WHITEMAN CREEK DRILL PROJECT

for

Essex Minerals Co.
(Arcturus Mines Ltd.)

by

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INTRODUCTION

The Whiteman Creek property includes Whiteman 1, Whiteman 2 and Whiteman III mineral claims. The Whiteman 1 and 2 claims are registered in the name of Kennco Explorations (Western) Ltd. and the Whiteman III mineral claim is registered in the name of Arcturus Mines Ltd. Exploration is a joint venture between these two companies and the drill program was financed by Arcturus Mines Ltd.

Geological, geochemical and geophysical work done by or under the direction of J. R. Woodcock Consultants Ltd. in 1979, indicated a circular target with diameter of 500 to 600 meters. This target is anomalous in a number of trace elements including molybdenum, manganese (negative anomaly), fluorine and pyrite.

The center of this target at grid location 24+26' N, 3+23' E, elevation approximately 3400 feet was the site of two drill holes. Hole 1 is 1847 feet (562.97 meters) long and Hole 2, dipping minus 55° with azimuth 70° is 1207 feet (367.89 meters) long.

In the upper part of both holes, some highly fractured pyritic volcanic rock was encountered; recovery in this section was very poor. In Hole 1, recovery was less than 30% to a depth of 147 feet and in Hole 2, only seven feet of core were recovered in the first 354 feet. In the remainder of the drill holes, recovery was > 95%.

The project was managed by J. R. Woodcock Consultants for Arcturus Mines Ltd. The drill contractor was Tonto Drilling Limited of Kamloops. Mobilization of the equipment started on April 3rd and drilling began April 8th. The first hole was completed on April 16th and the second hole was completed on April 23rd. The core logging was done largely by Dennis Gorc under the direction of J. R. Woodcock who examined most of the core and classified the rock units and the alteration types. Subsequent to the drilling J. R. Woodcock made quick petrographic examination of a number of thin sections and on this basis some of the rock names were changed. Subsequent to this the petrography, Dennis Gorc relogged some of the core with emphasis on quantifying the alteration and mineralization.

The notes made for the petrographic examination of thin sections are included in this report with the caution that time was not spent in making accurate determinations of plagioclase compositions. The petrographic work was merely to sort out the rock types. Places at which specimens were collected for thin section studies or other petrographic studies are noted on the drill core logs.

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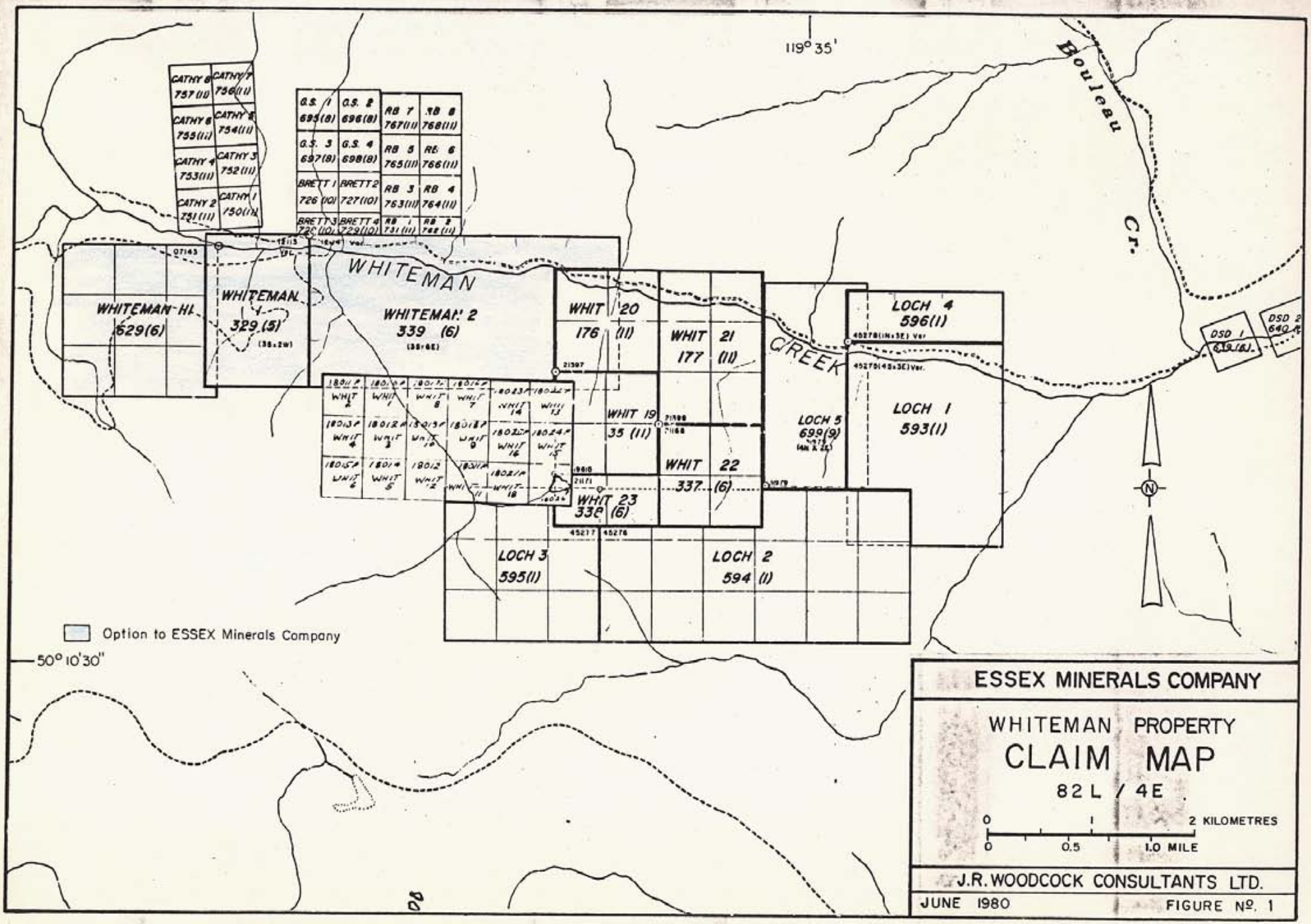

ESSEX MINERALS COMPANY

WHITEMAN PROPERTY
CLAIM MAP
82 L / 4E

0 1 2 KILOMETRES
0 0.5 1.0 MILE

J.R. WOODCOCK CONSULTANTS LTD.

JUNE 1980 FIGURE Nº. 1

The diamond drill logs are included in the appendix with general descriptions of the rock units presented on one sheet and semi-quantitative estimates of the alteration and mineralization recorded on a separate sheet.

As it is very difficult to estimate the percentage of pyrite, the quantity has been expressed as Nil, Low, Moderate and High, with + and - signs for additional categories. Note should be made of the sericite alteration which occurs in bands of complete quartz sericite alteration and also as pervasive or disseminated sericite alteration. Thus the one column measures the bands of complete alteration and expresses them in centimeters per meter of core length whereas the second column gives an impression (scale: 1 - 10) of the overall sericite alteration including that of the completely altered quartz-sericite bands. Gypsum and anhydrite are both present in many fractures throughout much of the core. In places, the later bands are a white colour and seem to cross-cut earlier watery bands. Thin section examination shows that the watery bands can be anhydrite or secondary gypsum. The white vs. the colourless varieties may have some implication genetically but the colour is not reliable in differentiating between gypsum and anhydrite.

The geology is depicted on the enclosed cross-sections of the drill holes and the alteration estimates are quantified on additional cross-sections. (Figures 3 to 7)

CLAIM DATA

TABLE I

Claim Data

Name	Record Number	Record Date	Assessment Credits (pre 1979)	Recorded Owner
Whiteman 1	329 (5)	May 30/77	4	Kennco Explorations (Canada) Ltd.
Whiteman 2	339 (6)	June 14/77	3	
Whiteman III	629	June 13/79	0	John R. Woodcock
Whit 1 to Whit 18	18010 (P) to 18027 (P)	Nov. 5/74	5	Can. Occidental Petroleum Ltd.
Whit 19	35 (11)	Nov. 3/75	5	" "
Whit 20, 21	176 (11), 177 (11)	Nov. 8/76	3	" "
Whit 22, 23	337 (6), 338 (6)	June 10/77	3	" "
Loch 1 to 4	593 (1) to 596 (1)	June 25/79	0	Cominco Ltd.
D & C 1 to 4	505 (8) to 508 (8)	Aug. 8/78	0	Charles Brett of Kelowna

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The Whiteman 1 (6 units) and Whiteman 2 (18 units) claims were staked on May 28, 1977 and June 7, 1977 respectively by Gordon Davies and Gordon Kain for Kennco Explorations (Canada) Ltd. The two claims were grouped into the Whiteman #1 Group on May 23, 1978 and a geochemical report by R. L. Stevenson was submitted in 1978 for assessment work.

An extra nine units (Whiteman III claim) was staked by Paul Stanneck, agent for John R. Woodcock, west of Whiteman 2 on June 12, 1979 and recorded on June 13, 1979. This claim was added to the Whiteman Group on July 20, 1979.

Assessment work applied for work done in 1979 placed the Whiteman 1 and III claims in good standing until 1985, and the Whiteman 2 until 1984.

Assessment work applied for work done in 1980 will place the Whiteman 1, 2 and III claims in good standing until 1991.

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WHITEMAN PETROGRAPHY

Summary

The Whiteman property covers the western contact of the Whiteman Creek Stock. In the mapping, done early in 1979, field terms were used for the rock types and in the initial core logging of 1980, additional field terms were added. Subsequently petrographic examinations were made of all rock types encountered in the drill holes and the terminology was changed. The following summary emphasizes the main differences in the major rock units. Individual descriptions of a number of thin sections serves to emphasize the characteristics of each of these rock types and their altered equivalents.

Dark green andesitic volcanics, some of which are pyroclastics, are the oldest rocks in the area and are intruded by the Cretaceous (?) batholithic plutons of the region and by the Eocene Whiteman Creek Stock. Such andesites were encountered in the upper parts of both holes.

On its northern side the Whiteman Creek Stock intrudes rock which on published maps has been called Cretaceous granodiorite. This is an equi-granular quartz-rich leucocratic rock with abundant hornblende. No petrographic examination has been made for this study; so the name granodiorite will be retained in this report.

To the west of the Whiteman Creek Stock is a quartz deficient rock which is also grouped with the Cretaceous plutons on published maps. This rock occurs in the upper parts of both drill holes, below the volcanic rock. It is a quartz deficient, equi-granular, flesh-coloured rock which has been named monzonite. In the upper part of Hole No. 1, shorter sections of a similar rock type, but with some fine-grained phaneritic matrix has been called a monzonite porphyry. This seems to be interlayered with some of the andesidic rock.

The Whiteman Creek Stock is generally regarded as a syenite intrusion of Eocene age. However, in the diamond drilling and in the limited surface mapping, two main rock types can be differentiated. One of these is a porphyry (called light brown feldspar porphyry in the initial logging) which has feldspar phenocrysts and a fine-grained phaneritic matrix. The phenocrysts include abundant large K-feldspar crystals plus some plagioclase crystals. The matrix is about two-thirds quartz and mafic minerals are scarce. This rock should possibly be classified as a quartz monzonite porphyry. However, the K-feldspar/total feldspar ratio is high enough to place the rock in the granitic category. The high quartz content, the low mafic content, and the desire to stress the difference between this rock type and the Cretaceous (?) monzonite has prompted the writer to call the rock an alaskite porphyry.

The so-called syenite is actually the same rock type with more feldspar phenocrysts. It has an overall fresh colour because of the abundance of K-feldspar phenocrysts. The matrix however, has the

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same high quartz content but is slightly coarser grained. Similarly this might be called a monzonite. However, in order to stress the similarity to and the gradation to the alaskite porphyry and in order to differentiate and stress a rock type completely different than the Cretaceous monzonite, the term alaskite will be used.

One other rock unit is common in the Whiteman Creek Stock and in the diamond drill holes. This has been called "the mixed rock". This rock unit includes either the alaskite porphyry or the alaskite, mixed with a fine-grained phaneritic leucocratic rock, consisting largely of plagioclase laths and some very long biotite laths. This unusual rock type is herein called leucocratic microtonalite. In surface exposures the microtonalite occurs as inclusions within the alaskites. However, in some places, the reverse relationship appears. Possibly these mixtures were intruded early in the magnatic history of the rock, before complete consolidation and before intrusion. Contacts between the two rock types are quite sharp, but not knife edge, and no open spaces are present.

A rock, originally labelled dacite porphyry, crops out over a limited distance along Kennco Creek and also along the main access road (near the zone of manganese-cemented gravels). A similar rock type was encountered in diamond drill Hole No. 2. The surface exposures of this rock type and the intersection in the drill hole appear to be spacially related to the Kennco Creek Fault. This unique rock type with the abundant chalky-white altered phenocrysts within a dark grey matrix is probably the altered equivalent of the alaskite porphyry.

The other main rock unit includes igneo-fragmental intrusions which occur throughout the diamond drill core. Most of these igneo-fragmental intrusions contain some hornfels fragments plus fragments of the adjacent igneous host. Associated with these igneo-fragmental intrusions and sometimes forming a matrix, is a very fine-grained pyrite-rich rock which was originally mapped as an aplite but which is actually a fine-grained fragmental that is herein called a "pyritic micro-fragmental".

Also associated with the intrusive fragmentals is a very dark brown aphanitic rock which contains K-feldspar phenocrysts. This rock has a composition similar to trachyte. However, it is intrusive and it lacks trachytic texture. Therefore, it will be called a bostonite porphyry.

Volcanic

Section 80-1-226

This is part of the volcanic sequence in the upper part of the hole. It is a dense rock with apple-green colour and concentrations of magnetite, giving the dappled appearance. This was originally considered a lime silicate rock in the logging of the core.

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Thin section examination shows that much of the dark opaque material has a white reflection and is a fine-grained granular material with very high birefringence. Possibly it is little concentrations of leucoxine. Disseminated magnetite occurs throughout the section and also in some of the patches containing leucoxine.

A distinct veinlet cutting the section is largely anhydrite, partially replaced by gypsum. Pyrite patches occur within this veinlet and carbonate forms an envelope to parts of the pyrite grains. Some quartz occurs in the veinlets.

Scattered throughout the section are numerous euhedral or irregular crystals of a highly birefringent mineral that could be anhydrite. It does however, appear to occur almost as phenocrysts.

Secondary biotite is erratically distributed throughout the section; in places, forming over 50% of the rock. Probably the most widespread alteration product is kaolinite, accompanied by some fine-grained sericite (?).

One can conclude that this is highly altered volcanic rock and that the greenish tint could be due to a greenish mica and clay alteration products and not due to lime silicate minerals.

Section 80-1-366 (volcanic cut by igneo-fragmental dyklet)

This is a volcanic rock which is cut by a very small dyklet containing quartz and feldspar.

Thin section examination shows that the volcanic rock is largely a biotite hornfels with abundant biotite throughout.

The dyklet is zoned. The main central portion is a highly variable porphyry, possibly partly clastic. It includes crystal fragments of plagioclase, quartz, anhydrite, K-feldspar and biotite. Secondary biotite is abundant, especially in concentrations. This probably represents included clasts of hornfels. However, secondary biotite does also occur throughout the rock and part of it appears to be interstitial to the lithic clasts and crystal clasts. Other clasts are a fine-grained mixture of feldspar without any quartz or mica.

The dyke is fringed by an envelope of quartz containing abundant crystals of anhydrite. In one of these envelopes there is a layer of gypsum.

Thus this could be called an igneo-fragmental dyklet. The small area along the outer fringes of the porphyry part (adjacent to the quartz-anhydrite veining) seems to be finer-grained. It is possible that the dyklet was intruded first and the contacts subsequently mineralized with quartz and anhydrite.

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Monzonite

Section 80-2-403 (monzonite)

This rock was initially logged as monzonite.

This section is largely feldspar, probably K-feldspar, but no all clouded with clay alteration. In addition, the original rock contained about 10% quartz and about 5% biotite.

The rock is characterized by abundant fine-grained secondary biotite which pseudomorphs some unknown mafic mineral, either hornblende or biotite. It occurs abundantly throughout the matrix of the rock and also in some small veinlets within the feldspar cyrstals.

Two parallel veinlets cross this section. One consists of quartz and gypsum; the other one consists of gypsum only. Adjacent to the quartz - gypsum veinlet, there has been a bleaching with the formation of opaque brownish fine-grained carbonate and some fine-grained sericite which probably replaced the secondary biotite. The quartz-gypsum veinlet contains pyrite which is essentially absent from the gypsum veinlet. Moreover, the secondary biotite adjacent to the gypsum veinlet has not been bleached to the clay and sericite minerals found along the quartz-gypsum veinlet.

Note that abundant kaolinite appears to occur throughout the rock especially in pockets between the feldspar crystals and also in areas of the secondary biotite (this seems to be incompatible). It is possible that the so-called kaolinite is fine-grained gypsum; however, a granular shape to it and the low birefringents do indicate kaolinite.

Pockets of somewhat fibrous low birefringent material throughout the rock could also be gypsum.

Section 80-1-687 (monzonite)

This is a relatively fresh section of the so-called monzonite. The rock consists of approximately 60% plagioclase, 27% K-feldspar, 10% quartz, and 3% biotite. All of the feldspar is clouded dark brownish colour with a clay dusting and, in places, it is impossible to distinguish the K-feldspar from the plagioclase. In most places, the feldspar with the darker brown clay dusting was considered K-feldspar. One should note that the potash feldspar/total feldspar is approximately 1/3 and that the quartz content is approximately 10%, therefore, this rock could be called either monzonite or granodiorite or even diorite or quartz-diorite. We will retain the term monzonite. Note that the interstitial finer-grained material is not abundant enough to use the term porphyry. The rock is a medium-grained phaneritic rock.

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Fine-grained secondary biotite also is present in this rock although it is not as abundant as in Section 80-2-408. It occurs scattered throughout the minor finer-grained matrix of this rock and also as pseudomorphs of some pre-existing mafic crystal.

One gypsum veinlet cuts the section. There does not appear to be any alteration either in hand specimen or in thin section adjacent to this veinlet.

Note that sericite alteration is scattered throughout the plagioclase and in concentrations in places up to almost 100%.

Mixed Rock Unit (Alaskite Porphyry and Fine-Grained Microtonalite)

Section 80-1-1175 (alaskite porphyry)

In hand specimen, this rock has a light brownish grey matrix and contains abundant pinkish or flesh coloured orthoclase phenocrysts. It was logged as the "light brown feldspar porphyry" in the initial work.

Thin section examination shows that the phenocrysts comprise about 42% of the rock and the matrix about 58% of the rock. Phenocrysts include 25% plagioclase, 57% K-feldspar, 12% quartz and about 5% biotite. The K-feldspar phenocrysts are up to 4 mm long. The quartz phenocrysts are comprised largely of one irregular patch with a few scattered smaller patches. The mafic mineral, presumably originally biotite, is largely in one crystal about 1.5 mm long.

The matrix, which constitutes about 58% of the rock, includes about 55% quartz. The remainder of the matrix is quite clouded and it is difficult to distinguish the K-feldspar from the plagioclase; however, it is assumed that 20% of it is plagioclase and 25% is K-feldspar.

The matrix size varies from 0.1 to 0.25 mm and these crystals are readily visible with the strong hand lens. Thus the rock would be placed in the fine-grained phaneritic category.

The overall composition of the rock would be approximately 38% quartz, 39% K-feldspar, 21% plagioclase, and 2% biotite. The high quartz content and the high K-feldspar/plagioclase ratio would indicate a granitic composition. The phaneritic ground mass is not fine-grained enough to call it a rhyolite; but the low mafic content would allow it to be called alaskite. Thus the name alaskite porphyry seems to be appropriate.

Alteration in the rock includes considerable sericitization of the plagioclase phenocrysts, some carbonate alteration of the biotite phenocrysts, and considerable brownish clay dusting of the orthoclase phenocrysts and much of the matrix feldspars.

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Section 80-1-1563 (alaskite porphyry)

This is the rock called alaskite porphyry. Thin section examination shows that the quartz content of the matrix is only about 40%; that the phenocryst content is higher than the other specimens examined and that the content of mafic crystals in the phenocrysts is also higher. These mafic crystals, probably originally biotite, are now partially altered to chlorite and carbonate.

This rock should be called a quartz monzonite porphyry; however, in keeping with the other terminology it will also be called "alaskite porphyry".

Section 80-2-503 (altered alaskite porphyry)

This is a specimen of the rock initially logged as grey dacite porphyry with abundant highly altered white feldspar phenocrysts. Some of these altered phenocrysts, especially the smaller ones, have a darker central portion which is soft and easily plucked, indicating a composition different to that of the main part of the altered phenocrysts. Some features noted when logging suggest that this rock could be altered alaskite porphyry.

Thin section examination shows that about 25% of the rock was feldspar phenocrysts. Many of the altered phenocrysts consist of quartz and sericite, generally with a zoning and increasing grain size towards the center. In the centers of some, the quartz is coarse enough that it includes crystals which might be considered phenocrysts and the sericite flakes are relatively large and almost radiating in places. Surrounding this is a band that is largely sericite flakes. In some crystals these two zones can be surrounded by a second zone of relatively abundant quartz, but with finer grain size than that found in the center of the crystal and again an outer layer that is largely sericite. In a few crystals the central part is intense sericite alteration and this is surrounded by the quartz-rich zone.

The zoned alteration patches are probably pseudomorphs of large K-feldspar crystals. This is compatible with the fact that many of the large K-feldspar crystals within the Whiteman Creek Stock do have an unusual zoning, including a somewhat dark vuggy center. Moreover, the plagioclase phenocrysts of the unaltered alaskite porphyries are not zoned.

Some of the large phenocrysts are probably perthitic K-feldspar which have some sericite alteration. Other large phenocrysts have some sericite alteration and abundant carbonate alteration. These are probably also K-feldspar.

Most of the quartz phenocrysts have been largely resorbed and only an irregular or wormy remnant is left in the section. The remaining

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crystals form about 1% of the rock.

The matrix is a mosaic of untwinned crystals, generally equi-dimensional along with scattered flakes of sericite. Some of this matrix is quartz. Some twinned plagioclase is present. Probably K-feldspar forms a large portion.

Very little mafic mineral is present or has been present. Some small biotite phenocrysts are present but form only a trace in the overall content.

This rock is herein called "altered alaskite porphyry".

Specimen W79-87 (alaskite)

This is from the main Whiteman Creek Stock, an area generally mapped as syenite. The hand specimen appears to be largely pink feldspar crystals, many of which are orthoclase. Scattered throughout are some white crystals which may be altered plagioclase and also some dark mafic minerals. The dark mafic minerals, some of which are biotite, form about 5% of the rock. The rock is a medium to coarse-grained phaneritic.

Thin section examination shows that the rock has about 38% fine- to medium-grained phaneritic matrix interspersed between the larger feldspar crystals. The fact that this matrix is phaneritic and is only interstitial to the abundant larger feldspar crystals has been a factor in using an equi-granular name (syenite) rather than a porphyry name.

The rock is composed of 38% matrix, 17% plagioclase phenocrysts, 42% K-feldspar phenocrysts, about 1% biotite, and about 2% sphene + apatite. The matrix consists of about 23% quartz; much of the remainder is plagioclase. However, the amount of brownish clay dusting is such that K-feldspar cannot be readily identified. Thus the following suggestion is made for the matrix:

Quartz 23% of rock
Plagioclase 12%
K-feldspar 8%

This would give an overall composition for the rock as follows:

K-feldspar 45%
Plagioclase 29%
Quartz 23%
Biotite 1%
Apatite + Sphene 2%

The amount of biotite noted in the rock is considerably less than what appeared in the hand specimen.

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This composition is very similar to the rock which was initially logged as light brown feldspar porphyry and which was subsequently called alaskite porphyry based on thin section examination. The matrix of the both appear very similar excepting that this rock matrix is coarser and less abundant, resulting in an overall lower quartz content. K-feldspar/total feldspar is slightly less than 2/3 and the quartz content is about 23%. The mafic content in hand specimen is probably 5% whereas that in thin section is estimated at 1%. Thus this rock could be classified as a quartz monzonite. However, because of its similarity and its gradation into the alaskite porphyry and because of the low mafic content it will be called an alaskite.

Section 80-1-1184.5 (leucocratic microtonalite)

This is part of the mixed rock unit; the hand specimen contains some of the alaskite porphyry and some of the fine-grained phase. The fine-grained phase has a pinkish colour and appears to be almost aphanitic.

In thin section, this fine-grained phase is mostly criss-crossed plagioclase laths. In some places, there appears to be alteration of the outer parts to K-feldspar. Flakes of mafic minerals, probably biotite but now largely converted to muscovite, constitute about 10% of the rock and interstitial quartz also constitutes about 10-12% of the rock.

The plagioclase crystals and some of the mica crystals are up to 2 mm long. Except for the dense nature of the rock, these should be visible with a hand lens. Thus the rock could probably be considered fine-grained phaneritic.

Alteration of the plagioclase includes mainly sericite with some minor carbonate and some clouding, possibly due to clay.

The alteration is not intense; however, the twinning is not sharp and it is difficult to establish a composition. The index appears to be close to the index of the medium that surrounds the thin section, possibly negative. The plagioclase may be albite.

This is an unusual rock type. The quartz content and the plagioclase/orthoclase ratio would place this in the granodiorite or the quartz diorite (tonalite) category. The sodic plagioclase, would indicate quartz diorite; however, the low mafic (all mica) would lean towards a more acidic category. This rock will be called leucocratic microtonalite.

The other part of this mixed rock is the alaskite porphyry with the abundant quartz in the matrix.

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Section 80-2-808.5 (leucrocratic microtonalite and alaskite porphyry - mixed rock unit)

In the initial logging this was labelled as aplite with pyrite. The hand specimen shows the mixed rock, part of it is the fine-grained portion and part of it is the porphyry.

Thin section examination confirms that the fine-grained portion of this rock is the "leucrocratic microtonalite" of the mixed rock type.

Section 80-1-1236 (altered leucocratic microtonalite)

This is considered an intensely altered or sericitized part of the intrusive rock. It was logged as sericite alteration. It is cut by a veinlet.

Thin section examination shows that alteration throughout the section is somewhat erratic; in places complete alteration and in other places only partial sericitization of the plagioclase. Sericite appears to be the main alteration product and, where intense, is accompanied by quartz. One might refer to this as quartz-sericite alteration accompanied by some kaolinite.

The veinlet includes sections composed of quartz and sections in which the quartz forms only the boundary of the vein, with the central parts filled with gypsum and remnants of anhydrite. Pyrite also occurs within this veinlet as euhedral crystals.

Note that other veinlets present are composed of quartz plus carbonate and that the coarse quartz flooding occurs in the vicinity of intersecting veinlets.

Scattered crystals of muscovite occur throughout the section; some of these appear to be within or are associated with quartz carbonate veinlets. Whether some of these muscovite crystals are part of the original rock or whether they are formed by an increase in grain size if the sericite is not known.

In areas of least alteration, the rock that appears to be largely plagioclase laths with interstitial quartz and with the plagioclase only slightly altered to clay and minor sericite. The twinning within this plagioclase is not sharp. Thus the rock is probably altered microtonalite of the mixed rock type.

Section 80-1-1684 (altered microtonalite)

This is a highly altered porphyry with a clay-rich appearance and a slightly greenish-grey tint. The feldspar phenocrysts in the rock are light green colour, probably due to sericite alteration.

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Thin section examination shows that the main alteration product is kaolinite accompanied by some sericite. In some of the larger crystals the sericite content is very high and this accounts for the greenish tint noted in the hand specimen.

The rock consists of highly altered plagioclase laths, and some of the very long mica laths or needle-like crystals. Quartz occurs as an interstitial product. The rock is obviously the microtonalite of the mixed rock type.

Some carbonate alteration is present, especially associated with the long altered crystals of biotite, which are now largely muscovite. Some of the muscovite contains numerous minute needles or laths of a mineral which resembles rutile.

Bostonite Porphyry

Section 80-1-1016

This rock was initially logged as dark brown feldspar porphyry.

Thin section examination shows that this is a porphyritic rock consisting of about 1/3 phenocrysts and 2/3 matrix. The phenocrysts are comprised of about 68% K-feldspar, 25% plagioclase, 5% biotite, and 2% quartz.

The matrix is largely clouded feldspar (about 85%) some of which is in the form of plagioclase laths. Most feldspar is very clouded and is impossible to determine the type of feldspar or the composition of the plagioclase. The remainder of the matrix contains about 8% biotite flakes and about 4% interstitial quartz. The average grain size of the matrix is about .02 mm; thus this is an aphanitic rock.

Alteration consists mainly of sericitization of the plagioclase phenocrysts, quite intense in some of the centers. Some sericite alteration occurs in some of the small plagioclase laths of the matrix. The feldspar phenocrysts also have a brownish clay dusting. It is not certain that the clay dusting is restricted to the K-fledspar and the sericite to plagioclase within this matrix.

If the feldspar ratio of the matrix is similar to that of the phenocrysts then this rock would be called a trachyte porphyry. However the typical trachytic flow texture is absent and the rock is of intrusive origin. Therefore, the name bostonite might be appropriate.

Section 80-1-4375 (bostonite porphyry)

This is another specimen of the dark brown porphyry. Thin section

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examination shows abundant fine-grained biotite throughout much of the matrix. In places, it is coarser-grained than the average and these places could be replacements of previous mafic minerals. Some are also interstitial patches within clots of plagioclase phenocrysts. This biotite is secondary as some patches occur within the plagioclase phenocrysts and other irregular elongated patches appear to cross throughout the section, including the plagioclase phenocrysts. The dark colour of the rock is due to the secondary biotite.

The phenocrysts in this rock are mainly plagioclase, with a few scattered biotite crystals.

Anhydrite occurs in a few small veinlets and also as irregular pockets within the rock. Some anhydrite is also associated with the coarser patches of secondary biotite.

Some quartz occurs within the matrix; however, most of this is in irregular pockets, generally associated with some of the anhydrite or the relatively coarse-grained secondary biotite. This quartz is probably secondary alteration.

Ingeo-Fragmental

Section 80-2-508.5 (monzonite igneo-fragmental)

This was originally logged as a monzonite breccia. The hand specimen contains a number of different fragments including some hornfels.

Thin section examination shows a number of different types of rocks, including those with intense concentrations of secondary biotite (the hornfels), large crystals of quartz or large mosaics of coarse-grained quartz forming lenses (quartz phenocrysts), intense concentrations of fairly coarse-grained sericite, in places with abundant kaolinite (altered plagioclase phenocrysts) and some fresh biotite crystals (probably part of the monzonite).

It is impossible to classify the rock from the thin section examination. Alteration is largely quartz-sericite with some kaolinite and with abundant biotite in the hornfels fragments.

Section 80-1-198.5 (erratic porphyry)

In hand specimen, this is a breccia which contains numerous angular fragments of dark brown biotite hornfels. Minor scattered brown patches throughout are also probably due to smaller fragments of hornfels. Smaller white fragments are probably altered feldspar fragments and crystals.

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Thin section examination shows that the hornfels fragments contain abundant fine-grained secondary biotite and that some of these fragments include euhedral plagioclase crystals, probably originally a porphyritic lava. Intrusive fragments are composed of coarse plagioclase plus biotite crystals. Crystal fragments are phenocrysts, with very irregular edges, probably indicating some resorption.

The matrix of this unusual porphyry appears to be a mosaic of equi-dimensional quartz in places and quartz mixed with some slightly twinned plagioclase in other places. The plagioclase of the matrix and of some of the larger crystals has an index lower than that of the mounting medium and is probably albite. Whether or not K-feldspar is present in the matrix has not been determined.

This is an unusual rock in that the composition and the texture is quite erratic. This porphyry host for the breccia fragment has only been found in this part of Hole No. 1 and so is not a common rock type. One might refer to it as the "erratic porphyry".

Pyritic Micro-Fragmental

Section 80-1-1107 (pyrite-sericite micro-fragmental)

This is a pyrite-rich rock, dark grey in colour, which is associated with the breccia fragments and which was originally logged as aplite. The pyrite is disseminated throughout the rock; however there does seem to be a greater concentration near a watery veinlet and adjacent to this veinlet there is some dark hematitic material.

Thin section examination shows that most of the rock has been highly sericitized and cannot be identified. The pyrite crystals, disseminated throughout this altered rock, are generally euhedral or subhedral. Fine-grained quartz occurs in rounded concentrations and larger quartz crystals appear to be fragments rather than phenocrysts. Thus it is quite likely that this is a clastic rock which has been sericitized and pyritized, possibly by solutions that were contained within the rock itself.

Alteration in the rock includes the concentrations of sericite, possibly with the minor kaolinite and also scattered sericite in the rounded fine-grained quartz clasts. Minor carbonate is found in places.

Igneo-Fragmental with Quartz Sericite Alteration

Section 80-2-575

This was originally logged as a highly altered intrusive breccia with quartz stockwork. One end of the specimen contains flesh coloured

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soft material which is probably a carbonate.

Thin section alteration shows that the section changes throughout from highly silicified rock at one end (mainly quartz with some remnant sericite and minor kaolinite) through a quartz section to a vein or patch of the flesh coloured material. This flesh coloured material is coarse-grained carbonate with gypsum, interstitial to the euhedral carbonate crystals. A smaller carbonate veinlet crosses the coarser-grained quartz and the silicified section of the rock.

The original rock type cannot be ascertained from the section. If breccia, it should be called igneo-fragmental.

Section 80-2-604

This has been logged as intrusive breccia cut by veinlets of anhydrite.

Thin section examination shows that parts of the rock are a fine-grained mosaic of quartz and other parts include quartz and sericite with minor kaolinite. The second type could represent an alteration product of a plagioclase-rich matrix.

Irregular quartz veinlets and lenses cut the rock and one could interrupt the quartz mosaic as pervasive silicification. Scattered grains and patches of pyrite occur throughout the section; but are especially abundant within the quartz veinlets and lenses.

Large irregular patches or remnants of muscovite are present. Whether this was an original rock constituent or whether it is a replacement of a more mafic primary mineral is not known.

Several different features of this rock should be noted. The veining is strictly quartz and the usual anhydrite content is absent. In fact there is no anhydrite or gypsum. Also the quartz does not appear to be accompanied by secondary K-feldspar. There is however some kaolinite associated with the sericite throughout much of the rock.

This section does have some resemblance to the so-called erratic porphyry of Section 80-1-198.5. However, the abundance of silicification precludes any definite categorization. Also the abundant hornfels fragments are missing from the section.

Section 80-2-585

This was originally logged as a highly altered intrusive breccia. Most of the section is cut by numerous irregular or discontinuous

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watery veinlets of quartz. One side of the section is cut by a late veinlet of a white material which could be gypsum.

A thin section examination shows that this is exactly the same type of alteration and probably the same type of original rock as that noted in Section 80-2-604. Quartz veinlets or lenses or discontinuous veinlets are numerous and the usual anhydrite and gypsum are absent. Possibly the sericite alteration in this specimen is a little bit coarser-grained than that found in Section 80-2-604

One slight difference is the presence of a few large euhedral crystals of epidote (?).

J R Woodcock

1980

Costs of Whiteman Drill Program

Employment Costs

J.R. Woodcock:

February 28	1	day	
Mar. 1 to 20	1	day	
Apr. 11-16	5⅕	days	
Apr. 27-29	2⅕	days	
Apr. 23, 24	1½	days	
Apr. 8, 10, 22, 25	1	day	
May 2, 5, 8, 9	1	day	
May 14, 15, 16	1	day	
	14⅕	days @ $375 =	$ 5,437.50

P. Stanneck:

Feb. 24- Mar. 8	7⅕	days	
Mar. 30- Apr. 12	14	days	
Apr. 13-26	14	days	
	35½	days @ $130 =	4,615.00

D. Gorc:

Mar. 30- Apr. 12	3	days	
Apr. 13-26	13	days	
Apr. 27- May 10	9	days	
May 15, 16	1	day	
	26	days @ $153 =	3,978.00

G. Sprawson:

Feb. 24- Mar. 8	3	days @ $130 =	390.00
		Total Employment Costs	14,420.50

Tonto Drilling

April 30'80, Invoice # 4677C	$34,218.94	
April 15'80, Invoice # 4669C	42,896.17	
	Total for Tonto Drilling	77,115.11
	TOTAL COSTS	$91,535.61

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PROPERTY Whiteman
CLAIM No. Whiteman 2
COORDINATES 24 + 26 feet N
3 + 23 feet E
ELEVATION 3400 feet

HOLE No. 80 - 1
BEARING ---
DIP Vertical
LENGTH 1847'
DIAMETER NQ

DRILLED BY Tonto Drilling Ltd.
STARTED: April 8, 1980
TERMINATED: April 16, 1980
LOGGED BY: J.R. Woodcock & D. Gorc

Tropari Tests	Dip	Azimuth
@ 1200' depth	86°	239°

Abbreviations quartz - qtz., disseminated - diss., pyrite - py., chalcopyrite - chalco., medium - med., porphyry - porph.

FOOTAGE FROM	FOOTAGE TO	% RECOVERY	Spec. Loc.	DESCRIPTION AND REMARKS	SAMPLE NO.	SAMPLE FROM	SAMPLE TO	ASSAY
0	64'			Casing (0-15 ft. overburden)				
(0	19.5m)							
64'	120'	30%		Volcanic - core very broken up, little intact core				
(19.5m	36.6m)			mostly small fragments; abundant chlorite; weathers soft				
				and in flakes; light to dark green in colour; pyrite				
				content variable disseminated and in fractures - primari-				
				ly in fractures; note that pyrite is not oxidized with				
				no limonite present.				
120'	147'	7%	120.5					
(36.6m	44.8m)		(36.7m)	Monzonite Porphyry- only 2' of core recovery				
147'	159.7'			Monzonite Porphyry- pink phenocrysts and/or fragments;				
(44.8m	48.7m)			large metavolcanic fragments with alteration envelopes;				
				Cut by several thin quartz veinlets and numerous gypsum -				
				anhydrite veinlets; seemingly random orientation to				
				veinlets.				
				152' - 159.7' (46.3m - 48.7m) - rock is darker coloured;				
				lacks pink conclusions or crystals and instead has				
				white phenocrysts and mafic phenocrysts; pyrite primarily				
				in quartz and gypsum veinlets.				
Cont'd.				Alteration in rock consists of greenish tint in some of				

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Hole No. 80-1 Logged By J.R. Woodcock and D. Gorc Date April 12, 1980 Sheet No. 2

FOOTAGE FROM	FOOTAGE TO	% RECOVERY	Spec. Loc.	DESCRIPTION AND REMARKS	SAMPLE NO.	SAMPLE FROM	SAMPLE TO	ASSAY
Cont'd.				pinkish rock which may indicate possible sericitization; some bleaching along qtz. and gypsum veinlets ex @ 156' (47.5m).				
159.7' (48.7m	193' 48.8m)	>95% for rest of hole	172' (52.4m) 182.5' (55.6m)	Volcanic - sharp contact @ 45° dark green in colour, probably due to chloritization; cut by numerous gypsum and qtz. veinlets which tend to group together in subparallel fashion; gypsum veinlets cut qtz. veinlets; alteration is more intense alongside veinlets where rock is bleached to pale yellow green colour; green alteration in darker sections probably chlorite especially along gypsum veinlets; Magnetite concentrations are visible and common, often giving the rock a mottled appearance; zones (1'-2') (3m-6m) of intense fracturing are common; note that yellow green alteration adjacent to veinlets may be due to epidote alteration.				
193' (58.8m	202.5' 61.7m)		191.5' (58.4m) 198.5' (60.5m)	Igneo-fragmental - contains 50% monzonite porphyry clasts and 50% brown hornfelized volcanic clasts; in upper three feet of unit the cement of the breccia has a high silica content; this upper section also contains a higher pyrite content and more gypsum veinlets;				
202.5' (61.7m	257' 78.3m)		214.5' (65.4m)	Volcanic - dark green to almost black; minimal amounts of bleaching or alteration along veinlets but some is				

Cont'd.

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Hole No. 80-1 Logged By J.R. Woodcock and D. Gorc Date April 12, 1980 Sheet No. 3

FOOTAGE FROM	FOOTAGE TO	% RECOVERY	Spec. Loc.	DESCRIPTION AND REMARKS	SAMPLE NO.	SAMPLE FROM	SAMPLE TO	ASSAY
Cont'd.			223' (68.0m)	present, such thin zones may be due to sericitization; darker sections may be chloritized; in section 202.5' to				
			226' (68.9m)	257' (61.7m to 78.3m) pyrite is primarily along fractures with or without gypsum, with lesser diss., py.; 217'-				
				219' (66.1m -66.8m) is an alaskite porphyry the lower portion of which is altered; the lower contact of this dyke is ½" (1 cm) thick gypsum vein. The section 219' to				
				257' (66.8m to 78.3m) has more pale yellowish green alteration than the above volcanics, this section often has multicoloured silicated appearance with a complex intermixture of various shades of green; magnetite concentrations often give rock a mottled appearance.				
257' (78.3m	260' 79.2m)			Bostonite Porphyry - sharp contacts with 6" (15.2cm) chilled zones alongside contacts, characterized by a dark brown aphanitic matrix and white feldspar phenocrysts.				
260' (79.2m	414' 126.2m)		287' (87.5m)	Volcanic - dark green with darker sections having a brownish hornfelized appearance contains sections which have multicoloured silicated appearance such sections disappear by 315' (96.0m); abundant gypsum-anhydrite veining and minor quartz veining; thin zones (½"-1")				
Cont'd.			300' (91.4m)	(1.3cm - 2.5cm) of alteration selvage adjacent to some veinlets, such zones are light green in colour, contains				

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Hole No. 80-1 Logged By J.R. Woodcock and D. Gorc Date April 12, 1980 Sheet No. 4

FOOTAGE FROM	FOOTAGE TO	% RECOVERY	Spec. Loc.	DESCRIPTION AND REMARKS	SAMPLE NO.	SAMPLE FROM	SAMPLE TO	ASSAY
Cont'd.				abundant disseminated magnetite but irregularly dis-				
				tributed; pyrite is diss. and in fractures which may or				
				may not contain gypsum; 327' to 329' (99.7m to 100.3m)				
				is brecciated with thin igneo-fragmental dyklets ($\frac{1}{2}$")				
				(1.3 cm) thick. These dyklets continue throughout the				
			366'	remainder of the unit but are very few in number, pyrite				
			(111.6m)	content in dyklets is generally high; 318.5' to 389'				
				(97m to 118.6m) pyrite primarily infractures with lesser				
				disseminated; short sections (3") (7.6cm) of igneo-				
			403'	fragmental; 389' to 414' (118.6m to 126.2m) a few very				
			(112.8m)	short sections (1" - 3") (2.5cm-7.6cm) of breccia con-				
				taining intrusive porphyry clasts plus hornfel clasts;				
				389' to 414' (118.6m to 126.2m) lesser proportion of py.				
				in veinlets; some sections look like banded volcanic				
				tuff; minor chalco. at 386.5' (117.8m).				
414'	443.5'		43.6'	Monzonite Porphyry - charcaterized by pinkish matrix with				
(126.2m	135.2m)		(132.9m)	white feldspar and bronzy biotite phenocrysts; magnetic;				
			437.5'	gypsum-anhydrite veinlets present; minor qtz. veining;				
			(133.4m)	igneo-fragmental dyklets are also present but few in				
				number; matrix is fine textured, very light brown in				
				colour; pyrite content is low with pyrite primarily				
				along veinlets; 443' (135.0m) green transparent mineral				
				(fluorite?); although few in number qtz. veinlets often				
Cont'd.				have thin (1"-2") (2.5cm-5cm) silicified zones adjacent				

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Hole No. 80-1 Logged By J.R. Woodcock and D. Gorc Date April 12, 1980 Sheet No. 5

FOOTAGE FROM	FOOTAGE TO	% RECOVERY	Spec. Loc.	DESCRIPTION AND REMARKS	SAMPLE NO.	SAMPLE FROM	SAMPLE TO	ASSAY
Cont'd.				to the veinlets; other than occasional silicification				
				there is no alteration alongside any veinlets.				
443.5'	449'			Volcanic-dark green cut by abundant gypsum veinlets and				
(135.2m	136.9m)			a few dyklets of qtz. with what appears like white				
				feldspar phenocrysts; noticeable but minimal alteration				
				envelopes adjacent to veinlets; some magnetite along				
				some veinlets occasionally associated with some hematite.				
449'	461.5'			Monzonite Porphyry- grades to finer texture towards				
(136.9m	140.7m)			edges of dyke; some gypsum veinlets with or without				
				pyrite; only a moderate number of gypsum veinlets; a				
				few dyklets of quartz and small feldspar. phenocrysts				
				and some py.				
461.5'	523'		486.5'	Volcanic - sections to 503.5'(153.5m) have dappled appear-				
(140.7m	159.4m)		(148.3m)	ance which may be tuff, 461.5' to 492' (140.7m to 150m)				
			519'	mostly dappled rock; 487.5' to 488.5' (148.6m to 148.9m)				
			(158.2m)	- rock brick red colour; 461.5' to 503.5' (140.7m to				
			522'	153.5m) only moderate gypsum veining; 503.4' to 523'				
			(159.1m)	(153.5m to 159.4m) increasing alteration to lower contact				
				intensely fractured with abundant gypsum veinlets and				
				several chlorite-pyrite veinlets which are cut by the				
				gypsum veinlets; patchy light grey to light green al-				
				teration; little if any pyrite veinlets.				

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Hole No. 80-1 Logged By J.R. Woodcock and D. Gorc Date April 12, 1980 Sheet No. 6

FOOTAGE FROM	FOOTAGE TO	% RECOVERY	Spec. Loc.	DESCRIPTION AND REMARKS	SAMPLE NO.	SAMPLE FROM	SAMPLE TO	ASSAY
523' (159.4m	548.5' 167.2m)			Monzonite Porphyry - 523' to 536' (149.4m to 163.4m) - highly altered and fractured; gouge (fault?) zones at 527', 531' and 534' (160.6m, 161.9m and 162.8m) gouge zones @ 30°; some grey watery veinlets of quartz with feldspar phenocrysts which are cut by gypsum veinlets; py. diss. and in veinlets 536' to 548.5' (163.4m to 167.2m) - first section largely unaltered; at 542' (1652m) more intense fracturing begins with associated alteration alongside fractures.				
548.5' (167.2m	555.5' 169.3m)		552' (168.2m)	Altered Alaskite Porphyry- matrix light grey in colour, fine textured; most of feldspar phenocrysts altered white and soft; rock still quite competent; little py.; 553'-555.5' (168.6m-169.3m) monzonite porphyry				
555.5' (169.3m	572' 174.3m)			Volcanic - altered volcanic with fragments of intrusives; quite fractured with abundant gypsum veinlets with associated bleaching and alteration alongside veinlets;				
572' (174.3m	791.5' 241.2m)		579.5' (176.5m)	Monzonite - white feldspar with lesser pink feldspar phenocrysts; mafic mineral predominantly hornblende; minor diss. pyrite; qtz. veins cut by gypsum veinlets; not many gypsum veinlets; unit on whole has a pinkish and whitish mottled appearance.				
Cont'd.				580' to 584' (176.8m to 178.0m) - Altered alaskite porphyry				

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Hole No. 80-1 Logged By J.R. Woodcock and D. Gorc Date April 12 1980 Sheet No. 7

FOOTAGE FROM	FOOTAGE TO	% RECOVERY	Spec. Loc.	DESCRIPTION AND REMARKS	SAMPLE NO.	SAMPLE FROM	SAMPLE TO	ASSAY
Cont'd.				and alaskite porphyry; intermixed zones of each; in places well fractured. 593.5' to 598' (180.9m to 182.3m) - rock is strongly altered but not completely altered (qtz. - sericite al-				
			609' (185.6m)	teration)601.5' to 610' (183.3m to 185.9m) contains zones of qtz. - sericite alteration. 612' to 614' (186.5m to 187.1m) - strongly altered zone which contains more abundant gypsum veinlets with or without pyrite and more abundant diss. py. 644.5' to 651' (196.4m to 198.4m) - Altered alaskite porphyry and alaskite porphyry; intermixed zones of each. Alteration Zones - 627' to 630' (191.1m to 192m), 632.5' to 634.5' (192.7m to 193.4m), 637.5' to 639' (194.3m to 194.8m) plus smaller zones throughout this section; 652' to 690' (198.7m to 210.3m) alteration zones thinner but more abundant; comprising about 20% of rock; py. content in monzonite is low; py. content in altered zones is moderate (+) 659' (200.9m) - a few dyklets of dark brown fine-grained igneo fragmental				
			693.5' (211.4m)	690' to 755' (210.3m to 230.1m) - cut by numerous veinlets of pyrite (with sericite?) and by darker and thicker				
			698.5' (212.9m)	veinlets of gypsum; py. sometimes alongside gypsum veinlets, sometimes within veinlets; this section contains				
Cont'd.				several short (to 2") (.6cm) sections of breccia which				

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Hole No. 80-1 Logged By J.R. Woodcock and D. Gorc Date April 12, 1980 Sheet No. 8

FOOTAGE FROM	FOOTAGE TO	% RECOVERY	Spec. Loc.	DESCRIPTION AND REMARKS	SAMPLE NO.	SAMPLE FROM	SAMPLE TO	ASSAY
Cont'd.				contain clasts of volcanic (ex. 712', 717'to 718', 720' to 721') (217.0m, 218.5m to 218.8m, 219.4m to 219.8m)				
			719.5' (219.3m)	clasts in breccia zones to 2" (5 cm) wide; pyrite rims to many clasts; alteration zones are far fewer in				
			728.5' (222.0m)	number but still present; a few short sections of altered alaskite porphyry (ex. 693.5') (211.4m); some				
			764.5' (233.0m)	zones of very slight pervasive sericite alteration in which many feldspar phenocrysts have greenish tinge due to sericitization, matrix seems essentially unaltered; pyrite is found along fractures and incipient fractures; little or no pyrite is found within the rock except adjacent to gypsum veinlets; alteration zones and breccia zones contain moderate (+) pyrite.				
				742' to 743' (226.2m to 226.5m) zone of strong alteration there are compound zones of py. - sericite veinlets up to 3" (7.6 cm) thick (ex. 751') (228.9m)				
				755' to 765' (230.1m to 233.3m) unit grades to diss., darker, slightly less coarse grained; gradual transition				
				775' to 777' (236.2m to 236.8m) - white to grey gypsum veinlets form stockwork in which veinlets have a central core of anhydrite surrounded by white gypsum;				
			778' (237.1m)					
			784.5' (239.1m)	784.5' (239.1) - 3/8" (.9cm) anhydrite veinlet with molybdenite				

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Hole No. 80-1 Logged By J.R. Woodcock and D. Gorc Date April 13, 1980 Sheet No. 9

FOOTAGE FROM	FOOTAGE TO	% RECOVERY	Spec. Loc.	DESCRIPTION AND REMARKS	SAMPLE NO.	SAMPLE FROM	SAMPLE TO	ASSAY
791.5' (241.2m	804' 245m)		802' (244.4m)	Igneo-fragmental - clasts of monzonite and hornfelized volcanic, cemented light grey aplitic cement; clasts are subangular up to 2" (5cm) wide but predominantely ½" (1.2cm) wide; magnetite in streaks; magnetite rimming some clasts.				
804' (245m	862' 262.7m)		812' (247.5m) 823' (250.9m)	Monzonite - bleached zones alongside some veinlets where feldspars bleached white and mafics altered to cream coloured mineral (muscovite??), central parts of these bleached zones have pyrite concentrations; such zones are very thin. 804' to 822' (245m to 250.5m) - strongly fractured containing abundant veinlets and veins; 812' (247.5m) - a few qtz. eyes in bleached zone. Monzonite is darker than usual and is relatively unaltered. 832.5' to 834.5' (253.7m to 254.4m) - Igneo-fragmental 848' (258.5m) - zone of bleaching and alteration 852' to 852.5' (259.7m to 259.8m) - gouge; kaolinite concentration.				
862' (262.7m	882' 268.8m)		866' (263.9m)	Igneo-fragmental - variable rock unit; upper 2.5' (.8m) has abundant hornfelized volcanic clasts in addition to monzonite clasts; remainder of unit consists primarily of small monzonite clasts (< 3/8") (.9cm) - fine-grained dk. brown, cement; unit is characterized by vertical veins				
Cont'd.								

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Hole No. 80-1 Logged By J.R. Woodcock and D. Gorc Date April 13, 1980 Sheet No. 10

FOOTAGE FROM	FOOTAGE TO	% RECOVERY	Spec. Loc.	DESCRIPTION AND REMARKS	SAMPLE NO.	SAMPLE FROM	SAMPLE TO	ASSAY
Cont'd.				of anhydrite with or without pyrite (especially along contacts with bleached selvage); also a few veinlets of dolomite and gypsum.				
				789' (240.5m) - first notice of carbonate material; small amounts of calcite in some bleached zones; lower contact sharp.				
882' (268.8m	906' 276.1m)		884' (269.4m)	Monzonite - pinkish to light grey mottled appearance; coarse textured; contains pink and white feldspars and mafics (hornblende and biotite), seemingly unaltered; gypsum veinlets common but not abundant.				
				884' to 895' (269.4m to 272.8m) - some with abundant gypsum - py. veinlets with associated alteration envelopes where feldspars are bleached white; these bleached zones retain original texture and have spotty patches of cream coloured mineral which are probably altered mafics; pyrite is always present along veins and is often abundant along such; such veins are often zoned with a central core of pyrite surrounded by thin layers of gypsum which is in turn surrounded by a relatively thin zone of alteration				
				Monzonite - py. content is low except along veinlets where often abundant. 882' to 895' (268.8m to 272.8m) - short zones of bleaching and alteration alongside veinlets				
				895' to 906' (272.8m to 276.1m) - largely unaltered				

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Hole No. 80-1 Logged By D. Gorc Date April 13, 1980 Sheet No. 11

FOOTAGE FROM	FOOTAGE TO	% RECOVERY	Spec. Loc.	DESCRIPTION AND REMARKS	SAMPLE NO.	SAMPLE FROM	SAMPLE TO	ASSAY
906' (276.1m	923.5' 281.5m)		911.5' (277.8m)	Igneo-fragmental - cemented by dark brown fine-grained dk. brown, cement; only clasts of monzonite, no clasts of volcanic; a few thin zones of alteration (dark coloured) ex. (912' to 913') (278.0m to 278.3m); fairly abundant veining, primarily gypsum or gypsum-pyrite but a few qtz. veinlets and a few carbonate veinlets; some sections with grey aplitic cement 921' to 922' (280.7m to 281.0m)- several galena-sphalerite-chalco. veinlets; 2 of veins to $\frac{1}{5}$" (1.2cm) thick; coarse-grained galena and sphalerite with lesser chalcopyrite. Little alteration associated with veins except in vicinity of galena - sphalerite - chalcopyrite veins where there is some bleaching and some sericitization.				
			919' (280.1m)					
923.5' (281.5m	929' 283.1m)		927' (282.5m)	Bostonite Porphyry - dark brown fine-grained matrix with subrounded phenocrysts of pink and white feldspar to $\frac{1}{5}$" (1.2cm) in size; py. diss. and in fractures, even distribution a few gypsum veinlets some containing magnetite sharp lower contact @ 20° core angle.				
929' (283.1m	993' 302.7m)			Monzonite - pinkish and whitish mottled appearance but darker than usual; essentially unaltered; fairly numerous gypsum fractures with or without pyrite; py-magnetite, magnetite veinlets (very thin) are quite common; pyrite generally restricted to fractures or incipient fractures				
Cont'd.								

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Hole No. 80-1 Logged By D. Gorc Date April 13, 1980 Sheet No. 12

FOOTAGE FROM	FOOTAGE TO	% RECOVERY	Spec. Loc.	DESCRIPTION AND REMARKS	SAMPLE NO.	SAMPLE FROM	SAMPLE TO	ASSAY
Cont'd.				often abundant in such; little or no alteration alongside veinlets or fractures; very dark coloured almost black to 962' (293.2m) some dark coloured mineral fills in some fractures (chlorite?); some thin dyklets, of dark brown igneo-fragmental at 982' (299.3m) a thin horizontal 2" (5cm) of alaskite porphyry at 972' (296.3m).				
993' (302.7m	1044.5' 318.4m)		1016' (309.7m)	Bostonite Porphyry - (lesser monzonite) very sharp upper contact @ 35°; similar or identical to unit 923.5' to 929' (281.5m to 283.2m); matrix dark brown fine-grained with some sections a lighter red brown; unit charcaterized by subrounded phenocrysts of pink and white feldspar; in some sections alignment of diss. py. implies incipient bedding; py. content low, diss. and along veinlets; not many gypsum veinlets.				
				996' - (303.6m) ½" (.9cm) qtz. vein @ 35°, contains some py. 996' to 1002' (303.6m to 305.4m) - monzonite				
				After 1002' (305.4m) some sections have med. red brown matrix versus the more usual dark br. matrix, amount of phenocrysts varies				
				1009' to 1022' (307.5m to 311.5m) - matrix becomes med. red brown still fine-grained but contains a few clasts (to 2") (5 cm) of hornfelized volcanic; some dark coloured clasts have white coloured phenocrysts of feldspar??				
Cont'd.								

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Hole No. 80-1 Logged By D. Gorc Date April 13, 1980 Sheet No. 13

FOOTAGE FROM	FOOTAGE TO	% RECOVERY	Spec. Loc.	DESCRIPTION AND REMARKS	SAMPLE NO.	SAMPLE FROM	SAMPLE TO	ASSAY
Cont'd.				Some gypsum veinlets but not many; some magnetite along some veinlets; a few qtz. veinlets; little alteration alongside veinlets but py. often alongside.				
				1027' to 1027' (313.0m to 316.1m) - monzonite				
				1037' to 1039.5' (316.1m to 316.8m) -bostonite porph.; few phenocrysts; very dark colour almost black; sharp upper and lower contacts. Unit also has a few very short sections of breccia???				
				1040' to 1043' (317.0m to 317.9m) - monzonite				
1044.5' (318.4m	1103'5' 336.3m)			Monzonite - coarse textured; mottled with pink and white feldspars; unit cut by dark coloured to black veinlets; also greenish coloured veinlets; minimal if any alteration along most veinlets; seemingly a slightly darker colour than previous mafics due to more mafics; not many fractures or veinlets; both gypsum and py.- silica veinlets present but py. - silica veinlets are very thin; pyrite primarily along fractures but also diss.; some diss. magnetite?; some magnetite along fractures? Note: a few thin $\frac{1}{2}$"-2"				
			1102' (335.9m)	(1.2cm - 5cm) dyklets of bostonite porphyry containing clasts of surrounding monzonite to 1" (2.5cm) such dykes contain moderate (+) pyrite				
1103.5' (336.3m	1141' 347.8m)		1107' (337.4m)	Igneo-fragmental - matrix of breccia is dark brown bostonite porphyry containing few, if any, phenocrysts but does contain high to high (+) pyrite; clasts of monzonite,				
Cont'd.								

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Hole No. 80-1 Logged By D. Gorc Date April 13, 1980 Sheet No. 14

FOOTAGE FROM	FOOTAGE TO	% RECOVERY	Spec. Loc.	DESCRIPTION AND REMARKS	SAMPLE NO.	SAMPLE FROM	SAMPLE TO	ASSAY
Cont'd.			1111' (338.6m)	bostonite porphyry with white phenocrysts and minor hornfelized volcanics are present; clasts are subangular; unit also contains a few short sections of unbrecciated monzonite; these monzonites contain only minor amounts of pyrite; many of clasts have cream coloured altered mafics along the rim of clasts; little alteration associated with veinlets; pyrite often along veinlets; some dolomite along some veinlets. A thin zone of alaskite porphyry 1111' (338.6m) 1118' to 1120.5' (340.8m to 341.5m) - highly fractured; bleached to light brown and somewhat altered but not intensely; contains several gypsum veinlets with small amounts of py. and dolomite; some fluorite? in one of veinlets; mineral was purple, soft, nearly transparent.				
1141' (347.8m)	1532.5' 467.1m)			Mixed Rock - Microtonalite and Alaskite Porphyry - outward appearance of core indicates short sections of intense alteration, however, much of the unit has been affected by a slight pervasive alteration; Unit is highly variable consisting of intermixed fine-grained intrusive containing few if any phenocrysts (microtonalite) and porphyritic alaskite; the colour of the rock also varies from med. grey to med. brown with some dark brown sections; contacts between rock types are extremely sharp; several sections of the unit are highly fractured; such				
Cont'd.				sections have a slightly lighter colour indicating a				

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Hole No. 80-1 Logged By D. Gorc Date April 14, 1980 Sheet No. 15

FOOTAGE FROM	FOOTAGE TO	% RECOVERY	Spec. Loc.	DESCRIPTION AND REMARKS	SAMPLE NO.	SAMPLE FROM	SAMPLE TO	ASSAY
Cont'd.				small amount of alteration but only sections of obvious intense alteration were noted.				
			1175' (358.1m)	Some gypsum veinlets but not that numerous; gypsum veinlets contain little pyrite; pyrite predominately in				
			1179.5' (359.5m)	fractures however with lesser diss. 1180' to 1207' (359.7m to 367.9m) - more gypsum veinlets than usual, some $\frac{1}{4}$" (.6cm) thick.				
				1184' (360.9m) - small amount of galena - 1179' to 1185' (359.3m to 361.2m) - galena and sphalerite commonly found in small amounts.				
				1193.5' to 1200' (363.8m to 365.8m) - more intensely fractured zones altered and bleached to dirty white colour; more numerous and thicker gypsum veinlets; some sections of high pyrite.				
				1198' to 1199' (365.2m to 365.4m) - several thin zones of gouge @ 20°. Note: entire unit to this point is quite well fractured; abundant pyrite along many fractures				
			1250' (386.0m)	1225' to 1242' (373.4m to 378.6m) - altered section; 1225' (373.4m) - fluorite?; pyrite - sericite alteration with med. grey, fine-grained appearance; no remnants of phenocrysts; pyrite content high; alteration patchy, more intense alongside fractures.				
				1257' (383.1m) (4") (10.6cm) of gouge @ 35°				
				1258.5' (383.5m) (6") (15.2cm) gouge @ 35°				
Cont'd.				Short zones of strong alteration continue until 1282'				

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Hole No. 80-1 Logged By D. Gorc Date April 14, 1980 Sheet No. 16

FOOTAGE FROM	FOOTAGE TO	% RECOVERY	Spec. Loc.	DESCRIPTION AND REMARKS	SAMPLE NO.	SAMPLE FROM	SAMPLE TO	ASSAY
Cont'd.				(390.7m) - after 1282' (390.7m) intensity of alteration noticeably decreases.				
			1265' (385.6m)	some greenish sericite alteration				
			1291.5' (393.6m)	Note: after 1257' (383.1m) a reduction in py. content in both altered and unaltered sections.				
			1308' (398.7m)	1308' (398.7m) - pyrite content again increases especially in some altered sections.				
			1317' (401.4m)	1317' (401.4m) - some py.-qtz. veinlets?; very thin Note: some pyrite-chlorite veinlets present??				
			1340' (488.4m)	1291' to 1298' (393.5m to 395.6m) - zones of pervasive sericite alteration again diminishes; pyrite - chlorite veinlets still present; pyrite content again diminishing; more pyrite in fine-textured rock; some thin dyklets of dark brown micro-fragmental noted.				
			1381.5' (421.1m)	1352.5' to 1353.5' (412.2m to 412.5m) - inclusion of chloritized volcanic?				
				1375.5' to 1387' (419.1m to 422.8m) - highly altered, completely sericitized to greenish grey to whitish colour; whitish colour suggests a great deal of kaolinite; veinlets and hairline veinlets of pyrite, galena, sphalerite; galena predominates; transition zone on either side of altered zone; 1.5' (.4m) near top , 4' (1.2 m) at bottom.				
				1391' to 1393' (424m to 424.6m) - highly altered; includes				
Cont'd.				½" (1.2cm) gypsum vein with coarse py., galena, sphalerite				

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Hole No. 80-1 Logged By J.R. Woodcock and D. Groc Date April 14, 1980 Sheet No. 17

FOOTAGE FROM	FOOTAGE TO	% RECOVERY	Spec. Loc.	DESCRIPTION AND REMARKS	SAMPLE NO.	SAMPLE FROM	SAMPLE TO	ASSAY
Cont'd.				1397' (425.8m) - end of alteration				
				1404' to 1406' (427.9m to 428.5m) abundant magnetite in nicrotonalite.				
			1429' (435.6m)	1404' (427.9m) - minor alteration; some indefinite silica veinlets at 1420' (432.8m), silica veinlets offset by pyrite - chlorite veinlets; py. content low to low (+); locally 3' to 4' (.9m to 1.2m) sections have slight to moderate fracturing				
				1441' to 1451' (439.2m to 442.3m) - many if not most of veinlets contain black magnetite; sometimes forms net-work of veinlets				
				1454' (443.1m) - watery purplish crystal (fluorite?) in dolomite vein minor chalco., sphalerite,				
				1448' (441.4m) - small amount of sphalerite, pyrite content is low (+) primarily in fractures but some diss.				
				1459' to 1477' (444.7m to 450.2m) - Intensely fractured; py. abundant along fractures; some thin gypsum veinlets; a few silica veinlets and silicified zones; occasionally small amounts of sphalerite; py. - chlorite veinlets continue to appear.				
			1494.5' (455.5m)	1482' (451.7m) - magnetite again appearing in some veinlets with or without py; no alteration along veinlets				
			1512' (460.9m)	1506' (459.0m) - altered inclusions of volcanic? (to 6" (15.2 cm) diameter)				
Cont'd.								

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Hole No. 80-1 Logged By J.R. Woodcock & D. Gorc Date April 15, 1980 Sheet No. 18

FOOTAGE FROM	FOOTAGE TO	% RECOVERY	Spec. Loc.	DESCRIPTION AND REMARKS	SAMPLE NO.	SAMPLE FROM	SAMPLE TO	ASSAY
Cont'd.			1528' (465.7m)	1506' to 1532.5' (457.4m to 467.1m) - mixture of three rock types; the fine textured microtonalite, alaskite porphyry and a phase of alaskite containing a much greater amount of K-feldspar, this phase of alaskite is quite coarse textured.				
			1546' (471.2m)					
1532.4' (467.1m	1637' 498.9m)		1563' (476.4m)	Alaskite - coarse textured; contains abundant K-spar; matrix med. brown; abundant phenocrysts to ¼" (.6cm); noticeable amounts of magnetite along fractures; a few py-magnetite (chlorite?)				
				Veinlets - a few gypsum veinlets				
				1566.5' to 1568.5' (477.5m to 478.1m) - fracture @ 10° - contains abundant molybdenite; a dry fracture with no qtz. or gypsum and only small amounts of py. and graphite.				
			1582' (482.2m)	1554' (473.7m) - unit becomes noticeably darker due to diss. magnetite and magnetite along fractures; dark brown in colour; a few gypsum veinlets; pyrite - magnetite veinlets common often with abundant pyrite.				
				1621' (494.1m) - some altered inclusions.				
1637' (498.9m)				Mixed Rock - Alaskite and Microtonalite - some altered sections but generally alteration is minimal and other pervasive type although there is some bleaching along some veinlets.				
				1637' to 1643' (498.9m to 500.8m) - pervasive alteration;				
Cont'd.				feldspar phenocrysts sericitized to white colour, soft;				

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Hole No. 80-1 Logged By J.R. Woodcock & D. Gorc Date April 16, 1980 Sheet No. 19

FOOTAGE FROM	FOOTAGE TO	% RECOVERY	Spec. Loc.	DESCRIPTION AND REMARKS	SAMPLE NO.	SAMPLE FROM	SAMPLE TO	ASSAY
Cont'd.				some veinlets have thin alteration envelopes; magnetite veinlets continue.				
			1648.5' (502.5m)	1643' to 1652' (500.8m to 503.5m) - Intensely altered section - seemingly predominately white kaolinite; gouge at 1644' (501.0m) and 1649' (502.6m); strongly altered on either side of gouge zones; veinlets present include gypsum and qtz.-pyrite, and a few carbonate veinlets.				
			1657' (505.0m)	1652' to 1672' (503.5m to 509.6m) - only slight pervasive alteration, spotty selective sericitization of feldspar phenocrysts; occasional reaction to acid				
			1666' (507.8m)					
				1672' to 1685.5' (509.6m to 513.7m) - Intensely altered section; similar to 1643' to 1652' (500.7m to 503.5m); white in colour; seemingly high kaolinite; low py. content				
			1675.5' (510.7m)	small amounts of galena and sphalerite - in some veins; many of phenocrysts sericitized to light green colour				
			168.4' (513.3m)	1672' to 1682' (509.6m to 512.7m) - some qtz. veinlets; 1672' to 1685.5' (509.6m to 513.7m) many veinlets contain some py., sphalerite and galena, also small amounts of diss. sphal. and galena; 1681' (512.4m) - abundant sphalerite, galena, pyrite				
			1686.5' (514.0m)	1685.5' to 1703' (513.7m to 519.0m) - very slight pervasive alteration - a few short sections (3" to 6") (8cm to 15.2cm) more intense alteration; some qtz. veinlets				
Cont'd.			1688' (514.5m)	but only minor py; some galena in some veinlets; in most				

FOOTAGE FROM	FOOTAGE TO	% RECOVERY	Spec. Loc.	DESCRIPTION AND REMARKS	SAMPLE NO.	SAMPLE FROM	SAMPLE TO	ASSAY
Cont'd.				cases no alteration selvage				
				1692' to 1693' (515.7m to 516.0m) 6 qtz. veinlets @ 30°; brownish selvage adjacent to veinlets				
				1703' to 1715' (519.0m to 527.7m) - Intensely altered section; again similar to previous altered sections, white, low py. content, seemingly high in kaolinite; slightly less altered than previous; some small amounts of diss. galena.				
				1715' to 1751' (522.7m to 533.7m) - minimal pervasive sericite alteration; some feldspars phenocrysts completely sericitized while in others only the central core or rim				
			1729.5' (527.2m)	of phenocrysts is sericitized; noticeable amounts of magnetite diss. and in fractures gives rock slightly darker colour; 1729 to 1731 (527m to 527.6m) - 6 sub-parallel qtz. veinlets @ 0° to 5° - no selvage; occasional magnetite - pyrite veinlets but not many; some diss. magnetite				
			1760' (536.4m)	1751' to 1764' (533.7m to 537.7m) - intermediate alteration; strongly altered but could not be classed as intense; more fractured than usual but not intensely fractured - some monor galena				
				1760' (536.4m) - some epidote?? small amounts of greenish mineral.				
			1794' (546.8m)	1764' to 1817' (537.7m to 553.8m) - minimal alteration to unaltered; essentially unaltered; only occasional				
Cont'd.								

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Hole No. 80-1 Logged By D. Gorc Date April 17, 1980 Sheet No. 21

FOOTAGE FROM	FOOTAGE TO	% RECOVERY	Spec. Loc.	DESCRIPTION AND REMARKS	SAMPLE NO.	SAMPLE FROM	SAMPLE TO	ASSAY
Cont'd.				feldspar phenocrysts sericitized; py. content very low primarily disseminated; diss. magnetite gives rock darker colouration.				
				1792.5' (546.4m) small amounts of chalco. + (galena?) in fracture				
				1798.5' (548.2m) - questionable fault gouge.				
			1819.5' (554.6m)	1817' to 1826' (553.8m to 556.6m) - slight pervasive alteration most of feldspar phenocrysts sericitized, light brown in colour; mottled appearance; unit magnetic few veinlets of any kind.				
				1826' to 1847' (556.6m to 562.97m) - essentially unaltered with some sections of very slight pervasive alteration, only occasional sericitized feldspars				
			1847' (562.97m)	1842' to 1843.5' (561.4m to 561.9m) strongly fractured slightly more altered zone, with irregular dolomite - gypsum veinlets containing small amounts of pyrite and sphalerite				
				End of hole - 1847' (562.97m)				

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PROPERTY Whiteman
CLAIM No. Whiteman 2
COORDINATES 24 + 26' N
3 + 23' E
ELEVATION 3400'

HOLE No. 80-2
BEARING Az 70°
DIP 55°
LENGTH 1207'
DIAMETER NQ

DRILLED BY Tonto Drilling Ltd.
STARTED: April 17, 1980
TERMINATED: April 23, 1980
LOGGED BY: D. Gorc

Tropari Tests

Depth	Dip	Az.
540'	55°	66.8°
1000'	54°	71.8°

Abbreviations quartz - qtz., disseminated - diss., pyrite - py., chalcopyrite - chalco., medium - med., porphyry - porph.

FOOTAGE FROM	FOOTAGE TO	% RECOVERY	Spec. Loc.	DESCRIPTION AND REMARKS	SAMPLE NO.	SAMPLE FROM	SAMPLE TO	ASSAY
0	64'			overburden				
(0	19.5m)			very soft and chloritized bedrock; no core recovery				
64'	151'							
(19.5m	46.0m)							
151'	158'	25%		Volcanic - very poor rocovery; core all broken up gritty				
(46.0m	48.1m)			feel to fragments; black in colour due to high diss.				
				magnetite content; py. content high; may well be volcanic				
				tuff; unit is quite soft; occasional green tints suggest				
				possible chloritization; after 158' (48.1m) hole col-				
				lapsed in and casing had to be extended to 354' (107.8m)				
0	354'			Casing				
(0	107.8m)			Volcanic - black to very dark grey to dark brown in				
354'	384'		373'	colour; fine textured; black colour due to disseminated				
(107'8m	117.0m)		(113.6m)	magnetite; unit cut by numerous gypsum veinlets some				
				containing py.; light yellow green alteration alongside				
				many veinlets; seem like two generations of gypsum				
				veinlets younger set of which does not have alteration				
				alongside; pyrite content is high, diss. and in fractures;				
				magnetite is common but not as abundant as above; 375'				
				to 378' (114.6m to 115.2m) core badly broken up, most				
				of core lost; section contains 1' (.3m) section of highly				
Cont'd.				altered multicoloured volcanic; light green to dark green				

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Hole No. 80-2 Logged By D. Gorc Date April 21, 1980 Sheet No. 2

FOOTAGE FROM	FOOTAGE TO	% RECOVERY	Spec. Loc.	DESCRIPTION AND REMARKS	SAMPLE NO.	SAMPLE FROM	SAMPLE TO	ASSAY
Cont'd.				to white to cream coloured.				
			376'	Alteration is sericite - py.; locally some small greenish				
			(114.6m)	concentrations of sericite; unit quite soft; most of				
				veinlets @ 30° to 35° but all orientations present;				
				only a few qtz. veinlets; watery veinlets of anhydrite and				
				whitish veinlets of gypsum are both present; some of				
				diss., sulphide is likely pyrrhotite.				
				378' to 384' (115.2m to 117.0m) - no core				
384'	402'		384'					
(117.0m	122.5m)		(117.0m)	Monzonite - upper contact is sharp and marked by a				
				3" (7.6cm) silicified zone; contains some light yellow-				
				ish green clasts; $\frac{1}{2}$" (1.2cm) zone of light olive green				
				alteration along silicified zone; unit is quite fractured				
				and altered to point where most of original texture is				
				lost; can sometimes see remnants of original porphyritic				
				texture; only occasionally magnetic; abundant gypsum -				
				py. veinlets often associated with thin zones of alter-				
				ation or bleaching alongside; a few silicified zones;				
				some of veinlets vuggy; chlorite? alteration in upper				
			400'	part of unit; some silica veinlets @ 400' (121.9m); fault				
			(121.9m)	gouge @ 397' (121.0m) difficult to assess py. content;				
				abundant py along veinlets.				

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Hole No. 80-2 Logged By D. Gorc Date April 21, 1980 Sheet No. 3

FOOTAGE FROM	FOOTAGE TO	% RECOVERY	Spec. Loc.	DESCRIPTION AND REMARKS	SAMPLE NO.	SAMPLE FROM	SAMPLE TO	ASSAY
402' (122.5m	425' 129.5m)		403' (122.8m	Monzonite - unit is characterized by scattered 1' to 2' (.3m - .6m) zones of intense alteration plus thinner 1" - 3" (2.5cm - 7.6 cm) zones of alteration adjacent to veinlets separated by essentially unaltered monzonite; unit is coarse textured; med. greyish to light grey brown with pinkish tint; considerable amounts of mafic minerals; spotty diss. magnetite; gypsum veinlets predominate over qtz. veinlets; many veinlets have thin (1" - 3") (2.5cm-7.6cm) alteration zones along sides in which the feldspars are bleached white and the mafics are altered to a cream coloured mineral (muscovite?) 407' - 413' (124.0m - 125.8m) - intense sericitization with high diss. py.				
425' (129.5m	433.5' 132.1m)		426' (129.8m	Igneo-fragmental - largely clasts of monzonite (to 6") (15.2cm) diameter - with a few hornfelized volcanic clasts and a few clasts of alaskite porphyry; cemented by med. grey, fine-textured aplitic intrusive; gypsum and qtz. veinlets present but not as much alteration along veinlets as previously; gypsum veinlets predominate; some gypsum veinlets may have silica borders; intrusive cement has high py. content.				

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Hole No. 80-2 Logged By D. Gorc Date April 21, 1980 Sheet No. 4

FOOTAGE FROM	FOOTAGE TO	% RECOVERY	DELTA ANGLE	DESCRIPTION AND REMARKS	SAMPLE NO.	SAMPLE FROM	SAMPLE TO	ASSAY
433.5' (132.1m	483' 147.2m)		450' (137.2m)	Monzonite - identical to section 402'-425' (122.5m -129.5m); characterized by scattered thin zones of alteration separated by essentially unaltered rock; magnetite commonly found diss. through rock; some 1" (2.5cm) silicified zones adjacent to some veinlets; some cream coloured altered mafics also present in such zones; silicified zones - 448.5' to 450' (136.7m - 137.1m), 451.0' to 451.5' (137.4m to 137.6m), 455.5' to 456' (138.8m to 138.9m) and 460' to 460.5' (140.2m to 140.3m)				
				463' to 464' (141.m to 141.4m) - alaskite porphyry dyke.				
483' (147.2m	492' 149.9m)			Alaskite Porphyry (lesser altered alaskite porphyry) - slightly altered with many feldspar pheno. altered white and soft; matrix seems altered in sections; moderate py. content primarily diss. but some in fractures; unit is cut by both gypsum and qtz. veinlets.				
492' (149.9m	503.5' 153.4m)			Monzonite - pinkish greyish mottled; coarse textured; largely unaltered; fairly abundant mafics; py. content generally low but abundant along some fractures; zones of more intense fracturing often associated with thin zones of white bleaching and alteration of feldspars plus the alteration of mafics to a cream coloured mineral (muscovite?)				

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Hole No. 80-2 Logged By D. Gorc Date April 22, 1980 Sheet No. 5

FOOTAGE FROM	FOOTAGE TO	% RECOVERY	Spec. Loc.	DESCRIPTION AND REMARKS	SAMPLE NO.	SAMPLE FROM	SAMPLE TO	ASSAY
503.5' (153.4m)	505.5' (154m)		503' (153.3m)	Alaskite Porphyry (lesser altered alaskite porphyry) light grey to light brown; fine textured; abundant rounded feldspar phenocrysts; partially altered with patchy zones of alteration; a few greenish sericitized feldspar phenos.; py. diss. and along fractures.				
505.5' (154.0m)	522' (159.1m)		508.5' (154.9m)	Ingeo-fragmental-intensely altered; well fractured and brecciated; clasts of varying sizes; clasts predominately monzonite but a few hornfelized volcanic clasts; gypsum veinlets often associated with 1" (2.5cm) zones of bleaching and alteration; such zones are pale green to yellow				
			521' (158.8m)	green and has a high diss. py. content; pale blue mineral at 521' (158.8m); lower contact indistinct.				
522' (159.1m)	557' (169.7m)		522.5' (159.2m)	Monzonite - characterized by scattered 1'-3' (.3m-.9m) zones of alteration; upper contact indistinct; Alteration very irregular in that intensely altered zones are separated by essentially unaltered rock; such altered zones				
			533.5' (162.6m)	have a higher diss. py. content; altered zone are multi-coloured with light grey predominating but white, cream, yellow green, pale blue and pale blue-green are also seen intermixed; alteration is qtz.-sericite alteration; small patches of cream coloured to yellow green minerals are present (altered mafics?); abundant gypsum veinlets present; unit is seemingly well fractured; some				
			547' (166.7m)	localized white bleaching in alteration zones; a few silici-				
Cont'd.				fied zones ex. 547' (166.7m); a few qtz. veinlets to $\frac{1}{16}$"				

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Hole No. 80-2 Logged By D. Gorc Date April 22, 1980 Sheet No. 6

FOOTAGE FROM	FOOTAGE TO	% RECOVERY	Spec. Loc.	DESCRIPTION AND REMARKS	SAMPLE NO.	SAMPLE FROM	SAMPLE TO	ASSAY
Cont'd.				(.6cm) ex. 550' (167.6m); alteration zones - 523' to 524'				
				(159.4m to 159.7m), 530.5' - 544' (161.6m to 165.8m);				
				silaceous zones - 547' - 551' (166.7m - 167.9m), 547' to				
			557'	548' (166.7m to 167.0m), 557' to 557.5' (169.7m to 169.8m);				
			(169.7m)	557' to 557.5' - (169.7m to 169.8m) has high silica content,				
				high py. content; purplish cast on some horizons; Note:				
				a few thin (2"-3" (5cm-7.5cm) alaskite porphyry dykes seen				
557'	567'			Igneo-fragmental - silaceous zone marks contact;				
(169.7m	172.8m)			557' to 562' (169.7m to 171.2m) - noticeable amounts of				
				alteration, but not intensely altered; large clasts of				
				monzonite cemented by light grey, very fine textured				
				aplitic intrusive; occasionally magnetic.				
				562' (171.2m) - zone of intense alteration begins, zone				
				well fractured and brecciated.				
567'	796'		585'	Igneo-fragmental - consists of altered alaskite porphyry;				
(172.8m	242.6m)		(178.3m)	intensely altered; very low pyrite content; some flesh				
				coloured anhydrite in larger cavities; rock is multicoloured				
			509'	with light to med. grey predominating but some sections are				
			(179.5m)	dark green in colour suggesting extremely intense sericiti-				
				zation; no cream coloured altered mafics observed; gypsum-				
			575'	anhydrite veinlets present some of which have adjacent				
			(175.2m)	bleached and altered zones (1") (2.5cm); at 579' (176.4m)				
				some sphalerite in anhydrite vein; alteration often so				
				intense that original texture completely obliterated; in				
Cont'd.				some sections feldspar phenos. altered soft and white;				

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Hole No. 80-2 Logged By D. Gorc Date April 22, 1980 Sheet No. 7

FOOTAGE FROM	FOOTAGE TO	% RECOVERY	Spec. Loc.	DESCRIPTION AND REMARKS	SAMPLE NO.	SAMPLE FROM	SAMPLE TO	ASSAY
Cont'd.				py content difficult to estimate, probably moderate to high;				
				py primarily diss. but abundant py. along some fractures.				
				567' to 618'(172.8m to 188.3m) - quartz veins become more				
				abundant, predominate over gypsum veinlets; quartz				
			604'	stockwork 603.5' to 605' (1839m to 184.4m) qtz. veinlets				
		(	1184m)	generally contain small amounts of py.; qtz. veinlets dark				
				grey in colour 618' to 623' (188.3m to 189.8m) -almost all of units				
				are white and soft, clay minerals (kaolinite?);contains				
				no veinlets, no py; related to small scale fault??; no				
				gouge observed.				
				623' to 634' (192.3m to 192.7m) - intensely altered; dif-				
				ficult to see veinlets; gouge at 631' (192.3m) and 632.5'				
				(192.7m) Note: by 605' (184.4m) small but scattered				
				amounts of cream coloured alteration minerals seen.				
				634' to 796' (193.2m to 242.6m) - variable intensity to				
				alteration but overall still quite intense.				
				637' to 638' (194.1m to 194.4m) qtz. stockwork; many				
				veinlets are extremely thin; unit not magnetic 640' (195.1m)				
				642' to 643' (195.6m to 195.9m) qtz. stockwork; may be more				
				extensive but cannot be sure				
			646'	645.5' to 648' (196.7m to 197.5m) may extend to 666' (203.0m)				
			(196.9m)	but questionable since gypsum-anhydrite veinlets become				
				more abundant after 648' (197.5m) 672' (204.8m) qtz. vein-				
				lets can increase in mumber, almost like stockwork on				
Cont'd.				certain horizons; intermixed with gypsum veinlets; gypsum				

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FOOTAGE FROM	FOOTAGE TO	% RECOVERY	Spec. Loc.	DESCRIPTION AND REMARKS	SAMPLE NO.	SAMPLE FROM	SAMPLE TO	ASSAY
Cont'd.			745' (227.0m)	veinlets are younger?				
				720' (219.4m) concentration of pyrite-magnetite-hematite				
				small amount; intensity of alteration diminishes slightly				
				748' (227.9m) - alteration begins to increase again but				
				intensity varies; pyrite content is hard to judge;				
				py. content probably low (+) to moderate with a few sections				
				containing high py.; 739' to 748' (225.2m to 227.9m) -				
				number of qtz. veinlets diminishing noticeably after 748'				
				(227.9m) the number of qtz. veinlets increases; abundant				
				py. with many veinlets.				
				767' (233.7m) - gouge?				
			783' (238.6m)	Note: - alteration still intense but not as intense as previously seen in this unit.				
796' (242.6m)	870' (265.1m)		808.5' (246.4m)	Mixed Rock - fine-grained microtonalite and alaskite porphyry more diss. py. in fine-gr. material versus porphyritic;				
				only one qtz. veinlet seen; gypsum veinlets present but				
				not abundant; little alteration along veinlets; essentially				
				unaltered but perhaps 1/10 of all feldspar phenocrysts				
				are sericitized; py. 820' (249.9m) this pervasive alter-				
			826' (251.7m)	ation noticeable diminishes but some blackish alteration to $\frac{1}{2}$" (1.2cm) along a few veinlets.				
				846' (257.8m) - silicified zone and qtz. vein				
			862.5' (262.8m)	Unit is only occasionally magnetic; py. content still variable low (+) to moderate primarily diss.				

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FOOTAGE FROM	FOOTAGE TO	% RECOVERY	Spec. Loc.	DESCRIPTION AND REMARKS	SAMPLE NO.	SAMPLE FROM	SAMPLE TO	ASSAY
870'	1000'		883'	Alaskite Porphyry (lesser altered alaskite porphyry)				
(265.1m	304.8m)		(269.1m)	matrix fine textured with abundant white feldspar phenocrysts; only very slight pervasive alteration essentially unaltered; however, sericitized feldspar pheno. are common but not abundant; also a few zones of blackish sericitization some of which are associated with veinlets; py. content variable primarily mod(-); gypsum veinlets common but not abundant; little py in veinlets; 887' - 892' (270.3m - 271.8m) - noticeably more altered but not intensely; sericitization patchy; perhaps 60% of rock altered; 897' (273.4m) - colour beginning to vary from light grey to med. red brown; only occasional gypsum veinlets have thin zones of adjacent alteration.				
			933'	932'-936' (284.0m -285.2m) - noticeably altered but not				
			(284.3m)	intensely; patchy, blackish sericitization; altered zones contain slightly higher amounts of py.				
				936' to 1000' (285.2m to 304.8m) slight increase in amount of pervasive alteration; locally short sections of intense alteration; a few short sections of fine gr. microtonalite				
				951.5' - 963' (289.8m -293.5m) - noticeable but not intense alteration a few short (2" - 3") (5cm -7.5cm) of				
			969'	intense alteration.				
			(295.3m)	976' (297.4m) 3/8" (.9cm) gypsum veinlet with $\frac{1}{2}$" (1.2cm) zone of blackish alteration alongside; one of few such zones seen.				

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FOOTAGE FROM	FOOTAGE TO	% RECOVERY	Spec. Loc.	DESCRIPTION AND REMARKS	SAMPLE NO.	SAMPLE FROM	SAMPLE TO	ASSAY
1000'	1040'		1002.5'	Mixed Rock - Alaskite and microtonalite with minor amounts				
(304.8m	316.9m)	(	305.4m)	of alaskite porphyry - essentially unaltered with the				
				exception of one zone of alteration; slight pervasive				
			1021'	alteration but very minimal; 1015' (209.3m) clay filled				
		(	311.2m)	fracture with 2" (5cm) zone of blackish alteration and				
				breccia.				
				1027' to 1032' (313.0m to 314.5m) - strongly altered but				
				not intensely ; med grey in colour; gouge at 1027.5' (313.1m);				
				very little py; py. primarily in fractures				
1040'	1085.5'		1044'	Alaskite - contains a considerable amount of coarse gr.				
(316.9m	303.8m)		(318.2m)	K-feldspar; intensity of alteration varies from non-				
				existent to intense; rapid transition from one to the				
				other.				
				1040' to 1061' (316.9m to 323.3m) very strongly almost				
				intensely altered; almost completely sericitized to dark				
				to med. grey; some pockets with little alteration; py.				
				content varies to moderate (+) and is higher than sur-				
				rounding rock.				
				1061' to 1085.5' (323.3m to 330.8m) - patchy irregular				
				alteration primarily adjacent to fractures and veinlets;				
				1075.5' to 1077.5' (327.8m to 328.4m) very dark coloured;				
				magnetite rich section				
1085.5'	1102'		1095.5'	Altered Alaskite Porphyry - light grey, fine textured				
(330.8m	335.8m)		(333.9m)	matrix; strongly altered but not completely altered; most				
Cont'd.				of feldspar pheno. altered white and soft, moderate py.				

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Hole No. 80-2 Logged By D. Gorc Date April 24, 1980 Sheet No. 11

FOOTAGE FROM	FOOTAGE TO	% RECOVERY	Spec. Loc.	DESCRIPTION AND REMARKS	SAMPLE NO.	SAMPLE FROM	SAMPLE TO	ASSAY
			1096' (334m)	content diss. and in fractures				
1102' (335.8m	1169' 356.3m)		1135.5' (346.1m)	Alaskite - (minor amounts of alaskite porphyry) med. red brown; coarse textured K-feldspar predominates; only slight pervasive alteration short zones 1' - 2' (.3m .6m) of slightly stronger alteration are present.				
1169' (356.3m	1189' 362.4m)		1179' (359.3m) 1185.5' (361.3m)	Mixed Rock - Alaskite and Microtonalite 1168' - (356.0m) - small amount of galena in anhydrite vein; a few clasts of hornfelized volcanic?				
1189' (362.4m	1207' 367.89m)		1201' (366.9m) 1202.5' (366.5m)	Mixed Rock - Alaskite Porphyry and Microtonalite only very slight pervasive alteration; essentially unaltered; 1201' (366.0m) - small amount of galena and a few qtz veinlets.				
				End of Hole 1207' (367.89m)				

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PROPERTY Whiteman

HOLE No. 80-1 LOGGED BY D. Gorc DATE May 25 - May 30, 1980 SHEET No. 1

INTERSECTION, ft. (m.)			QUARTZ	GYPSUM, ANHYDRITE		QTZ.-SER.	QTZ.-SER.	PYRITE	
From	To	Rock Type	VEINLETS No./m	WHITE No./m	CLEAR No./m	BANDS cm/m	ALTERATION (1 to 10)	(Low to High)	COMMENTS
0	64'	casing							
	(19.5m)								
64'	120'	Volcanic	?	?	?	?	?	LtoM	core very broken but pyrite not weathered
(19.5m)	(36.6m)								
120'	147'	Monzonite	?	?	?	?	?	LtoM	only 2' (.6m) of core recovery
(36.6m)	(44.8m)	Porphyry							
147'	150'	Monzonite	3.3	12.2	25.6	/	.5	LtoM	slight pervasive alteration;
(44.8m)	(45.7m)	Porphyry							
150'	159.7'	Monzonite	1.0	6.9	7.9	/	.5	LtoM	slight pervasive alteration; after 153' (46.6m
(45.7m)	(48.6m)	Porphyry							matrix becomes a darker brown
159.7'	193'	Volcanic	.3	11.4	18.6	6.4	1	MtoM(+)	beginning at 179' (54.6m) many veinlets have
(48.6m)	(58.8m)								$\frac{1}{4}$" -1"(.6cm-2.5cm) zones of bleaching
									alongside; remainder of rock seemingly un-
									altered; dark green colouration suggests that
									some horizons were chloritized
193'	202.5'	Igneo-fragmental	.7	.7	3.8	/	.1	MtoH(-)	very minimal pervasive alteration;essentially
(58.8m)	(61.7m)								unaltered
202.5'	217'	Volcanic	/	5	1.8	.6	/	MtoH(+)	very minor amounts of alteration alongside
(61.7m)	(66.1m)								veinlets; essentially unaltered
217'	219'	Alaskite	/	5.7	22.9	/	2	M(+)	noticeable pervasive sericitization; at
(66.1m)	(66.8m)	Porphyry							218.5' (66.6m) gouge zone; 218'-219' (66.4m
									-66.8m) high kaolinite content

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HOLE No. 80-1 LOGGED BY D. Gorc DATE May 25 - May 30, 1980 SHEET No. 2

INTERSECTION, ft. (m.) From	To	Rock Type	QUARTZ VEINLETS No./m	GYPSUM, ANHYDRITE WHITE No./m	GYPSUM, ANHYDRITE CLEAR No./m	QTZ.-SER. BANDS cm/m	QTZ.-SER. ALTERATION (1 to 10)	PYRITE (Low to High)	COMMENTS
219' (66.8m)	257' (78.3m)	Volcanic	.2	4.0	5.4	/	?	M(-)	has altered multi-coloured lime-silicated appearance with light and dark greens predominating; alteration does not appear to be qtz. sericite alteration; a thin section at 226' (68.9m) had abundant kaolinite.
257' (78.3m)	206' (79.2m)	Bostonite Porphyry	/	3.3	3.3	/	.1	L(+)	essentially unaltered; minimal pervasive alteration
260' (79.2m)	315' (96.0m)	Volcanic	.3	10.1	1.2	.9	/	M(+)toH	has dark grey br. hornfelized appearance, essentially unaltered; only a very small amount of alteration along some veinlets; 3' (.9m) of rock has lime silicated appearanc
315' (96.0m)	414' (126.2m)	Volcanic	.2	6.5	.8	.2	/	L(+)toM(-)	essentially unaltered, minimal alteration which consists of very thin zones alongside some veinlets; 1 ft. (.3m) zone with slight lime-silicate type appearance
414' (126.2m)	443.5' (135.2m)	Monzonite Porphyry	.4	1.1	2.8	/	/	L	unaltered; no alteration alongside veinlets
443.5' (135.2m)	449' (136.9m)	Volcanic	1.2	7.0	1.8	/	/	L(+)	unaltered
449' (136.9m)	461.5' (140.7m)	Monzonite Porphyry	/	.8	7.6	/	/	L	unaltered
461.5' (140.7m)	504' (153.6m)	Volcanic	.2	4.3	1.9	/	/	L(+)	unaltered

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HOLE No. 80-1 LOGGED BY D. Gorc DATE May 25 - May 30, 1980 SHEET No. 3

INTERSECTION, ft. (m.) From	To	Rock Type	QUARTZ VEINLETS No./m	GYPSUM, ANHYDRITE WHITE No./m	CLEAR No./m	QTZ.-SER. BANDS cm/m	QTZ.-SER. ALTERATION (1 to 10)	PYRITE (Low to High)	COMMENTS
504' (153.6m)	523' (159.4m)	Volcanic	.3	27.6	20.7	68.3	5	L(+)	highly fractured; abundant veinlets, py. content still low (+), noticeably altered but not completely altered or intensely altered
523' (154.5m)	535' (163.0m)	Monzonite Porphyry	.6	5.8	13.9	100	9.5?	L	intensely altered; gouge zones at 527' (160.6 531' (161.9m) and 534' (162.8m), little associate py.
535' (163.0m)	548.5' (167.2m)	Monzonite	1.4	3.8	15.0	14.5	2	L	535' (153m) to 542' (165.2m) largely unaltered at 542' (165.2m) more intense fracturing begins with associated alteration alongside veinlets and fractures
548.5' (167.2m)	553' (168.6m)	Altered Alaskite Porphyry	.7	1.4	2.9	/	4	L	most of feldspar phenocrysts altered soft and white; matrix seemingly little affected; pervasive type of sericite alteration
553' (168.6m)	555.5' (169.3m)	Monzonite Porphyry	/	8.6	8.6	21.7	2	L	minimal amounts of sericitization alongside veinlets
555.5' (169.3m)	572' (174.3m)	Volcanic	/	16.8	9.2	18.3	1	L	quite fractured with noticeable amounts of bleaching and alteration alongside veinlets and fractures; such zones are thin, however, and rock - as whole is not that altered
572' (174.3m)	580' (176.8m)	Monzonite	/	1.6	19.6	6.1	.5	LtoL(+)	minimal amounts of alteration along veinlets
580' (176.8m)	584' (178.0m)	Monzonite	/	1.7	12.5	25.3	3	LtoL(+)	patchy sericitization approx. 25% of rock altered; zone well fractured

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HOLE No. 80-1 LOGGED BY D. Gorc DATE May 25 - May 30, 1980 SHEET No. 4

INTERSECTION, ft. (m.)			QUARTZ VEINLETS	GYPSUM, ANHYDRITE		QTZ.-SER. BANDS	QTZ.-SER. ALTERATION	PYRITE	COMMENTS
From	To	Rock Type	No./m	WHITE No./m	CLEAR No./m	cm/m	(1 to 10)	(Low to High)	
584' (178.0m)	593.5' (180.9m)	Monzonite	1.0	.7	19.3	14.7	1	LtoL(+)	thin zones of alteration alongside veinlets remainder of rock unaltered
593.5' (180.9m)	598' (182.3m)	Monzonite	/	/	23.6	100	5	MtoH	strongly sericitized but not completely altered
598' (182.3m)	610' (185.9m)	Monzonite	1.7	3.3	6.4	42.2	4	MtoH	zones of intense alteration separated by essentially unaltered rock
610' (185.9m)	644.5' (196.4m)	Monzonite	.3	6.9	6.5	23.2	3	L(+)toM	zones of intense alteration separated by unaltered rock; such zones are generally no greater than 3' (.9m) wide
644.5' (196.4m)	651' (198.4m)	Altered Alaskite Porphyry and Alaskite Porphyry	/	3	10	61	6	L(-)	noticeably altered but not completely sericitized; patchy zones of alteration intermixed with unaltered rock
651' (198.4m)	690' (210.3m)	Monzonite	.1	1.4	4.8	19.2	2	L(+)toM	More abundant zones of alteration but zones are much thinner 2-3" (5cm-7.5cm); alteration zones are adjacent to veinlets; alteration zones have a higher py. content
690' (210.3m)	791.5' (241.2m)	Monzonite	.2	.3	2.9	2.9	.1	LtoM	largely unaltered; a few alteration zones to 2' (.6m) wide but most alteration zones 1"-2" (2.5cm-5cm) wide adjacent to veinlets; such zones are few in number
791.5' (241.2m)	804' (245.0m)	Igneo-fragmental	/	.3	1.8	/	/	L	unaltered

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HOLE No. 80-1 LOGGED BY D. Gorc DATE May 25 - May 30, 1980 SHEET No. 5

INTERSECTION, ft. (m.)			QUARTZ VEINLETS	GYPSUM, ANHYDRITE		QTZ.-SER. BANDS	QTZ.-SER. ALTERATION	PYRITE	COMMENTS
From	To	Rock Type	No./m	WHITE No./m	CLEAR No./m	cm/m	(1 to 10)	(Low to High)	
804'	862'	Monzonite	.2	.2	.8	3.4	.1	L(-)to	alteration zones are adjacent to veinlets
(245.0m)	(262.7m)							L(+)	and very thin; alteration is minimal; es-
									sentially unaltered 852'-852.5' (258.5m-
									259.8m) high kaolinite content (gouge?)
862'	882'	Igneo-fragmental	/	.3	2.4	/	/	L	essentially unaltered; perhaps some
(262.7m)	(268.8m)								extremely slight pervasive alteration
882'	895'	Monzonite	1.0	/	8.3	22.9	2	L(+)toM	thin zones of alteration alongside fractures;
(268.8m)	(272.8m)								more abundant than above but rock is still
									for the most part unaltered
895'	906'	Monzonite	/	.3	.6	/	/	M	unaltered
(272.8m)	(276.1m)								
906'	923.5'	Igneo-fragmental	.2	2.0	/	5.6	.1	MtoM(+)	essentially unaltered only a few thin zones
(276.1m)	(281.5m)								of alteration adjacent to some veinlets
923.5'	929'	Bostonite	/	2.9	/	/	/	L(+)	unaltered
(281.5m)	(283.2m)	Porphyry							
929'	993'	Monzonite	.2	.3	.8	/	/	L(+)toM	unaltered
(283.2m)	(302.7m)								
993'	996'	Bostonite	2.2	2.2	/	/	/	L(+)toM	unaltered
(302.7m)	(303.6m)	Porphyry							
996'	1002'	Monzonite	/	/	5	/	/	L(+)toM	unaltered
(303.6m)	(305.4m)								
1002'	1027'	Bostonite	/	.5	/	/	/	L(+)toM	unaltered
(305.4m)	(313.0m)	Porphyry							

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HOLE No. 80-1 LOGGED BY D. Gorc DATE May 25-May 30, 1980 SHEET No. 6

INTERSECTION, ft. (m.)			QUARTZ VEINLETS	GYPSUM, ANHYDRITE		QTZ.-SER. BANDS	QTZ.-SER. ALTERATION	PYRITE	COMMENTS
From	To	Rock Type	No./m	WHITE No./m	CLEAR No./m	cm/m	(1 to 10)	(Low to High)	
1027'	1037'	Monzonite	6	1	6	/	/	L(+)toM	Unaltered
(313.0m)	(316.1m)								
1037'	1040'	Bostonite	/	3.3	/	/	/	L(+)toM	unaltered
(316.1m)	(317m)	Porphyry							
1040'	1043'	Monzonite	1.1	1.1	4.4	/	/	L(+)toM	unaltered
(317m)	(317.9m)								
1043'	1044.5'	Bostonite	4	/	/	/	/	L(+)toM	unaltered
(317.9m)	(318.4m)	Porphyry							
1044.5'	1103.5'	Monzonite	.4	.2	.4	/	/	L(+)	unaltered
(318.4m)	(336.3m)								
1103.5'	1118'	Igneo-fragmental	/	.9	1.6	/	/	L(+)toH	Unaltered
(336.3m)	(340.8m)								
1118'	1120.5'	Igneo-fragmental	/	4.3	/	100	6	MtoH	noticeably altered but not intensely; highly fractured
(340.8m)	(341.5m)								
1120.5'	1141'	Igneo-fragmental	/	1.1	/	/	/	L(+)toH	unaltered
(341.5m)	(347.8m)								
1141'	1145'	Mixed Rock	/	2.7	/	100	9	L(+)toM	intensely altered
(347.8m)	(348.9m)	Alaskite							
		Porp. +							
		Microtonalite							
1145'	1193'	"	/	.1	1.0	/	2	L(+)toM	small amounts of pervasive alteration; some
(348.9m)	(363.6m)								feldspar phenocrysts sericitized;
									does not have altered appearance;
									alteration of pervasive type

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INTERSECTION, ft. (m.)			QUARTZ VEINLETS	GYPSUM, ANHYDRITE		QTZ.-SER. BANDS	QTZ.-SER. ALTERATION	PYRITE	COMMENTS
From	To	Rock Type	No./m	WHITE No./m	CLEAR No./m	cm/m	(1 to 10)	(Low to High)	
1193'	1225'	Mixed Rock							
(363.6m)	(373.4m)	Alaskite	/	.4	1.7	/	3	L(+)toM	slightly more altered than above but
		Porphyry +							not completely altered; alteration of
		Micro-tonalite							pervasive type
1225'	1242'	"	/	/	1.2	25	4	L(+)toM	patchy but more intense alteration; than
(373.4m)	(378.6m)								above; rock not completely sericitized;
									alteration of pervasive type
1242'	1282'	"	/	.9	.2	/	3	MtoH	noticeable decrease in alteration from
(378.6m)	(390.7m)								above section; gouge zones 1257' (383.1m),
1282'	1302'	"	/	.2	.3	/	1	L(+)toM	1258' (383.5m) small amounts of pervasive
(390.7m)	(396.8m)								alteration; alteration of pervasive type
1302'	1367'	"	.2	.1	.9	/	/	L(+)toM	unaltered
(396.m)	(416.7m)								
1367'	1375.5'	"	.4	.4	/	/	.5	L(+)toM	small amount of pervasive alteration
(416.7m)	(419.1m)								
1375.5'	1387'	"	/	.3	/	100	8?	L(+)	intensely altered but seemingly predominantly
(419.1m)	(422.8m)								kaolinite; diss. galena and sphalerite com-
									mon
1387'	1391.5'	"	/	/	2.3	/	.5	LtoL(+)	minimal amounts of pervasive alteration
(422.8m)	(424.1m)								
1391.5'	1393'	"	/	1.5	/	100	8?	LtoL(+)	intensely altered; predominantly kaolinite?;
(424.1m)	(424.6m)								contains $\frac{1}{2}$" (1.2cm) vein with coarse py. -
									galena - sphalerite

J. R. WOODCOCK CONSULTANTS LTD. PROPERTY Whiteman

HOLE No. 80-1 LOGGED BY D. Gorc DATE May 25 - May 30, 1980 SHEET No. 8

INTERSECTION, ft. (m.)			QUARTZ VEINLETS	GYPSUM, ANHYDRITE		QTZ.-SER. BANDS	QTZ.-SER. ALTERATION	PYRITE	COMMENTS
From	To	Rock Type	No./m	WHITE No./m	CLEAR No./m	cm/m	(1 to 10)	(Low to High)	
1393'	1397'	Mixed Rock	/	/	/	/	.5	LtoL(+)	minimal amounts of pervasive alteration
(424.6m)	(425.8m)	Alaskite							
		Porphyry							
		and Micro-							
		tonalite							
1397'	1459'	"	.2	.05	.2	/	/	/	unaltered
(425.8m)	(444.7m)								
1459'	1477'	"	.4	/	2.5	/	.5	LtoL(+)	minimal amounts of pervasive alteration
(444.7m)	(450.2m)								
1477'	1532.5'	"	.3	.6	.1	/	/	LtoL(+)	unaltered
(450.2m)	(467.1m)								
1532.5'	1637'	"	.1	.2	.3	/	/	L(-)toL	unaltered; occasional sericitized
(467.1m)	(498.9m)								phenocrysts of feldspar, some sections 1-2'
									(.3m-.6m) slightly more altered
1637'	1643'	"	1.5	1.3	/	/	.5	LtoL(+)	slight pervasive alteration; a few feldspar
(498.9m)	(500.8m)								phenocrysts
1643'	1652'	"	/	1.5	/	100	7?	NIL	gouge @ 1644' (501.0m) and 1649' (502.6m)
(500.8m)	(503.5m)								zone seemingly mostly kaolinite
1652'	1672'	"	1.1	.8	/	/	2	LtoL(+)	fairly strong pervasive alteration
(503.5m)	(509.6m)								
1672'	1685.5'	"	2.4	1.2	/	100	7??	L	seemingly predominantly kaolinite; can see
(509.6m)	(513.7m)								small amounts of sericite; small amounts of
									diss. galena and sphalerite

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HOLE No. 80-1 LOGGED BY D. Gorc DATE May 25 - May 30, 1980 SHEET No. 9

INTERSECTION, ft. (m.)			QUARTZ VEINLETS	GYPSUM, ANHYDRITE		QTZ.-SER. BANDS	QTZ.-SER. ALTERATION	PYRITE	COMMENTS
From	To	Rock Type	No./m	WHITE No./m	CLEAR No./m	cm/m	(1 to 10)	(Low to High)	
1685.5' (513.7m)	1703' (519.0m)	Mixed Rock Alaskite and Micro-tonalite.	1.5	.4	/	/	1	L	slight pervasive alteration
1703' (519.0m)	1715' (525.7m)	"	/	.1	/	100	7?	L	intensely altered but seemingly predominantly kaolinite
1715' (527.7m)	1751' (533.7m)	"	1.6	.2	/	/	.5	L	minimal amounts of pervasive alteration
1751' (533.7m)	1764' (537.7m)	"	1.3	.8	/	/	3	L	strong pervasive alteration
1764' (537.7m)	1817' (553.8m)	"	.3	/	/	/	/	L	unaltered
1817' 9553.8m)	1826' (556.6m)	"	/	/	/	/	.5	L	minimal amounts of pervasive alteration
1826' (556.6m)	1847' (562.97m)	"	.3	/	/	/	/	/	unaltered

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HOLE No. 80-2 LOGGED BY D. Gorc DATE May 25- May 30, 1980 SHEET No. 1

INTERSECTION, ft. (m.)			QUARTZ	GYPSUM, ANHYDRITE		QTZ.-SER.	QTZ.-SER.	PYRITE	
From	To	Rock Type	VEINLETS No./m	WHITE No./m	CLEAR No./m	BANDS cm/m	ALTERATION (1 to 10)	(Low to High)	COMMENTS
o	64'	Overburden							
	(19.5m)								
64'	151'	Casing							
(19.5m)	(46.0m)								
151'	158'	Volcanic	?	?	?	?	?	H	altered to some extent but too broken
(46.0m)	(48.1m)								up to decipher (some Chloritization?)
0	354'	Casing							
	(107.8m)								
354'	375'	Volcanic	/	7.2	/	/	.5	H	
(107.8m)	(117.0m)								
375'	378'	Volcanic	2.2	8.9	/	33.8	9	H(+)	
(114.6m)	(115.2m)								
378'	384'	No core	/	/	/	/	/	/	
(115.2m)	(117.0m)								
384'	402'	Monzonite	?	?	?	100	9	L(+)toH	altered to point where original texture
(117.0m)	(122.5m)								is completely altered; cannot count
									veinlets since core is too broken up
402'	425'	Monzonite	.4	8.2	.7	27.9	8	LtoL(+)	scattered 1'-2' (.3m-.6m) zones of intense
(122.5m)	(129.5m)								alteration plus thinner 2"-3" (5cm-7.5cm)
									zones of intense alteration alongside veinlet
425'	433.5'	Igneo-fragmental	.8	7.7	4.6	/	/	LtoH(+)	essentially unaltered
(129.5m)	(132.1m)								

J. R. WOODCOCK CONSULTANTS LTD. PROPERTY Whiteman

HOLE No. 80-2 LOGGED BY D. Gorc DATE May 25 - May 30, 1980 SHEET No. 2

INTERSECTION, ft. (m.) From	To	Rock Type	QUARTZ VEINLETS No./m	GYPSUM, ANHYDRITE WHITE No./m	GYPSUM, ANHYDRITE CLEAR No./m	QTZ.-SER. BANDS cm/m	QTZ.-SER. ALTERATION (1 to 10)	PYRITE (Low to High)	COMMENTS
433.5' (132.1m)	583' (147.8m)	Monzonite	.03	5.9	.8	20.4	4	Low(-)to Low(+)	patchy, irregular alteration; zones of intense sericite alteration separated by essentially unaltered rock.
483' (147.8m)	492' (149.9m)	Alaskite Porph.	.9	1.4	2.4	/	3	M	slight but noticeable pervasive alteration; patchy; locally alteration more intense
492' (149.9m)	503.5' (153.4m)	Monzonite	.6	2.6	6.6	13.1	2	L(+)toM	thin zones of bleaching and alteration alongside veinlets; patchy, irregular alteration
503.5' (153.4m)	505.5' (154.0m)	Alaskite Porph.	/	1.7	.5	/	4	M	patchy sericitization; a few greenish sericitized feldsopar phenocrysts
505.5' (154.0m)	522' (159.1m)	Igneo-fragmental	/	3.7	.6	6.0	5	MtoH	thin 1" (2.5cm) zones of bleaching adjacent to veinlets
522' (159.1m)	557' (169.7m)	Monzonite	.8	2.0	2.4	30.2	4	MtoH	thin zones of alteration adjacent to veinlets separated by essentially unaltered rock
557' (169.7m)	567' (172.8m)	Igneo-fragmental	1.3	2.2	/	100	8	MtoH	first 5ft. (1.5m) is not intensely altered; remainder is intensely altered and fractured
567' (172.8)	618' (188.3m)	Igneo-fragmental	3.9	1.8	.06	100	10	MtoH	very intensely altered to point where original texture completely obliterated; includes qtz. stockwork 603.5' to 605' (183.9m to 174.4m) where not all of the qtz. veinlets were counted.

J. R. WOODCOCK CONSULTANTS LTD. PROPERTY Whiteman

HOLE No. 80-2 LOGGED BY D. Gorc DATE May 25 - May 30, 1980 SHEET No. 3

INTERSECTION, ft. (m.)			QUARTZ VEINLETS	GYPSUM, ANHYDRITE		QTZ.-SER. BANDS	QTZ.-SER. ALTERATION	PYRITE	COMMENTS
From	To	Rock Type	No./m	WHITE No./m	CLEAR No./m	cm/m	(1 to 10)	(Low to High)	
618' (188.3m)	623' (189.9m)	Igneo-Fragmental	/	/	/	/	/	Nil	very high kaolinite content; contains small scale fault??
623' (189.9m)	634' (193.2m)	Igneo-fragmental	4.2	.6	/	100	10	L(+)toM	Intensely altered zone continues; difficult to see veinlets; py content diminishes
634' (193.2m)	796' (242.6m)	Igneo-fragmental	12.9	1.0	/	100	7	L(+)toM	intensity of alteration varies but overall unit is still quite altered; veinlets are very thin and difficult to count; includes zones of qtz. stockwork
796' (242.6m)	870' (265.1m)	Mixed Rock microtonalite and alaskite porphyry	.04	1.8	.1	/	1	LtoM	unit has slight pervasive alteration which diminishes deeper into the hole; some minor sericitization along some veinlets
870' (265.1m)	887' (270.m)	Alaskite Porphyry	.6	.4	.6	/	1	LtoM(-)	slight pervasive sericitization in which occasional feldspar phenocrysts are sericitized; little alteration along veinlets
887' (270.3m)	892' (271.9m)	Alaskite Porphyry	/	1.9	/	60	5	LtoM(-)	noticeably stronger pervasive alteration; 60% of rock sericitized; patchy alteration; altered zones are dark grey
892' (271.9)	932' (284.0m)	Alaskite Porphyry	.2	.7	.2	1.2	.5	LtoM(-)	very slight pervasive alteration; occasional thin alteration zones along some veinlets
932' (284m)	936' (285.2m)	Alaskite Porphyry	/	.8	.8	75	6	M(+)	noticeably more intensely sericitized; dark grey sericite alteration; 75% of rock altered

J. R. WOODCOCK CONSULTANTS LTD. PROPERTY Whiteman

HOLE No. 80-2 LOGGED BY D. Gorc DATE May 25 to May 30, 1980 SHEET No. 4

INTERSECTION, ft. (m.) From	To	Rock Type	QUARTZ VEINLETS No./m	GYPSUM, ANHYDRITE WHITE No./m	CLEAR No./m	QTZ.-SER. BANDS cm/m	QTZ.-SER. ALTERATION (1 to 10)	PYRITE (Low to High)	COMMENTS
936'	1000'	Alaskite	.4	.3	.2	7.0	2	LtoL(+)	slight increase in amount of pervasive
(285.2m)	(304.8m)							Locally	alteration; a few short sections of intense
								M	alteration
1000'	1040'	Mixed Rock	.3	1.2	.1	7.6	.1	LtoL(+)	essentially unaltered with the exception
(304.9m)	(316.9m)	Alaskite +							of one zone of strong but not intense
		Microtonalite							alteration 1027' to 1032' (313.0m to 314.5m);
									some very minimal pervasive alteration.
1040'	1061'	Alaskite	.3	.5	/	100	7	M(+)	very strongly altered but not quite
(316.9m)	(323.3)								completely sericitized; alteration dark
									grey to med. grey
1061'	1085.5'	Alaskite	/	2.9	.1	9.3	1	LtoL(+)	patchy, irregular alteration primarily
(323.3m)	(330.8m)								adjacent to veinlets; minimal alteration
1085.5'	1102'	Altered	.2	.6	/	100	7	M	strongly altered but not intensely altered;
(330.8m)	(335.8m)	Alaskite							most of feldspar phenocrysts altered soft
		Porphyry							and white
1102'	1169'	Alaskite	.1	.9	/	2.2	1	L	1102' to 1122' (33.58m to 341.9m) contains
(335.8m)	(356.3m)								1'-2'(.3m-.6m) zones of fairly strong
									pervasive alteration; remainder of unit has
									only minimal pervasive alteration; alteration
									diminishes downwards
1169'	1189'	Mixed Rock	/	1.1	/	/	/	LtoL(+)	unaltered
(356.3m)	(362.4m)	Alaskite and							
		microtonalite							

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PROPERTY Whiteman

HOLE No. 80-2 LOGGED BY D. Gorc DATE May 25 - May 30, 1980 SHEET No. 5

INTERSECTION, ft. (m.) From	To	Rock Type	QUARTZ VEINLETS No./m	GYPSUM, ANHYDRITE WHITE No./m	GYPSUM, ANHYDRITE CLEAR No./m	QTZ.-SER. BANDS cm/m	QTZ.-SER. ALTERATION (1 to 10)	PYRITE (Low to High)	COMMENTS
1189'	1207'	Mixed Rock	.2	.5	/	/	.1	LtoL(+)	essentially unaltered; very minimal amounts
(362.4m	(367.89m)	Alaskite							of pervasive sericitization; scattered
		Porphyry							feldspar phenocrysts are sericitized
		and micro-							
		tonalite							

LCP
WHITEMAN III
LCP
WHITEMAN 2
WHITEMAN I
WHITEMAN CREEK ROAD
WHITEMAN CREEK
LIMITS OF GLACIAL OUTWASH
DDH 80-2
DDH 80-1
BOUNDARY OF HIGH PYRITE ZONE
QUARTZ STOCKWORK AREA
KENNCO CREEK

LEGEND

QUATERNARY
- 12 Fe-Mn cemented stream gravel
- 11 Glacial outwash
- 10 Boulder till

KAMLOOPS (?) VOLCANICS
- 9 Andesites some felsites

WHITEMAN STOCK
- 6 Rhyolite porphyry
- 7 Latite porphyry
- 6 Mixed rock (breccia)
- 8 Monzonite porphyry
- 4 Transition rock
- 5 Orthoclase porphyry (syenite)

MESOZOIC INTRUSIONS
- 2 Granodiorite

NICOLA (?) VOLCANICS
- 1 Andesites with epidote

- Approximate contact
- Boundary of high pyrite zone
- Limits of glacial outwash
- (8) Outcrop
- Passable road / Overgrown road
- Creek
- Survey station
- Fault
- Diamond drill hole
- Resistivity Ridge

ESSEX MINERALS COMPANY

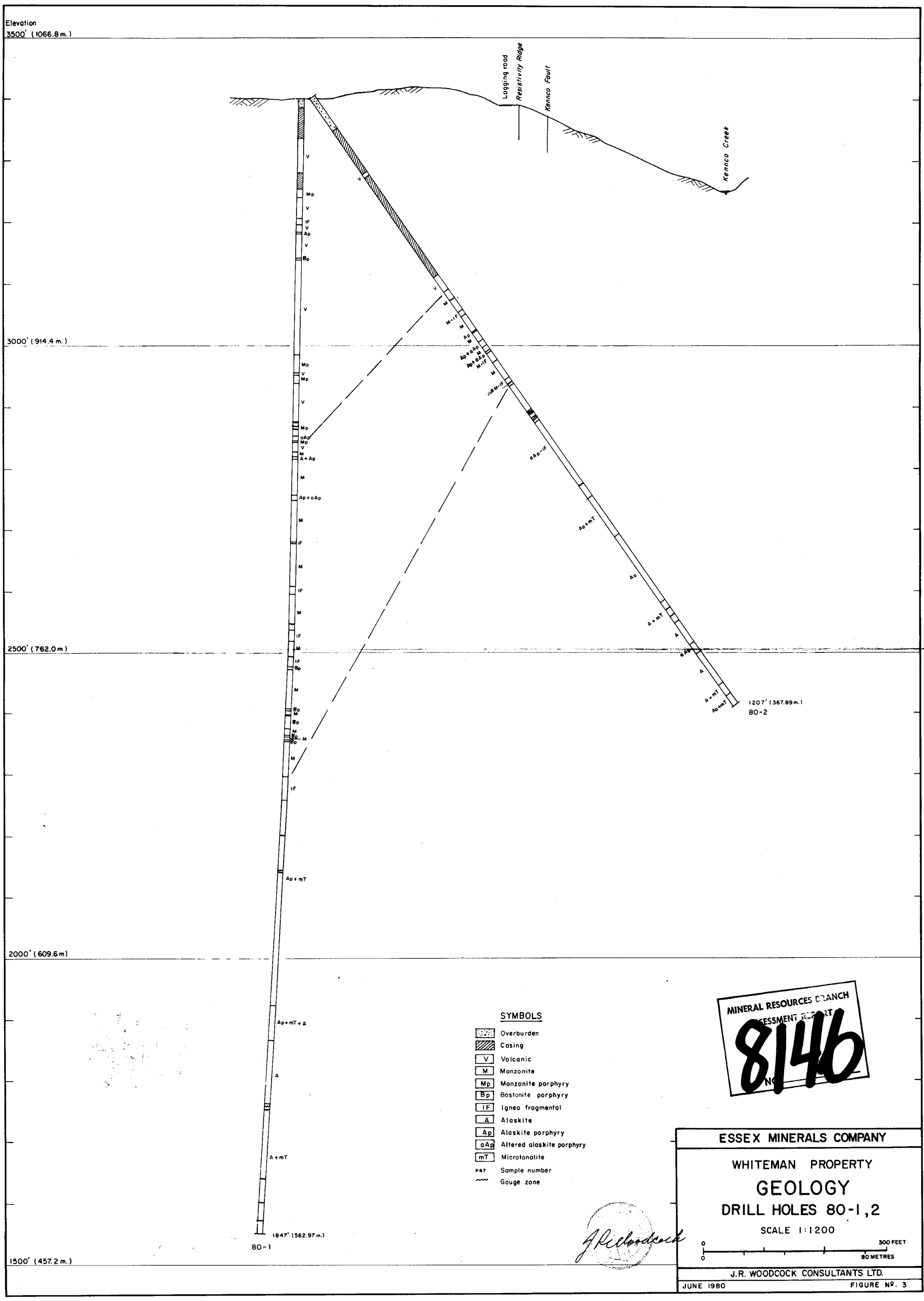
WHITEMAN PROPERTY

GEOLOGY

0 500 1000 FEET
0 100 200 300 METRES

J. R. WOODCOCK CONSULTANTS LTD.

DATE : JUNE 1979 AMENDED JUNE 1980 FIGURE Nº. 2


Elevation
3500' (1066.8 m.)
3000' (914.4 m.)
2500' (762.0 m)
2000' (609.6 m)
1500' (457.2 m.)
Logging road
Resistivity Ridge
Kennco Fault
Kennco Creek
V
Mp
V
IF
V
Ap
V
Bp
V
Mp
V
Mp
V
Mp
aAp
Mp
V
M
A + Ap
M
Ap + aAp
M
IF
M
IF
M
IF
M
Bp
M
Bp
M
Bp
M
Bp
Bp
M
IF
Ap + mT
1847' (562.97 m.)
80-1
Ap+mT+A
A
A+mT
M
M-IF
M
Ap
M
Ap + aAp
M
Ap + aAp
M-IF
M
aB M-IF
aAp-IF
Ap+mT
Ap
A + mT
A
aAp
A
A + mT
Ap+mT
1207' (367.89 m.)
80-2
SYMBOLS
Overburden
Casing
V Volcanic
M Monzonite
Mp Monzonite porphyry
Bp Bostonite porphyry
IF Igneo fragmental
A Alaskite
Ap Alaskite porphyry
aAp Altered alaskite porphyry
mT Microtonalite
P67 Sample number
Gouge zone
MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
8146
ESSEX MINERALS COMPANY
WHITEMAN PROPERTY
GEOLOGY
DRILL HOLES 80-1,2
SCALE 1:1200
0 300 FEET
0 80 METRES
J.R. WOODCOCK CONSULTANTS LTD.
JUNE 1980
FIGURE Nº. 3

Elevation

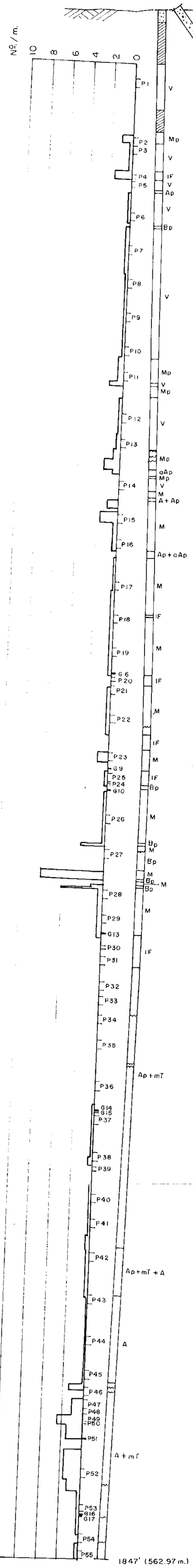
3500' (1066.8 m.)

3000' (914.4 m.)

2500' (762.0 m)

2000' (609.6 m)

1500' (457.2 m.)



SYMBOLS

- Overburden
- Casing
- V — Volcanic
- M — Monzonite
- Mp — Monzonite porphyry
- Bp — Bostonite porphyry
- IF — Igneo fragmental
- A — Alaskite
- Ap — Alaskite porphyry
- gAp — Altered alaskite porphyry
- mT — Microtonalite
- P67 — Sample number
- ~~~ — Gouge zone

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WHITEMAN PROPERTY

QUARTZ VEINLETS

SCALE 1:1200

0 300 FEET

0 80 METRES

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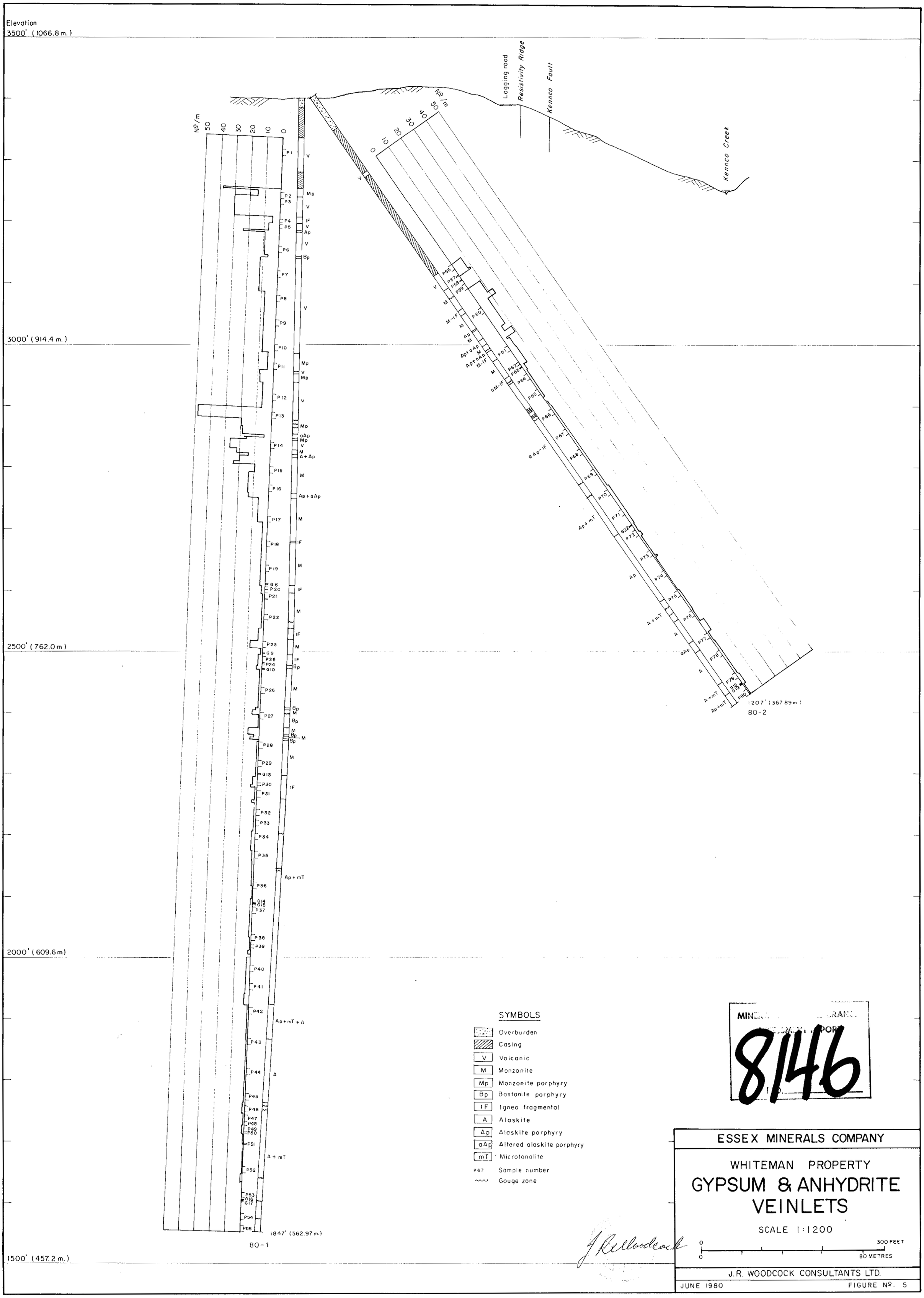
JUNE 1980 FIGURE No. 4



SYMBOLS

- Overburden
- Casing
- V — Volcanic
- M — Monzonite
- Mp — Monzonite porphyry
- Bp — Bostonite porphyry
- IF — Igneo fragmental
- A — Alaskite
- Ap — Alaskite porphyry
- gAp — Altered alaskite porphyry
- mT — Microtonalite
- P67 — Sample number
- ~~~ — Gouge zone

MINERAL ... BRANCH
ASSESSMENT REPORT
8146

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WHITEMAN PROPERTY

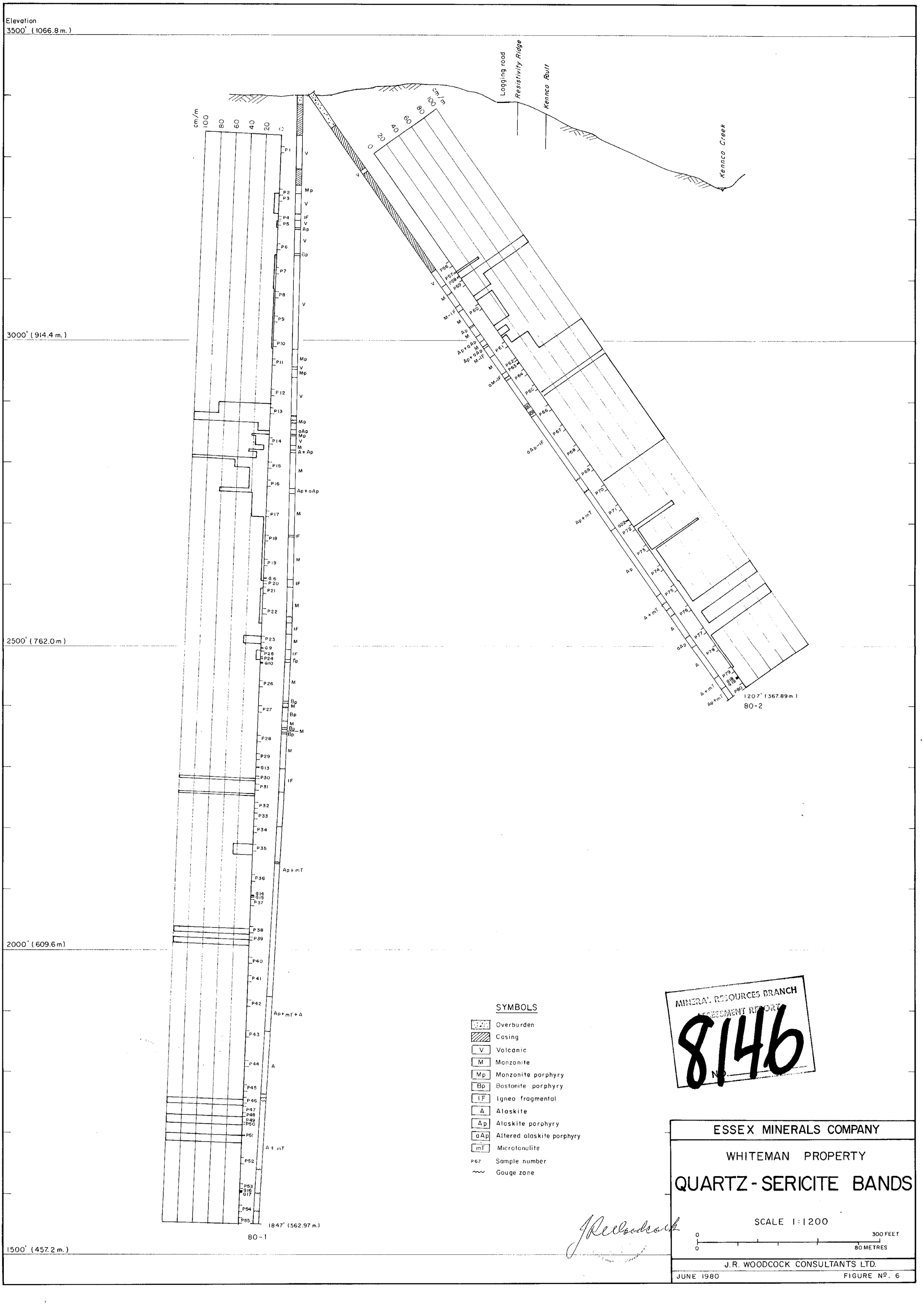
GYPSUM & ANHYDRITE VEINLETS

SCALE 1:1200

0 300 FEET
0 80 METRES

J.R. WOODCOCK CONSULTANTS LTD.

JUNE 1980 FIGURE No. 5



SYMBOLS

- Overburden
- Casing
- V — Volcanic
- M — Monzonite
- Mp — Monzonite porphyry
- Bp — Bostonite porphyry
- IF — Igneo fragmental
- A — Alaskite
- Ap — Alaskite porphyry
- aAp — Altered alaskite porphyry
- mT — Microtonalite
- P67 — Sample number
- Gouge zone

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WHITEMAN PROPERTY

QUARTZ-SERICITE BANDS

SCALE 1:1200

0 300 FEET
0 80 METRES

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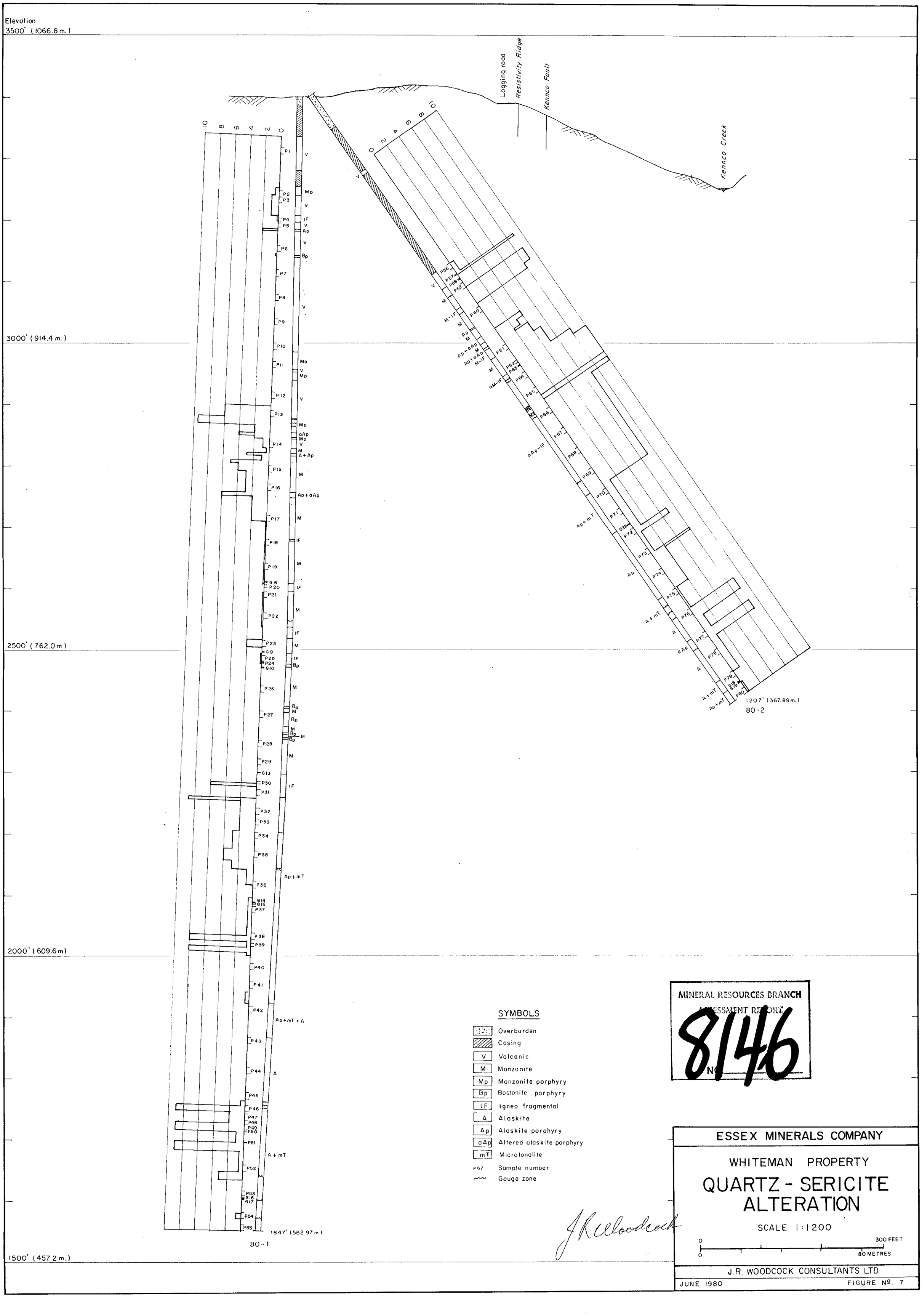
JUNE 1980 FIGURE Nº. 6



SYMBOLS

- Overburden
- Casing
- V — Volcanic
- M — Monzonite
- Mp — Monzonite porphyry
- Bp — Bostonite porphyry
- IF — Igneo fragmental
- A — Alaskite
- Ap — Alaskite porphyry
- gAp — Altered alaskite porphyry
- mT — Microtonalite
- P67 — Sample number
- Gouge zone

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WHITEMAN PROPERTY

QUARTZ - SERICITE ALTERATION

SCALE 1:1200

0 300 FEET
0 80 METRES

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JUNE 1980 FIGURE Nº. 7