EL 7696

FIRST ANNUAL REPORT To 11th MAY 1993

WEST MT BLEECHMORE PROJECT

ALCOOTA 1:250 000 70/5

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4th June 1993
SUMMARY

An exploration program designed to test the area for economic mineralization was carried out, with emphasis on occurrences in ultrabasic intrusives. A program of ground magnetics and drilling was conducted and a total of $33,170.00 was spent on the tenement in the anniversary year.
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PROJECT AIMS

The aims of the project are to identify and test intrusive structures of a type which might carry economic mineralization, for example, Diamond, Platinum Group Metals, Gold, Niobium, Rare Earth Elements, or any other substances in economic quantities, such as Apatite, Vermiculite etc.

LOCALITY

The project area is located approximately 5 kms west of Mt Bleechmore and is accessed by station tracks from the Plenty Highway (Figure1).

This area was selected because of the possibility of tectonic similarities to the Mud Tank locality, where a deeply sourced magmatic intrusion, (the Mud Tank Carbonatite), outcrops adjacent to a deep crustal structure known as the Woolanga Lineament. (Alice Springs 1:250,000 geological, and Strangways special geological 1:100,000 maps).

The hypothesis is substantiated to a degree by the identification by the author of some thoroughly lateritised carbonatitic material a similar distance and direction from the Woolanga strike trend as the Mud Tank intrusion, at about 19 km in a north north westerly direction from that feature. (This places the small outcrop north of the Plenty Highway about 5 kms west of Mt Bleechmore, at about the centre of El 7696).

HISTORY

Most mineral exploration of similar aim in the area has been concentrated where the Woolanga lineament and its influence are more evident. This can be described approximately as being from where the strike trend would intersect the Plenty Highway, (at about the Alcoota Station and Bushy Park Station boundary grid), South south east, past Woolanga bore, through the Gardens Station, to the Mordor complex, a large kimberlite related intrusion in the eastern MacDonnell Ranges.

EXPLORATION PHILOSOPHY

The occurrence of the nearby Mud Tank Carbonatite on the northern end of the mapped Woolanga structure has given earlier explorers some encouragement to search for other deep seated magmatic intrusions south of the Plenty Highway along the zone influenced by the structure. In turn, the identification of a similar, though much smaller, intrusion (dubbed "Lexandra"), west of Mount Bleechmore, has encouraged the author to explore the area north of the highway. This program does not involve the outcrops of the Bleechmore and Strangways units, but is directed to the flat country in the margin between the main Bleechmore outcrop to the east of
the exploration licence, and a less prominent area of the unit to the west. (Alcoota 1:250,000 geological).

WORK COMPLETED

EXPLORATION TECHNIQUES

Stream sediment sampling and soil geochemistry have not been considered appropriate for this project due to a generous cover of quaternary backfill over the previous landform. Drilling has proved this correct as many of the drill holes have encountered the sand-beds of palaeo channels under 2 to 3 meters of hard clay.

In view of the Lexandra carbonatite having a prominent magnetic profile, (discovered during reconnaissance about 1984-85), a magnetic survey was undertaken for the first part of the exploration program, followed by drill sampling of any likely areas of interest.

MAGNETIC SURVEY METHODS

A magnetic survey was conducted using for the baseline a strip previously cleared for a fencing project. This is a surveyed line running true north-south in a location suited to the project, (and which coincides closely with longitude 134°12' 00".) The baseline was designated as 2,000 east. Traverse line stations were measured at 100 meter intervals along the baseline, southward from a point on the northern boundary of the exploration licence, (latitude 22°51'00"), which was designated as 5,000 north. Magnetic intensity readings were taken at 50 meter intervals along the traverse lines, (see magnetic line data as figures 2 and 3).

The instrument used for the survey is a geometrics G836 Proton Magnetometer giving a reading of local field intensity rounded to the nearest ten. Several readings were taken at each station to guarantee field stability, and thus reasonable accuracy. No correction for diurnal variation was applied.

From this data magnetic variation contours were drawn, and used in combination with other observations (See magnetic contour and interpretation maps Figures 4 and 5).

DRILLING PROGRAM

A drilling program was conducted to explore the nature of the three features, see Figures 6, 7, 8, 9, & 10). A total of 472 meters was drilled, being 277 meters at the Central Premier magnetic anomaly (Figure 6), 120 meters at the Southern Star magnetic anomaly (Figure 7), and 75 meters at Quentin's Flat Clay feature, (Figure 6).
DRILLING EQUIPMENT

The drilling plant used for the project was an Ingersol-Rand ECM 350 model, air-track drill mounted along with its compressor on a semi-trailer. It has a boom mounted air hammer and is probably best described as a percussion RAB drill.

DRILL SAMPLES

Samples were collected by three meter intervals, and all material recovered was retained. Sample recovery is estimated to be in excess of 95%.

SAMPLE TREATMENT

The samples collected were transported to Baikal Homestead. Selected samples were puddled and washed, then separated into various fractions, (approximately +5mm, -5mm to 2mm, -2mm to 1mm, -1mm to 0.5mm, -0.5mm to 0.05mm and -0.05mm). These were concentrated and the heavy fractions observed by binocular microscope. Selected accessory mineral grains from the concentrates, samples of the concentrate itself, and bulk samples of the original material ex drill have been sent to Dr Dobos for analysis.

ENVIRONMENTAL CONSIDERATIONS

No trees were cut to gain access to drill sites, no earthworks of any kind were needed to reach the drill sites, and no preparation of any sites prior to drilling was necessary. All drill holes were backfilled to ground level before sites were vacated. As the surface clay is quite hard, and the drill rig relatively light, no compaction of the ground occurred when moving about. No permanent markers such as steel pickets were used and all flagging and temporary pegs have been removed, except for several remaining at reference points.
EXPLORATION RESULTS

MAGNETIC INTERPRETATION

Features indicated by the ground magnetometer survey contour (Figures 4 and 5) are the two roughly circular anomalies, dubbed "Central Premier" (Figure 4) and "Southern Star" (Figure 5). Both would appear to be generated (1), by fairly homogeneous rocks with a low magnetic susceptibility, and (2), by structures having one long axis orientated vertically. This gives rise to the very even nature of the dome profiles, there being no zones of high magnetism (at least near the surface of the features) to create any spikes in the curves, particularly at central premier. The likelihood of these being pipe structures is further indicated by the general concentricity of the contours, which have a very strong vertical magnetic flux component, and to a lesser extent, the lack of a prominent low on the southern side which a strong shallow source should generate.

Figure 4: A broad low is evident south of the central premier but it is interrupted somewhat by the presence of the carbonatite, (2), and further complicated by the structural element E-F. A deeper though less prominent structural element which parallels regional lineaments lies along B-C, with a weaker parallel subsidiary at H-I. A-B is an observable break in the geology which continues south-east onto Figure 5. This seems to have had some control on the emplacement of the carbonatite which has a dip/plunge north-west along the A-B strike. B-D and G-E simply reflect the foliation of the Bleechmore unit rocks.

The zone marked (1) is associated with a superficial outcrop of mafic granulite, while 3 is generated by granulite as well, but the outcrop is more deeply emplaced. The irregularity at 4 is connected with the two outcrops of ferricrete shown on Figure 6.

Figure 5: B-C is the continuation of A-B on Figure 4, which shows on Figure 7 as a clearly defined break in the geology of the Bleechmore rocks, as does D-C. It is interesting to observe that the main intrusion has found a weak point in the country rock south of the D-C fault-contact and has invaded a short distance along the weakness, (1), giving clear evidence of the relative emplacement sequence.

D-E and F-G indicate the foliation of the Bleechmore rocks.

While these comments are of an empirical nature, they have been made in conjunction with ground observations as well as air photographs and regional geological maps, and provide, I believe, a reasonably accurate picture of the structural situation.
RECONNAISSANCE OBSERVATIONS

Besides the two magnetic anomalies identified by the survey, a roughly triangular feature was identified centred at about 4000N-2,300E local grid. (See Geological Map 1, Quentin's Flat Clay Feature). Within this area is a type of clay somewhat different to the "Country Clay", which has a hard leathery surface and shows very little evidence of any expansion and contraction during wet and dry periods. Most of this clay will be a product of the weathering rocks of the Bleechmore complex, deposits building up gradually where obstructions to the natural drainage have occurred on the flat country near the hills.

By contrast, the Quentin's Flat Clay has a somewhat crusty surface which compresses easily underfoot. (A sample of this material is among those sent to Dr S K Dobos at the University of Queensland for analysis.)

Further reconnaissance of the feature identified a remnant outcrop of siliceous rock, with the texture of a macro silica-sponge. This I believe to be a thoroughly weathered and silicified porphyritic ultrabasic rock, with phenocrysts altered to a brown clayey gossan. Percussion drilling showed the silicification to persist at 24-27 meters depth, and the phenocryst material to be most likely a manganese oxide, though this will probably be a secondary mineral as well. The other accessory minerals in this sample were magnetite, ilmenite, and rare garnet, (the latter sent separately for analysis).
DRILLING RESULTS

Microscopic examination of drill fractions produced the following observations:

**PUB 13** ULTRABASIC CLAYS
- Garnet, Zircon Octahedra, dense clear spheroids, and non-magnetic black vitreous material plus Magnetite and Ilmenite

**PUB 15** VERMICULITE, QTZ
- Micro-Botryoidal Psilomelane, a dark bottle green striated mineral, Garnet, Apatite, Zircon Octahedra, and altered-magnetite Octahedra, (still magnetic sensitive)

**QFP1** QTZ, MnO
- Magnetite, Ilmenite, and Garnet

**QFP 3** QTZ, UB CLAY
- Magnetite, Ilmenite, and Garnet

**SUB 1** UB CLAY
- Magnetite, Ilmenite, Zircon (no Octahedra) and dense clear spheroids.

**SUB 4** UB CLAY
- Garnet (3 types, 2 probably from Palaeochannel contamination, one maybe not), Magnetite and Ilmenite with Leucoxene alteration.

**LEX 1** Soapy UB Clays
- Vermiculite, Magnetite, Apatite and Zircon fragments
EL 7686 EXPENDITURE REPORT (11 MAY 1992/93)

Expenditure for the 12 months to 11th May 1993 is as follows:

- General Reconnaissance (56 hrs x $35/hr) $1,960.00
- Magnetic Surveys, (60hrs x $35/hr) $2,100.00
- Drilling, (472 meters x $35/meter) $16,520.00
- Mob/Demob of drillrig $1,920.00
- Sampling Preparation and Handling, (95 hrs x $35/hr) $3,325.00
- Research, Map Compilation, Correspondence etc (19hrs x $35/hr) $665.00
- Field Vehicle (Toyota), Approximately 3,500 kms x $1.00/km $3,500.00
- Sample Analyses and Associated Costs $3,180.00

TOTAL $33,170.00

This project is a joint venture between S K Dobos and myself. We are the sole operators of all aspects of the project, and have not employed any other person in relation to the project.
PROPOSED PROGRAM & EXPENDITURE 1993/94

1. Further examination of existing sample material from the three prospect locations $1,500

2. Follow up drilling at the prospects
   Central Premier $1,750
   Southern Star $1,750
   Quentins Flat $1,750

3. Preparation and analysis of material as required $2,000

TOTAL ESTIMATED EXPENDITURE $8,750
SOUTHERN STAR
MAGNETIC ANOMALY

CONTOURS: INDICATED VALUE X 10 (nT)

MAGNETICS: PROTON TOTAL FIELD MAGNETOMETER
CONTROLLED FROM BASELINE MT 2000 WEST.
RELATIVE VALUES, UNADJUSTED.
TRaverse LINE SPACING - 100 METERS,
STATION INTERVALS - 20 METERS.

SCALE 1:8000

METERS

Figure 5
Figure 6
WEST MOUNT BLEECHMORE PROJECT

CENTRAL PREMIER MAGNETIC ANOMALY

(DRILLED, SAMPLED AND COVERED)

DRILLHOLE SECTIONS, PUB 1A - PUB 13

DRILL: INGERSOLL RAND AIRTRACK MODEL ECM 350 (TRUCK MOUNTED) PERCUSSION DRILL.

HOLE DIAMETERS: ALL HOLES 75mm.

SAMPLES: ROCK CHIPS COLLECTED BY JIM INTEKHA... ALL MATERIAL RETAINED AS BULK SAMPLES.

NOTE: The term "ULTRABASIC" is used here as a broad description to cover the weathered sample material probably derived from rocks of ultrabasic/ultramafic/carbonatic origin.

Collars removed and all holes re-drilled before vacating site.

VERTICAL SCALE: 1:250

Figure 8
WEST MOUNT BLEECHMORE PROJECT

CENTRAL PREMIER MAGNETIC ANOMALY

DRILLHOLE SECTIONS, PUB 14 - PUB 23

VERTICAL SCALE: 1:250

METERS

PUB 14

- Sandy rubble
- Weathered Vermiculite
- Ultrabasic clays

3m

PUB 15

- Sandy clays
- 2m

3m

15m

PUB 16

- Clay
- Loamy clay

3m

15m

PUB 17

- Clay

2m

15m

PUB 18

- Mostly clay

2m

15m

SANDY RUBBLE
WEATHERED VERMICULITE
ULTRABASIC CLAYS

mostly Vermiculite,
with some weathered
ultrabasic clays
to 18m

SAMPLE WASHED
AND CONCENTRATED

U.B. CLAYS
AND VESICULAR
CLAYS

YELLOWISH
AND REDISH
BANDS
OF WEATHERED
U.B. CLAYS
AND FINE
VERMICULITE

WEATHERED
U.B. CLAYS AND
FINE VERMICULITE

Collars removed and
all holes backfilled to
ground level before
vacating site.

DRILLHOLE SECTIONS
PAGE 2.

Figure 9
WEST MOUNT BLEECHMORE PROJECT

LEXI. QFP1 QFP2 QFP3 SUB1. SUB2. SUB3 SUB4 SUB5

1m. CLAY 1.5m. MOSTLY CLAY 2m. FERRICRETE AND CLAY FERRICRETE AND CLAY FERRICRETE AND CLAY FERRICRETE AND CLAY FERRICRETE AND CLAY 2m. IRON LATELITE IRON LATELITE IRON LATELITE IRON LATELITE IRON LATELITE 3m. GRADING INTO 3m. GRADING INTO 3m. GRADING INTO 3m. GRADING INTO 3m. GRADING INTO

MT BLEECHMORE COMPLEX ROCKS GRANULITE, QUZ-CHALCITET ETC.

LATERITISED PARTIALLY SULFURED FERRICRETE ULTRABASIC WEATHERED, MOSTLY RED, ULTRABASIC CLAYS WEATHERED YELLOW ULTRABASIC CLAYS WEATHERED YELLOW ULTRABASIC CLAYS WEATHERED YELLOW ULTRABASIC CLAYS

? SULFURED FERRICRETE ULTRABASIC ? WEATHERED, MOSTLY RED, ULTRABASIC CLAYS WEATHERED YELLOW ULTRABASIC CLAYS WEATHERED YELLOW ULTRABASIC CLAYS WEATHERED YELLOW ULTRABASIC CLAYS

24m. 21m. 27m. 27m. 3m.

THUS SAMPLE WASHED AND CONCENTRATED 21m. 21m. 21m. 21m.

VERY WET SAMPLE WASHED AND CONCENTRATED.

DRILLHOLE SECTIONS:

QUENTIN'S FLAT CLAY FEATURE, (QFP 1-5)

SOUTHERN STEAK MAGNETIC ANOMALY, (SUB 1-5)

VERTICAL SCALE: 1:450

Figure 10

COLLARS REMOVED AND ALL HOLES BACKFILLED TO GROUND LEVEL PRIOR TO VACATING EACH SITE.

DRILLHOLE SECTIONS
EL 7696. FIRST ANNUAL REPORT, PAGE 5.