PROGRESS REPORT

1.7.1973 TO 22.10.1973

EXPLORATION LICENCE NO. 689

REDBANK, NORTHERN TERRITORY

TRIAKO MINES N.L.

NOVEMBER, 1973

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SUMMARY

During the period 1st July to 22nd October, 1973 Triako Mines N.L. continued its intensive exploration programme over Exploration Licence No. 689, Redbank, Northern Territory.

Detailed geological mapping was carried out to gain a better understanding of the relationship of the known mineralization to the geological sequence with a view to aid in determining areas of potential for the discovery of additional mineralization.

A comprehensive summary report assimilating the exploration data available on the Redbank area from exploration programmes carried out by companies previously working in the area, principally Placer Prospecting and Harbourside Oil-Newmont Pty. Ltd., was compiled by Mr. E.B. Bell, Consulting Geologist and the possibilities for increasing the known ore reserves were outlined.

Regional geological mapping and a helicopter based reconnaissance survey were undertaken to aid in refining the regional geological picture. A professional prospector was also engaged in the reconnaissance work to aid in outlining additional prospects.

Extensive stream, soil and auger drilling geochemical sampling and geophysical surveys comprising a Barringer Input survey, gradient array and dipole-dipole induced polarization coverage, mise-a-la-masse and ground magnetic surveys have been carried out to test the geological concepts and aid in selecting drill targets.

Three diamond drill holes totalling 1,420 feet of drilling have been completed but no ore grade mineralization was intersected.

The exploration work was carried out by a team of professional staff comprising Mr. J.A.J. Smit, senior geologist, Dr. H.B. van den Heuval, chief geologist, Mr. A. Fleming and Mr. M. Spadafora, geologists, Mr. M. Critchley and Mr. V.L.R. Furlong, geophysicists, Mr. R. Fidler, geochemist and Mr. E.B. Bell, consulting geologist, assisted by a number of field technicians and assistants.

GEOLOGY

Geologic mapping suggests the following subdivision for the stratigraphic sequence at Redbank:

Masterton Sandstone	Ptn	Quartz sandstone
Pungalina Member	Ptu	Flaggy, red-brown sandstone and siltstone.
Hobblechain Rhyolite	Pth	Agglomerate, conglomerate, locally rhyolite flows.

Gold Creek Volcanics	Ptg_5	Upper trachyte
	Ptg_4	Sandstone - tuff
	Ptg_3	Middle Trachyte
	Ptg_2	Agglomerate, volcanic mud and breccia
	Ptg_1	Lower trachyandesite
Wollogorang Formation	Pto	Dolomite, dolomitic siltstone grading into sandstone phases. Locally trachyte flows and sills.
Settlement Creek Volcanics	Pte	Andesite, trachyandesite, trachyte.

The Wollogorang Formation and its contact with the Gold Creek volcanics have been studied in detail and a number of sections have been measured.

The Wollogorang Formation is a unit consisting predominantly of interbedded grey and purple dolomite, purple, grey and brown dolomitic siltstone, purple siltstone, quartz siltstone and lithic siltstone. Distinctive rock types within the formation include a hard grey, dolomitic siltstone containing nodules (up to 15 cm) of crystalline dolomite, spherical stromatolite colonies up to 1.3m in diameter, grey dolomite which in section exhibits wavey laminations and a sequence of interbedded purple dolomite and dolomitic siltstone with thin (up to 8 cm) interbeds of massive and vesicular

trachyte. The latter is often contorted and brecciated, presumably by pre-diagenetic slumping. In the area east of the Jump Up, this unit is a marker bed. It has not been observed however in the sections measured along Twelve Mile. It is evident that there were phases of volcanism during Wollogorang time and it is possibly significant that this volcanic activity was confined to a strip trending through Redbank Mine and China Workings.

The lower sequence of the Wollogorang Formation which conformably overlies the Settlement Creek Volcanics, is characterized by dolomite, dolomitic siltstone and siltstone which infers a low energy, sub-aqueous depositional environment. In the upper sequence however, sandstone units become more common and the rock type conformably underlying the Gold Creek volcanics is usually a massive, current bedded sandstone. It appears that prior to the onset of volcanism which produced the Gold Creek Volcanics, the hinterland became unstable and sand filled the basin.

The Wollogorang Formation is not thought to exhibit lithologic consistency over great distances. Beds appear to vary in thickness and lens out. Correlation of units in the sections measured is difficult.

Deposition of the Wollogorang Formation abruptly ceased with the onset of the Gold Creek volcanism. The Wollogorang Formation sediments are folded into open symmetrical synclines and anticlines with amplitudes usually in excess of 500m. Dips rarely exceed 25^{0}.

The Gold Creek Volcanics form essentially a strongly layered, horizontal sequence. The volcanics have been affected by the structural deformation which broadly folded the Wollogorang Formation. The lower part of the Gold Creek Volcanics is folded conformably with the Wollogorang but folding dies out in the middle and upper part of the volcanics. There is a suggestion that basement fractures penetrated the Wollogorang Formation but have been stopped and are partly obliterated by the layered volcanic sequence. The strong E-W trend which carried the Redbank-Bluff mineralization is hardly expressed within the volcanic sequence at the surface. The trend has been fragmented and an oblique E-W joint pattern has been developed. Mineralization appears to be localized by cross-cutting joints or faults.

At the top of the Gold Creek Volcanic sequence a rhyolitic unit has been recognized as the last volcanic event. There is some suggestion that the mineralization is related to this event. At several places, secondary copper actually occurs within a rhyolitic agglomerate.

The Pungalina Member, which conformably overlies the rhyolitic unit, is apparently later than the mineralization. At Camp Valley, this unit completely conceals the underlying mineralized breccia pipe.

A helicopter supported reconnaissance survey has supplied valuable background information about the regional stratigraphy.

A reconnaissance traverse over the Hobblechain rhyolite in the northwest quadrant of the Exploration Licence has resulted in a sequence similar to that recognized in the Redbank area.

The Packsaddle Granite and adjacent deposits of the Wollogorang Formation and The Gold Creek Volcanics have been checked by Mr. Bell and Mr. Smit at two localities in the northern part of the Exploration Licence. The Packsaddle Granite intrusion appears to be a hypabyssal, sill-like body, partly extrusive and closely related to the Hobblechain rhyolite. Indications of stoping have been observed but there are no signs of contact metamorphism. The rock is in general fine crystalline, locally fragmental, has a rhyolitic composition and appears in places to be extrusive. Near the southern contact, several thin (up to 10 metres) sills were observed, stratiform within the Wollogorang Formation. Slightly anomalous samples from the Hobblechain rhyolite and from contact zone of the intrusion suggest that there was some copper present within the system. The results, however are disappointing and the Packsaddle intrusive does not generally appear to be prospective for base metal mineralization. The rhyolite appears to peter out and lose its pyroclastic character away from the central prospective Redbank area.

Minor copper shows at scattered localities within E.L. 689 suggest that some copper was present within the volcanic system during most of the extrusive phase. However, an important change in magma composition took place when the Packsaddle Granite was emplaced with the Hobblechain Rhyolite as its extrusive member. The aerial magnetic survey indicates an intrusive body at depth at Redbank, similar to the Packsaddle Granite.

It is thought that the change of the magma to a more acid composition triggered off a local concentration of copper within the melt. The copper mineralization is therefore related to the last volcanic event, the rhyolite unit. Some of the mineralization escaped through rhyolite vents and occurs as sub-economic deposits within the rhyolite unit (such as Redbank, Azurite, Seven Mile, etc.). The exploration targets are where the mineralization followed a stockwork system of hot springs and gas vents, probably close to a main vent or within a possible caldera-type environment. The gas or hot springs prepared favourable rock units by brecciation or leaching for the later emplacement of copper. This includes the manto-type mineralization within the Wollogorang Formation.

More detailed geological mapping has been concentrated on locating mineralized flows within the Gold Creek Volcanics. Sulphides occur locally within trachyandesite flows and, possibly more so, within the agglomeratic volcanic-mud-breccia unit. Weakly mineralized outcrops, however, lack significant geochemical values. Mineralized flows are attractive targets, but thus far we have found no evidence to indicate that they also carry copper.

Regional geological mapping has discovered the Wanyi prospect, approximately 4,500 feet SSE of the Bluff. It consists of fracture controlled minor chalcocite and malachite within a pink trachyte which may represent metasomatic alteration. Mineralization extends for almost 200 feet along a prominent E-W structural trend. The prospect is being mapped in more detail.

Gossanous material within laterite has been recognized near the west boundary of the Exploration Licence. Rock chip samples assay 1100 and 2300 ppm Cu. Assays of random soil samples collected in the area were not above background. Auger samples from this locality exhibit minor anomalism and further work will be necessary to establish its significance. The area is underlain by the Masterton Sandstone.

A number of anomalous samples originated from an area north of Wollogorang in the vicinity of China workings. Minor occurrences of copper, mainly malachite with some azurite and chalcocite appears as fracture fills in contorted and brecciated dolomite of the Wollogorang Formation which is relatively thin (10-20 cm) in this locality. The breccia appears to be related to regional fractures. The copper occurrences are not considered to be significant.

A number of photo interpreted circular features have been recognized in the Masterton Sandstone in the NW quadrant of the Exploration Licence. The most conspicuous feature is a circular depression approximately 150m in diameter. Outside the circular feature the sandstone is flat lying but inside dips up to 25^{o} are evident. Soil, rock and stream sample assays are not above background. The genesis of the circular feature is not known and further work is needed to insure that it is not the surface expression of a mineralized breccia pipe.

A geological plan at a scale of 1:12,000 is in preparation. A plan showing the area covered by the prospector is included.

GEOCHEMISTRY

Soil sampling programmes over the Bluff-Redbank trend and over the Airstrip Valley have been completed. Samples were taken at 100 feet intervals along N-S trending lines 300 feet apart.

Flat lying areas such as Sandy Flat and around the Airstrip cannot be adequately tested by soil or stream sediment techniques. These areas are partly covered by eluvial sands which in places overlie an earlier laterite cover. The areas were therefore tested by an auger drill geochemical sampling programme.

From the index map which shows the various geochemical anomalies plotted at a scale of 1:12,000 the close relationship between known ore intersections and the surface geochemistry becomes evident. The Bluff and Sandy Flat areas are outstanding anomalies. A large anomaly east of Bluff may be prospective and may cover one or more breccia pipes at depth. A significant geochemical anomaly has been located at Titley's Flat.

An anomaly in the Wayni-El Rae area appears to be related to both a structural trend and a particular, partly leached, trachyte unit. It is possible that the anomaly represents a mineralized system at depth.

The Yellow Girl zone is indicated by stream and soil geochemistry to be of limited extent. It is possible that the mineralization which occurs within the rhyolite agglomerate and within the directly underlying trachyte unit is of the Redbank-Azurite type, shallow and of no economic significance.

A stream sediment sampling programme of the Exploration Licence has virtually been completed. The programme has indicated several mineralized areas and appears to be effective when sampling is carried out at a relatively close spacing. Soil and auger sampling will continue, particularly in the flat lying area north and north-east of Camp Mountain which now appears to be prospective. A total of 6,644 samples were assayed during the period covered by this report.

GEOPHYSICS

Extensive geophysical coverage was obtained in the areas of known mineralization and in the areas delineated as being prospective by the detailed geological and geochemical information with the aim to assist in selecting drill targets.

A Barringer Input survey was flown over the Redbank area. Several anomalies, delineated by the letters A to K on the enclosed plan, were outlined and were checked by a programme entailing geology, geochemistry and induced polarization.

The sulfide mineralization at Sandy Flat was detected as a one channel anomaly. None of the other five known mineralized pipes, however, were detected as Input anomalies. Anomalies A, D, and Q are located where vesicular-trachyte-mud breccias outcrop and this stratigraphic unit which appears to carry no copper mineralization may be the source of these anomalies. Anomaly D, being a five channel Input anomaly was however, further tested by dipole-dipole induced polarization coverage which indicated a shear zone carrying no polarizable material.

The table below summarizes the results of the follow-up program:

INPUT Anomaly	Underlying Rock Type	Stream Sample Assays	Soil/Auger Sample Assays	Comments	Follow-up Work Still To Be Completed
A	Lower Gold Creek Trachyte breccia	Not anomalous	--		Soil sampling Possible dipole dipole I.P.
B	Masterton S.S.	"	--		
C	Poor outcrop, U. Gold Creek Trachyte	"	--		
D	L. Gold Creek vesicular-trachyte mud breccia	Samples SE of 5 channel anomaly are anomalous		Most significant anomaly	Detailed soil sampling. Dipole dipole I.P.
E	No outcrop	--	Auger samples to S are anomalous	May be related to geophysical & geochemical anomaly at Titley's Flat	
F	No outcrop	Not anomalous	--		
G	Vesicular-trachyte-mud-breccia	"	Not anomalous		
H	U. Gold Creek trachyte	Anomalous	"		
I	No outcrop	--	Anomalous auger samples	May be related to Seven Mile Cu occurrence	

INPUT Anomaly	Underlying Rock Type	Stream Sample Assays	Soil/Auger Sample Assays	Comments	Follow-up Work Still To Be Completed
J	Poor outcrop	--	Not anomalous		
K	Gold Creek trachyte & S.S.	Anomalous	Anomalous soil samples		
L	Gold Creek trachyte & S.S.	Slightly anomalous	--		
M	L. Gold Creek trachyte tuff & trachyte breccia	Not anomalous	--		
N	Masterton S.S.	"	--		
O	No outcrop	--	Anomalous	One of the 2 anomalies coincides with Sandy Flat pipe	Auger sampling Drilling
P	Poor outcrop Gold Creek & Cretaceous S.S.	--			Auger sampling
Q	L. Gold Creek trachyte breccia	Not anomalous	--		
R	No outcrop, alluvium on Wollogorang Formation	"	--		

Gradient array induced polarization coverage was obtained over five blocks measuring 2,000 by 3,000 feet each and covering all areas of interest. Several anomalies were outlined and dipole-dipole induced polarization coverage was obtained over a total of twenty-one lines to obtain more detailed information over the gradient array anomalies and to refine the selection of drill targets.

Mise-a-la-masse surveys were carried out over the Sandy Flat, Titley's Flat and Roman Nose area to assist in delineating the extension of known ore intersections.

Ground magnetic coverage has been completed over the gradient array induced polarization grids.

All geophysical work is being compiled and maps being prepared at a scale of 1:6,000 where possible.

DRILLING

Three diamond drillholes totalling 1,420 feet of drilling have been completed. No ore grade mineralization has been intersected.

BFK-1 - The hole was located at 125,200E and 119,300N within the Sandy Flat area and was designed to test a trend indicated by dipole-dipole induced polarization coverage to extend over more than 1,500 feet from Sandy Flat to south of the Prince Prospect. No significant sulfide mineralization was encountered, and the rocks intersected have in general, a high resistivity.

The hole was stopped at 307 feet. The results of a subsequent mise-a-la-masse survey suggested that the dipole-dipole induced polarization trend refers to a narrow, possible fault trend, approximately 50 feet away from the drill hole intersection.

BFK-2 - The drill hole was located at 129,200E and 123,200N within the Seven Mile Area and was selected to test a gradient array induced polarization anomaly whose source had been interpreted to be at a depth of approximately 800 feet.

Minor sulfides were intersected at several levels and limited sulfide mineralization was encountered between 850 feet and 880 feet. The hole was stopped at 917 feet. Interesting sulfide mineralization has been intersected within each of the main stratigraphic units.

(i) Rhyolite agglomerate- chalcopyrite occurs both within the matrix and as disseminated specks within rhyolite fragments.

(ii) Gold Creek Volcanics -

(a) occasional speck of chalcopyrite associated with recrystallized carbonate veining, calcite, dolomite and siderite along joints and fractures.

(b) occasional speck of chalcopyrite within the matrix and within vesicles of the trachyte agglomerate units.

(c) finely disseminated chalcopyrite within narrow (3cm wide) tuff bands and within the top of a reddish cert unit.

(iii) Interface between the Gold Creek Volcanic and the altered Wollogorang Formation, mainly along fractures.

(iv) Wollogorang Formation -

(a) predominantly fracture controlled but also some finely disseminated chalcopyrite within a black, partly carbonaceous, dolomitic shale unit which has been distorted and brecciated (slump structures?).

(b) finely disseminated chalcopyrite within tuffaceous bands (syngenetic) and within coarser grained dolomitic sandstone (detrital?).

At this stage it is difficult to assess how much of the encountered chalcopyrite mineralization is syngenetic and how much of it has been introduced (fracture controlled) by later volcanic processes (gas vents) of the rhyolitic unit. Pyrite has been observed and there is some suggestion that chalcopyrite locally replaces pyrite. The general pyrite to chalcopyrite ratio within this intersection is estimated as being 1:3.

BTF-3 - The drill hole was located at 131,900N and 126,400N to test the extensive geochemical anomaly at Titley's Flat. The hole intersected a poorly fractured, unprospective stratigraphic sequence of the Gold Creek Volcanics and was stopped at 196 feet. The results of this drill hole thus suggest that the geochemical anomaly would be the remains of a previously overlying, mineralized rhyolite unit. The extrusive vent of this mineralized rhyolite unit and the possible associated plumbing could still be an attractive exploration target.

FUTURE EXPLORATION PROGRAMME

Regional and detailed geologic mapping will continue over the Exploration Licence in the next quarter supported by soil and auger drill geochemical sampling, prior to the onset of the wet season.

Three additional diamond drill holes have also been programmed to test those areas indicated by geology, geochemistry and geophysics to be of greater potential for the discovery of additional mineralization.

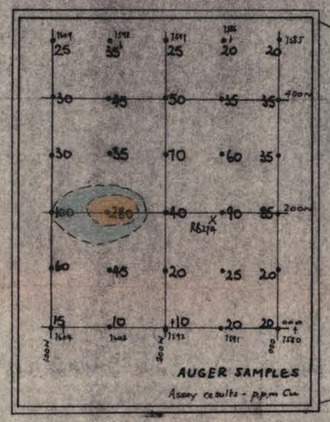
EXPENDITURE

The following expenditure has been incurred during the period 1.7.1973 to 22.10. 1973.

Salaries	$ 2,587.75
Consultants - Fees & Expenses	10,939.53
Travel	2,456.00
Stores	2,617.54
Hire of Equipment	268.00
Geochemistry	2,892.40
Geophysics	14,603.92
Administrative Costs & Overheads	10,960.00
	$ 47,325.14

REFERENCE:

- Stream sediment sample locations and sample numbers
- Soil sample
- Rock chip sample
- Prospector's sample - locality accurate
- Area covered by prospector
- Prospectors samples - locality uncertain



E.L. 689

E.L. 872

AMDEX MINING LIMITED
REDBANK
RECONNAISSANCE EXPLORATION
E.L's 689 & 872
Survey: E.Bull, J.Smit, A. Fleming, M. Spadafora
Scale 1:100,000 | Date 28.9.73

CR 73/250

SOIL PLAN 12

Five channel IP/RT survey

REDBANK CK

AUGER PLAN 3

SOIL PLAN 11

SOIL PLAN 1

REDBANK CAMP

SOIL PLAN 2

SOIL PLAN 3

AUGER PLAN 2

AUGER PLAN 4

TITLEN'S FLAT

AZURITE

REDBANK

SAN MANUEL

PUNCHBOWL

CAMP VALLEY

ROMAN ROSE

QUARTZITE

OLIVE BLUFF

SOIL PLAN 10

SOIL PLAN 4
AUGER PLAN 1

SOIL PLAN 5

SEVEN MILE

BOB'S PROSPECT

EIGHT MILE

SOIL PLAN 6

SOIL PLAN 7

MANY FLAT

SOIL PLAN 8

YELLOW GIRL

SOIL PLAN 9

MASTERTON

BWANYI

BEL RAE

REFERENCE

- soil plan
- auger plan
- limit of gradient array IP
- dipole-dipole IP
- soil sample anomaly
- auger sample anomaly
- diamond drill hole

Auger sample assays, ppm Cu

- 100-200
- 200-400
- 400-800
- >800

Soil assays, ppm Cu

- 100-200
- 200-400
- 400-1000
- >1000

TN

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REDBANK

INDEX MAP
Geochemical plans, IP surveys, geochemical anomalies, drill holes

SURVEY:

SCALE: 1/12,000

DATE:

CR73/850

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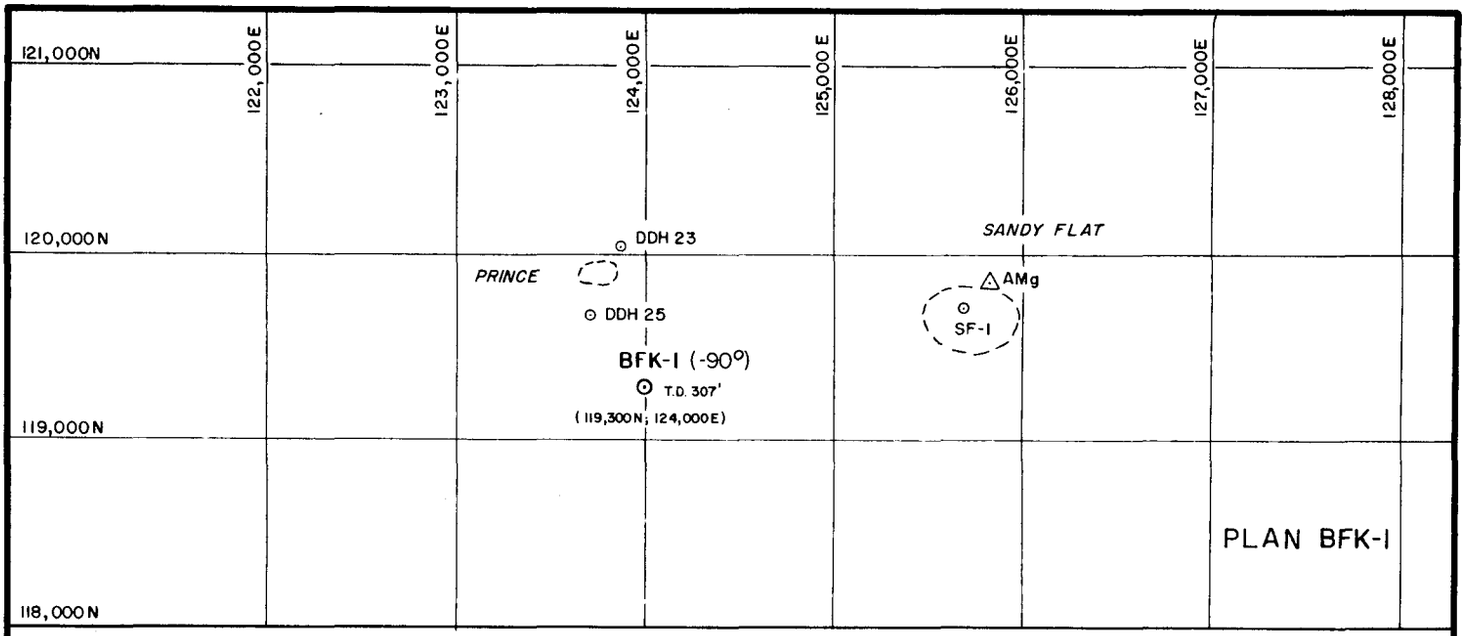
REDBANK
GEOCHEMICAL PLAN
STREAM SEDIMENT SAMPLE LOCATIONS & ASSAY RESULTS
Survey: Adrian Fleming
Scale: 1:12,000
Date: 29·9·1973
REFERENCE
3 CHANNEL INPUT ANOMALY
ASSAY VALUE - P.P.M. COPPER
SAMPLE NUMBER
CHIP SAMPLE - P.P.M. COPPER
Mastertons Spring
Mastertons Cave Workshop
Camp
Shadford Spring
REDBANK
AZURITE
SAN MANUEL
Azurite Ridge
Camp Mountain
CAMP VALLEY
ROMAN NOSE
QUARTZITE
Bluff Mountain
BLUFF
EAST BLUFF
7 MILE
Airstrip Mountain
BOBS PROSPECT
PRINCE
SANDY FLAT
Marsterton Ridge
MARSTERTON
YELLOW GIRL
BLACK CHARLIE
WANYI
The Jumpup
Mistake Ck. W.H.
Redbank Ck.
SOUTH CAMP ROAD
OLD NORTH ROAD
W.H.

CR73/250


A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q
R
REDBANK CK.
REDBANK CAMP
REDBANK
AZURITE
SAN MANUEL
COMP VALLEY
QUARTZITE
BLUFF
SEVEN MILE
BOBS PROSPECT
OWANYI
REFERENCE
STRATIGRAPHY
Quaternary
Cza alluvium
Czl laterite
Cretaceous
Kl s.s. + conglomerate
Proterozoic
Masterton Sandstone
Ptn2 quartz s.s.
Ptn1 siltstone
Hobblechain Rhyolite
Pth rhyolite agglomerate conglomerate + s.s.
Gold Creek Volcanics
Ptg2 upper sequence
Tss. silicified tuff & s.s. marker bed
Ptg1 lower sequence
Wollogorang Formation
Pto s.s. + dolomite
LITHOLOGY
ta trachyandesite
a andesite
t trachyte
tv vesicular trachyte
b breccia
m mud
s.s. sandstone
f tuff
peak of questionable anomaly (within noise level)
3EM/M30
3 channel INPUT anomaly with magnetic intensity of 30 gammas
stream sediment sample with assay value in p.p.m Cu
soil sample assay values in ppm Cu
auger sample assay values
limit of gradient array IP
geochemical plan
N
AMDEX MINING LIMITED
REDBANK
BARRINGER INPUT SURVEY
Geology, geochemistry and IP over INPUT anomalies
SURVEY: ADRIAN FLEMING
SCALE: 1:12,000
DATE: 29. 9. 73

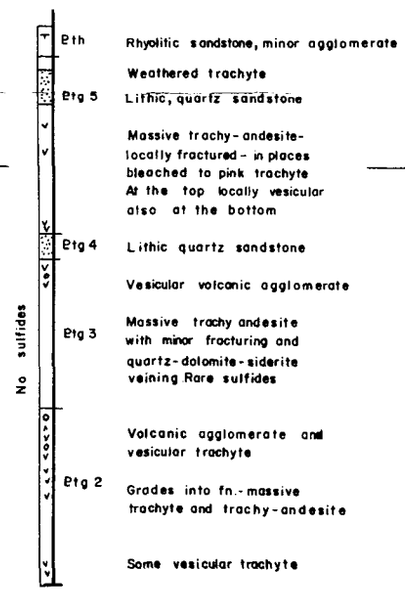
CR73/250



West

BFK-1 (-90°)

East



APPROX. LEVEL OF OXIDATION

SECTION BFK 1

T.D. 307 FEET

NO SIGNIFICANT ASSAYS
Highest values:
42'-51' 9·0ft at 0·052% Cu
257'-263' 6·0ft at 0·014% Cu

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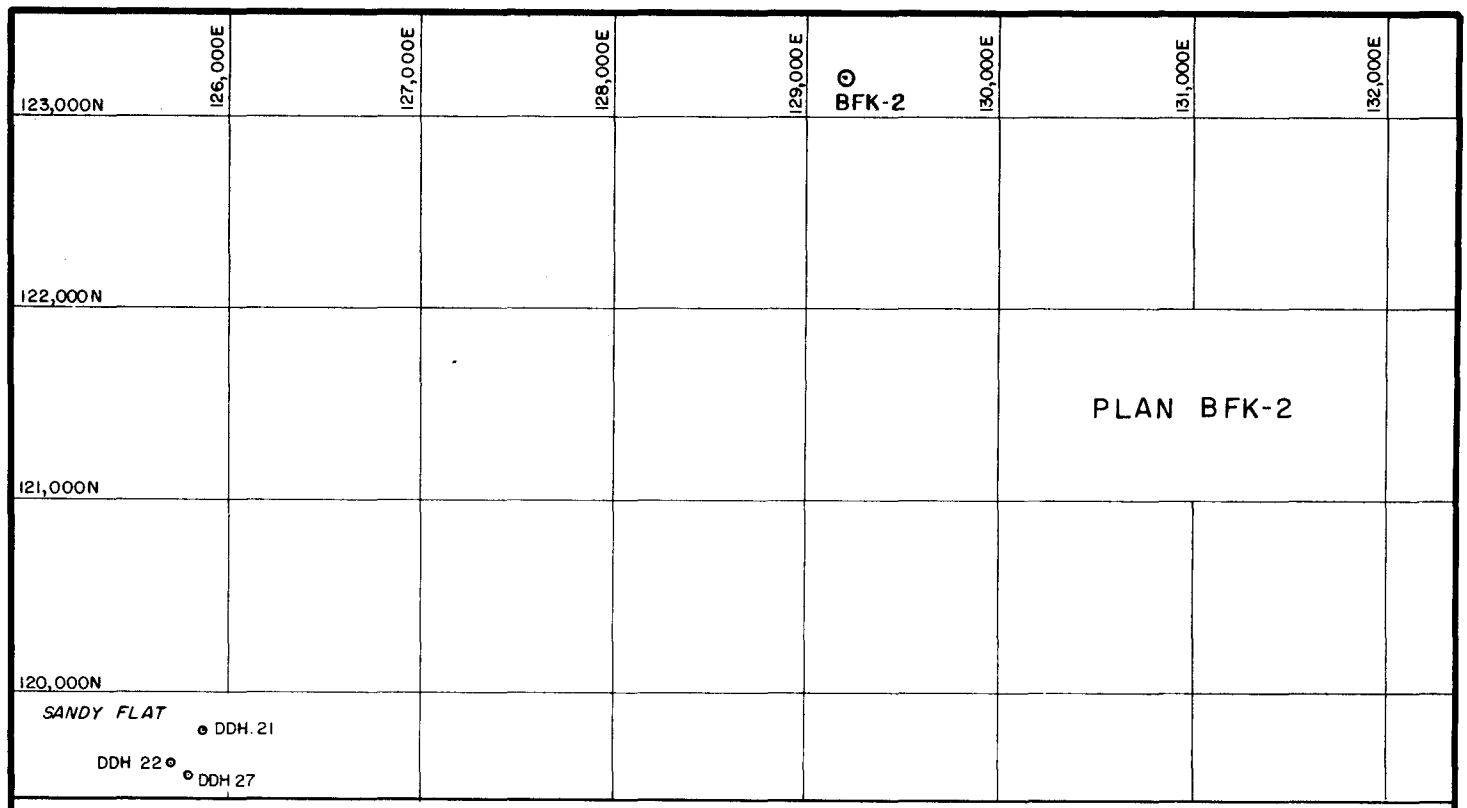
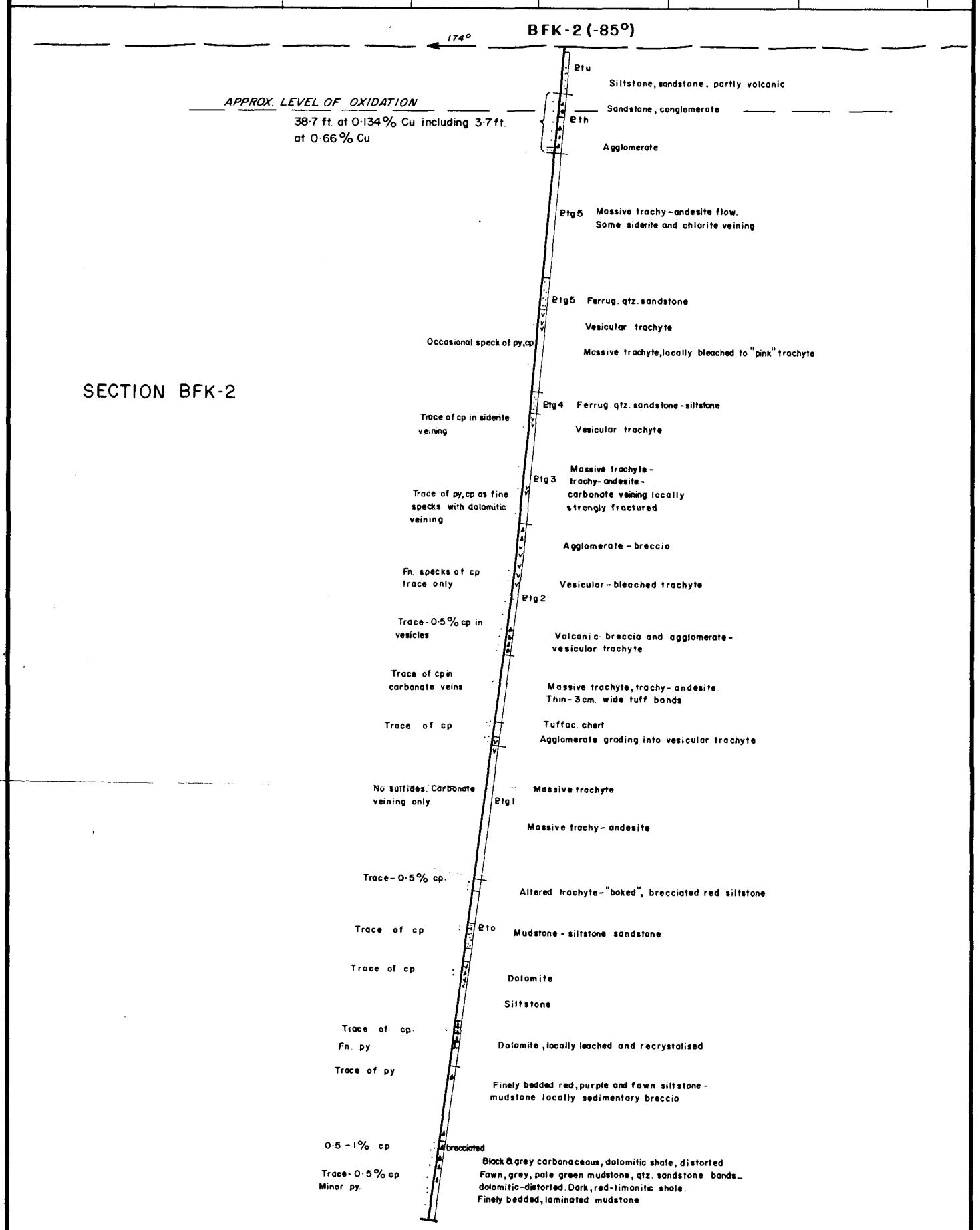
REDBANK	
DRILL SECTION BFK-1 SANDY FLAT - PRINCE GEOPHYSICAL TREND	
Survey:	
Scale: 1:1200	Date: Oct. 22, 1973

CR73|250





SECTION BFK-2

T.D. 917 FEET

AMDEX MINING LIMITED	
REDBANK	
DRILL SECTION BFK-2 SEVEN MILE GRADIENT ARRAY ANOMALY	
Survey:	
Scale: 1:1200	Date: Oct. 29, 1973

CR 73/250