810378

Report on Geological and Geochemical Work
Second EB Group
EB 1-13, 15-17; Rec. No. 32890-32905
Lat. 50°32'N Long. 127°37'W
Report by: Andrew E. Nevin, P. Eng. of Q
Minerals Corporation, and Garnet Exploratio
Ltd. on behalf of Marshall Creek Copper Min
Consolidated Altair Development Ltd. On wo
conducted during period: April 17-July 27.

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August 7, 1972.

REPORT ON GEOLOGICAL AND GEOCHEMICAL WORK

SECOND EB GROUP

EB 1 - 13, 15 - 17

Record Numbers 32890 - 32902 and 32903 - 32905

Latitude 50°32' N Longitude 127°37' W

NTS Map Sheet 92L/12E

Report By: Andrew E. Nevin, P. Eng. of Quintana Minerals Corporation, and Garnet Exploration Corporation Ltd. on behalf of Marshall Creek Copper Mines and Consolidated Altair Development Ltd.

On work conducted during the period April 17 - July 27, 1972.

August 7, 1972.

SUMMARY

On the sixteen EB claims Cretaceous sandstone crops out discontinuously on about half the area and Upper Bonanza fragmental andesites crop out on the other half. The Bonanza volcanics are sporadically altered to pyrite, kaolin, chlorite and other minerals. A few of the 22 rock chip geochemical samples returned anomalous values in mercury and fluorine and background values in copper, molybdenum, zinc and silver. Alteration and heavy metal content are considered to be products of deuteric processes related to the original vulcanism and not particularly to ore-forming processes.

INTRODUCTION

Terms of Reference

Quintana Minerals Corporation and Garnet Exploration Corporation Ltd. performed geological and geochemical work on the sixteen EB claims as part of an exploration program, which ran from April 17 through July 27, 1972. Work was conducted by Andrew E. Nevin and Cliff Banninger. The purpose of the work was to identify features indicative of large porphyry copper deposit.

Claims and Ownership

The claims are EB 1 through 13, 15 through 17, record numbers 32890 - 32902 inclusive and 32903 - 32905 inclusive, Nanaimo Mining Division. A Notice to Group filed on August 3, 1972 grouped these claims as the "Second EB Group". The claims are owned as to 50% by Marshall Creek Copper Mines Ltd. and as to 50% by Consolidated Altair Development Ltd.

Location and Access

The claims are located on Map Sheet 92L/12E, at latitude 50°32' N, longitude 127° 37' W. They are immediately north of Apple Bay on Holberg Inlet. Access is via boat, from Coal Harbour, or by foot through the bush from logging roads.

WORK DONE

Previous workers, in particular MacDonald Consultants Ltd. on behalf of a client, conducted a soil geochemical survey and mapped geology at 1000 feet to the inch. The work described in this report consisted of geologic mapping, with special emphasis on mapping of hydrothermal alteration facies, and rock geochemical sampling. The program on the EB claims was part of a program encompassing surrounding ground. In total the geologists spent 10 man days examining rocks. Twenty-two rock chip samples were analyzed for Mo, Cu, Zn, Ag, Hg and F. Thin sections were examined of seven of these rocks.

GEOLOGY

Outcrop on the claims is far less than 1%. The southern half of the area consists of Cretaceous sandstone, which is considered post-ore on Northern Vancouver Island. These rocks lie unconformably upon pre-ore rocks and dip gently to the south. Pre-ore rocks consist entirely of fragmental andesites and dacites of the Bonanza formation. Owing to the nature of these fragmental volcanics no information is available on the exact structure, that is the strike and dip, of subunits on the EB claims. Such structural information has to be interpolated from regional data, which suggest that subunits within the Bonanza strike northwest and dip moderately south. Again outcrop is too poor to allow identification of any fabric of significant faulting or fracturing or fracturing. A major regional fault does however extend in a 290°

direction along the south edge of the claims.

Alteration

The Bonanza volcanics locally contain pyrite, kaolin, diaspore, sericite, chlorite, and laumontite as alteration products. Typically these are present on the scale of one outcrop, that is 20 x 30 feet in area. They do not persist over large areas. In the most intense of these altered areas, pyrite reaches concentrations of 10%. Typical unaltered Bonanza volcanics contain 0.1 to 0.25% pyrite and minor traces, that is 5% kaolin and laumontite in small irregular veinlets. Specifically, the intensely altered outcrops are numbers 15035, 15037, 18031 and 18036, as shown on drawing 2.

GEOCHEMISTRY

Geochemical values on rock samples are shown in the Table. Inspection of the values indicates that nearly all are considered background. Insufficient data are available to establish with certainty a threshold value, however sample number 15035 may be considered anomalous in Hg, with a value of 3100 ppb and in F with a value of 1300 ppm. Clearly no pattern emerged from this work.

CONCLUSIONS

The combined results of this work indicate that spotty alteration products in the lower epizonal temperature range are present. These are considered to be results of deuteric processes and not results of hydrothermal ore forming processes of interest.

Attached:
Drawing 1-Property Location Map
Drawing 2-Geology and Geochemical Sample Locations
Declaration of Costs
Appendix: Thin Section Reports

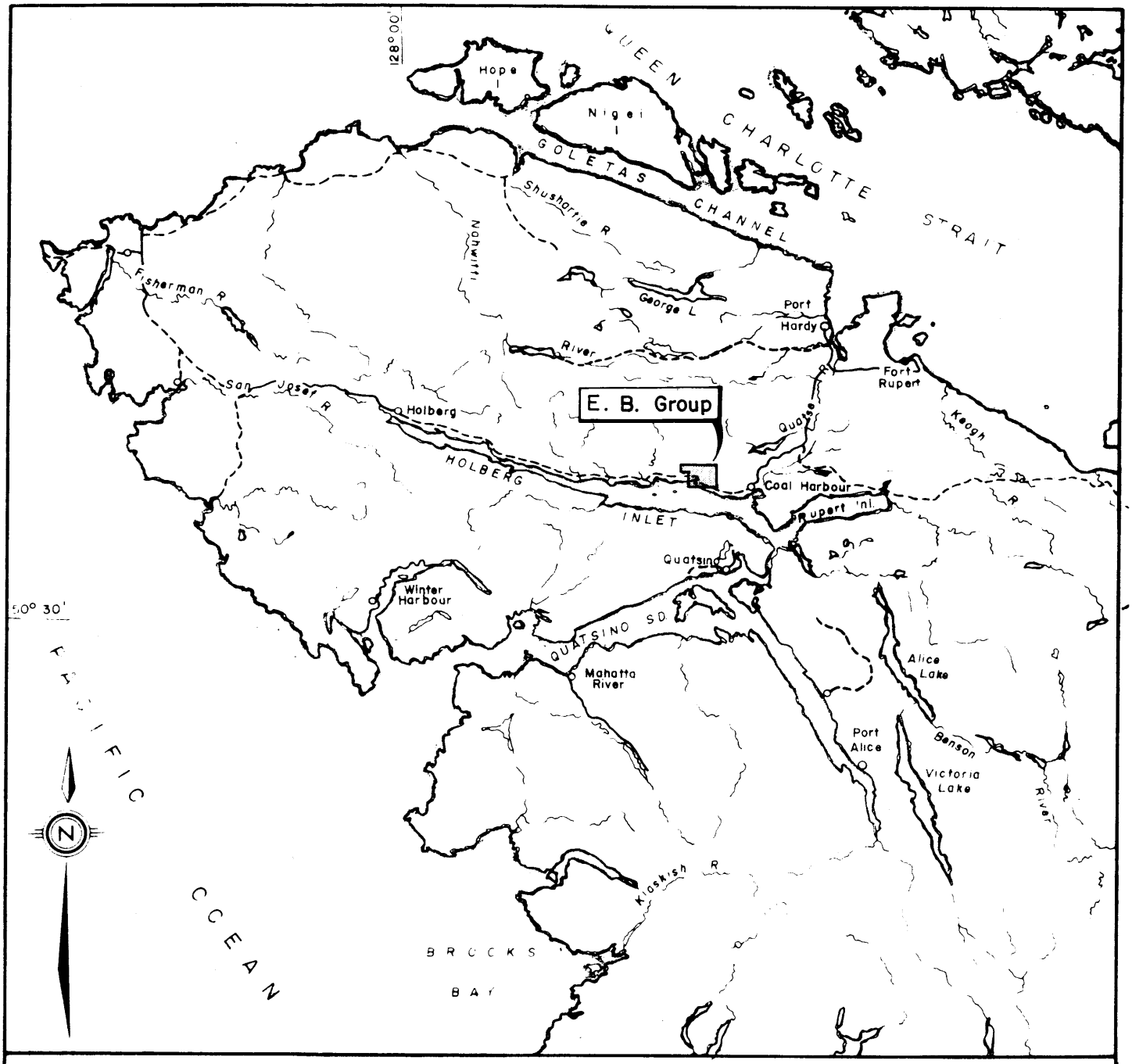
Respectfully submitted,

Andrew E. Nevin, P. Eng.

AEN/cc

TABLE - Rock Chip Geochemical Values

Sample No.	Mo ppm	Cu ppm	Zn ppm	Ag ppm	Hg ppb	F ppm	Thin Section
15034	0.4	37	65	0.3	30	280	
15035	0.4	58	64	0.4	3100	1300	X
15036	0.6	19	7	0.1	30	420	X
15037	1.3	59	55	0.5	30	900	X
15111	0.6	36	96	1.0	5	290	
18029	0.6	30	31	0.7	20	500	X
18030	0.4	6	27	0.5	20	525	
18031	0.7	31	81	1.0	20	450	
18032	0.5	21	77	1.6	20	500	
18033	0.7	46	85	1.0	20	475	
18034	0.5	54	62	1.5	30	365	
18035	0.7	18	128	1.2	20	750	
18036	0.4	117	14	0.7	110	550	X
18037	0.4	7	67	0.7	20	390	X
18038	0.8	39	55	0.8	30	380	X
18039	0.3	6	85	0.8	20	305	
18108	0.4	16	34	0.6	20	490	
18109	0.3	12	62	0.8	25	670	
18110	0.3	18	64	0.4	40	585	
18111	0.5	20	66	3.4	45	610	
18113	0.3	24	88	0.3	25	460	
18114	0.3	6	58	0.5	30	295	
18115	0.3	10	54	0.2	15	240	



"Second E. B. Group"

Holberg Inlet, Nanaimo M. D.

of

MARSHALL CREEK COPPER MINES LTD.

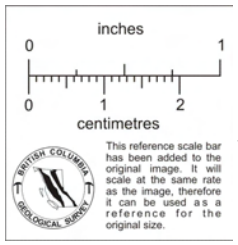
CONSOLIDATED ALTAIR DEVELOPMENT LTD.

PROPERTY LOCATION MAP

by

QUINTANA MINERALS CORPORATIONS

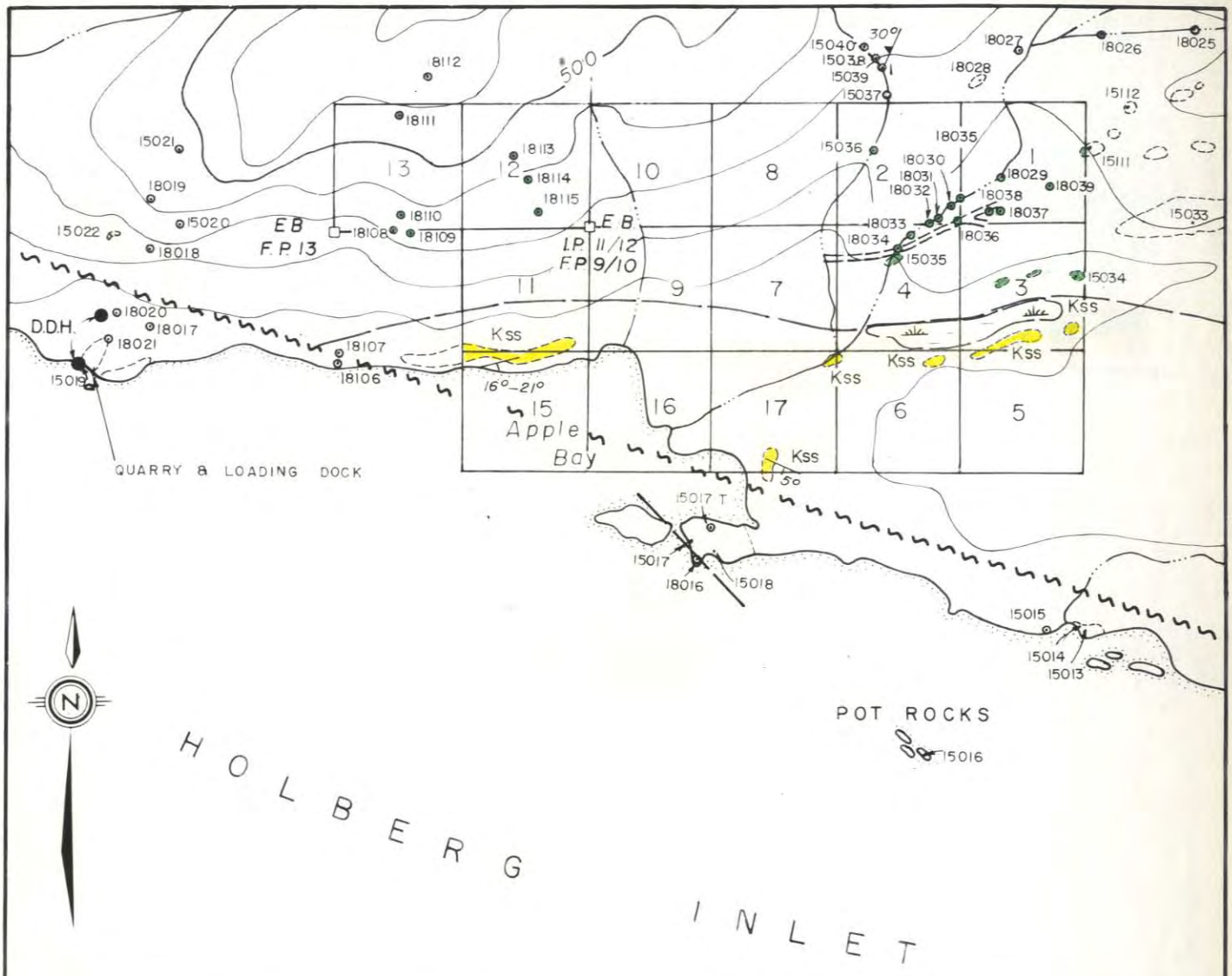
GARNET EXPLORATION CORP. LTD.



Andrew E. Nevin, P. Eng.

Scale 1 : 500,000

DRAWING 1



LEGEND

- Overburden or unmapped
- Kss — Cretaceous sandstones
- Fragmental andesites of Bonanza formation.
- ⊙ 18012 — Small outcrop and rock chip geochemical site.
- 16° — Strike and dip of beds.

inches
0 1
0 1 2
centimetres

This reference scale bar has been added to the original image. It will scale at the same rate as the image, therefore it can be used as a reference for the original size.

E.B. 1–13, 15–17 MINING CLAIMS
"Second E.B. Group"

Holberg Inlet, Nanaimo M.D.

of

MARSHALL CREEK COPPER MINES LTD.
CONSOLIDATED ALTAIR DEVELOPMENT LTD.

GEOLOGY AND GEOCHEMICAL SAMPLE LOCATIONS

by

QUINTANA MINERALS CORPORATIONS
GARNET EXPLORATION CORP. LTD.

Andrew E. Nevin, P. Eng.

Scale 1" = 4,000

DRAWING 2

DECLARATION

I, Andrew E. Nevin, P. Eng., of 962 Montroyal Blvd., North Vancouver, B.C. do solemnly declare that the following was expended on geological and geochemical work on the "Second EB Group":

Salaries		
A. E. Nevin, Geologist, April 20, 23, 25, 27, June 13, 1972 - 5 days @ $110.00 -	$ 550.00	
C. Banninger, Geologist, same dates, 5 days @ $ 60.00	$ 300.00	
D. Small, Technician, April 20, 23, 25 3 days @ $ 40.00	$ 120.00	
		$ 970.00
Office overhead @ 10%		97.00
Living expenses		
Room and board, 13 man-days @ $ 15.00		195.00
Vehicle cost, 5 days @ $ 15.00		75.00
Analytical Work		
22 geochemical analyses 2 $ 9.40		206.00
7 thin sections @ $ 12.00		84.00
Interpretation and Report		200.00
		$ 1,827.00
To be applied toward assessment work		$ 1,600.00

Andrew E. Nevin

APPENDIX

THIN SECTIONS

15035

The rock originally was an andesite with small euhedral plagioclase and hornblende phenocrysts in a progressively finer grained groundmass of plagioclase microlites and interstitial glass. The rock appears to have been auto-brecciated. Intense epizonal alteration has affected the rock.

Small pyrite anhedra are liberally disseminated throughout the rock. Glass, plagioclase, and hornblende have been altered to a mush of sericite and kaolin; often kaolin occurs as small patches enclosed in the sericitized pseudomorphs. Plagioclase phenocrysts, in addition, contain small, scattered diaspore crystals.

Pyrite is oxidized in portions of the rock.

Mineral percentages are estimated as: sericite 54%, diaspore 2%, pyrite 14%, kaolin 26%, leucoxene 1%, hisingerite 3%, sphalerite tr..

15036

The specimen originally was a dacite with large subhedral phenocrysts of plagioclase and hornblende in a chilled microcrystalline (partly glassy) matrix. Low epizonal alteration has been moderately strong.

Plagioclase phenocrysts, especially the crystal cores, are altered to microcrystalline delessite and hydromicas. One phenocryst contained fibrous sphene as well. Hornblende is replaced by delessite and quartz as well as hosting disseminated pyrite grains. The matrix is replaced by fine cherty quartz, delessite, and hydromicas; sphene is an accessory.

15037

The specimen originally was an andesite with scattered phenocrysts of plagioclase and hornblende in random orientation in a microcrystalline (chilled) groundmass. Epizonal alteration has been intense.

Plagioclase phenocrysts are wholly altered to fine-grained sericite studded with larger calcite anhedra. Hornblende has been replaced by prochlore and quartz; often the pseudomorphs are studded with pyrite grains. The matrix is a fine-grained mush of sericite with less chlorite and small earthy clots of epidote.

cont'd..

15037 cont'd..

Minerals are present in the following estimated amounts: sericite 56%, calcite 12%, pyrite 4%, prochlore 18%, leucoxene 1%, epidote 2%, quartz 7%, apatite tr..

18029

The specimen originally was a dacite with scattered subhedral phenocrysts of basaltic hornblende and plagioclase in a chilled, partly glassy, microcrystalline matrix. Epizonal alteration has been strong.

Plagioclase phenocrysts are wholly altered to kaolin which may contain small corroded diaspore grains. These pseudomorphs may be remmed with sericite; smaller plagioclase crystals tend to be replaced by sericite. Hornblende is replaced by quartz and outlined with dust-like hematite inclusions. The matrix is partly silicified; the new quartz is fine grained and interstitial sericite is abundant. Pyrite is widely disseminated throughout the rock.

Mineral percentages are estimated as: sericite 41%, quartz 38%, kaolin 12%, pyrite 8%, sphene tr., apatite tr., diaspore tr., hematite tr..

18036

The specimen appears to have been a tuff, probably of quartz latite composition. Scattered catacrysts of quartz, orthoclase, plagioclase, and hornblende occur, with rare xenoliths, in a microcrystalline matrix which probably originally consisted of tiny, angular quartz and feldspar grains. Epizonal alteration has been strong.

Orthoclase catacrysts tend to be fresh, but plagioclase is altered to sericite and hydromicas. Hornblende is replaced by quartz stained with hisingerite derived from disseminated pyrite. The altered plagioclase catacrysts also are stained from adsorbed hisingerite.

Irregular voids in the fabric are usually filled with coarse chalcedonic quartz. They may remain empty and be lined with sericite.

18037

The rock originally was a glassy volcanic, possibly of dacitic composition. Despite later intense, low epizonal alteration, original textures may be clearly seen. Phenocrysts of plagioclase were few. Glassy fragments are scattered along the original banding of a glassy matrix.

The glass is wholly altered to sericite with interstitial quartz where it was streaky; glass fragments tend to alter to microcrystalline prochlore and sericite. Plagioclase phenocrysts are only partially sericitized; less often they

18037 cont'd..

are veined with prochlore. Small clots of microcrystalline, almost earthy epidote are scattered in the matrix. Tiny pyrite grains are also widely disseminated. In places they are oxidized to hisingerite which tends to stain the rock nearby.

18038

The specimen is a basalt composed of small phenocrysts of labradorite and twinned augite in a serate porphyritic texture. The matrix ultimately is cemented by tiny angular chips of plagioclase and augite. Magnetite is an abundant accessory.

Alteration has only been deuteric. Hornblende occurred sparingly as euhedral phenocrysts, also occasionally as uralite mantles on augite. It is wholly altered to prochlore. Locally plagioclase is veined with prochlore and calcite.

Minerals are present in the following estimated amounts: plagioclase 55%, augite 14%, magnetite 6%, prochlore 22%, sphene 1%, calcite 2%, quartz tr., apatite tr..