greywacke

12m Grey condlomerate identical to the ones above, but pebble size is under 4 cm across, also little matrix

2m Whitish limy siltstone



8 m Grey conglomerate - no more big pebbles, maximum size 3 to 4 cm, but most are 1 - 2 cm

2 m Whitish limy siltstone

28 m Grey conglomerate - same as above, grading into sandstone (Sample HEL-3)

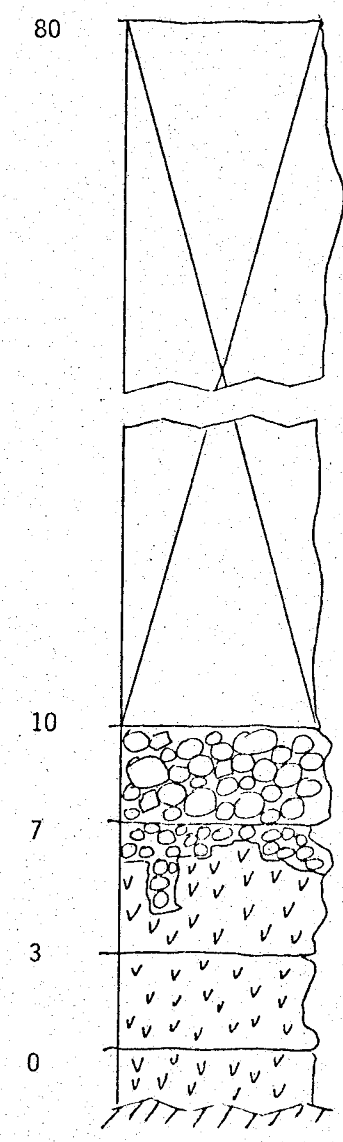
3 m Whitish limy siltstone

7 m Grey conglomerate

40 m Recessive, no outcrop

2.5 m Grey-greenish conglomerate, maximum pebble size is 3 cm, strike N 20°E, dip 12° NW

2 m Trachytic dyke running 60° NE, dip 55° to SE



70 m Recessive

3 m Tan conglomerate, with chert pieces, volcanic fragments, quartz etc, large andesite block from below, coated with ankerite. Very irregular contact.

4 m Andesitic flow

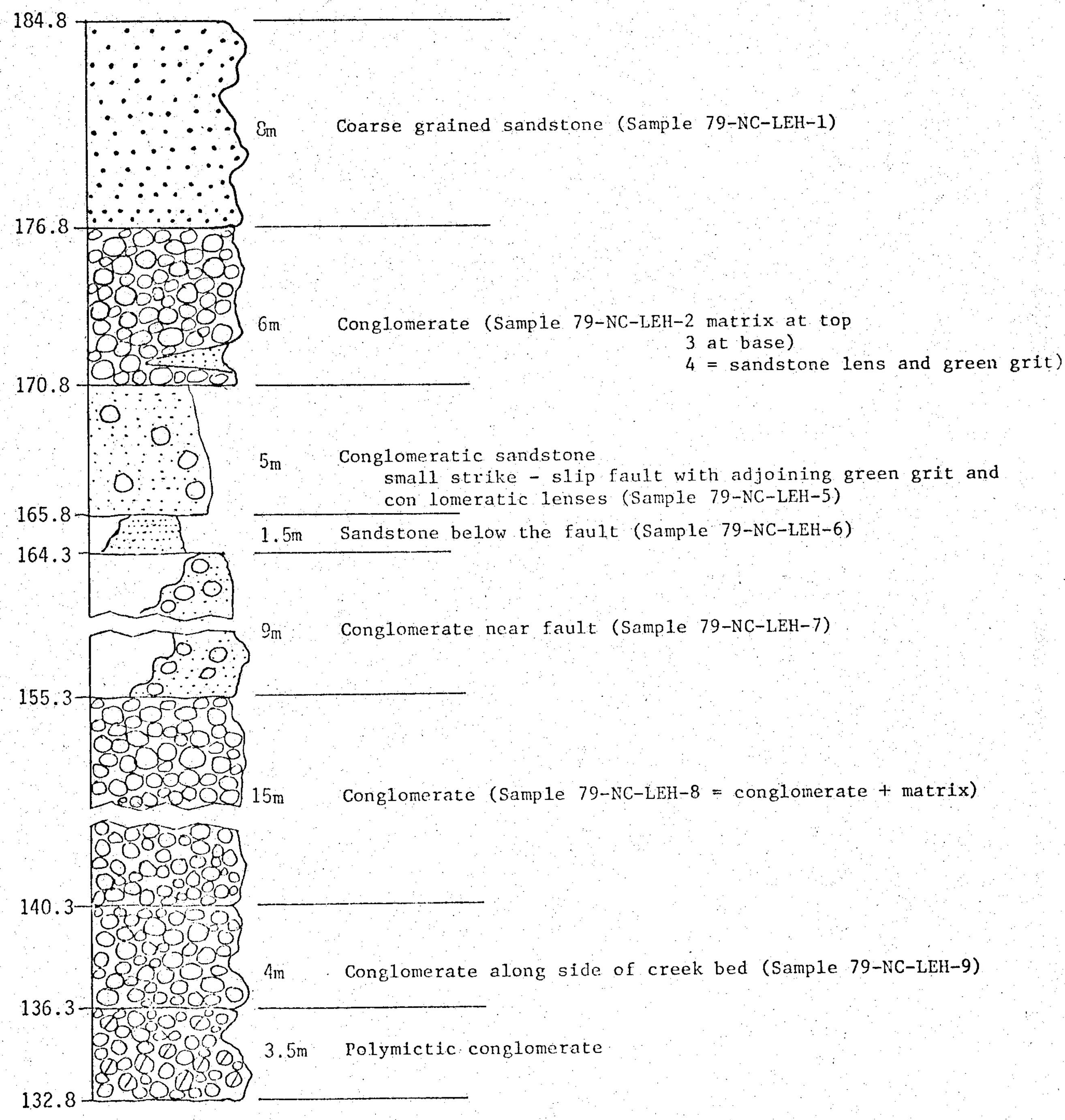
3 m Rhyodacite flow, red brown

Base of section

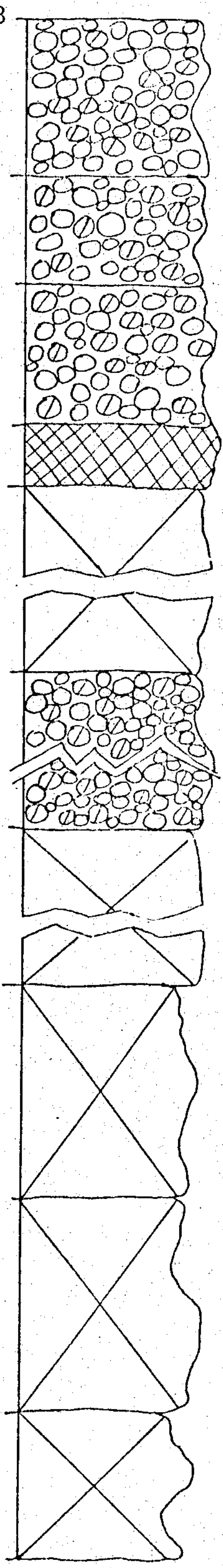
Stratigraphic Measured Section

NC - Section on the NE side of Mt. Helveker (Mike Mann)

Top of Section - Elevation: 1435 m



NC - Section



132.8

5m Polymictic conglomerate

127.8

3.5m Polymictic conglomerate

124.3

4.5m Polymictic conglomerate

119.8

2m Dyke

117.8

21m No outcrop except a small conglomerate outcrop 2 m above last unit.

96.8

10.2m Polymictic conglomerate

86.6

11.9m No outcrop

74.7

6.9m No outcrop

67.8

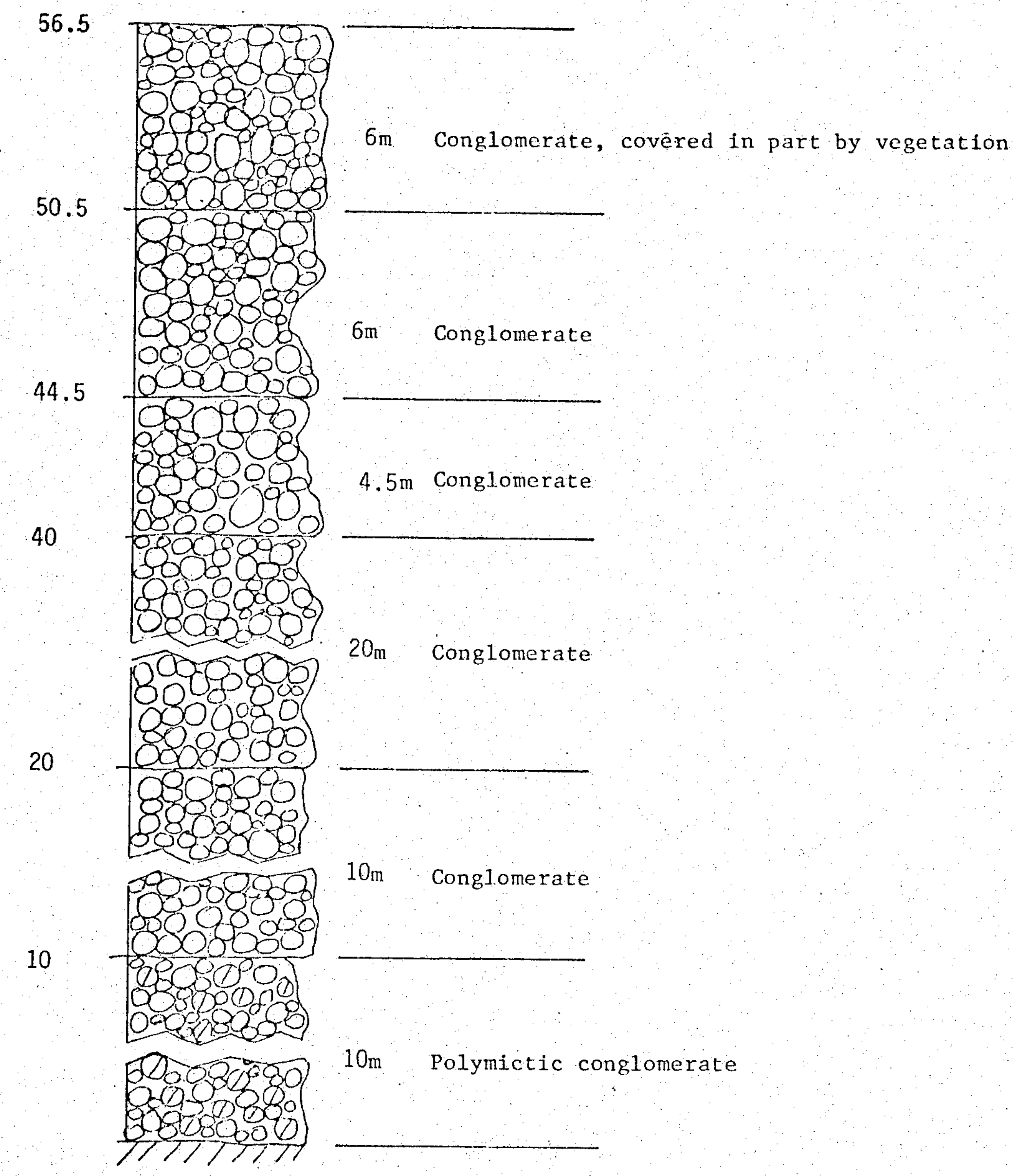
6.7m No outcrop stream bed

61.1

4.6m Vegetation cover, no outcrop

56.5

NC - Section

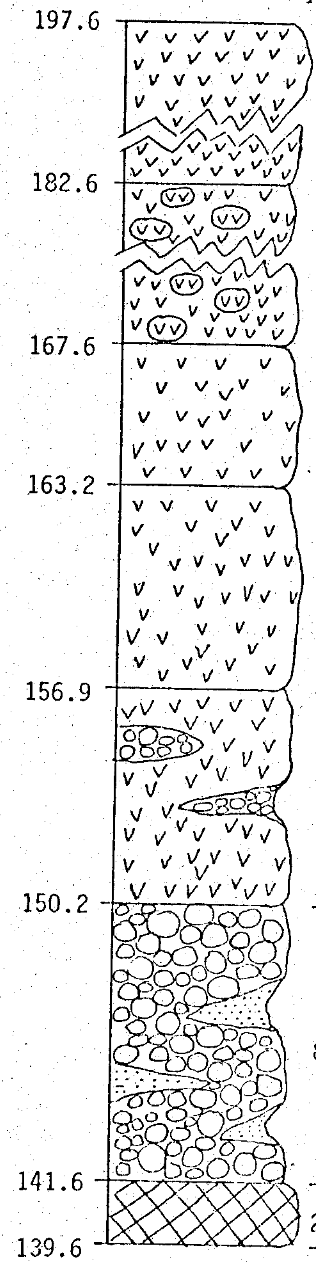


Base of section - 1260 m elevation

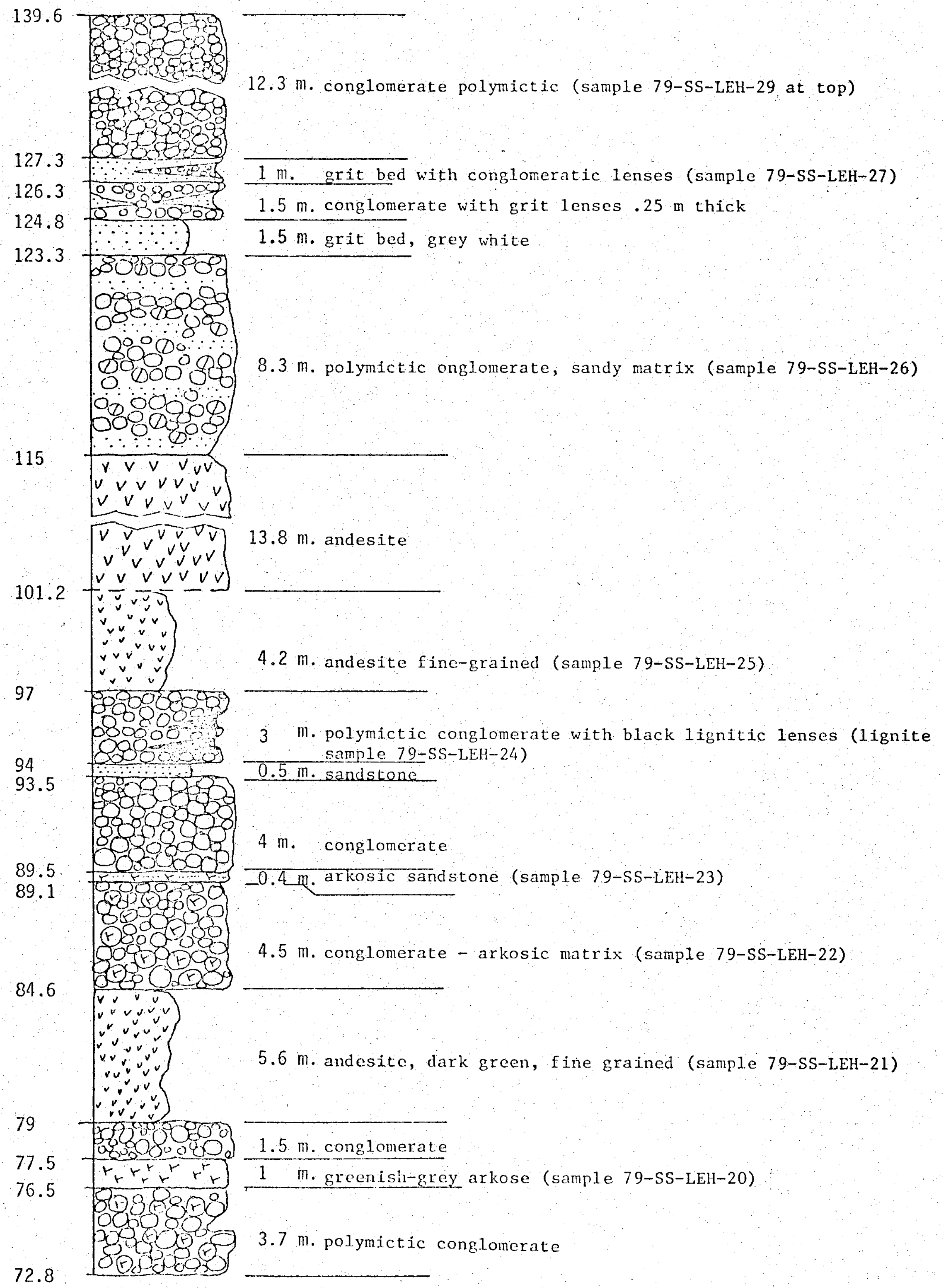
STRATIGRAPHIC MEASURED SECTION

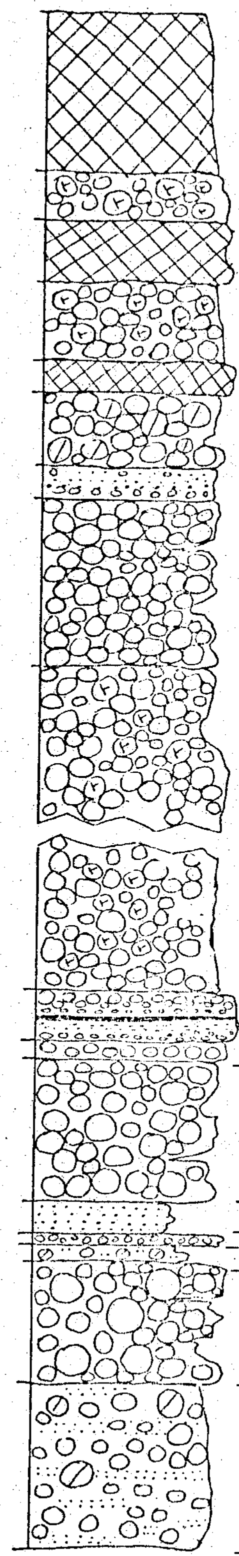
SS - section on southern face of Mt. Helveker,
along the creek which has the main showing (Mike Mann)

END OF SECTION



UNIT THICKNESS	
15 m.	white-grey andesite (sample 79-SS-LEH-36)
15 m.	brownish agglomerate and tuff (sample 79-SS-LEH-35)
4.4 m	dacite with flow structures (sample 79-SS-LEH-34)
6.3 m.	white rhyolite (sample 79-SS-LEH-33)
6.7 m.	greenish tuff with conglomatic lenses (sample 79-SS-LEH-32)
8.6 m.	conglomerate alternating with sandstone lenses .25 m thick to 75 m thick (sample 79-SS-LEH-31)
2 m.	dyke (sample 79-SS-LEH-30)


139.6
12.3 m. conglomerate polymictic (sample 79-SS-LEH-29 at top)
127.3
1 m. grit bed with conglomeratic lenses (sample 79-SS-LEH-27)
126.3
1.5 m. conglomerate with grit lenses .25 m thick
124.8
1.5 m. grit bed, grey white
123.3
8.3 m. polymictic onglomerate, sandy matrix (sample 79-SS-LEH-26)
115
13.8 m. andesite
101.2
4.2 m. andesite fine-grained (sample 79-SS-LEH-25)
97
3 m. polymictic conglomerate with black lignitic lenses (lignite sample 79-SS-LEH-24)
94
0.5 m. sandstone
93.5
4 m. conglomerate
89.5
0.4 m. arkosic sandstone (sample 79-SS-LEH-23)
89.1
4.5 m. conglomerate - arkosic matrix (sample 79-SS-LEH-22)
84.6
5.6 m. andesite, dark green, fine grained (sample 79-SS-LEH-21)
79
1.5 m. conglomerate
77.5
1 m. greenish-grey arkose (sample 79-SS-LEH-20)
76.5
3.7 m. polymictic conglomerate
72.8



72.8

5 m. Dyke (andesite)

67.8

1.5m. Polymictic conglomerate (sample 79-SS-LEH-19 = conglomerate matrix)

66.3

2 m. Trachytic sill

60.3

2.4 m. Polymictic conglomerate

61.9

1 m. Trachytic sill (Sample 79-SS-LEH-18)

60.9

2.2 m. Polymictic conglomerate, unsorted (Sample 75-SS-LEH-17)

58.7

1 m. Grit bed, grey, upper section contains pebbles aligned at 236° (Sample 79-SS-LEH-16)

52.7

5.2 m. Conglomerate

52.5

14 m. Polymictic conglomerate, grey green, large boulders, contains lignitic and oxidized lenses, greenish gritty matrix (Sample 79-SS-LEH-15)

38.5

.8 m greenish grey conglomerate (Sample 79-SS-LEH-14)
.25 m oxidixed finer conglomerate. .07 m lignitic layer
.05 m oxidized, weathered gritty material
.4 m oxidized conglomerate (Sample 79-SS-LEH-13)

1.5 m.

37.0

0.4 m. greenish grey conglomerate (average pebble size 5 cm)

36.55

4.7 m. Conglomerate, large pebbles and boulders (Sample 79-SS-LEH-11)

31.85

1 m. Hematized, hard sandstone (sample 79-SS-LEH-11)

30.85

0.15m. Conglomerate, small pebbles

30.7

0.5 m. Green polymictic conglomerate containing very fine pebbles in a gritty feldspathic sandstone matrix (average pebble size: .5 to 1 cm) (Sample 79-SS-LEH-10)

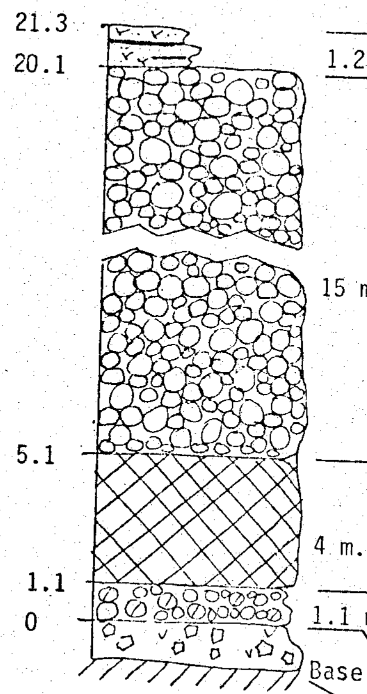
30.2

3.7 m. Conglomerate, very large boulders (Sample 79-SS-LEH-9)

26.5

5.2 m. Unsorted polymictic conglomerate; pebbles range in size from .5 cm to boulders coarsening upward (?) - boulder elongation at 150°, sandy matrix (Sample 79-SS-LEH-8 at bottom of unit).

21.3



1.2 m. Arkose with lignitic laminae, fine grained, greenish grey
(Sample 79-SS-LEH-7)

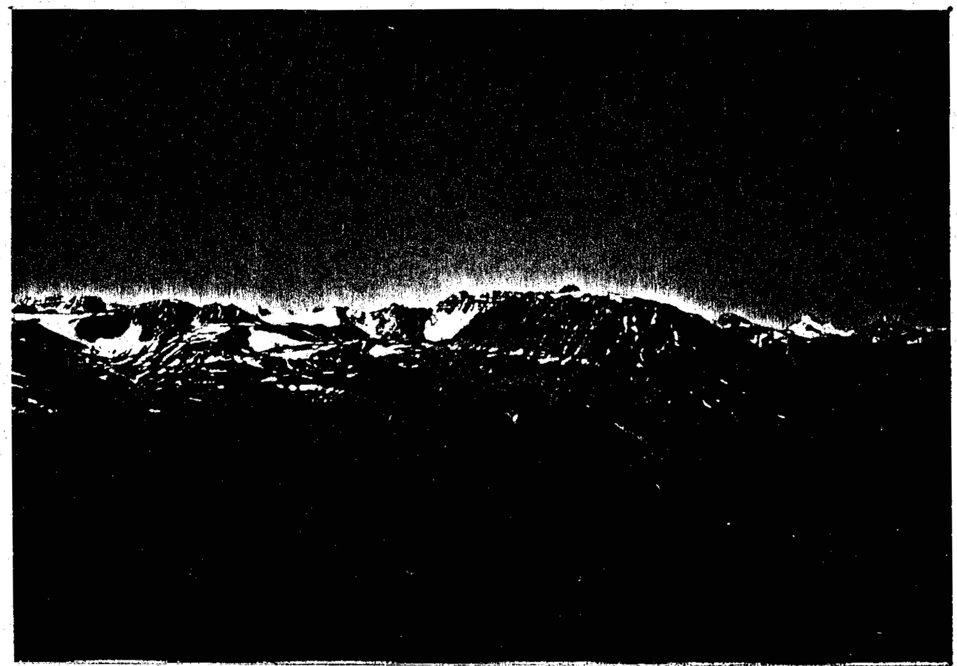
15 m. Conglomerate, baked at dyke margin, locally oxidized -
(Sample 79-SS-LEH-4 - baked conglomerate)
-5 - oxidized)
-6 - conglomerate matrix)

4 m. Trachytic, greenish grey, feldspar lenses, dyke - strike 300°
(Sample 79-SS-LEH-3)

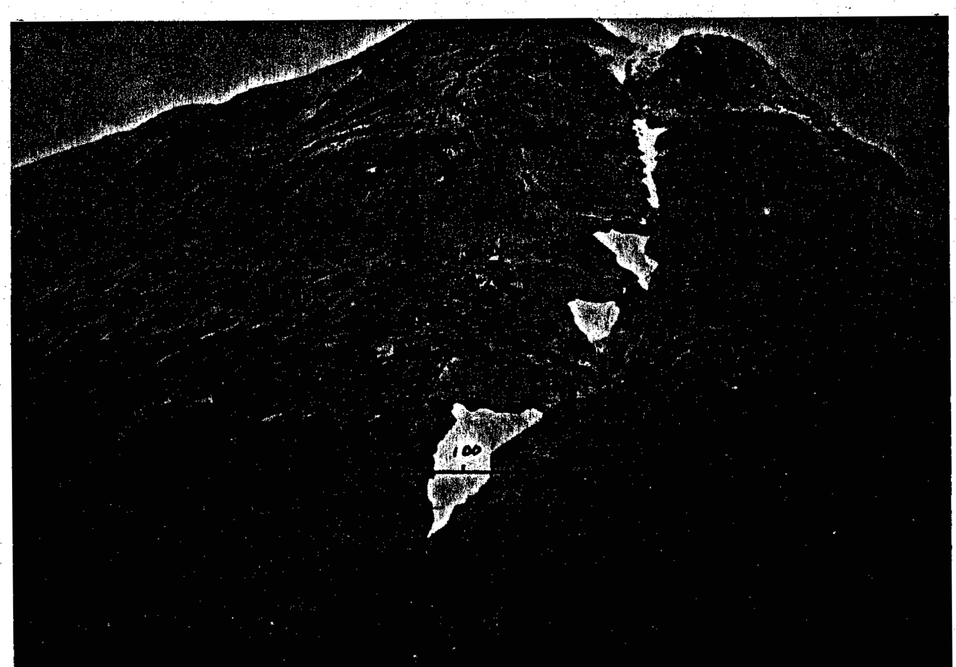
1.1 m. Baked, hardened polymictic conglomerate, unsorted. Pebble size from 2 to 18 cm., sandy matrix, maroon tinged
(Sample 79-SS-LEH-2)

Weathered green altered (clay) tuff (Sample 79-SS-LEH-1)

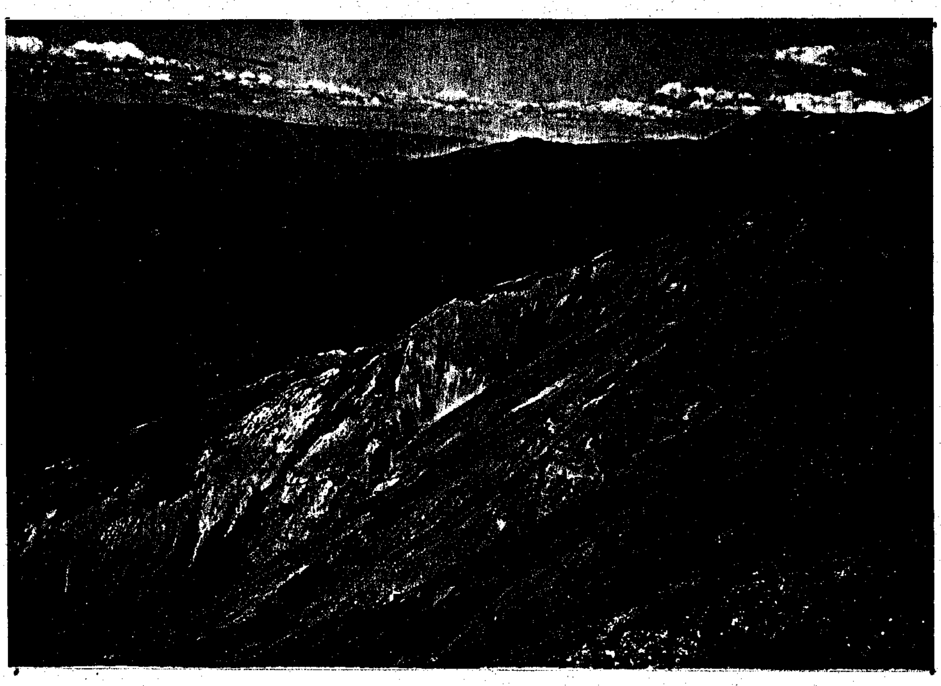
Elevation at base of section 1570 meters.



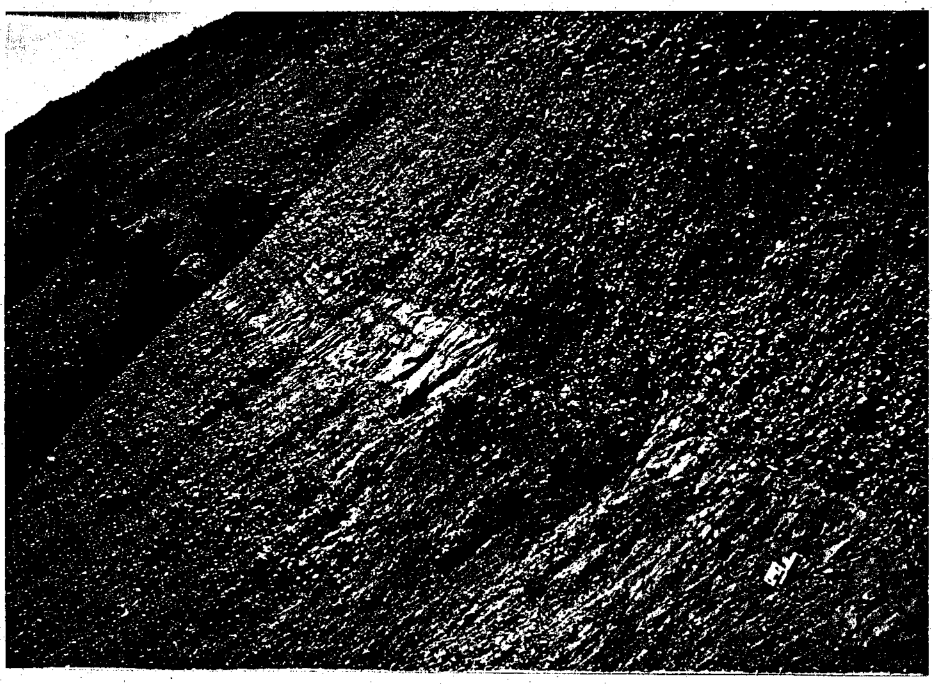
1. Mount Helveker from 10 km to the north



2. The south-east slopes of Mount Helveker, Hel Claims.
Grid location over outcrop area of showing noted.



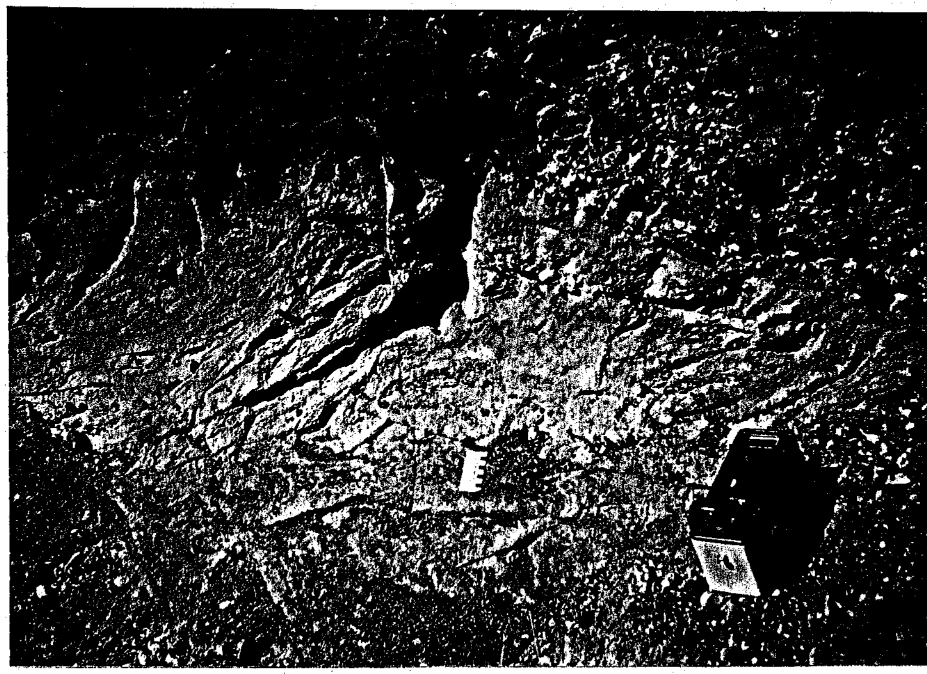
3. View across a section of Sustut Group conglomerates and sandstones on north slope of Mount Helveker, looking eastward.



4. Sand lenses containing mineralization, near grid location 100 meters east, 100 meters north on the Hel claims, see photo # 2.

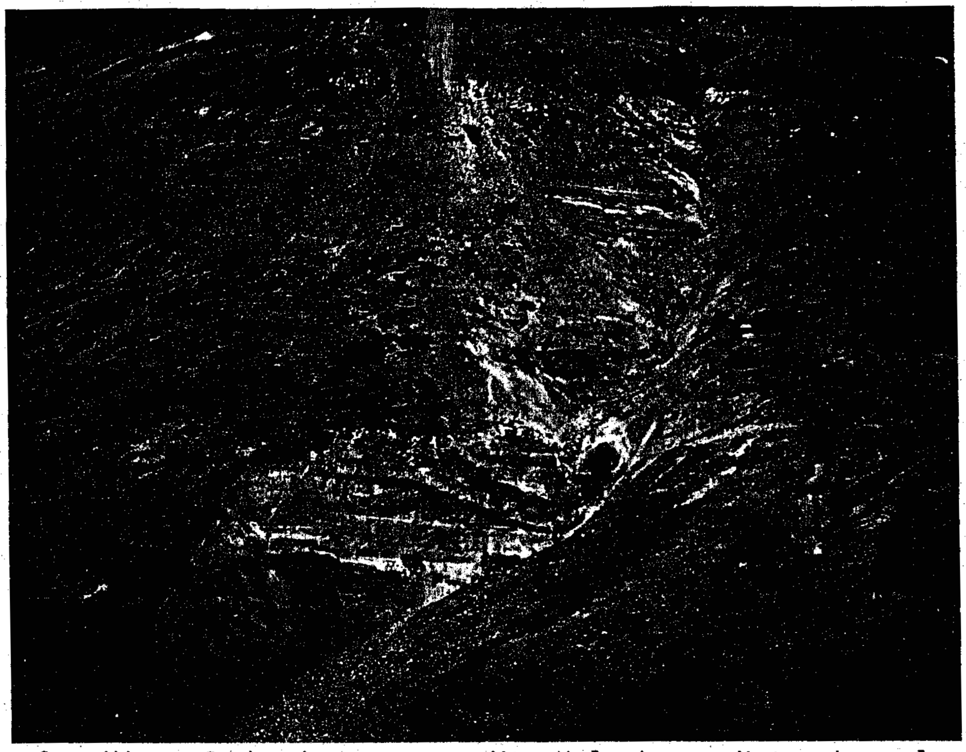
5. Close-up of same sequence shown in previous photo; note small oxidized, mineralized zones in sandstone near centre of photo.

6. Sampling a radioactive zone in oxidized, carbonaceous conglomerate. Note thin coaly bed which contained anomalous uranium content immediately overlying conglomeratic bed.



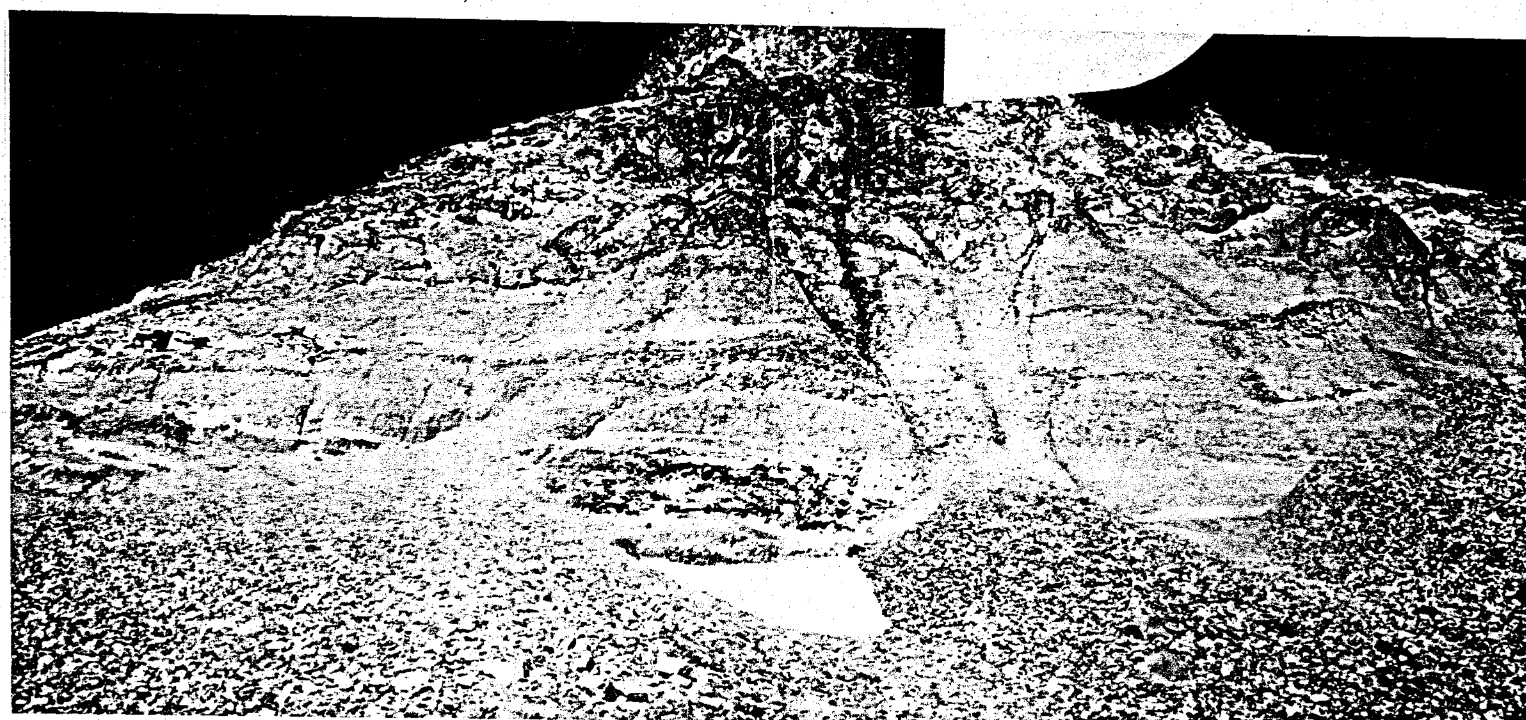
7. Strongly oxidized and indurated zone in conglomerate and adjacent cross-bedded, fossiliferous sandstone lenses of the Sustut Group on the east flank of Mount Helveker.

8. Calcareous tuff overlying the sequence of maroon conglomerates near the top of the Sustut Group.

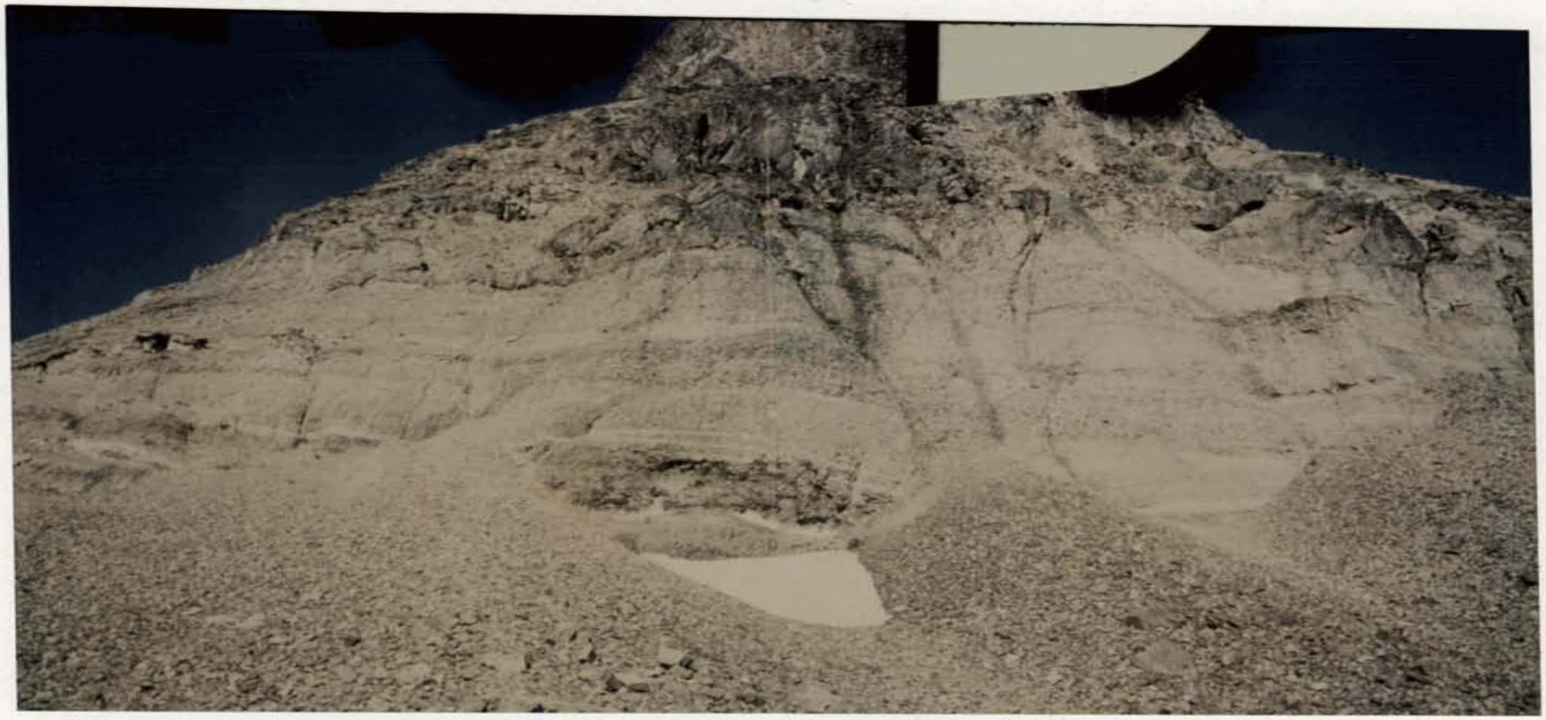


9. View of showing area on Mt. Helveker. Note channel containing mineralization near bottom of photo below dikes. See close-ups of same. About 400 meters of nearly flat lying section is shown.

10. Looking east at northwest slope of Mt. Helveker and Sustut clastics capped by Sloko volcanics.



11. View of upper sequence of Sustut conglomerates well above mineralized horizon, looking at upper east slope of Mount Helveker.



11. View of upper sequence of Sustut conglomerates well above mineralized horizon, looking at upper east slope of Mount Helveker.

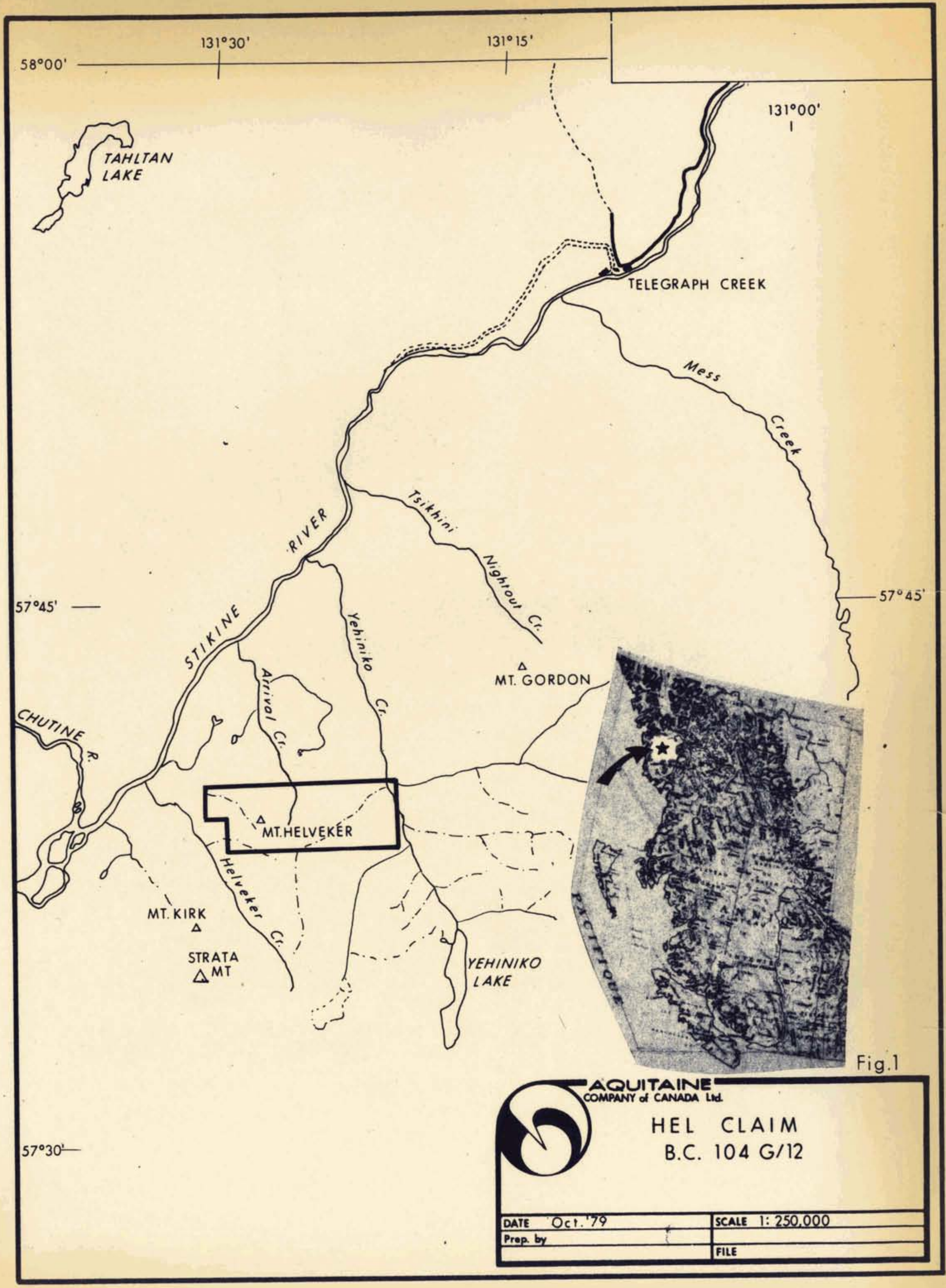

131°30'
131°15'
131°00'
58°00'
57°45'
57°45'
57°30'
TAHLTAN LAKE
TELEGRAPH CREEK
Mess Creek
Tsikhini
Nightout Cr.
STIKINE RIVER
Yehiniko Cr.
Arrival Cr.
MT. GORDON
CHUTINE R.
MT. HELVEKER
Helveker Cr.
MT. KIRK
STRATA MT
YEHINIKO LAKE
AQUITAINE COMPANY of CANADA Ltd.
HEL CLAIM
B.C. 104 G/12
DATE Oct. '79
SCALE 1: 250,000
Prep. by
FILE

Fig.1

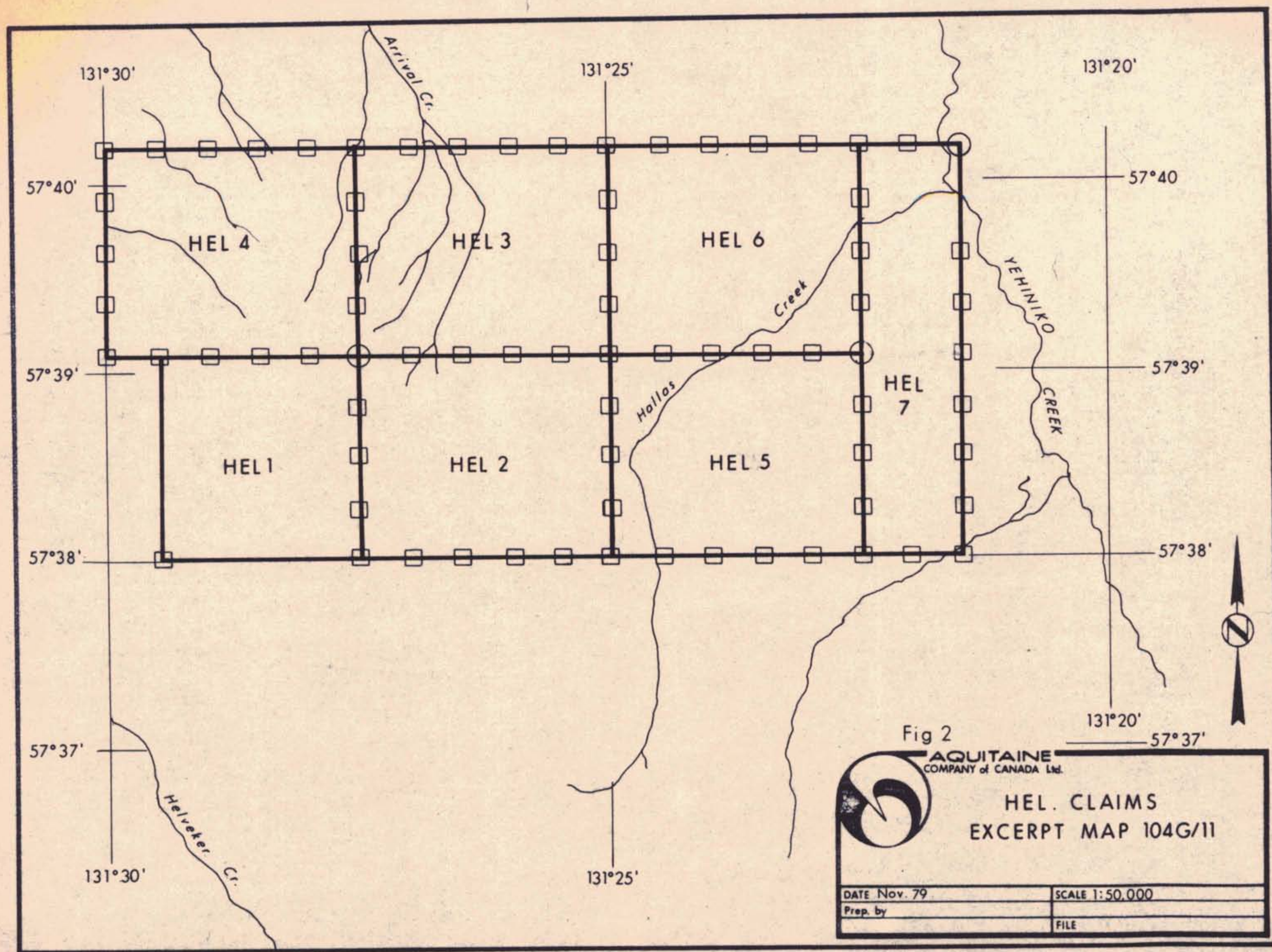


Fig 2

AQUITAINE COMPANY of CANADA Ltd.

HEL. CLAIMS
EXCERPT MAP 104G/11

DATE Nov. 79	SCALE 1:50,000
Prep. by	
	FILE

Anticline

Strike & Dip (inclined, horizontal)

Geological contact (observed, assumed)

Granite

200 0 200 400 600 800 1000 Metres

Vs Volcanic Sloko group

Vsr Volcanic Sloko group - white rhyolite

SUSTUT GROUP

CgV Upper Conglomeratic formation

Org. Organic matter fossil in CgV

CgL Lower Basal congl. Formation

m. Whitish tuff marker

CgLs Red Sandstone in lower Conglomerate

TRIASSIC JURASSIC

Bv Basal volcanic

Bp Basal pyroclastic

Bt Basal tuff-siltstone

X Occurence

dy Dyke

Fault

Fig. 3

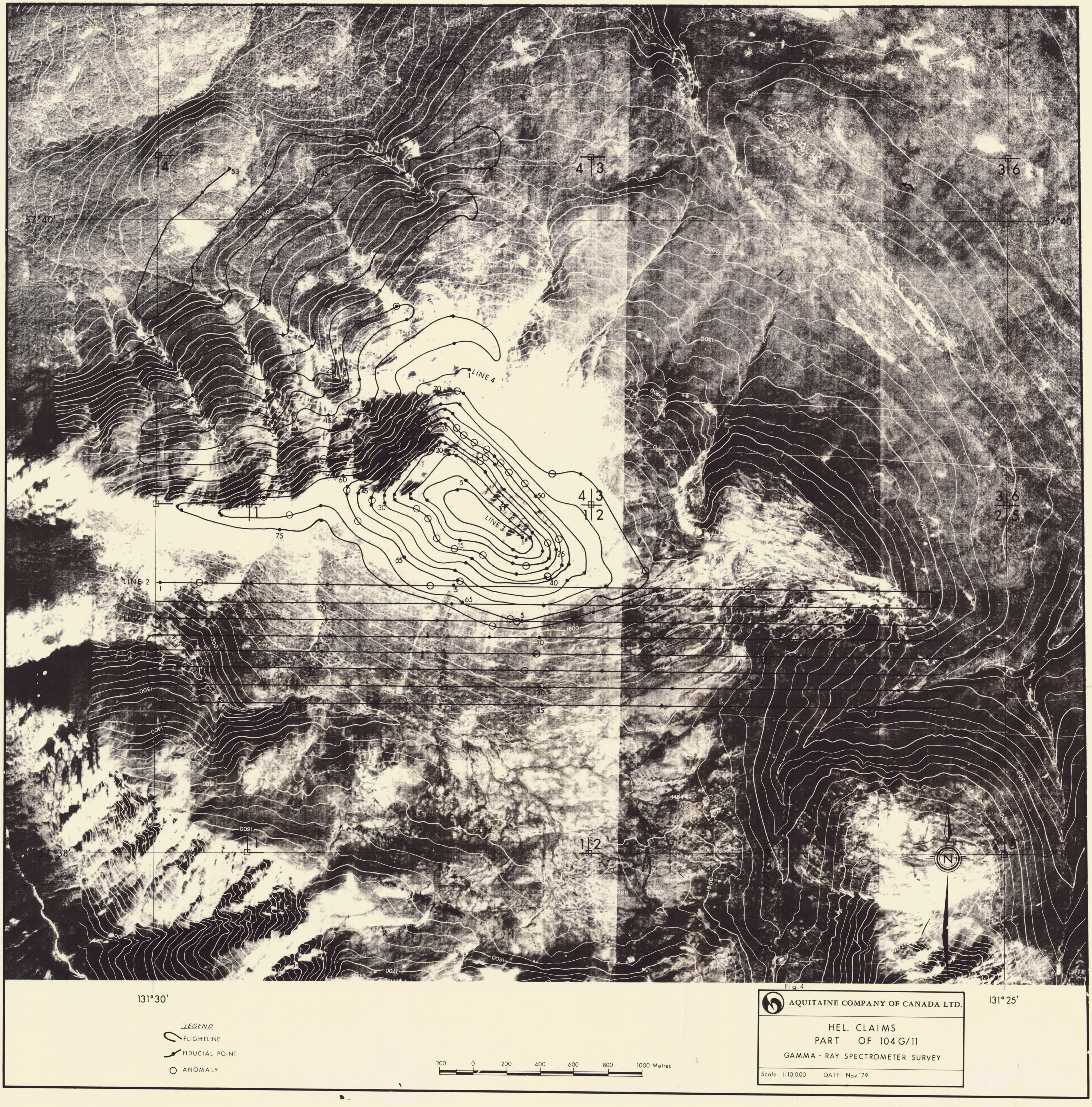
AQUITAINE COMPANY OF CANADA LTD.

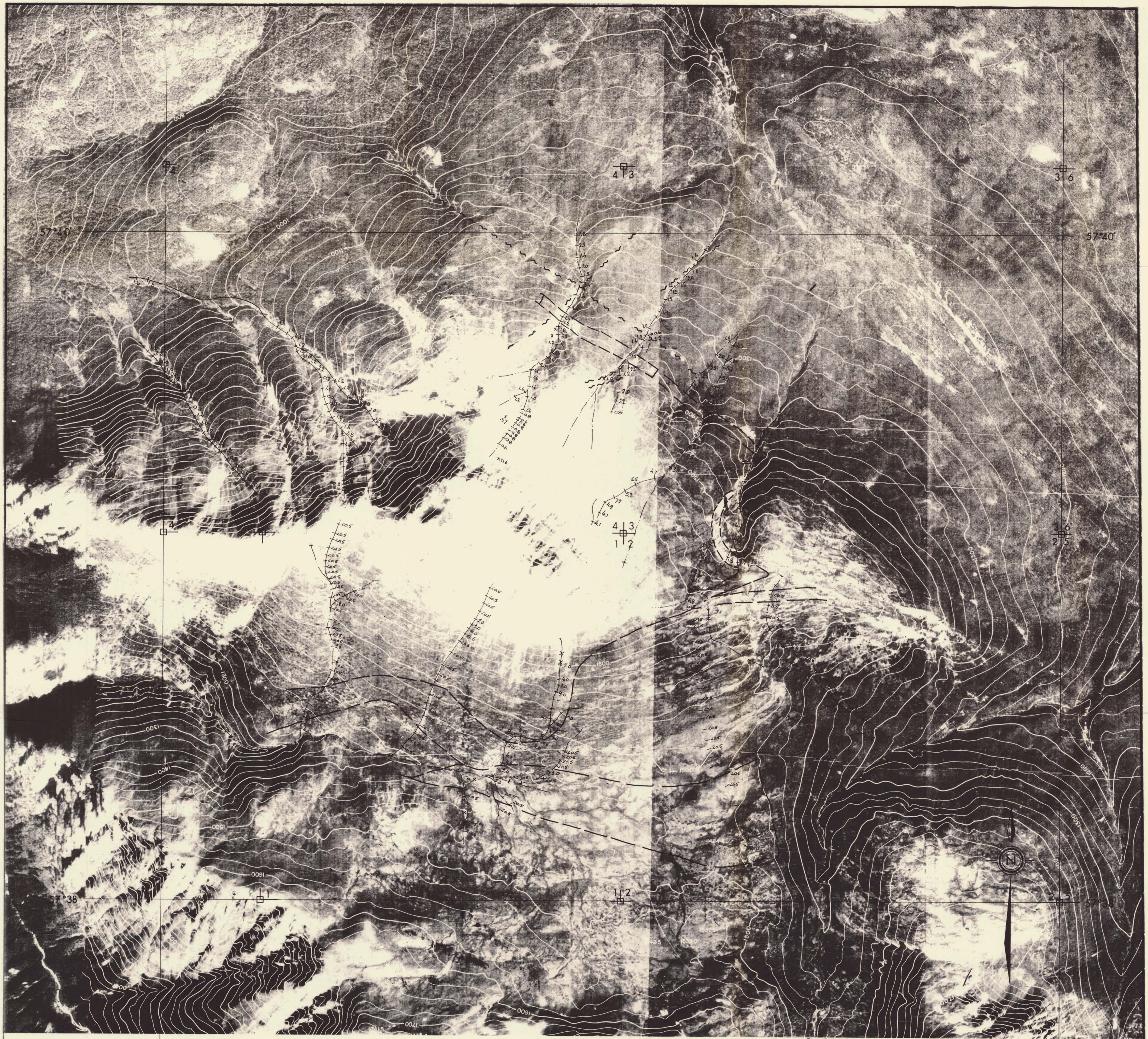
HEL. CLAIMS

PART OF 104G/11

GEOLOGICAL MAP

Scale 1:10,000 DATE: Nov. '79


57°40'
57°40'
LINE 4
LINE 3
LINE 2
131°30'
131°25'
LEGEND
FLIGHTLINE
FIDUCIAL POINT
ANOMALY
200 0 200 400 600 800 1000 Metres
Fig. 4
AQUITAINE COMPANY OF CANADA LTD.
HEL. CLAIMS
PART OF 104 G/11
GAMMA - RAY SPECTROMETER SURVEY
Scale 1:10,000 DATE Nov.'79



200 0 200 400 600 800 1000 Metres

Fig. 5

AQUITAINE COMPANY OF CANADA LTD.

HEL. CLAIMS
PART OF 104G/11
STREAM SEDIMENT SAMPLES
PPM U_3O_8

Scale 1:10,000 DATE: Nov. '79

CONTOUR LEGEND

5 ppm.
10 ppm.
15 ppm.
20 ppm.
25 ppm.

NOTE:
Background value appears to be less than 1 ppm., but values below 5 ppm. have been grouped with the background to ensure that only significant anomalies are shown by contouring

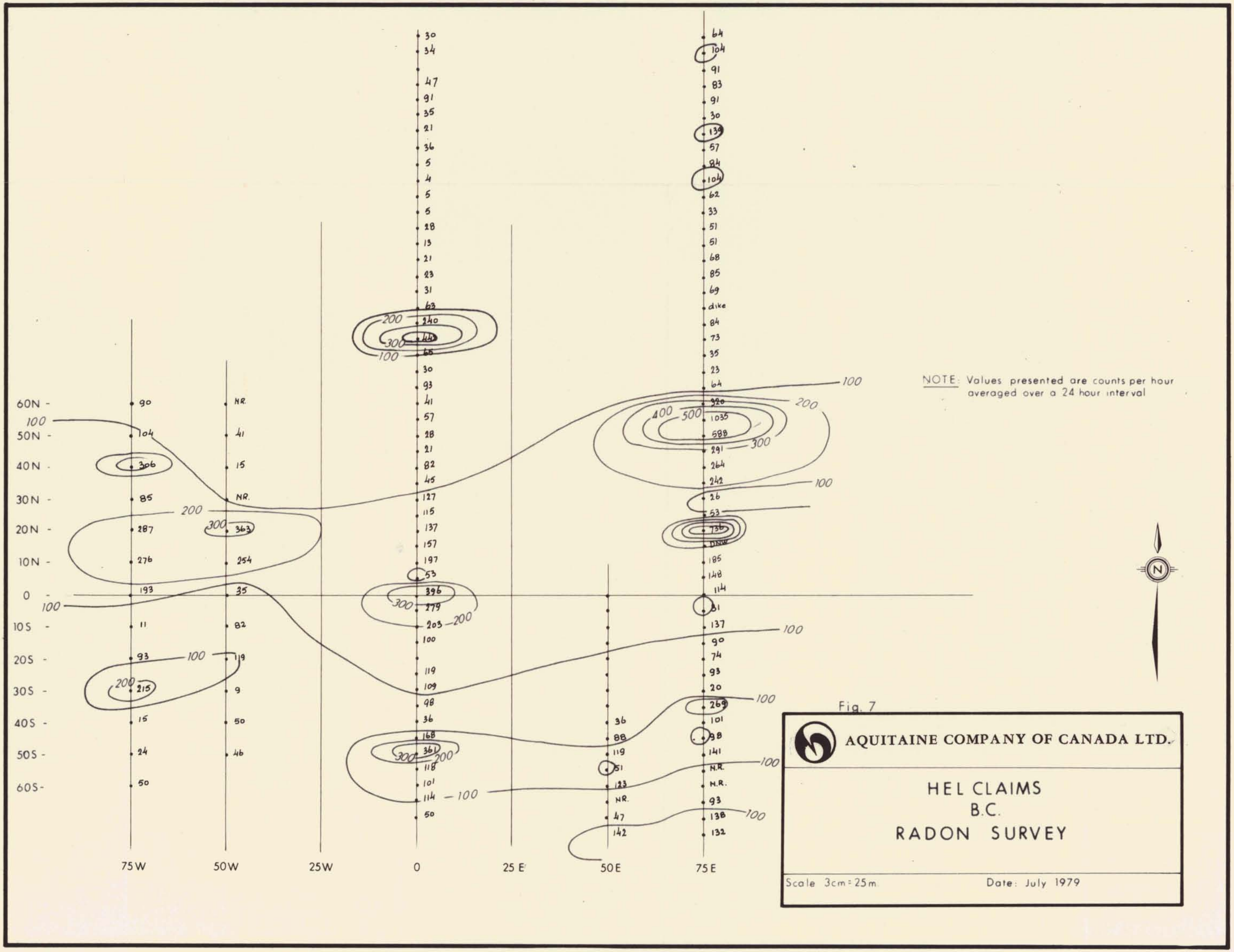
Claim Identification Post
Hel 1
Post 1 South
No 614

FIG 6

AQUITAINE COMPANY OF CANADA LTD.

HEL CLAIMS
B.C.
URANIUM VALUES FROM A
GEOCHEMICAL SURVEY
(SOIL SAMPLING)

Scale: 3cm = 25m   Date: July 1979


NOTE: Values presented are counts per hour averaged over a 24 hour interval
60N
50N
40N
30N
20N
10N
0
10S
20S
30S
40S
50S
60S
75W
50W
25W
0
25E
50E
75E
N
Fig. 7
AQUITAINE COMPANY OF CANADA LTD.
HEL CLAIMS
B.C.
RADON SURVEY
Scale 3cm=25m
Date: July 1979