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Buffalo Gold Limited: Mt Kare, Technical Report Update, 2007

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This report was prepared as a National Instrument 43-101 Technical Report, in accordance with Form 43-101F1, for Buffalo Gold Limited by Snowden. The quality of information, conclusions, and estimates contained herein is consistent with the level of effort involved in Snowden's services, based on: i) information available at the time of preparation, ii) data supplied by outside sources, and iii) the assumptions, conditions, and qualifications set forth in this report. This report is intended to be used by Buffalo Gold Limited, subject to the terms and conditions of its contract with Snowden. That contract permits Buffalo Gold Limited to file this report as a Technical Report with Canadian Securities Regulatory Authorities pursuant to provincial securities legislation. Except for the purposes legislated under provincial securities law, any other use of this report by any third party is at that party's sole risk.

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1 Summary

This Technical Report describes the Mt. Kare gold and silver project, a mineral exploration area located in Enga Province, in the centre of the western highlands of Papua New Guinea (PNG). The Mt. Kare project is located approximately 20 km southwest of Barrick Gold Corporation's Porgera operation, a gold mine which has been in production since 1991 and which has produced in excess of 14 million ounces of gold.

The Mt. Kare project is wholly contained within exploration licence EL 1093 which, according to tenement documentation provided by Buffalo Gold, has a 90% interest held in the name of Madison Enterprises (PNG) Limited (Madison) and a 10% interest held in trust for the Mt. Kare national landholders. Buffalo Gold and Madison have entered into a contractual agreement whereby Buffalo Gold will be able to earn Madison's 90% interest in the property.

1.1 Summary of geology and mineralisation

The Mt. Kare property is an epithermal mineral deposit comprising a folded and faulted sequence of meta-sediments that have been intruded locally by gabbroic and mafic-porphyry dykes.

For the purpose of resource estimation, three main mineralized domains have been identified, each having distinctive structural, geological and mineralogical characteristics.

The Western Roscoelite Zone (WRZ) is the westernmost mineralized domain. Drilling has traced the WRZ over a strike length of 550 m, outlining a north-south trending body. In the field, a clearly visible east-northeast tending fault divides the WRZ into to two distinct zones: a northern, cohesive mineralized body, NWRZ, and a less well defined southern zone, SWRZ.

The Central Zone domain is not well defined and has previously been identified as a broad 700 m by 300 m area of shallow, generally sub-horizontal to gently dipping mineralisation with a sub-vertical root zone, extending to the northeast from the WRZ towards the Pinuni Valley. In previous resource models, sub-vertical mineralisation in the southwest, adjacent to the SWRZ, has been attributed to the Central Zone. Recent drilling in this area has lead to the inclusion of this deeper mineralisation in the WRZ domain. Mineralisation in the Central Zone is not as cohesive as in the WRZ and is generally of lower tenor.

The Black Zone and the C9 shoot are controlled by the same northeast-striking fault system and are considered to form a single mineralized domain. The Black Zone lies 600 m east of the WRZ, occupying the crest and western flank of a steep northeast trending ridge structure. In outcrop, the Black Zone is a black, strongly manganiferous breccia. Drilling has traced mineralisation over a strike length of 250 m and has outlined two shoots in the Black Zone. The C9 shoot lies 250 m to the southwest of the Black Zone, occupying the high ground to the east of the SWRZ.

1.2 Summary of exploration concept

In order to fulfill their agreement with Madison (dated 18 May 2007), Buffalo Gold is undertaking an exploration program with a view to completing a Bankable Feasibility

Study covering all areas with significant potential, within the Mt. Kare EL 1093, within four years.

1.3 Summary of status of exploration, development and operations

Exploration by Buffalo Gold to date has included:

- Establishment of survey grids.
- Geochemical sampling in the Lubu Creek area to the southwest of the resource area.
- Trenching to assess northern extensions of the main mineralised zones (WRZ and Central Zone).
- Studies on the structure and controls on mineralisation.
- Diamond core drilling to in-fill the main mineralised zones. Buffalo Gold had completed 62 drillholes, totaling 8467 m by the 6 December 2007.

1.4 QP conclusions and recommendations

The Mineral Resources for the Mt. Kare property are based on drilling undertaken by CRA (1985 to 1989), Madison (1996 to 2005) and Buffalo Gold (2006). Snowden has reviewed the resource estimation process including the input data, input parameters and assumptions, estimation methodology, and resultant estimates. Snowden concludes that Mineral Resources have been estimated in accordance with the CIM Standard Definitions.

Snowden recommend that the estimate be updated prior to a full feasibility study being undertaken to improve the local accuracy of the estimate. The following items should be addressed during this re-estimation:

- Re-logging of the historic drilling data in order to standardize and simplify all lithological, alteration, structural and mineral zonation facies.
- Surface mapping of property for lithology, alteration, structure and mineral zonation in relation to the drillhole interpretation.
- Geological interpretation on cross sections of lithological units, structures, alteration assemblages and other domains which may contribute to the understanding of the deposit.
- Delineation drilling to a nominal spacing of no more than 30 m.
- Carry out routine QAQC sampling and analysis in a dynamic process.
- Carry out routine density measurements.
- Use oxidation and alteration characteristics when estimating density as recommended in the previous technical report (Snowden, 2006).
- Revise the classification system to take into account geological confidence, grade continuity, estimation accuracy and sampling confidence as well as drillhole spacing.
- Review the variography orientations as one would expect the orientations to match with the directions of geological continuity as used for the search orientations.

Snowden recommends that search orientations and variograms orientations be aligned.

2 Introduction

This Technical Report has been prepared by Snowden Mining Industry Consultants (Snowden) for Buffalo Gold, in compliance with the disclosure requirements of the Canadian National Instrument 43-101 (NI43-101). The trigger for preparation of this report is the 21 June 2007 press release of Buffalo Gold, disclosing an updated mineral resource for the project.

Unless otherwise stated, information and data contained in this report or used in its preparation has been provided by Buffalo Gold.

The Qualified Persons for preparation of the report are Mr Brian McEwen who visited the project site in June 8-11, 2006 and April 12-16, 2007, Ms Lynn Olssen who has not made a current site visit, and Mr. John Fox who also has not visited the site.

The responsibilities of each author are provided in Table 2-1.

Table 2-1 Responsibilities of each co-author

Author	Responsible for section/s
Mr Brian McEwen	4-5, 7-13, 18
Ms Lynn Olssen	1-3, 6, 14-15,17, 19-23
Mr John Fox	16

Unless otherwise stated, all currencies are expressed as Kina (K).

3 Reliance on other experts

There has been no reliance on experts who are not Qualified Persons in the preparation of this report.

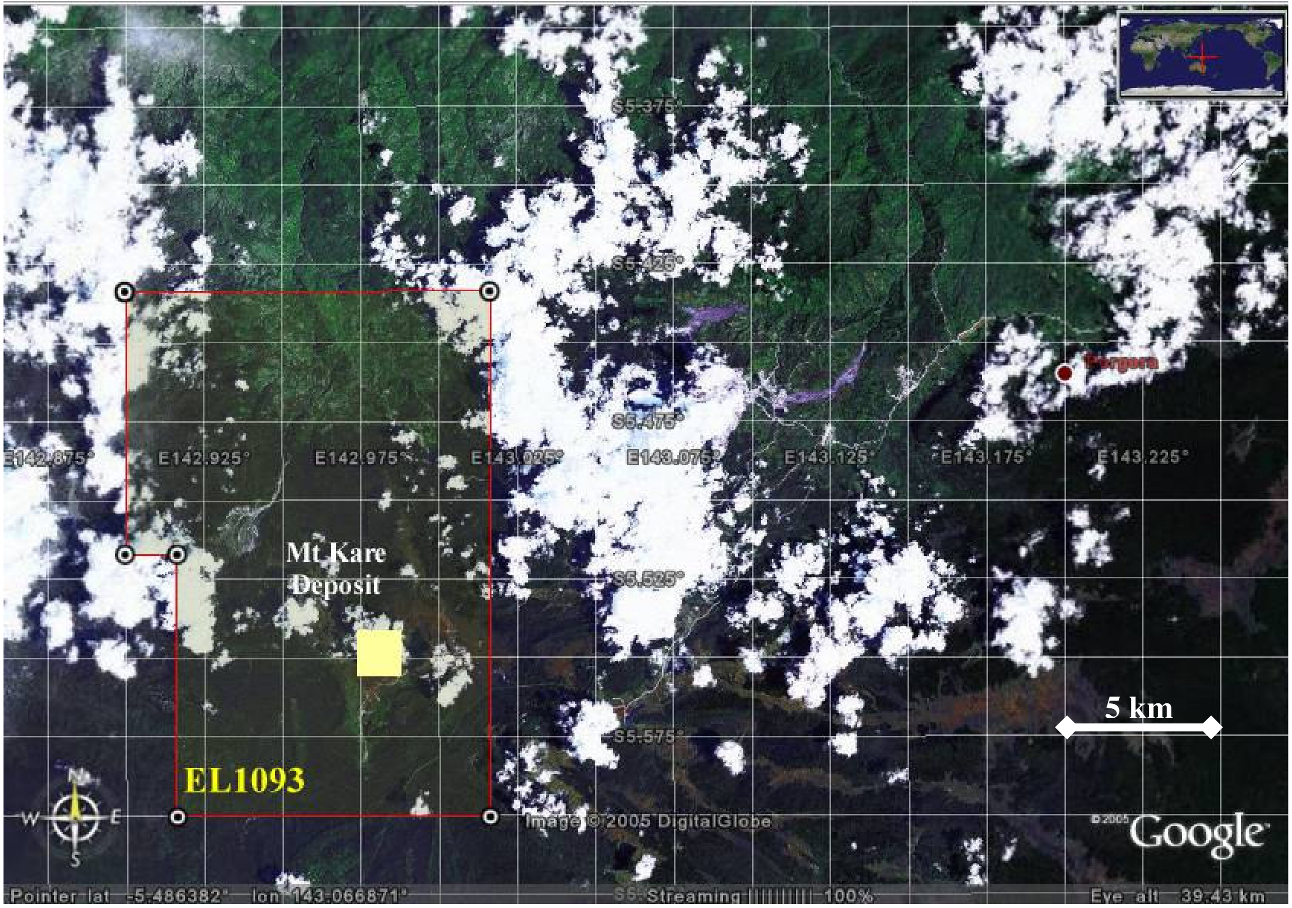
4 Property description and location

4.1 Location and project area

The Mt. Kare gold and silver deposit is centrally located in Enga Province in the western highlands of PNG. The deposit is approximately 26 km southwest of the Porgera gold mine and approximately 600 km northwest of Port Moresby.

The Mt. Kare deposit is wholly contained within the 220 km² exploration licence EL 1093 which is held by Madison Enterprises (PNG) Limited (Madison). Figure 4.1 shows the corner markers and extent of EL 1093 draped on a satellite image.

Figure 4.1 EL 1093 location map shown on satellite image



4.2 Issuer's interest

90% ownership of this tenement is attributed to Madison and 10% interest is held in trust for the Mt. Kare native landowners (the Mt. Kare joint venture). Buffalo Gold and Madison have entered into a contractual agreement whereby Buffalo Gold will be able to earn Madison's 90% interest in the property.

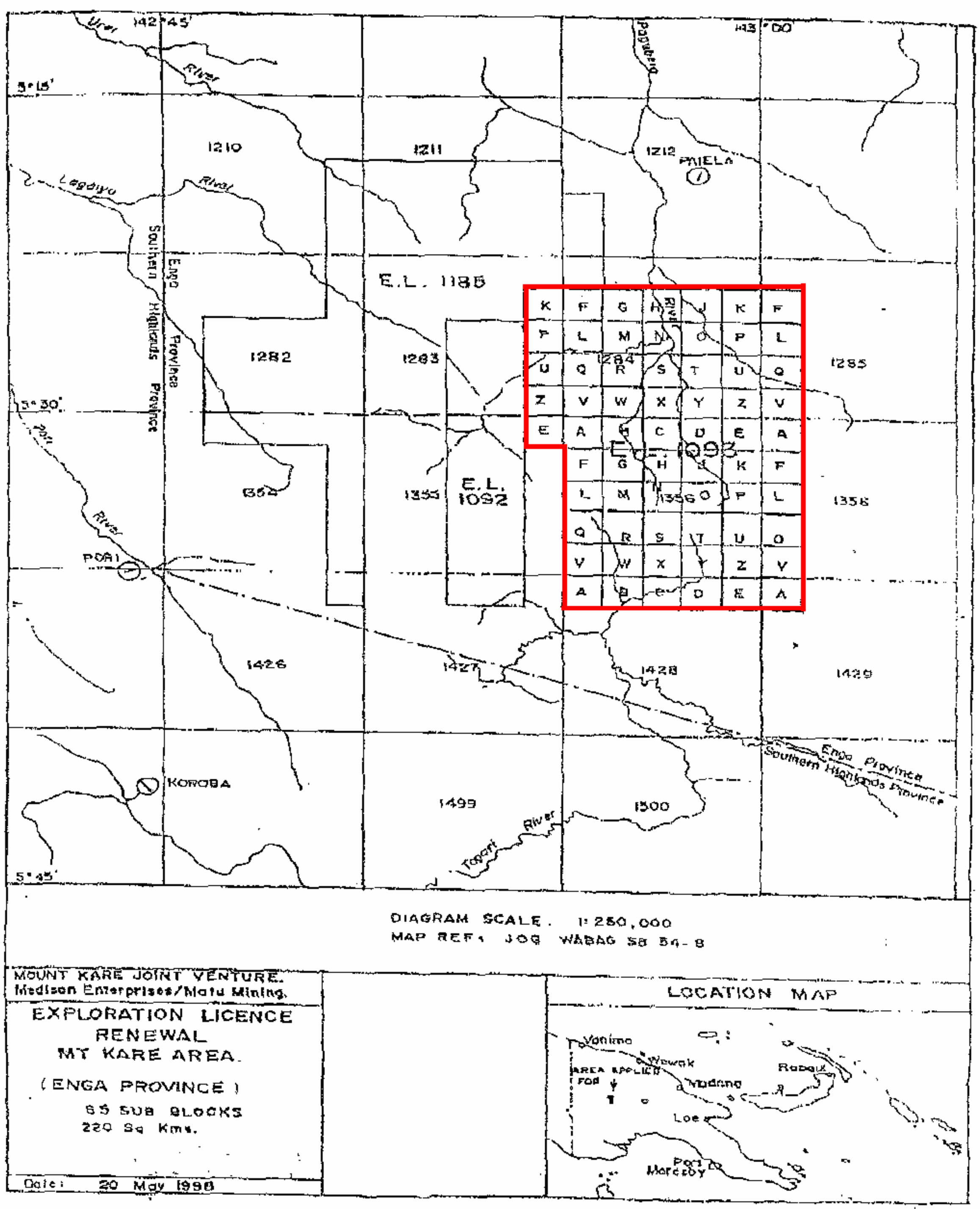
4.3 Location of property boundaries

The tenement boundaries have not been surveyed as they are identified by sub-blocks of latitude and longitude coordinates as follows (PNG Department of Mining, 2004):

- a line commencing at coordinates (latitude/longitude) 5° 26′ S and 142° 54′ E
- then to 5° 26′ S and 143° 01′ E
- then to 5° 36′ S and 143° 01′ E
- then to 5° 36′ S and 142° 55′ E
- then to 5° 31′ S and 142° 55′ E
- then to 5° 31′ S and 142° 54′ E
- then back 5° 26′ S and 142° 54′ E being the point of commencement.

This description covers the blocks and sub-blocks as depicted in Figure 4.2.

Figure 4.2 EL 1093 blocks and sub-blocks[1]



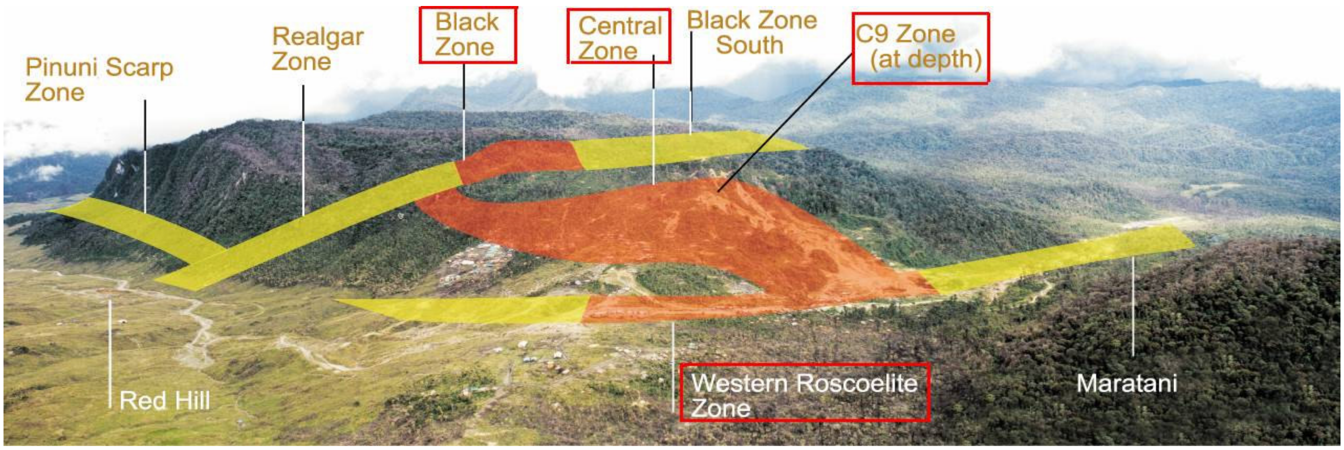
[1] Modified from PNG Department of Mining, 1996

4.4 Location of mineralized zones

Gold and silver mineralisation near Mt. Kare has been interpreted by Madison and Buffalo's geologists to occur in four zones in the south east quadrant of EL 1093. These zones are identified as the Central Zone, the C9 Zone, the Western Roscoelite Zone, and the Black Zone. The labeling of these zones is highlighted in Figure 4.3 and Figure 4.4.

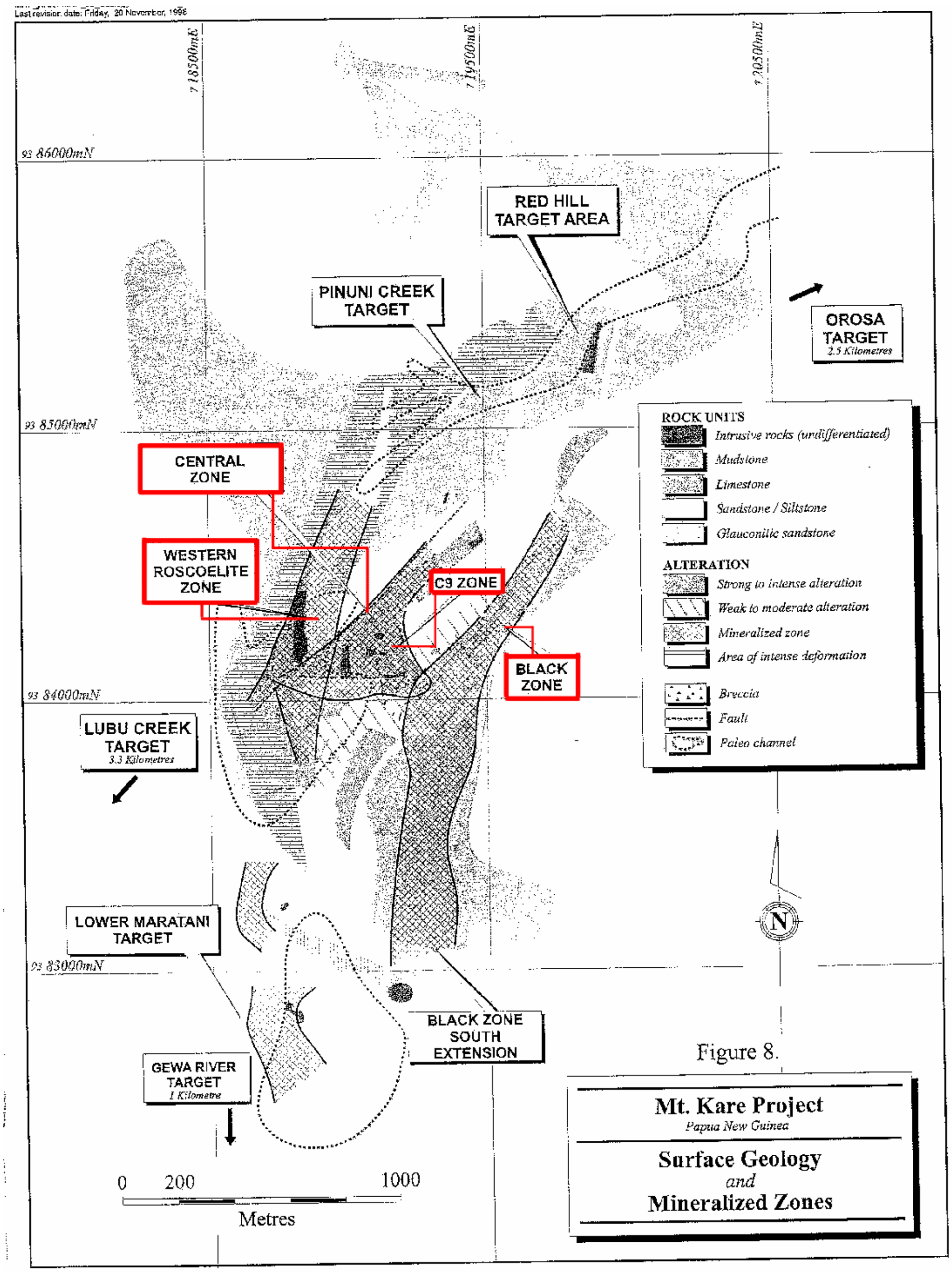
The Mineral Resources discussed in Section 17 of this report are contained within these four main zones. Other areas named in the images are targeted for future and/or additional exploration. These targets are discussed in Section 18 of this report.

Figure 4.3 View of mineralised zones, looking grid west[2]



[2] Source Madison, 2005

Figure 4.4 Mt. Kare deposit mineralized zones[3]



[3] Modified from Watts, Griffis and McOuat, 1998

4.5 Royalties, back-in rights, payments, agreements, encumbrances

As of 18 May 2007, Buffalo Gold and Madison have agreed to earn-in terms for the Mt. Kare project. Buffalo Gold will immediately earn a 60% interest in Madison's interest in the Mt. Kare property by issuing CAD$500,000 in cash or shares and issuing an additional 3,000,000 Buffalo Gold shares to Madison, with these shares subject to a four-month hold period. Buffalo Gold will earn a further 15% interest, totaling 75%, by completing a Bankable Feasibility Study covering all areas with significant potential within four years, with a provision for an additional 1-year extension. Should Buffalo Gold acquire a 75% interest, Buffalo Gold retains the right to acquire the balance of Madison's interest, based on an independent valuation of Madison's remaining interest, for cash or shares of Buffalo Gold or a combination of both.

Key issues relating to EL's in PNG (PNG Department of Mining, 2002) are as follows:

- When applying for an extension of an EL not less than half of the area held must be relinquished, however, where not more than 75 sub-blocks are held the holder can apply have this requirement waived.
- Bi-annual reports must be lodged describing all works completed on the EL. Buffalo Gold advised at the time of writing this report that only the most recently required bi-annual report is still to be submitted but the report was expected to be filed before the end of August 2007.
- The holder of a tenement is liable for compensation to the landholders for loss or damage related to exploration and mining. Buffalo Gold advised that previous tenement commitments require a statutory vegetation compensation and campsite rental to be paid to the landholders.
- Annual rents are applicable of K90/180/470 per sub-block in term 1/2/3. There are 58 sub-blocks on EL 1093 as shown on Figure 4.2.
- A security deposit of K6000 is required for an EL. Buffalo Gold advised this payment is in place as a condition of the grant of EL 1093.
- Annual expenditure requirements per sub-block per annum are K400/1,000/2,000 for terms 1/2/3. Buffalo Gold advised expenditure commitments are in good standing.

Other key issues relating to the development of a mine include:

- The PNG government reserves the right at the commencement of mining to make a single purchase of up to 30% of the equitable interest in any mineral discovery arising from a licence at a price pro-rata to the accumulated exploration expenditure.
- Royalties for mined products apply at a rate of 2% of the value of either direct revenue or net smelter returns.

4.6 Environmental liabilities

Snowden is not aware of any environmental liabilities relating to EL 1093. However, there is no supporting documentation from an independent environmental expert to confirm this.

4.7 Permits

Snowden is not aware of any permits other than a granted EL that are required to carry out exploration work on EL 1093.

5 Accessibility, climate, local resources, infrastructure and physiography

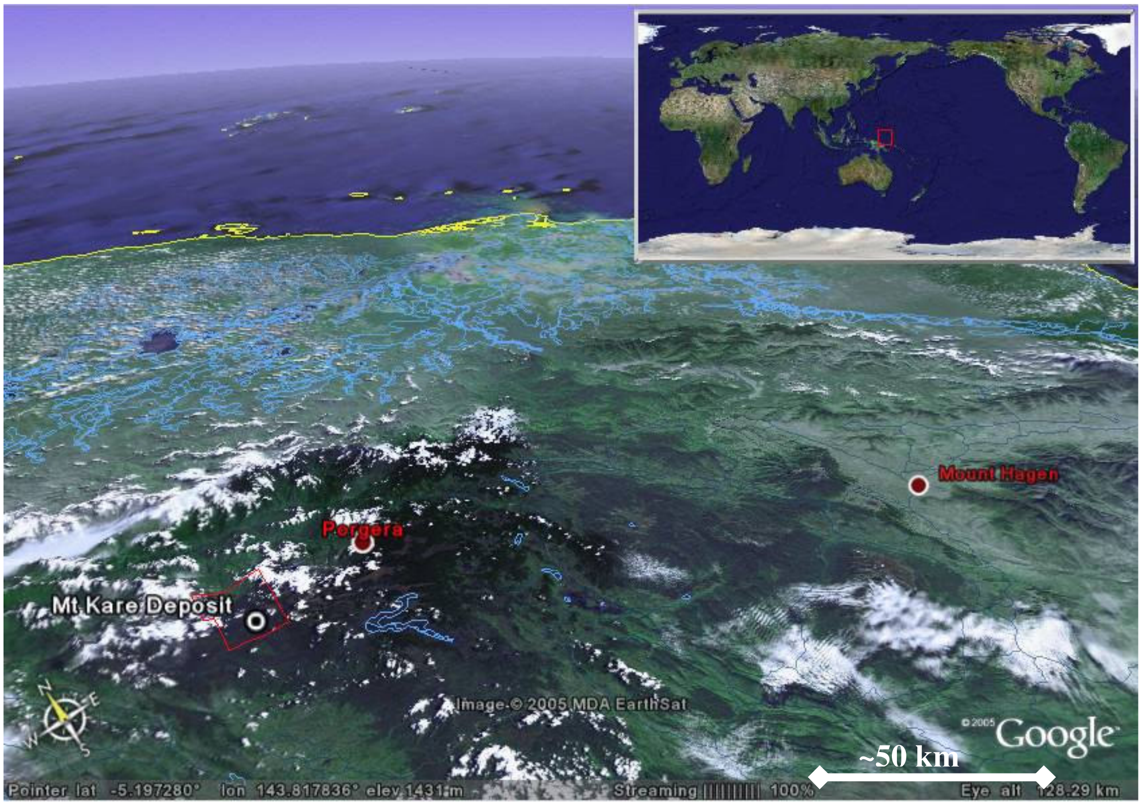
5.1 Topography, elevation and vegetation

The Mt. Kare deposit area is located in hilly to semi-mountainous country in the PNG Highlands (Figure 5.1). Local elevations range between 2,600 m and 3,000 m above sea level.

Water in the southern portion of the property collects into Maratani Creek, which eventually drains into the Ere River, and further into the Tari River basin. Water from the northern portion of the property collects in the Pinuni River. The Pinuni River flows into the Pacubeia River and the Pacubeia River eventually flows into the Lagaip River.

To the south, the Tari River basin is inhabited and a considerable human population exists only 50 to 60 km south of the Mt. Kare property. This population builds gradually as the Tari River flows to the southeast. To the north, the Lagaip River basin is very remote and, except for the Porgera Mine site and Porgera Village, is relatively uninhabited.

Figure 5.1 Topographic drape of EL 1093 on the PNG Highlands



5.2 Access, proximity to population centre and transport

Access to the tenement is via helicopter (45 minute flight) from Mt. Hagen which is 140 km east-northeast of Mt. Kare. There is no road access to the deposit. Travel to Mt. Hagen is by commercial airlines (Air Niugini) from Port Moresby.

The nearest population centre is Mt. Hagen (population 28,000) which is the capital of the Western Highland province in PNG. Mt. Hagen Provincial Airport has been declared an international port of entry due to frequent access of expatriate workers to the Porgera mine. Short-term business visas are available on arrival.

The closest road access to the Mt. Kare area is provided by an all-weather road from Mt. Hagen to the Porgera mine site. The road comes to within 7 km of the project site. Occasional interruptions to travel occur on this road due to washouts from high rainfall.

An all weather road allows access from the Porgera operation to the Waile Creek reservoir. The end of the road at Waile Creek reservoir is approximately 7 km from the main area of mineralisation at Mt. Kare. The Porgera operation uses the road to access the reservoir as well as a limestone quarry which is located a short distance from the existing road terminus.

For recent exploration programs on the Mt. Kare property, it has been common practice to truck materials to the end of the Waile Creek reservoir road and shuttle material the last 7 km by helicopter.

According to information from Porgera, there a weight limit of 25 tonnes for the road between the Porgera operation and the city of Mt. Hagen.

5.3 Climate and length of operating season

The climate in the Mt. Kare district is tropical but much of the typical coastal effects of extreme humidity and temperature are mitigated by the +3,000 m elevation. Temperatures vary from 5˚C overnight to daily maximums ranging from 25˚C to 30˚C. The wet seasons are from January to April and from September to December. However, heavy rain can occur during any period of the year and low cloud limits helicopter access to Mt. Kare for up to several days at a time.

5.4 Surface rights

People did not live permanently in the Mt. Kare area before the discovery of gold due to altitude and the inhospitable environment. However, people from nearby Paiella in Enga Province and people travelling from the upper Tari basin in Southern Highlands Province visited the Mt. Kare area for religious rites, harvesting the karuka (pandanus) nut, hunting and taking refuge from enemies. The karuka nut harvesting in the immediate Mt. Kare area was mainly carried out by family groups travelling up from the Paiela valley villages en masse for a month or so at a time. Mt. Kare also lies on a traditional trade route between the Tari and Laiagam areas. Groups from both Tari and Paiella claim ownership of land portions within EL 1093.

There is now a village site on the Mt. Kare property with a population of approximately 200. It is located between the Maratani and Pinuni drainages. Not all of the villagers live in the valley over the entire year, but the village has become somewhat permanent. A small cemetery is present within the village.

Land ownership studies of the area commenced soon after the discovery of alluvial gold at Mt. Kare, and are ongoing. Social anthropologists have been retained to review all available literature concerning land ownership in the area. This is complicated by a history of intermarriage between the North Tari Basin and the Paiella Valley.

Two bodies are recognized by the government and the Mt. Kare joint venture as representing landowners; Kare Puga Development Corporation (KDC) and Kare Puga Graun Agents Association (KPGAA). KDC was set up in 1990 and holds a 10% landowner interest in the project, free carried to mine feasibility. The Mt. Kare joint venture has no obligation to fund KDC; however, it does have an obligation to support small-scale alluvial mining if KDC obtains a replacement tenement to the now expired SML1 lease which used to cover a portion of EL 1093 (Figure 7.4). In fact the Mt. Kare joint venture does support KDC with payment of directors' fees, assistance with transport for meetings and with legal fees and obligations. KDC presently has no income from other sources.

KPGAA was established in 2003 at the behest of the government to provide a wider representation of landowner interests. The Mt. Kare joint venture has no obligation to assist this body; however, in practice some assistance is provided for arranging meetings and carrying out awareness campaigns in the joint venture interests, and for legal obligations.

Apart from the obligations of the Mt. Kare joint venture under EL 1093, there are no other signed agreements between the Mt. Kare joint venture and the Government.

The matter of resettlement of local people from the proposed mining area has not been considered in detail at this stage. Once a decision is made it will be necessary for a census to be carried out and a relocation plan put in place.

5.5 Infrastructure

5.5.1 Power

A high voltage power line is in place to the Porgera operation and delivers sufficient power for Porgera and the nearby village. This line is routed along the southwestern corner of the Mt. Kare property. According to personnel at the Porgera operation, this power line is currently at its limit and it is not expected that electrical power would be available for operations at the Mt. Kare property from that source.

5.5.2 Water

There are no current facilities for water collection and storage. One possibility is the construction of a dam across the upper Pinuni River. However the width of the valley and likely significant depth of residual soils mean that the size (and cost) of the structure would be significant. As the volume of water needed is small, it is more likely that water supply could be provided from two groundwater wells drilled within the significant thickness of limestone at Mt. Kare.

5.5.3 Mining personnel

People are employed from the local area where possible; because of isolation there has been little formal education so that most local hire is general labour, with more skilled workers drawn from surrounding areas. The current day labour force is between 110 and 140.

The local people are encouraged to supply timber for the project and the company has supplied credit for local people who wish to acquire forest mills, with debts repaid from production. Vegetables are also purchased where possible from vendors with local connections.

The local people are also assisted with such things as provision of medicines to aid posts, school supplies, some limited scholarships, assistance with basic materials for bush material church buildings, assistance with formation of a women's association, and assistance with telephone calls, fax messages and photocopying. Some assistance with mourning feasts has been given to various groups when a leader has died.

Government officers, including police, are also assisted as required with helicopter transport, accommodation and allowances.

5.5.4 Tailings storage areas, waste disposal areas and processing plant sites

There are no existing sites or plans for tailing storage areas, waste disposal areas or processing plant sites.

6 History

6.1 Prior ownership and ownership changes

In 1985 CRA Minerals (PNG) Pty Ltd Exploration (CRA) acquired a Prospecting Authority (effectively an exploration licence) over a 1,400 km² area surrounding Mt. Kare.

There was a change of ownership in 1992 when CRA, in an effort to resolve indigenous disputes between local landowners and artisan miners, negotiated alluvial rights for gold surface mining in the Mt. Kare region through establishment of Mt. Kare Alluvial Mining (MKAM), which was a joint venture between CRA (51%) and local landowners. From Watts, Griffis and McOuat (WGM, 1998) and other reports, Snowden understands that CRA's main aim in this venture was to obtain unhindered access for hard rock exploration while appeasing and assisting local land owners in exploitation of alluvial/colluvial gold deposits. However, in 1992 relationships between CRA and some land owners deteriorated to the point where an armed raid by 25 locals on the Mt. Kare camp resulted in significant damage to the camp. CRA subsequently withdrew from direct exploration and development of the Mt. Kare deposit. Additionally, litigation was brought against CRA by various special interest groups who sought to have CRA's exploration licence revoked. CRA subsequently transferred management of the project to Placer Pacific who managed on going exploration from the Porgera gold mine. Eventually CRA allowed its exploration licence to lapse in September 1993 due to an inability to carry out further unhindered exploration.

Following CRA's surrender of tenure over the area, several companies registered interest in acquisition of the tenement from the PNG Government. The government elected to determine ownership through a ballot and Matu Mining (Matu) was awarded the Mt. Kare hard rock exploration licence. Following two years of litigation by several contesters to the legality of the ballot, the Supreme Court of PNG upheld Matu's rights to the tenement. Matu then entered into an option agreement with Madison which resulted in Madison owning 90% of the tenement with the other 10% held in trust for the Mt. Kare native landowners.

In July 2005, Longview Capital Partners Limited (Longview) acquired the option from Madison to acquire up to a 100% interest of Madison's 90% interest in the Mt. Kare property. In November 2005 Buffalo Gold entered into an agreement with Longview to acquire this 90% interest.

6.2 Previous exploration and development work

6.2.1 CRA 1985 to 1989

Detailed exploration for gold was initiated by CRA in 1985 when the company acquired a Prospecting Authority (effectively an exploration licence) over a 1,400 km² area surrounding Mt. Kare. CRA's initial programs in 1985 involved stream sediment sampling. Two anomalous results were returned from samples collected near Mt. Kare in the upper Ere River from the initial 25 samples collected. In 1987 CRA relinquished most of the 1,400 km² land holding and retained the ground that now comprises EL 1093.

In 1987, artisan alluvial miners were alerted to the possibility of placer gold at Mt. Kare by CRA's heightened exploration activity. In the following two years, up to 10,000 miners recovered an estimated one million ounces of gold from colluvial deposits in the area (Laudrum, 1997). Most placer mining occurred in areas known as the Kare Puga colluvials and the Gewa River alluvial deposits. The influx of artisan miners from other areas created tension between local landowners and ultimately led to abandonment of operations by CRA.

CRA continued exploration during 1987 to 1989, focusing on hard rock exploration rather than alluvial or colluvial deposits. Work completed by CRA included surface trenching, ridge and spur soil geochemistry testing, and 30 diamond core drillholes. The diamond core drilling intersected several zones of high grade mineralisation near Mt. Kare including 38 m grading 11.2 g/t Au in one drillhole (MK15).

Table 6-1 below provides details of drilling completed by CRA. Coordinates of the drillhole collars are in local coordinates and relative to the local grid which is described in Section 10.1. Drilling methods and significant intercepts from these drillholes are listed in Section 11 for each zone of mineralisation.

Table 6-1 Listing of diamond core holes drilled by CRA

Drillhole	East	North	Length (m)	Bearing	Dip
MK1	19114.0	84288.7	238.1	355˚	-60˚
MK2	19130.2	84177.4	248.2	295˚	-60˚
MK3	19293.6	84463.6	236.0	325˚	-60˚
MK4	19296.9	84060.3	250.0	155˚	-60˚
MK5	18865.3	84262.0	239.1	255˚	-57˚
MK6	19420.6	84222.0	250.0	50˚	-60˚
MK7	19056.9	84423.2	250.0	50˚	-60˚
MK8	19344.8	84369.1	270.4	320˚	-60˚
MK9	19099.6	84108.7	301.3	95˚	-60˚
MK10	19207.5	84094.2	319.6	97˚	-60˚
MK11	18965.5	84121.7	448.0	90˚	-60˚
MK12	19117.7	84238.3	322.5	90˚	-60˚
MK13	18869.4	84106.2	347.0	90˚	-60˚
MK14	19121.6	83940.0	237.5	90˚	-62˚
MK15	19463.5	84238.0	300.0	125˚	-60˚
MK16	19686.3	84269.6	314.0	305˚	-60˚
MK17	19543.6	84374.6	255.0	130˚	-60˚
MK18	19392.5	84286.8	158.6	130˚	-60˚
MK19	19391.5	84285.4	350.2	130˚	-65˚
MK20	18791.3	84404.5	185.0	90˚	-70˚
MK21	18959.5	84404.3	200.0	270˚	-60˚
MK22	18956.6	84313.4	223.4	270˚	-60˚
MK23	18956.8	84130.2	259.6	270˚	-60˚

MK24	18981.9	84194.2	261.5	270˚	-60˚
MK25	18860.7	83998.4	257.1	270˚	-60˚
MK26	18956.2	84315.96	252.4	335˚	-55˚
MK27	19177.4	84425.9	223.0	155˚	-60˚
MK28	19112.2	84006.5	466.0	330˚	-60˚
MK29	19151.4	84479.1	323.1	150˚	-60˚
MK30	19012.2	84347.2	344.1	270˚	-70˚
MK31	18995.6	84137.1	166.0	330˚	-60˚
MK32	19011.1	84477.9	128.1	270˚	-70˚

6.2.2 Matu/Madison 1996 to 1999

During 1996, Matu recommenced exploration carrying out trenching and bedrock sampling (9 trenches totaling 9,600 m) expending approximately US$ 300,000 to June, 1996.

During 1996 and 1997, Madison renewed the exploration focus at Mt. Kare with work programs including:

- Construction of a new 50 person camp.
- Two programs of trenching and associated chip sampling (21 trenches totaling 5,500m and 30 trenches totaling 4,800 m).
- Establishment of professional survey baselines and capture of prior exploration work.
- Surface geological mapping over the main deposit areas.
- Two programs of auger geochemical sampling (2,100 samples from 104 km of grid lines, and 4,569 samples from 133 km of gridlines).
- Geophysical programs (2,899 line-km over an area of 171 km² of airborne magnetic and radiometric survey).
- Two programs of diamond core drilling (45 holes totaling 7,053 m and 65 holes totaling 11,384 m).
- An independent external review of exploration work and resource estimation by WGM.

Following completion of this phase of exploration no new work was carried out until 2000.

Geochemical sampling

The initial definition of a main zone of anomaly (the Main Zone, Figure 6.1) resulted from surface soil sampling completed by CRA exploration teams during programs from 1986 to 1991. This anomalous area subsequently became the focus of trenching and drilling by Madison during 1996 to 1997.

Several soil auger grids were established by Madison to test the Main Zone anomaly and other prospective targets. The grid lines were established on 100 m or 50 m intervals along the interpreted strike of mineralisation with samples collected at minimum 50 m spacing across strike. Sample locations were recorded using Global Positioning System (GPS) equipment.

Soil samples with masses ranging from 200 g to 400 g were collected from auger (both power and manual) cuttings with the depth of sample selection being at least one metre but generally from a depth of approximately six metres. The samples were analyzed for gold and silver by fire assay. Additional elements analyzed included copper, lead, zinc, manganese, antimony, and mercury with concentration determined by atomic absorption spectroscopy (AAS). An additional 30 trace elements were analyzed using ICAP (Inductively Coupled Argon Plasma) at TSL (Technical Services Laboratory) which are located in Saskatoon, Canada.

The results from the auger sampling described above were identification of the Lower Maratani Zone (which is interpreted to be an extension of the Western Roscoelite Zone), and the extension of the Black Zone anomaly by a distance of approximately one kilometre to the north.

Trenching

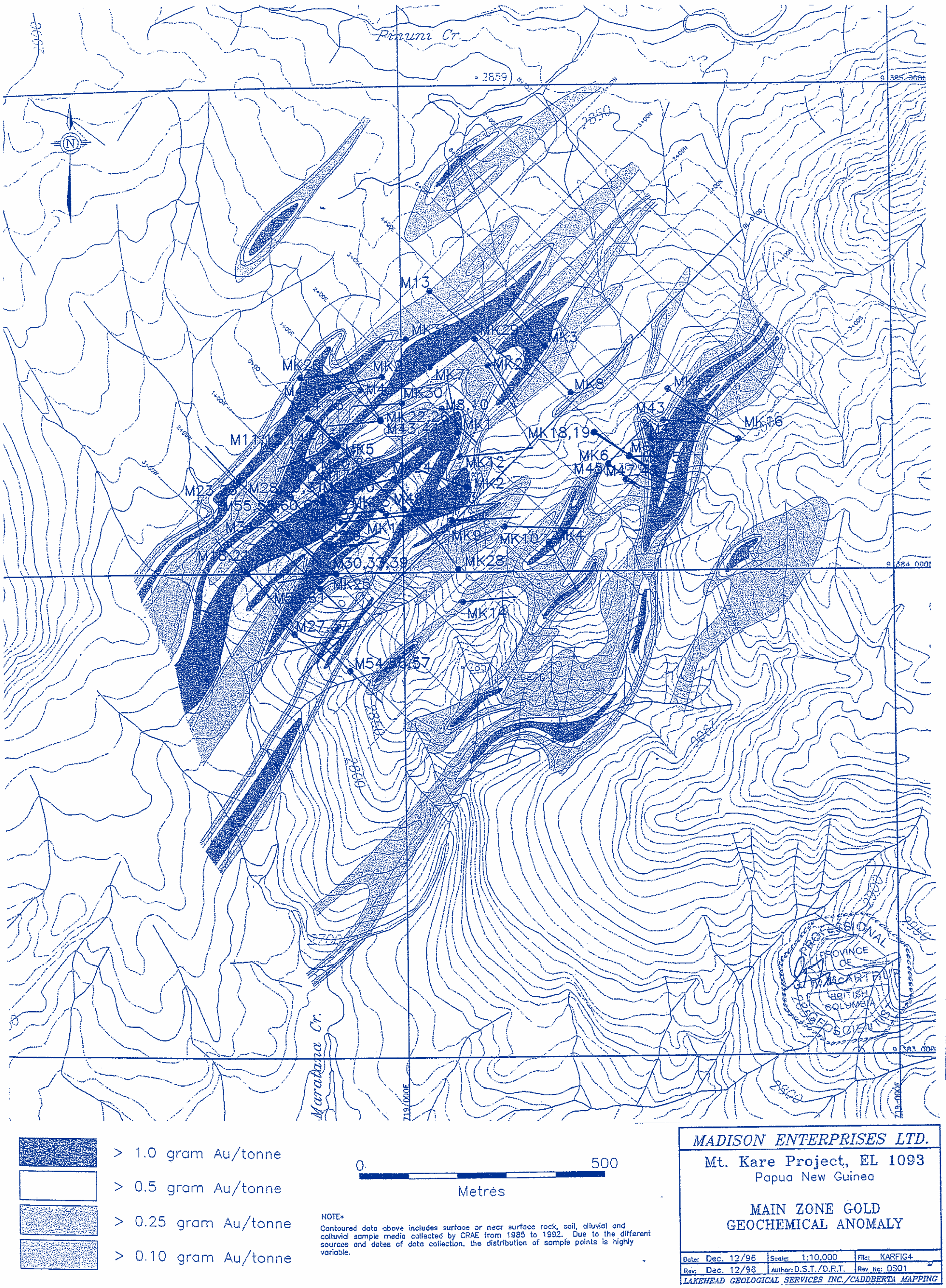
During 1996 and 1997 Madison exploration teams excavated (by hand) trenches to test geochemical and geophysical anomalies. Five areas were tested as follows:

- Area 1, comprising 7 trenches (MKT 11, 17-19, 19B, 22 and 24) were excavated to test reported occurrences of alluvial gold.
- Area 2, comprising 5 trenches (MKT 12-14, 21 and 30), were dug to evaluate the northern limits of the main geochemical anomaly.
- Area 3, comprising 10 trenches or extensions (MKT 1W, 1E, 2W, 2E, 3, 4W, 4E, 5, 16, 25) to test extensions of the Main Zone anomalies, with MKT-16 and 25 testing the Black Zone.
- Area 4, comprising 7 trenches (MKT 15S, 20E, 26E &W, and 29a & b), tested sources of alluvial gold and several aeromagnetic anomalies.
- Area 5, comprising 6 trenches (MKT 23, 27 and 28), which were targeted on several airborne geophysical anomalies.

The trenches were marked-up at five metre intervals using survey chain and compass. These intervals were used as references for geological mapping and channel sampling. Channel samples of five metres length and of three to five kilograms were dried and crushed on site at the Mt. Kare sample preparation laboratory. A 250 g sub-sample of each interval was then dispatched to either Analabs in Lae, PNG, or to TSL in Saskatoon Canada. The main results of the sampling of the five areas are as follows:

- Area 1 – no significant concentration of precious metals or indicator elements from shallow soil development (20 to 100 cm) were obtained.
- Area 2 – strongly anomalous results in MKT 12 with up to 3.9 g/t Au and 24 g/t Ag in altered intrusive and brecciated sediments were obtained.
- Area 3 – MKT 16 and 25 returned anomalous results with MKT 16 returning 2.3 g/t Au and 46 g/t Ag in altered sandstone and mineralized breccia and MKT 25 returning up to 3.9 g/t Au and 250 g/t Au from similar material.
- Area 4 and Area 5 – no significant results were obtained, with many portions of trenches failing to reach bedrock.

Figure 6.1 Main Zone geochemical contours[4]



4 modified from Madison, 1997

Drilling

Madison undertook core drilling programs from 1996 until 1999 (Table 6-2). Drilling methods and significant intercepts from these phases of drilling are discussed in Section 11.

Table 6-2 Madison 1996 to 1999 diamond drilling collar locations

Year	Drillhole	East	North	Length (m)	Bearing	Dip
1996	MK9601	18846.9	84054.7	235.8	85˚	-60˚
	MK9602	18848.9	84054.7	275.0	85˚	-75˚
1997	MK9703	18848.9	84054.7	133.5	85˚	-88˚
	MK9704	18846.1	84056.2	193.7	135˚	-50˚
	MK9705	18846.1	84056.2	60.8	315˚	-50˚
	MK9706	19463.1	84236.4	100.0	125˚	-58˚
	MK9706B	19463.1	84236.4	77.1	125˚	-60˚
	MK9707	19462.1	84235.2	100.6	90˚	-48˚
	MK9708	19081.5	84338.0	131.6	135˚	-60˚
	MK9709	18846.1	84056.2	137.0	315˚	-60˚
	MK9710	19081.5	84338.0	142.0	135˚	-45˚
	MK9711	18866.6	84266.8	155.8	315˚	-60˚
	MK9712	18866.6	84266.8	193.6	315˚	-70˚
	MK9713	19059.0	84579.8	478.6	135˚	-55˚
	MK9714	18866.6	84266.8	271.9	135˚	-45˚
	MK9715	18866.6	84266.8	259.1	135˚	-65˚
	MK9716	18866.6	84266.8	202.4	135˚	-85˚
	MK9717	18814.8	84218.9	203.3	135˚	-45˚
	MK9718	18677.6	84004.4	200.2	135˚	-45˚
	MK9719	18814.8	84218.9	183.3	135˚	-60˚
	MK9720	18814.8	84218.9	152.0	135˚	-85˚
	MK9721	18673.2	84006.5	141.9	135˚	-70˚
	MK9722	18814.8	84218.9	101.2	315˚	-50˚
	MK9723	18661.8	84193.2	150.6	135˚	-45˚
	MK9724	18806.5	84320.0	107.0	135˚	-45˚
	MK9725	18805.7	84320.9	112.5	135˚	-85˚
	MK9726	18661.8	84193.3	144.4	315˚	-45˚
	MK9727	18773.8	83876.8	152.4	135˚	-55˚
	MK9728	18768.9	84158.5	74.1	135˚	-45˚
	MK9729	18768.9	84158.5	50.8	135˚	-80˚
	MK9730	18859.6	84000.3	154.2	315˚	-45˚

Year	Drillhole	East	North	Length (m)	Bearing	Dip
	MK9731	18768.9	84158.5	50.1	315˚	-50˚
	MK9732	18673.2	84006.5	126.5	315˚	-45˚
	MK9733	18859.6	84000.3	193.5	315˚	-80˚
	MK9734	18762.4	84084.3	96.6	315˚	-45˚
	MK9735	18762.4	84084.3	77.7	315˚	-85˚
	MK9736	18765.9	84080.6	125.2	135˚	-45˚
	MK9737	18770.2	83880.9	111.3	315˚	-45˚
	MK9738	18840.2	84144.4	48.6	135˚	-45˚
	MK9739	18863.9	83996.2	203.2	135˚	-75˚
	MK9740	18840.2	84144.4	184.1	135˚	-60˚
	MK9741	19508.6	84275.3	132.9	95˚	-45˚
	MK9742	18918.4	84377.8	51.8	315˚	-45˚
	MK9743	19536.0	84311.9	118.5	95˚	-45˚
	MK9744	18956.0	84315.9	192.2	315˚	-45˚
	MK9745	19421.2	84219.0	105.8	125˚	-45˚
	MK9746	18866.8	84387.7	115.3	315˚	-45˚
	MK9747	19459.8	84190.5	45.7	125˚	-45˚
	MK9748	19459.8	84190.5	75.4	115˚	-45˚
	MK9749	19001.8	84130.3	119.5	135˚	-45˚
	MK9750	18866.8	84387.7	80.1	315˚	-70˚
	MK9751	18999.5	84135.2	150.3	135˚	-70˚
	MK9752	18999.5	84135.2	125.0	315˚	-50˚
	MK9753	18999.5	84135.2	62.0	315˚	-70˚
	MK9754	18889.8	83796.3	144.8	135˚	-50˚
	MK9755	18833.4	84147.4	126.3	315˚	-45˚
	MK9756	18887.3	83800.7	108.3	315˚	-80˚
	MK9757	18886.4	83801.5	123.4	315˚	-45˚
	MK9758	18833.4	84147.4	135.1	315˚	-65˚
	MK9759	18834.9	83957.8	96.3	135˚	-45˚
	MK9760	18833.4	84147.4	114.8	315˚	-85˚
	MK9761	18831.5	83963.1	184.4	315˚	-75˚
	MK9762	18837.2	84141.2	39.5	135˚	-45˚
	MK9763	18831.5	83963.1	175.0	315˚	-55˚
	MK9764	18904.5	84497.9	171.7	315˚	-80˚
	MK9765	19247.0	84518.4	229.5	135˚	-50˚
	MK9766	19247.0	84518.4	121.3	135˚	-65˚

Year	Drillhole	East	North	Length (m)	Bearing	Dip
	MK9776	18895.9	83899.3	200.0	315˚	-60˚
	MK9777	19054.7	84584.2	220.7	315˚	-80˚
	MK9778	18895.9	83899.3	193.8	315˚	-75˚
	MK9779	19231.9	84817.2	217.0	315˚	-75˚
	MK9780	18858.0	84226.6	127.4	315˚	-70˚
	MK9781	19231.9	84817.2	406.6	315˚	-45˚
	MK9782	18858.0	84226.6	136.7	315˚	-45˚
	MK9783	18858.0	84226.6	166.2	135˚	-80˚
	MK9784	18962.1	84386.0	221.3	315˚	-45˚
	MK9785	19048.1	85008.2	189.9	135˚	-60˚
	MK9786	18984.6	84433.3	210.3	315˚	-60˚
	MK9787	18895.9	83899.3	203.6	295˚	-65˚
	MK9788	18895.9	83899.3	187.8	295˚	-50˚
	MK9789	18895.9	83899.3	144.5	295˚	-89˚
1998	MK9890	19519.6	84238.7	162.5	135°	-45°
	MK9891	19519.5	84238.6	117.0	135°	-70°
	MK9892	19620.1	84359.7	129.8	135°	-45°
	MK9893	19620.1	84359.7	193.5	135°	-70°
	MK9894	19177.0	84155.3	373.1	135°	-75°
	MK9895	19176.9	84155.3	289.3	135°	-65°
	MK9896	19176.9	84155.3	214.6	135°	-55°
	MK9897	19176.9	84155.3	399.4	135°	-84°
	MK9898	19197.1	84457.6	154.5	135°	-45°
	MK9899	19197.1	84457.5	250.9	135°	-65°
	MK98100	18985.1	84433.5	277.1	315°	-80°
	MK98101	18985.1	84433.5	328.9	315°	-90°
	MK98102	19057.1	84580.4	283.2	135°	-90°
	MK98103	19057.1	84580.4	383.4	135°	-80°
	MK98104	19179.4	84205.7	398.7	135°	-70°
	MK98105	19502.6	84199.2	77.7	135°	-45°
	MK98106	19502.5	84199.2	107.3	135°	-85°
	MK98107	18999.0	84028.7	338.6	315°	-75°
	MK98108	19543.0	84266.8	112.5	135°	-55°
	MK98109	19381.5	83735.3	269.1	270°	-45°
	MK98110	19543.0	84266.8	130.0	135°	-80°
	MK98111	19381.3	83735.3	317.0	270°	-65°

Year	Drillhole	East	North	Length (m)	Bearing	Dip
	MK98112	18710.5	82848.5	249.5	200°	-45°
	MK98113	19381.3	83735.3	127.4	90°	-45°
	MK98114	19381.3	83735.3	469.4	270°	-75°
	MK98115	19574.3	84304.2	96.5	135°	-45°
	MK98116	19574.2	84304.1	120.0	135°	-80°
	MK98117	19362.4	83769.6	473.4	270°	-60°
	MK98118	19592.2	84324.8	125.2	135°	-85°
	MK98119	19592.2	84324.7	98.0	135°	-50°
	MK98120	19627.8	84420.4	128.2	135°	-80°
	MK98121	19654.3	84387.0	132.5	145°	-50°
	MK98122	19654.3	84387.0	117.7	135°	-85°
	MK98123	19507.1	84273.3	75.5	135°	-45°
	MK98124	19507.1	84273.3	90.9	135°	-55°
	MK98125	19362.2	83769.7	488.6	270°	-70°
	MK98126	19507.2	84273.4	89.7	135°	-70°
	MK98127	19507.1	84273.3	165.6	135°	-85°
	MK98128	18640.8	83124.6	149.6	270°	-45°
	MK98129	18583.3	83170.8	150.5	90°	-45°
	MK98130	19462.2	84236.3	152.4	135°	-80°
	MK98131	19362.2	83769.7	464.9	270°	-45°
	MK98132	19469.7	84272.6	144.5	135°	-60°
	MK98133	19469.6	84272.5	132.0	135°	-75°
	MK98134	19362.2	83769.7	226.4	90°	-50°
	MK98135	19363.9	83835.7	474.0	270°	-45°
	MK98136	19469.7	84272.5	228.0	0°	-90°
	MK98137	19517.9	83772.9	545.9	270°	-60°
	MK98138	19514.1	84303.1	135.7	135°	-60°
	MK98139	18699.5	83882.0	30.8	0°	-90°
	MK98140	19001.3	84026.2	431.5	135°	-60°
	MK98141	18649.2	83154.8	151.6	270°	-45°
1999	MK99150	18694.2	84169.2	21.0	0°	-90°
	MK99151	19003.8	83996.1	89.7	315°	-80°
	MK99152	19003.7	83996.1	123.3	315°	-55°
	MK99153	18845.7	84056.69	63.5	337°	-62°
	MK99154	18666.2	84067.7	33.8	0°	-90°
	MK99155	18640.1	83974.6	37.2	0°	-90°

Year	Drillhole	East	North	Length (m)	Bearing	Dip
	MK99156	19143.6	84096.7	288.5	135°	-75°
	MK99157	18845.7	84056.6	117.9	360°	-70°
	MK99158	19084.0	84088.0	335.5	315°	-55°
	MK99159	19030.7	84233.1	242.1	315°	-80°
	MK99160	19030.7	84228.4	128.1	315°	-55°
	MK99161	18822.6	83890.3	78.9	225°	-50°
	MK99162	18910.0	84149.5	114.1	315°	-45°
	MK99163	18910.0	84149.5	81.2	315°	-75°

6.2.3 Madison 2000 to 2006

During 2000, Madison drilled 74 drillholes (for 8477 m) numbering MK164 to MK235 (Table 6-3). Drilling methods and significant intercepts for these holes are discussed in Section 11.

Table 6-3 Madison 2000 diamond drilling collar locations

Drillhole	East	North	Length (m)	Bearing	Dip
MK164	19033.0	84230.0	405.3	135°	-50°
MK165	18869.0	84295.0	101.5	315°	-45°
MK166	18869.0	84295.0	23.1	315°	-70°
MK167	18869.0	84295.0	112.5	315°	-75°
MK168	18889.0	84436.0	81.7	270°	-45°
MK169	18889.0	84436.0	110.2	315°	-70°
MK170	19339.0	84462.0	108.1	315°	-45°
MK171	19339.0	84462.0	145.5	315°	-65°
MK172	18890.3	84406.8	106.5	315°	-65°
MK173	18866.8	84387.7	100.0	225°	-45°
MK174	18866.8	84387.7	74.9	270°	-50°
MK175	19193.0	83075.0	157.9	255°	-45°
MK176	19030.7	84193.6	270.8	315°	-65°
MK177	19131.0	84179.0	445.5	135°	-75°
MK178	18956.0	83988.0	81.2	315°	-60°
MK179	18739.0	83939.0	60.0	0°	-90°
MK180	18730.0	84005.0	47.6	0°	-90°
MK181	18667.0	83961.0	60.0	0°	-90°
MK182	18843.0	83819.0	91.4	0°	-90°
MK183	19339.0	84462.0	225.0	0°	-90°
MK184	19339.0	84462.0	213.0	135°	-75°

Drillhole	East	North	Length (m)	Bearing	Dip
MK185	19353.0	84494.0	105.2	315°	-45°
MK186	19353.0	84494.0	225.0	0°	-90°
MK187	19146.0	84307.0	26.6	315°	-45°
MK187A	19146.0	84307.0	117.9	315°	-50°
MK188	19146.0	84307.0	81.2	0°	-90°
MK189	19077.0	84344.0	54.5	315°	-45°
MK190	19077.0	84344.0	14.0	0°	-90°
MK191	19292.0	84544.0	165.3	135°	-45°
MK192	19292.0	84544.0	40.0	0°	-90°
MK193	18956.0	83988.0	121.5	135°	-65°
MK194	19029.0	84093.0	88.1	0°	-90°
MK195	19029.0	84093.0	90.5	135°	-45°
MK196	19345.0	84566.0	75.3	0°	-90°
MK197	18843.0	83819.0	108.7	315°	-50°
MK198	18843.0	83819.0	82.6	280°	-45°
MK199	18851.0	83794.0	138.0	0°	-90°
MK200	18851.0	83794.0	74.9	240°	-60°
MK201	19070.0	84312.0	76.5	315°	-65°
MK202	19406.0	84489.0	151.5	315°	-45°
MK203	19406.0	84489.0	124.0	0°	-90°
MK204	19406.0	84489.0	29.0	135°	-45°
MK205	19459.0	84490.0	71.7	135°	-45°
MK206	19459.0	84490.0	133.5	0°	-90°
MK207	19459.0	84490.0	137.5	315°	-45°
MK208	19088.0	84239.0	135.0	315°	-60°
MK209	19049.0	84289.0	27.0	315°	-80°
MK210	19762.0	84574.0	71.7	135°	-45°
MK211	19762.0	84574.0	115.0	135°	-70°
MK212	19128.0	84209.0	100.5	290°	-70°
MK213	19128.0	84209.0	50.0	290°	-45°
MK214	19101.0	83830.0	91.4	0°	-90°
MK215	19713.0	84623.0	207.0	135°	-70°
MK216	19061.0	84277.0	136.4	315°	-80°
MK217	18803.0	84199.0	59.0	315°	-50°
MK218	18792.0	84175.0	65.7	315°	-50°
MK219	19257.0	84166.0	540.2	225°	-65°

Drillhole	East	North	Length (m)	Bearing	Dip
MK220	19301.0	83206.0	232.0	220°	-50°
MK221	18905.0	83940.0	110.2	45°	-45°
MK221A	18905.0	83940.0	28.0	45°	-45°
MK222	19775.0	84619.0	61.0	135°	-45°
MK223	19775.0	84619.0	106.0	135°	-65°
MK224	19627.8	84420.4	140.1	135°	-50°
MK225	20369.0	85090.0	200.9	325°	-55°
MK226	18817.0	84109.0	52.5	0°	-90°
MK227	18874.0	84047.0	83.4	360°	-45°
MK228	18994.0	83934.0	74.8	0°	-90°
MK229	18942.0	83378.0	130.0	270°	-45°
MK230	19477.0	84118.0	45.0	90°	-45°
MK231	18745.0	84067.0	40.0	0°	-90°
MK232	18758.0	84031.0	45.1	0°	-90°
MK233	18797.0	84038.0	80.0	0°	-90°
MK234	18743.0	84151.0	30.0	0°	-90°
MK235	18779.0	83992.0	64.4	0°	-90°

No further field work was carried out until 2003 when a program of mapping, trenching and sampling was completed. This was followed by geophysical surveying in 2004 with geophysical anomalies tested through sampling, pitting and trenching. Five holes were drilled to test the most prospective areas in 2005 (MK236 to MK240) for a total of 1209 m of drilling (Table 6-4).

Table 6-4 Madison 2005 diamond drilling collar locations

Drillhole Name	East	North	Length (m)	Bearing	Dip
MK236	19299.0	84206.0	170.3	135°	-65°
MK237	19299.0	84206.0	197.7	135°	-86°
MK238	20025.0	84636.0	37.2	315°	-60°
MK238A	20025.0	84636.0	196.1	315°	-60°
MK239	19079.0	84094.0	397.9	132°	-76°
MK240	18900.0	83988.0	209.3	135°	-55°

In late 2005, Encom Technologies Pty Ltd was commissioned to re-process and interpret the airborne magnetic survey data flown in 1996.

Enhancement filters applied to the magnetic data together with the 90 m spaced SRTM (Shuttle Radar Topography Mission**)** elevation data showed a number of discrete anomalies, identified as a suites of intrusive porphyries. In addition, two target areas, displaying similar magnetic signatures to the main Mt. Kare anomaly, were identified 4 km to the northeast and 10 km to the south-southwest.

Reprocessing and interpretation of the 2004 Induced Polarization (IP) survey data covering the Mt. Kare deposit and Pinuni Valley was carried out by Graeme MacKee of GeoDiscovery Group. Filtering and 3D modeling of the chargeability data lead to the following conclusions:

- The strongest IP responses coincide with the Central Zone and to a lesser degree with the peripheral Western Roscoelite Zone and Black Zones.
- The strongest gold mineralisation, associated with the latter two peripheral zones, does not correlate directly with the IP response which is better related to overall sulphide content. The implication is that some of the secondary strength IP anomalies may prove to be prospective for low sulphide gold mineralisation.
- Secondary magnitude anomalous zones (targets) include the northeast and southwest extensions of the Black Zone and the northeastern extension of the Central Zone into the Pinuni Valley.
- The main IP anomalous zone over the Mt. Kare deposit remains open to the south and southwest.

6.3 Historical mineral resource and mineral reserve estimates

In January 2004, WGM estimated resources for the Mt. Kare project using the data provided by Madison (WGM, 2000). The resources were reported at a 1.0 g/t Au-equivalent (AuEq) block model cut-off grade:

- Indicated Resource 14.7 Mt grading 2.36 g/t Au and 33.7 g/t Ag.
- Inferred Resource 11 Mt grading 2.0 g/t Au and 23 g/t Ag.

The gold-equivalent was derived from the sum of the gold and silver grades under the assumptions of a gold price of US$300/oz and a silver price of US$5.50/oz and did not account for metal recoveries:

$$\text{AuEq g/t} = \text{Au g/t} + (5.5/300) \times \text{Ag g/t}$$

The WGM resource formed the basis of the previous technical report (Snowden, 2006) and is updated in this report (Section 17).

6.4 Production history

As discussed previously, artisan miners are estimated to have recovered approximately one million ounces of gold from alluvial and colluvial sources (Laudrum, 1997). The workings comprise shallow pits and trenches usually with maximum depth of a few metres. The largest artisan excavations are located around the toe of a large landslip that occurs on the southern margin of the Mt. Kare ridge.

There are no other reports of production in the Mt. Kare area.

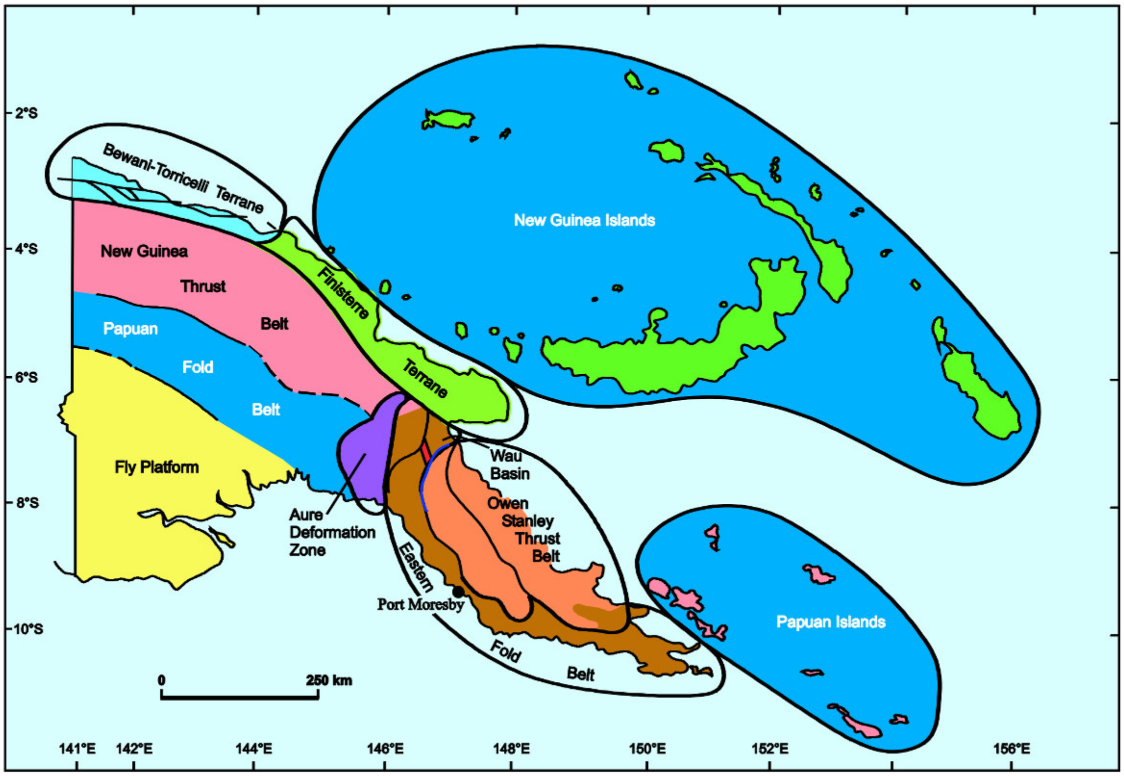
7 Geological setting

7.1 Regional geology

The main landmass of PNG is the product of the interaction of the Australian craton colliding with the Pacific oceanic plate. Simplistically, these major geological plates make up the landmass of PNG which reflects the process of successive collision and accretion (Figure 7.1 and Figure 7.2). The most recent interaction began about five million years ago (5 Ma). This event resulted in the uplift, folding and thrust development in the New Guinea Highlands which continues today.

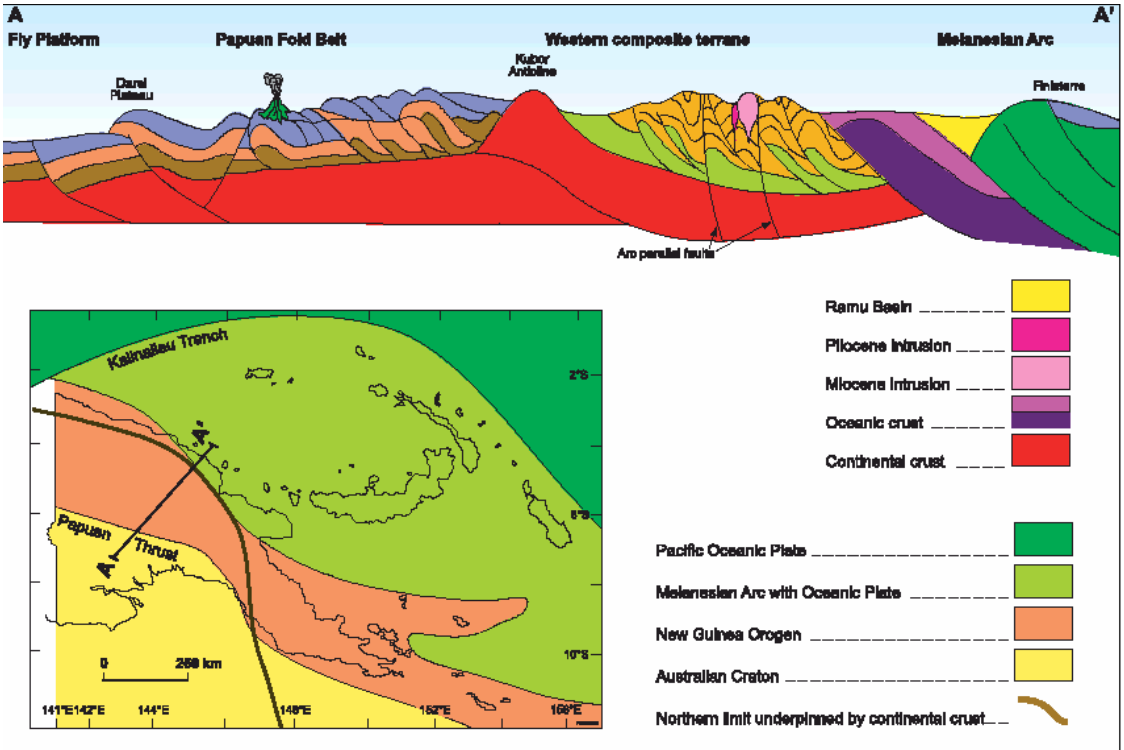
The continental Fly Platform in the south is formed from the Palaeozoic metamorphic and granitic rocks of the Australian continent (Figure 7.1). Overlying this basement are rocks formed from Mesozoic (clastic) sediments which are in turn overlain by younger Quaternary sediment cover. The central collision zone which presents as the Papuan Fold and New Guinea Thrust Belts, is composed of Mesozoic meta-sediments faulted against ocean floor sequences (ophiolites), ultramafics, and volcanic rocks. The northern zone of PNG is composed of Cainozoic basaltic and andesitic volcanic rocks associated with reef limestones. These are covered in turn by Quaternary volcanic rocks.

Figure 7.1 Regional geological setting[5]



[5] from Williamson and Hancock (2005)

Figure 7.2 Conceptual cross section of PNG[6]



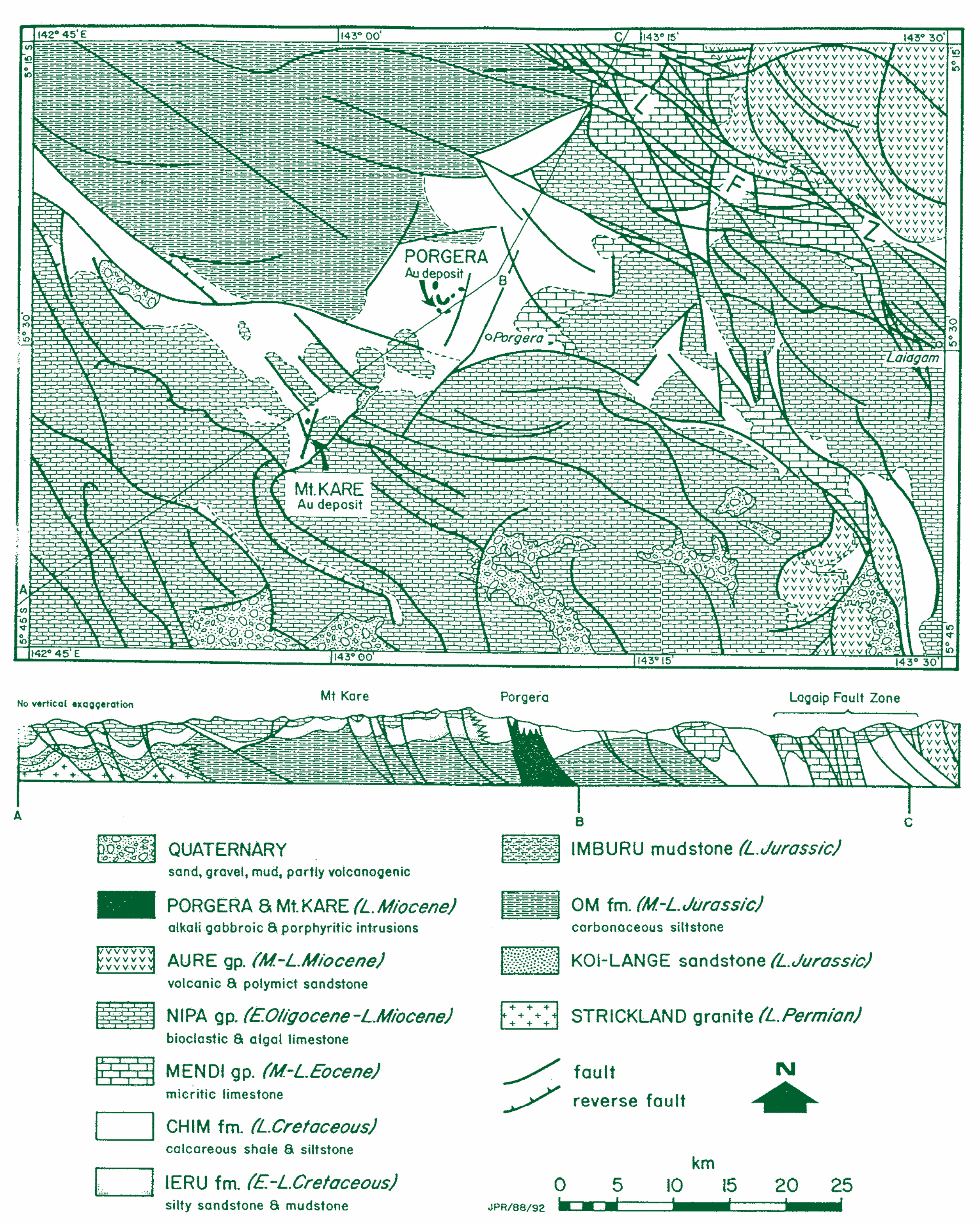
7.2 Local geology

The Mt. Kare deposit is hosted by Mesozoic and late Tertiary sedimentary rocks originally deposited on the Australian craton. Following continental collision, folding and thrusting in the Papuan Fold Belt and subsequent uplift, late Miocene-Pliocene (6.0 Ma) alkaline intrusive bodies were emplaced (Figure 7.3). At Porgera and Mt. Kare, intrusive complexes, about which subsequent precious metal mineralisation has been centred, are focused at the intersections of a deep seated transverse fault (Porgera Transfer Structure, Figure 7.4) and major northwest-trending, arc parallel thrusts.

The similarity between intrusion types at Porgera and Mt. Kare is well documented (Richards, J.P. and Ledlie, I. 1993) and lends credibility to the hypothesis that the two systems are genetically related, with a common source intrusive complex within the lower crust and a common control on intrusion emplacement.

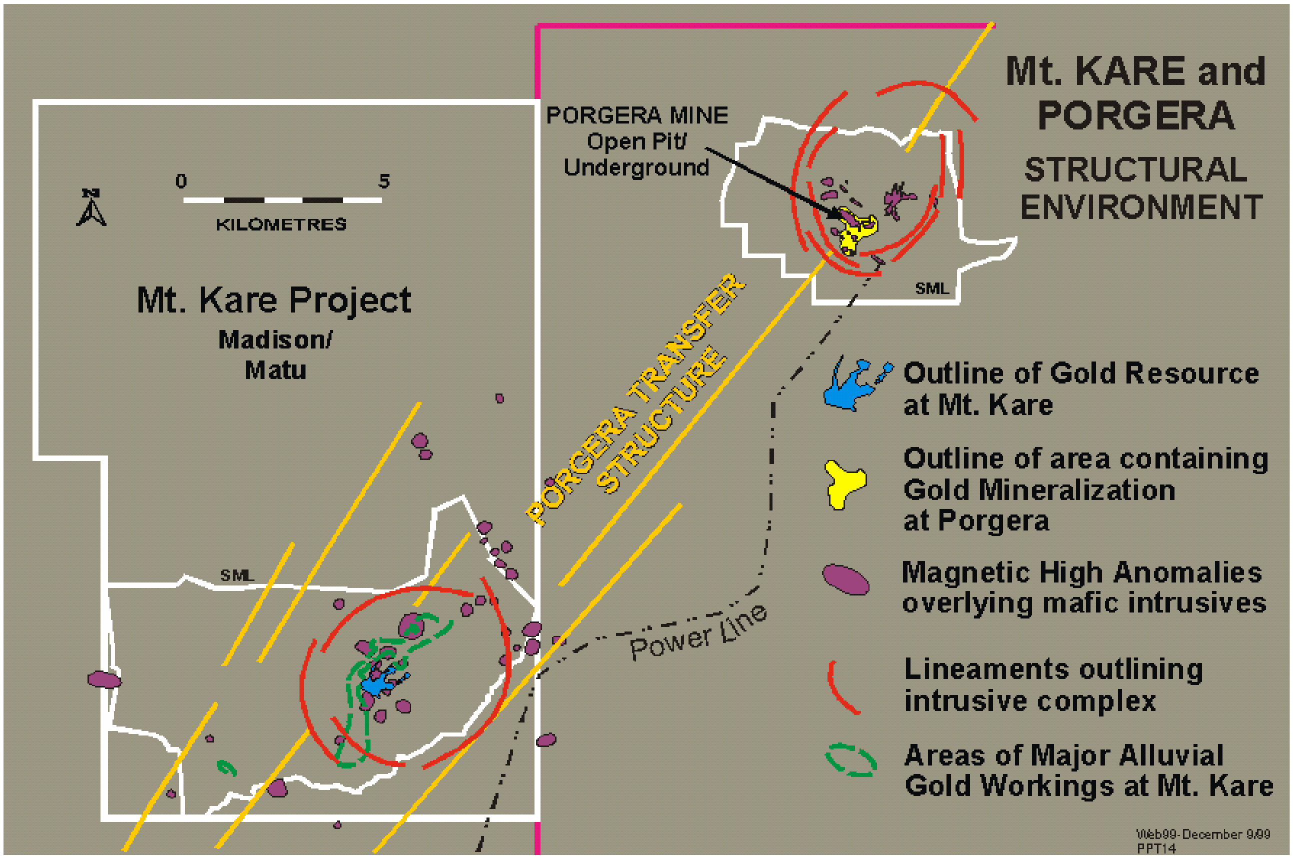
[6] from Williamson and Hancock, 2005

Figure 7.3 Geology of Mt. Kare project [7]



[7] modified from Richards and Ledlie, 1993

Figure 7.4 Schematic structural interpetation Mt. Kare area[8]



7.3 Property geology

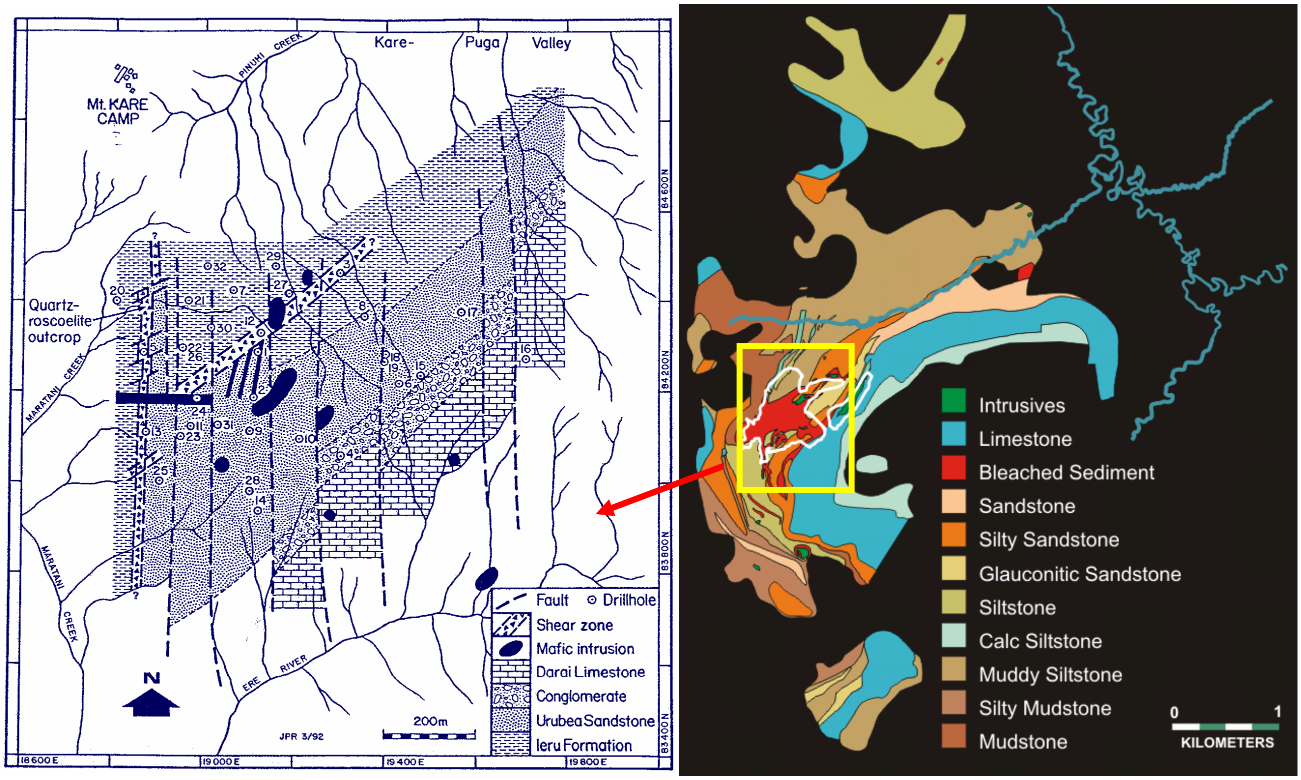
7.3.1 Mapping and stratigraphy

Detailed geological mapping was carried out by Madison and is available only over the immediate area (approximately 300 hectares) of the Mt. Kare deposit (Madison, 1997). No dedicated program of surface geological mapping has been carried out by Buffalo Gold. Surface exposures were examined by the SRK consultants as part of their structural study (SRK, 2007).

The property geology comprises a folded and faulted sequence of meta-sediments that have been intruded locally by gabbroic and mafic-porphyry dykes (Figure 7.5).

[8] source Madison, 2005

Figure 7.5 Mt. Kare property geology[9] (left) and geological mapping interpretation (right)[10]



7.3.2 Rock types

With minor modification, the following is taken from the 2007 SRK structural report (SRK, 2007):

"Analysis of lithology and stratigraphy indicates that the following sequences and relationships are present at Mt. Kare:-

i) To the west of the Mt. Kare mineralized zones, a brown coloured mudstone and siltstone unit (locally called the "Brown Mudstone") is in fault contact with sandstone, mudstone, calcareous siltstone and limestone referred to as the "Eastern Succession". The Brown Mudstone is similar in appearance to the brown mudstone units which form the western wall of the Porgera pit, which have been dated using nano-fossils as Late Cretaceous (69-74 Ma), probably part of the Ieru Formation and equivalents.

ii) At the base of the Eastern Succession, in the hangingwall of the Brown Mudstone fault, is a coarse grained, well-bedded limestone unit interbedded with marl and minor sandstone. This unit is exposed to the east of the Mt. Kare prospect and forms a series of prominent ridges including Mt. Kare. Conformable on the limestone is a sequence of fine grained bioterbated sandstones and siltstones (silty marl). The sequence contains variable amounts of carbonate. At Porgera, the silty bioterbated limestone is locally called "calcareous sediment" and has been dated as Oligocene in age (30-34 Ma). Younging in the sandstone-siltstone sequence suggests the sequence youngs and dips to the west.

[9] modified from Richards and Ledlie, 1993
[10] modified from Madison, 2005

iii) In the eastern part of the Mt. Kare prospect, a sequence of sandstone, limestone and calcareous shale is in fault contact with Oligocene sandstone-siltstone sequence and is distinctive by the presence of interbedded limestone, shale and glauconitic fine grained sandstone. Commonly the siltstone units between the limestone beds have been strongly deformed and are visible in core as carbonaceous gouge and breccias. The sequence is exposed at surface in the Western Roscoelite Zone and in numerous drillholes in that area.

In summary, the host stratigraphy at Mt. Kare consists of Late Cretaceous Brown Mudstone in fault (thrust) contact with younger (Oligocene) limestone, marl, fine grained sandstone and siltstone units. The Oligocene rocks may correlate with the Dari Limestone and parts of the Lai Siltstone."

The Miocene-Pliocene age intrusives at Mt. Kare are predominantly narrow dyke-like bodies which have exploited zones of weakness (faults). The dykes vary in composition from coarse grained gabbro, diorite/porphyritic diorite to andesite. To date, no major intrusive bodies have been identified at Mt. Kare.

7.3.3 Structure

With minor modification, the following is taken from the 2007 SRK structural report (SRK, 2007):

"The sequence at Mt. Kare is folded about north-northeast-trending, gently north-northeast-plunging fold axes. A syncline, with the younger rocks preserved in the hinge, lies immediately east of the Brown Mudstone contact and is the host structure to mineralisation. Further east, the basal limestone unit forms the core of a gently north-northeast-plunging anticline (Mt. Kare limestone scarp)."

Observations by the SRK consultants, suggest that the following structures provide important controls on mineralisation at Mt. Kare:

"i) The contact between the Eastern Succession (limestone, sandstone, siltstone, marl) and the Brown Mudstone is a fault/shear zone termed the "Brown Mudstone Fault". The fault is evident in drill core as a zone of shearing and brecciation up to 10 m wide in the mudstone and may also include footwall and hanging wall shear zones which splay shallowly to the west. The splays have in some areas faulted off and isolated some of the Eastern Succession. The Brown Mudstone Fault likely forms part of the Porgera Transfer Structure and is overprinted by a northwest-striking (arc parallel) thrust at the southern edge of the prospect and by a strike parallel fault zone along the in the northern edge). This indicates that the last movement on the Brown Mudstone Fault was relatively early.

ii) A fault breccia, "F1", which includes a polymict (heterolithic) breccia, occurs in the immediate hanging wall of the Brown Mudstone Fault. North of 84450 mN, the F1, Hangingwall Fault, overprints the Brown Mudstone Fault as a result of it having a shallower dip but remains near strike-parallel to the Brown Mudstone contact. Additional moderately dipping faults, parallel to the F1 are evident in the drilling in the northern part of the prospect, all of these structures contributing to the Transfer Structure.

iii) Either before or during the Transfer Fault movements, the Eastern Succession in the hanging wall of the Brown Mudstone Fault has been folded. The folds plunge moderately northeast such that the older sequences of limestone exposed to the east form the nose of a northeast-plunging anticline and the younger limestone, glauconitic sandstone, sandstone sequence occurs in a syncline in the immediate hanging wall of the F1 fault. The plunge direction of the folding at Mt. Kare correlates with shallowly north-northeast-plunging folds observed at Porgera. These folds at both Porgera and Mt. Kare probably formed at the same time as the regionally more extensive west-northwest-tending folds and the northeast plunge is likely a result of the folding, accommodating simultaneous movement on the Transfer Structure."

7.3.4 Alteration

With minor modification, the following is taken from the 2007 SRK structural report (SRK, 2007):

"The main pervasive hydrothermal alteration observed at Mt. Kare is a sericite + pyrite (fine grained disseminated) + carbonate (generally dolomite) + silica alteration which is spatially associated with the intrusions and pre-dates mineralisation. The strongest alteration with silicification is generally on the immediate margins of the dykes, accompanied by fine pyrite veins and very fine disseminated pyrite. This alteration tends not to penetrate the intrusive and the cores of larger dykes are weakly (chlorite + fuchsite + clay + pyrite) to relatively unaltered. Towards the southern edge of the deposit, the alteration is more extensive and forms broader zones around the intrusions. This suggests a source of hydrothermal fluids not only derived from the dykes but also from deeper sources below the southern areas of the deposit."

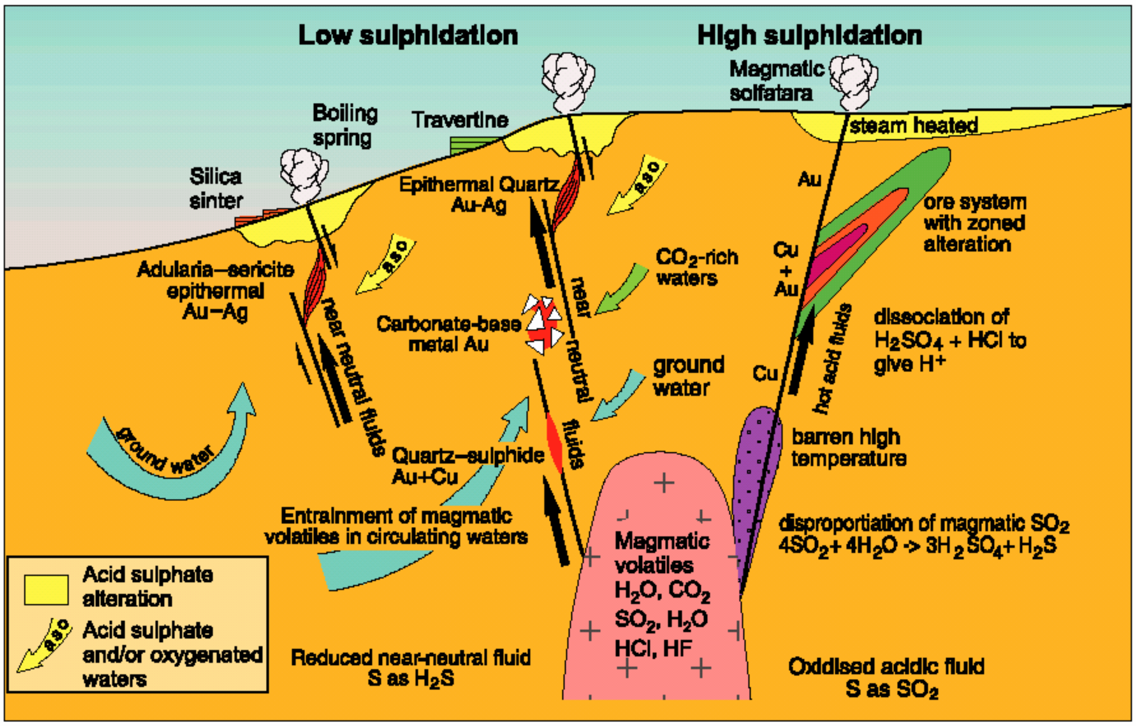
Supergene alteration includes manganese oxide deposition (in part from the oxidation of manganese carbonate and rhodochrosite), iron oxides including limonite, goethite, haematite (also hydrothermal), and clays.

8 Deposit types

Mt. Kare is an epithermal mineral deposit, which is defined as a deposit formed within 1,000 m of the Earth's surface from low temperature (50 to 100°C) hydrothermal mineralising fluids which have emanated from a magmatic source flowing through host and country rocks.

Epithermal gold mineralisation has been classified into either low-sulphidation (LS) or high-sulphidation (HS) types (Figure 8.1). The difference in these types relates to the acidity of the hydrothermal fluid with the LS types being near neutral in pH and the HS types being more acid. The model for Mt. Kare is the LS type.

Figure 8.1 Conceptual models for epthermal gold deposits[11]



[11] modified from Corbett, 2002

9 Mineralisation

Mineralisation at Mt. Kare post-dates the intrusions, pervasive alteration, north-northeast-plunging folds and most of the movement on the major faults, including the major hangingwall fault containing a polymict breccia. Gold mineralisation is predominantly within veins, the dominant style of vein fill being pyrite + sphalerite + galena + quartz, carbonate and silver sulphosalts.

Buffalo Gold believes that the mineralisation style at Mt. Kare is similar to that at Porgera. The SRK 2007 study (SRK, 2007) describes the mineralisation at Porgera as follows:

"*At Porgera vein mineral assemblages similar to those at Mt. Kare are well documented. The veins at Porgera are grouped into:-*

Early Stage (Stage I). The vein paragenesis is such that pyrite only veins (B-type and C-type) are early. Pyrite + sphalerite + galena + carbonate veins are paragenetically slightly later (A-type), and veins rich in silver sulphosalts, commonly associated with colloform banded carbonate, are later again (E-type veins).

Later Stage (StageII). Quartz + roscoelite (vanadium mica) + pyrite + carbonate veins which commonly host free gold, returning high grades."

Stage II mineralisation has two modes of occurrence at Porgera, either occurring as veins overprinting Stage I veins (commonly within or immediately adjacent to the Stage I veins) or as discrete zones of fault breccia and vein, formed by activation and re-activation of faults which are separate to the Stage I vein sets (e.g Zones VII and VIIA at Porgera).

According to the SRK 2007 study (SRK, 2007), "*Stage II mineralisation at Mt. Kare occurs as discrete veins, stockwork and breccia matrix-fill, spatially associated with, and overprinting, the Stage I mineralisation. The mode of occurrence of Stage II mineralisation at Mt. Kare is a composite overprint on Stage I.*" To date, no discrete zones of Stage II mineralisation have been observed, although target areas have been identified where discrete domains of Stage II mineralisation may occur.

For the purpose of resource estimation, three main mineralized domains have been identified at Mt. Kare, each having distinctive structural, geological and mineralogical characteristics.

9.1 Western Roscoelite Zone

The Western Roscoelite Zone (WRZ) is the westernmost mineralized domain, lying in the immediate hangingwall of the Brown Mudstone Fault.

Drilling has traced the WRZ over a strike length of 550 m, outlining a north-south trending body. In the field, a clearly visible east-northeast tending fault at 84225 mN divides the WRZ into to two distinct zones: a northern, cohesive mineralized body, NWRZ, and a less well defined southern zone, SWRZ.

In the NWRZ, the Brown Mudstone Fault and Hangingwall Fault are the main structures that control veining, and mineralisation occurs entirely between these two faults. Swarms of early stage (Stage 1) pyrite and pyrite + sphalerite + galena + carbonate extension veins, with a weak Stage II quartz + pyrite + roscoelite + carbonate overprint, have focused around the earlier alteration and intrusions occurring in the immediate hangingwall of the Brown Mudstone Fault. The veins generally strike northeast to north-northeast, dip steeply to the east and are located at the steepest part of the Brown Mudstone Fault, immediately above a change to a shallower dip where a northwest striking splay fault (Hangingwall Splay) intersects the contact. The Brown Mudstone Fault and F1 fault are also affected by northwest-striking faults which compartmentalize the vein swarms and form a southern boundary (the Northwest Fault). Base metal mineralisation in the NWRZ is frequently semi-massive to massive in nature with concomitant high gold values, locally enhanced by quartz-roscoelite veining.

The controls on mineralisation in the SWRZ are not as clear-cut as in the NWRZ.

The alteration system is more widespread, extending to depth before shallowing out at a depth of approximately 400 m where it converges towards the Black/C9 shoot. Stage I veining with a minor Stage II overprint occurs in the immediate hangingwall of the Brown Mudstone Fault while, to the east, sandstones and lesser siltstones host predominately disseminated pyrite and pyrite veining forming a steeply dipping shoot (this area has previously been included in the Central Zone).

9.2 Central Zone

The Central Zone domain is not well defined and has previously been identified as a broad 700 m by 300 m area of shallow, generally sub-horizontal to gently dipping mineralisation with a sub-vertical root zone, extending to the northeast from the WRZ towards the Pinuni Valley. In previous resource models, sub-vertical mineralisation in the southwest, adjacent to the SWRZ, has been attributed to the Central Zone. Recent drilling in this area has lead to the inclusion of this deeper mineralisation in the WRZ domain.

Mineralisation in the Central Zone is not as cohesive as in the WRZ, comprising northeast-trending, Stage 1, pyrite and base metal vein swarms and is generally of lower tenor.

9.3 Black/C9 Zone

The Black Zone and the C9 shoot are controlled by the same northeast-striking fault system and are considered to form a single mineralized domain.

The Black Zone lies 600 m east of the WRZ, occupying the crest and western flank of a steep northeast trending ridge structure. In outcrop, the Black Zone is a black, strongly manganiferous breccia (formed by the near surface weathering of manganiferous carbonate - rhodochrosite) in the hangingwall of the steep, westerly dipping limestone-sandstone contact. Mineralisation is hosted by brecciated sandstone and calcareous siltstone and occurs as pyrite + sphalerite + galena + carbonate veins and breccia matrix (Stage I, A and B-type) with a pervasive late Mn-carbonate overprint. In drill core the sulphides are often semi-massive to massive with abundant black manganiferous wad and iron oxides near surface.

Drilling has traced mineralisation over a strike length of 250 m and has outlined two shoots, the southern shoot being the largest, with a plunge of approximately 24° to the southwest. The limestone contact, although conformable, is an irregular surface which has a number of bends towards a northwest-strike. The northwest-striking sections of the contact dip to the north-northeast such that the limestone contact becomes shallower dipping. Two of these bends coincide with the southwestern edges of the northern and southern shoots respectively. The pattern is similar to the Brown Mudstone Fault, the base of the Black Zone shoots coinciding with the northwest-striking bends which may be the result of cross structures off-setting the limestone contact.

The C9 shoot lies 250 m to the southwest of the Black Zone, occupying the high ground to the east of the SWRZ, adjacent to the contact between sandstones and the basal limestone unit. The C9 mineralisation consists of pyrite + sphalerite + galena + silica + carbonate (A-type) which occurs in the matrix to a breccia of altered sandstone, siltstone and calcareous siltstone. The alteration and mineralisation form a steep westerly plunging shoot extending from surface outcrop at 3010 mRL to 2600 mRL. Mineralisation occurs on an east-west striking bend, splay or step-over, in a steeply dipping northeast-striking fault. The northeast strike and steep northwest dip of the breccia at the margins of the shoot suggest that the controlling structure may be bedding parallel and parallel to the limestone contact. The three dimensional shoot geometry is consistent with a component of strike slip (dextral) movement on northeast trending structures.

10 Exploration

Several phases of exploration have been undertaken in the Mt. Kare area by Buffalo Gold. The work has included:

- Establishment of survey grids.
- Geochemical sampling.
- Trenching.
- Studies on the structure and controls on mineralisation.
- Diamond core drilling (Section 11).
- Aeromagnetic Survey

10.1 Surveying

The original survey beacons established by Palanga Survey Pty Ltd in 1997 and 1999 have been destroyed. In June 2006, Buffalo Gold contracted Arman Larmer Surveys to re-establish survey control over the project area. Utilizing Station PSM 17885 Paiam Town (Porgera) (UTM Zone 54 Easting 738 026.498 Northing 9 395 888.603) as a reference station, a differential GPS survey was carried out establishing a primary base station (GPS1) within the Mt. Kare camp compound, with secondary control stations in the vicinity of the helipad (GPS2) and the old CRA workshop (GPS3). Coordinates are tabulated in Table 10-1 below.

Table 10-1 Survey stations

Station	WGS 84 UTM East (m)	WGS 84 UTM North (m)	WGS 84 Elev (m)	Mt. Kare Local East (m)	Mt. Kare Local North (m)
GPS1	719434.961	9384792.623	2898.815	19320.961	84613.623
GPS2	719333.451	9384841.334	2882.701	19219.451	84662.334
GPS3	718934.943	9384940.836	2877.994	18820.943	84761.836

The approximate conversion between Mt. Kare Local Grid and WGS 84 (Universal Transverse Mercator Projection – UTM Zone 54 Southern Hemisphere) is:

- WGS 84 East = Mt. Kare Grid East + 700114 m
- WGS 84 North = Mt. Kare Grid North + 9300179 m
- WGS 84 Elev. = Mt. Kare Elevation + 78 m

10.2 Geochemical sampling

Lubu Creek is situated in the southwest corner of EL 1093, some 4 km southwest of the Mt. Kare deposit. Regional stream sediment and pan concentrate sampling by CRA in 1986 returned anomalous gold values in the vicinity of artisanal alluvial mining. No follow-up work was carried out by CRA and work by Madison was confined to reconnaissance sampling. Encom Technology, in their re-interpretation of the 1996 aero magnetic data, targeted a probable magnetic intrusive, to the west of Lubu.

In October 2006, Buffalo Gold initiated a stream sediment and reconnaissance geological mapping program covering an area of 14 km^2. A total of 263 stream sediment samples were collected and submitted to PT Intertek Utama Services, Jakarta for gold and multi element ICP (Inductively Coupled Plasma) analysis. Geological mapping indicated the area to be underlain by a mudstone/siltstone-sandstone-limestone sequence locally intruded by diorite dykes. Pyrite mineralisation was located on intrusive contacts in drainages in the northern portion of the area of sampling. However, no significant zones of hydrothermal alteration were noted.

Assay results for the stream sediment samples returned generally very low gold values in the <1 to 2 ppb range with highs of 3 to 6 ppb. Two higher values of 93 ppb and 193 ppb were returned for samples taken in drainages to the south of the main Lubu Creek alluvial workings. No significant values were noted in the multi element values and rock chip samples of the pyrite mineralisation proved barren.

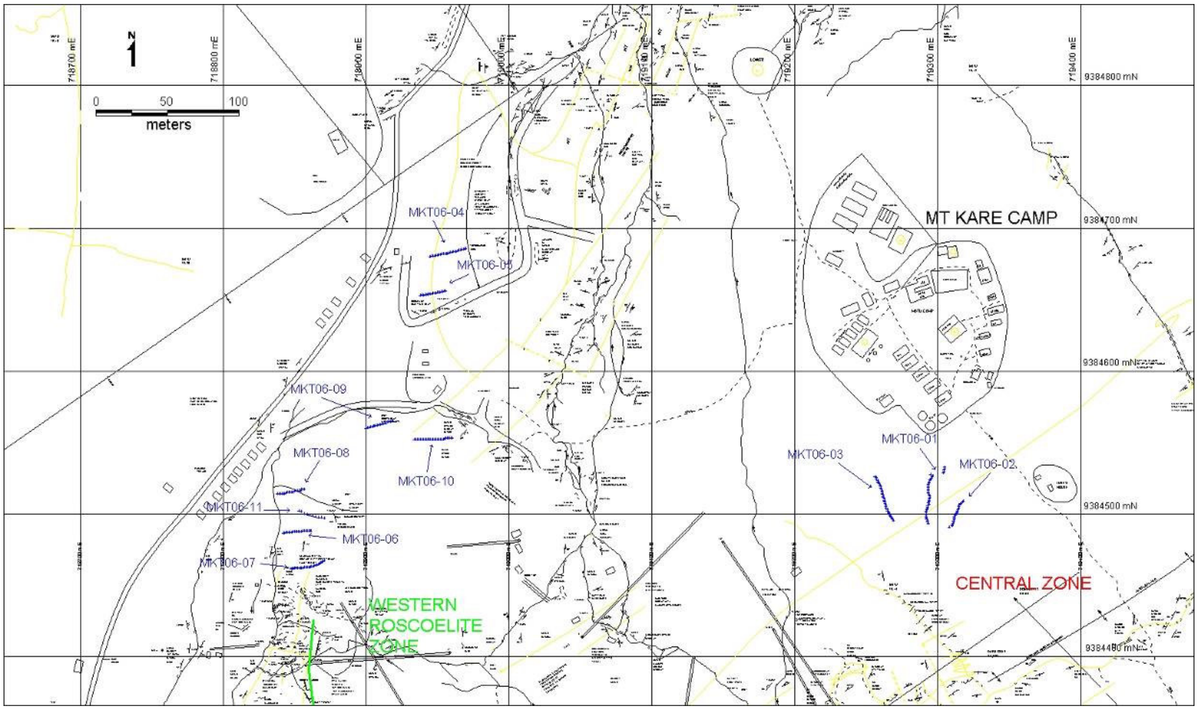
Follow-up panned concentrate sampling and ridge and spur soil sampling was carried out to the south of the alluvial workings and in areas of above background stream sediment values. A total of 41 panned concentrate and 90 soil samples were collected for gold and gold/multi element analysis respectively.

Results indicate that the majority of anomalous panned concentrate values (100 g/t to a maximum of 292 g/t Au) are from samples collected in streams draining the alluvial deposits. These are interpreted to be palaeo-placers with the gold probably derived from the Mt. Kare area. One area of high panned concentrate values requires further investigation. Ridge-and-spur soil samples returned extremely low gold values with only a few slightly above the 0.005 g/t detection limit and no significant multi element response.

10.3 Trenching

Buffalo Gold exploration teams excavated (by hand) 11 trenches totaling 275 m (Figure 10.1). Three trenches, MK06-T01 to T03, tested a previously unexplored sulphide sub-outcrop in the northeastern extension of the Central Zone. The remaining 8 trenches, MK06-T04 to T11, targeted the northern extension of the WRZ. The walls of the trenches were geologically mapped and channel sampled at one metre intervals. Samples were dried and crushed on site by ITS (Intertek Testing Services) and one kilogram sub-samples dispatched to the ITS sample preparation facility in Lae for further processing and subsequent forwarding to the PT Intertek Utama Services laboratory in Jakarta for analysis.

Figure 10.1 Location of trenches on the northern extension of the Western Roscoelite Zone and Central Zone



Northeastern extension Central Zone

Trench MK06-T01 was excavated in an attempt to trace the source of large sulphide boulders found in Clem's Creek (directly behind camp). The trench exposed a 40 m, northeast trending zone of base metal and pyrite veining averaging 2.37 g/t Au. The northeastern and southwestern strike extensions of the zone were explored in trenches MK06-T02 and MK06-T03 respectively. Both trenches exposed altered sediments and minor intrusives with disseminated pyrite and more massive pyrite-sphalerite-galena mineralisation. This zone was tested by drillhole MK06-80 (Table 11-7).

Northern extension Western Roscoelite Zone

In 2004 to 2005 Madison carried out a pitting campaign aimed at tracing the strike extension northward from the area of drilling towards the junction with the Pinuni Creek Structure. A grid of 173 one metre deep pits, at 10 to 20 m spacing, were excavated from 84465 mN to 84730 mN (in the vicinity of old CRA compound). The pits were geologically logged and sampled, with auger sampling being used to extend pits to bedrock in areas of overburden. The pit samples were not submitted for assay at the time.

Buffalo Gold retrieved the stored samples and related sampling data and submitted the samples for assay. Results outlined a number of areas with anomalous gold values.

Pits were trenched 20 to 50 m along strike from the most northerly outcrop of the WRZ alteration zone, returning values of 24 g/t, 6.04 g/t and 1.36 g/t Au. Trenches MK06-T06 and MK06-T07 were excavated over this zone, exposing a northerly trending breccia unit hosting base metal and local quartz-roscoelite veining. This zone was tested by drillhole MK06-74 (Table 11-6).

Trenches MK06-T11 and MK06-T08, 15 m and 30 m north of drillhole MK06-08 respectively, exposed only barren mudstones.

At a location 75 m northeast of trench MK06-T08, pit values of 2 to 3 g/t Au outlined a second anomaly in an area where previous trenching had exposed a pyritic shear assaying 2 g/t Au over 5 m. Trenches MK06-T09 and MK06-T10 were excavated to further explore this mineralized zone. Both trenches exposed calcareous siltstones with carbonate veining and minor disseminated pyrite. Channel sampling results returned no significant gold values.

Pits in the vicinity of the old CRA compound outlined a 150 by 50 m, north-south trending, weakly anomalous zone with values in the 20 to 60 ppb gold range. Trenches MK06-T04 and MK06-T05, excavated over the zone, exposed mudstones with no visible signs of mineralisation and only trace gold values.

10.4 Geological study of structure and controls on mineralisation

In February 2007 Buffalo Gold commissioned SRK Consulting to carry out a detailed study of the structure and controls on mineralisation with the aim of identifying target areas for drilling. Principal Consultant Stuart Munroe and Consultant Silvano Sommacal spent two weeks at Mt. Kare reviewing geology including surface exposure and drill core. This work led to the construction of a 3D model of the geology, structure, alteration and mineralisation (SRK, 2007).The study was based on historic drilling and drillholes completed in the 2006 drilling program. Subsequent drilling has not significantly altered the geological framework developed by Munroe and Sommacal.

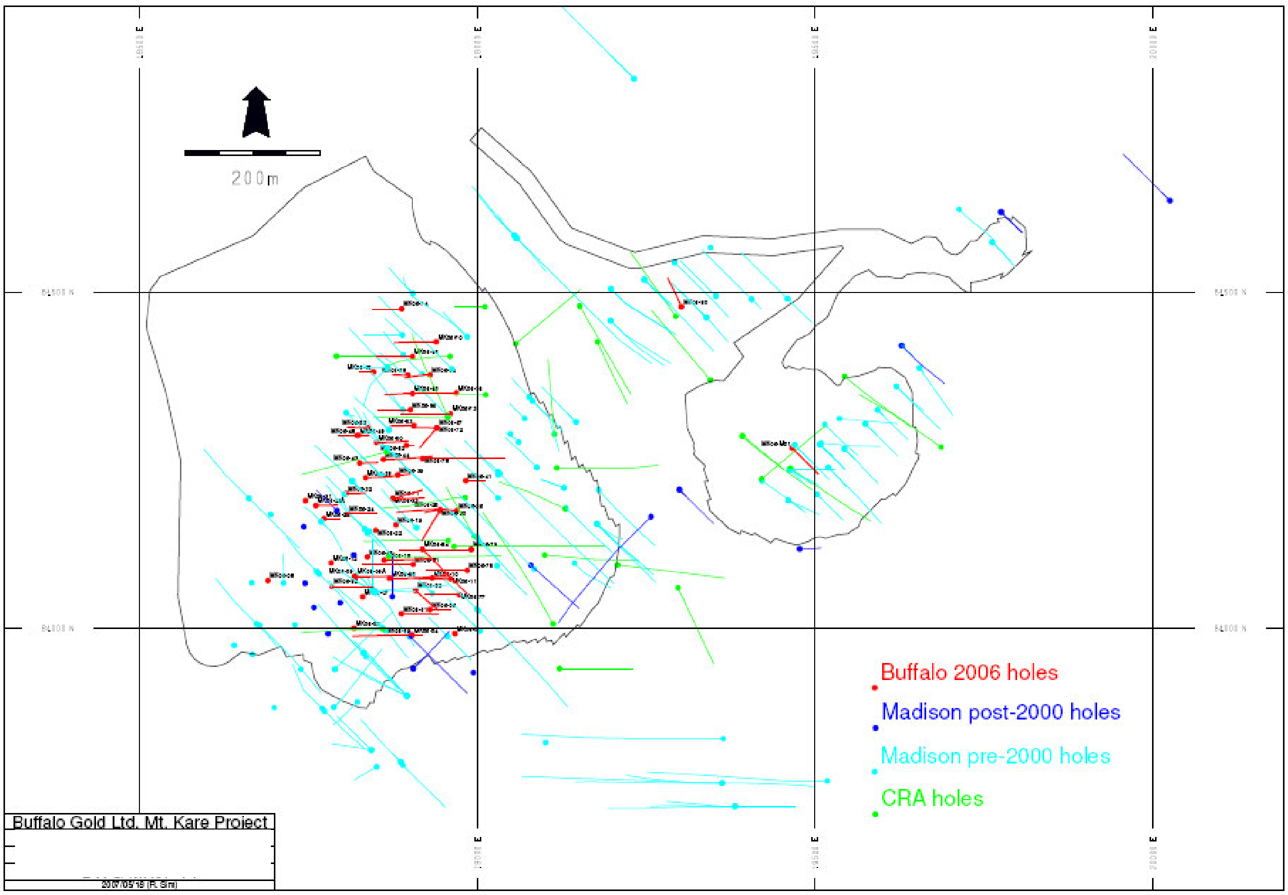
10.5 Personnel

Buffalo Gold's exploration activities are directed by Mr Brian McEwen and supervised in the field by Mr. John Keenan. Mr. Keenan has been managing the project since the start of Buffalo's involvement. He is supported by local PNG geologists and consultants as required.

11 Drilling

Several phases of diamond core drilling have been competed by CRA, Madison and Buffalo Gold. Figure 11.1 illustrates the various drilling programs undertaken at Mt. Kare, in relation to the surface projections of the mineralisation. The following sections describe the historical drilling as well as Buffalo Gold's more recent drilling.

Figure 11.1 Drillhole locations



11.1 CRA and Madison diamond core drilling

CRA drilled 32 diamond core holes which are identified as MK1 to MK32 in Buffalo Gold's electronic database. These holes tested all of the main zones of mineralisation. The total length of drilling completed by CRA is 8625 m. The details of Madison's diamond core drilling programs are described in WGM (1998).

11.1.1 Drill core sizes

Madison's diamond core drilling programs were designed to test targets within and as extensions to, the mineralized zones defined by CRA's drilling and surface sampling, and also later extensional sampling by Madison. Drilling was carried out using two drill rigs, denoted 'PNG' and 'FALCON' in the electronic database, which were used to recover, PQ (85 mm diametre), HQ (63.5 mm diametre), NQ (47.6 mm) and BTW (42 mm diametre) core. Based on the data records for drilling in the 1997/1998 programs, 60% of the core collected was HQ, 22% PQ and the remainder, of NQ and BTW size. Typically the diametre of the core collected decreased with increasing drillhole depth with up to three core sizes collected from any given drillhole.

11.1.2 Drilling procedures

WGM reported that the planned drill collar locations were cleared and leveled (by hand) and the drill rigs were transported to site by helicopter. Drilling was carried out using the wire-line, triple-tube approach which is a method designed to minimize core-loss and washing of the core column by circulating water. In this method, the core is captured at the bit into an inner core barrel that isolates the cut material from the drilling fluid while clamping the whole column from each drill run to limit the loss of friable materials. In addition, polymers are added to the drilling fluid to reduce the swelling properties of clay alteration zones in the recovered core and to also limit erosion of the drillhole walls by the return drilling fluid.

Core recovered by drilling in Madison programs was placed by the driller into plastic core trays with a capacity of five, one metre lengths. The core trays were numbered using industry standard methods with depth markers indicating the start and end of each three metre drilling rod. Each completed tray was covered with a plastic lid and stored on site for collection. The core trays were then transported by helicopter sling back to the main exploration camp for logging.

The delivered core was then placed on benches at the camp logging shed where Madison geologists logged the core recording. Recovery, average fracture spacing, lithology, alternation, mineralisation, veining, and other key geological features were recorded. Snowden understands from the WGM audit document that videotape and photographic records are available of the entire core drilled.

At the time of the audit by WGM (1998), drill logs were recorded by hand onto pre-structured forms. The descriptive notes of each geological interval are somewhat briefer than those found in the CRA logging and a check-box approach has been used to flag key alteration and mineralisation features. A summary type-written log has been produced on completion of the hand-written version which captures the main geological description in a more legible format. Sample intervals are recorded on a separate sample number sheet which needs to be cross referenced with the assay reports from the laboratory. While somewhat cumbersome to compare results to logging in this raw capture form, the records provide a good audit trail for checking and validation of the electronic database. Snowden considers these hard-copy records are of a good industry standard and consistent with industry approaches at the time the drilling was carried out.

11.1.3 Down hole surveys

Snowden could not find any descriptions of the methods used for down hole survey of drillhole path deviations in WGM reports other than a 'Sperry-sun survey instrument' was used to carry out the surveys. Some single shot down hole camera surveys were taken on deeper holes but, for shorter holes, an inclination and bearing was only recorded at the collar. In 2006, Snowden reviewed the electronic database provided by Buffalo Gold and found that the number of down hole survey records for the drillholes ranged from one to ten with the majority of holes having two survey records being at the collar and one near the end of hole. The CRA holes generally only have a record at the collar, while deeper holes tend to have multiple survey records.

11.1.4 Collar surveys

Snowden understands from survey reports in 1997 and 1999 (Madison, 1997b and Madison, 1999), that all drill collars were located on surface by contract surveyors. Details of surveying methods were not detailed in reports or by WGM review reports. Snowden understands that collar surveys of more recent drillholes have been by GPS methods.

11.1.5 Results of drilling

Snowden compiled a listing of significant drilling intercepts using an automated up-hole composite routine using criteria of:

- lower cut-off grade of 1.0 g/t Au
- minimum interval of five metres
- composite grade must exceed 2 g/t Au
- internal waste of up to five metres as long as total interval exceeds 2 g/t Au.

Determination of the true thickness and width of these intercepts is subjective as the geometry of the main mineralized zones is variable and fan drilling has been used to define the limits of the mineralized zones.

Table 11-1 to Table 11-4 list significant results for each of the mineralized zones using the accumulation criteria described above.

Table 11-1 Western Roscoelite Zone significant intercepts

Drillhole	Depth from (m)	Depth to (m)	Length (m)	Au (g/t)	Ag (g/t)
MK11	334	344	10	2.5	13.9
MK22	147	169	22	5.6	93.2
MK24	174	192	18	3.6	5.6
	194	204	10	2.1	5.0
MK25	61	69	8	7.2	7.0
MK26	198	220	22	2.7	13.4
MK9703	9	15	6	2.0	6.3
	64.5	91.5	27	3.3	5.1
MK9705	37.5	58	20.5	443.9	163.7
MK9709	27	48	21	3.0	7.7
MK9711	41.3	52.5	11.2	2.2	13.3
	78	84	6	2.1	161.7
	97.5	106.5	9	7.8	19.5
MK9712	52.7	60	7.3	8.4	76.9
	82.5	106.5	24	4.5	39.5
MK9716	132	141	9	12.3	22.8
	144	157.5	13.5	7.0	8.5
MK9717	54	81	27	2.6	56.1
	84	142.5	58.5	11.7	37.3
MK9719	19.5	28.5	9	2.9	10.2
	36	45	9	2.0	16.9
	55.5	67.5	12	4.7	22.2
	70.5	91.5	21	3.6	38.3
	103.5	117	13.5	4.2	9.1
MK9720	91.5	100.5	9	3.6	58.5
MK9724	33	39	6	2.6	18.4
	75	84	9	3.7	32.0
	85.5	107	21.5	3.1	10.3
MK9728	9.95	16.8	6.85	3.1	9.1
	26.2	35.5	9.3	7.0	32.0
MK9729	13.5	23	9.5	3.6	24.7
MK9744	159	177	18	20.6	65.3

Drillhole	Depth from (m)	Depth to (m)	Length (m)	Au (g/t)	Ag (g/t)
MK9750	45.3	54	8.7	4.7	32.8
MK9755	65.5	76	10.5	2.2	7.9
	83.5	91	7.5	2.4	21.1
	95.5	116.6	21.1	2.9	252.3
MK9758	43.5	64.5	21	2.9	23.0
	66	76.5	10.5	6.7	48.1
	84	90	6	2.2	96.5
MK9760	30	36	6	2.6	21.8
	42	54	12	2.6	23.1
MK9769	106.5	117	10.5	4.5	22.3
MK9773	76.5	109.5	33	6.5	45.1
MK9780	67.5	79.5	12	8.2	52.6
	105	117	12	2.0	34.4
MK9782	64.5	72	7.5	2.0	7.0
	82.5	118.5	36	6.5	35.7
MK9783	37.5	45	7.5	3.0	481.2
	78	87	9	2.0	87.5
	102	144	42	3.6	7.3
MK99143	76.5	84	7.5	7.1	4.0
MK99149	54	64.5	10.5	4.0	40.1
MK99149B	36	48	12	4.0	45.9
MK99153	36	48	12	2.7	6.7
MK99157	27	42	15	4.7	9.0
	75	84	9	9.4	6.0
P165	52.5	60	7.5	2.8	9.4
P167	43.5	52.5	9	29.3	13.3
	70.5	81	10.5	2.3	55.3
	82.5	94.5	12	2.5	28.8
P168	52.5	60	7.5	2.9	17.5
P174	37.5	45	7.5	3.3	8.5
P177	421	427	6	2.5	3.9
P233	45	51	6	4.3	38.6

Table 11-2 Central Zone significant intercepts

Drillhole	Depth from (m)	Depth to (m)	Length (m)	Au (g/t)	Ag (g/t)
MK11	16	24	8	5.31	23.3
MK13	44	54	10	4.44	26.3
	126	140	14	4.19	109.9
	142	147	5	15.58	305.6
MK24	36	66	30	2.45	9.3
	68	78	10	3.59	7.0
MK27	60	76	16	2.02	17.5
	124	130	6	2.14	3.7
MK29	180	200	20	3.55	34.9
	204	214	10	2.73	15.6
MK3	10	22	12	2.06	3.5
	36	46	10	2.96	21.9
MK31	7	15	8	2.03	6.8
MK9710	117	123	6	2.08	2.1
MK9732	22.5	37.5	15	2.17	18.5
MK9752	0	9.75	9.75	4.29	8.6
MK9767	0	6	6	2.08	3.7
MK9778	84	91.5	7.5	6.40	209.0
	125.5	132.5	7	4.16	178.6
MK98107	30	36	6	5.66	43.3
	166.5	174	7.5	2.10	8.3
	222	229.5	7.5	4.41	39.4
MK99146	28.5	34.5	6	3.06	29.8
	40.5	64.5	24	4.91	89.3
	84	96	12	173.51	73.6
MK99148	9	18	9	2.25	55.5
MK99152	73.5	82.5	9	3.31	30.8
	91.5	100.5	9	2.84	21.2
MK99155	0	12	12	2.21	41.9
MK99158	25.5	31.5	6	2.09	17.0
MK99159	172.5	181.5	9	2.71	5.2
	204	210	6	2.16	10.3
P170	61.5	67.5	6	2.47	15.8

Drillhole	Depth from (m)	Depth to (m)	Length (m)	Au (g/t)	Ag (g/t)
P171	22.5	37.5	15	2.46	10.1
	39	46.5	7.5	3.51	13.6
P176	151.5	166.5	15	3.76	10.6
P178	33	52	19	5.39	337.2
P183	68	73	5	2.37	7.1
	115	120	5	2.45	47.4
P187A	11	16	5	6.65	6.8
P202	45	50	5	2.73	7.5
P209	8	27	19	3.82	12.0
P216	63	68	5	2.01	13.2
P227	26	35	9	2.85	40.5
	60.15	65.8	5.65	3.54	10.3
P234	0	14	14	2.54	78.0

Table 11-3 C9 Zone significant intercepts

Drillhole	Depth from (m)	Depth to (m)	Length (m)	Au (g/t)	Ag (g/t)
MK11	232	242	10	2.85	15.5
MK9	210	260	50	4.04	5.6
MK9894	171	180	9	2.62	19.2
	283.5	301.5	18	2.57	5.2
MK9895	201	208.5	7.5	3.53	6.6
	213	229.5	16.5	6.51	27.0
MK9896	67.5	73.5	6	2.58	5.5
	177	183	6	5.46	17.9
MK9897	198	216	18	3.33	6.1
	219	225	6	2.02	3.4
	255	268.5	13.5	9.43	15.3
MK99156	222	232.5	10.5	5.31	8.6
	249	264	15	4.98	8.1
P164	288	295.5	7.5	2.02	4.9
	297	342	45	3.58	25.5
P177	183	190	7	2.20	6.7
	197	203	6	2.06	3.4
	240	246	6	2.44	8.2

P219	190	195	5	2.06	9.1
	222	228.2	6.2	3.60	0.8

Table 11-4 Black Zone significant intercepts

Drillhole	Depth from (m)	Depth to (m)	Length (m)	Au (g/t)	Ag (g/t)
MK15	52	60	8	2.2	22.0
	68	82	14	28.4	212.9
MK9706	67.5	82.5	15	23.3	145.1
MK9706B	37.5	52.5	15	4.3	36.2
MK9707	49.5	93	43.5	4.2	78.8
MK9741	63	70.5	7.5	10.5	72.4
MK9743	79.5	88.5	9	3.6	19.8
MK98105	13.5	19.5	6	2.7	187.3
MK98106	12	22.5	10.5	3.4	160.6
MK98110	3	34.5	31.5	5.2	69.5
	42	67.5	25.5	3.7	165.5
	70.5	90	19.5	4.3	87.2
MK98116	33	66	33	6.2	32.8
MK98118	39	51	12	3.1	54.1
MK98119	19.5	30	10.5	4.8	320.0
	54	67.5	13.5	2.0	2.8
MK98122	57	66	9	8.7	54.2
MK98123	22.5	33	10.5	8.4	47.7
	43.5	73.5	30	4.6	42.0
MK98124	58.5	70.5	12	8.3	65.8
MK98126	58.5	78	19.5	6.3	48.2
MK98127	127.5	135	7.5	3.8	54.9
MK98132	61.5	69	7.5	2.6	251.4
	70.5	96	25.5	9.0	85.1
MK98133	82.5	96	13.5	6.0	58.2
	111	117	6	3.1	24.6
MK9891	71	93.5	22.5	4.3	62.7
MK9892	4.5	24	19.5	2.5	390.8
P210	8	26	18	3.3	13.0
P211	13	39	26	3.7	15.6

11.2 Buffalo Gold drilling

During the second half of 2005, Buffalo Gold refined and updated the interpretation of the Western Roscoelite Zone (WRZ) from the Madison and CRA data. A series of 25 m spaced, detailed east-west cross sections, north-south longitudinal sections and level plans were prepared, displaying drillholes, gold assays and geology from which a resource envelope was interpreted using a 0.3 g/t Au cut-off. The resulting resource shell demonstrated continuity in three dimensions and formed the basis for the design of an in-fill drill program, designed to provide intersection points at sufficiently close spacing to enable the consideration of a measured and indicated resource. It was determined that drilling the WRZ on approximately 30 m centres would be sufficient spacing to achieve this goal. This phase of drilling was carried out on 25 m east-west orientated section lines.

Buffalo Gold initiated the in-fill drilling program on 25 February 2006 with 62 holes totaling 8467 m completed by 6 December 2006.

Details of the drillhole locations and orientation (in local grid) are listed in Table 11-5. Results are discussed in Section 11.2.5.

Table 11-5 Buffalo Gold, 2006 diamond drillhole collar details

Drillhole	East	North	Elevation	Length (m)	Bearing	Dip
MK06-03	18817.3	84000.0	2857.8	78.5	90˚	-90˚
MK06-04	18903.3	83989.4	2876.1	57.0	90˚	-75˚
MK06-05	18966.8	83992.1	2904.8	56.4	0˚	-90˚
MK06-06	18930.1	84027.8	2864.4	67.8	90˚	-63˚
MK06-07	18830.4	84046.9	2850.0	123.6	0˚	-90˚
MK06-08	18689.9	84071.1	2798.8	28.3	90˚	-90˚
MK06-09	18818.0	84077.0	2837.2	52.1	90˚	-64˚
MK06-09A	18820.0	84077.0	2837.2	129.0	90˚	-64˚
MK06-10	18933.0	84074.6	2867.6	77.9	90˚	-73˚
MK06-11	18957.7	84073.8	2872.2	171.8	270˚	-70˚
MK06-12	18783.4	84097.2	2822.9	60.0	90˚	-90˚
MK06-17	18837.2	84106.1	2830.5	70.6	90˚	-90˚
MK06-18	18862.2	84101.4	2844.4	213.1	90˚	-70˚
MK06-19	18879.5	84153.9	2836.2	96.8	90˚	-90˚
MK06-20	18945.0	84174.6	2856.7	223.0	217˚	-76˚
MK06-22	18849.6	84145.6	2825.6	97.5	90˚	-90˚
MK06-23	18773.0	84162.9	2808.2	42.0	90˚	-55˚
MK06-23A	18761.0	84182.4	2814.2	75.0	90˚	-64˚
MK06-24	18808.4	84169.9	2815.8	126.0	90˚	-70˚
MK06-25	18945.0	84176.6	2856.7	192.4	270˚	-70˚
MK06-26	18970.1	84175.4	2865.3	194.3	270˚	-76˚
MK06-31	18745.6	84189.7	2812.3	33.8	90˚	-90˚

Drillhole	East	North	Elevation	Length (m)	Bearing	Dip
MK06-32	18805.9	84200.6	2816.6	109.5	90˚	-75˚
MK06-33	18874.5	84192.6	2852.6	84.1	90˚	-55˚
MK06-38	18834.6	84223.8	2828.3	151.5	90˚	-74˚
MK06-39	18885.3	84227.8	2859.9	192.3	90˚	-84˚
MK06-41	18982.8	84219.4	2889.1	57.7	90˚	-60˚
MK06-43	18825.8	84245.5	2827.3	134.6	90˚	-78˚
MK06-44	18861.0	84251.0	2851.0	207.8	90˚	-69˚
MK06-48	18819.8	84286.4	2840.8	54.8	270˚	-60˚
MK06-49	18824.1	84287.1	2840.9	139.5	90˚	-85˚
MK06-50	18850.7	84276.3	2844.1	179.2	90˚	-75˚
MK06-52	18835.8	84297.3	2837.4	89.8	270˚	-70˚
MK06-53	18902.9	84303.2	2861.9	178.3	270˚	-77˚
MK06-56	18901.0	84325.0	2859.0	107.6	270˚	-63˚
MK06-58	18889.4	84371.0	2856.7	133.4	270˚	-80˚
MK06-61	18883.9	84022.1	2859.0	98.4	90˚	-55˚
MK06-62	18895.3	84271.9	2868.2	104.5	90˚	-84˚
MK06-63	18902.3	84349.4	2865.8	129.0	270˚	-70˚
MK06-64	18928.9	84372.1	2863.8	178.0	270˚	-77˚
MK06-65	18849.2	84390.2	2831.9	46.2	270˚	-65˚
MK06-66	18904.4	84406.0	2853.5	110.9	270˚	-60˚
MK06-67	18941.9	84295.7	2881.5	210.0	270˚	-79˚
MK06-68	18872.6	84070.5	2852.7	211.5	90˚	-62˚
MK06-69	18897.7	83988.9	2876.1	190.1	270˚	-61˚
MK06-70	18933.8	84424.2	2867.3	131.4	270˚	-60˚
MK06-71	18872.8	84193.6	2852.8	197.7	75˚	-77˚
MK06-72	18941.6	84299.3	2881.4	219.8	220˚	-79˚
MK06-73	18954.7	84316.0	2880.8	233.8	270˚	-72˚
MK06-74	18885.4	84473.7	2863.6	75.6	270˚	-55˚
MK06-75	18979.7	84085.5	2879.6	218.2	270˚	-74˚
MK06-76	18966.8	84353.4	2875.8	224.9	270˚	-70˚
MK06-77	18962.0	84050.9	2873.5	171.1	270˚	-73˚
MK06-78	18921.4	84257.9	2889.5	257.9	90˚	-62˚
MK06-79	18983.6	84116.6	2881.3	250.5	270˚	-65˚
MK06-80	19300.8	84474.7	2931.5	112.7	337.5˚	-62˚
MK06-81	18904.7	84094.7	2862.9	166.2	270˚	-63˚
MK06-82	18786.1	84057.0	2827.3	119.5	90˚	-60˚

Drillhole	East	North	Elevation	Length (m)	Bearing	Dip
MK06-83	18909.0	84051.2	2861.7	193.0	135˚	-76˚
MK06-84	18920.3	84111.9	2867.7	274.4	135˚	-70˚
MK06-85	19868.2	85312.6	2833.6	145.6	135˚	-55˚
MK06-M01	19466.0	84268.0	2991.0	110.1	135˚	-60˚

11.2.1 Drill core sizes

Drilling was carried out using three drill rigs denoted 'FALCON', 'UPD' and 'NATIONAL' in the database. The majority of core recovered was HQ (63.5 mm) with the larger PQ size (85 mm diametre) only used in the near surface portions of a few of the holes.

11.2.2 Drilling procedures

Planned drill collar locations were cleared and levelled (by hand) and the drill rigs were transported to site by helicopter. Drilling was carried out using the wire-line, triple-tube approach.

Core recovered by drilling, was placed by the driller into plastic core trays with a capacity of five, one metre HQ lengths or four one metre PQ lengths. Core trays were marked with their sequential number and the number of the drillhole, with depth markers indicating the start and end of every drill run. Each completed tray was covered with a plastic lid and stored on site for collection. At the drill site, the core was under constant guard by 24-hour security and was kept covered until collected by helicopter and slung to the staging pad adjacent to the core logging shed. On receipt of the core from the drill site, the geologist checked the sequence of core trays to ensure that all full core trays were delivered. Each core tray was then marked on the left-hand upper edge with a 'Start' indicator and the tray number. A quick check was made of the core run markers and a comparison made with the recovery sheet received from the drillers at the end of each shift, to ensure there were no marking errors.

The core trays for each hole were laid out in sequence on the helicopter-staging platform where the core was washed to remove any contamination and was digitally photographed. The images were down-loaded onto a computer in the Geological Office with a separate file for each drillhole.

The core trays were then taken into the core logging shed and placed on logging benches. All core runs were measured and recovery of each run was calculated. Any discrepancies were brought to the attention of the drill foreman and, if the issue could not be resolved, the drillers were requested to pull all the rods in order that an accurate depth measurement be made. Core loss per run, as well as loss per metre (where possible), were recorded, and metre intervals (where possible) were marked with permanent marker on the channel dividers above the core in the core trays, as aids to logging and sampling. The RQD (Rock Quality Designation) was measured and recorded for each run. Fracture angles and fracture density were also recorded. All data was transferred to files in computers in the Geological Office.

Buffalo Gold geologists logged the core in detail recording lithology, alteration, mineralisation, veining, brecciation, fracturing and any other key geological features. Drill logs were recorded by hand onto pre-structured forms. The emphasis was on detailed logging with separate columns for lithology code, alteration and mineralisation.

This descriptive style of log proved useful in providing detailed information which was incorporated in the SRK study. The hand written logs were subsequently typed in full and filed together with all the relevant data for each drillhole.

11.2.3 Down hole surveys

Down hole surveys were carried out using a FLEXIT SmarTool instrument providing direct digital readings. Surveys were generally carried out at 50 m intervals down the hole. A number of holes were not surveyed due to a) delays in the arrival of the survey instrument at the beginning of the program, b) very shallow depths <4 0 m, c) collapse of the hole or situations which may cause damage or loss of the instrument and d) the failure of the instrument requiring shipment to Canada for repair.

11.2.4 Collar surveys

Drill sites were located by GPS methods with collar locations subsequently surveyed by contractors Arman Larmer Surveys, utilizing the established base stations.

11.2.5 Results of drilling

The results of individual drillholes were reviewed separately and intercepts calculated to identify various mineralized zones. No fixed cut-off value or minimum thickness criteria were applied, although a cut-off grade of 1 g/t Au was generally used.

Determination of true thickness and width of these intercepts is subjective as the geometry is variable and the drillholes are not always perpendicular to the zone.

Western Roscoelite Zone

A total of 51 drillholes drilled on the WRZ were included in the resource estimate. Portions of ten of the holes fall within the Central Zone and these intercepts are reported separately in the next section. Table 11-6 lists the calculated intercepts for the WRZ.

Table 11-6 Buffalo Gold, 2006 drillhole intercepts, Western Roscoelite Zone

Drillhole	Included Zone	Depth from (m)	Depth to (m)	Length (m)	Au (g/t)	Ag (g/t)	Comments
MK06-03		1.50	40.00	38.50	3.02	3.45	
	incl	1.50	15.00	13.50	5.60	3.15	
	or incl	5.00	15.00	10.00	7.03	3.20	
MK06-07		-	-	-	-	-	No significant intersection
MK06-08		1.50	16.00	14.50	1.54	26.85	
MK06-09		1.50	22.00	20.50	1.91	32.32	Landslide material
		43.00	52.05	9.05	13.64	4.55	Incomplete intersection; drillhole abandoned
MK06-09A		17.80	36.00	18.20	4.79	16.14	Zone of poor recoveries
		44.65	78.00	33.35	15.71	10.12	

Drillhole	Included Zone	Depth from (m)	Depth to (m)	Length (m)	Au (g/t)	Ag (g/t)	Comments
	incl	44.65	64.00	19.35	24.32	15.00	
	or incl	60.00	63.00	3.00	120.60	64.93	
MK06-10		28.00	32.00	4.00	2.87	0.95	
MK06-11*		55.00	114.10	59.10	10.07	12.77	
	incl	55.00	84.00	29.00	17.11	12.07	
	or incl	56.00	58.50	2.50	173.00	103.00	
MK06-12		3.50	23.00	19.50	0.95	43.91	Landslide material
	incl	3.50	11.50	8.00	1.50	63.61	
MK06-17		15.00	45.90	30.90	3.87	4.59	Landslide material to 27 m
	incl	26.90	45.90	19.00	5.29	4.57	
MK06-18		48.00	70.00	22.00	2.00	5.61	
		134.00	149.95	15.95	1.80	33.96	
		202.00	207.90	5.90	2.53	25.51	
MK06-19		40.75	96.80	56.05	3.76	32.60	Incomplete intersection; drillhole abandoned due to excessive vibration & collapse of hole
	incl	63.75	96.80	33.05	5.83	37.20	
	or incl	76.00	96.80	20.80	7.97	21.53	
MK06-20*		142.00	175.00	33.00	0.42	0.85	
MK06-22		43.00	68.00	25.00	1.51	11.20	
		86.00	90.00	4.00	2.83	1.23	
MK06-23		10.15	18.50	8.35	2.05	45.85	Overburden
	incl	10.15	16.20	6.05	2.63	42.22	
MK06-23*		1.50	21.00	19.50	2.38	14.54	Overburden 1.50 m to 14.50 m
MK06-24		22.00	33.00	11.00	1.33	7.27	
		51.00	72.00	21.00	3.31	20.37	
	incl	66.00	72.00	6.00	6.37	14.15	
MK06-25*		129.00	164.50	35.50	3.78	5.87	
	incl	132.80	157.50	24.70	4.92	6.93	
MK06-26*	-	77.60	192.30	114.70	-	-	No significant intersection
MK06-31		6.00	12.00	6.00	1.84	5.50	Overburden
MK06-32		27.00	56.00	29.00	1.86	16.02	
	incl	27.00	49.10	22.10	2.05	20.18	

Drillhole	Included Zone	Depth from (m)	Depth to (m)	Length (m)	Au (g/t)	Ag (g/t)	Comments
		80.00	97.50	17.50	1.72	12.05	
MK06-38		18.20	133.00	114.80	4.03	23.10	
	incl	38.00	133.00	95.00	4.70	23.63	
	or incl	51.00	69.00	18.00	7.74	63.68	
MK06-39		146.00	184.00	38.00	0.60	4.72	
MK06-43		19.00	105.00	86.00	4.24	17.69	
	incl	45.65	105.00	59.35	5.75	21.80	
	or incl	62.00	75.00	13.00	10.21	14.78	
MK06-44		173.00	196.00	23.00	2.39	9.62	
MK06-48		0.00	54.80	54.80	1.27	25.28	
MK06-49		0.00	122.00	122.00	2.36	15.17	
	incl	29.00	98.00	69.00	3.13	11.17	
	or incl	76.00	93.00	17.00	5.26	10.17	
MK06-50		94.00	143.00	49.00	10.36	11.96	
	incl	101.00	128.50	27.50	17.21	18.16	
	or incl	101.00	109.00	8.00	29.18	25.15	
MK06-52		5.40	84.50	79.10	2.98	60.08	
	incl	21.50	84.50	63.00	3.20	66.97	
MK06-53		93.00	133.00	40.00	15.25	69.30	
	incl	97.00	121.00	24.00	23.95	80.62	
MK06-56		81.00	107.55	26.55	3.68	25.15	Drillhole abandoned; incomplete intersection
	incl	81.00	103.10	22.10	4.25	29.53	
MK06-58		78.00	108.00	30.00	19.21	72.39	
	incl	94.00	100.50	6.50	41.83	93.39	
MK06-63		98.20	123.20	25.00	22.61	69.65	
MK06-64	-	-	-	-	-	-	No significant intersection
MK06-65		3.70	18.50	14.80	3.74	57.72	
MK06-66		83.75	100.15	16.40	9.40	54.13	
	incl	91.00	100.15	9.15	14.80	83.19	
MK06-67		163.00	200.00	37.00	0.71	5.79	
	incl	179.00	186.00	7.00	1.35	10.93	
MK06-68		2.10	31.30	29.20	1.87	37.17	
	incl	2.10	23.10	21.00	1.70	30.81	Landslide Material

Drillhole	Included Zone	Depth from (m)	Depth to (m)	Length (m)	Au (g/t)	Ag (g/t)	Comments
		43.50	68.00	24.50	2.50	9.66	Poor Recoveries
		137.00	194.00	57.00	1.59	24.86	
	incl	137.00	177.00	40.00	1.89	25.22	
	or incl	137.00	156.00	19.00	2.58	36.52	
MK06-69*		138.00	141.00	3.00	1.35	40.00	
		155.85	157.00	1.15	3.78	100.00	
MK06-70		122.00	126.30	4.30	2.46	6.78	
MK06-71		56.00	60.00	4.00	2.66	150.73	
		113.00	117.00	4.00	1.68	5.58	
		142.00	157.00	15.00	1.02	6.02	
MK06-72		195.00	216.40	21.40	2.30	9.75	
MK06-73		173.00	189.00	16.00	1.08	6.33	
MK06-74		31.50	46.20	14.70	2.08	6.24	
MK06-75*		98.15	199.00	100.85	1.56	15.50	
	incl	98.15	124.00	25.85	2.25	17.87	
	and incl	139.00	154.10	15.10	2.03	31.98	
MK06-76	-	-	-	-	-	-	No significant intersection
MK06-77*		113.00	119.60	6.60	4.56	31.39	
MK06-79*		175.00	229.10	54.10	1.27	9.43	
	incl	214.00	229.10	15.10	2.23	22.37	
MK06-81		4.00	89.80	85.80	1.41	12.09	
	incl	4.00	17.00	13.00	2.45	10.90	
	and incl	36.00	89.80	53.80	1.50	7.23	
	incl	36.00	40.00	4.00	4.91	56.86	
	incl	57.00	59.00	2.00	4.10	2.55	
	incl	74.00	89.80	15.80	2.48	7.88	
MK06-82	-	-	-	-	-	-	No significant intersection; abandoned due to collapse of drill pad
MK06-83*		96.40	193.00	96.60	-	-	No significant intersection
MK06-84*		48.00	58.00	10.00	1.74	15.93	
		93.00	205.00	112.00	5.04	54.96	

Drillhole	Included Zone	Depth from (m)	Depth to (m)	Length (m)	Au (g/t)	Ag (g/t)	Comments
	incl	141.00	166.00	25.00	13.86	73.00	
		235.00	236.40	1.40	28.30	29.35	
		246.75	254.00	7.25	9.62	192.01	
		268.00	271.00	3.00	3.33	376.20	

Note: Where Ag assay results are reported at >200 g/t and no re-assay has been carried out, a value of 200 g/t has been assigned

* Note2: Portions of these drillholes are in the Central Zone

Central Zone

Eight drillholes were drilled in the Central Zone and these, together with portions of 10 holes drilled in the WRZ, have been included in the resource estimate. Table 11-7 lists the calculated intercepts for the Central Zone.

Table 11-7 Buffalo Gold, 2006 drillhole intercepts, Central Zone

Drillhole	Included Zone	Depth from (m)	Depth to (m)	Length (m)	Au (g/t)	Ag (g/t)	Comments
MK06-04	-	-	-	-	-	-	No significant intersection
MK06-05		46.00	48.00	2.00	2.52	21.75	
MK06-06		29.50	61.00	31.50	1.75	22.37	
	incl	34.00	61.00	27.00	1.59	27.31	
	incl	52.50	59.00	6.50	4.05	50.41	
MK06-11*		1.50	32.70	31.20	-	-	No significant intersection
MK06-20*		142.00	175.00	33.00	0.42	0.85	
MK06-25*		11.00	48.00	37.00	2.51	2.87	
	incl	29.50	38.00	8.50	4.89	3.25	
MK06-26*	-	-	-	-	-	-	No significant intersection
MK06-33	-	-	-	-	-	-	No significant intersection
MK06-41		1.50	12.00	10.50	0.50	4.26	
MK06-61		63.00	82.00	19.00	2.02	28.80	
MK06-69*		5.80	63.25	57.45	-	-	No significant intersection
MK06-75*		16.20	26.10	9.90	2.42	9.50	
MK06-77*		52.00	61.00	9.00	2.57	12.34	
MK06-78		174.00	192.00	18.00	1.31	4.33	

Drillhole	Included Zone	Depth from (m)	Depth to (m)	Length (m)	Au (g/t)	Ag (g/t)	Comments
	incl	174.00	179.00	5.00	2.21	5.26	
	and incl	185.00	192.00	7.00	1.48	13.19	
MK06-79*		4.85	122.00	117.15	-	-	No significant intersection
MK06-80		0.00	48.00	48.00	1.64	6.52	
	incl	0.00	28.60	28.60	1.96	5.73	
	and incl	40.00	48.00	8.00	1.94	11.64	
MK06-83*		54.30	71.35	17.05	0.74	26.37	
MK06-84*		29.00	48.00	19.00	1.74	15.93	

Note: Where Ag assay results are reported at >200 g/t and no re-assay has been carried out, a value of 200 g/t has been assigned

* Note2: Portions of these drillholes are in the WRZ

Black Zone/C9

Metallurgical hole MK-M01 was drilled into the southern shoot of the Black Zone. The drillhole was not sampled as the entire intersection was dispatched to Vancouver for metallurgical test work. No other drillholes were drilled in the Black or C9 Zones.

Other drillholes

Two drillholes drilled in the 2006 campaign were not included in the resource estimate.

MK06-62 in the Western Roscoelite Zone was abandoned before reaching target depth due to collapse of the drill pad. The hole was not sampled.

MK06-85 was drilled in the Red Hill target outside of the main zone of mineralisation and consequently was not incorporated in the resource model. The hole was sampled but returned no significant values.

12 Sampling method and approach

The principal samples used to define mineral resources are sub-samples of diamond drill core. The following sections describe the sampling methods for the historical CRA and Madison drilling programs as well as the more recent Buffalo Gold drilling programs.

12.1 CRA

Details on the drilling programs undertaken by CRA are located in Section 6.2.1.

No details are available of CRA sampling methods and procedures. Snowden understands that Buffalo Gold is attempting to retrieve these old reports from CRA's archives and through the PNG Department of Mining.

Snowden understands that when CRA relinquished exploration tenure in the area, the core from the holes drilled by the company was stored at the core shed at the original CRA camp. When the camp was subsequently destroyed over time through locals scavenging materials from the abandoned camp, the core was lost or dumped on the ground thereby destroying the integrity of the physical records of drilling. As such, data from the CRA phase of drilling cannot be physically verified.

Buffalo Gold provided Snowden with scanned copies of hand written drill logs recorded by CRA geologists and these revealed geological logging of a good industry standard with the descriptive logs capturing the key attributes of each geological interval identified. Sample numbers and assay results are recorded adjacent to geological intervals and allow assessment of the geochemical signature of each interval. Subsequent type-written logs containing all information in a more legible format is also available.

12.2 Madison

Details on the drilling programs undertaken by Madison are located in Section 6.2.2 and 6.2.3.

Drill core sampling intervals were identified by Madison geologist's during geological logging of the core. The nominal sampling length was 1.5 m but shorter lengths were collected were deemed appropriate to deal with complex geology. Summary statistics from the database show that the average length from the main mineralized domains is 1.2 metres. In zones of poorer sample recovery, the sampling interval was set to the known length intervals as indicated by core-tray depth markers. Sample numbers were assigned to selected intervals by attaching plastic tags to the core tray with the tags indicating the sample number and the from/to depth interval of the sample. The marked core tray was then handed over to the on-site sample preparation facility which was managed by TSL Laboratories and prepared as discussed in Section 13.2.2. A sample book with the core number was then filled out and a paper tag left in the core tray at the end of the sample interval for future reference and verification.

WGM expressed concern that the 1.5 m nominal sample length was too long for the structural complexity of the deposit and was also concerned with the masses of the primary sample relative to sub-samples and fire assay. Snowden, however, considers that this sample length is acceptable for resource estimation purposes and would comment that there is little point in adjusting the length for any infill programs as the dominant length is now set in the resource database.

As part of the core logging procedures, Madison geologists recorded the core recovery for all drilling. The average recovery was approximately 93% for the assayed data while the average recovery for mineralized material was marginally lower.

Approximately 20% of the >0.2 g/t Au intervals had a core recovery less than 80% which is of concern if the lost material is preferentially mineralized or preferentially barren. However, analysis showed that there is no correlation between the core recovery and gold grade.

Full details of core handling and sampling procedures are detailed in Section 13.

12.3 Buffalo Gold

For the 2006 Buffalo Gold drilling programs, drill core samples were generally restricted to one metre lengths, except where excessive core loss determined a longer sample between run-markers or where mineralisation/lithology determined a shorter interval (minimum 50 cm sample length). In lithological units where previous sampling and logging indicated very low gold values, sample intervals were increased to 1.5 m.

As part of the core logging procedures, Buffalo Gold geologists recorded the core recovery per drill run and, where possible per sample length (usually one metre). The overall recovery for all 62 holes was 92% and 89% for data filtered for intercepts where the grade exceeded a nominal threshold of gold mineralisation set at 0.2 g/t.

Full details of core handling and sampling procedures are detailed in Section 13.

13 Sample preparation, analyses, and security

The following sections outline details for the historical CRA and Madison sampling as well as the more recent Buffalo Gold sampling.

13.1 CRA

No details are available for the sample preparation, analyses, and security procedures used by CRA.

13.2 Madison

Snowden has relied on a sampling audit carried out by WGM (1998) for the following description of the processes used for sampling preparation, analysis, and security of Madison's samples from Mt. Kare. WGM's opinion from an audit of the on-site sample preparation procedures in 1998 was that there was no indication of processes that might affect the integrity of the Madison samples, or any activity that could result in unintentional data errors due to carelessness or fraudulent activities.

Madison appointed TSL which is located in Saskatoon, Canada to prepare their samples. On site, sample procedures were supervised through TSL's representative who was responsible for the correct identification, security, sample preparation, and dispatch of samples to the laboratory in Canada.

It is Snowden's understanding that the following procedures were followed for all of Madison's drilling programs between 1998 and 2005.

13.2.1 Core sub-sampling and dispatch

The sampling and dispatch procedure for diamond core was:

- Core-intervals designated by Madison geologists were cut in half along the core axis using a water-cooled diamond saw. Cutting was carried out under the supervision of the TSL site manager. WGM did not discuss the procedure for sampling intervals of poor recovery of broken core intervals other than the interval was between known depth markers.
- Half the core was then returned to the core tray and the second half was placed in a steel drying pan and dried in an electric oven at 120°C overnight.
- Core samples were then crushed in a laboratory jaw crusher to 60% passing -10 mesh (2 mm) and split through a Jones riffle splitter to collect a 250 g sub-samples. Compressed air was used to clean equipment between successive samples.
- The 250 g samples were thermally sealed in robust plastic sample bags so that the bags could not be opened without clear evidence of tampering.
- Approximately 20 kg of 250 g sub-samples were then stacked into rice-bags (up to 80 samples) which were sealed with ties. The samples were then stored in a locked closet until transport to Mt. Hagen by helicopter.
- The sub-sample reject from the splitter was also stored in labeled rice bags and the rejects are stored in locked shipping containers at the Mt. Kare camp.

- The shipment of the samples to Canada was tracked from Mt. Hagen airport by the TSL laboratory manager with all documentation, handling services and delivery of samples to the laboratory provided by FEDEX. WGM reported that the transit time from Mt. Hagen to Saskatoon was generally three days and that where transit times were excessive the delay was usually due to the Canadian customs service.
- On arrival at TSL, the batches were checked for missing or damaged bags. Any such samples were replaced with new samples from the coarse rejects available at the Mt. Kare site.
- Samples transferred to the TSL laboratory management system were assigned a laboratory sample number prior to further processing and analysis to keep the original sample number anonymous during the laboratory process.

13.2.2 Laboratory sample preparation and analysis

The laboratory sample preparation and analysis procedure was:

- The 250 g samples were crushed to pass a nominal -200 mesh (150μm) size before sub-sampling for assay. No description of the sub-sampling process prior to assay is available.
- The pulps were stored in paper envelopes and stored in sealable plastic storage pails at the laboratory.
- Analytical assay was by conventional fire assay using a nominal 30 g charge.
- The charge and flux was adjusted for high-carbonate samples, such as from the Black Zone, to reduce frothing during firing.
- Gold from the dissolved prill was determined by AAS.
- For samples which returned a gold grade exceeding 1.0 g/t Au, a second fire assay sample was collected from the stored pulp and the gold grade was determined by gravimetric (weighing) method.
- Silver and base metals were analyzed using a variety of methods. Samples were generally prepared by multiple acid digestion with a 4 g charge used for silver analysis and 0.5 g or 1.0 g charge used for base metals (Cu, Pb, Zn, Ni, Fe, Mo, Cr, and Sn). Metal concentrations were determined by AAS. Metal oxide concentrations from 89 holes were determined by ICAP which is a spectrographic method for multi-element reading.

13.2.3 Quality assurance and quality control

WGM did not carry out a laboratory audit of TSL when Mt. Kare samples were being processed in 1998 and Snowden has relied on the second-hand descriptions of the laboratory processes from WGM reports. However, Snowden has no reason to suspect that TSL laboratory processing methods affect the integrity of Madison's Mt. Kare samples during 1997 and 1998.

TSL was not an accredited laboratory at the time but was undergoing the process of ISO 9002 accreditation which is an international standard quality assurance system for laboratory practice. Inspection of the TSL web site shows that TSL received a Certificate of Laboratory Proficiency for analysis of gold, silver and base metals samples during 1997 and 1998.

WGM reported that TSL laboratory used a system of duplicate analyses, blank and certified or standard reference materials as part of the process of analysis. For each batch of fire assay samples, most samples were designated as primary samples, several samples were randomly selected duplicates (from the original pulp) of the primary samples, and one sample was a laboratory standard or blank sample. Specifically for each batch the quality control samples were:

- Gold – one standard and up to two repeats of the primary assay.
- Silver – one standard or blank and one repeat.
- Base Metals – one standard and two repeats.

WGM reported that at the time of analysis of Mt. Kare samples, TSL policy was to re-use fire assay crucibles using the rule that the maximum degree of contamination allowable is 0.5% of the previous analysis. Additionally, once the risk of contamination exceeds 1.5 ppb Au, the crucibles were only re-used for high grade gravimetric analyses which typically exceeded 3 g/t Au (3,000 ppb).

13.2.4 In situ density estimation

WGM reported in 1998 that Madison carried out density determinations on 4,767 core samples. The density values were measured on-site using the water displacement method to assess the density in grams per cubic centimetre which is equivalent to tonnes per cubic metre. These measurements were not laboratory controlled analyses but in Snowden's experience the method is generally reliable when core is not too friable or porous and moisture content is assessed as part of the measurement process.

Snowden's interrogation of the database provided by Buffalo Gold revealed that 8,504 density measurements are now available with 6,980 determinations available for the resource estimates main zones. The results of the density determinations are summarized in Table 13-1 for each zone.

Table 13-1 Density determination summary for resource estimation data

Zone	Samples	Total length (m)	Average (t/m^3)	Minimum (t/m^3)	Maximum (t/m^3)	Standard deviation (t/m^3)
Black	1,025	102.5	2.40	1.06	4.20	0.38
C9	661	66.1	2.55	1.70	3.60	0.19
Central	1,372	137.2	2.55	1.80	3.81	0.17
Western Roscoelite	3,922	392.4	2.54	1.30	5.80	0.30
Total/Average	6,980	698.2	2.53	1.40	4.97	0.27

For comparative purposes Snowden reproduced the average density values per zone quoted by WGM in 1998 in Table 13-2. Comparing these results to the summary above shows there is generally good correspondence of average values, albeit the value for the WRZ in the 1998 data is marginally higher than average values from the electronic database.

Table 13-2 WGM density summary 1998 and Snowden check

Zone	WGM Average (t/m^3)	Snowden Average (t/m^3)
Black	2.36	2.40
C9	2.59	2.55
Central	2.49	2.55
Western Roscoelite	2.7	2.54
Average	2.55	2.53

Although the density measurements were not obtained from an independent laboratory analysis, Snowden's experience is that the results are likely to be reliable for the type of mineralisation. However, there may be a tendency to select more competent core plugs for measurement and as such, the reported values may overstate the true density if more friable material is found to occur within the global rock mass of each zone.

13.3 Buffalo Gold

13.3.1 Core sub-sampling and dispatch

The sampling and dispatch procedure for diamond core was:

- The core was placed in core trays by the drill crew, who marked each tray with its sequential number and the number of the drillhole.
- The core was systematically logged by the geological staff and all core data was transferred to files in computers in the Geological Office.
- Core trays accompanied by two tickets per sample, were delivered by the core handler to the uncut core area of the sample preparation laboratory and stacked in racks next to the diamond saw area. Here they come under the control of the lab supervisor, an employee of ITS (PNG) Limited. The lab is kept locked outside work hours.
- Core trays were taken to the diamond saw area where core was cut longitudinally according to the sample lengths determined by the geologist. Care was taken to ensure that run-markers remained in their correct position.
- One half of the sample was placed into a drying pan together with the two sample tickets (1 with sample details and 1 with sample number only) and taken to the ovens area where pans were stacked in electric ovens for overnight drying.
- The other half of the core was replaced in the core tray as a record of the drillhole.
- The same relative half of the core went for processing and the opposite half remained in the core tray, irrespective of lithology/mineralisation, in order to avoid bias when submitting the sample.
- When a core tray was completely logged and sampled, it was taken to the cut core area and stacked on racks for removal by the core handler to a locked shipping container.

- When dry, the samples were taken to the jaw crusher area where the whole sample was passed through the crusher. The use of dust hoods, extractor fans and compressed air for cleaning prevented contamination of the samples.
- Once the sample was crushed, it was riffle split and a 1 kg sample was separated out for assay, poured into a bag with sample number marked on outside, one sample ticket (ticket with sample number only) placed inside and the sample was taken to the bagging area for shipping.
- The remainder of the reject split sample was poured into a bag with the sample number marked on the outside, one sample ticket (ticket with sample details) placed inside and the sample taken to the bagging area.
- After each sample, the crusher was cleaned with compressed air and a scoop of blank material was passed through the crusher; this crushed material was then discarded.
- A minimum of 60% passing -10 mesh crushed product was required as a primary crush to be sent to the ITS sample preparation laboratory in Lae.
- A daily crushed material quality control test was carried out on one sample of reject material and the result noted on a monthly logging sheet. After the test, the reject material was re-bagged and handled as above.
- At the bagging area for shipping, the bag of 1 kg sample for assay was sealed and five 1 kg samples were placed into a tamper-proof SECURPAK, which was also sealed. The project name and first and last sample numbers were marked on the outside of the bag. Four SECURPAK bags were packed into a sack (total weight +20 kg), which wais securely taped and tied shut. The sample batch submission number, first and last sample numbers, total number of samples, weight of total samples and sack number of the total number of sacks were noted on the outside of the sack. Sacks were then taken to the shipping area within the laboratory, where they were kept in a locked area prior to delivery to the helipad on day of scheduled transport to the airstrip at Tari.
- At the bagging area, the bag of reject material was sealed and packed into sacks (approximately 20 reject samples per sack) which were securely taped and tied shut. Hole number, first and last sample number and sack number for that hole were noted on the outside of the sack, which was taken to the reject holding area for collection and storage in a locked shipping container.
- A geologist accompanied each sample shipment to Tari airport, supervised the loading of the sacks onto the Airlink plane with guaranteed protected space, and waited for the plane to take off. The sacks of samples did not leave the aircraft until arrival in Lae, where they were delivered to an employee of ITS who met the plane and checked the integrity of the sacks, the number of sacks delivered and sample numbers of the shipment.

13.3.2 Laboratory sample preparation and analysis

The laboratory sample preparation and analysis procedure was:

- At the ITS lab in Lae, the whole 1 kg sample was pulverized to +90% passing -200 mesh.
- A +200 g split was taken for shipment by DHL courier service to PT Intertek Utama Services which is an ISO 17025 accredited assay laboratory.
- Gold values were determined by fire-assay with AAS finish (aqua regia digestion) using a 50 g aliquot.
- Ag (OES finish), Cu, Pb, Zn and As values were determined by ICP.

13.3.3 Quality assurance and quality control

Repeat assays, blank samples and laboratory standards were employed as controls at the laboratory.

Routine standards and field duplicate samples were not submitted, however, a resampling program was later undertaken to determine the precision and accuracy of the data (Section 14.2.2).

Approximately every two months, 50 to 100 samples randomly selected from previously submitted samples returning low, average and high values, were listed and assigned new sample numbers. A geologist traveled to Lae to personally retrieve the sample pulps, riffled and split out approximately 70 g of pulverized material (sufficient for one firing only) into Kraft envelopes, renumbered the envelopes and re-submitted them for check assaying. The samples were then forwarded by courier to PT Intertek Utama Services for check assaying.

14 Data verification

14.1 Database verification

Snowden reviewed the database supplied by Buffalo Gold which Snowden understands contains the data used for the Mt. Kare mineral resource estimate completed by Longview.

The database contains data for of 341 diamond drillholes. The previous technical report (Snowden, 2006) indicated that MK1 to MK32 are CRA drillholes, MK9601 to MK99163 are Madison drillholes with accurate collar surveys and P163 to P235 are Madison drillholes with GPS collar locations.

Of the remaining drillholes, MK236 to MK240 are from the Madison 2005 drilling program while MK06-M01 and MK06-3 to MK06-85 comprise Buffalo Gold's recent, 2006 diamond drilling.

Assay data is supplied for gold and silver, with absent assays identified by -1.

Snowden undertook a validation of the database. Only minor data issues were identified during the validation process:

- Two drillholes have no assay data:
  - MK06-62 was not sampled, being abandoned due to collapse of the pad before reaching target depth.
  - MK06-M01 was a metallurgical hole in the Black Zone and was not sampled as all core used for test work.
- 129 drillholes have no density data:
  - Buffalo Gold indicated that no density measurements were taken for the 2006 drilling due to equipment issues. Buffalo Gold is of the opinion that sufficient historical data is available and that density data for the 2006 holes was not required; however, subsequent set up of the equipment suggests that some of the historical data might be suspect although this cannot be verified. Snowden recommend that density measurements be taken on all drillholes in the future.

14.2 Quality assurance and quality control

Quality assurance describes the processes put in place to ensure integrity of the sampling process and security of the samples. The quality assurance methods concerting survey control, sampling selection and collection and analysis methods have been detailed previously.

Quality control describes the tests put in place to assess that the quality assurance methods are in fact working to expectations. Typically, for resource estimation purposes, the key area or quality control is for the sample analysis to undertake tests to assess accuracy, precision, and contamination.

14.2.1 CRA and Madison drilling

With respect to the samples used in the resource estimate, no quality control samples were routinely submitted to the main assay laboratory by Madison. However, the database provided by Buffalo Gold reveals that laboratory duplicate assays were routinely carried out for gold by both CRA and Madison with up to two repeats available, and in some instances, duplicate results were available for silver and base metals.

Additionally, during the WGS audit in 1998, a set of duplicate samples were collected representing a second split of the crushed half core (verification samples). WGM also requested that TSL carry out a number of screen fire assays on the selected duplicates to quantify the effect of coarse gold within the samples.

Each of these quality control sample sets are discussed below.

Laboratory duplicates

Laboratory duplicate analysis was completed by CRA and Madison with the repeat sample being collected from the same pulp as the original. Snowden reviewed the laboratory duplicate results through analysis of spatial and statistical representations of the duplicate samples from the full data set, by review of the laboratory repeat precision statistics and presentation of the duplicates on scatter, Q-Q and pair mean/half-absolute-relative-difference (HARD) plots.

Snowden considers that the level of precision of the CRA and Madison duplicates is consistent with expectations from a deposit containing coarse gold and that the results indicate the data is acceptable for use in resource estimation.

WGM verification samples

During the resource audit conducted in 1998, WGM collected 83 duplicate samples of crushed material resulting from sample preparation that was in progress at the time of the audit.

The accumulated results of the verification samples confirm that the original Madison intercepts are mineralized and there is grade correspondence of gold and silver over the intercepts lengths tested. However, the differences between the two sets of samples are significant and Snowden considers that the differences are a function of coarse gold. The main issue is that the weight of the samples submitted by WGM, being only a few kilograms, is likely to be insufficient to achieve good precision and close repeatability of grades from duplicate samples.

For gold there is generally good correspondence between the Madison and WGM results up to approximately 18 g/t Au but for higher grade samples the Madison results tend to report a higher gold grade than the check results reported by WGM. This bias may indicate that the Madison high grade results have been overstated but could also indicate that the verification laboratory tended to under-report high grade results. The correct interpretation cannot be determined as no standards were submitted with either sample set to determine which result is considered the more accurate.

The precision of the duplicate splits is poor, with only 63% of the data having a relative difference of less than ± 20% of the pair mean grade. This poor precision is consistent with coarse free gold in the samples but the effect may have been exacerbated by a bias at one of the check laboratories. Again the correct interpretation cannot be identified as no standard samples were submitted to check accuracy for gold.

For silver there is generally good correspondence between the Madison and WMG duplicate results. The silver results show better precision with the silver data displaying over 80% of the results with a mean difference of ± 20%.

WGM fire assay results

WGM completed 106 μm screen fire (150 mesh) assays on 17 individual samples from the intercepts selected for the duplicate verification program described above. Two 50 g fire assays were carried out to determine the gold grade of the undersize material.

The screen fire assay results were compared with the original Madison result and the WGM duplicate result. The results show that the screen fire assay results report on average lower than the original Madison assays and higher than the WGM duplicate assays. The majority of samples have only a small percentage of gold exceeding a size of 106 μm in the pulps but some samples do contain a high proportion of free gold. There is poor correlation between sample grade and percentage of coarse gold.

Similarly to the bias discussed in the previous section, it is not possible to confirm whether the original or duplicate is the most accurate result due to the lack of standard results. However, assuming that the screen fire assays are likely to be the most reliable, the conclusion could be draw that due to the better correlation of WGM duplicate to the screen fire, the original Madison assays, above approximately 20 g/t Au tend to be overstated relative the more reliable results.

WGM carried out additional screen fire tests using a finer 75 μm screen to assess the partitioning of gold in selected higher grade samples. These results show that for the samples tested the gold size is very fine except for the one sample. These few results also indicate that the original Madison fire assays tend to overstate the screen fire grade whiles the WGM duplicate results tend to understate the notionally more reliable screen fire assays.

WGM verification conclusions

Following analysis of the results and completion of the site audit in 1998, WGM concluded that "the outcome of the check samples is a reasonable result, and we believe that our analyses indicate no evidence for sample tampering or selective sampling to improve the outcome of sample analysis". Due to the historical nature of this data, Snowden has relied on this opinion from WGM. WGM operates as a company of independent consultants and cites on their website, their review of the Mt. Kare project as reference (http://www.wgm.on.ca/main_downloads.htm).

14.2.2 Buffalo Gold drilling

During the drilling program of 2006, standards were not available and hence were not inserted for comparative purposes. Additionally, the full requirement for duplicate samples and/or blanks was not completed for the purposes of quality assurance and quality control from the laboratory. Pulp rejects from the 2006 drilling were resampled and reassayed on a regular basis.

During the performance of this study in the first half of 2007, around 4% of the coarse reject material from the 2006 drilling program was re-sampled and standards were included in the re-sampling program every 20 samples.

Snowden reviewed the results of the re-sampling in order to determine the precision and accuracy of the data as follows.

Duplicate analysis

Snowden reviewed the re-sampling results against the original samples for gold and silver. The duplicates were reviewed for:

- Representation:

  - The location of the duplicate samples were mapped in plan and section to ensure there is no bias due to location.
- Bias:
  - This was examined by graphing Q-Q plots of the original (first sample of duplicate pair) versus the total dataset to check for a bias in the sampling of the duplicates.
  - This was examined by graphing Q-Q plots of the original duplicate versus the duplicate to check for a bias in the duplicates.
- Precision:
  - Scatterplots of the original versus duplicate samples to check the precision or repeatability of the duplicates.
  - Precision plot to determine the precision of the duplicates.

In addition, univariate statistics were generated for the total 2006 data set, original and duplicate samples. Bivariate statistics were also generated to compare the relationship between the original and duplicate samples.

The results show a bias whereby the duplicate samples are concentrated in the higher grade areas of the deposit. This is expected as the re-sampling was concentrated on areas inside the mineralised zones.

Analysis of the results shows reasonable levels of precision, with over 90% of the data within 20% mean paired relative difference for gold and silver. This is acceptable for duplicate data.

Standard analysis

Buffalo Gold submitted 14 standards (5%) into the check sampling batches, from three lots of standard reference material. Snowden reviewed the results for each standard against the expected mean and standard deviation.

The results were reasonable with only one of the samples falling just outside of the expected +/- three standard deviations. Snowden considers that this is acceptable but that the standards should be constantly monitored over time as more data becomes available, to assess any change in the laboratory accuracy.

15 Adjacent properties

Buffalo Gold considers it material that the Porgera operation exists within 20 km of the main zone of mineralisation on the Mt. Kare property. There are similarities between the two projects in terms of geography and geological setting and these have been considered in the development of a project plan for Mt. Kare.

The geology and history of the Porgera deposit is well described by Williamson and Hancock (2005) and the following is a summary of their description.

Gold mineralization at Porgera is of epithermal style and is associated with igneous rocks which have intruded similar stratigraphy to those found in the Mt. Kare area. Porgera is characterized by a broad halo of low grade gold mineralization (1.0 to 3 g/t Au) which is characterized by bleached meta-sediments and quartz sulphide veins. Two stages of mineralization have been identified at Porgera with a genesis analogous to the two styles at Mt. Kare. The first stage is interpreted as an epithermal gold event with gold and silver mineralization characterized by pyrite and base metal sulphides as well as carbonate alteration. The second stage of mineralization is associated with an east-west trending fault and is characterized by epithermal quartz-gold-silver, with roscoelite alteration and open-spaced breccias in some areas.

While the magnitude and tenor of the mineralization at Porgera is not necessarily indicative of the potential resources within EL 1093 which is the subject of this report, there are many parallels that can be drawn between Porgera and Mt. Kare including:

- The structural setting of Porgera and Mt. Kare are similar with both deposits being located in the major regional lineament corridor knows as the Porgera Transfer Structure.
- Both deposits have been confirmed to be of epithermal origin with mineralization emplaced in similar stratigraphic sequences with similar styles of epithermal alternation assemblages.
- Both deposits are characterized by a strong regolith anomaly and surface concentration of alluvial and colluvial deposits bounding the hard rock gold source.

The Porgera deposit is currently being mined using open pit and underground mining methods. In 2006, mill feed, on a tonnage basis, was sourced 85% from open pit and stockpiled ore, and 15% from underground. Underground ore accounted for 30% of the contained gold in mill feed (sourced from the Barrick Gold web site).

16 Mineral processing and metallurgical testing

In late 2006 a set of 5 mineral samples were delivered to the PRA laboratory in Vancouver. These samples represented 3 types off mineralization/ alteration.

1. Oxide material, which was not identified/segregated in the resource.
2. Black (Manganese) material that is of limited extent but is quite high grade.
3. Three samples from the mineralization representing a range of grades.

The sample description and head analysis is shown below.

Table 16-1 Mineral Samples for Metallurgical Testing

Sample #	Description	g/t Au	g/t Ag	%S(tot)	%C(tot)
MK06-3	Oxide	2.58	6.9	0.28	0.07
MK06-18		2.41	43.7	7.31	1.06
MK06-38		2.58	13.4	4,86	0.85
MK06-53		22.6	227.5	20.05	0.72
MK06-M1	Black	22.8	150.7	24.09	2.47

With the exception of the oxide sample, all other samples exhibited various degrees of refractoriness, and testing showed that this refractory nature was due to both active carbon in the ore and inclusions within sulphide mineralization.

The samples were subjected to a number of tests after standard sample preparation.

Direct cyanidation results at a targeted 80% passing 74 micron grind are as follows:

Table 16-2 Direct Cyanidation Test Results

Sample	P80	Measured Head		Calculated Head		Extraction		Residue	
ID	µm	Au, g/t	Ag, g/t	Au, g/t	Ag, g/t	Au, %	Ag, %	Au, g/t	Ag, g/t
MK06-3	74	2.57	6.9	2.73	7.0	95.5	45.8	0.13	4.03
MK06-18	70	2.41	43.7	3.96	58.6	29.7	36.4	2.76	36.95
MK06-38	79	2.58	13.4	2.81	73.0	52.1	23.6	1.36	56.35
MK06-53	72	22.60	227.4	30.43	135.3	71.4	11.9	8.70	119.20
MK06-M1	72	22.80	150.7	41.61	155.0	69.7	22.3	12.60	120.50

These results were broadly confirmed in other tests.

The sulphidic cyanidation residues were subjected to diagnostic leach tests the gold was apportioned to various types of mineralization as follows:

Table 16-3 Diagnostic Leach Test Results

Sample	% With Carbon	% (see note 1)	% Sulphidic	% Quartz
	Au	Au	Au	Au
MK06-18	38.9	12.1	47.0	1.9
MK06-38	10.0	14.8	70.5	4.7
MK06-53	15.1	25.6	58.5	0.9
MK06-M1	5.3	34.8	68.9	1.0

Note 1: This is intermediate "refractory": Pyrrhotite and Calcite are decomposed to free gold.

The samples were subjected to pretreatment by both pressure oxidation and roasting to determine which pre-treatment best handled the refractory nature of the ore. In every case, better results were achieved for gold after pressure oxidation and in the case of MK06-38 and MK06-M1 these results were much better (>90% v <10%). The worst recovery for gold, after pressure oxidation, was 89% recovery. The silver results were somewhat variable.

Pre-concentration by flotation in combination with gravity was investigated. Gold and silver recoveries in the mid 90's% were achieved for all sulphidic mineralization types, with the oxide sample recovering slightly over 50% in this preconcentration. Weight recovery was quite high. The high grade ores (as well as the oxide) had flotation tailings over 1g/t gold, not generally considered acceptable, but this material is probably not refractory.

17 Mineral Resource and Mineral Reserve estimates

17.1 Summary

A Mineral Resource estimate was disclosed for Mt. Kare on 21 June 2007 (Table 17-1). There has been no Mineral Reserve estimate reported based on this Mineral Resource.

Table 17-1 21June 2007 Mineral Resources reported at various cut-off grades

Category	Cut-off Equivalent (AuEq g/t)	Tonnage (kt)	Grade (g/t Au)	Grade (g/t Ag)	Contained Gold (koz)
Indicated	1	18,830	2.31	17.31	1,396
	2	8,559	3.66	22.51	1,008
	3	4,587	5.04	25.37	743
Inferred	1	5,753	1.56	9.53	288
	2	1,331	2.77	11.77	119
	3	476	3.85	11.22	59

17.2 Disclosure

Mineral Resources reported in Section 17 were prepared by Mr Robert Sim of Longview Technical Group. Mr. Sim is not considered independent of Buffalo Gold and hence Ms. Lynn Olssen MAUSIMM (CP), Senior Consultant and full time employee of Snowden, has reviewed the resources estimation procedure and QAQC data and has approved the resource estimation.

Lynn Olssen is a Qualified Person as defined by NI43-101. Snowden is independent of Buffalo Gold.

Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

17.2.1 Known issues that materially affect mineral resources and mineral reserves

Snowden is unaware of any issues that materially affect the mineral resources in a detrimental sense.

17.3 Assumptions, methods and parameters

The basis of the Mineral Resources estimates for the Mt. Kare deposit is discussed in this section.

The estimates were prepared in the following steps:

- data validation – this was undertaken by Mr Robert Sim and reviewed by Snowden
- data preparation – this and subsequent steps are discussed below
- geological interpretation and modeling
- establishment of block models

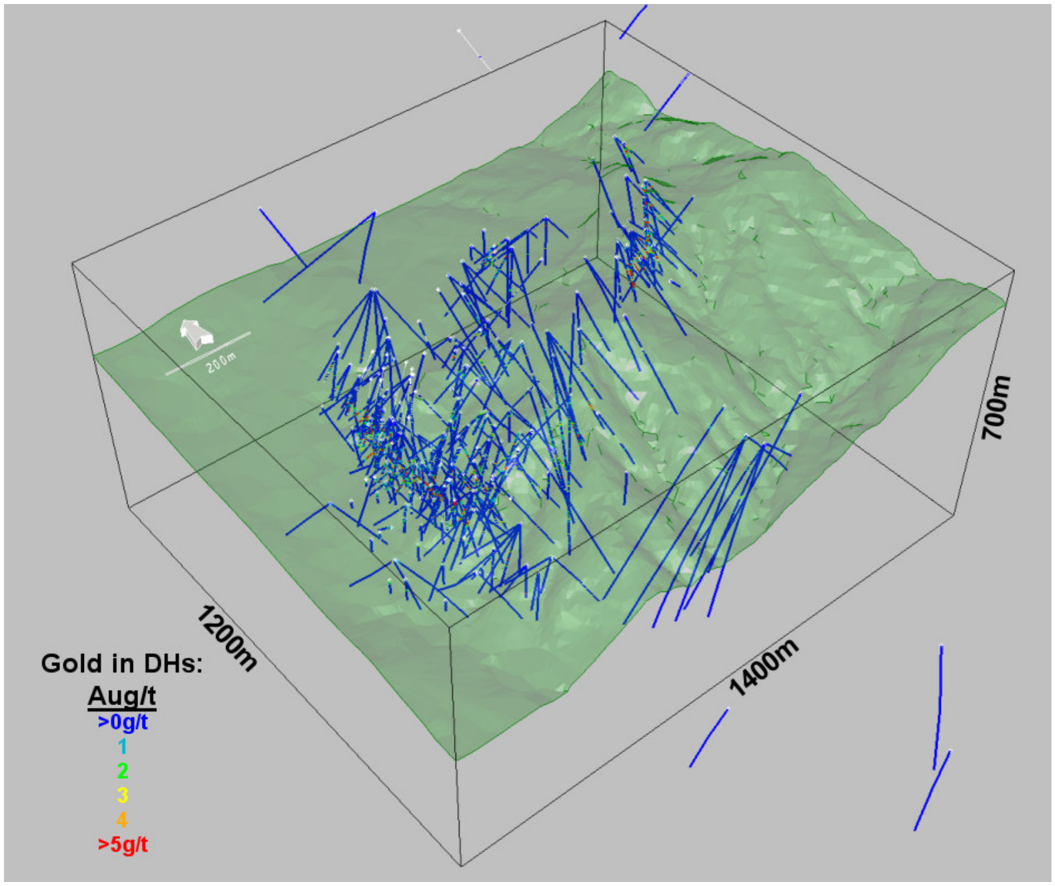
- compositing of assay intervals
- exploratory data analysis of gold and silver
- analysis of top cuts
- variogram analysis
- derivation of kriging plan and boundary conditions
- grade interpolation of gold and silver
- validation of gold and silver grade estimates
- classification of estimates with respect to CIM guidelines
- resource tabulation and resource reporting.

17.3.1 Database

The collection and verification of data has been detailed in prior sections of the report. For the 2007 resource estimate, there were 340 drillhole collars in the database with a total drilled length of 55,326 m (Figure 17.1). Drill depths range from a minimum of 14 m to a maximum depth of 546 m. All holes are diamond core holes. Drilling was primarily conducted in two directions: Approximately 35% of the holes were drilled in an east-west orientation and approximately 50% of the holes were drilled in a north-south (315˚) or south-east (135˚) orientation. The remaining holes have various orientations including vertical. Due to the different drillhole orientations, the drillhole spacing is highly variable. Some portions of the WRZ area are drilled on a grid spacing of closer than 20 m; however, the majority of the better mineralized areas are drilled on a nominal grid spacing varying between 30 m and 50 m.

The database comprises 38,023 individual analyses for gold, ranging from 0.001 to 5,840 g/t Au, and 35,624 analyses for silver, ranging from 0.05 to 3,100 g/t Ag. Note that these include results originally defined as negative values, meaning "below detection limit", which were set to half of the detection limit for estimation. The database also contains analyses for lead, zinc, copper, arsenic and manganese; however, these attributes were not incorporated into the resource estimate.

Figure 17.1 Isometric view, showing surface topography and drillholes used for resource estimation



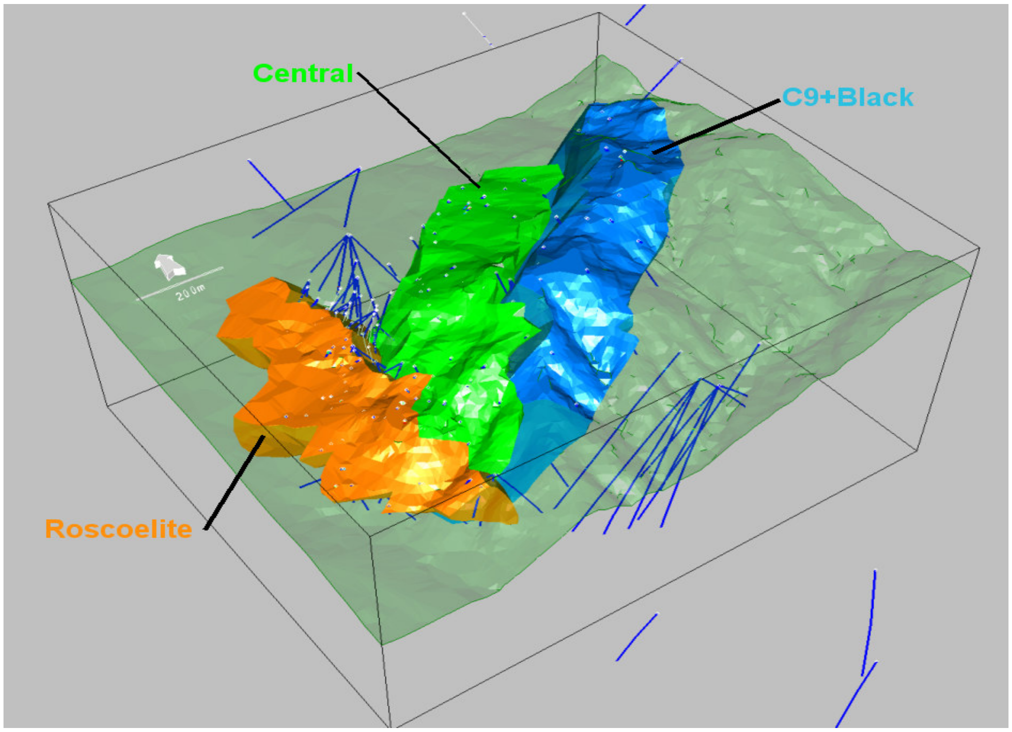
17.3.2 Geological interpretation and modeling

Buffalo Gold project geologists consider that the main controls over the distribution of gold and silver mineralisation are related to a series of erratically distributed brecciated zones which act as conduits for epithermal fluids emanating from deep seated porphyritic intrusions. These feeder zones appear to transect the host stratigraphy and the controls of their distribution are not well known at this stage of the project. Buffalo Gold is currently reviewing the historic drilling data in an attempt to gain a better understanding of the nature of formation of this deposit.

In the absence of a detailed geologic model for the Mt. Kare deposit, an indicator or probability shell approach has been utilized in order to provide some degree of segregation of the mineralized portion of the deposit.

Three general trends to the mineralisation have been interpreted in the area of the deposit; the WRZ (bearing 10°, dipping -55° east), The C9+Black Zone (bearing 210°, dipping -70° northwest) and the Central Zone (bearing 230°, dipping -65° northwest). Wireframes were created to define the limits of these three zones (Figure 17.2), allowing for unique search orientations to be applied during subsequent interpolation runs.

Figure 17.2 Isometric view showing general mineralized zones



Site geologists believe a gold grade of 0.2 g/t Au is a cut-off which seems to form a natural limit which segregates mineralized rocks from the unmineralized country rocks. This grade limit has been used as the threshold in the development of an indicator probability shell for gold. Not only does it appear to represent a natural limit present in the area but it is low enough to ensure that sufficient smoothing (dilution) is included in the resource estimate.

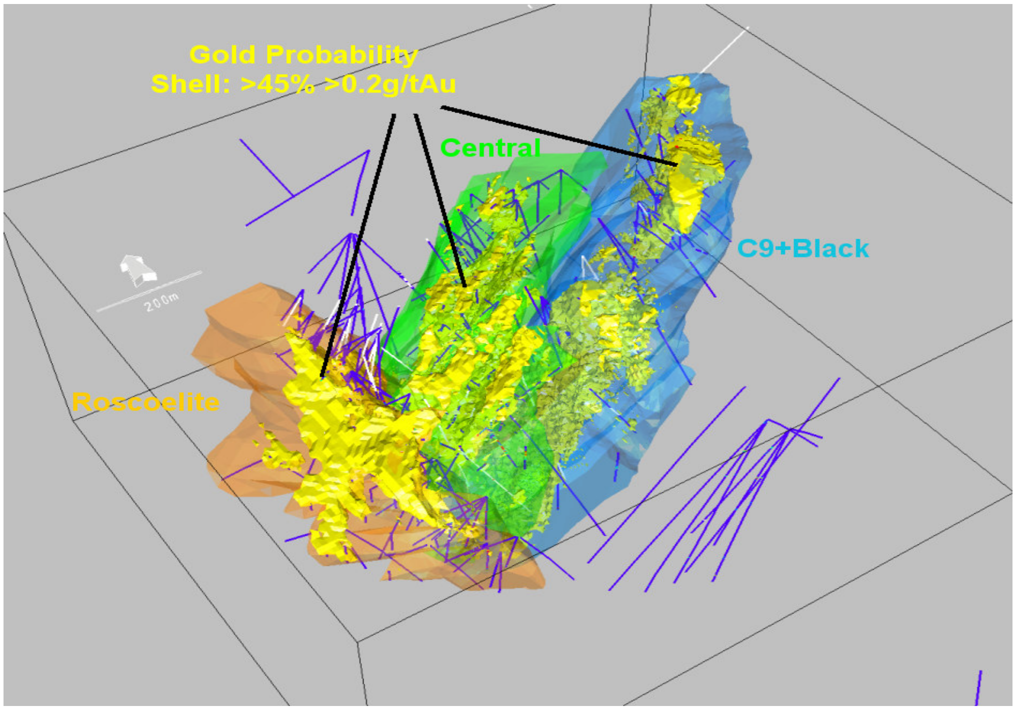
The original drillhole samples were composited to nominal lengths of 2 m and samples were coded with indicator values above and below the 0.2 g/t Au threshold grade. Three indicator variograms were produced; one for each of the general mineralized zones (Table 17-2). All variograms were modeled using two spherical structures.

Table 17-2 Indicator variogram parametres - gold

Zone	Nugget	S1	S2	1st Structure			2nd Structure		
				Range (m)	Bearing	Dip	Range (m)	Bearing	Dip
WRZ	0.312	0.436	0.252	52	34˚	75˚	154	17˚	-17˚
				30	332˚	-7˚	154	306˚	47˚
				16	64˚	-13˚	37	93˚	38˚
C9+Black	0.241	0.345	0.414	172	80˚	42˚	116	312˚	62˚
				78	222˚	41˚	35	138˚	28˚
				16	331˚	21˚	15	47˚	2˚
Central	0.488	0.266	0.246	161	330˚	72˚	161	92˚	-2˚
				56	167˚	17˚	140	11˚	75˚
				11	256˚	-5˚	11	182˚	15˚

The probability of exceeding the 0.2 g/t Au threshold was estimated in the model using ordinary kriging of the indicator values. A series of three dimensional probability shells were then developed at a series of probability thresholds from 30% through to 60% at 5% increments. These were compared to the grade distributions in the drillholes and the 45% probability shell was selected as the shell which best delineated the volume containing the mineralisation with grade greater than 0.2 g/t Au. The resulting gold probability shell is shown within the three mineralized zones in Figure 17.3.

Figure 17.3 Gold probability shell inside mineralized zones.



The combination of the gold probability shell and the three mineralized zones results in a total of six domains which were used to constrain the gold grade estimates. These "AuZone" domains are summarized in Table 17-3.

Table 17-3 Summary of gold domains

AuZone Domain	Description
1	Roscoelite Zone inside gold probability shell
2	Roscoelite Zone outside gold probability shell
3	C9+Black Zone inside gold probability shell
4	C9+Black Zone outside gold probability shell
5	Central Zone inside gold probability shell
6	Central Zone outside gold probability shell

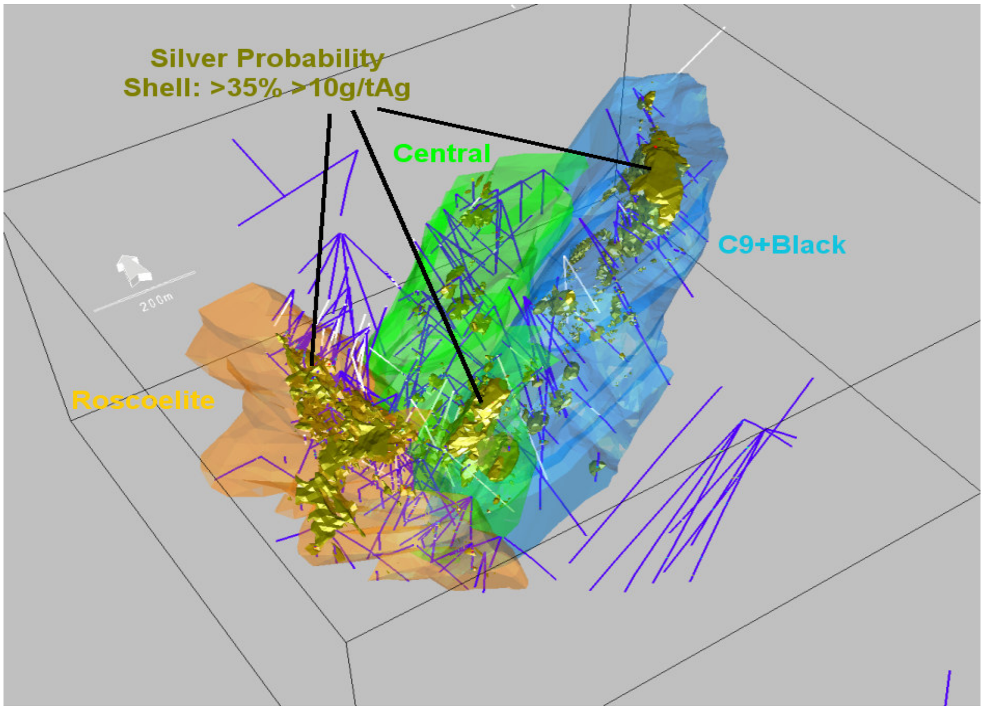
A similar approach was taken to develop a probability shell for silver at a threshold grade of 10 g/t. The indicator variogram parameters are listed in Table 17-4. As with gold, all variograms were modeled using two spherical structures.

Table 17-4 Indicator variogram parametres – silver

Zone	Nugget	S1	S2	1st Structure			2nd Structure		
				Range (m)	Bearing	Dip	Range (m)	Bearing	Dip
WRZ	0.231	0.411	0.358	61	345˚	65˚	157	82˚	68˚
				9	295˚	-16˚	22	240˚	21˚
				4	211˚	18˚	8	153˚	-8˚
C9+Black	0.334	0.374	0.292	86	349˚	80˚	108	113˚	70˚
				34	67˚	-2˚	39	69˚	-14˚
				25	156˚	9˚	21	343˚	13˚
Central	0.300	0.373	0.327	34	95˚	-12˚	679	310˚	61˚
				22	19˚	48˚	99	111˚	28˚
				4	175˚	39˚	34	26˚	-8˚

The probability of exceeding the 10 g/t Ag threshold was estimated in the model using ordinary kriging of the indicator values. Following a review of a series of probability thresholds, the 35% probability shell was selected as the shell which best delineated the volume containing the mineralisation with grade greater than 10 g/t Ag. The resulting probability shell for silver is shown in Figure 17.4.

Figure 17.4 Silver probability shell inside mineralized zones



The silver probability shell is generally not as extensive as the gold shell but there tends to be a relationship between the two. There are minor areas, in the Central Zone and near the Black Zone, where there are silver grades well in excess of 10 g/t with relatively low gold grades.

The combination of the silver probability shell and the three mineralized zones results in a total of six domains which were used to constrain the silver grade estimations. These "AgZone" domains are summarized in Table 17-5.

Table 17-5 Summary of silver domains

AgZone Domain	Description
1	WRZ inside gold probability shell
2	WRZ outside gold probability shell
3	C9+Black Zone inside gold probability shell
4	C9+Black Zone outside gold probability shell
5	Central Zone inside gold probability shell
6	Central Zone outside gold probability shell

Oxide minerals have been noted at Mt. Kare but are rare and only represent a thin, erratic zone of oxidation. This domain is not considered significant and, as a result, has not been modeled as a separate domain for resource estimation purposes.

17.3.3 Exploratory data analysis, compositing and top cuts

The original sample data was composited to a standard sample length of 2 m. The composited intervals were then coded using the general mineralized domains and the gold and silver grade shells. The basic statistics of the samples within these domains are listed in Table 17-6 and Table 17-7.

Table 17-6 Basic statistics by AuZone – gold g/t

AuZone	Metres of sample	Minimum	Maximum	Average	Std Dev.	COV
1	7138	0.001	3,008.15	3.86	58.9	15.26
2	11434	0.001	14.38	0.09	0.49	5.44
3	3705	0.001	134.0	1.83	5.04	2.75
4	7402	0.001	7.14	0.08	0.30	3.75
5	2441	0.001	182.5	1.17	5.44	4.65
6	8937	0.001	22.28	0.13	0.68	5.23

Table 17-7 Basic statistics by AgZone – silver g/t

AgZone	Metres of sample	Minimum	Maximum	Average	Std Dev.	COV
1	2,888	0.1	1,806	40.9	92.1	2.25
2	14,604	0.1	1,010	3.9	23.1	5.92
3	1,792	0.4	1,650	73.4	118.1	1.61
4	8,631	0.1	1,900	3.8	31.9	8.39
5	744	0.5	1,820	43.1	117.9	2.74
6	9,847	0.1	413	2.7	11.8	4.37

Histograms and probability plots were reviewed in order to identify the existence of anomalous outlier grades in the composite database. The locations of high grade samples were also reviewed in three dimensions to evaluate whether there were similar proximal grades. It was found that in the WRZ and, to a lesser extent, the Black Zone, there are clusters or zones of high grade samples. The approach taken was to deal with the very high grade samples through top cutting and to limit the effects of the moderately high grade samples through the application of an "outlier limitation" during block grade interpolation. An outlier limitation limits the effective distance a sample has above a defined grade cut-off. In this case, samples above the defined cut-off were limited to a maximum distance of 20 m during interpolation runs. The cut-off limits and outlier limitation thresholds for gold and silver are defined in Table 17-8 and Table 17-9.

Table 17-8 Top cut and outlier threshold limits - gold

AuZone	Top cut limit (g/t Au)	# samples cut	outlier limitation (g/t Au)
1	100	5	45
2	n/a	-	10
3	40	2	20
4	n/a	-	10
5	20	2	10
6	20	2	10

Table 17-9 Top cut and outlier threshold limits – silver

AgZone	Top cut limit (g/t Ag)	# samples cut	outlier limitation (g/t Ag)
1	300	25	150
2	250	12	100
3	500	11	n/a
4	100	13	60
5	200	7	100
6	100	14	60

17.3.4 Variogram analysis

Separate gold correlograms were produced for AuZones 1, 3 and 5; however, due to the sometimes scattered nature of the sample distribution, the "outside" domains (AuZones 2, 4 and 6) were combined for variography. For silver, separate correlograms were produced for AgZones 1 and 2 while AgZones 3 and 4 were combined and AgZones 5 and 6 were combined. All variograms were modelled using two spherical structures. The parametres for gold and silver are listed in Table 17-10 and Table 17-11 respectively.

Table 17-10 Variogram parametres by AuZone – gold

AuZone	Nugget	S1	S2	1st Structure			2nd Structure		
				Range (m)	Bearing	Dip	Range (m)	Bearing	Dip
				22	25˚	77˚	370	351˚	5˚
1	0.50	0.332	0.168	7	150˚	7˚	66	80˚	-15˚
				7	62˚	-10˚	37	278˚	-74˚
				26	151˚	78˚	784	63˚	43˚
3	0.514	0.303	0.184	14	67˚	-1˚	74	268˚	44˚
				6	337˚	12˚	55	165˚	13˚
				84	47˚	-38˚	147	235˚	-17˚
5	0.730	0.180	0.090	22	101˚	37˚	76	180˚	62˚
				15	344˚	31˚	17	138˚	-21˚
				49	89˚	42˚	129	252˚	73˚
2+4+6	0.787	0.116	0.098	27	316˚	37˚	28	30˚	13˚
				2	25˚	-26˚	23	302˚	-11˚

Table 17-11 Variogram parametres by AgZone – silver

AuZone	Nugget	S1	S2	1st Structure			2nd Structure		
				Range (m)	Bearing	Dip	Range (m)	Bearing	Dip
				72	342˚	5˚	102	325˚	71˚
1	0.591	0.229	0.180	26	74˚	17˚	25	331˚	-19˚
				6	238˚	72˚	18	61˚	2˚
				62	169˚	0˚	437	157˚	46˚
2	0.760	0.199	0.041	37	257˚	-86˚	425	135˚	-42˚
				8	79˚	-4˚	90	55˚	11˚
				83	354˚	80˚	550	78˚	51˚
3+4	0.421	0.263	0.316	28	318˚	-8˚	174	25˚	-26˚
				26	49˚	-6˚	55	309˚	27˚
				36	46˚	10˚	388	153˚	10˚
5+6	0.25	0.488	0.262	32	315˚	5˚	215	49˚	54˚
				8	199˚	78˚	98	70˚	-34˚

17.3.5 Block model set up

A block model was created using the dimensions defined in Table 17-12. The selection of a nominal block size measuring 10 mE by 10 mN by 5 mRL is considered appropriate with respect to the current drillhole spacing as well as the selective mining unit (SMU) size typical of an operation of this type and scale.

Table 17-12 Block model limits

Direction	Minimum	Maximum	Block size (m)	# Blocks
East	18500	19900	10	140
North	83600	84800	10	120
Elevation	2400	3100	5	140

Blocks in the model were coded with the appropriate domain codes as defined in Table 17-3 and Table 17-5. The proportion of blocks which occur below the topographic surface was also generated and stored within the model as individual percentage items. These values are utilized as a weighting factor in determining the in-situ resources for the deposit.

17.3.6 Grade interpolation and boundary conditions

The block model grade interpolation, by ordinary kriging (OK), was conducted using "hard" code matching (or only composites of the same zone code were used for the estimation of any given zone or domain) of AuZone and AgZone domain codes. All estimates used a minimum of 3 and a maximum of 5 composites from a single drillhole and a maximum of three drillholes to interpolate a block grade. An octant search selection was used to control the spatial distribution of selected holes about blocks. A search ellipse measuring 100 mE by 100 mN by 15 mRL was orientated based on the geological orientation of each mineralized zone.

17.3.7 Density

The bulk density database comprises 7,951 individual measurements for bulk density. These measurements are based on core plug measurements from the previous drilling programs (pre 2000). There have been no additional bulk density measurements taken from the recent Buffalo Gold drilling.

The bulk density measurements range from a minimum of 1.1 t/m^3 to a maximum of 5.8 t/m^3 with an average of 2.54 t/m^3 and a standard deviation of 0.27. The bulk density data was provided as one decimal place precision; this data is typically measured to two decimals.

Bulk density was estimated into the block model using inverse distance squared weighting (ID2). The gold domains were used as hard boundaries to constrain the estimation.

Model blocks outside of the gold domains, which did not receive an estimated value for bulk density, were assigned a value of 2.5 t/m^3.

WGM recommended in 1998 that density estimate should be further domained on the basis of oxidation and alteration zones and Snowden concurs with this recommendation.

17.3.8 Model validation

Longview validation

Longview validated the results of the estimation process through visual comparison of the results as compared to the drillhole sample data, comparison to a nearest neighbour estimate and comparison of moving window input and output statistics (swath plots).

Longview considers that the estimates produced are a reasonable representation of the contained gold and silver. The model would be greatly improved by the addition of an underlying geological model which encompasses the distribution of both gold and silver in the deposit. The following is a list of Longview's recommendations regarding this project:

- Re-logging of the historic drilling data in order to standardize and simplify all lithological, alteration, structural and mineral zonation facies.
- Surface mapping of property for lithology, alteration, structure and mineral zonation in relation to the drillhole interpretation.
- Geological interpretation on cross sections of lithological units, structures, alteration assemblages and other domains which may contribute to the understanding of the deposit.
- Delineation drilling to a nominal spacing of no more than 30 m.

Snowden validation

Snowden was asked to verify the Longview resource estimate. Buffalo Gold supplied Snowden with all input data, wireframes and estimates together with a short document on the estimation process.

Snowden validated by the Mt. Kare model by:

- Review of the resource envelope interpretation.
- Review of the density modelling procedures.
- Review and validation of the compositing and top cut procedures.
- Verification of the variography.
- Comparison of top cut input grades with tonnage weighted output grades.
- Inspection of the model against the input composites.
- Comparison of moving window input and output statistics.
- Review of the classification criteria.
- Verification of the resource reporting.

Based on the above validation process, Snowden considers this estimate is able to be used for a preliminary assessment and pre feasibility study but believe that more work is required before a full feasibility study is carried out on the estimate as summarised below.

Requirements for a feasibility level estimate are:

- Carry out routine QAQC sampling and analysis in a dynamic process.
- Carry out routine density measurements.
- Incorporate geology and structure into the interpretation.

- Use oxidation and alteration characteristics when estimating density as recommended in the previous technical report (Snowden, 2006).
- Revise the classification system to take into account geological confidence, grade continuity, estimation accuracy and sampling confidence as well as drillhole spacing.
- Reconsider the top cuts as they appear to be too light, particularly gold in AuZone 1.
- Review the variography orientations as one would expect the orientations to match with the directions of geological continuity as used for the search orientations. Snowden recommends that search orientations and variograms orientations be aligned.

17.3.9 Mineral Resource classification

Buffalo Gold has classified the Mt. Kare resource estimate using the WGM protocol as follows:

- Inferred Mineral Resources: Blocks located within one of the three general mineralized zones and within a maximum distance of 50 m from a drillhole were classified as "Inferred".
- Indicated Mineral Resources: Blocks located within either the gold or silver probability shell and within a maximum distance of 25 m from a drillhole were classified as "Indicated".

17.3.10 Mineral Resource reporting

Table 17-13 and Table 17-14 summarize the resources by category for a variety of cut-offs. It has not yet been determined which is an appropriate cut-off grade for Mineral Resource reporting.

The resources have been tabulated based on a gold equivalent grade (AuEq). The formula was used in the previous WGM resource estimate and has been retained here for comparison purposes. The AuEq formula is based on a gold price of US$300/oz and a silver price of $5.50/oz and assumes 100% recovery of both elements.

$$\text{AuEq g/t} = \text{Au g/t} + ((5.5/300)*(\text{Ag g/t}))$$

Table 17-13 Indicated Resources at several gold equivalent cut-offs

Cut-off (AuEq g/t)	ktonnes	Au g/t	Ag g/t	Density t/m3	AuEq g/t
1	18,830	2.31	17.3	2.58	2.62
2	8,559	3.66	22.5	2.62	4.08
3	4,587	5.04	25.4	2.67	5.51

Table 17-14 Inferred Resources at several gold equivalent cut-offs

Cut-off (AuEq g/t)	ktonnes	Au g/t	Ag g/t	Density t/m3	AuEq g/t
1	5,753	1.56	9.5	2.56	1.73
2	1,331	2.77	11.8	2.54	2.99
3	476	3.85	11.2	2.55	4.06

18 Other relevant data and information

18.1 Exploration targets

1 Mt Kare Deposit

1.1 Southern Extension

Re-processing and interpretation of previous Induced Polarization data highlights the fact that the strong I P response associated with the Central Zone, and a lesser degree with the peripheral Western Roscoelite and Black/C9 Zones, is open to the south of line 83 600N. Further I P is planned to trace the continuation of the anomalous zone southward covering the Black Zone South extension, where trenching and limited, shallow drilling have outlined Au/Ag mineralization, and the geochemically anomalous Lower Maratani Zone one kilometer south of the Western Roscoelite Zone. A deeper penetrating I P system will be employed with the potential to identify mineralized zones not evident at surface.

1.2 Black Zone Magnetic Anomaly

Interpretation of the airborne magnetic data has identified an anomaly in the limestone unit in the immediate footwall of the Black Zone. Modeling of the magnetic data indicates a buried intrusive body with concomitant mineralizing potential. A ground magnetic survey is planned to provide more definitive data for target definition.

1.3 Realgar Zone

The Realgar Zone is the northeastly extension of the Black Zone with realgar and gold mineralization occurring in a sandstone breccia unit at the contact with the footwall limestone unit. Shallow drilling has traced the zone over 100 metres with boreholes MK00-210 and 211 returning values of 3.32 g/t Au over 19 metres and 3.75 g/t Au over 26 metres respectively. A study of the geochemical signature of the Realgar Zone in the context of low-sulphidation epithermal systems is in progress. This work may target further gold potential at depth.

2 Regional Targets

A comprehensive study of all available data sets covering EL 1093, plus relevant technical literature, has been carried out by Douglas Haynes of Douglas Haynes Discovery Pty Ltd. Ranking scores of targets defined in the study reflect informal estimates of their probability of association with syndromes interpreted to be causally associated with the Mt Kare and Porgera deposits. Nine ranked targets have been identified in El 1093 and a program of ground verification is planned.

18.2 Landowner relationships

Considering the early history of the Mt. Kare project, a good relationship with local landholders is important to the project development. Madison has demonstrated that the company has established a good working relationship with local artisan miners since embarking on detailed exploration over the past 10 years. Such good relationships will need to maintain for project development particularly as some artisan miners are actively mining the saprolite material within the bounds of the resource envelope. Buffalo Gold plans to continue to work with landowners and understands the importance of maintaining and nurturing these relationships., Buffalo Gold will need to consider appropriate incentives and strategies to encourage the local miners to move their mining activities to alternative areas should mining commence on a commercial level.

19 Interpretation and conclusions

Snowden concludes that Mineral Resources have been estimated for the Mt. Kare property in accordance with the CIM Standard Definitions and are based on drilling undertaken by CRA (1985 to 1989), Madison (1996 to 2005) and Buffalo Gold (2006).

Snowden considers that all key interpretations and conclusions regarding the exploration and estimation of these Mineral Resources have been detailed in the prior sections of this report.

With respect to the exploration targets described in Section 18, Snowden considers that the targets are of a very preliminary nature. The dimensions of the targets as described should not be considered to be indicative of potential resources until adequately tested by a regular grid of diamond core drilling and sampling.

20 Recommendations

The following is a list of Longview's recommendations regarding this project:

- Re-logging of the historic drilling data in order to standardize and simplify all lithological, alteration, structural and mineral zonation facies.
- Surface mapping of property for lithology, alteration, structure and mineral zonation in relation to the drillhole interpretation.
- Geological interpretation on cross sections of lithological units, structures, alteration assemblages and other domains which may contribute to the understanding of the deposit.
- Delineation drilling to a nominal spacing of no more than 30 m.

Snowden recommend that the estimate be updated prior to a full feasibility study being undertaken. In addition to Buffalo Gold's recommendation above, the following items should be addressed during this re-estimation:

- Carry out routine QAQC sampling and analysis in a dynamic process.
- Carry out routine density measurements.
- Incorporate geology and structure into the interpretation.
- Use oxidation and alteration characteristics when estimating density as recommended in the previous technical report (Snowden, 2006).
- Revise the classification system to take into account geological confidence, grade continuity, estimation accuracy and sampling confidence as well as drillhole spacing.
- Reconsider the top cuts as they appear to be too light, particularly gold in AuZone 1.
- Review the variography orientations as one would expect the orientations to match with the directions of geological continuity as used for the search orientations. Snowden recommends that search orientations and variograms orientations be aligned.

21 References

Author	Title
CIM, 2005	CIM DEFINITION STANDARDS - For Mineral Resources and Mineral Reserves. Prepared by the CIM Standing Committee on Reserve Definitions. Adopted by CIM Council on December 11, 2005
Corbett, G., 2002	Epithermal Gold for Explorationists. AIG Journal. AIG Perth.
Laudrum, D.C., 1997	The Mt. Kare Project, Papua New Guinea: Exploration Update. In: Geology, Exploration and Mining Conference, Madang, 10-12 October 1997. AusIMM. Melbourne.
Madison, 1997	Report on Phase 1 Exploration, January to August 1997, Enga Province Papua New Guinea. Report Prepared for Madison Enterprises Co. October 1987 by McArthur, G.F, Turnbull, D., and Bond, W. Unpublished report.
Madison, 1997b	Mount Kare Exploration Survey Data, 1997. CPS Palanga Survey Pty Ltd. Port Moresby. Unpublished report..
Madison, 1999	Mt. Kare Survey Report, March 1999. CPS Palanga Survey Pty Ltd. Port Moresby. Unpublished report.
Madison, 2005	Madison Minerals Inc, PowerPoint Presentation Nov26Final Europe. Madison Mineral Inc. Unpublished presentation.
PNG Department of Mining, 2002	Department of Mining Handbook. . PNG Department of Mining. Port Moresby.
PNG Department of Mining, 2004	Notification of Grant of Extension of Tenement by Minister. Letter to Madison Enterprises (PNG) Limited, 17 September 2004. PNG Department of Mining. Port Moresby. Unpublished letter.
Richards, J.P. and Ledlie, I,. 1993	Alkalic Intrusive Rocks Associated with the Mount Kare Gold Deposit, Papua New Guinea: Comparison with the Porgera Intrusive Complex. Economic Geology. Vol. 88. No. 4.
Snowden, 2006	Technical Report on the Mt. Kare project, February 2006, Authored by Mr. Mark Murphy.
SRK, 2007	Mt. Kare Structural Model and Controls on Mineralisation, March 2007, Authored by Dr. Stuart Monroe and Dr. Silvano Sommacal.
Watts, Griffis, and McOuat Limited, 1998	Mt. Kare Gold Project, Papua New Guinea, Audit and Resource Estimate for Madison Enterprises Corporation. Toronto. Unpublished Report.
Watts, Griffis, and McOuat Limited, 2000	Letter to Mr. David Lundrum re update of resources at Madison's Mt. Kare Project. Toronto. Unpublished letter.
Williamson and Hancock, 2005	The Geology and Mineral Potential of Papua New Guinea. PNG Department of Mining. Port Moresby.

22 Dates and signatures

Name of Report:
Mt. Kare, Technical Report Update, 2007

August 2007

Issued by:
Buffalo Gold Limited

[signed]	[August 2, 2007]
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Brian McEwen	Date

[signed]	[August 2, 2007]
----------------------------------	-------------------------
Lynn Olssen	Date

[signed]	[August 2, 2007]
----------------------------------	-------------------------
John Fox	Date

23 Certificates

CERTIFICATE of QUALIFIED PERSON

(a) I, Brian McEwen, President and COO of Buffalo Gold Ltd., 24th Floor, 1111 West Georgia Street, Vancouver, BC V6E 4M3, do hereby certify that:

(b) I am the co-author of the technical report titled Mt. Kare Project, Enga Province, Papua New Guinea, (the "Technical Report") prepared for Buffalo Gold Ltd.

(c) I graduated with a Bachelor of Science from the University of British Columbia.

I am a Member of the Association of Professional Geologists, Geophysicists of Alberta.

I have worked as a geologist continuously for a total of 26 years since my graduation from University. Prior to commencing work with Buffalo, I worked in resource evaluation and gold projects world wide with Amec Inc., and Norwest Corporation. I joined Buffalo in June 2006 as President and COO.

I have read the definition of "qualified person" set out in National Instrument 43-101 ("the Instrument") and certify that by reason of my education, affiliation with a professional association and past relevant work experience, I fulfill the requirements of a "qualified person" for the purposes of the Instrument. I have been involved in resource evaluation for 20 years.

(d) I have made trips to the Mt. Kare property, June 8-11, 2006 and April 12-16, 2007.

(e) I am responsible for the preparation of the sections of the Technical Report as detailed in Table 2.1

(f) I am not independent of the issuer as defined in section 1.4 of the Instrument.

(g) I have had prior involvement with the property that is the subject of the Technical Report.

(h) I have read the Instrument and Form 43-101F1, and the Technical Report has been prepared in compliance with that Instrument and form.

(i) As of the date of this certificate, to the best of my knowledge, information and belief, the Technical Report contains all the scientific information that is required to be disclosed to make the Technical Report not misleading.

Dated at Vancouver, BC this 31st day of July 2007.

"*Signed and Sealed*"

____

Brian McEwen

CERTIFICATE of QUALIFIED PERSON

(a) I, Lynn Olssen, Senior Consultant of Snowden Mining Industry Consultants Pty Ltd., 87 Colin St., West Perth, Western Australia, do hereby certify that:

(b) I am the co-author of the technical report titled Mt. Kare Project, Enga Province, Papua New Guinea (the 'Technical Report') prepared for Buffalo Gold Limited.

(c) I graduated with a Bachelor of Science from the University of Western Australia.

I am a Member and Chartered Professional of the Australasian Institute of Mining and Metallurgy.

I have worked as a geologist continuously for a total of 13 years since my graduation from university. Prior to commencing work with Snowden, I worked in resource evaluation and mining geology roles in Western Australian gold and copper deposits. I joined Snowden in April 2002 with skills in resource estimation, reconciliation, geostatistical analysis, database quality assurance and quality control, and grade control. Since joining Snowden I have worked predominately on gold, copper, nickel, mineral sands and platinum reef deposits in Australia and Africa.

I have read the definition of 'qualified person' set out in National Instrument 43-101 ('the Instrument') and certify that by reason of my education, affiliation with a professional association and past relevant work experience, I fulfil the requirements of a 'qualified person' for the purposes of the Instrument. I have been involved in resource evaluation consulting for seven years, including work on gold deposits for at least 5 years.

(d) I have not made a current visit to the Mt. Kare property.

(e) I am responsible for the preparation of the sections of the Technical Report as detailed in Table 2.1.

(f) I am independent of the issuer as defined in section 1.4 of the Instrument.

(g) I have not had prior involvement with the property that is the subject of the Technical Report.

(h) I have read the Instrument and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.

(i) As of the date of this certificate, to the best of my knowledge, information and belief, the Technical Report contains all the scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated at Perth WA this 2nd day of August, 2007

"Signed and Sealed"

Lynn Olssen, BSc, (Geology), University of Western Australia 1993, (CP) MAusIMM

CERTIFICATE OF QUALIFICATION

I, John R.W. Fox, of 1677 Deep Cove Road, North Vancouver, British Columbia, V7G 1S4 do hereby certify that:

1) I am a consulting metallurgical engineer with an office at 302-304 W. Cordova St. Vancouver, British Columbia V6B 1E8

2) I am a graduate of the University of Leeds (UK) in 1971 with a B.Sc. in Applied Minerals Sciences.

3) I am a member in good standing of the Association of Professional Engineers and Geoscientists of the Province of British Columbia.

4) I have not visited the property.

5) I have practised my profession continuously since 1971 and have been involved with the development of many similar properties including the Escalante Silver mine, Utah, USA, the Canatuan Mine, Philippines, the Julietta Mine, RFE, Russia and others.

6) I have read the definition of "qualified person" set out in National Instrument 43-101 and certify that by reason of education, experience, independence and affiliation with a professional association, I meet the requirements of an Independent Qualified Person as defined in draft National Policy 43-101.

7) In the Independent report titled "Mt Kare, Technical Report Update, 2007", I am responsible for supervising metallurgical testwork, development of process flowsheets and plant General Arrangement drawings and Section 16. .

8) I am not aware of any material fact or material change with respect to the subject matter of the technical report that is not reflected in the Technical Report.

9) I am independent of the issuer applying all of the tests in section 1.5 of National Instrument 43-101.

10) As of the date of this certificate, to my the best of my qualified knowledge, information and belief, this technical report contains all the scientific and technical information that is required to be disclosed to make the report not misleading.

Dated this 2nd day of August 2007

"Signed and Sealed"

John Fox, P.Eng