EIS 1335

AB020031

Submissions lodged relating to the Timbarra gold project

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1st September 1995

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INDIVIDUAL SUBMISSIONS

Vinca Falls

National Parks Association of NSW

Armidale Branch,
PO Box 372,
Armidale, 2350.
10th August, 1995

The Director General,
Department of Mineral Resources,
P.O.Box 536, St Leonards NSW 2065.

Submission on: **Timbarra Gold Project EIS**

(1) **It is a matter of great concern to our Association that a proposal for a National Park centred on the Demon Fault and Timbarra plateau area appears to have been significantly altered to accommodate the proposed Timbarra open-cut goldmining operation. We understand that the size of the Park may now be reduced to a block of Vacant Crown Land west of the Poverty Point fire-trail. The latter is now proposed to be upgraded to serve as the main access route for the mining operation. This would preclude the possibility of an extensive National Park on both sides of the trail, with varied terrain which could be enjoyed by many visitors; we may instead have only a small Nature Reserve on the rugged and inaccessible eastern side of the Demon Fault. Should the project go ahead this would be a significant loss to the community; it is a strong ground for objection.**

It is clear from the extensive biological studies undertaken for the EIS, as well as from other investigations done in relation to the proposed National Park, that the area in general has a particularly rich and varied faunal population; and that despite the long history of human use of the area for mining, grazing and timber-cutting, it has recovered well and has retained much of its original native flora, has many distinctly different vegetation communities, and is remarkably free from introduced species. The project area alone contains 3 communities with conservation significance, and 5 plant species on the CSIRO list of Rare or Threatened Australian Plants; fauna found on the project area include 17 species from the NPWS Schedule 12 list.

(2) **The proposed mining operation would cause far greater disturbance than the area has previously suffered.** Impacts on both flora and fauna would be severe, not only over the 16ha directly affected by clearing and subsequent mining use, but also in the surrounding areas, from which many native animals would inevitably be driven because of unaccustomed noise and human activity. The mined and "rehabilitated" areas would take a very long time to provide safe habitats again for some of the displaced fauna; and some rare fauna might (3) **become locally extinct, particularly since both the area of disturbance and the length of occupation of the site would be increased if further investigations were to show economic viability of any of the four potential mine areas referred to in section 2.3.1.**

(4) **The possibility of cyanide (picked up by animals such as the native mice visiting the various treatment solution ponds, or birds visiting the un-netted leach-pad area) getting into the food-chain has not been addressed; and given the rarity of so many of the species present this again is a strong ground for objection to the proposal.**

The following points are made to indicate that in many other respects the proposal as described is likely to cause unacceptable environmental impacts:

(5) **The Aboriginal Place at Bold Top Mountain.**

Bold Top Mountain is not identified on most of the maps included in the EIS. It lies midway between the major Big Hill Open Cut and the CP1 potential open cut (approximately 250 metres from the rim of the first and 250 metres from the line marking the boundary of the second. The Moombahlene Local Aboriginal Land Council and Aboriginal Elders have good reason to feel apprehensive about the effects of blasting on the huge tors that together make up this Aboriginal site. **The ridge that extends north from the site has also been identified as one of the special flora and fauna sites recommended not to be disturbed (p.141), and we find it hard to see how unacceptable environmental impacts can be avoided, despite the evaluation of the stability of the tors on the top of the mountain. This is not the only concern: access to the area must also be available to the Aboriginals.**

Whilst the proponents have demonstrated their concern to avoid any direct interference, the area remains vulnerable; and the Aboriginal Elders' consent has not not yet been obtained for the exact dimensions of a proposed buffer zone needed to protect the Bold Top Mountain area. **Should the mine go ahead any buffer-zone would have to be as wide as possible, and perhaps the proponents should be required to mark it off with fencing, and treat it as a No-Go Area, because of its proximity to the mining sites and consequent vulnerability to disturbance, e.g. by vehicles. The need for Aboriginals to have access, the need to avoid disturbance of the ridge, the occurence of a patch of the very rare *Eucalyptus scias* to the north of Bold Top Mountain, and the presence and behaviour patterns of Brush-tailed Rock Wallabies and other animals would all need to be considered in any fencing arrangement.**

(6) **Climatic Data**

We are alarmed at the apparent failure of the proponents to properly understand the climatic features of the area, especially as it is stated (section 3.5.7) that "Climatic data provides a basis for planning project operations, particularly with respect to water management."

We have studied the monthly rainfall figures given in Tables 3.7 from Tenterfield and 3.8 from "Timbarra" Homestead, and note that in April 1988 439mm fell at Timbarra; in April 1989 391 mm fell; and in April 1991 187.5mm fell. Yet the highest monthly reading for April at Tenterfield from 1965 for 23 years was only 118mm, and the mean monthly figure for April at Tenterfield is only 45mm. We conclude that if, as the EIS suggests (p.121) climatic data is to be used as a basis for planning project operations, **little reliance** should be placed on the Tenterfield figures, which are not be relevant to the Timbarra situation.

Tenterfield is in an area of "smooth" terrain in the Northern Tablelands (Western) meteorological district; Malara State Forest is in the Northern Tablelands (Eastern) district and in an area of "rough" terrain. Timbarra Homestead is near the boundary of the two districts, in relatively "smooth" terrain. We suggest that Girard State Forest records might be a closer guide to the rainfall of the Timbarra Plateau. We further suggest that **daily** figures (taken from Girard State Forest records and the Timbarra Homestead unofficial records) should be regarded as of greater significance than monthly averages from Tenterfield records **for the purpose of assessing the likely magnitude and seasons of occurrence of storm events on the Timbarra site.** Such events could markedly effect the success or otherwise of erosion control and water management in general. For example it is stated that "April to September are the driest months of the year with the lowest median rainfall of 37mm in April" (p.119). In Tenterfield, perhaps, but not at Timbarra Homestead in the Aprils of 1988, 1989 and 1990! Planning on the basis that April is one of the driest months could have disastrous consequences.

The EIS states in several places that the system is designed to cope with storm waters from a 1 in 100 year 72 hour rainfall event; the hydrology consultants have simulated the behaviour of 115 ML storm storage over the 100 year period from 1894 to 1993, "**using daily rainfalls at Tenterfield adjusted for the project site**" (p.177); but the adjustment appears to have been made by using the monthly averages for 1987-1994 at Timbarra Homestead to derive correction ratios that result in the mean annual rainfall at Tenterfield for those years equaling the mean annual value (1022 mm) at Timbarra Homestead, i.e.22% higher. Had the adjustment been made using figures from Girard State Forest an even higher percentage would have resulted. **We submit that the proponents may have seriously underestimated**
(7) **the potential for cyclonic events in the area.** (Some relevant information is referred to on pp.22 & 23 of Proposed Forest Operations in the Washpool Area; Environmental Impact Assessment, prepared by the Department of the Environment & Planning, Sydney, May 1982.) **Contingency plans should have been for storm events in excess of a 1 in 1000**
(8) **year 72 hour rainfall event, not merely a 1 in 100 year event. because of the potential for cyanide-contaminated waste water pondages to breach their containment or overflow.**

On p.178 it is stated that "In the unlikely event of a rainfall event occurring which has the potential to exceed the 115 ML storage capacity within the ILS, PLS, BLS and Storm Pond system, the Applicant would pump the excess solution to the Big Hill Open Cut." **But no**
(9) **pipeline is shown between the Storm Pond and the Big Hill Open Cut, a distance of well over 2 km. Nor is there any indication of suitable pumping facilities being on hand and promptly available for such an emergency.**

(10) **Effects of Cyanide-contaminated water on wildlife**

Contamination from an overflow of the treatment solution is a legitimate cause of concern, but **a far more pressing and ever-present danger would be the continual presence of large areas of cyanide-contaminated water in the Heap Leach Pad Area that would have no covering or means of preventing birds or other small animals from attempting to drink or swim in it. Only the PLS,ILS and BLS Ponds are to be netted (p.50), very small areas when compared with the open Heap Leach Pad area.**
We have heard recently of problems at the Northparkes Mine at Goonumbla, near Parkes, where wildlife deaths have been reported over the last two years. Reptiles and marsupials

have been affected as well as birds, and the latest kill has resulted in media anouncements from the Company that it is hiring a consultant and engaging a helicopter to examine birds reportedly stuck in soft sediments of a tailings dam. We have been informed of similar problems occuring in other gold-mines where the cyanide stack-leaching process is being used.

We note that Appendix 4, which reproduces a Chamber of Mines leaflet entitled "Cyanide in the Gold Mining Industry" deals only with the dangers to humans involved in the industry, and gives no indication of effects on wildlife which are put at risk by its use.

(11) **The location of this proposed mine in high country at the headwaters of many Creeks and swamps, where rare and vulnerable flora and fauna have found refuge, is an unfortunate choice for an industry already shown to have such lethal effects on wildlife.**

Conclusion

We wish to point out that far too little time has been allowed for members of the public to properly examine the EIS and related documents for this complex and highly technical proposal. We join with other members of the public in seeking an extension of time, and may make a supplementary submission at a later date.

On the basis of what has already been said above, we submit that the proposed Timbarra Open Cut Gold Mine should not be allowed to proceed.

Annavan Dignam
Honorary secretary
Armidale Branch NPA.

EPA

John. (Regional Manager – Western Div.) at Queensbeyan.

David Dillon

Simon. Smith.

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1) Economic Viability
- light/reduce level of environmental control to trade off.
- Environmental economics?
  - trade off loss to environment + economic gain
  - ∴ investigate options available objectively.

2) Significant flora/fauna
∴ high standard of engineering
- S.E. controls
- accepted civil engineering standards.
- licence conditions
  1) Dumaresq Ch.
  2) Leaf leach.
  } 1) engineering standard. 2) monitoring standard.
- MREMP is a review process only. – detailed fine tuning

DRAFT MREMP + DRAFT WMESRP.
(SUMMARY + CO-ORD.)
(ANY ANOMOLIES + PRIORITIES + ANYTHING THAT ARISES FROM STATT. REQUIREMENTS).

EPA

Environment Protection Authority
New South Wales

PO Box 1135 Chatswood NSW 2057
Tel .02. 795 5000 Fax .02. 325 5678

Mr V Fallico
NSW Department of Mineral Resources
PO Box 536
ST LEONARDS NSW 2065

Our Reference: AR199

Your Reference:

17 AUG 1994

Contact: David Greenhalgh

Dear Mr Fallico

COMMENTS ON EIS FOR TIMBARRA GOLD PROJECT

Thank you for giving the Environment Protection Authority (EPA) the opportunity to comment on the Environmental Impact Statement (EIS) for the proposed gold mine at Poverty Point.

The EIS only addresses issues related to mining of the "Poverty Combined" and "Big Hill" deposits. If mining is to be carried out on other deposits or operations expanded, another EIS may be needed as further mining is likely to significantly change the scale and intensity of the operations and hence increase the potential adverse impact.

APPROVALS AND LICENSES

This matter is being determined under Part 5 of the Environmental Planning and Assessment Act 1979 (EP&A Act). The EPA is a determining authority because pollution control approval is required under section 17K of the Pollution Control Act 1970 and an annual pollution control licence will also be required for any ongoing operations.

Activity is proposed on land designated as State Forest. The EIS identifies that timber harvesting would be undertaken "by or on behalf of State Forests of NSW". Any forestry practices carried out must comply with the Pollution Control Licence held by NSW State Forests.

SURFACE AND GROUND WATER

(1) **Heap Leach Pad - Storm Water**

The EIS states that 115 ML will be made available for storage to cope with high rainfall events. This storage capacity will need to be maintained at all times, over and above the normal operating levels of the storage. The EIS states that in a 100 year simulation the storage will have a two percent (2%) chance of over topping. In such an event the minimum discharge predicted is 18.2 ML with an anticipated cyanide concentration of 30 mg/L.

HEAP LEACH

MREAP – Engineering control

Coffey's will look at 1) construction techniques + 2) compaction tests + sign off –

GROUND WATER MONITORING

(1) EPA will clarify the permeability req^ts: (page 23)

(2) improve structural integrity – independent certification.

– integrity of base or double liners

(land fill require this)

– improved by bringing in clay or

to get spec specs.

(3) monitoring. will have limit of lease area (target limit) Gahnia in Duncans Ck about

LICENCE UNMESC PLANS ← emphasis on off-stream drainage plan. – need detail assessment.

– will be reviewed by EPA.

HEAP LEACH REHAB

1) – stability + water quality into wetland is to be as good as possible – then specs to EPA.

6. Can flush + detoxify in 6 weeks

2) – or replace onto another pad + restore by plants.

3) – trials by replace onto – but material will be pH of 7).

(eg. grow in pH of 4-6 – native species + grass to clean – may use cover crop to assist

4) Co – there is no reason whatsoever for there to be a discharge – large rainfall – in heap – 3-4 days lag + can be pumped + treated. Procedures in place – nominated people responsible, etc.

This compares to a level of 5 µg/L of free cyanide to protect aquatic ecosystems as stated in the Australian & New Zealand Environment & Conservation Council's (ANZECC) publication, "Australian Water Quality Guidelines for Fresh and Marine Waters.

(2) The EIS does not indicate what effect this will have on the downstream aquatic ecosystems and this may represent an unacceptable risk. We understand that National Parks and Wildlife Service (NPWS) considers this area to be sensitive from a cultural heritage and endangered species perspective.

A contingency plan has been suggested which involves pumping to the Big Hill void. No justification or assessment of impact has been provided for that alternative.

(3) Heap Leach Pad - Siting

The site recommended in the EIS for the pad appears unsuitable. A large portion of the pad is located on top of a wetland area referred to in the EIS as "Central Marsh". Information presented in the EIS raises questions about the capacity of the soil to bear the weight of the "heap" and to ensure the integrity of the HDPE liner. Any breach of the liner could have serious consequences.

If the project proceeds, the EPA would need to consider the necessity of a multiple liner with an integrated monitoring system rather than rely on a single membrane.

Hydrogeological surveys need to be conducted to determine the effects groundwater may have on the integrity of the pad and implications should the liner fail. Special consideration needs to be given to periods of high rainfall.

Waste Rock Emplacement

(4) The Big Hill waste rock emplacement straddles Duncans Creek. Duncans Creek flows down a steep gully through wet sclerophyll forest and near special habitat areas. Little detail has been supplied on how the diversion of Duncans Creek will be achieved. The EPA will require considerable detail on how the diversion is to be engineered and how erosion is to be controlled.

(5) No geotechnical investigations have been carried out on the proposed waste rock emplacement site. The EPA will need to be satisfied that the waste rock emplacement can be located on this site and that the design is stable.

REHABILITATION

(6) Rehabilitation of the Big Hill open cut involves the partial filling of the void with waste rock. The final form includes a 50 metre deep hole which will fill with water in approximately 12 years. There have been no apparent thoughts towards an alternative proposal. For example, the possibility of back filling the void with waste rock.

(7) It is proposed to rehabilitate the waste rock emplacements and the heap leach pad by placing 50 to 200mm of topsoil over the rock. The heap leach pad has been designed to allow maximum water and air infiltration. The EPA is not convinced that this method can successfully sustain vegetation in the long term. Before approval can be considered the proponent will need to demonstrate that the area can be successfully rehabilitated.

(8) The landform of the rehabilitated pad is shown to direct runoff into an adjacent catchment. The EIS does not provide information on what effects the redirection of approximately 30 hectares of catchment will have on the downstream wetland areas.

WASTE ROCK EPA — will look at DMR assessment.
- Big Hill waste rock + backfill.
assessment of economics + environmental damage.
+ options.

RESPONSE PLAN

— Study of Procedure in place.

SPE.

CN

1) Spray drift

— Co — bunds are above wobblers.

— any sprays down sides of legs will be cut off.

— may need auto-cut offs if necessary.

DUNCANS CK (A) EPA MAIN CONCERN

Assess hydrological report in detail for Big Hill + Duncans Ck.

— waste rock

— environmental flow

Co → ∴ diversion to minimize H_2O into pit &

maximize diversion.

— maintain as much as into Duncans Ck.

EPA — variability + baseflow SPECS. NEEDED FROM CO.

. to maintain a natural integrity of Duncans Ck.

Co → can be achieved.

— does not need it for make up or need input.

NP+WS + EPA — Continue environmental flow in Duncans Ck.

CONDITION of ~~ASS~~ ENVIRONMENT ASSESSMENT.

— value judgement needed.

Can quantify the volumes. (MAT will give his opinion)

NP+WS.

EPA — impact on Duncans Ck has not be assessed with open pit in it & waste rock beside it —

Co — landform will be ~~[illegible]~~ changed + a pit left.

THIS WILL BE ASSESSED BY DMR (NP+WS + EPA CONSULTED)

SEDIMENT AND EROSION CONTROL

(9) The EIS indicates that the soils of the area contain a high to very high sand component and low clay component. Slopes are reported to be up to 25 degrees. Although most of the disturb areas will be on land of less than 18 degrees. Erosion potential is given as moderate with a low erosion hazard. These statements appear to contradict each other. Advice from the Department of Land and Water Conservation indicates that the erosion potential for these soils is much higher.

Detailed sediment and erosion control plans must be submitted to the EPA before approval can be granted and be in place before works commence. The plans will need to be endorsed by the Department of Land and Water Conservation.

WMSEC CONTROL MEASURES ACCORDING TO RISK.

HAZARDOUS CHEMICAL TRANSPORT AND STORAGE

(10) The EPA has a major concern with storage and transport of hazardous chemicals and cyanide in particular. The EIS identifies that 700 t will be used annually. A detailed spill response plan involving the Police and emergency services will need to be completed before any operations take place and will need to be approved by the EPA .

CONCLUSIONS

The EIS indicates that a quantity of gold is present within the Timbarra Gold Project mining lease. However, the EPA considers that mining of the area poses real risks to the environment of Poverty Point. The EPA does not support the proposal as outlined and considers that significant environmental impact may occur. Some of these issues may be resolved through further discussion and more detailed reports.

Before either an approval or licence is issued, the EPA will need to be satisfied that the project can proceed without significantly affecting the environment and must "take into account to the fullest extent possible all matters affecting or likely to affect the environment" (section 112 EP&A Act 1979).

The EPA is aware of considerable local opposition and concerns of the NPWS. Given those issues and the EPA 's interests discussed above, we will need to consider any other representations before making a determination on any application that may be forthcoming.

If you require any further information or advice regarding this matter please contact David Greenhalgh in our Armidale office on 067 737 133.

Yours sincerely

WARWICK FORREST
Executive Director, Operations

TERM — another EIS may be placed down and ~ 2-3 years if the reserves allow further mining.

HEAP LEACH — Red Dome — agglomerated material.
1) reduce pH with cover crop.
2) break up agglomerated material
3) cover with biomass + topsoil + logs.
4) local native cover & stabilized.

105 Pateman Rd
DRAKE
NSW 2469
14.8.95.

The Director-General
Department of Mineral Resources,
P.O. Box 536
St Leonards
NSW 2065.

RE: ASSESSMENT OF ENVIRONMENTAL IMPACT OF THE TIMBARRA GOLD PROJECT NEAR TENTERFIELD, N.S.W.

(1) I object to the development application by Capricornia Prospecting Pty Ltd for the Timbarra Gold Project.
I request that the Minister for Planning instigate a Commission of Enquiry into the above project.
My comments on the environmental impact of the proposed operations are attached to this letter. Due to lack of time, I am unable to forward all comments by Monday 14th August 1995. I will forward the remainder of my submission by Friday 18th August 1995.

Yours Faithfully
Janelle Johnston

PART SUBMISSION ON EIS ON TIMBARRA GOLD PROJECT

(2) COMMUNITY CONSULTATION

I submit that there has been a distinct lack of community consultation during the preparation of the EIS.

The method of community consultation, as detailed in Section 1.8.2 of the E.I.S., has not in my opinion, enabled adequate consultation to have been undertaken.

Inadequacies in the consultative process include:-

(1) Those downstream of the proposed project do not appear to have been consulted. For example - the Clarence River Catchment Committee and the Tabulam Aboriginal Community do not appear in the EIS as having been consulted in the process.

(3) As a result both groups have raised their concerns about reduced water flow and quality since publication of the EIS. Such concerns should have been addressed in preparation of the EIS.

Those downstream, not represented by the above mentioned groups, do not appear to have been consulted.

(5) No public meetings or other avenues of information

(4) dissemination were employed in the community consultation process. This was highlighted by the request from the Drake community for a public meeting. The request came from 2 sources ie a motion passed at a meeting of the Drake School of Arts & Progress Association to hold a public meeting & on-site inspection with the Applicants representatives

(J Johnston)

and a request from a candidate for the local Council elections. As a result of these requests a public meeting was held at Drake NSW on 10th August 1995. This meeting itself fell short of the community consultative process in that

i) it was held at 48 hours notice excluding many community members from attending

ii) only 2 speakers attended; a representative from the Dept. of Mineral Resources and a representative from R.W. Corkery & Co Pty Ltd. Mining company representatives were present but stood at the back of the room and took a major participatory role in proceedings. There were no other representatives from any other consenting authorities (eg CALM, NPWS., E.P.A.) to enable community consultation to occur.

iii) the meeting was held at 11am thus excluding many community members from attending

iv) the meeting was held 4 days before the final date for close of submissions to the EIS. This did not allow adequate time for community discussion or investigation of matters of community concern.

(3) (3) Distribution of the EIS. is also a matter of concern as:-

i) Copies were available for purchase only from the Dept. of Mineral Resources in Sydney. Allowing for postal delivery, it took at least one week for a purchased copy to be delivered. Thus there was a possible reduction of reading time of 25% of the period allowed (30 days) for submission

(J. Johnston)

of the EIS. comments.

a) Copies were not made available for purchase at any local outlets eg. Tenterfield Shire Council. If they had been, it would have made the EIS more accessible and allowed more time for reading of the EIS by community members.

ii) Only limited copies of the EIS were available throughout the local community.

(4) Only 30 days, from the date of publication of notice in the newspapers, were allowed for preparation of submissions to the EIS. Given that there were 4 substantial reports in addition to the EIS document of 233 pages, I submit that the 30 day period was inadequate to allow informed community consultation to occur. A further period of 30 days should be allowed for community input & consultation.

In light of my above comments, I submit that the EIS does not comply with the (6) principles of Ecologically Sustainable Development (ESD) - In particular the objective "to improve the material and non-material well-being" (p225 of EIS). The EIS states at page 226 (7) "Community consultation during the development of the proposal has been undertaken to develop an awareness of issues concerning overall standard of living which have been addressed throughout the Statement." I believe there has been inadequate community consultation and that the issues have not been adequately addressed

(J Johnston)

by the EIS.

At p 227 of the EIS it is stated - "the approach taken in planning the proposal has been multi-disciplinary, with foresight, community involvement + extensive consultation with professionals and various Government Authorities." the lack of community consultation has been minimal and would hardly lead one to conclude that the proposal is "socially desirable".

I therefore submit that community consultation should be enhanced; the EIS does not adequately address community consultation and thus does not comply with one of the objectives of ESD. I therefore request that further time be allowed for community consultation.

DRAKE ENVIRONMENTAL ASSOC.
C/- Drake Post Office
Drake NSW 2469
14-8-95
Ph (067) 376627
Fax (067) 376658

Minister for Mineral Resources
Bob Martin MP
State Parliament
Macquarie St
SYDNEY

RE: Environmental Impact Study
Timbarra Gold Project near Tenterfield NSW.

(1) We the undersigned object to the proposed development and request that a Commission of Inquiry be held into the proposed mine and its Environmental Impact.

We urge you to give urgent consideration to accepting submissions past the present closing date of 14th August 1995 or to accept late submissions. We believe the 30 day period was not long enough, given the points outlined in the accompanying attachment.

Yours Faithfully,

Name	Organisation	Address	Signature
Elizabeth Mitchelson	D.E.A.	c/- Drake P.O. DRAKE	
Judy Bleakley	DRAKE ENVIRONMENTAL ASSOC	C/O P.O. DRAKE.	J.Bleakley
Janelle Navin	D.E.A.	Lot 91 Bruxner H'Way.	J. Navin
Zina Power	DEA	c/o Drake Church DRAKE Bruxner H.Way	Z. Power
Lisa Jorgensen	DEA	c/o Drake P.O.	
Simon Kaplan	DEA	Lot 1 Church St Drake	
PETE STANFORD (SELF SURVIVAL)		Rocky River Rd	
BRIAN WATT		ROCKY RIVER RD	
Janelle Johnston	DEA	105 Pateman Rd, Drake	J Johnston

PART SUBMISSION ON EIS ON TIMBARRA GOLD PROJECT

(2) COMMUNITY CONSULTATION

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The method of community consultation, as detailed in Section 1.8.2 of the E.I.S., has not in my opinion, enabled adequate consultation to have been undertaken.

Inadequacies in the consultative process include:-

(1) Those downstream of the proposed project do not appear to have been consulted. For example - the Clarence River Catchment Committee and the Tabulam Aboriginal community do not appear in the EIS as having been consulted in the process. As a result both groups have raised their

(3) concerns about reduced water flow and quality since publication of the EIS. Such concerns should have been addressed in preparation of the EIS.

Those downstream, not represented by the above mentioned groups, do not appear to have been consulted.

(4) (•) No public meetings or other avenues of information dissemination were employed in the community consultation process. This was highlighted by the request from the Drake community for a public meeting. The request came from 2 sources ie a motion passed at a meeting of the Drake School of Arts & Progress Association to hold a public meeting & on-site inspection with the Applicants representatives

and a request from a candidate for the local Council elections. As a result of these requests a public meeting was held at Drake NSW on 10th August 1995. This meeting itself fell short of the community consultative process in that

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(J. Johnston)

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In light of my above comments, I submit that the EIS does not comply with the (6) principles of Ecologically Sustainable Development (ESD) - In particular the objective "to improve the material and non-material well-being" (p 225 of EIS). The EIS states at page 226 "Community consultation during the development of the proposal has been undertaken to develop an awareness of issues concerning overall standard of living which have been addressed throughout the Statement." I believe there has been inadequate community consultation and that the issues have not been adequately addressed

(J Johnston)

by the EIS.

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I therefore submit that community consultation should be enhanced; the EIS does not adequately address community consultation and thus does not comply with one of the objectives of ESD. I therefore request that further time be allowed for community consultation.

14/8/95
Lot #1 Rocky River Rd
Via Drake NSW
2469.

The Director General
Dept of Mineral Resources
PO Box 536
St Leonards
NSW 2065.

Re- Assessment of Enviromental Impact of the Timbarra Gold Mine near Tenterfield NSW.

We object to the proposed development application by Carricornia Prospecting Pty Ltd

(1) for the Timbarra Gold Project.

We request that the Minister for Planning start an Investigation and Commission of Enquiry into the above Project.

Futher information regarding this submission will follow at a later date but some of our objections are as follows.

(1). We have not been considered at all in EIS as a nearby landholder a

(2) permenant residents appx 5 km from proposed mine site.

2). Not considered in EIS or contacted in any way by Mining Co or others, as grazing

(3) Licence Holder(s) of Portion 57.

PTO 1/2

(4) 3). IMPACT & DEGRADATION OF FOREST, WETLANDS, FLORA & FAUNA.

(5) 4). NO FAITH IN MINING REHABILITATION PRACTICE OR GOVERNMENT BODIES AT POLICING ONGOING REHABILITATION AFTER MINING CEASES.

(6) 5). ANY "ACCIDENTAL RUNOFF FROM STORM OR SOLUTION PONDS WOULD RUN OFF INTO THE NELSON CREEK. (ONE OF THE FEW PERMENANT SOURCES OF CLEAN WATER IN THE AREA!! NO AMOUNT OF SAFEGUARDS OR CONTINGENCY PLANS COULD EVER BE SUFFICENT!

(7) 6) ACCESS TO PORTION 57 GRAZING LISCENCE (LEASE) LISCENCE # LI 185403 WILL BE LOST DUE TO PROJECT

(8) 7). DEGRADATION AND POLLUTION FROM WATER PUMPING FROM TAMBARRA RIVER.

PETE STANFORD FOR ADAM STANFORD
POLY

BRIAN WATTS

Rocky River Rd
DRAKE
NSW 2469
14 Aug '95

The Director-General
Dept of Mineral Resources
P.O Box 536
St Leonards
NSW 2065

RE: Assessment of Environmental Impact of the Timbara Gold Project NEAR Tenterfield - NSW.

I object to the development application by Capricorn Prospecting Pty Ltd for the Timbarra Gold Project.

(1) I request that the Minister for Planning investigate a Commission of Enquiry in the above project.

(2) I request this due to being one of several downstream residents that were not consulted re this development. More information following this week in relation to my submission.

Sincerely
Ms E Mitchelson

Ruby St
Drake. N.S.W.
2469
14th Aug 95.

The Director General
Department of Mineral Resources
P.O. Box 536
St Leonards
N.S.W. 2065.

Re: Assesment of Environmental Impact of the Timbara Gold Project near Tenterfield, N.S.W.

I object to the development application by Capricorn Prospecting Pty Ltd for the Timbara Gold Project.

I request that the Minister for planning
(1) investigate and proceed in a Commision of Enquiry in the above project.

I request this a concerned citizen who was not consulted regarding this development. I will send
(2) a letter of more concerns at a later date, this week, in relation to my submission.

Yours faithfully
Judy Bleakley
JBleakley

U.C.A.R.E Tabulam Inc.
c/o Tabulam P.O.
Tabulam, 2469 NSW

To: The Director General
Department of Mineral Resources
P.O. Box 536
St Leonards NSW 2065

13 August 1995

Dear Director General,

Re: Timbarra Gold Mine Project

Submissions in response to EIS

This submission has been prepared by and on behalf of U.C.A.R.E (Upper Clarence Action for the Repair of the Environment) Tabulam. We would like to express our opposition to the issuing of any mining license or other approvals in relation to the proposed mine. Our reasons include the following:-

(1) - The contingency plans in the case of a 1-100 year flood does not adequately cover the procedure. The idea of stopping the dam overflowing by pumping into the Big Hill open cut, which has a groundwater

(2) infiltration of between 8% to 40% over the duration of the project, suggests that groundwater may become contaminated with cyanide. This groundwater moves down gradient into creeks at lower elevations (p116. Section 3.6.2.1).

(3) - Downstream effects of the use of 2.5ML/day for 200 days, on the Jabullam Community, cattle graziers, and residents of the area who rely on the clean water of the Timbarra (Rocky) River in times of drought when other water supplies are low, has not been adequately studied.

(4) - The tenure of Portion 57, Parish Bloxsome, County of Clive was overlooked in the EISA report by Dallas Donnelly (1991), Report on the Investigation of the Anthropological Significance of Portion 57 , Parish Bloxsome, County

Clive , Northern NSW, To: The NSW Aboriginal Land Council; suggests that the land is of great significance to the Aboriginal people.This is supported by the archaelogical report on Portion 57 by J.P.Collins, (April,I99I),prepared for the NSW Aboriginal Land Council.

(5) - I5 rare/vulnerable species occur within the project site (pp204-205, & Fig. 3.II). Species of special significance include the Sooty Owl, Masked Owl, Powerful Owl, Black Cockatoo, and the Tiger Quoll,which occur within the project area, and will be effected by mining operations.

This submission has been made in haste as a result of the EIS only being available in the area over the past fortnight, also as a result of the lack of answers provided at a public meeting held on I0th August. We would like to reiterate our opposition to the granting of any licence or other approvals for the mine, for the above reasons. We reserve our right to make further submissions.

Yours Sincerely,

D. Van Gelder

D. Van Gelder
President U.CA.R.E Tabulam Inc.

Rec'd. 14-8-

Clive , Northern NSW. To: The NSW Aboriginal Land Council; suggests that the land is of great significance to the Aboriginal people.This is supported by the archaelogical report on Portion 57 by J.P.Collins, (April,1991),prepared for the NSW Aboriginal Land Council.

- 15 rare/vulnerable species occur within the project site (pp204-205, & Fig. 3.11). Species of special significance include the Sooty Owl, Masked Owl, Powerful Owl, Black Cockatoo, and the Tiger Quoll,which occur within the project area, and will be effected by mining operations.

This submisesion has been made in haste as a result of the EIS only being available in the area over the past fortnight, also as a result of the lack of answers provided at a public meeting held on 10th August. We would like to reiterate our opposition to the granting of any licence or other approvals for the mine, for the above reasons. We reserve our right to make further submissions.

Yours Sincerely

D. Van Gelder
President U.CA.R.E Tabulam Inc.

Name	Organisation/Interest	Address	Signature
TALLY WELLNER	UCARE	SECRETARY, TABULAM	S. Wellner
CAREEN MARSH	UCARE	Fire Brigade TABULAM	C Marsh
Phillip Coleman	U.CARE	Vice Pres. Dent Tabulam	P Coleman
Rick Carroll	U.CARE	Tabulam	R Carroll
Peter Chaplin	R.E.S.P.G.	Drake	P Chaplin
Lee CANNING	UCARE	TABULAM	L Canning
Tracey Cahill		Tabulam	T. Cahill
L. Gordon		PRETTY GULLY TABULAM	L Gordon
GREG FIRTH			
[illegible] KELLY	U CARE	TABULAM	[illegible]

Yours Sincerely,

D. Van Gelder

D. Van Gelder
President U.CA.R.E Tabulam Inc.

Name	Organisation/interest	Address	Signature
SALLY WERNER	UCARE SECRETARY.	TABULAM	S. Werner
WARREN MARSH	UCARE Fire Brigade.	TABULAM	W Marsh
Phillip Coleman	U.CARE VICE PRESIDENT	Tabulam	P Coleman
Rick Carroll	U.CARE	Tabulam	R Carroll
Helen Chaplin	P.E.P. Gill	Drake	H Chaplin
...ue CANNING	UCARE	TABULAM	M Canning
TRACEY Cahill		TABULAM	T. Cahill
L. Gordon.		PRETTY GULLY	L Gordon
GREG FIRTH		TABULAM	G Firth
SUE KELLY	U CARE	TABULAM	S Kelly
V. Hoddes.		P.O Drake	V Hoddes

Lynne Davies	EWINGAR	RESIDENT	Lynne Davies.
Phil Brown	VIA TABULAM	Tabulam	P. Brown.
	U.C.A. P.E.		
	Tabulam.		
BRANDON HAMILTON.	TABULAM.		J. Williams
Jon Williams.	EWINGAR.		A. Gilligan.
Angie Gilligan.	TABULAM.		J. Buckley
JUSTINE BUCKLEY	LISMORE	PERMACULTURE INTERNATIONAL JOURNAL	P. Osborn.
Paul Osborn	Drake	Resident	K. Caldwell
Katten Caldwell	Drake	Resident	
CAROL DILLON	TABULAM S	RESIDENT	Carol Dillon
Courtney Warren	TABULAM	RESIDENT	Gwarren
Michael Cleary	Drake	Resident	M Cleary
	Pretty Gully	RESIDENT	

Name	Address	organisation/interest	Signature
K. STEVENS	DRAKE		K Stevens
Rachel & Geoff FINDLAY	TABULAM	Exec UCARE	R Findlay G Findlay
Sharon ROSS	TABULAM.		S. Ross
Amanda Cedar	TABULAM St.	UCARE.	A Cedar
Terry KEFT	DRAKE	Local Resident.	
VERNA LEWIS	TABULAM S.	RIVER RESIDENT	
WAHEEE	NEWINGAR	EARTH	
DEBORAH KEEP	DRAKE	CONCERNED RESIDENT	Keep
K. FABIAN	TABULAM	Clarence River Valley Resident	K Fabian
R. STEVENS	DRAKE	Local Resident	Renée Stevens
[illegible]	NEWINGAR	CONCERNED RESIDENT	J Lamb
V. J. AYRE	TABULAM Lot 3 Grafton Road Tabulam	RESIDENT Concerned Person	V. J. Ayre
Carlo Burns			Carlo Burns

13-8-1995

The Director
Department of Mineral Resources
Sydney

Dear Sir,

Re: EIS - TIMBARRA GOLD PROJECT (Capricornia Prospecting P/L)

(1) We refer to the above and make the following submission with respect to Section 3.11.3 (Post-European Archaeology) of the Statement :

1. Scientific/Archaelogical Significance

The applicant's archaeological consultants (Appleton and Burke) have assessed the significance of historic features within and surrounding the proposed mine workings as being low. This assessment is based in part on the consultant's opinion that *"The prime workings and habitation areas are not particularly rare or unusual in a regional context."*

It appears that this assessment has been based on a limited and incomplete knowledge of the history of the Poverty Point mine and its associated artefacts. The water race shown in Figure 3.12 (extending South from PP13 for approximately 250m and then West for approximately 700m) is in fact part of a more extensive work of an historical nature which extends to the head of Nelsons Creek some 2000m to the West.

The works were constructed by the Surface Hill Sluicing Company between 1877 and 1880, and consisted of almost a kilometre of tunnel and another kilometre of zinc fluming suspended across a valley on timber framing up to 18m above ground level, and with an average height of 12m. The purpose of the works was to secure a reliable water supply from Nelsons Creek to enable hydraulic sluicing of the auriferous granite dykes at Poverty Point. Accounts of the progress of these works are contained in the Dept. of Mines Annual Reports of the time.

Although little trace of the zinc fluming and timber framework remains, the tunnel is extant and together with the said water race forms part of an historical feature which must be of regional or even State significance. We therefore request that the significance of the water race be re-evaluated by the consultants with a view to its protection during the proposed mining and processing operations.

2. Public Significance

(2) We contest the consultant's assertion that the public significance of the Poverty Point sites is low. The area

experiences relatively high levels of visitation by members of four wheel drive clubs, as well as individuals from a wide area of the North Coast and Tablelands, who come to see the old mine workings and remaining historical artefacts. We submit that at the very least, the better preserved fireplaces identified in Table 3.16 should be relocated to a site such as the historical museum in Tenterfield, where they should form part of a public exhibit. Relocation should be undertaken under the close supervision of a competent archaeologist.

(3) With respect to the proposed rehabilitation works, we submit that the open cut areas should be backfilled with material from the 'waste rock emplacements'. Every effort should be taken to restore the natural environment with the least possible disturbance to the surrounding environment and any remaining historical features.

Yours faithfully,

Mr.B.S.Blackford

30 Shelley Drive
Byron Bay, 2481

Mr.K.Cockburn

8 Panorama Cres.
Alstonville, 2477

Michael Combe
133 Miles Street
TENTERFIELD 2372 NSW
Ph 015 255048

Dept of Mineral Resourses

(1) Attached is my submission on the Capricornia Prospecting Pty Ltd Timbarra Gold Project EIS. Since the time of the EIS FIS and Supporting Documents public display I have had time to read about half of the 150mm thick A4 information provided, and must say I find the review period inadequate to assimilate the information and respond in detail.

(2) I note that Government Agencies were able to comment on earlier drafts of the EIS - a (3) courtesy not extended to the general public. An undefined area of Poverty Point has been proposed as the Demon National Park by the NSW Government, based partly on unscrutinised information supplied in the draft EIS that has catapulted Poverty Point into an area of high conservation significance. At least one Government Dept bent on land acquisition has seized on the information to advance its land claims without any consultation with landholders on the Poverty Point area. This single action has caused great anxiety frustration and disillusionment about the rights of individual landholders and the planning process at the State level.

(4) At this late stage in the planning and consent process, this is the first opportunity for public comment on the EIS, well after the obvious wheeling and dealing of the Government its agencies and the Mining Industry. I find this situation most unsatisfactory and distressing. Nevertheless my submission is attached and I hope it can be given some credence as a genuine and concerned local landholder and taxpayer.

Yours Sincerely

Michael Combe

13 August 1995.

Submission on the Timbarra Gold Project EIS

About Michael Combe

I am a full-time Consultant Forester with holdings adjacent to the proposed mine development. I have undertaken limited contract work for the proponents and consultants preparing the EIS. Diary records indicate I spend up to 80 days/year at *Poverty's End.*

(1) About *"Poverty's End"* Portions 15, 16 & 39 Parish of MacLean County of Clive.

The land described above comprises 916 hectares of mostly forested private land which is situated as close as 1 km to MLA4 to the west and south west of the proposed development.

Developments at *Poverty's End* include:

- A hut in Por 39 immediately south of the old Malara SF, occasionally occupied by myself friends and bona fide tenants;
- 2 km of stock proof fencing in the northern part of Por 15 enclosing a 24 ha (60 acre) paddock where horses (and soon to be stock) are depastured;
- Surveyed boundaries to all of Por 15 and the north and east sides of Por 16 and;
- Trial plantings of Eucalyptus olida within Por 15.

Activities associated with the developments at *Poverty's End* are:

- Forestry including harvesting of hardwood sawlogs, round and split posts and firewood, regeneration and enrichment planting;
- Seed and plant collection for propagation or sale as ornamental or dried arrangements;
- Harvest of Eucalyptus leaf for essential oils;
- Fire and fuel management;
- Passive recreation including horse trail rides,spotlighting of wildlife, fossicking and explorative bushwalking and;
- Enjoyment of solitude and quiet peace in a remote natural setting.

Future projects and aspirations for *Poverty's End* include:

- The development of the hut area with additional dwellings to accommodate up to 20 people as a base for eco-tourism featuring passive recreational pursuits and focussing on the natural landscape, heritage and historical values on the Poverty Point plateau and Timbarra River local environs and;
- Plantation based agro-forestry in appropriate higher site quality areas.

The EIS represents the most comprehensive collection of valuable environmental and other information on the Poverty Point area backed up by considerable research and

the proponents should be commended for a well presented and exhaustive investigation. In my opinion the outstanding qualities of Poverty Point are its variety of landscapes, pure waters, historical and heritage values and its rugged nature. In relation to current and proposed activities based at *Poverty's End* and the proposed mine development's proximity to it, I wish to comment on the following aspects of the EIS as presented:

Roading and Increased Human Numbers

(2) The provision of a substantially improved access road to the area is a requirement of the mining project only. Multiple and private hire of plant to maintain the existing access for the purposes of erosion control and activities at *Poverty's End* have in the past been arranged by myself. Neither Tenterfield Shire Council, State Forests, Conservation and Land Management nor the Mining Companies involved at Poverty Point have in the past claimed any responsibility for maintenance of the Poverty Point Road, although in fairness some have been party to funding a multiple hire. Who will be responsible for the Roads construction and future maintenance? Can we also be assured that through access to the Timbarra River via the Poverty Poit Fire Trail for other public users will be maintained?

(3) In the past three years Mining personnel connected with exploration on Poverty Point have been involved in at least three serious motor vehicle accidents on the Timbarra and Poverty Point Roads as far as I am aware. (2 collisions and 1 rollover). In each case excess speed was a contributing factor. Safety is an important factor for all public road users which can be fundamentally addressed by imposing traffic speed limits.

(4) Improved access and mining will bring increasing numbers of people to the area. Much of *Poverty's End* is unfenced and already interest in the proposed mine development has attracted more people to the area who inevitably get lost and end up unintentionally trespassing on freehold land. Theft of plant material generally and cooking and living items from the hut has occurred recently. Rubbish has been deposited on the property. There is potential for such unwanted activities to increase with increasing population to Poverty Point. It is important therefore that all mining personnel and visitors be fully briefed on the extent and boundaries of private land in the area and that this be conditional to the granting of the Mining Licence or its approval. Assistance in signage of private property and strategic fencing may overcome this problem to a large degree.

Potential Expansion and Integrity of the Project

Following on from above the EIS covers a set area of 400ha of MLA4. However Homestake Australia (recently taken over by Ross Mining) carried out an extensive exploration drilling programme of limited areas on *Poverty's End* in Por 39 on Hortons Creek and less than 200m south of the hut. Drilling sample bags still litter the area some 2-4 years after the programme was completed. Within Por 15 a telecommunication facility has been installed by Auralia without formal consent nor

compensation to use of the area. My personal experience with miners is that the rhetoric is not matched by what actually happens.

(4b) The operation of the Mt Carrington Mine at Drake bore no resemblance to the EIS covering the proposed activities. The hydrological study in that case was grossly in error. Although the Mt Carrington Drake Mine may be geologically and operationally different to the Timbarra Gold Project, the point being made is that those charged with the responsibility of reviewing the EIS and its technical data as presented failed to detect gross errors in assumption and calculation. Subsequently DMR and the then SPCC (now EPA) have not adequately addressed the environmental disaster at Mt Carrington nor brought to account those responsible for the sorry mess. The legacy of Mt Carrington must not be repeated and it is critical that the determining authority for the Timbarra Gold Project EIS has the resident expertise and competence to review the Proponents proposal and not just to act as a rubber stamp. What guarantees can the DMR give that this will be the case?

(5) As the EIS notes, mining will result in the complete transformation of the site - its impact will be total and with respect to the heap-leach pad and excavation sites irreversible. It is most important therefore that the size and scale of the project remains in proportion to the existing topography and its landscapes. The current proposal is predicated on the limited area of disturbance and the start of this mine must not be a precursor to more expansive mining projects in the area.

It is vitally important to me that I be fully informed of any expansion of mining within Poverty's End given my aspirations for the area. Consultation at the planning stage and well prior to any proposed development would seem to be the minimum courtesy. As the landholder, rate payer and custodian of *Poverty's End* the reference to land owners as "....the holder of surface and grazing rights." by some mining proponents is an unfair description of property rights.

(6) **Ecotourism at Poverty's End and Environs**

There are numerous opportunities for ecotourism focussing on natural features in the Poverty Point area and *Poverty's End* is strategically well placed as a base for such a development. The return of mining to the Poverty Point area provides an additional attraction to tourists to the area and the opportunity for mine management to be pro-active in the environmental debate and to demonstrate high standards of environmental care and the compatibility of its mine operation with natural and historic values.

(7) **Historical Values**

The consideration of historic features of the area have grossly understated the value and significance of old mine workings and features within and adjacent to the development area. Poverty Point is regularly visited by fossickers and 4WD Clubs focussing on the old workings. Copies of Annual Mining Dept Reports from the late 1870's refer to the construction of many miles of water race including wooden viaducts across gullies and tunnels through hard rock constructed over several years to

bring water to the Poverty Point mine from Tin Swamp. As all this was done by hand it was an incredible achievement in our history. The EIS has dismissed the value of this heritage and proposes its destruction through mining. At the very least historical working and heritage should be photographed and properly documented. Without it we cannot understand the value of what it is proposed to destroy. It is alarming that mine exploration track construction and drilling has been allowed to bulldoze old workings which were hand crafted and took years to construct.

(8) **Rainforest Definition**

Vegetation communities 5 and 6 as described in the FIS (page 18) are argueably composite types and not clearly defined rainforest. The claim that there is 1250 ha of rainforest mostly west of the development on private and leasehold land is contested. Appendix 2 is an excerpt from Floyd (1990) "Definition of rainforest and its subforms". Under this classification much of forest would fall into forest situations (d) and (e). The Forestry Commissions Research Note No 17 "Forest Types in NSW" describes some 24 Rainforest Types and defines rainforest as -

> An absence of Eucalypts and the more typical associations of Eucalypts except occasionally as relics from an earlier community which has been invaded by the rainforest. In such cases the Eucalypts usually stand as an overmature overstorey and their regeneration is rare or completely lacking."

There is an abundance of Blue Gum and Brush Box regeneration throughout much of these vegetation communities from past disturbances which have been well highlighted in the FIS and EIS and it is clearly not rainforest. Eucalypts in particular have numerous mechanisms to respond to disturbances such as fire which also distinguishes it from rainforest. The general history of frequent firing in the area has sharpened the boundaries between rainforest and Eucalypt forest types which is strikingly apparent from aerial photographs of the area. It is recommended the definition and vegetation classifiction be revised.

Unfortunately rainforest has emotive connotations often used to political advantage to restrict sustainable harvesting operations in forested areas.

(9) **Some Minor Errors**

(10) The FIS in particular states that "....it is certain that in the 1860's Red Cedar was logged in the Local Area." (page 25) This statement is repeated elsewhere but is not supported by the flora species list Appendix 2b. Nor does Red Cedar receive mention in Alex Floyd's "Rainforest West of the Timbarra." Despite my intense efforts to locate the species on the Poverty Point plateau I can tell you it does not occur here. My plantings of Red Cedar near the hut in Por 39 have suffered high mortality due to cold and frost. The nearest known occurrences are at lower elevations in Girard SF in the vicinity of Richmond Trig and at Long Gully, and to the east in Washpool NP. In both instances soils are derived from sedimentary rocks and not granites as occur at Poverty Point.

(10) The FIS Flora species lists Eucalyptus dalrympleana (Mountain Gum) as common in the development area. I am certain the species does not occur here and is correctly identified as E brunnea (formerly E deanii -Roundleaved Gum).

The 1:50,000 base map used in the EIS and FIS has some basic errors:

- Hortons creek is shown as Herding Yard Creek. The latter occurs in the north east of Poverty Point within Toby Smith's lease.
- The FIS Figure 4 shows an exaggerated and incorrect overlay of rainforest. Warm-temperate rainforest does exist as elongated gully line occurrences along sections of Nelsons Creek but this is not shown. It is submitted that this Map at this scale can only be indicative, but as presented is extremely misleading. The map should be completely revised.

FOREST PROTECTION SOCIETY LIMITED

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321
~~1/240~~ Rouse St
Tenterfield NSW 2372

Telephone: (067) 363323
Facsimile: (067) 363310
A.C.N. 008 665 736

Attention: Vince Fallico

14 August 1995

Dear Vince

Further to our phone conversation I wish to advise that there are four of us who will be putting in submissions regarding the proposed mining development at Timbarra by Auralia Resources.

We will fax our submissions in the next week but the subjects we will be commenting on (not necessarily in order) include:-

(1) * Installation of reliable monitoring equipment to detect contamination of nearby waterways.

(2) * Incorrect labelling of forest type in EIS (ie. wet eucalypt being named rainforest)

(3) * Reference to Hastings River Mouse exclusion zone by State Forests, and proposed research.

(4) * Increased human activity in the area and potential affect on neighbouring private land from trespass and from loss of quiet and enjoyment. Also concerns with stock on access road with the greatly increased traffic.

(5) * Adequate bond and conditions to meet rehabilitation or clean-up costs if required.

(6) * Concerns regarding the pumping from the Rocky River - that proper measures are adopted to ensure that the water supply to the water users (not just those with pump licences) upstream as well as downstream is not affected, especially as the Rocky has seen some of its lowest levels over the past few years.

Thanking you,

Petrie

Bronwyn Petrie
Northern NSW Co-ordinator

Bill Petrie - Landowner (where heap-leach pad is to be situated)

Phillip Makings - C[redacted] Pty Ltd (Logging Contractor), FPS NSW Board Member and Tenterfield Branch[redacted]

Michael Comb[redacted] downer neighbour of proposal, Forestry Consultant. - Mack may have already sent you his but I know he was pressed for time.

NEW SOUTH WALES ABORIGINAL LAND COUNCIL

The Director General
Department of Mineral Resources
PO Box 536
St Leonards NSW 2065

10 August 1995

Dear Director General,

Re: Timbarra Gold Mine Project
Submissions in response to EIS

This submission is made on behalf of the Jubullum Local Aboriginal Land Council and the Aboriginal residents at Tabulam, as well as the other persons (Aboriginal and non-Aboriginal) whose signatures appear at the end of this letter.

You have requested submissions in response to the EIS for the proposed Timbarra Gold Mine by 14 August 1995. There are a number of serious deficiencies in the EIS which make it impossible for us to make final submissions as to the acceptability of the proposed mine itself at this stage.

A community meeting was held at Drake on 10 August 1995 at which members of the community, both Aboriginal and non-Aboriginal, sought answers to these and other questions. Our questions were not answered by the representatives of the mining company or your department. Consequently, this submission refers to the inadequacies of the EIS only and we reserve our right to make further submissions in relation to the mine itself if and when these deficiencies are made good.

Naturally, however, we would have to oppose the issuing of any mining licence or other approvals in relation to the proposed mine at this stage.

(1) **Native Title**

The EIS asserts (at p.151) that native title has been extinguished in the area of the mine site. However part of the land is currently State Forest and no tenure history is given to justify the assertion. Until such a tenure history is provided it is impossible to assess whether or not native title over the mine site area has been extinguished.

We submit that the failure of the EIS to adequately deal with the tenure of the proposed mine site is itself a fundamental flaw, and that any decision to approve the mining licence pursuant to this EIS would be invalid.

9th Floor, 33 Argyle Street,
Parramatta, 2150

P.O. Box W125,
Parramatta, 2150

Ph: (02) 689 4444
Fax: (02) 687 1234

Extraction of water from Timbarra River

The EIS states that the mine will draw 2.5 million litres of water per day from the Timbarra River, on which a community of over 300 Aboriginal people at Tabulam (as well as other riverside residents) depends. The EIS does not adequately address the impact such pumping would have on these downstream users of the river.

One omission of particular concern is that the EIS does not give the figures for the current flow of the river. The river is at a very low level this year, as it was last year. It is impossible for the community to assess the impact of the extraction of 2.5ML per day when the report does not give figures for current and recent flow levels for the purpose of comparison. The EIS does refer (at p.102) to an unspecified 43-year period of records, but does not indicate which years are included. From a layperson's perspective it does not seem possible that the figures include the current and recent flow rates of the river.

The EIS refers (at p.177) to future consultations between the company and the Department of Water Resources to establish a minimum flow level below which pumping would cease. It is of grave concern that this level has not been set as an integral part of the planning and
(3) EIS process. It is also a matter of grave concern that there is no indication of consultation with downstream river users such as the Tabulam Aboriginal community.

(4) These matters were specifically raised at the meeting in Drake on 10 August and no satisfactory answers were given.

Cyanide controls

(5) The expert water study states that in the event of an overflow of the storm pond during heavy rain (as would have occurred in 2 of the 100 years of simulated rainfall), the resulting cyanide level would be unacceptable high, despite dilution. It is of serious concern that the EIS does not refer to this expert assessment in its discussion of "contaminated water system behaviour under extreme conditions" on p.177ff.

The EIS refers (at p.177ff) to a "contingency plan" in the event of heavy rainfall which consists of pumping cyanide-contaminated water from the storm pond to the Big Hill open cut void. The EIS does not give sufficient details of the indications for the implementation of the plan, nor of the procedures to be adopted, the equipment to be used or the personnel responsible. Given the extremely serious consequences of any failure of this plan, it is essential that more information be provided before the mine could be approved.

(6) Another deficiency in the EIS which needs to be addressed is in relation to the risk of cyanide leaching into the river through contaminated groundwater. The EIS describes (at p. 174) a groundwater interception trench which is supposed to collect and return any contaminated groundwater downhill from the leach pad. No information is given in either the EIS or the specialist water study about the behaviour or adequacy of this device during extreme rainfall conditions.

Our children play in the Timbarra River and we use its water, and we must be absolutely satisfied about the procedures for the prevention of cyanide entering the river system.

Conclusion

(7) We have responded in good faith before the deadline for submissions, despite the lack of time available to seek independent expert advice about the issues raised in this letter. We are seriously concerned about these issues which have the potential to affect our very health (8) and livelihood. We are also deeply distressed that these issues could not be satisfactorily addressed at the public meeting on 10 August.

As a result of the deficiencies of the EIS we are unable to form a final view on the acceptability of the proposed mine. However, as noted above, due to the serious nature of these deficiencies we would have to oppose the granting of any licence or other approvals for this mine at this stage.

We reserve our right to make further submissions if and when further information is provided. If no further information is provided, or if information is provided which we find unsatisfactory, we reserve our right to make further submissions after expert advice and community consultations, say within eight (8) weeks.

All correspondence and enquiries may be directed to:

Mr Shawn Whelan
Legal Officer, Native Title Unit
NSW Aboriginal Land Council
PO Box W125
Parramatta NSW 2150
tel. (02) 689 4415
fax (02) 687 1238

Copies of all correspondence should be forwarded to:

Mr Kevin Walker
Jubullum Local Aboriginal Land Council
PO Box 25
Tabulam NSW 2470
tel. (066) 661 337
fax (066) 661 386

Yours sincerely,

Shawn Whelan
Legal Officer
Native Title Unit

Persons supporting this submission:

Name	Organisation/interest	Contact address	Signature

+6126871238 NSW ABORIGINAL LAND F-249 T-093 P-005 AUG 14 '95 15:55
NSW ABORIGINAL LAND. F-220 T-083 P-005/005 AUG 11 '95 16:52

Persons supporting this submission (continued):

Name	Organisation/interest	Contact address	Signature
Richard Byers		Tabulam	Richard Byers
Brandley Bruce		Tabulam	Brandley Bruce
Audley Hickling		casino	A. Hickling
William Hickling		TABULAM	William Hickling
Thomas Avery			Thomas Avery
Lillian Hickling		TABULAM	L Hickling
Terrie Bell		TABULAM	T Bell
Adam Bell		Tabulam	A. Bell
Andrew Bell		TABULAM	Andrew Bell
Jenny Phola		TABULAM	J Phola
Priscilla Avery		Tabulam	P. Avery
Harold J Avery		TABULAM	H J Avery
Selina Hickling		TABULAM	Selina Hickling
Barbara Fraser		TABULAM	Barbara Fraser
Natasha Naggs		YAMBA	Natasha Naggs
Patricia Laure		YAMBA	Patricia Laure
Daphne Collin		TABULAM	Daphne Collin
Donna Collins		TABULAM	Donna Collins
Violet Gordon		TABULAM	Violet Gordon
Raymond Gordon			Raymond Gordon
Mandel Burton		TABULAM	Mandel Burton
Neville M'Grady		TABULAM	Neville M'Grady
Rex Williams		TABULAM	
Laurie D. Robinson		TABULAM	Laurie D. Robinson
Rebecca Hickling		TABULAM	Rebecca Hickling
Daniel Walker			Daniel Walker
Meryn Williams		Tabulam	Meryn Williams

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Persons supporting this submission (continued):

Name	Organisation/interest	Contact address	Signature
Cheryl WALKER		7 Bennett St, CHSINO	Cheryl Walker
JANELLE FALEPAU		340 OLD DYRAABA RD	J Falepau
Peter Falepau		340 OLD Dyraaba Road	P Falepau
Chris Walker		32 Lennox st	Chris Walker
G. W. Smith		Lot 17-19 Peacock s	
BOB COLLINS.		TABULAM.	Bob Collins
STEPHEN LAURIE		YAMBA	Stephen Laurie
WILLIAM A. Collins		TABULAM	William A. Collins
Daniel Bowd		ASHFORD	Daniel Bowd
Ian Torrens		Evans Head	Ian Torrens
Steph Walker		Tabulam	
Dianne Torrens		Evans Head	D. Torrens
Annabelle Walker		Tabulam	A Walker
Della Walker		Yamba	
Paula Caldwell		Casino	P. Rogers
Kenny Laurie			
allan. Laurie		YAMBA	
Naomi Torrens		Tabulam.	E. Hickling
Pamela Williams			
Ernest Hickling			
Rhonda Williams			R Williams
Christine Torrens			Christine Torrens
WALLY BELL		TABULAM	
VANESSA. MUNDINE		Tabulam	

Persons supporting this submission (continued):

Name	Organisation/interest	Contact address	Signature
LEWIS Walker	Malabugilmah		
MARTY WALKER	TABULAM		M WALKER
DEBRA CLEARY	TABULAM		D. Cleary
Denise French	Mallanganee		D. French
Robert Collins	Mallanganee		
Cecil French	Mallanganee		
Christine Mickling	Casino		C Mickling
TREVOR McGRADY	TABULAM		
Patrick Torrens	TABULAM		
Geoff Findlay	EWINGAR		G Findlay
Peter V. Sampson	Ewingar		
Col 4 Parker	Pretty Gully.		
Tommy Walker	TABULAM		T. Walker
	TABULAM		
MARK ROBINSON	CASINO		M Robinson
HERBERT W. DUROUX	280 HIGH ST CASINO		
NORRIE WILLIAMS	BARYULGIL		
Barbara Avery	Tabulam		
ANTHONY AVERY	REDFERN		
LENNY BAKER	Tabulam		

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NSW ABORIGINAL LAND F-220 T-083 P-003/005 AUG 11 '95 16:52

Persons supporting this submission (continued):

Name	Organisation/interest	Contact address	Signature
HANK EXTON	TABULAM		HANK EXTON
Jacqueline Torres		12 Clark Ave, Casino	Jacqueline Torres
Loretta Torrens		Casino	Loretta Torrens
Kathy Donnelly		T. Field	Kathy Donnelly
Muriel Exton		Tabulam	Muriel Exton
Neville Weeper		Yamba	N Weeper
CLIFF DALEY		GRAFTON	Cliff Daley
ALEXANDER WALKER		426020 5a LOUIS CHIPPENDALE	[illegible]
K Moffitt		16 Clarence St Bonalbo	K Moffitt
M Smith		Tabulam (Pretty Gully)	
D N Smith		Tabulam (Pretty Gully)	
N L Smith		Tabulam (Pretty Gully)	
KATHRYN O'NEILL		PADDYS FLAT	[illegible]
Buck Buchanan		PADDYS FLAT Pretty Gully	[illegible]
[illegible]		195 RIVER ST, MACLEAN	Matt [illegible]
Brenda Randall		45 Cameron St Maclean	
Clifford Williams		5 CENTRAL AVE, Maclean	
Allan Williams		51 DONALDSON ST GRAFTON	[illegible]

+6126871238 NSW ABORIGINAL LAND F-249 T-093 P-007 AUG 14 '95 15:57
126871238 NSW ABORIGINAL LAND F-220 T-083 P-005/005 AUG 11 '95 16:52

Persons supporting this submission (continued):

Name	Organisation/interest	Contact address	Signature
BRYONY ALLAN	LOCAL TEACHER	POND ST TABULAM	[signature]
LUKE KENNEDY	SHOP ASSISTANT	PADDYS FLAT RD. TABULAM.	[signature]
SUE KELLY	H/CARE RESIDENT/MOTHER	CYRIL SMITH CRT	[signature]
BRUCE LAURENCE	Resident	Sugarbag Rd	[signature]
Gordon Kelly	Student	Cyril Smith CRT	[signature]
Sam Norton	Student	Tabulam	S. North
Debbie Moore	Domestic Servant	Tabulam	D Moore
W McKnight	Town Water Controller	TABULAM	W McKnight
Karren Amadio	Pre-school	Tabulam	K Amadio
Felicity Cahill	Parent.	Drake	J. Cahill.
Kristie Power.	STUDENT	TABULAM	Kristie
S. Velenich	Mechanic	TABULAM	[signature]
. CALLAGHAN	HOMEBODY!?!	TABULAM	K. Callaghan
D. Brown	Parent	"	D. Brown.
. Brown	Farmer	"	[signature]
Clarke	Resident	"	P Clarke
SHEAN	Resident	Tabulam	[signature]
MERTON.	Resident.	Ewingar.	[signature]
CHRISTENSEN	Resident	Tabulam	[signature]
FANKER.	Resident	TABULAM.	[signature]
M WARD	RESIDENT	TABULAM	Pam Ward
KAPLAN	RESIDENT/DEA MEMBER	DRAKE	[signature]
ndella Price	~~[illegible]~~ Student	Tabulam	[signature]
ren Pirie	~~R-esi~~ Resident	Tabulam	a. Pirie
ky Kroft	Local Resident	Drake	[signature]
Betty McKnight	RESIDENT	TABULAM	Betty McKnight

Persons supporting this submission (continued):

Name	Organisation/interest	Contact address	Signature
HAROLD AVERY		TABULM	Harold Avery
SHOANNE O'CONNOR		TABULM	Shoanne O'connor
PHYLLIS ROBERTS		TABULAM	Phyllis Roberts
Robert Hickling		TABULAM	Robert Hickling
PATRICIA ROBINSON		TABULAM	Patricia Robinson
MIRNDA ROBINSON		TABULAM	Mirnda Robinson
PATRICIA HICKLING		TABULAM	Patricia Hickling
Julie Robinson		" "	Julie Robinson
SUE McGRADY		" "	S McGrady
MARGARET WILKES		" "	M Hickling
MARIE HICKLING		" "	J Walker
JOSEPH WALKER		TABULAM	Thomas Bell
THOMAS BELL		TABULAM	Thomas Avery
Thomas Avery		TABULAM	Carl Hickling
CARL HICKLING		TABULAM	Max Torrens
MAX TORRENS		TABULAM	John Morrisey
JOHN MORRISEY		TABULAM	Lionel Foley
LIONEL FOLEY		TABULAM	G Simon
Glynis Simon		Tabulam	S Hickling
SUSAN HICKLING		TABULAM	E Robinson
EVON ROBINSON		TABULAM	

+6126871238 NSW ABORIGINAL LAND F-216 T-091 P-009

Persons supporting this submission (continued):

Name	Organisation/interest	Contact address	Signature
PETE STANFORD (SELF SUFFICIENT)		PO BOX 10 TABULAM	
Janelle NAVIN.	D.E.& A.	Lot 91 Broxner H'way DRAKE.	J. Navin.
J. M. Power.	DEA.	c/o DRAKE church Broxner H. way	J Power
		Rocky River Rd Drake	
Simon Kaplan		c/- P.O Drake	
N. HOFFMAN			

Persons supporting this submission (continued):

Name	Organisation/interest	Contact address	Signature
Mitchelson	Drake Environmental Association.	c/- Drake P.O. Drake	[signature]
borah Smith	D.E.A.	c/o Drake P.O. Drake.	Deborah D. Smith
enelle Johnston	DEA	c/- Drake P.O Drake	J Johnston.
Andrew Michael Valgin		Boorook Rd Sandy Hill via Tenterfield	[signature]
Lisa Jorgensen		c/ Drake P.O. Drake	[signature]
ndy Bleakley	D.E.A.	c/o. P.O Drake.	J A Bleakley
Kerry Bleakley		c/o P.O Drake	[signature]
Revor Hessell		c/o Po Drake.	[signature]
Revor Scutts		c/o PO Drake	T. Scutts
E Stanford	(Self Survival)	Po Box 80 Tabulam	[signature]
elen Chaplin	D.E.A	Boorook Rd. Sandy Hills.	Helen Chaplin
ny Curtis		Lwr Rocky Rd Drake.	A. N. Curtis
n Robson		Mud Flat Rd. Drake	[signature]
ter M Jones		Lot 14 Bruxner Drake	[signature]
ich Baldin		c/o Drake Hotel	[signature]
nis O Rourke		Lot 6 Long Gully Rd	Denis O Rourke
rry Palmer		c/- P.O. Drake	T. Palmer
ayleen Hodgskin		Lower Clarence Maclean	[signature]
nie Lanas		Bruxner Hwy, Drake NSW	[signature]
k Dunwell		Bruxner Hwy Drake, NSW	[signature]
ki Hodder.		P.O. Drake.	V Hodder
[illegible] Hodder		P.O Drake	[signature]

JUBULUM
Local Aboriginal Land Council
Telephone: (066) 661 337
Fascimile: (066) 661 386
[letterhead]
Address: P.O. Box. 25
TABULUM NSW 2469

The Director General
Department of Mineral Resources
PO Box 536
St Leonards NSW 2065

[date] 11th August 1995

Dear Director General,

Re: Timbarra Gold Mine

I am writing on behalf of the Jubullum Local Aboriginal Land Council, which represents the Aboriginal people living in the Tabulam area. We only recently got a copy of the EIS and specialist reports about the Gold Mine at Poverty Point.

We intend to seek legal and scientific advice about these reports, and we also need time to consult with our Elders and the whole community. This letter is only a preliminary response to request an extension of time in which to make full submissions.

We have four main concerns about this mine.

(1) **(1) Sites affected by the mine**

Our Elders are especially concerned about the disruption and damage to several sites on and near the mine. Mr Eric Walker has identified a sacred site and several related sites. He is currently in Sydney looking after his incapacitated wife.

(2) **(2) Native Title**

The EIS states that native title has been extinguished in the area of the mine, however we do not accept that this is the case. We are seeking legal advice on this point.

(3) **(3) Water supply**

We live on the Rocky River and depend on it for our water supply. At the moment the river is very low. Last year it almost stopped. We are very concerned about the effect of pumping 2.5 million litres a day from the river, and cannot imagine where it is supposed to come from. We are seeking technical advice on this issue.

FROM NSW [illegible] NO. 2083374981 PAGE 4

JUBULLUM
Local Aboriginal Land Council
Telephone: (066) 661 337
Fascimile: (066) 661 386
Address: P.O. Box 25
TABULUM NSW 2469

(4) **(4) Cyanide poisoning**

Our children swim and play in the Rocky River, and we all use the water from it for various purposes. We are extremely concerned about the risk of cyanide entering the river in a flood or by leaching through the mountain into the tributary streams. We are not convinced that the cyanide can be fully contained and are seeking expert advice on this point.

We intend to write a more detailed submission as soon as we have the necessary expert advice. Since we did not receive the EIS and specialist reports until the very end of July, we cannot be expected to respond in full by 14 August. We trust that you will allow us to expand on these submissions as soon as we are able.

Yours sincerely,

Joan Bell

Joan Bell
Chairperson
Jubullum Local Aboriginal Land Council.

TCM

Total Catchment Management

Community And Government Working Together

Clarence Catchment Management Committee

PO Box 371, Grafton NSW 2460
Telephone: (066) 427799 Fax: (066) 431161

14 August, 1995

Mark Stevens
Department of Mineral Resources
PO Box 536
St Leonards
NSW 2065

Dear Mark,

Intention to lodge a late submission - Timbarra gold mining operation

The Committee believe that this mining operation has the potential to substantially impact on the Clarence Catchment.

Major areas of concern are:

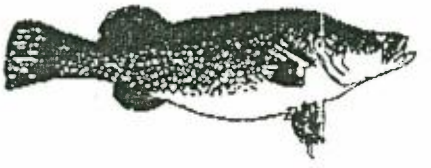
(1) • **Disposal of contaminated waste rock from leach pads**
(2) • **Potential for ground water contamination**
(3) • **Runoff from site**
(4) • **Erosion and sediment from site**
(5) • **Water requirements of the operation**

We are currently preparing a detailed submission on this proposal which you will receive by 18 August.

Regards

Matt Foley

Matt Foley
(Coordinator)



Clarence River -home of the eastern fresh water cod

State Forests — Meeting at C.I. on 6/11/95

(Steve Thomas, Pat Crowhurst, Peter Newbery.)

(1) Compensation — timber losses.

— wages/salaries for supervision.

— No need to be on NREMP committee

(2) + (3) Ongoing responsibility to forests — land tenure may be changed at the end ∴ Crown Land — NREMP committee should have CALM repr.

Your reference T95/0114/55
Our reference DO 158F
S J TOMS/st

14 August, 1995

Director General,
NSW Department of Mineral Resources,
PO Box 536,
St Leonards, NSW 2065

Attention: V Fallico

State Forests of
New South Wales

Glen Innes District
PO Box 426
Glen Innes NSW 2370
Phone (067) 32 3277
Fax (067) 32 2558

Dear Sir,

Re: Timbarra Gold Project
-Mining Lease Application Nos 4 an 5 Inverell
-Environmental Impact Statement (Capricornia Prospecting P/L)

Overview

The following is State Forests of NSW response to both the Mining Lease Application and the EIS for the Timbarra Gold Project.

Assuming that the overall project can demonstrate net positive social and economic advantages to the area and subject to satisfactory resolution of the items raised in this response, State Forests does not object to the continuing investigation and development of the project.

This response also assumes that the other key regulatory agencies including EPA, NPWS, LaWC and DUAaP will present detailed submissions and controls relating to the project.

(1) The question of compensation to State Forests of NSW for any damage, loss of future productive capacity or costs of supervision under the Mining Lease will also have to be finalised.

(2) The project will result in some risk to the environment through the significant use of chemicals and in massive ground disturbance, and is seen as incompatiable with the objects
(3) of State Forest dedication. Should the project be approved, the State Forest land tenure may need to be reviewed.

(4) Harvesting Plans.

Overall Plan & when stage & WMESC Plan for each stage.

- ELS — OK.
- Minister's approval
- EPA — SEPARATE APPROVAL.
- RAPIC (NPWS, EPA, State Forests, & others).

(5) Clearing

RAPIC — * Harvesting or Clearing Plans may have to be approved by them.

JOHN ~~HAWKE~~ — RAPIC Committee needing approval?

* Steve Thomas will look at T.I.P. Act & talk to Secretary of RAPIC to determine if a H.P. is required.

(4) It should also be noted that State Forests of NSW management of the Malara State Forest is subject to regulation by a number of agencies. Logging requires the preparation of detailed Harvesting Plans which are then reviewed through the following processes:-

1. NPWS under the Endangered Fauna Legislation, in which S120 licences are required before logging and associated roading can be undertaken in the area. Crown land immediately to the west of the project area has already been subject to a S120 licence refusal. In addition , under the State Government Conservation Policy, the Poverty Point plateau is enclosed within the planning boundary of the Demon Creek National Park proposal and as such logging operations on Crown Lands are currently not sanctioned within this area.

2. Environment Protection Authority (EPA) under the Pollution Control Licence held by State Forests of NSW covering logging and associated roading.

3. Regulatory and Public Information Committee (RAPIC) reviews areas proposed for logging by State Forests of NSW under the Timber Industry (Interim Protection) Act (TIIP Act), pending the determination of Forestry EIS's.

(5) **2.4.3 Clearing**

Merchantable Timber

The removal of merchantable timber requires further negotiation, in terms of its timing and approval. Merchantable timber should include all that is saleable from the area including fencing timber and firewood. Under the Forestry Act, State Forests of NSW is responsible for the sale of timber from State Forest and Other Crown Timber Lands.
As indicated in the section above, State Forests is constrained due to the current regulatory climate and the Governments Conservation Strategy to be able to authorise the harvesting and clearing of timber from the areas affected by the project without reference to the other agencies.

Given that the project involves much more than harvesting and clearing timber, it is strongly recommended that the Company and / or Department of Mineral Resources (DMR), should ensure that the approval to the project includes:-

- S120 licence to cover the harvesting of timber and associated clearing as proposed in the project.
- EPA approval to the harvesting of timber and associated clearing within the licencing framework of the project, and
- RAPIC approval to the harvesting of timber and associated clearing

Harvesting of the merchantable timber should ideally be undertaken at the time of clearing. Further joint inspections regarding this are recommended.

(6) — EIS says no burning, but this is a worthwhile option as ~~you~~ the Co. won't be able to ~~p~~ replace it over the area.

But $\frac{1}{3}$ – $\frac{1}{2}$ timber is merchantable, &

— 5–10% only removed in log form.

Perhaps Co. could . . (1) ~~harvest~~ .. 5–10% timber.

(2) burn $\frac{1}{2}$

(3) $\frac{1+2}{10}$ used to cover area & habitat.

(4) $\frac{1+2}{10}$ Stack timber nearby (not within tracks) & within local tracks ~~available~~.

CONDITION

(1) Burning is approved in situations ~~that~~ where otherwise it is impracticable ~~an~~ appropriate procedure and ~~a plan of~~ ~~timber management is in place that~~ is acceptable.

— Co. — needs to ~~look at~~ do more homework on volume of timber. Stockpile of timber is a fire hazard.

(7) OK.

(8) — noted in ay Harvest Plans that may have to be submitted — consultant's report.

(9)

↓

OK.

Clearing

(6) The EIS states that all non merchantable timber would be pushed, cross cut and stockpiled on all available tracks, old clearings etc. I have concerns regarding this aspect. The EIS does not state how the material will be moved to temporary storage, as the potential storage areas could be some distance from the point of clearing and involve the use of various tracks. Many of the tracks proposed for stockpiling of vegetation have been recently drained following earlier exploration by the Company, and so there reuse will involve more disturbance. Ultimately much more area will be cleared than would be rehabilitated with the stockpiled vegetation, ie open cut mines and the heap leach pad are likely to be excluded, which will leave a problem of what to do with this large mass of rather unnatural cross cut material. The stockpiled material would be at risk of ignition through wildfires or other causes, and so could be destroyed any way. I would recommend that while some stockpiling of vegetation material should occur, that much of it should be stockpiled and burnt to ash on site.

(7) Greatest importance in the rehabilitation stage will be in the collection and storage of topsoil which would be relatively rich in seed and organic matter, and in the collection of seed from all vegetation types as part of the clearing process.
The EIS refers to progressive rehabilitation through the life of the project which obviously is important. However, in practice the majority of areas will not be available for rehabilitation until nearer the life of the project, and so stockpiled materials will be in storage for up to four years putting further pressure on the stockpiling area and techniques. 2.12.3.1 provides for seed bearing biomass to be harvested from the surrounding forest for rehab purposes, this should not be necessary if the material is collected at the clearing stage.

(8) In the vegetation classifications, the Tallowwood/Blue Gum/Brush Box with rainforest understorey has been classified as Sub tropical rainforest, but should be referred to as moist coastal hardwood, and Tallowwood/New England Blackbutt should be classifed as a New England hardwood type not warm temperate rainforest.

2.6.4 Heap Leaching

(9) The EIS does not refer to any heap/leach pads that have successfully operated on this type of terrain, geology or rainfall area. Opinion seems to indicate that most other projects have operated on flatter, drier country.

(10) I would expect that the leach pad irrigation solution would have a high load of fine sediment, which could clog the underneath drainage system within the leachpad, thus reducing its efficiency.

(11) Of greatest concern with respect to the project is the very large amount of sodium cyanide to be transported, stored and used on site. Table 2.12 indicates that **the annual consumption of Sodium Cyanide will be 700 tonne**. The EIS does not adequately explain what actually happens to all of this material. It states that the heapleach pad would be flushed with clean water for 30 days following completion of mining, but given that the irrigation system is a closed system, it is not explained where all of this clean water will come from, or rinse water go to.

(12) The cyanide solution will be irrigated over the leach pad via a sprinkler system. The leach pads will rise in three x eight metre high lifts, with the sprinklers on top. The EIS states that the sprinkler design will result in very little drift, however in even small breezes it is difficult to see why significant off site drift will not occur and the implications of this need to be addressed.

(13) Section 2.12.6 states "following cyanide neutralisation of all remaining liquid within the pond," but does not detail the processes involved of what has actually happened to all of the cyanide added into the system. If it is broken down to something else, then what significance will that have? The transformation of NaCN to HCN is possible, and could have important implications with air contamination.

(14) 2.7.3.2 Gold Production Wastes deals entirely with containers of imported chemicals and fuels, etc but does not deal with the chemicals themselves.

(15) 2.7.2.1 Waste Rock Characteristics This section notes that some arsenic production from waste rock is expected, which I highlight as a potential risk.

(16) It should be noted that the EPA have been monitoring the Plumbago Creek catchment near Drake due to a number of concerns, a significant one of which is the leachate of cyanide and cadmium from the recent Mt Carrington gold project.

(17) 2.12.5 Spent Ore Heap This section deals with the rehabilitation of the heap/leach pad. The proponent has stated in the EIS that at the end the pad will be reshaped, topsoil and biomass spread over the final surface and reseeded with *Eucalyptus olida*. There are apparently no similar rehabilitation examples on this type of substrate, and as stated in the EIS, trials will need to be conducted early in the process to prove the proposed methods. The very height of the pad, ultimately standing 24 metres above natural surface is likely to render it more exposed than the surrounding country.

Water Pipeline

(18) The Company proposes running a 150 mm steel pipeline up from the Timbarra River to the project site. It involves a 800 m lift and would be routed beside the Poverty Point fire trail. It should be noted that the trail is very twisty in places, ascends some very steep country and being located on granite is very sensitive to erosion. Because of its steepness, the trail is very difficult to adequately drain, something that will be exacerbated through its greater use in laying and maintaining the pipeline.

(19) 3.14.1 indicates that the Poverty Point Fire Trail is controlled by the local bush fire brigade. It has actually been maintained by the Tenterfield Bush Fire Management Committee, through funding allowed for that purpose. The company will need to be responsible for funding the maintenance of this trail through the mining period.

(20) A surveyed and engineered design for the pipeline location should be required to ensure proper planning of the location. Maintenance of the trail will be compromised if the pipeline crosses or comes to close to the trail.

(24) Steve Tran will look over these & get back to me.

(21) The pipeline laying and firetrail use and maintenance should come under the supervision of the Department of Land and Water Conservation (LaWC). Preferably LaWC should be contracted to undertake the work.

It is noted that the Company has requested an Occupation Permit for that part of the pipeline traversing State Forest, even though the MLA 5 has been applied for this purpose.

2.11.1 Site Access

It is State Forests understanding that the access road is classified as Public Road all the way in to MLA 4.

(22) State Forests does not anticipate any major use of the road during the projected four year life of the project and does not propose contributing to any of the road access upgrading or maintenance during the above life of the operation.

(23) The EIS states that traffic movement will only rise by 150%, given my understanding of existing low level of traffic to the area, traffic movement can be expected to rise well in excess of the projected 150%.

Proposed Mining Lease Conditions (MLA 4 and 5)

(24) The proposed CONDITIONS OF AUTHORITY (ML) (1993) appear to some extent to be overtaken by the complexity of the project and its associated Environmental Impact Assessment. To this end I would expect that any approval and determination would also refer to the committments given in the EIS and subsequent issues raised from the process.

In relation to the ML Conditions as proposed by the DMR, the following comments/requirements are made in addition to the comments on the EIS:-

1. How would the Department of Mineral Resources or the Company indemnify State Forests of NSW from any legal liability arising out of the project?

2. Cond 27(a) why doesn't this include consent from State Forests of NSW for clearing on Crown Land.

3. Cond 30(c) states that the Lease holder must not operate a crawler tractor, I assume this clause should be deleted.

4. Cond 30(d) requires resolution of whether a clearing licence is required, and if so which agency is now responsible for its issue.

5. A compensation agreement will need to be negotiated with State Forests of NSW.

6. The District Forester is to be notified at least 14 days in advance before the commencement of any clearing operations approved under the Mining Lease.

7. Any millable timber, as determined by the District Forester or nominee, is to be cross cut and taken to an appropriate landing for recovery by industry.

8. The Applicant shall obtain from the Environment Protection Authority (EPA) all statutory approvals required under the Pollution Control Act, 1970, the Clean Air Act, 1961, Clean Waters Act, 1970, Noise Control Act, 1975 to cover the entire project, including approval to the harvesting of timber and associated clearing.

9. All earthworks shall be undertaken in accordance with specifications fixed by the Department of Land and Water Conservation.

10. The Applicant shall obtain a S120 Licence under the National Parks and Wildlife Act to cover the entire project, including approval to the harvesting of timber and associated clearing.

11. The Applicant shall obtain RAPIC approval to the harvesting of timber and associated clearing.

Yours faithfully

S J TOMS
District Forester
GLEN INNES DISTRICT

Tenterfield Shire Council

TENTERFIELD, N.S.W. 2372

Please address all correspondence to
The General Manager
P.O. Box 214

Telephone: (067) 36 1744
Facsimile: (067) 36 2669

Our Ref. DA:MB:WP:15039

Your Ref.

Further Enquiries

Contact M. Brady

15th August, 1995.

The Department of Mineral Resources,
Attn: Mr. Vince Fallico,
P.O. Box 536,
ST. LEONARDS NSW 2065

Dear Mr. Fallico,

Re: Timbarra Gold Project - Council's E.I.S. Submission

Please find attached an agreement between Council and the Company in relation to the use of Timbarra Road for access to the proposed mine and other associated matters. This agreement covers Council's conditions and acts as Council's E.I.S. submission in relation to the above project.

Should you have any further queries please contact Council's Director of Environmental Services, Mr. Bill Naylor.

Yours faithfully,

B. D. Earl
General Manager

Encl

TENTERFIELD SHIRE COUNCIL

TIMBARRA GOLD MINE PROJECT

AGREEMENT ON USE OF TIMBARRA ROAD AND ASSOCIATED MATTERS

Agreement shall be for five (5) years or the life of the mine, which ever is sooner or for the duration of the resources referred to in the EIS which don't require a further D.A. at this stage, at which time the Company will be required to enter into a new agreement with Council if mining operations are continuing.

COMPANY'S UNDERTAKINGS

(1) ROAD RECONSTRUCTION

1. The road is to be reconstructed to generally an 8m gravel formation from the Bruxner Highway to the mine site (approximately 30km) to Council's standards for Local Roads (generally AUSTROADS).

2. The Company's road designers are to liaise with Council and to upgrade where feasible the road to a higher standard than the planned 60 kph design. In some instances a lower standard may be acceptable.

3. Road drainage structures, including the existing timber bridge over the Cataract River are to be upgraded to Council's satisfaction.

4. In consultation with the R.T.A., a type 'A' intersection is to be provided at the junction with the Bruxner Highway with 2 metre wide sealed shoulders (both sides of the Bruxner Highway) for the acceleration/deceleration length for 100km/hr traffic. Sealing for as a minimum 50m along Timbarra Road from the Bruxner Highway is required.

5. The intersection of Timbarra Road and Nutshell Road to be constructed similarly to the junction with the Bruxner Highway with widening of Timbarra Road similar to condition 4 above.

6. The company to consult with Council and R.T.A. concerning Nutshell Road and its junction with the Bruxner Highway. It is envisaged that similar requirements to Timbarra Road and its junction with the Highway may be required unless an undertaking from the Company is given to have all transport to and from the mine via Timbarra Road only.

7. Bitumen sealing on Timbarra Road as indicated in the E.I.S. is to be undertaken to Council's satisfaction.

8. Initially, a 75 mm compacted gravel road base is to be constructed on the road and an additional 100 mm compacted gravel road base is to be added to the road within six months of the first gold pour (i.e. total gravel pavement thickness of minimum 175mm compacted).

9. Company to upgrade and/or widen drainage structures including causeways and replace or extend pipes with precast concrete headwalls at appropriate locations.

(2) **ROAD MAINTENANCE**

1. That the company agree to provide Council with a suitable form of Bond to the value of $50,000 to be expended at Council's discretion should the company default on any of the conditions layed down by Council with respect to the maintenance and restoration of the access roads to be utilised by the Company.

2. The Cataract River bridge on Timbarra Road to be upgraded and maintained by the company for the life of the mine and that the company is to have the bridge inspected by a structural engineer prior to work commencing.

3. Timbarra Road from the Bruxner Highway to the Mine site is to be maintained by the Company for the life of the mine including all drainage structures and road-side furniture.

4. That the Company agree to undertake appropriate dust suppression measures by the use of watercarts or other approved techniques if and when required by Council.

5. That the Company at the completion of the agreement undertake to leave the access roads in a safe and good trafficable condition.

OTHER

(3) 1. Prior to the commencement of mining operations the Company is to liaise with the Tenterfield Shire Local Emergency Management Committee to discuss emergency issues which may affect the mine and transportation of goods to and from the mine.

(4) 2. The Company to liaise with Council's Fire Control Officer in the drawing up of the Bushfire Management Plan for the site.

COUNCIL'S UNDERTAKINGS

(5) 1. Council to be responsible for the supply and erection of all signage following design being undertaken by the company.

2. Council to facilitate gravel, water and burn off locations and to provide the company with a preliminary plan of suitable areas prior to the commencement of roadworks.

3. Council to undertake any road resumptions within the first 13 kilometres of Timbarra Road reconstruction if required.

4. Council to undertake the maintenance of the sealed sections of road at cost price to the Company.

5. All maintenance undertaken by Council to be at cost price to the Company.

NP & WS.

Alan
Rebecca.
Matt Cameron.
Sue Walker (120 licence & FFS)

Abor. Heritage.

1) — anthropological studies — Ross. Herron. (Aboriginal, Southern Cross Uni)
— brief from NP & WS.
— DMR make the decision if time has come to make a decision
— NP & WS will give comment on anthrop. report.
— NP & WS can also make comment on EIS.

2) Section 120 licence
(← 11th Dec issued) on site inspection
— licence condition conferred with DMR & Co before D.G. approves.

3) Rehab strategy.
— what cover — conditions?
— how much a transparent in assessing.

(1) CONDITIONS SENT TO EPA. + NP & WS. for COMMENT.

(2) S.D. CALCULATIONS (G.V. + MS) SENT TO EPA. + Co.

— long term stability of heap leach + Duncans Ck
& look at detail. Heap leach — will it rehab.
& sensitive areas around it.
DETAIL + TRIALS CAN BE GIVEN BY CO.
(no exotic species introduced)

4) Have you satisfied the manner of assessment or not?

NSW NATIONAL PARKS AND WILDLIFE SERVICE

14 August 1995

Department of Mineral Resources
P.O. Box 536
St Leonards, 2065

Our reference:
Your reference:

Dear Sir,

RE: ENVIRONMENTAL IMPACT STATEMENT- TIMBARRA GOLD PROJECT

Thank you for the opportunity to comment on the Timbarra Gold Project Environmental Impact Statement (EIS). The National Parks and Wildlife Service (NPWS) comments are as follows.

INTRODUCTION

(1) NPWS considers the Timbarra Plateau to be an area of outstanding and unique conservation value as it is situated in an important biogeographical overlap zone imparting high biodiversity on the area. Faunal influences from the central-west, coastal east, sub-tropical north and temperate south overlap with local tablelands influences to produce a rich and seemingly unique vertebrate fauna diversity. The Gold Project site occupies a biologically diverse part of the plateau which is considered to be of very high conservation value based on the following.

The Project Site and surrounding area supports a rich and highly significant faunal assemblage. This includes a large number of endangered species as listed on Schedule 12 of the National Parks and Wildlife Act 1974 including important populations of the hastings river mouse and brush-tailed rock-wallaby.

The Project Site contains a high floristic diversity including a number of rare and threatened Australian plants (ROTAPs) with limited distributions and a high conservation value. A number of these plant communities a poorly represented in national parks and reserves.

The presence of populations of many Critical Weight Range (CWR) mammal species, including several endangered species, is a key feature of the Project Site. This can be attributed, at least in part, to the current absence or very low levels of feral predators on site.

The reptile fauna of the Project Site is rich with up to 35 species recorded at or near the site or predicted to occur. The known occurrence of five species of *Egernia* skinks within one location is also significant. The high reptile diversity reflects the site's biogeographic position and high inherent habitat value.

The Project Site supports highly significant native mammal populations. Outstanding features include the presence of 3 species of *Pseudomys*, 16 known bat species, the occurrence of the hastings river mouse and brush-tailed rock-wallaby, core regional habitat for the spotted-tailed quoll and the parma wallaby.

The Timbarra Plateau is the northern known limit for the distribution of the endangered stuttering

Northern Zone
GIO House
24 Moonee Street
Coffs Harbour NSW
Australia
PO Box 914
Coffs Harbour 2450
Fax: (066) 516 187
Tel: (066) 515 946

Head Office
43 Bridge Street
Hurstville NSW
Australia
PO Box 1967
Hurstville 2220
Fax: (02) 585 6555
Tel: (02) 585 6444

NP & WS

FLORA
— not proper assessment, eg. in winter (late autumn — is good but not ideal time to sample plants

— pipeline corridor. CONDITION ?
— may be a number of rare & threatened plants
∴ need to check of their presence & take into account when laying pipeline.

FAUNA
— NP & WS — says underestimation of impact on ^underassessed fauna.
eg 1) indirect impact (not localised impact)
— eg predator impact (feral species come in as demonstrated ... zoologist made this comment)
eg. along road — & extra activity along or adjacent to road & be more conducive to feral animals & impact on adjacent habitats, ∴ affect small native fauna.
∴ affect diversity of fauna.

CONDITION — FERAL ANIMAL CONTROL. (but is never satisfactory.)
(endangered species on 120 licence)

HAUL ROAD
— have impact either side

frog *Mixophyes balbus*.

RELATIONSHIP BETWEEN THE EIS AND THE FAUNA IMPACT STATEMENT (FIS)

The impact of the proposal upon endangered fauna is to be assessed by NPWS in its review of the FIS which will accompany the Section 120 licence application to "take or kill" endangered fauna. At this stage the NPWS can only make preliminary comments on information contained in the EIS relating to endangered fauna pending review of the FIS. The discussion of endangered fauna below will generally be limited to their contribution to the conservation value of the area. These comments, therefore, in no way prejudice any future assessment of impacts upon endangered fauna made in the context of the Section 120 licence application.

(2) FAUNA

NPWS considers the fauna survey undertaken to be comprehensive. Sampling procedures are deemed to be appropriate.

The Project Site exhibits a number of attributes in regards to fauna which make it unique and accord it a very high conservation value. A number of these attributes are detailed below.

1. The site supports an assemblage of nine species of small ground mammals. This is considered to be a very high diversity.

2. The project site supports a diverse bat fauna with sixteen species known to occur and further species likely to occur but yet to be recorded.

3. The presence of three species of *Pseudomys* at the site. Two are endangered species.

4. The project site provides habitat for several CWR marsupials, including a number of endangered species. This group of animals have been greatly impacted upon throughout Australia as a result of habitat modification and impact of introduced predator species.

5. Overall, the site provides habitat for significant mammal populations with thirty nine native species recorded.

6. Three endangered owl species have been recorded for the site.

7. The reptile fauna of the Project Site is rich with 35 species known or predicted to occur, including the occurrence of five species of *Egernia* skinks.

(3) The fauna habitat assessment, whilst providing some indication as to the habitats available, is deemed to be of little value in evaluating available habitat for sensitive or endangered species. In any event, the habitat values assigned to the site, nominally moderate to moderately high, underestimate the habitat value of the site. In particular, the assessment fails to recognise that a number of the identified habitat types are of limited regional spatial distribution and support sensitive or endangered fauna.

(4) Impacts of the proposal will be both direct, as a result of loss of habitat due to the clearance of areas for the establishment of infrastructure and the undertaking of mining activities, and, to a less obvious degree, indirect. Whilst a number of these indirect effects have been identified the NPWS considers that their impacts have not been adequately assessed. The NPWS considers that a full and detailed assessment of the indirect impacts on the site's biota would most likely show that such impacts are potentially large and significant.

As a direct result of the establishment of the mine and plant there will be a significant negative impact on the fauna of the site and adjoining area resulting primarily from the destruction of habitat, disturbance to foraging areas and establishment of barriers to wildlife movement. The impacts on species sensitive to disturbance and those with a limited home range is likely to be severe.

NPWS is particularly concerned about the indirect effects occurring as a result of the following structures and/or activities.

1. **Leach pad.** This facility adjoins an area of sensitive wetland which, in conjunction with adjoining vegetation, provides important habitat for a range of species including core habitat for an endangered mammal, the eastern chestnut mouse. (5)

   If the development proceeds it is important that an adequate buffer be maintained around this sensitive habitat both to ensure minimal surface impacts as well as to allow early detection of any groundwater quality problems prior to the wetland being impacted. The NPWS is concerned that the proposed position of the western and northern boundaries of the leach pad do not allow sufficient buffers to the wetland areas.

   The EIS notes that systems will be installed to adequately cope with a 1 in 100 hour storm event. It is stated that in the event of this storm event being exceeded, or presumably consecutive storms of similar magnitude occurring, additional flows will be pumped to the Big Hill open cut. No information is provided as to the infrastructure to be put in place to enable rapid transfer of excess water from the storm pond to the Big Hill open cut. (6)

   Notwithstanding the proposed contingency plan, there remains the possibly of overflows from the storm pond system to the wetland. The EIS notes that the various leachate ponds are interconnected to the storm pond. NPWS considers that this should be reviewed and consideration given to installing bypasses such that during high flow events the heavily contaminated waters of the leachate ponds are not flushed to stormwater. (7)

   Further, NPWS considers that there is a need for the impact of any discharges to the wetland to be assessed. This should be in terms of contaminants such as cyanide and its breakdown products as well as physical processes such as erosion and sedimentation. (8) (9) Monitoring of leaks from the leach pad is also seen as being of critical importance. (10) Concerns are also raised at the likelihood of windblown spray drift from the irrigation of the leach pad. (11)

2. **Haul road.** As well as having substantial direct construction impacts, being 16 metres wide and 2500 metres long, the haul road will indirectly impact on sensitive endangered fauna in the vicinity of the route. The road presents a substantial barrier to species which occupy or pass through the area bisected by the route and the potential for wildlife mortality due to the high volume of traffic is high. As well, noise, dust and light associated with the roadway will impact upon species normal movement and foraging patterns. The indirect impacts of the road will, therefore, be more far reaching than the route corridor itself and will extend to a presently unknown distance from the road. NPWS considers that such impacts have not been adequately addressed. (12)

3. **Big Hill open cut and waste rock dump.** It is noted that it is proposed to extend the Big Hill open cut across Duncans Creek and establish the Big Hill waste rock dump partially within the creek drainage line. Duncans Creek is to be captured above the open cut and this water used for make up. The nature of the works proposed would appear at odds with the stated predicted impact. NPWS considers more detailed assessment is required of the impact upon Duncans Creek. In particular, the impact upon flow regime of the capture of Duncan Creek headwaters and groundwater flows, the latter which may have entered the (13)

NP&WS

1) 'Black Butt' assessed as high conservation level – not low. Co. Butt 1% out of ? % affected.

2) Management – to be agreed to by NP & WS. (e.g. check on individual plants + management).

3) 'Eucalyptus Laliadia' – identified as sub species.

4) ~~Check on~~

creek but which will now discharge to the open cut, needs to be assessed. In turn, the impact of any altered flow regime upon riparian and aquatic fauna habitat, in particular that utilised by the endangered stuttering frog, should be determined in more detail. The present sediment level within Duncans Creek is of concern in regards impacts on natural flow characteristics and frog habitat values. Particular attention should be given to sediment control to prevent further degradation of the creek downstream of the Big Hill open cut area.

4. (14) **Feral predator ingress.** The substantial works on the site and it's access roads together with the increased visitation by humans will result in a the potential for increased feral predator ingress into the site and surrounding bushland. Feral predators, particulary the fox, have been implicated in the documented Australiana wide demise of Critical Weight Range marsupials. Foxes are generally abundant within most habitats of the eastern tablelands but, as yet, have not been recorded within the Project Site. This important feature is unexplained but may relate to the area's relative remoteness and lack of visitation. Foxes tend to accompany human activity, benefiting from road networks, rubbish dumps and other habitat alterations which lead to increased availability of feral rodents and rabbits and consequent access to native prey. The proposed mine will lead, inevitably, to a higher likelihood of fox occurrence within sensitive fauna habitats of the Timbarra Plateau, the detrimental impact spreading well beyond the Project Site.

The NPWS considers that cats and dogs should be prohibited from the mine site and that a pest species management plan should be prepared to detail measures to mitigate the ingress of feral predators and exotic plants.

FLORA

(15) **Survey methods:** The stratification chosen for the vegetation survey sites is not the most appropriate to sample the range of environmental variation present at the study site. Ideally, sampling of vegetation communities should have aimed at sampling variations in geology and aspect in the study area. Transect sampling appears to have been biased at the site to exposed and sheltered aspects. Some species occurring at the site may not have been sampled as a result.

Additionally the date of the field survey is considered a poor time of year to sample tablelands vegetation types in terms of fully documenting the number of species present at the site. Sampling should preferably be undertaken in spring and summer to maximise the number of species recorded. The timing of the plot sampling was therefore a factor contributing to a reduced species list. This limitation on the comprehensiveness of the species list is demonstrated in that one vegetation site completed by the NPWS in the area in April 1993 as part of the North East Forest Biodiversity study (NPWS 1995) recorded 12 additional species not recorded by the consultants in their 90 plots at the project site.

It also appears that not all Rare or Threatened Australian Plants (ROTAP) and herbarium records have not been sought for plants of significance likely to occur in the area. Three ROTAP species are recorded from the Timbarra Plateau not far to the north of the study site. These are *Kunzea bracteolata, Phebalium ambiens* and *Daviesa elliptica.* This information is omitted from Table 3 p 27 of the supporting vegetation report. A further two species of conservation significance recorded from the vicinity of the project site that are likely to occur in the study area are *Phebalium ambiens* and *Thelionema grande.*

(16) Access Road. It would appear that no assessment of the flora has been carried out for the access road construction whilst the EIS clearly states that disturbance of natural vegetation will occur. Several records of ROTAP species are known from the Poverty Point Fire Trail -Timbarra Rd area.

These include: *Daviesa elliptica* (3RC-);
Pultenaea pycnocephala (3RCa);
Eucalyptus olida (2RCa);
Acacia floydii (3RC-);
Eucalyptus scias (3K);
Kunzea bracteolata (3RC-)

The NPWS recommends that a vegetation assessment be undertaken for the access route in areas proposed to be widened or disturbed, particularly along the Poverty Point fire trail, with emphasis being made to locate any plant species or communities of significance.

(17) **Flora impacts along pipeline corridor:** No plants of conservation significance were recorded as occurring along the pipeline corridor. *Botriochloa biloba* is a threatened grass species which has been recorded along the Malara Creek Fire Trail in grassy grey gum (*E. birturbinata)* forests about 10 km west of the site. Similar habitat occurs along the pipeline route and the species may occur there. The species flowers during summer and is therefore unlikely to have been able to be identified during the flora survey. The NPWS recommends that the presence/absence of this species be verified and that if present an investigation of the likely impacts on this species be undertaken.

(18) **Distribution and characteristics of vegetation communities:** The supporting vegetation report states on page 19 that *"Eucalyptus rubida also occurs as an occasional specimen in vegetation community 2."* The identification of these specimens needs to be confirmed to the sub species level as a matter of priority. Harden (1991) lists four sub species of *Eucalyptus rubida* from NSW. One of these sub-species *Eucalyptus rubida* ssp *barbigerorum* is restricted to the Guyra-Glen Innes-Tingha area on the northern tablelands. It is listed by Briggs & Leigh as a threatened ROTAP species (3V) which is not known from a conservation reserve.

Strong doubts must be held on the preliminary identification of the Eucalypt as its recorded habitat is described as "occurring on deep, nutrient rich clay loams as a dominant or locally common component of grassy woodlands." (Bruhl et al 1995). This appears at odds with the communities described at the project site.

(19) The conservation of vegetation communities is assessed in table 3.9 of the EIS. Vegetation community 3 New England Blackbutt / Red Bloodwood is assessed as being "adequately reserved". The reasons for this assessment are not documented. Given that Red Bloodwood *E. gummifera* is typical of coastal environments and New England Blackbutt *E. campanulata* is more typical of the tablelands it is considered that a combination of the two species may have some conservation significance. The absence of this community from Hager & Benson (1994) classification does not mean that it possesses no conservation significance. It is an unrecorded community which requires conservation assessment.

(20) All areas outside of any proposed activity should be fenced to prevent further intrusion. Fences should be wildlife friendly to allow unimpeded access.

(21) The EIS refers to the opportunity to fund research programmes for endangered flora and fauna should the project proceed. No research programmes, however, are recommended for the significant flora of the area. The NPWS recommends that should the project proceed a survey of *Eucalyptus scias* ssp *apoda* and *Eucalyptus rubida* ssp *barbigerorum* should be done to identify the population size and distribution of these species on the site and surrounding area.

FUTURE GOLD PROSPECTS

(22) No discussion is made in the EIS concerning two other identified possible gold deposits on the Project Site, Miserable Swamp and Lushes Hill. Similarly, NPWS understands that additional deposits have been identified outside the project site. No discussion is made in the EIS concerning these areas either. As such, these deposits, both on and off site, are excluded from further discussion. It should be recognised, however, that the environmental impacts of their development may be substantial. This is especially true if viewed in the context of the development the subject of the EIS. NPWS considers that the development of these additional areas must not proceed without a full environmental assessment by way of an Environmental Impact Statement.

TRANSPORTATION

(23) Inspection of the proposed access route indicates that significant widening of the road is likely to prove necessary. This will entail extensive tree removal in some areas both along the Timbarra Road and Poverty Point Fire Trail. It is considered that the extent of vegetation clearance likely to occur has been inadequately detailed. The impacts on vegetation were discussed in more detail under the heading of FLORA.

(24) Traffic levels have been inadequately described. It is unclear as to what roads the traffic movements detailed in Table 2.19 will apply. Traffic routes, both on and off site, should be clearly delineated and traffic movements along these routes comprehensively described.

REHABILITATION

(25) It is noted in the EIS that backfilling of the open cuts is to be an integral part of the operation. Despite this fact, waste rock emplacements have been designed to accommodate the total wasterock extracted during mining operations. It is considered necessary that more detailed investigations as to the extent to which backfilling would be possible take place. Based on this assessment, waste rock dumps should be redesigned to provide a best case scenario and allow a comparison of the impact on site vegetation and fauna habitat of varying degrees of backfilling.

(26) A more complete assessment as to the location of topsoil and timber/debris stockpiles needs to be undertaken. It is unlikely that existing disturbed sites, such as tracks and drill pads, will provide adequate space for all plant biomass as well as top soil and rocks. The location of such stockpiles needs to be carefully selected and their impact fully assessed.

(27) Alternatives to the location of the waste rock dumps were considered. These need to be detailed. In particular, any alternative location(s) to the Big Hill waste rock dump that minimise the impact upon Duncans Creek should be further reviewed.

(28) Alternative final rehabilitation plans for the Big Hill open cut should be reviewed. In particular, consideration should be given to the reinstatement of Duncans Creek through or around the Big Hill open cut to maintain the existing flow regime and protect downstream riparian and aquatic habitats.

(29) The NPWS has concerns in regards the successful rehabilitation of the heap leach pad. More details based on successful examples at other mine sites should be discussed.

HYDROLOGY

(30) Whilst details are provided on mean, medium and minimum flows within the Timbarra River, no information is provided as to the timing, frequency and size of flood events.

(31) No quantitative information is presented as to the hydrology of smaller streams likely to be impacted upon. Whilst it is accepted that such information is not readily available, it is considered that given the long history of the proponent on the site such crucial background information would have been started to be collected.

(32) NOISE LEVELS

No background noise levels were noted. NPWS considers that background noise levels should be determined for the site. Such baseline information will be important for monitoring any impact of operations upon the noise environment which may effect fauna in the area. The impact of continual noise and occasional blasting at the site is expected to have a significant effect on the normal behavioural patterns of many cryptic and/or sensitive fauna species.

(33) METEOROLOGY

Information on storm events of varying frequency and duration should be provided as should information on monthly rainfall for a range of wet years. This information allows calculations as to stormwater/wastewater generation under a range of conditions. Where models are to be used to generate such information full information as to the detail and accuracy of such models should be provided.

CULTURAL HERITAGE VALUE

(34) The results of the archaeological survey undertaken by Appleton (1994) have shown no evidence that the proposed development may impact upon any archaeological material. The absence of relics of past Aboriginal usage in the archaeological record in the subject area, is largely due to the intensity of past mining activities.

(35) Appleton (1994) noted the presence of a site of significance to the Aboriginal community, Bold Top Mountain. This place was identified by Mr Eric Walker. Due to participation in the consultation process Capricornia Prospecting Pty Ltd are aware of the significance that members of the Aboriginal community attach to the summit of Bold Top Mountain. Appleton (ibid) appears to view the discovery of the mythological, or story site, as no potential impediment to the continuation of the development proposal. NPWS does not concur with this view and considers it essential that this matter be resolved prior to any decision being made concerning the development.

(36) There is a prevalence in Australian archaeology to identify large numbers of artefacts and open camp sites on a regular basis. This does not detract from or diminish the reality and importance of places having significance to the Aboriginal community which appear largely devoid of material evidence of past Aboriginal usage. On the contrary, the significance of these sites is enhanced due to the relative rarity of the discovery of such ceremonial places.

(37) Appleton (1994) considers that a buffer zone around the site can be determined by mining engineers. This is not appropriate. Any buffer should be determined in consultation with the Aboriginal community and the appropriate regulatory authorities. The EIS establishes a buffer based on the potential for physical impacts on the site by mining operations. This takes no account of anthropological considerations.

(38) The National Parks and Wildlife Service recommends that the proponent undertake an anthropological investigation at their own cost to establish the nature and extent of the recorded Aboriginal 'Place' inclusive of the summit of Bold Top Mountain. This study should address the following.

1. Establish the nature of the site, to allow a discussion of the significance of the site, and to allow placement of the site in a regional context.
2. Establish the extent of the site.
3. Assess the requirements for future conservation of the site.
4. Assess the potential effects of the proposed development on the integrity and spirituality of the place in view of the information gained from the investigation.
5. Determine an appropriate buffer zone based on anthropological considerations.

NPWS is unable to make comment on the impact of the discovery of the Bold Top Mountain site upon the development until the anthropological investigation has been completed and assessed. Similarly, the value or otherwise of mitigation measures proposed awaits this report.

RECOMMENDATIONS

(39) 1. The NPWS recommends that a vegetation assessment be undertaken for the access route particularly along the Poverty Point fire trail, with particular emphasis being made to locate any plant species or communities of significance.

(40) 2. The identification of specimens of *Eucalyptus rubida* need to be confirmed to the sub-species level as a matter of priority. If the identification is confirmed a detailed survey for the species should be undertaken within the project site and the access road. All populations of the taxa should be protected from development.

(41) 3. The NPWS recommends that a survey of *Eucalyptus scias* ssp *apoda* and *Eucalyptus rubida* ssp *barbigerorum* be done to identify the population size and distribution of these species on the site and surrounding area.

(42) 4. Provide a wider buffer between the edge of the northern and western boundary of the Heap Leach Pad and the wetland.

(43) 5. Detail information on the methods to transport excessive stormwater from the Leach Pond to Big Hill open cut during excessive storm events.

(44) 6. Review safeguard measures to prevent contaminated waters of the leachate ponds being flushed to stormwater. Further, NPWS considers that there is a need for the impact of any discharges to the wetland to be assessed.

(45) 7. Further address the impacts of the Haul Road on the fauna in the vicinity of the route.

(46) 8. Provide further details in regards the retention of a normal flow regime and protection of water quality in Duncans Creek.

(47) 9. A more detailed assessment of the likely impacts of feral predators on the fauna of the project site is required. A pest species plan of management should be prepared and approved prior to mine commencement to detail measures to mitigate the ingress of feral predators and exotic plant species.

(48) 10. The National Parks and Wildlife Service recommends that the proponent undertake an anthropological investigation at their own cost to establish the nature and extent of the recorded Aboriginal 'Place' inclusive of the summit of Bold Top Mountain.

(49) 11. Waste rock dumps should be redesigned to provide a best case scenario and allow a comparison of the impact on site vegetation and fauna habitat of varying degrees of backfilling.

(50) 12. A more complete assessment as to the location and impact of topsoil and timber/debris stockpiles needs to be undertaken.

(51) 13. Additional examples of successful rehabilitation of leach pads under conditions similar to that existing on site should be provided.

CONCLUSIONS

NPWS believes that the concerns raised above need to be addressed prior to any decision being made in relation to this proposed development. NPWS considers the Timbarra Plateau to be an area of outstanding and unique conservation value as it is situated in an important biogeographical overlap zone imparting high biodiversity on the area. The determining authority needs to give careful consideration to the conservation values of the area when processing the development application.

As stated earlier the NPWS will formally comment on the impacts of the proposal upon endangered fauna as part of the Section 120 licensing process. If you wish to discuss any of the above please contact me at this office.

Yours faithfully

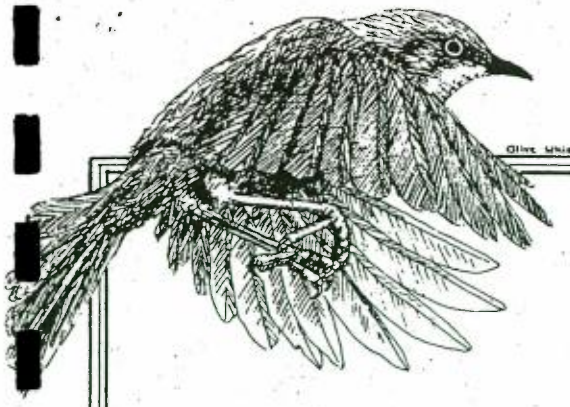
Matt Cameron
Environmental Planning Coordinator
Northern Zone

References.

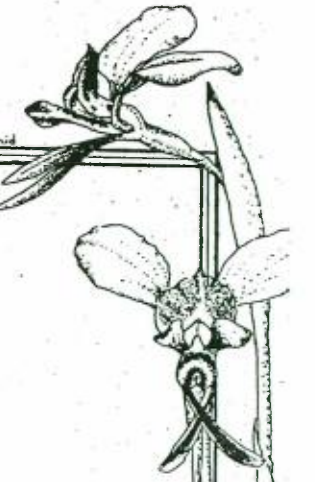
Bruhl J, Quin F, Gross C & Williams J (1995). *Species Outlines for threatened species in northern NSW*. Unpublished report from the University of New England for the National Parks & Wildlife Service.

Hager T.C & Benson J.S. (1994). *Review of the Conservation Status of Vegetation Communities in NSW. Part 3 Assessment of the Conservation Status of Forest Plant Communities in North-Eastern NSW*. Final Report. Report to the Australian Heritage Commission.

NSW National Parks & Wildlife Service 1995. *Flora of north-east NSW*. North-east Forests Biodiversity Study Report No. 4.



THE BIG SCRUB ENVIRONMENT CENTRE
INC.
149 Keen Street, Lismore 2480.
Phone (066) 21 3278
Fax (066) 22 2676



8th August 1995

Department of Mineral Resources
PO Box 536
St Leonards, NSW 2065

Re: Proposed Development by Capricornia Prospecting

MLA 4 AND MLA 5 Inverell district

Timbarra Gold Project.

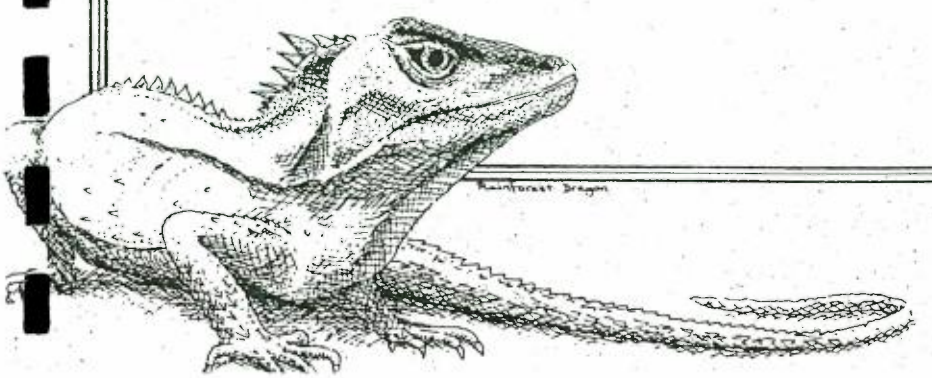
Please find attached an Interim Submission prepared by Terry Placing, representing the Big Scrub Environment Centre on this issue.

Yours sincerely

Lisa Yeates

Lisa Yeates
(Information Officer)

faxed to Vinie Fallilo - 8-8-95



Recd. 11/8/95

Postal Adress
Box 55 PO
TABULAM 2469

INTERIM SUBMISSION

on Proposed Development by Capricornia Prospecting.

MLA 4 and MLA 5 Inverell distict.

Timbarra Gold Project.

Compiled by Terry Placing.
spokesperson Big Scrub Environment Centre.
local area coordinator North East Forest Alliance.
Resident/Landowner Timbarra River (approx. 15km downstream).

(2)

This submission is an overview of concerns held by myself and The Big Scrub Environment Centre in regards to both the E.I.S. itself and the proposal it outlines.

A more formal and detailed submission is currently being prepared and will be lodged in due course.

(1) his document will attempt to adress two major areas

1. The reasons we believe the time allowed for comment on the proposal is inadaquate and should be extended.

2. A brief summary of the thus far percieved areas of concern in regard to both the E.I.S. and the proposal in general.

As time constraints limit our present input we will refrain from comment on E.I.S. on proposal until we submit a more detailed submission.

(2) REASONS for extending time available for public submissions on E.I.S. on proposed developments by Capricornia Prospecting Timbarra Gold Project MLA 4 and MLA 5 Inverell dist.

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(3) (I) DIFFICULY in obtaining original E.I.S. and F.I.S.

This group was aware of public notification of the proposal 29th June 1993 and made application shortly thereafter (4th July).

No response was obtained from D.M.R. for a period of seven or eight days, only after making personal (telephone) contact with Mr Vince Fallilo at the D.M.R. offices in Sydney

Due to further delays (postal) we have had copies of both documents for a period of less than fourteen working days.

Given the highly complex and to our experience technical nature of the proposal we consider this nowhere near enough time to digest and comment on such a proposal.

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(4) (II) Expected further delays in aquiring relevant support material and associated studies and results ie.

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(5) (III) Complex NATURE of proposal.

As the very nature of mineral extraction and refining in the manner proposed is intrinsically complex, the possible implications to what is recognised as a sensitive and valuable resource (Timbarra river) cannot be underestimated.

And certainly in the time allowed cannot be either understood or commented on.

Reasons for time extension continued....

---

(6) (IV) OTHER Interested residents/parties also require more time.

Through personal contacts in the local community by myself and approaches to The Big Scrub Environment Centre by concerned members of the public I can assure the Department that there is both resistance to any further mining developments in the Drake/Tabulam distict and resentment at what is pecieved as a lack of concern for the community or the environment in rehabilitation of previous developments.

As the E.P.A. is about to release results of Plumbago ck. Cathcment Study (sept6th) via a series of public meetings.

A local pressure group is in the process of forming to comment on the proposal.

Also...

Representatives of the Indigenous Landowners (Eric and Kevin Walker and Sam Daly) and many others members of both communities have commented to myself that the time allowed leaves very little consideration for the process of community consultation and concencus. And have echoed our problems in obtaining both informatio and copies of E.I.S. and F.I.S.

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(7) (V) as the proponent has had over 12 months to generate the documentation required to formulate E.I.S. and F.I.S and thousands of person/hours how can an individual or community group be expected to comment on same in amatter of days.

Given the reasons outlined I feel the purpose of public notification and exhibition of proposals by D.M.R. can only further be served by extending the time available for public comment on these proposals by a period of no less than 30 days.

And we hereby formally request that time be extended by no less than thirty days.

5

A Brief S...
MLA 4 and MLA 5

Given the short amount of time available for comment at this stage and the fact that only the first two sections have been looked at in any detail, the following areas require further discussion or clarification. And will certainly be the subject of further criticism or comment in a more comprehensive submission.

(8) Introduction..1.8.2. pg 11
As an interested local resident I found the public consultation process sadly lacking, what site meetings and community meetings (2) I attended I was informed of by other interested residents (Mr Eric Walker.)
(9) Input from these meetings was as far as can be ascertained from the proposal ignored or at leat modified greatly.

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(10) Description. 2.1.3.- 5. pg 17
Iff the Applicant does obtain all relevant approvals to develop project the Committe proposed to oversee said development and rehabilitation should in our view contain a mechanism for providing community input and dissemination of MREMP reports and relevant information.

Description. 2.3.2. pg 22
From onsite meetings we have had with Local Indigenous Landowners , Mr. Eric Walker, Mr. Sam Walker, Mr Sam Daly, and Mr Kevin Walker and others, also Mr John Appleton on behalf of the applicant was present it is quite clear that (11) they (the Indigenous landowners) regard the proximity of the proposed Big Hill open cut to be far greater than has been made clear in the proposal.
The area surrounding Bold Top Mtn. should in the opinion of all present at these meetings , excluding the applicants representatives,be excluded from any development whatsoever and be protected from any future such proposals.
At a meeting held at the Land Council Offices at Rio (Tabulam Aboriginal Community) Mr Ken Gordon (a Bundjalung Elder) requested an exclusion zone of at least one kilometre around Bold Top Mtn. of the applicants representatives present.

6

SUMMARY of Objections , Comments and areas of concern continued....

Description. 2.6.4.3. pg 46

(12) No long term information is provided in regard to the HDPE liner materials possible reaction to or contamination by the combinations of chemicals and solvents used over the lifetime of the project in the leaching and solution storage facilities proposed.

2.6.5. pg 48

(13) As the Storm pond is likely to contain dirty or contaminated water we would like to see a more comprehensive desciption of the expected concentrations of other toxic or environmentaly harmfull elements in both the Storm Pond and BLS pond as at the close of the project .

Waste Management 2.7

(14) A complete lack of mention in this section, of the water left on site at completion of project. As contaminated water management is of maior signifigance to projects of this type the failure to deal with the subject by this document can be seen as indicative of the irresponsible attitude of the mineral extaction industry in general and Capricornia Prospecting in particular.

(15) Given the track record for the mining industry in the district (several prosecutions by EPA pending against Mt. Carrington Mines at Drake for breaches of their Pollution Licence in regard to contaminated water emmissions) we will be having further comment on these issues as time allows.

Further detailed comments are difficult to make at this stage but we would like to flag areas of future comment and objection very briefly.....

TCM

Total Catchment Management
Community And Government Working Together

Clarence Catchment
Management Committee

PO Box 371, Grafton NSW 2460
Telephone: (066) 427799 Fax: (066) 431161

14 August, 1995

Mark Stevens
Department of Mineral Resources
PO Box 536
St Leonards
NSW 2065

Dear Mark,

EIS submission - Timbarra gold project

Some of the concerns from our previous correspondence were addressed at a meeting at the mine site on 16/8/95. Two of our Committee members Tony Hart and Jeremy Challacombe attended this meeting. We have the following comments.

Stormwater management

(1) • We that it is essential that all storm water, particularly from the liquor ponds and storm pond, is retained on site in any storm event.

(2) • A contingency plan is necessary for managing severe storm events and for addressing a potential spill from the storm pond.

(3) • These aspects appear to have been adequately addressed in the design work, except that there is no contingency plan for potential spills from the storm pond.

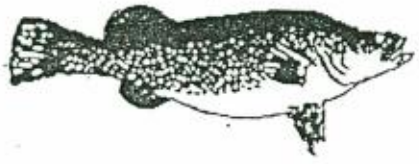
Proposed Big Hill waste rock emplacement

(4) • Detail is lacking on erosion control measures for this area, and diversion of Duncans Creek.

Site rehabilitation

(5) • Detail is lacking on how the liquor ponds and storm water pond will be neutralised and decommissioned following the operation.

(6) • A contingency plan is needed to cater for site rehabilitation in the event of the operation being closed down before the project life is completed.



Clarence River -home of the eastern fresh water cod

Erosion control on roads and along pipeline

(7) • We feel that it is essential the Department of Land and Water Conservation is consulted on design and maintenance of roads and the corridor for the pipeline.

Provided the project addresses the above concerns and the legitimate concerns of DUAaP, EPA, DL&WC, State Forests, and NPWS, the Clarence Catchment Management Committee have no objection to the continuing development of the project.

Regards

Matt Foley

Matt Foley
(Coordinator)

*** END OF DOCUMENT ***

Jim Laurie

067376658

Lot 8
Long Gully Road
Drake
N.S.W. 2469
18 th August, 1995

The Director General
Dept. of Mineral Resources
P.O. Box 536
St. Leonards
N.S.W. 2065

Re. Assessment of Environmental Impact of the Timbara Gold Project near Tenterfield.

We as concerned citizens of Drake, strongly object to the granting of any Mining Licence to Capricornia Prospecting Pty. Ltd. for the Timbara Gold Project.

(1) Timbara River Region is used extensively for recreation and water utilization by the residents of the area, and we feel that the proposed extract-

Jim Laurie 067376658

(2) con. of any amount of water for mining purposes is a gross exploitation of the limited water supply that is already depleted due to the drought.

(3) Also we're extremely alarmed at the prospect of persons looking into the environment, as was allowed to happen previously in Drake.

In this day and age it is scandalous to think that the Government would even consider the destruction of a beautiful place such as this.

We will keep objecting in the strongest possible terms to ensure that this mining project is stopped.

(4) We request that the Minister for Planning should set up a Commission of Enquiry into this project.

Yours Sincerely,
B. K. O'Rourke

Doris O'Rourke

1

TO
DIRECTOR GENERAL
DEPT OF MINERAL RESOURCES.
P.O. BOX 536
ST. LEONARDS 2065.

FROM
PETER ELWORTHY
P.O. BOX 76
TABULAM 2469.
24/8/95.

I AM WRITTING TO SUBMIT MY CONCERNS IN REGARD TO THE PROPOSED BIG HILL, TIMBARRA GOLD MINE EAST OF TENTERFIELD. I HAVE ATTENDED TWO MEETINGS WITH MINE PROSECT OFFICIALS, ONE OF THESE BEING AN ON SITE INSPECTION AND I FEEL INSUFFICIENT CONTROLS ARE IN PLACE TO ENSURE THE SAFE FUNCTION OF THE MINE. MY CONCERNS REGARD THE THREAT TO THE ENVIRONMENT FROM:

(1) CYANIDE POISONING OF BIRDS AND ANIMALS DURING THE SATURATION OF THE LEACH HEAP. (A REAL RISK CONCEDED BY MINE OFFICIALS.

(2) CYANIDE LEAKING INTO GROUND WATER SHOULD THE P.V.C. SHEET UNDER THE LEACH HEAP BE SPLIT BY SOIL SUBSIDENCE CAUSED BY THE MASSIVE WEIGHT OF THE HEAP OVER A 29 HECTARE AREA.

(3) CYANIDE FINDING ITS WAY INTO WATER-COURSES WHEN THE DAM OVERFLOWS - DAMS ALWAYS OVERFLOW (OR BURST) EVENTUALLY, WITNESS THE CURRENT DISASTER IN GUIANA, SOUTH AMERICA.

(4) THE RISK OF CYANIDE POLLUTION DURING TRANSPORT AND STORAGE.

(5) THE OPENCUT MINE AT BIG HILL WILL BE UP TO 120 METRES DEEP, SITED ON A STEEP WATERCOURSE WHICH FLOWS INTO THE TIMBARRA RIVER, FALLING 650 METRES. SHOULD THE

CONTAINMENT WALL BE BREACHED THE TORRENT OF WATER DOWN THIS WATERCOURSE (DUNCANS CREEK) WOULD CAUSE MASSIVE EROSION.

(6) THIS PIT WILL TAKE UP TO 12 YEARS TO FILL, EFFECTIVELY DRYING DUNCANS CK. FOR THAT TIME.

(7) INADEQUATE ASSURANCES ABOUT THE REHABILITATION OF THE SWAMP AREA IN THE VICINITY OF THE CRUSHER AND LEACH HEAP.

(8) DUST AND NOISE FROM EXPLOSIVES AND CRUSHING OPERATIONS

(9) THE LONG TERM VIABILITY OF THE COMPANY ITSELF TO ACCEPT LIABILITY FOR DAMAGE FROM OPERATIONS AFTER MINING HAS CEASED

(10) THEIR APPEARS TO BE NO ALLOWANCE FOR INDEPENDENT COMMUNITY MONITORING OF MINING OPERATIONS SHOULD THE MINE PROCEED.

TIME CONSTRAINTS ON CLOSING DATES FOR SUBMISSIONS PREVENT ME GOING INTO GREATER DETAIL.

YOURS SINCERELY

P E Lowthy

TOTAL P.02

MARILYN HEINZ
LOT 1 Mud Flat Rd
DRAKE NSW 2469

21st August 1995

Director General
Dept Mineral Resources
P.O Box 536
ST LEONARDS NSW 2065

Re: Proposed Timbarra Gold Project
near Tenterfield NSW

I wish to submit to you my concerns about allowing the above project to procede. I feel that sufficient measures have not been put forward to ensure adequate protection of the environment.

In particular I am concerned about possible pollution of the environment from :—

(1) • cyanide leaching into underground waterways
(2) • when the "leach dam" overflows & pollutants such as cyanide find their way into watercourses
(3) • stability of the ground once the peat has been removed
(4) • strength of the "vinyl" under the leach heaps should the ground shift due to acts of nature and allow cyanide into the ground
(5) • water containment plan not adequate with the possibility of massive erosion into the Timbarra River
(6) • The hole at proposed "Big Hill" mine is supposedly 120m deep and after mining is completed it is proposed to allow this hole to fill with water — estimated time to fill 10 to 12 years. None of that water goes into Duncans Creek for that

10 – 12 years depleting Duncan's Creek and hence effecting the flow of the Timbarra River.

(7) • The mining company's lack of concern for fauna drinking or swimming in the "leach dam". The Company hasn't proposed any fencing and netting safeguards to restrict access to the dam.

(8) • Cartage of cyanide through Tenterfield and along the Bruxner Highway.

(9) Any environmental pollution from the mine will effect the Timbarra River. This river is enjoyed by many people in a recreational capacity – swimming, fishing and camping. Many people also depend on the Timbarra River for water. Anything that effects the Timbarra River ultimately effects the Clarence River.

Should the mine go ahead I would like to see the above issues addressed and the following occur:-

(10) • Appointment of a local independant environmental group, from the surrounding communities, recognised by the relevent Government Departments.
This group – to be given all records of water level & water quality of the Timbarra River immediately when records are taken
– to be allowed to take samples of any water or soil on the mine site at any time
– to be allowed access to the mine site at any time to observe on the Communities behalf that the Mining Company is acting responsibly towards the environment and the community.

Yours sincerely – Marilyn Heinz

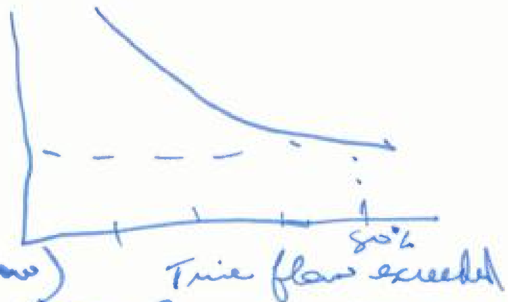
TOTAL P.02

Dept of W.R.

LICENCING: (1) TIMBARRA RIVER
10 megalitre / year / 1 km — usual domestic/stock usage.

—

— Environmental flow needed in rivers
— unknown
— 18% Volume
(is proposed)



Dept of W.R. need:
(1) — type of pump (e.g. 100 mm centrifugal, axial flow) — Cannot increase pump size after licensing.

PROPOSED BY Co.
0.5 megalitre / day.

[2] LICENCING DIVERSION OF DUNCAN'S CK. (under Rivers & Foreshores Act)
— cutting in Part 2 of Water Act or 3(A) R. & F. Act.
— need design of diversion.

[3] Bores
Any bores need licensing. Applying

Conditions.
(Objectives in condition.)

1) Co. will maintain an environmental flow ~~after it leaves the~~ Big Hill project area. downstream of the . . . . of the cut area. 2) That design of the flow through the area is approved by D.E.

(3)

Department of Land & Water Conservation
formerly Department of Conservation & Land Management
& Department of Water Resources

Vince Fallico
Department of Mineral Resources
PO Box 536
St Leonards
2065

Tony Broderick
22/08/95

Your Ref: T95/0114/55

Dear Sir,

Re: Timbarra Gold Project. Mining Lease Application No's 4 & 5 Inverell.

The Department of Water Resources has recently been amalgamated with the Department of Conservation and Land Management and the Public Works sections of Estuary and Coastal Management and Country Water Supply and Sewerage. The details below relate only to the concerns of the former Water Resources.

Mining Lease Conditions

The Department of Mineral Resources has notified this department of the conditions it intends to include "in any lease which may be granted". It is the opinion of this department that many of the proposed operations are in breach of these conditions.

Conditions 40 and 41 relate to "the pollution or siltation of any watercourse or waterbody" and "interfering with the flow of water in any stream or watercourse" respectively. Examples of these inconsistencies include the location of the

(1) * heap leach pad on top of a number of tributaries;

(2) * big hill open cut mine inhibiting flows in Duncans Creek for at least 10 years after completion of mining;

(3) * big hill waste rock emplacement into and around Duncans Creek; and

(4) * excavation of various tributaries to create ponds

This list is not meant to be an exhaustive list of the inconsistencies, merely examples of the more obvious ones. The department's concerns are outlined below.

(8) (9) Waste Rock Emplacement.

wet sleevefill

dry sleevefill

— habitats are important ∴ riparian corridor is important. LICENCING

① Co. willing to divert as much as possible Duncan's Ck away from Big Hill.

A Diversion of flow will be made at Big Hill — Design → Dept of W.R.

② Waste Rock emplacement not designed to go within 30 m of Duncan's Ck., Where it will go within 40 m Co. will obtain approval from Dept of W.R.

NOT IN BED OF CREEK

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The NSW State Rivers and Estuaries Policy

Many of the proposed actions of this mining project are aligned with the principles of the NSW State Rivers and Estuaries Policy. The policy states that "it is the policy of the NSW Government to encourage the sustainable management of the natural resources of the State's rivers, estuaries and wetlands and on the adjacent riverine plains, so as to reduce, and where possible halt:

* declining water quality,
* loss of riparian vegetation,
* damage to river banks and channels,
* declining natural productivity,
* loss of biological diversity, and
* declining natural flood mitigation."

This department believes it is integral for any mining operation to be aligned with the above policies.

Water License Requirements

A water license application has been received for the pumping from the Timbarra River. However, licenses under the Water Act (1912) will also be required for any of the proposed operations outlined below.

(5) The excavation of and pumping from Duncan Creek (ie. Big Hill open cut mine)

(6) The excavation of and pumping from a tributary of Williams Creek (ie Poverty Hill open cut mine)

(7) The construction of any water storage on defined watercourses used for mining operations.

Rivers and Foreshores Improvement Act Requirements

This department has significant concerns with the proposed activities of the mining development. Additionally, many of these activities require licensing under the Rivers and Foreshores Improvement Act (1948).

Any excavation or filling within 40 metres of any watercourse requires authorisation from the administering department (ie the department of Land and Water Conservation) of the Rivers and Foreshores Act (1948). The proposed operations requiring such authorisation are listed below.

(8) The waste rock emplacement in a tributary of McLeans Creek.

(9) The waste rock emplacement in the middle of Duncans Creek.

(10) The construction of the heap leach pad over the top of tributaries of Nelson Creek.

(11) The construction of any watercourse crossings.

(8) — MREMP Committee (Dist of WR) need to see areas of creeks — prior to construction is pegged out to check if it is a creek + need licencing. if not a creek a WMEASC Plan.

(13) Creek crossing . (WM + ESC Plan)
– Haul road needs to have on pipeline route.
~~(1)~~. No licence needed.
PERMIT (part 3(a) R & F Act) needed – (1) ensure
water flow continues.
(2) POORLY controlled creek crossings ∴ major sediment
input into stream ∴ in WM + ESC Plan
– prefer low level crossings; but depends on
traffic (+ muddy slopes) – with trucks ∴ culverts

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Rehabilitation and Environmental Management Controls.

General

(12) Contrary to suggestions within the Scope of the EIS document this department certainly does not consider the EIS to provide enough details relating to rehabilitation and sediment control to represent a MREMP. As managers of the water environment, it is hereby requested that this department is involved in the approval of the MREMP to provide comments on the design of sediment control and rehabilitation of riparian areas etc.

Sediment control devices and methodologies should all be implemented before construction begins.

It is recommended that a qualified Environmental Officer be appointed to be on site at all times during construction and operation to ensure relevant environmental safeguards are being employed.

(13) Any existing and newly constructed creek crossings by roads will need to be appropriately constructed and maintained so as to minimise erosion and damage to the bed, banks and water quality of the watercourses. Site selection of crossings, suitable armouring of approaches and crossing design should all be investigated and permitted by this department before construction. Existing crossings may require upgrading due to the extra traffic related to the mining project.

(14) **Duncans Creek**

The riparian habitat of this creek has been identified during the EIS process as having significant habitat value. This in conjunction with it being a healthy, defined and stable watercourse confirm that adequate provisions should be made to minimise impacts upon it.

The current proposal will inhibit 11% of the Duncans Creek catchment from contributing stream flows until at least 10 to 12 years after project completion.

No contribution to flows of Duncan Creek from 11% of its catchment is an inappropriate management option. A strategy is required to incorporate an environmental flow component from that part of the Duncan Creek catchment above the open cut void. It is recommended that careful consideration be given to alternatives in relation to the maintenance of streamflows in Duncans Creek during and after project operations. This may include an appropriately constructed diversion channel with consideration given to channel width, alignment, length and revegetation. It is important to note that any such works would require authorisation from this department. Attached are guidelines for such diversion works.

Heap Leach Pad (MREMP Committee)

(17) – Liner — 1) signed off by Engineer...
Monitoring process – daily basis
– leak detected – shut off area, + take other measures.

(19)(20) – 1 in (100) 100 design on storm ponds.
0.05% Cu. (Angus level) – but there wouldn't be a discharge as it will go to Big Hill.
– MREMP. Committee – data (1) 1 in 100 designs in stormwater control. + (2) Monitoring (3) WM + ESCP's

(15) The waste rock emplacement into and around Duncans Creek will also influence fluvial processes of the creek. The riparian vegetation downstream from the Big Hill open cut void will be integral in maintaining the ecological health of the creek system via bank stabilisation and buffering of nutrient and sediment laden runoff. Thus it is the opinion of this department that the creek bed and banks are not a suitable site for waste rock emplacement nor is such a practise consistent with the NSW State Rivers and Estuaries Policy or the mining lease conditions.

Further, it is noted that the application of contaminated materials (eg oil spills) and superphosphate to waste rock emplacements is recommended in the EIS as a disposal strategy. Whilst this may be effective it is certainly not an appropriate management strategy on or near watercourses.

Operational procedures enabling the progressive or staged emplacement of waste rock back into the Big Hill open cut void should be investigated. Restoration of the creek channel at the open cut should be given more attention with efforts made to minimise the size of the open cut void at the completion of the project. Waste rock emplacement downstream of the void in and around Duncans Creek is not a best management practise and is not consistent with the NSW State Rivers and Estuaries Policy.

(16) Whilst in stream sediment control measures should be included in the operation, particular attention should be given to the control of sediment before it enters Duncans Creek in order to protect the ecological health downstream.

Nelson Creek and McLeans Creek

(17) **The heap leach pad**

The heap leach pad drains into a wetland in the headwaters of Nelson Creek. This department has concerns that leachate from the heap leach pad has the potential to contaminate the wetland with detrimental effects on surface and groundwater. The EIS describes methods that will be implemented in order to detect any leaks within the heap leach pad.

(18) However, there is no assessment of the potential impact of the leachate on the wetland or the groundwater should such a "leak" event occur.

(19) The Surface water and Groundwater study reports that "there is a 2% chance of the stormwater pond spilling in any one year when the heap leach pad is fully developed" and that "any spill will contain residual cyanide levels that are higher than acceptable for release into natural

(20) waterways". The EIS document makes reference to a contingency plan in which those flows exceeding the capacity of the heap leach pad storage pond will be pumped to the Big Hill open cut in an attempt to prevent spillage of contaminated water. There is no mention of any infrastructure to implement this strategy.

(25) Nelson + McLeans Ck (LICENCING OR MREMP)

if 'Creeks' then LICENCING REQUIRED.

Dept of WR will be looking at: –

– Reducing the catchment – ∴ contracting the habitats — if no licensing Dept of W.R. need to check & be part of MREMP.

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(21) Whilst management strategies have been outlined in the EIS there is a lack of information relating to the potential impacts emanating from a leak in the heap leach pad or spillage of contaminated water. The EIS also states that the low permeability of the granite bedrock in the Big Hill open cut
(22) will prevent any groundwater contamination resulting from the implementation of the pumping contingency plan. It seems that this is based on the assumption that there will be no fractures in the granite bedrock. This department believes that the potential impacts of contaminated water on surface water, groundwater and any aquatic habitats must be investigated and assessed before the proposed development can be adequately determined.

(23) The EIS indicates that the cyanide solution will be applied to the heap leach pad through an irrigation sprinkler system. There is no discussion as to how drift of the contaminants will be prevented and no assessment of any impacts should such a drift event occur.

(24) The EIS discusses that rehabilitation of the heap leach ore will involve the flushing of contaminants. It is assumed that this settling point is the solution or stormwater ponds. The EIS also states that, the remaining liquid within these ponds will be subject to cyanide neutralisation. More information relating to how this neutralisation process will be conducted is required.

(25) The proposed final landform of the heap leach pad will effectively divert the existing runoff from this area away from Nelson Creek to McLean Creek. Characteristics of watercourses and wetlands are determined by catchment size and runoff characteristics etc. Changes to these characteristics can result in erosion and channel widening or sedimentation and channel narrowing or in this particular case, contraction of the wetland. Upon completion of the project the direction of surface water runoff from the heap leach pad site should replicate that which exists prior to any of the proposed earth works.

(26) **Monitoring Requirements of the MREMP**

Monitoring strategies should be conducted to detect any contamination of surface and ground water as a result of the mining activities. The monitoring strategy should clearly define

(a) what concentrations (or other monitoring parameter) of particular contaminants constitute a "problem" or an adverse environmental impact.

(b) what action should be taken when a "problem" is identified

It is integral for a monitoring strategy to identify conditions which relate to particular responses to cope with particular scenarios. Those conditions which justify the shut down of operations should be specified.

(33) (LICENCING)
Big Hill open cut will be a lake ∴ more detail in diversion design.

(MEMO)
(35) CN. neutralization will be by Hydrogen peroxide + flushing. + monitor out (in prog. pond) of leaps.
~~of neutralisation~~.
(36) - final rehab of leap leach will now be diverted towards Nelson Ck. The leap will not be a canal

Summary of Recommendations

(27) (1) A comprehensive MREMP should be compiled which includes a detailed description as to how works on any watercourse and wetland will be conducted and rehabilitated. These are to be consistent with the States Rivers and Estuaries Policy. The MREMP should also include a monitoring strategy which specifies operating conditions and procedures to be implemented following the detection of particular "triggers" which indicate an adverse impact.

(28) (2) Considering some works on creeks have already been implemented without appropriate sediment control (e.g. Duncans Creek); sediment control strategies be implemented immediately before any further construction

(29) (3) A qualified environmental officer be appointed to be on site.

(30) (4) Appropriate approval from this department is granted before construction of any road crossings of watercourses.

(31) (5) An environmental flow requirement be established for downstream of the Big Hill open cut on Duncans Creek.

(32) (6) A detailed design of sediment control and the diversion works for Duncan Creek be investigated and included in the MREMP..

(33) (7) The Big Hill waste rock emplacement site should not be within 40 metres of the mean high water line on the banks of Duncans Creek and that the vegetation within that 40 metres remain intact to serve as an effective riparian corridor.

(34) (8) The potential impacts of the event of

* a "leak" from the heap leach pad,
* a "spillage" from the solution or stormwater ponds, and
* contaminate drift from the irrigation sprinkler system

upon any surface or ground water quality needs to be assessed.

(35) (9) Information is required on the cyanide neutralisation process of the liquid remaining in the stormwater and solution ponds of the heap leach pad (ie how will this be conducted?)

(36) (10) Upon completion of the project the direction of surface water runoff from the heap leach pad site should replicate that which exists prior to any of the proposed earth works.

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(37)

GUIDELINES FOR THE DIVERSION OF NATURAL WATER COURSES

Stream diversions are not generally recommended, but may need to be undertaken for a variety of reasons. They are often associated with open cut mining, where a mineral is to be mined from under the watercourse.

Previously, all such works required a licence under Part 2 of the Water Act (1912). From 1st April, 1992 following amendments to the Rivers and Foreshores Improvement Act, this takes precedence over the Water Act. Hence from that date, the diversion of a natural watercourse requires a 3A permit under the Rivers anti Foreshores Improvement Act.

TEMPORARY DIVERSIONS

Where the proposal involves the diversion of a watercourse for the duration of the activity and subsequent reinstatement on the natural drainage line, the following guidelines apply:

1. The diversion channel should be of similar dimensions to the existing channel to allow a continuum of water and sediment discharge to pass through the site.

2. Provision shall be made for floods in excess of the design capacity of the diversion channel to ensure that life and property are not put at risk and that no significant environmental degradation results from a major flood event.

3. The diversion channel cross-section and bed grade should be of similar proportions to the natural channel and should be designed to ensure that the bed end bank of the diversion channel are not subject to scour.

4. Where the bed grade of the diversion channel is greater than that of the natural channel, a control structure(s) should be constructed within the diversion channel to control headward erosion both within the diversion channel and upstream. Such structures should reduce the gradient of the diversion channel, making it continuous with the natural channel.

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PERMANENT DIVERSIONS

in addition to the design considerations listed for temporary diversions, the following geomorphological, environmental and aesthetic considerations should be addressed for any application for permanent diversions. These are to ensure that the-new watercourse will look and behave like a natural watercourse.

5. A curved or sinusoidal alignment should be selected which is consistent with the natural alignment upstream and downstream of the diversion. This is to ensure that the diversion channel forms a continuum with the natural watercourse.

6. Bank batters on the inside of bends should be shallow enough to allow natural deposition and sediment transport processes to occur. Such batters should be no steeper than 1:5 and no flatter than 1:50 draining to the water's edge. No bank batter should be steeper than 1:3.

7. Where the outside of bends are formed in alluvium or other unconsolidated material, protection should be afforded to the toe of the bank. This is to protect land that would not have previously been subject to stream erosion risks.

8. A revegetation plan should be prepared for the new watercourse to include the planting of trees native to the area.

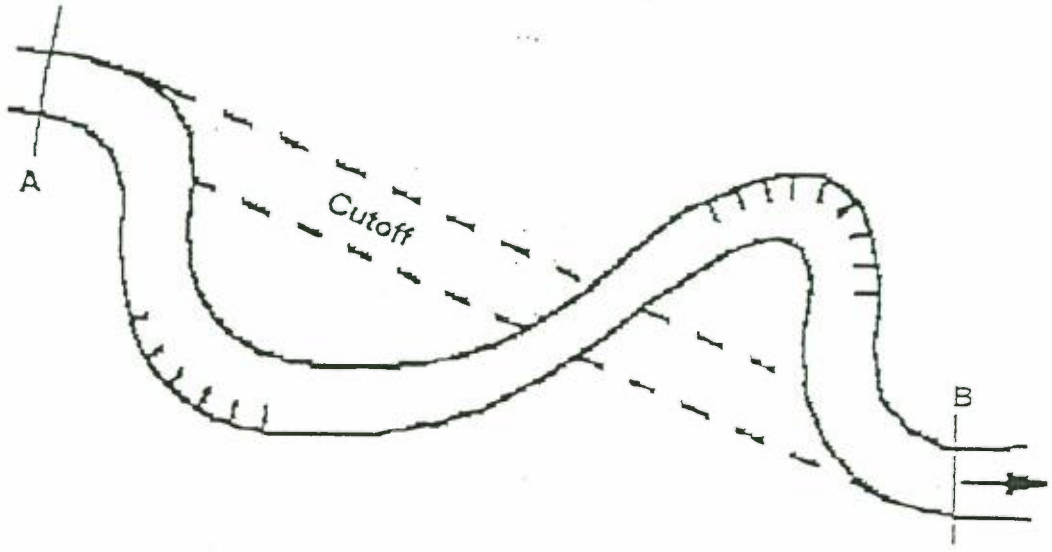
9. A series of low bad control structures are recommended in favour of one or two large drop structures. The latter should be avoided due to their long-term risk of failure, particularly where maintenance is not undertaken to ensure their continued effective operation. Large structures also impede fish passage, and detract from recreational use and visual ammenity.

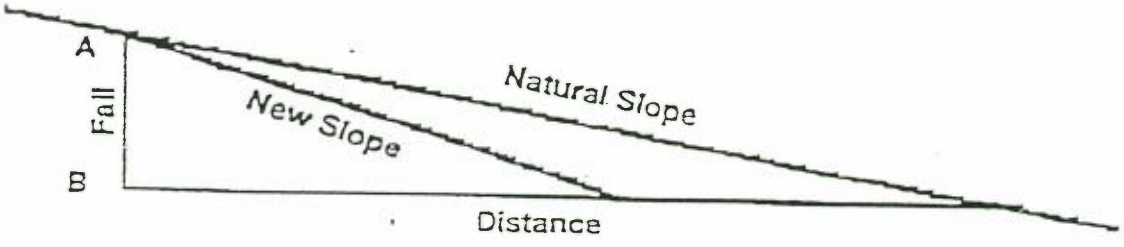
If you require any further information please contact Tony Broderick on (066) 427799.

Yours faithfully

Tony Broderick
Catchment Management Officer
North Coast Region

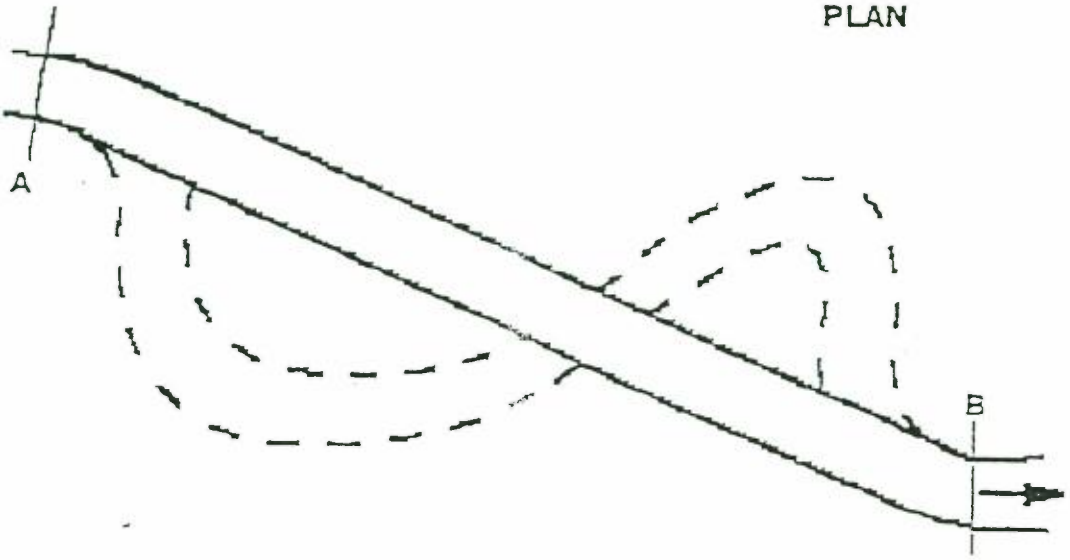
EFFECTS OF CHANNEL STRAIGHTENING

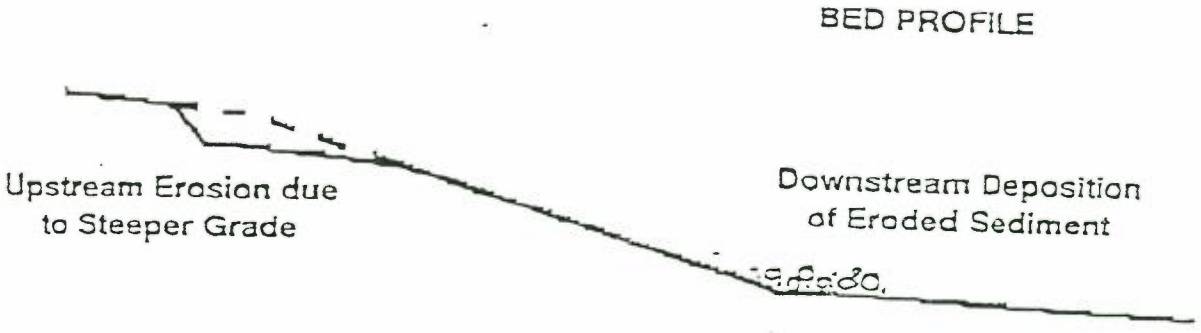




Whilst the fall remains constant, the distance between A and B is shorter in the cutoff. This steepens the grade of the channel.

Prepared by the NSW Department of Water Resources





Prepared by the NSW Department of Water Resources

Fax to 02 901 8493

Richmond/Clarence Greens

The registered Green Party of the North Coast of NSW
P.O. Box 125, Lismore, NSW 2480, 066 222 618

The Director
Department of Mineral Resources

Re. Timbarra Environmental Impact Statement.

We would like to make a submission by way of objection to the Timbarra Gold Project Environmental Impact Statement.

(1) We appreciate the extention to the 25/8/95 for submissions, but we are critical that the E.I.S. was not advertised in the regional dailies such as The Northern Star or available at othe North Coast Offices of the Department of MR &E in Lismore and UA &P in Grafton.

Our overall view is that the proposed Timbarra Gold Project should not proceed due to environmental, archeological and economic constraints.

1. ENVIRONMENTAL

1.1 Water

(2) There is inadequate detail to assess the hydrological impacts on the Timbarra/Clarence Catchment from the pumping proposed in the first four years of the project.

(3) This impact has also not been assessed in relation to the drought and further, there has been no assessment on impact of drawing of water from Timbarra river downstream users.

(4) That the position of the mine at the confluence of the headwaters of a number of creeks will have a significant impact on the quality of the water of the Timbarra Catchment has not been addressed.

1.2 Flora and Fauna

(5) The Fauna Impact Statement has listed a number of Schedule 12 Species, some of which are extremely rare. Of particular concern is the Brush-tailed Rock Wallaby which would be expected to move between prime habitat areas occuring to the north and southeast of the Project Site.

We will be making a further submission to the FIS and will seek to challenge the granting of a section 120 Licence.

(6) The clearing of a number of rare speces of flora including Eyucalyptus Olida, Acacia Floydii, Pultenaea Pycnocphala old growth stands is a major constraint on the project proceeding.

We are also concerned that other areas of old growth forest will be cleared for this project.

1.3 Chemicals

(7) The use, transport, and storage of chemicals as proposed in the EIS will have a significant effect on the environment. Of particular concern is the heap leach pad and the lack of information of any environmental or Occupational Health and Safety problems may occur if there is a breakdown or leakage in the system. There is no risk assessment on whether heavy metal waste concentrations will enter the environment or contingency plans in case of emergencies such as spills, accidents and human error.

1.4 Soil

(8) Admissions in the EIS that the exploration had caused soil erosion problems. that the mining Company may not have fully complied with the Mines Inspections, Soil Conservation and Clean Waters Acts.

2. ECONOMIC

(9) The hidden economic costs associated with this type of development have not been assessed The high cost of medical, environmental alongside the negative impact on other industries such as forestry, farming, grazing, fishing and tourism.

(10) The costs to the tax payer for infrastructure such as road works, compliance inspections and social impacts, green house emission, destruction of nationally significant heritage for short term goals.

3. ARCHAEOLOGICAL

(11) The E.I.S. conclusions on the significance of the area to the custodians is scientifically flawed and racially inspired. The proponent has not established whether Native Title has been extinguished over the MLA. and may be in breach of The Racial Discrimination Act 1975 and Native Title Acts 1993 if work proceeds without establishment of title or due compensation.

(12) We understand that a Representative of the Company and consulting archaeologist Mr. Appleton were told by a meeting of elders held at the Tabulam Aboriginal Community that they wished for a five mile buffer zone around Bold Top Mountain.

The lack of scientific credibility in the Appleton report will be exposed in any legal challenge that may occur if this proposal is consented too.

(13) The significance of the Poverty Point site archaeolgically and to the Aboriginal community and their elders is a major constraint for the mine to proceed.

Yours Sincerely,

Al Oshlack
Secretary
25/8/95

U.C.A.R.E. Tabulam Inc.
c/o Tabulam P.O.
Tabulam 2469 NSW

TO: The Director General
Department of Mineral Resources
P.O. Box 536
St Leonards , NSW 2065
24 August

Dear Director General

Re: Timbarra Gold Mine Project

Submission in response to EIS

This submission has been prepared by and on behalf of U.C.A.R.E. Tabulam Inc. Since our original submission (13th August), representatives of our group have visited the project site under the guidance of the Geologist of Aralia Mining Co., and have attended a meeting held with the E.P.A. . These occasions have raised concerns about the ecological and water catchment issues related to turning the BIG (1) Hill into a big lake, especially considering that waste rock is going to be dumped into the Big Hill open cut, this is likely to erode with time creating further (2) sedimentation problems downstream.

(3) The rehabilitation of the heap leach pad area , and the location of the (4) pad on the swamp area is unacceptable. The posibility of rehabilitating a hill (dune) with the soil (peat) from a swamp is not feasible and rehabilitation is not likely to occur as a result.

We would oppose the issueing of any mining license or other approvals in relation to the proposed mine, until the above issues have been adequately studied.

Yours Sincerely

D. Van Gelder

Board of U.C.A.R.E. Tab.

Shown to: D/D-G
25/8.

→ M/MRAB

National Parks Association of NSW

Armidale Branch,
PO Box 372,
Armidale 2350.
24th August 1995.

The Director General,
Department of Mineral Resources,
P.O.Box 536, St Leonards NSW 2065.

Supplementary Submission on the EIS for Timbarra Gold Project.

We wish to add the following matters to our submission dated 10th August 1995:-

Hazards

In our previous submission we referred to the potential hazards of the cyanide process in relation to wildlife.

(1) The Department of Planning letter of 2 Nov. 1993 required that the EIS include "Preliminary Hazard Analysis prepared in accordance with ... Hazardous Industry Planning Advisory paper No.6, including risk assessment against Risk Criteria for Land Use Safety Planning (Advisory Paper No 4) and recommendations to mitigate against potential risks." Though this topic is noticeably absent from the lists on p.242-243 of Appendix 1, many parts of a Preliminary Hazard Analysis can be found in the EIS, e.g. the Hazard Identification Word Diagram (Appendix 7, pp. 279-283). However these aspects of the Analysis do not deal with effects on the biophysical environment.

Hazardous incidents that have a probability of occurring would include dispersal of leach solutions from the heap or ponds, due e.g. to failure of an automatic shut-off of the wobbler-spray system during windstorms; or the probability of dams being overtopped during extreme rainstorm events. The latter could be influenced by 1) the need, particularly in the early stages, to keep maximum amounts of water in storage (to cope with low flows in the river); 2) the fact that the Big Hill open cut would not then be developed to be able to receive the possible overflow from the contaminated water system; or 3) the readiness of the pumps and pipeline to be used under the proponent's contingency plan to transfer, say, 25ML of solution to the Big Hill open cut in less than, say, 48 hours.

(2) In our earlier submission we pointed out the lack of provision for a pipeline to Big Hill open cut, or for suitable pumps to make effective the contingency plan detailed in section 4.2.5.2 (Contaminated Water System Behaviour Under Extreme Conditions). It is imperative that such provision be made.

We note that a spill event of between 18.2 ML and 22.5 ML could have occurred on two occasions, according to the model cited on p.177 (which is based on daily rainfalls at Tenterfield between 1894 and 1993 adjusted for the project site, a procedure already criticised in our previous submission). The proponent is content to say in effect that such an event is catered for. We contend that it is not.

(3) **We consider that a spillage from the contaminated water system during the length of the operation of this mine is not improbable, and that it could have grave consequences to the fauna dependant on the swamp systems to the north and north-east of the site, and possibly to aquatic systems in the river below. No attempt has been made to assess the biological consequences of such spillages.**

Water consumption

(4) Table 3.1 (p.102) of the EIS presents "monthly characteristics - Timbarra River at Billyrimba*...* 43 years of records". This table could be misleading, since records collected later than mid-1994 are apparently not considered in the document. The table does not show the following values of monthly minimum (ML/day) for the months indicated:

June	1994	29
July	1994	27
August	1994	14
September	1994	15
October	1994	0.2
November	1994	0.9
December	1994	25

(5) Inclusion of this data would alert readers to the possible occurrence of extended periods of low to very low daily flows.

The consultants acknowledge the existence of a body of daily stream flow data for the Timbarra River at both Billyrimba and Drake, yet the EIS has failed to make full use of it, particularly the day-to-day and week-to-week flows.

Daily data were apparently used to establish that "the daily flow [at Billyrimba?] fell below 10ML/day on only 1% of the days and 5ML/day on only 0.6% of the days" (p.102). To obtain these figures the consultant should have examined a time-weighted stream discharge duration analysis of mean daily values at Billyrimba from 26Nov 1951 to date. It would have been useful for the EIS to present this analysis in a table, or in a single figure (for the total) or a series of figures (one for each month) and to explore its implications for day-to-day management of the project.

The EIS statement that the flows at the proposed pumping station are likely to exceed those listed in Table 3.1 by approximately 35% is a reasonable assumption. But it could and should have been checked by analysis of all the data collected at both Billyrimba (upstream) and at Drake (downstream) during the common period of recording (1970-1994, continuing). Indeed, use of data from both gauging stations would increase the precision of estimates of river flows at the proposed pumping site, which is about midway between the two stations.

NREMP — Committee mechanics

(1) Timetable — 1 month turnaround.

1 week review

2–3 week submit + review.

x week amended + approved.

(2) Minimise conditions.

The EIS claims that"pumping from the Timbarra River would only affect residual flows during very low flow conditions and the likelihood of that happening would be less than 1%" (p.221). The EIS also claims that the impact of 2.5ML/day extraction at or above flows of 10ML/day would have "negligible impact" on the River (p.177).

(6) However the EIS does accept that the Department of Water Resources will have to determine a minimum flowrate to ensure the continuance of riparian flows and to reduce the risk of algal blooms developing.

Reference to flows of 10ML/day having "negligible impact" on the river implies that use of the 98 percentile could be an acceptable basis for determination of an environmental flow. **Such a determination would be totally unreasonable and against the public interest.** However, a minimum environmental flow based on the 80percentiles would probably be acceptable to stream ecologists. And it should attempt to simulate the natural behaviour of the river, e.g. by the use of monthly 80 percentile values.

Whatever pumping license conditions are determined, there could be long periods with the pumps switched off. Using monthly 80percentile values, the following are a few examples of such long periods:

1980 Jan (18 days), Feb-May (87), August (11), Aug-Nov (74)
1993 Mar-July (120 days), Sept-Nov (47), Nov-Dec (38)
1994 Jan (21 days), Jan-Feb (29), April-Dec (229)

(7) **Economic factors.** We think that the determining authority should assess the longterm viability of this project, given that the average gold content of the ore proposed to be mined is low (0.8 g/t) and the enterprise will be sensitive to the ups and downs of gold prices; and given the likelihood that inability to pump up the requisite amount of water for many consecutive days,weeks or months (ie. whenever the river flow is lower than the limit set by the Water Resources Dept Pumping Licence) will cause processing work to cease altogether, perhaps for months on end.

What provision is made for temporary closure of operations until a drought breaks, or until the price of gold recovers?

(8) Is the Bond sufficient to enable full rehabilitation of the site should the market render the operation unprofitable and the firm be liquidated? Has the cost of rehabilitation of the site at various stages of abandonment of project been considered? We note that State Forests has put its loss of royalties for timber opportunities foregone at $37,500, to be offset by $800,000
(9) p/a in mining royalties paid to the State if the mine production is on target. What compensation does the Government receive if the project fails before sufficient mining royalties are paid to equal the timber royalty lost?

Whilst such questions would not be expected to form part of an EIS, they should form part of the considerations of the determining authority.

Anna van Duyteren

Hon.Secretary, Armidale Branch, National Parks Association

Proposed
Conditions

~~1) WM ESC plans to be submitted~~
1) Erosion + Sed. Control Plans (WM+ESC)

(2) Harvesting Plans (H.P.) or Clearing/logging Plan (CP) ... endorsed by NP + WS.
(to be finalised with State Forests) — — (A)
that encompasses all areas — but if no
H.P. the CLP ESC
(~~erosion S + C~~ strategy, conditions for logging, pollution control measures (soil + suspended material), roads.
— submitted to Committee, & by
Note (1). through State Forests.

WMESC be prepared prior to any construction
(B) or commencement of ~~each stage and~~ any
segment of the site development, as part
(A) of the MREMP, and approved by D.G.
(This may be staged according to the project timeframe).

HLP (or CLP):
MREMP Committee to also look at & the Co. provide: —
Company Provide: (1) Erodability of soil .. high, medium?
(2) Erosion hazard .. .. (P.100)
to get lowest No. .... do plans ... check No.
again (e.g. 20 ~100 tonnes / ha acceptable)
This method will assess

The Department of Land and Water Conservation incorporates the former Departments of Conservation and Land Management and Water Resources

NSW Department of Mineral Resources,
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St. Leonards. 2065.

SOIL CONSERVATION SERVICE
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24 August 1995

ENVIRONMENTAL ASSESSMENT - TIMBARRA GOLD MINING PROJECT
Your reference T95/0114-5

CAPRICORNIA PROSPECTING PTY. LTD.

Concerns of the Department of Land and Water Conservation (DLWC) (SCS and CLS) relating to the above proposal which should be addressed or included as conditions of development consent are as follows. Concerns of the Department of Water Resources will be forwarded under a separate letter.

GENERAL COMMENTS

(1) (1) The Department of Land and Water Conservation (DLWC) contrary to p3 of the EIS considers that due to the conceptual nature of the EIS and the lack of detailed erosion and sediment control and water management plans that the EIS is not sufficiently detailed to be deemed a Mining, Rehabilitation and Environmental Management Plan (MREMP).

(2) (2) A detailed Water Management Erosion and Sediment Control Plan (WMESCP) is required to effectively control run-off, erosion and sedimentation.

No detailed WMESCP has been provided in the EIS for evaluation. The proponents however in the EIS propose to prepare a WMESCP prior to the commencement of on-site activities.

As it is essential that an effective WMESCP be implemented prior to the commencement of operations (including site clearing and road construction) the Department of Land and Water Conservation considers that this should be a condition of development consent and/or should be included as conditions of authority for MLA4 and MLA5 Inverell.

(3) (3) Logging is proposed prior to site clearing. No logging or clearing plans have been provided in the EIS. Logging and clearing plans are essential for effective erosion and sediment control. DLWC considers that a temporary catch drain on the downslope boundary of the area to be cleared does not represent adequate or effective erosion and sediment control.

The proponents should demonstrate effective harvesting and clearing plans which must include:

* identification of areas to be cleared/logged;

(3) Topsoil Management Plan

MREMP Committee to consider:–
(accessibility, future location, protect it from erosion (tracks are a problem) physical land to hold the topsoil, viability of the soil (may need to be fine stockpile) seeded down for biomass) less than 2 m in ht
volumes stripped, stored + replaced.

(3) CONDITION
A topsoil management plan be submitted
. . . . (B) . . . (A) . . .

may need definitive results prior to covering with plastic . . . . strip 30 cms as a trial ~~+ tops~~ + stockpile (John Lawton (JL) said O.K.) (a conservative figure), subsoil is important on the dump + heap leach dumps, ensuring topsoil is sufficient to cover any risks.
may need 2 cuts of topsoil (top 10 cms kept separate (J.L. states it is better to pay for extra during construction rather than.

* staging of logging or clearing;
* an erosion/sediment control strategy and run-off management.
* stockpile sites for tree debris to be retained for use in later rehabilitation;
* roadworks required for access and timber harvesting;
* sites for proposed log dumps;
* conditions relating to logging as derived from the Soil Erosion Mitigating Guidelines for logging SEMGLS;
* conditions for windrowing and/or burning of timber if proposed;
* conditions to mitigate erosion and sedimentation relating to clearing.
* erosion hazard assessment for logging and clearing operations and the timing of operations to reduce impact.

(4) (4) Topsoil/subsoil management is one of the most important aspects of any rehabilitation program. The amount of topsoil/topsoil, suitability, method of stockpiling, maintenance of topsoil/subsoil structure by minimising stripping and handling method, erosion and sediment control are important aspects of a topsoil/subsoil management program.

DLWC also has the following concerns relating to topsoil/subsoil management:

(1) the proponents plan to strip topsoil from proposed mining pad area and stockpile this topsoil on access tracks, stage II of the heap leach pad and up to 9000m^3 on an adjacent landholders property. The EIS however has not indicated the proposed stockpile sites, topsoil management, or erosion and sediment control.

DLWC has concerns that insufficient area is available on the abandoned access tracks to provide sufficient storage areas and maintain topsoil viability.

(2) the erosion/sediment control of the proposed stockpile sites has not been provided which demonstrates effective erosion and sediment control especially considering the intensity and location of existing tracks.

(3) the proponents plan on p31 "to strip soil material from the more elevated areas of the Project Site for rehabilitation of the leach heaps". These sites need to be clearly identified on a map and effective rehabilitation erosion/sediment control measures need to be demonstrated.

(4) the proponents do not propose to strip the full depth of soil material (30cm) from under Stage 1 of leach pads as indicated in Veness and Associates Pty. Ltd. 1994 Soil Survey Report (fig.2). The proponents only propose to strip the upper 10cm of profile containing topsoil and seed bearing material. The proponents also do not propose to replace subsoil on the leach pads prior to topsoil replacement unless revegetation trials indicate subsoil replacement is necessary for rehabilitation. If subsoil replacement is necessary the proponents propose to strip 20cm of subsoil material from Stage 2 of the leach pad.

DLWC's concerns are that:

(i) the replacement of only 10cm of "topsoil" will not result in long term site rehabilitation, due to the porosity of the leach pad and the low available water holding capacity.

(ii) insufficient subsoil will be available from Stage 2 to effectively rehabilitate Stage I as well as stage 2.

DLWC considers that the staging of the development of the heap leach pads should be undertaken so that stripping and stockpiling of topsoil and subsoil material can be undertaken to meet the rehabilitation requirements as demonstrated by the proponents from their rehabilitation trials. If insufficient material is available from beneath the heap leach pads for effective long term rehabilitation of the site then the proponents should identify clearly where such material is to be sourced. The rehabilitation of the site from which this material is sourced should also be demonstrated to the guidelines and specifications of DLWC.

(5) The soil loss figures for each erosion hazard class in Table 8 p23 of Veness and Associates Soil Survey report are not appropriate for a short duration mining or roading operations. The soil loss figures in Table 8 should be in tonnes/ha. for a 40 yr rotation not t/ha/yr as indicated for e.g. low <40t/ha/yr should be < 40t/ha. for a 40yr rotation which equates to 1 t/ha./yr (an acceptable soil loss).

Initial investigations indicate that the erosion hazard for the proposed mining and roading operation are higher than that indicated by Veness and Associates. This has implications in relation to the erosion and sediment control measures applied to the site prior to and during logging, clearing, mining, track and haul road construction, especially where such works take place on steep slopes.

It is considered that erosion and hazard assessment should be undertaken prior to the commencement of clearing, logging or mining operations and appropriate conditions for erosion and sediment control should be formulated prior to the commencement of such operations.

Due to steepness of slope & high rainfall + (total clearing)
∴ these assumptions are wrong.
∴ Erodability is HIGH not low.
Erosion Hazard

Waste Rock Emplacement
NREMP committee look at:—

topsoil, clay + drain + barrier filter + gabion system, are disturbed anyone fine, if drain is adequate, gabion structure (can control sediment in coarse but not in fine sediments) ∴ extra consideration given, horse-shoe slope to catch sediment, sediment fences are only temporary but can be used, less waste rock may be the case, rock armouring due to slope + nearness to creek (i.e. selectively place rock on face as you operate), rehab from bottom up.

Big Hill — NREMP look at these issues
– sequence erosion control, engineered diversion

Haul Road NREMP committee look at:
– more cut + less fill, side of road (+ not in steep areas), batters can stand up (erosion), vertical batter in cuts (aerated or not) + protect from run-off. ↑ problem with vertical batters are i) land changed forever, animals but road 16 m wide ∴ batter downtowards road to reduce slope. Vertical batter only option on 30° slope + then batter down afterwards. But don't want create too many vertical batters (too much rehab at end of day + need drop structures. Only have vert. batters where soil sustains it (geotechnical problem) + control water above vert. batter. Run-off along road to be

(6) (6) **Waste Rock Emplacement**

An erosion/sediment control and clearing plan is required prior to commencement of operations for waste rock emplacement including stockpile locations for topsoil and tree debris.

DLWC considers that the proposed drain and single barrier filter proposed to be constructed downslope of the area cleared for phase 1 of the poverty combined waste rock emplacement (p60) and below Big Hill Waste Rock Emplacement is not acceptable and a more effective Erosion and Sediment Control Strategy needs to be demonstrated to the guidelines and specifications of DLWC.

(7) (7) **Run-off Control above Big Hill Open Cut**

Control of run-off water from above Big Hill Open Cut has not been adequately addressed in the EIS. The DLWC has concerns that run-off water cascading over the exposed northern face of the Big Hill open cut will result in severe gully erosion along the berms and exposed soil batters. The design of the proposed perimeter rock access barrier Fig.2.4 appears to be inadequate due to the catchment area and channel grades proposed. DLWC considers that the proposed rock access barrier and disposal area be adequately designed and implemented to the satisfaction of DLWC prior to the commencement of clearing and mining operations.

(2)

(8) **Haul Road**

The proponents propose to construct a haul road 2.4km long to inter-connect Poverty Combined, Big Hill Open Cut and their respective waste rock emplacements. The haul road is proposed to be 16.5 metres wide with fill batters of 1(v):4(h) and in cut at approximately 1(v):0.5(h).

(8) No road designs, cross sections, long sections, geotechnical assessment or erosion sediment control has been provided in the EIS for the proposed haul road.

DLWC considers that as the road traverses slopes in excess of 18° considerable soil disturbance will result and the proposed fill batter grades of 1(v):4(h) are not practical to achieve and should be redesigned in accordance with the existing groundslope for each road section.

DLWC also considers that road cross sections, long section and appropriate batter rehabilitation, erosion and sediment control plans be provided prior to the commencement of haul road construction to the guidelines and specifications of DLWC.

(2)

(9) (9) **Plant Site**

No erosion and sediment control except for a 5 ML sedimentation dam (p172) has been proposed for the crusher site.

DLWC considers that an erosion sediment control plan should be provided for the plant site prior to site clearing and construction.

(2)

Plant site

Leaf Level Pad — MAREMP Committee :-

1) ~~adequacy of stability under Leapad~~ ; —
Full profile tests — none at all — except for stage 2
by consultants. Coffey's did not get sample for
volumes.
Need to save topsoil subsoil, pad stability
~~##~~ Coffeys need to get more sample information

2) pH of soil — trial
— most native plants don't like up to pH 7
(which is proposed) in Leaf. May need a cover
crop ~~to~~ for ~~[illegible]~~ 1–3 years to establish a
better A horizon for natives to establish
This would help reduce the pH. & assist in
stability.

3) Trials develop, info on soils are known.
rehab details

4) ~~Partition versus~~ — ~~It~~ is inseparable from
Pond with aqueous transfer.

5) Partly backfilled Storm Pond would act
as sediment control

(10) **The Heap Leach Pad**

The EIS proposes Heap Leach Pads to be constructed on an area of approximately 29 ha. The pads are proposed to be constructed in three 8 metre lifts with a capacity of 9.1 ML (p45 of EIS).

The proponents propose to strip unsuitable material (20,000m^3) from the site prior to pad construction. Cut and fill is proposed for leach pad construction to provide 2% downslope (to SW) and 0.5% sideslope (to the NW).

HDPE liner 1.5mm thick will then be laid on the site to create an impermeable structure.

(10) The soil survey undertaken by Veness and Associates only provides one full profile description for Soil Mapping Unit B on which the Heap Leach Pad is located. This sample was taken on a soil unit boundary well away from the Heap Leach Pad and therefore may not be a representative sample of the soils present under the Heap Leach Pad. Coffey and Partners have also only undertaken limited soil sampling of the area of proposed Heap Leach.

The limited soil sampling however indicates the soil material beneath the Heap Leach Pad will not hold water. This has implications for possible accessions to groundwater and monitoring should the HDPE be damaged.

Peat material was also identified (p45) which has insufficient bearing capacity to support the heap. The extent of this to peat material was not clearly identified except that approximately 20,000m^3 must be removed prior to Heap Leach Pad construction. DLWC considers to ensure Heap Leach stability that the extent of the peat material should be clearly identified and the peat material removed prior to pad construction.

On p46 of the EIS the proponents state "Based on advice from Anne Clements & Associates Pty. Limited that the agglomerated ore would be similar once worked with a bulldozer to the subsoils on the elevated areas of the Project Site, the replacement of between 50-100mm of soil material together with harvested biomass and locally collected seed would be adequate for the establishment vegetation on the former heap. Nevertheless, the necessity for subsoil replacement on the heap would be assessed through vegetation trials prior to the development of Stage 2 of the Heap Leach Pad area".

(11) No soils analysis or scientific evidence however has been provided for assessment to support that the Heap Leach material can be adequately rehabilitated using this technique. P86 of the EIS also indicates that "because of the large void volume between the agglomerates within the heap and the ease with which water and air can permeate; oxidation of the low level of residual cyanide would continue to occur after flushing is completed".

Road Access

- Road construction approved to be from Tenterfield Shire. 1) Crown road (reserve) — public ... even if no road reserve ... old Act allowed free access anyway.
2) Public (Council) road — a dedicated road .. This is the goal. Plans → Tenterfield Shire & approved. Survey need to new road & Tenterfield (request from Lands Office to gazette (or approval of re-alignment of public road) of new road. APPLICABLE. (as it is crown land).
- Sect 46 — 2 — NOT as a crown land. But is
* under 27(g) Forest Act approval needed to clear crown timber.
- Flora/Fauna work will be undertaken by Co. for NP&WS.
③ Council under Part V approval req'd ... and ④ Sect 46 on freehold land no approval is required if trees older than 10 years & area to clear > 2 ha.

SEPARATE APPROVALS

① 27(g) FORESTRY ACT — APPROVAL — portion 31 any clearing. ~~FORESTRY~~ 'STATE FORESTS'
— TO BE APPROVED BY
— PROJECT SITE + ACCESS ROAD*

② PROTECTED LAND APPROVAL (from SCS) — can be issued in 1-2 weeks.
1) Flora/Fauna completed ✓ — 2) 3 page form + WMESC Plan.
For (A) ACCESS TRACKS / PUMP SITE / PIPELINE & IF CLEARING ANY TREES / Neilson Hillview line / PUBLIC ROAD ACCESS.
— ~~DOES NOT~~ (~~if more than 2 ha is more the~~)

It is DLWC concern that the Heap Leach Pad is designed for rapid leaching. This will result in low available water holding capacity which will impact on the establishment of vegetation and the long term rehabilitation of the site. Concerns have been previously raised in Section 4 of this report concerning topsoil/subsoil removal/replacement and the proposed rehabilitation of the Heap Leach Pads.

The proponents on p87 of the EIS advise "that at the completion of the leaching process residual pH of Heap Leach Spent Ore would be between 7 and 8 but the pH would drop to a pH of approximately 7 within 12 months.

Soils of the area as indicated on p17 of Veness and Associates Pty. Ltd. report have pH ranges from 4.3-5.6. As soil pH can significantly affect plant growth the proponents should indicate the impact of this elevated pH on the growth and persistence of the local native vegetation proposed for rehabilitation of the Heap Leach site.

DLWC is most concerned about the proposed rehabilitation of the Heap Leach Pads. DLWC considers that trials should be implemented at the commencement of operations to determine the most appropriate method for long term rehabilitation of the Heap Leach Pads. The rehabilitation of the Heap Leach Pad must be a condition of development consent and an appropriate bond be held to cover the importation of soil material and or other techniques to ensure their long term rehabilitation.

(11) <u>Road Access</u>

(12) The proponents propose to upgrade the access road from the grid at Timbarra Homestead to the mine site. The proponents also propose to re-align the road to improve safety and reduce construction costs. Re-alignment of the road will impact on adjacent Crown Lands.

(13) The DLWC considers that the proponents should provide long sections and cross sections and an erosion/sediment control plan for the proposed road upgrade. Consent from the DLWC should also be obtained to open new sections of road and close and rehabilitate sections of road no longer required.

(12) <u>Pipeline from Timbarra River</u>

(14) The proponents propose to provide a pipeline corridor in a 30 metre wide strip of land from the project Site to the Timbarra River. This corridor will follow the Poverty Point fire trail for its entire length and will form MLA 5.

Concerns of DLWC relating to this pipeline corridor are:

* The pipeline is located on lands mapped as Protected Lands under 21A of the Soil Conservation Act 1938. The proponents should be advised that the clearing on protected lands for the construction of an access track or in excess of 2ha. of land or 7 trees/ha. or any tree within 20 metres of a prescribed stream (Timbarra River) requires an authority from the Commissioner of the Soil Conservation Service prior to work commencing.

7) Water gets into dam,

8) Impact on ~~__~~ flows ... e.g. remove liner on downslope & ground water is in contact with dam water.

∴ room to compromise & perhaps fill in dam.

9) Remove plastic & fill in

10) A small dam in a better location for landscaping may be an option.

11) Sediment control ponds could be left

Solution Ponds.

Probability of water leakage & ∴ left as stock water is a problem. — as Ponds may not be sound.

MMERP committee check on.

1) check if containments req'd — e.g. fence off from stock ~~[illegible]~~

2) Recharge of H_2O into dam is minimal as water will be diverted away.

3) Heap leach pad is now expected to be realigned to towards dam (20–30 ha catchment)

4) The 97,000 m³ has been increased to beat (210,000 m³ (1 in 400 year storm event).

Total of 140,000 m³ storm capacity in all Ponds.

The ~~key~~ location of the water level

5) Construction decision — bee water table is lower installed & is practical — remove layer of dirt over liner?

6) Left — for farm — if not stable, no dam left. d. res re-establish for wetland.

* The proponents should also note that concurrence will be required from State Lands Services and State Forests of NSW (SF NSW) in respect to clearing of trees on Crown Lands.

* The access track and pipeline are located on steep erodible lands of high erosion hazard. The proponents should provide an erosion and sediment control plan (including maintenance requirements) for the access track and pipeline to the guidelines and specifications of DLWC prior to commencement of construction.

* The proponents should note that a licence must also be obtained from DLWC for the establishment of a pump site within 40 metres of the bank of Timbarra River (River and Foreshore Improvement Act 1948) and to take water from Timbarra River (Water Act 1912).

* The proponents also propose to construct branch pipelines to Poverty Combined and Big Hill open cut. No erosion or sediment control plans for these branchlines have been provided in the EIS.

* An erosion and sediment control plan should be provided for these branch pipelines to the guidelines and satisfaction of DLWC.

(13) Protected Lands

(15) The proponents should be advised that an authority is required to damage, destroy, lop or top any tree on Protected Lands unless exemptions apply or an authority is obtained from the Commissioner of the Soil Conservation Service prior to the commencement of operations.

It should be noted that Protected Lands applies to either leasehold and freehold land which does not form part of a State Forest, National Forest Timber Reserve or Flora Reserve under the Forestry Act 1916 or land within 20 metres of the bed or bank of Prescribed Streams (Timbarra River and Nelson Creek).

(14) Solution Storm Ponds

Three solution ponds p49 are proposed for the management of the cyanide bearing solutions from the Heap Leach Pads.

A large Storm Pond of 97,600m^3 is also proposed to provide 1 days makeup water requirements and for the storm management of run-off from the fully developed Heap Leach Pads.

Soil tests indicate the soil material present on site has a low water holding capacity and will require lining with a HDPE liner.

The proponents propose (p87) to rehabilitate the three solutions ponds by ripping the liners and filling the ponds with spent ore prior to capping with 1 metre of stockpiled peat material. The area then to be covered with a veneer of seed bearing branches harvested from the adjacent wetland.

The proponents however, with the approval (p87) of the DLWC and/or State Forests of NSW propose to retain the Storm Pond for stock watering and fire suppression watering points.

Concerns of the DLWC concerning the Solution Ponds/Storm Ponds are as follows:

(16) (i) the rehabilitation of the three Solution Ponds will result in elevated "drier" areas of wetland not connected to the main wetland. The species and proposed method of rehabilitation may not be appropriate and further investigations should be undertaken prior to the final rehabilitation of these ponds.

(17) (ii) the large storm dam, as indicated by soil testing, will not hold water in the long term once the HDPE liner deteriorates by UV breakdown. DLWC's conditions should the proponents wish to leave the dam for stock watering and fire fighting purposes are as follows:

* the storm dam must be retained until the cyanide is neutralised;
* the dam to be fenced out to exclude stock;
* pipelines and troughs to be installed for stock watering and/or fire fighting purposes;
* the soil beneath the liner to be well compacted to reduce seepage;
* the liner on the completion of operations to be covered with soil material to prevent UV breakdown and stock damage (kangaroos etc.);
* failing the above the dam to be lined with impermeable clay to a depth of 0.3m and stock excluded by fencing;
* the dam to be utilised as a sediment trap for the Heap Leach Pads and diversion banks installed to maximise catchment area;
* drop structures to be installed where run-off enters the storm dam from any proposed diversion banks to prevent scouring of the dam batters.

Should the above conditions be unsuitable to the proponents then the dam should be filled in and rehabilitated as per the appropriate method as determined for the Heap Leach Pads by field trials.

(18) (15) <u>Sediment Dams/Storage Dams</u>

The proponents propose to construct a storage dam (p72) of 20 ML and a sediment dam (p172) of 5 ML adjacent to the crusher site.

Sed/Storage Dams. (near ......). _ MREMP Committee clarification:-

- May need lining unless in kaolin clay.
- If left behind will they ~~leave~~ hold water in long term, then will need to line.
- Need specs. on dams. Will be excavated to gain fill for Pad. Clay could be used for dams.
- If sed. dam leaks, it wouldn't be lined, but will be filled in.
- ~~[illegible]~~ Sed. dam ~~be~~ will be ~~used for~~ needed until rehab is completed
- Will in end sed. dam be accepted by Crown Lands after rehab. completed.
- a properly constructed dam (not leaking) is can be left.

Seed collection _ Revegetation. _ MREMP Committee [illegible]

- establish native community by collecting seed.
- seed collection business calendar (is seasonal but gives a guideline _ Environmental Officer ~~[illegible]~~ responsible.
- trials conducted.
- load topsoil with native seed.

(see Co. response - on seed collection).

At the completion of operations the proponents (p87) propose to also leave these dams with the consent of DLWC for stock watering purposes.

No soil testing has been undertaken for these dams. Soil tests for surrounding areas however indicate poor waterholding capacities to depths of 3 metres.

DLWC considers that soil testing should be undertaken prior to dam construction to determine soil structural stability and water holding capacity. The dams should also be constructed to DLWC's guidelines and specifications.

Should lining of these dams with HDPE be required then the proponents should be aware that DLWC will impose similar conditions of consent to those previously detailed for the Storm Dam should the proponents propose to leave these dams for stock watering/fire fighting purposes.

(16) **Rehabilitation**

The proponents (on p28) except for some collection of seed bearing material prior to tree felling for Poverty Combined Open Cut, Big Hill Open Cut and the initial clearing for Poverty Combined Waste Rock Emplacement do not consider a specific seed harvesting programme is warranted.

The proponents (p29) on advice from Anne Clements and Associates Pty. Ltd. propose to:

* progressively rehabilitate in stages;
* preferentially emplace directly on the areas awaiting rehabilitation;
* place topsoil/biomass in short term stockpiles for later use;
* place topsoil/biomass in long term stockpiles on the upper surface of emplacements, in stockpile areas or on the SE corner of Stage 2 of the Heap Leach Pad area.

The proponents propose (p85) to broadcast seed collected during the clearing phase on rehabilitation areas where topsoil is reclaimed from stockpiles in excess of 6 months old.

The proponents also do not propose to propagate any plants for rehabilitation purposes.

(19) DLWC concurs with the progressive rehabilitation of the site but is concerned that:

* except for the initial collection of seed during commencement of operations that no continued seed collection would be undertaken at the appropriate times for use in resowing of rehabilitation areas as required due to adverse seasonal conditions etc.;

- stripping and replacement of vegetation biomass due to mining operational requirements will not be undertaken at the appropriate time which ensures seed viability and optimum seasonal conditions for rehabilitation.

DLWC considers that:

- a seed collection programme be provided by the proponents which demonstrates an ongoing programme for seed collection for the total period of the mining operations;
- alternate rehabilitation programmes be provided by the proponents, should the direct replacement of biomass be unsuccessful;
- an ongoing research/trial and rehabilitation programme be demonstrated for the Mining, Heap Leach Pad and Rock Emplacement sites.

Should you wish to discuss any of the concerns raised above please do not hesitate to contact me.

Yours faithfully,

J.B. Thompson,
Specialist Environment & Land Assessment,
Tamworth.

THE NORTH EAST FOREST ALLIANCE SUBMISSION ON

Incorporating The Big Scrub Environment Centre's submission and objections to

Capricornia Prospecting Pty.Ltd. Environmental Impact Statement. Timbarra Gold Project. MLA 4 and MLA 5 Inverell District.

Prepared by Terry Placing
North East Forest Alliance.
149 Keen St. Lismore 2480
support material drawn from NEFA submission on FIS by Dailan Pugh

The North East Forest Alliance, The Big Scrub Environment Centre and the author of this submission object to the proposal by Capricornia Prospecting Pty. Ltd. to establish up to six open cut mining sites, two major waste rock emplacements, a heap leach pad area, Pumping site and associated Pipeline, Storm pond, processing liquor storage ponds and associated infrastructure on the Timbarra Plateau

We object on the grounds detailed in this submission principally being that;

(1) * The project will have major impacts on the headwaters of Duncans, Williams, and Nelson Creeks.

(2) * The project area is a site of state and national faunal significance with 15 schedule 12 fauna species recorded. Two of these species, the Hastings River Mouse and the Brushtailed Rock Wallaby are listed nationally (Schedule 1 of the Endangered Species Protection Act) as endangered and vulnerable respectively.

(3) * The project area has outstanding conservation values and is a required component for the comprehensive, adequate and representative reserve system.

(4) * The project area is a core component of the proposed Demon National Park which the State Government promised to establish by March 1996.

(5) * The mining activities are expected to last only four years at most and thus will only be of short term economic benefit to the region but will leave a degraded site and a long term source of both Cyanide and possibly Arsenic pollution to the Timbarra and thus the Clarence River Catchment.

(6) * The process of community consultation was in our opinion most deficient.

Read 29/8/95 Falls

(7) * Insufficient information regarding processing (gold extraction) liquor and associated storage.

(8) * In outlining the proposed pumping station and associated water requirements (make up water etc.) the applicant appears not to have considered the possibility of extreme low-flow conditions as are presently occurring.

(9) * The proposed activities are likely to result in the elimination of the only known populations of Hastings River Mouse, Brush Tailed Rock Wallaby, Eastern Chestnut Mouse, Eastern Freetailed Bat, and Yellow-Bellied Sheathtail Bat on the Timbarra (Malara) Plateau as well as significantly effecting several other endangered fauna.

(10) * The high potential erodability of the waste rock emplacements and of the site in general.

(11) * The siting of the big hill open cut, the pumping site and associated pipeline will in this authors opinion do irreparable damage to the process of reconciliation in this district and possibly statewide.

(12) * A complete lack of true economic safeguards to ensure site rehabilitation.

(13) * No long term studies or results on the potential contamination by processing compounds on the HDPE lining material (pond structures) which will be left on site.

(14) * No information on geological stability of HDPE liner underlaying heap leach pad area on completion of project or long term.

(15) * Failure of the document to deal with water storage structures left on site adequately in regard to toxic concentrations of processing compounds.

(16) * Insufficient research and results on levels of Cyanide and Arsenic remaining in heap leach pad structure after supposed neutralization.

(17) * Insufficient regard for archeological significance of both the proposed big hill open cut(Bold Top Mtn.) and the proposed pipeline corridor.

POSSIBLE IMPACTS ON Duncans,Williams and Nelson cks.

(18) The potential for both short and long term major turbidity and sedimentation of the headwaters of Duncan, Williams and Nelson creeks has not been dealt with adequately given the high erodability of the soils associated with the site. Short term concerns are held in regard to proposed erosion and sedimentation control structures ability to deal with extreme precipitation events.

As the proposal outlines contingency plans for diverting dirty water to the available open cuts, what controls will be in place during initial clearing phases as no open cuts will be available.

(19) The potential erodability of the waste rock emplacements and the long term stability of same will be dependant on the material comprising them as the potential for erosion is likely increased by mechanical disturbance the moderate dispersion rating as provided by Veness and Associates Pty.Ltd. 3.5.4.1 should in these circumstances be looked at somewhat critically.

(20) The long term potential once again for the spent ore heap on the headwaters of Nelson Creek to leach or leak into the groundwater and thereby the creek is certainly a possibility.The composition of any possible spill or leaching events will be entirely dependant on the success of the proposed flushing.As the success of such an operation is dependent on closely controlled circumstances (ie constant agitation of material to be neutralized) we are of the opinion that the concentration of Cyanide will in the long term be significantly higher than this document (EIS) would have us believe.

(21) This says nothing for the possibility of extreme precipitation events or events similar to those just outlined occurring prior to flushing and neutralizing. It would appear that in designing the waste rock and heap leach pad areas the applicant has not apparently considered the possibility of an extreme precipitation event.The EIS also fails to deal adequately with water/process liquor storage facilities both during the operational phase and those left on site at the
(22) projects completion. The rehabilitation plans for ILS BLS and PLS ponds as proposed, is in our opinion completely misplaced as the site is presently a swamp simply replacing peat on the pond structures after backfilling with spent ore etc. is woefully inadequate. As to the intention to leave
(23) several potentially contaminated (Cyanide is not the only toxic compound to be used on site table 2.15 p65) water storage structures on site is nothing short of an environmental timebomb.

FAUNAL SIGNIFICANCE.

(24) The area proposed for mining activities is known to have outstanding faunal values of National and regional significance. A total of 15 Schedule 12 fauna have to date been recorded on the site, with three additional species recorded adjacent. A further 10 species are listed as possibly occuring in the area. Of most significance is the occurence of three endangered owl species in the one vicinity, an apparently healthy population of Tiger Quolls the occurence of three **Psuedomys** species including a population of the nationally endangered Hastings River Mouse and a regionally significant population of the Eastern Chestnut Mouse, populations of at least three endangered macropods including a significant population of the nationally vulnerable Brushtailed Rock Wallaby, the only recent record of Eastern Free-Tail Bat in the region and a regionally significant record for the Yellow Sheathtail Bat.

Martin(1995,p69) notes that foxes have rarely been observed in the area by local residents and that none have been recorded in the project site and that there were few signs of cats in the area. She comments (p32) that " A significant characteristic of the study area is the prevalence of native fauna over introduced fauna."

It is likely that this relative lack of introduced predators is one of the reasons why there is such a diversity of Critical Weight Range species and apparently high population densities of some of these species. Schedule 12 species recorded in the area that are vulnerable to such predation or competition include Tiger Quoll, Hastings River Mouse, Eastern Chestnut Mouse, Parma Wallaby, Rufous Bettong and Brush Tailed Rock Wallaby.

(25) The major roadworks and extensive disturbances proposed for the site are likely to create conditions conducive to a dramatic increase in the numbers of cat and foxes in the are This is a major and serious impact which may lead to further major impacts on or the loss of, many of the vulnerable mammals from the area.

Martin(1995)recognises that introduced predators may affect populations of Tiger Quoll, Hastings River Mouse and Rufous Bettong but only recommends"that a feral animal monitoring program be implemented". There is no consideration of control measures or of what may be done when the mine ceases operations (but the feral animals don't).

The question of faunal values is more adequately addressed in attached support material.

CONSERVATION VALUES -- DEMON NATIONAL PARK

(26) The project area has outstanding conservation values and is a critical component of the promised Demon National Park due by march 96.

(27) The area contains nationally and regionally significant populations of
Accacia Floydii, Eucalyptus olida, and Eucalyptus scias ssp. apoda.
There are significant occurences of Eucalyptus olida dominated forest, rainforest(with Eucalyptus and Brush Box emergents) and sedgelands which are intended to be substantially cleared and disturbed by the proposed operations.

The project area has outstanding flora conservation values which emphasise the need to establish a comprehensive adequate and representative reserve on the Timbarra (Malara) Plateau. Until such time as a reserve has been identified there must be a moratorium upon any mining activities in the area.

The subject of flora is discussed in greater detail in accompanying support material.

Community consultation.

(28) The process of community consultation was in the view of this author, and others, as outlined in Interim Submission at best selective in the members of the community consulted. As a landowner adjacent to and downstream from the proposed site I am in receipt of absolutely no correspondence in regard to the proposal or the associated pump and pipeline. Likewise all residents on both sides of the Timbarra River with the exception of the Kelly family (Hong-Kong Point) with whom I have spoken have received no communication from the applicant , during this time (early 1994 till present) in regard to community consultation processes. I know personally of a number of residents both European and Koori who have felt that their input to the process of consultation has been completely ignored by the applicant in the framing of the
(29) proposal. In particular regard is the concept of a buffer zone around an identified site of great significance to the Bundjalung, Bold Top Mtn. at site meetings attended by myself and at further meetings held at

Community Consultation cont.

the Tabulam Aboriginal Community (Rio) great emphasis was given to the importance of this and associated sites on or near the proposed pipeline corridor by elders Mr Eric Walker.of Tabulam, Mr Ken Gordon of Baryulgil, and Mr Sam Walker of Tabulam, discussion was also held about a buffer zone of some kilometers(around the summit Bold TOP Mtn.) in dimension was suggested somewhat greater proportions than the" buffer zone of sufficient proportions should be established" proposed by Appleton 3.11.2.6 p146. And as no mention of any sites of significance associated with the proposed pipeline corridor were evident in the final proposal indeed to quote Appleton " with the possible exception of the summit of Bold Top Mtn. which possibly holds significance to the Aboriginal people, pre-european archeological aspects do not constrain the project" 3.11.3.1 p146.II feel this anecdote is indicative of the selective process of consultation as undertaken by the applicant and it's minions.

Pumping Station and Water requirements

(29) The EIS deals in a statistical manner only with regard to past flow rates, and it is our contention that in the present conditions(Dept. Water Resource has declared a ban on further water extraction licences downstream) of extremely low/no flow rate in the Timbarra River there should be no thought of continuing with the proposal until good rains have been experienced in the catchment, this is a view held by all residents spoken to by myself.

ECONOMIC SAFEGUARDS.

(30) The financial and practical provisions as described in the EIS for guaranteeing the rehabilitation and revegatation of the mine site 1.8.2 (v) p11 are in our estimation severely lacking. Given the extreme volatility of the international gold markets and the somewhat notorious socio/economic recurd of the mineral extraction industry in regard to fulfilling projected timeline rehabilitation schemes in this district ie Mt. Carrington Mines current problems with their rehabilitation program and in the light of recent oversees experience with similar projects (see attached newspaper article)Nthn. Star August 24 ,95. We would like to see a great deal more work and true economic safeguards designed into the proposal before we feel confident about safeguards.

THE NATION AND WORLD

Disaster declared after cyanide spill

GEORGETOWN, Guyana, Wednesday (Reuter). — Guyana declared the Essequibo River basin an environmental disaster zone yesterday after deadly cyanide-laden effluent seeped into the river from a gold mine for a third consecutive day.

Omai, the Canadian-owned company that owns the mine, said early today it had developed a plan to 'effectively stop the flow of effluent into the Essequibo River within the next two days'.

There were no human deaths or illnesses attributed to the leak since the cyanide seepage was discovered on Sunday, but workers at other mines along the river had reported seeing the carcasses of wild hogs and dead fish floating as far as 40km from the leak site.

Yesterday it was estimated that 1.25 million cubic metres of cyanide-laden effluent had reached the river.

President Cheddi Jagan said Guyana already had appealed for international aid and had received a favourable response. But he made it clear Guyana intended to make Omai bear responsibility.

Environmentalists were outraged by the spill.

The Guyana Environmental Monitoring and Conservation Organisation said it expected the plume of poison to exact a heavy toll on aquatic life in the Essequibo, calling it 'a major disaster with potentially serious consequences for the environment and for the health and welfare of citizens directly affected by the contamination'.

The Essequibo, which runs 975km from the highlands to the Atlantic, is considered one of Guyana's most important natural resources.

Sydney loses rescue 'copter to ACT

SYDNEY. — One of Sydney's three [illegible] to be relocat[illegible]

The move follows a review of the five aeromedical retrieval services [illegible] operating in NSW.

The third would be [illegible] ACT to cover the south-east region, including the snowfields and Hume Highway.

[illegible] ney being left [illegible] as the three Sydney helicopters were only in use 10 per cent of the time.

Acacia floydii

This shrub/small tree is of considerable biogeographical interest as it is only known to occur on the Timbarra (Malara) Plateau. It has been recorded as occurring in dry sclerophyll forest on granite outcrops or near creeks with rainforest (Harden 1991) and low heath woodland on dry sites to tall mesic forest (Binns 1992b). Martin (1995) notes that it is common and widespread within her study area, often as dominant understorey species in New England Blackbutt and New England Blackbutt/Tallowwood forest communities. It has a conservation status of 2RC- (Briggs and Leigh, in prep.) indicating its total lack of reservation.

Martin (1995) claims that part of the population of Acacia floydii (some 2,000 plants) is **proposed** by Mr. Binns to be reserved. This is a significant difference between Mr. Binns proposing that an area be reserved and there actually being a reserve, as in the past Mr. Binns has recommended reserves which State Forests have not accepted and which have thus not eventuated (ie Binns 1993b). State Forests have also previously given commitments to establish flora reserves which have not eventuated (ie Hastings EIS, draft Dorrigo EIS). A proposal by Mr. Binns to establish a reserve can thus have no credibility until such time as it is gazetted.

Martin (1995) cites Binns as noting that A. floydii has been recorded as abundant in several recently logged areas and is considered to be unlikely to be threatened by logging. Unscientific and subjective claims about logging impacts are not relevant to the proposed operations and are no substitute for a scientific appraisal of the likely impacts of the proposed operations upon this species.

Eucalyptus olida

Eucalyptus olida is a species of considerable commercial value as a source of an important volatile oil and thus it is of considerable genetic importance.

This species has been recorded at localities from the Gibraltar Range north to the Timbarra (Malara) Plateau (Harden 1991, Binns 1992b). As a species it has a status of 2RCa (Briggs and Leigh, in prep.) indicating that it is considered adequately reserved to the south of its range in

Gibraltar Range NP. There are no records of its being reserved in the north of its range, though Martin (1995) notes that there is a proposal by Mr. Binns to establish a reserve to the north on the Timbarra Plateau. As noted above such a proposal has no validity until it is actually established.

There is currently no assessment of the 1750 or remaining extent of *Eucalyptus olida* as a dominant in floristic associations, though it is apparently naturally rare with limited occurrences. The Commonwealth of Australia (1995) note *"relict, naturally rare communities would warrant much higher levels of reservation than 15 per cent of their pre-1788 distributions. ...Forest types [whose distribution is sporadic and concentrated in a few localities] would require elevated levels of reservation."* and *"The application of the benchmark for individual forest communities would need to take into account the level of depletion, rarity and threatening processes, including global warming."*. Given the rarity of *Eucalyptus olida* dominated forest communities a precautionary approach requires that all remaining occurrences be placed under moratoria until a CAR reserve system is decided.

Martin's (1995) claim that *"given the restricted distribution of the species, the overall loss would be considered to be moderate"* is ludicrous. Surely the more restricted a species is then the more significant is the loss of any population, not the other way around.

The proposal involves the direct destruction of over half the identified stand of *Eucalyptus olida* and is likely to result in significant disturbance to much of the remaining stand. Unsubstantiated claims by Mr Binns that this species regenerates well after disturbance (presumably logging disturbance where this species is unlikely to logged) and foliage harvesting is not relevant to the proposed operations and is no substitute for a scientifically valid assessment of the impacts of the proposed operations upon this species and the viability of the community which it dominates.

Eucalyptus scias ssp. apoda - Large-fruited Red Mahogany

This tree/mallee is apparently endemic to the Timbarra (Malara) Plateau area (with a record in the nearby Boonoo SF) and thus of considerable biogeographical importance. It has been recorded near granitic rock outcrops associated with Leptospernum shrublands, also *E. campanulata* open forest (Binns 1992b). Martin (1995) recorded two populations associated with rocky outcrops, on the margin of New England Blackbutt/Diehard Stringybark/Red Bloodwood woodland, noting that it naturally occurs in scattered small populations (<5ha) or as scattered individuals.

It is of limited distribution, only been recorded in two other state forests in the vicinity and has a conservation status of 3K (Briggs and Leigh, in prep.) reflecting is poorly known status. Apparently this species is currently not represented in the reserve system and thus there is an urgent need to ensure a viable population is protected.

One of the two identified populations within the study area occurs adjacent to the "potential Poverty North open cut" and is thus likely to be directly affected by the proposed operations. Additional populations may also occur in areas to be affected. Martin (1995) cites Mr. Binns as noting *"This species may be at risk from forestry activities and has been listed as sporadic and uncommon ...It has been proposed that prescriptions are recommended to ensure no damage to trees of this species result from logging activities"* and conversely that it is *"likely to regenerate well after forestry disturbance"*. Mr. Binns contradictory and subjective assessment is not relevant to the proposed operations and is no substitute for a scientifically valid assessment of the impacts of the proposed operations upon this species.

Pultenaea pycnocephala

This erect shrub has been recorded in woodland and dry sclerophyll forest on granite (Harden 1991) and in Tableland Heath Forest, being common around swamps (Binns 1992a). Martin (1995) recorded it occasionally within New England Blackbutt, *Eucalyptus olida*/New England Blackbutt and New England Blackbutt/Diehard Stringybark/Red Bloodwood communities.

Until recently it was recorded from Werrikimbe NP north to Gibraltar Range NP (Harden 1991) with a record also for Girraween NP in Queensland. It has recently been recorded in Boonoo SF (Binns 1992b). It has a conservation status of 3RCa (Briggs and Leigh, in prep.). To the south it is reserved in Guy Fawkes River NP, Gibraltar Range NP and Werrikimbe NP (Binns 1992a) but is not reserved in this area. There is a need for a reserve to be established on the Timbarra (Malara) Plateau to ensure the conservation of this species throughout its range.

No assessment of impacts is attempted.

FAUNA

The area proposed for mining activities is known to have outstanding faunal values of national and regional significance. A total of 15 Schedule 12 fauna species have to date been recorded on the site, with three additional species recorded adjacent. A further 10 species are listed as possibly occurring in the area. Of most significance is the occurrence of three endangered owl species in the one vicinity, an apparently healthy population of Tiger Quolls, the occurrence of three *Psuedomys* species including a population of the nationally endangered Hastings River Mouse and a regionally significant population of the Eastern Chestnut Mouse, populations of at least three endangered macropods including a significant population of the nationally vulnerable Brush-tailed Rock Wallaby, the only recent record of Eastern Free-tail Bat in the region and a regionally significant record for the Yellow-bellied Sheathtail Bat.

Martin (1995, p69) notes that foxes have rarely been observed in the area by local residents and that none have been recorded within the project site and that there were few signs of cats in the area. She comments (p52) that *"A significant characteristic of the study area is the prevalence of native fauna over introduced fauna"*.

It is likely that this relative lack of introduced predators is one of the reasons why there is such a diversity of Critical Weight Range species and apparently high population densities of some of these species. Schedule 12 species recorded in the area that are vulnerable to such predation or competition include Tiger Quoll, Hastings River Mouse, Eastern Chestnut Mouse, Parma Wallaby, Rufous Bettong and Brush-tailed Rock Wallaby.

The major roadworks and extensive disturbances proposed for the mine site are likely to create conditions conducive to a dramatic increase in the numbers of cats and foxes in the area. This is a potentially major impact that may lead to dramatic impacts on, and/or the loss of, many of the vulnerable mammals from the area. Martin (1995) recognises that introduced predators may affect populations of Tiger Quoll and Rufous Bettong but only recommends "that a feral animal monitoring programme be implemented", apparently relying on company personnel to report any sightings. There is no consideration of control measures or what will be done once the mine is closed (and the disturbances remain).

Austeco (1992, p45) note *"There is some evidence that small macropods in the Critical Body Weight Range (CWR) of 200-500 grams, such as the Parma Wallaby and Rufous Bettong, have declined in range since European settlement as a result of predation by introduced foxes ... CWR species appear to persist in moist high quality forests ... and other areas from which foxes are absent, and in which other predators such as Dingos and Quolls are abundant. The nature of the relationship between Foxes, Dingos, Quolls and CWR mammals is poorly understood, but may be critical to the long term future of many small macropods and native mammals. One theory suggests that CWR species persist where Dingos are common and actively exclude Foxes."*

Jarman (1986) considers *"where rabbits support numerous foxes, more vulnerable species such as rat-kangaroos or bandicoots may be subjected to insupportable predation. In north-eastern New South Wales Rufous Rat-kangaroos* Aepyprymnus rufescens *persist only where foxes and rabbits are scarce..."*

Bennett (1990) notes *"Foxes, efficient introduced predators in Australia, have been associated with the declining status of medium-sized marsupials (e.g. Brush-tailed Bettong, Parma Wallaby, rock wallabies)."*

Austeco note *"Roads are commonly used by foxes and it is possible that roading associated with timber harvesting will hasten invasion by foxes and reduce populations of threatened small macropod species. There does not appear to be any evidence to confirm or reject this hypothesis, but we consider it to be of sufficient importance to justify a significant allocation of resources for further investigation and monitoring. ...It is proposed that all logging roads not required for essential ongoing management purposes be closed and allowed to revegetate following harvesting."*

Tiger Quoll *Dasyurus maculatus* (S.12 Vulnerable and Rare)

Mansergh (1984) notes that the Tiger Quoll is considered to have a patchy distribution and be common to uncommon in Tasmania, very rare or extinct in South Australia, to occupy about half its pre-European range and considered rare in Victoria, to have a limited disjunct range and be uncommon in Queensland and to be generally uncommon (but more common in the north) in New South Wales.

The forests of north east NSW are reportedly this species stronghold on mainland Australia, and within these forests it appears that the highest population densities are in or near the larger relatively undisturbed forests. While they evidently range far from these strongholds, and do breed elsewhere, they are still declining in northern NSW and may ultimately rely upon these strongholds for their long-term survival.

Between 1960 and 1962 (with occasional visits up until 1965) CSIRO conducted an extensive survey in the upper Clarence and Richmond River valleys to the north-east of the study area (Calaby 1966), during which they recorded 16 Tiger Quolls, all in the upper Clarence valley (from the Richmond Range west to Acacia Plateau). They concluded that the Tiger Quoll was "*quite common throughout the area*". Smith, Hines, Pugh and Webber (1989) conducted a systematic survey of the upper Clarence River valley (Richmond Range west to Acacia Plateau) utilising cage traps and only located one Tiger Quoll in opportunistic trapping, stating that the Tiger Quoll *"has undergone a marked decline in range and density on mainland Australia. The detection of only a single individual during this survey gives reason for concern about is survival within the region."* In 1992 the NPWS conducted a systematic survey utilising cage traps and hair tubes throughout

the same area and located one Tiger Quoll in the last remaining large stand of oldgrowth forest left in the region - Dome Mountain - and one in the Tooloom Scrub Flora Reserve (A. Gilmore pers. comm.). The survey conducted by Austeco in 1992 for the Urbenville MA EIS failed to locate any individuals (District Forester, M. Curran, pers. comm.). Given the greater survey effort and improved methodology of recent surveys it is evident that the Tiger Quoll has undergone a very significant decline in that area over the past 30 years and may soon become locally extinct.

The apparent decline in populations of Tiger Quolls to the north/north-east and its classification of sparse in the Tenterfield MA should be of considerable concern. The sighting of two individuals and evidence of two others (including a juvenile) suggests that the mine area supports part of a significant population of Tiger Quolls. It is evident that the Washpool Wilderness to the south encompasses the most regionally significant population, though with the intensification of disturbances on the Malara Plateau the potential for the loss of a source population on the plateau certainly exists.

Austeco (1992, p53) consider *"Potential threats to this species include competition from foxes, and long term habitat degradation by burning and grazing."*

Parma Wallaby *Macropus parma* (S.12 Vulnerable & Rare)

While the Parma Wallaby appears to be relatively common to the south-east of the proposed site on the Gibraltar Range it appears to be absent from the forests to west and north of the proposed mine. On the Malara Plateau the Parma Wallaby appears to be restricted to the southern end of the plateau in and around the mine site. The mine site appears to be central to the only known population on the plateau.

Read and Fox (1991) note that due to its restricted range and continuing pressures on its forest habitat the Parma Wallaby is a species that is especially vulnerable to extinction. They note that since European settlement its range has declined, though consider with the paucity of information about population size, distribution and ecology its status must be treated with some reservation until more data is available. They state *"Obviously the species has survived in these disturbed forests but until information is available on the habitat requirements of M. parma it is not possible to determine the impact of particular forestry practices on this species."*

The direct loss of habitat and the potential for increased predation and road kills indicate that the proposed operations are likely to have a significant effect on the Malara population. There is a need for further assessment of the population size of the Parma Wallaby population in the vicinity of the mine site and the dispersal ability of the Parma Wallaby across the Timbarra River to the Gibraltar Range to be able to determine how significant this impact would be and whether it will affect the long-term survival of the local population.

Rufous Bettong *Aepyprymnus rufescens* (S. 12 Vulnerable & Rare)

Schlager (1981) notes *"Predation by foxes and dingoes has probably strongly influenced the present status and distribution of the species", "The general requirements of most of the Potoroinae for dense ground cover, together with a high level of home range fidelity, make them potentially susceptible to the effects of unnatural fire regimes.", "Lack of cover during the first few weeks following fire imposes high predation pressures upon those animals surviving in their burnt-out home ranges.", "Potoroinae have a high capacity to survive the short-term effects of fire. However, it is the long-term implications of unnatural fire regimes which require most*

consideration due to changes caused in the favouring of some plant forms and the elimination of others, resulting in changes to habitat structure, and hence to habitat suitability."

Kavanagh (1982) notes that management to favour Rufous Bettongs could best be achieved by controlling competitors (mainly rabbits), predators (foxes and dingoes) and beef cattle stocking rates.

Southwell (1987) notes that the Rufous Bettong is reported to eat a wide variety of food items including subterranean roots, tubers and fungi, as well as grasses and herbs. He found that their distribution was positively related to high food-plant diversity, moderate topography, and high numbers of cattle (this later correlation is most probably because of similar habitat preferences).

The fact that the species has significantly declined in NSW, has a preference for moderate topography, is vulnerable to predation, suffers possible detriment from unnatural fire regimes and has a diet including hypogeal fungi makes this species a high conservation priority. The loss of habitat and the opening up of the mine area will directly and indirectly (ie increased predation and road kills) affect this species. It is likely that this species is still declining in NSW and thus the degradation of any areas of high quality habitat, such as occur in this area, is of significance.

Brush-tailed Rock Wallaby *Petrogale penicillata*

The Brush-tailed Rock-wallaby *"was once abundant and ubiquitous throughout the mountainous country of eastern Australia. Its range extended for 2500 km along the Great Dividing Range with outlying populations in the coastal valleys and ranges to the east of the Divide, and the slopes and plains to the west as far as Cobar in New South Wales and Injune (500 km north-west of Brisbane) in Queensland"* (Short and Milkovits 1990).

Short and Milkovits (1990) found Brush-tailed Rock Wallabies at only 5 of the 18 sites where they had been recorded prior to 1920. They note *"Colonies of rock-wallabies appear to be more numerous and individuals within colonies appear to be more abundant and/or easier to observe in Queensland and northern New South Wales"*.

The range of the southern subspecies *P.p.penicillata* extends north from the Grampians in south-western Victoria to Nanango in Queensland. Short and Milkovits (1990) identified 5 areas in north-east NSW where colonies are known to persist: Urbenville (Bonalbo, Wallaby Ck., Urbenville, Kyogle), Tenterfield (Boonoo Boonoo Falls); Dorrigo (Dalmorton, Guy Fawkes River NP); Kempsey (Macleay R, Apsley R) and Dungog (Myall Ck). In addition to this there are colonies in Grafton (Mann R, pers. obs.) and Gloucester (Barnard River, H.Hines pers. comm.).

The Brush-tailed Rock Wallaby has been recorded at a number of localities in north-east NSW, principally as a number of small populations in the rugged country associated with the Great Escarpment. It has an apparent preference for steep rocky northerly facing slopes and cliffs for shelter, often close to water. At a number of localities it has been noted to feed extensively on grassy creek flats (D. Pugh pers. comm.).

Martin (1995) identified Brush-tailed Rock Wallaby as occurring on the site and acknowledges that there are no other known populations on or around the plateau. She attempts to downplay the significance of this by claiming (without any apparent foundation) that those she regularly observed were only using the site as "corridor habitat" and further claims that populations are likely to be in every direction around the site rather than the site itself (despite having no evidence for

this). The concept of Brush-tailed Rock Wallabies regularly and frequently (ie presumably many times a night) using this supposed corridor is a novel theory without any apparent scientific basis.

Martin (1995, p73) notes that on the site *"Most sightings have been strongly associated with massive rocky outcrops and steep rocky gullies"* (ie prime habitat), with the majority of sightings *"in the vicinity of Bald Top Mountain and the adjoining ridgeline to the north-west"* (ie in the centre of the proposed mine and in an area proposed to be subjected to major mining). She (p 74) also notes that *"The mean home range of individual wallabies in central New South Wales was found to be 15 ha"*, which does not support her theory that they are ranging over some hundreds of hectares.

From the evidence presented by Martin (1995) the only known population of Brush-tailed Rock Wallaby on the Timbarra (Malara) Plateau is located in the centre of the mining area. It would thus appear that the refuge habitat (rocky areas), feeding areas (grassy plateau areas near rocky areas) and watering areas (streams) will be directly and massively impacted by the proposed mine.

Anon (1988) consider *"Predation by Foxes is likely to have been an important factor in the disappearance of the Brush-tailed Rock-wallaby from the Grampians, and the current low population levels [in Victoria] are possibly limited by Fox predation..."*

Kinnear (1987) studied the population dynamics of five remnant Black-footed Rock-wallaby populations in the central wheatbelt region of Western Australia. From 1979-82 the populations remained relatively stable or declined. Beginning in 1982 a Fox control programme using 1080 baiting was implemented on two sites and maintained for 4 years. He found that during a 31 month period 183 foxes were knowingly destroyed, which showed that poisoned foxes were rapidly being replaced by immigrant foxes. Despite this he concluded that the control programme was effective as on the two baited sites Black-footed Rock-wallaby populations increased by 138% and 223% while the unbaited sites recorded an increase of 29% and decreases of 14% and 86%.

Anon (1988) consider the effects of competition of Brush-tailed Rock-wallabies *"with Goats and European Rabbits for food are unknown but are likely to be detrimental and may be exacerbated in years where food is scarce. Unlike competition for food, where the effects are often subtle and difficult to detect, competition for shelter has been directly observed... and may be an important factor in limiting the size and extent of Brush-tailed Rock-wallaby populations."*

Short and Milovits (1990) considered that there does appear to be an inverse relationship between the presence of foxes and goats and of rock-wallabies, recommending that *"Remnant populations will require suppression of goat and fox numbers for their long-term survival"*.

Any Rock Wallabies that manage to survive the massive direct impact of the mine are likely to be picked off by feral animals (foxes and cats) invading the area along roads and through other disturbed areas. There is also a likelihood that some Rock Wallabies may be killed by vehicles on roads.

Contrary to Martin's (1995, p118) conclusion that the mine and her token prescriptions *"should ensure that the direct impacts of the project on the species would be minor"*, there is a high probability that the direct impacts alone will eliminate the species from the area and that any survivors will be eliminated by the indirect impacts resulting from the project. The issuing of a licence to kill the nationally vulnerable Brush-tailed Rock Wallaby in this case will most likely result in the elimination of the only known population on the Timbarra (Malara) Plateau.

Hastings River Mouse *Pseudomys oralis* (S.1 Endangered, S.12 Threatened)

In 1985 a Forestry Commission survey located the largest population of Hastings River Mouse then known, some 13 individuals, along Boundary Creek in Forestland State Forest (Ovenden 1985), to the south-west of the Timbarra mine site. One side of the creek had recently been logged so the Forestry Commission reserved a 100 metre wide wildlife corridor along the creek and logged the rest (HRMRT 1992a). A "light wildfire" fuelled by logging debris burnt out the area in 1986 (Mackowski 1987c) and despite 4 retrapping attempts the population appears to have become extinct (HRMRT 1992a). It would appear that one or more of the disturbances (roading, logging and burning) were responsible for eliminating this population.

Cockburn (1992) notes that the soaks and stream-side habitats utilised by Hastings River Mouse *"are susceptible to disturbance arising from fire, grazing by cattle and macropods, and the impact of logging and road building. ... Forestry activities (notably road-building) would exacerbate the effect of cattle and predators, and perhaps also increase the risk of fire."*

There is evidence of sustained decline, both in broad geographic range, and in the form of local extinction of populations over the last 10 years. Of the four sites monitored for more than seven years (Werrikimbe, Mt. Hyland/Blicks River, Forestland and Mt. Royal) there have been localised extinctions at two sites (Werrikimbe and Forestland) and range reduction at another (Mt. Hyland/Blicks River). There have been apparent localised extinctions following logging and burning (Forestland SF and Hyland SF) and following burning (Werrikimbe NP and Blicks River FR).

Less than 200 individuals have been recorded since the species' re-discovery in 1969. It has been recorded from approximately 30 locations (areas over one kilometre from the nearest capture site) apparently reflecting 3 populations of relatively limited extent (Mt. Royal, Billilimbra, Gambubal) and two meta-populations thinly spread over more expansive areas (Werrikimbe/Carrai, northern Dorrigo plateau). Only 1-2 individuals have been found at one time at most locations and more than 10 individuals have only been found at any one time at 3 locations. No metapopulations have yet been identified which can be considered to be viable. It is increasingly likely that the total of all populations may be less than 1,000 and is unlikely to exceed 2,500.

The records of two female Hastings River Mice on the Timbarra (Malara) Plateau is highly significant. This is the most northerly known population in NSW and thus the nearest known population to those in Queensland. Given that none of the known populations is likely to be genetically viable in the long term, genetic exchange between populations is essential. This population thus potentially represents a stepping stone from the nearest known population in Billilimbra SF towards the Queensland populations if Hastings River Mice are able to disperse through the apparently unsuitable habitat between.

If Hastings River Mice are unable to disperse between such topographically isolated areas then the Malara population would need to be maintained at a viable level to ensure ongoing survival. With only two known individuals (one of which disappeared after having a transmitter attached to it) there is currently no indication of the total size of the Malara population. Though given that the intensive trapping effort in other localities failed to locate any individuals it is apparent that, like at most other localities, the mouse is likely to be at low population densities restricted to a limited number of locations. Without genetic exchange with other areas the survival of every Hastings River Mouse on the Malara Plateau is probably vital to the continued survival of the species on the plateau.

With two individuals located in close proximity to each other it is apparent that the site within the mining area is highly significant and cannot be dismissed as the location of a dispersing individual. As the only known site on the Malara Plateau it is of particular value. Elimination of this population may be tantamount to eliminating the species from the area, either by destroying the only population or by reducing the overall population on the plateau below a threshold critical for maintaining the population's genetic fitness.

Disturbances such as frequent burning (causing attrition of food plants and refuges - grass clumps and logs), grazing (degrading seepages and soaks, removing cover and food sources), roading and logging (causing hydrological changes and facilitating predation) may all be contributors to the significant decline of this species since European settlement and the ongoing elimination of surviving populations. Competition with Bush Rats is also implicated as another possible factor in this species rarity.

Martin's (1995 p59) claim that because the second capture of a Hastings River Mouse adjacent to an apparently recently constructed track *"indicates that the species is capable of recolonising heavily disturbed habitat"* is without any credibility.

The proposal to turn the only known site of the Hastings River Mouse on the Malara Plateau into an open cut mine will undoubtedly eliminate any individuals in that area. It will not simply remove *"some potential foraging and shelter habitat"* (Martin 1995, p115) but rather eliminate all known occupied habitat on the Malara plateau, hardly an insignificant impact. There will also be long term consequences of the proposed mining operations on potential Hastings River Mouse habitat, with roading and earthworks altering hydrological regimes and facilitating increased predation by introduced predators. Martin's (p115) claim that *"in the long term, proposed rehabilitation measures would be expected to mitigate effects"* is absurd, we don't know how to recreate its habitat, let alone understand what its habitat requirements are.

The proposals to undertake additional surveys for the species on the plateau after the mine proceeds and to trap the mine site before it is cleared to relocate any mice to another area (or zoo) will not mitigate impacts upon the species. If the mine site turns out to be the only suitable habitat (in terms of actual utilisation) then it will be too late once the mine has started operations to decide to protect its habitat. Relocating any individuals found to another site (presumably one where the mouse is currently absent due to unsuitability or threatening processes) is highly unlikely to be successful.

The issuing of a licence to kill the nationally endangered Hastings River Mouse in this case will most likely result in the elimination of the only known population on the Timbarra (Malara) Plateau.

Eastern Chestnut Mouse *Pseudomys gracilicaudatus* (S.12 Vulnerable & Rare)

The Eastern Chestnut Mouse has been recorded far to the east of this area on the Richmond Range at Mt. Pickapeen and far to the north on the McPherson Range at Mt. Clunie and apparently to the south-east in Washpool SF. The location of one individual near the proposed heap leach pond site, with intensive trapping effort, is of considerable importance as the only known site west of the Gibraltar Range.

While Martin (1995) maintains that the actual capture site will not be directly affected by the heap leach pond it is evident that extensive areas of potential habitat adjacent to the capture site will be

destroyed with numerous potential consequences for indirect hydrological and pollution impacts on the identified site. Other indirect impacts are likely to include increased predation.

Given the limited and restricted occurrences of this species in the Clarence valley the issuing of a licence to kill the Eastern Chestnut Mouse in this case will most likely result in the elimination of the only known population on the Timbarra (Malara) Plateau.

Powerful Owl *Ninox strenua* (S.12 Vulnerable & Rare)
Sooty Owl *Tyto tenebricosa* (S.12 Vulnerable & Rare)
Masked Owl *Tyto novaehollandiae* (S.12 Vulnerable & Rare)

Milledge, Palmer and Nelson (1991) found that the relative frequency of records of the Sooty Owl in different age classes suggests that its optimum habitat is large patches of old-growth forest. They note *"The Sooty Owl was most abundant in old-growth forest, but often occurred in young stands... The proximity of some records in young stands to old-growth stands... suggested that some pairs of Sooty Owls include areas of both young and old-growth forest in their extensive home ranges... However, some findings in young forest removed from old-growth forest ...indicated that other pairs were able to occupy stands lacking high densities of old live trees.",* and *"Most records were clustered in and about old-growth stands with a core area greater than 1 km^2".*

York and Shields (1992, p29) also cite a study that recorded Sooty Owls in forests over 60 years old. Austeco (1992 p25) note *"Previous studies suggest that Sooty Owls prefer moist oldgrowth forest habitats ... The ecological reasons for oldgrowth dependence by this species are unclear...".*

The Mt. Royal FIS (pB-37) proposes that *"the nesting areas of large owls will be defined by territory mapping and directional searches from triangulation".*

Austeco (1992, p25) state *"Management practices should aim to protect or minimise disturbance of known home ranges* [of Sooty Owl]*... until further information is available."* They then go on to recommend the protection of 200m around "known" nest sites and modified harvesting in only one of the areas it is known to occur in.

Kavanagh (1989b) recommends *"that old growth forest be reserved in gullies in wide (>200m) corridors for distance of up to 1km in either direction at all locations where Sooty Owls were detected."* and that for Powerful Owls and Masked Owls the general locality (ie 2.5km radius or 2000ha) around each site where they were detected be well served by a network of reserved old growth forest along gullies as wildlife corridors (>100m width). He also recommends the employment of a specialist "nest finder".

As evidenced by Kavanagh and Webb's (1989) findings, where large areas of unlogged forest were retained and prescriptions similar to those mentioned above were adopted, even Kavanagh's proposed prescriptions will not necessarily ensure the conservation of the Powerful Owl.

The proposed mine involves the destruction of significant areas of riparian vegetation and the destruction of potential nest and roost trees. Thus the proposal is likely to have a significant impact on all three species of owls.

It is considered imperative that to ensure the conservation of these endangered owls in north-east NSW it will be necessary to reserve sufficient territories of breeding pairs to ensure the

maintenance of viable populations of all three species. Areas, such as this part of the Malara Plateau, where the three species occur together are sites of high conservation significance and should be reserved.

Stuttering Frog *Mixophes balbus*

As well as directly destroying riparian habitat the proposed operations will significantly affect the hydrological regimes and water quality downstream by altering streamflows and causing increased turbidity and sedimentation. It can also be expected that pollutants from the Heap Leach Pad and solution ponds will have a significant impact downstream. Thus it can be expected that the proposed operations will have a significant impact on the Stuttering Frog.

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NEW SOUTH WALES ABORIGINAL LAND COUNCIL

NATIVE TITLE UNIT

FAX TRANSMISSION

*** Please deliver immediately ****

TO:	**Vince Fallico**
AT:	**Dept. Mineral Resources, Admin. Branch**
FAX:	**901 8493**
FROM:	**Shawn Whelan, Legal Officer**
TEL:	**(02) 689 4415**
FAX:	**(02) 687 1238**
SUBJECT:	**Timbarra Gold Project EIS Further submission from Moombahlene Local Aboriginal Land Council**
Date:	**28 August 1995**
Number of pages:	**5 (including this page)**

Dear Mr Fallico,

The proposed mine falls within the gazetted boundaries of the Moombahlene Local Aboriginal Land Council, based in Tenterfield. I enclose a copy of minutes of meeting of that LALC held on 23 August 1995. Please note the second-last paragraph, which states:

(i) The community of our Tenterfield people, members of M.L.A.L.C. are really very concerned over the environmental impact it [the mine] will have not only on our community but also Tabulam and we also support the issues raised to the Director General....concerning the Timbarra Gold Mine Project. [Note this is a reference to the multi-party submission dated 10 August 1995]

I also enclose a copy of the names and signatures of a number of MLALC members including the Chairperson (Sam Daley) and the Secretary (LM Duroux). Accordingly, the multi-party submission dated 10 August 1995 adopted by members of the Tabulam and Drake communities should now be regarded as being made on behalf of the Moombahlene LALC and the individual signatories, as well as the initial signatories.

Yours sincerely,

S. Whelan

9th Floor, 33 Argyle Street, Parramatta, 2150

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Ph: (02) 689 4444
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99

Moombahlene L.A.L.C. meeting

Date = 23-8-95

Venue = M.L.A.L.C.

Time = 11:20 am.

meeting opened by chairperson.

Visitors for today are Dave Brown - Rep + John Roberts, chairperson from Far North Coast.

Chairperson spoke on purpose of this meeting members of M.L.A.L.C. feel that they are being (2) held in jeopardy because of employment of cyanide being contained in the water.

Dave Brown handed papers to members to read concerning Timbarra Gold mine Background Briefing.

Dave Brown explains about 2 issues — (3) (1) N.T. (2) E.I.S. (Environmental Impact Statement)

It seems Native Title is an issue = re - water catchment - amount of (4) waste that is going to run into the rivers. A lot of water from the rivers is going to be used. It will not only affect Tabulam but will ~~also~~ also affect the economy of Tenterfield

Dave Brown explains the briefing of Timbarra Gold mine Background.

Dave considers that mining should not (5) go ahead unless Native Title is properly addressed; the effect of the pumping of water is fully examined + explained; (6) + the safeguards against cyanide spilling or seeping into the river are 100% watertight. His advice was that these subjects should be legally investigated.

John Roberts asked numerous questions on the 10th August + never received any positive replies.

This issue has now been taken up with the N.S.W.A.L.C. as the ~~issue~~ issues will be

taken out on our Chairperson or M.L.A.H.C. Community. Sam refers to Land Rights Act 1983. = Dabe Brown spoke on some + explained that land that can be claimed on Crown land etc: = Native Title has more say over land claims which have significance to any person under the Federal Govt. law. So any person who has any claim of inheritance or of belonging may well have first preference to the claim.

Dave Brown stated that if any claim was made on land in our Boundries (M.L.A.H.C.) we have as members every right to way lay the claim until every thing is sorted out + Tenterfield Land Council has some input into the claim.

The community of our Tenterfield people, members of M.L.A.H.C are really very concerned over the environmental impact it will have not only on our community but also Tabulam + we also support the issues raised to the Director General, Dept. of Mineral Resources, P.O. Box 536, St. Leonards. N.S.W. 2065 concerning the Timbarra Gold mine Project.

A meeting to be raised in the future to discuss possible land claims. This will be held in Tenterfield.

Meeting closed 1:15pm. by Chair.

Persons supporting this submission (continued):

Name	Organisation/interest	Contact address	Signature
L.M DUROUX	SECRETARY OF M.L.A.L.C.	9 MOLESWORTH ST. TENTERFIELD.	L.M. Duroux
C.L. DALEY	M.L.A.L.C.	143 NAAS ST	C.L. Daley
K.J. Donnelly	M.L.A.L.C	4 Casino Rd.	Kathy Donnelly
L.F. Daley	M.L.A.L.C.	127 Petrie St.	Laura F. Daley
H. Binge	M.L.A.L.C	127 Petrie ST	[illegible]
N. BINGE	M.L.A.L.C	127 Petrie St	Noelene Binge
W. Binge	M.L A.L.C	74 MARTIN ST	Walter C Binge
M. JARRETT	M.L A.L.C.	2 LINK. ST	Merryn L. Jarrett
C. McIntosh	MLALC	7 Railway Rd	C McIntosh
Bruce McINTOSH	"	"	B McIntosh
Patrick Duroux	MLALC	20 Miles St	P Duroux
Patrick Duroux	MLALC	"	PT Duroux
Nicole McGrady	MLALC	3/74 Martin St	Nicole McGrady
DARREN DALEY	MLALC	4 CASINO Road	Darren Daley
Beatha Daley	MLALC	94 MARTIN S	Beatha Daley
Sam Daley	M.L.A.L.C	94 MARTIN ST	Sam Daley
Johon Morrissey		1/74 MARTIN ST	
RONELLA JEROME	(M.L.A.L.C)	151 BULWER ST	Ronella L Jerome also for Paul Tandy

c/- Drake Post Office
DRAKE NSW 2469

The Director-General
Department of Mineral Resources
PO Box 536
ST LEONARDS NSW 2065

RE: PROPOSED TIMBARRA GOLD PROJECT via Tenterfield NSW

I/we object to the development application by Capricornia Prospecting Pty Ltd for an open cut gold mining operation on the Timbarra Plateau and request that a Commission of
(1) Inquiry be held into the proposed mine and its environmental impact. The objection is based on the following concerns.

(2) EXTRACTION OF WATER FROM THE TIMBARRA RIVER AND REDUCED FLOW.

In relation to this concern the following is submitted:-

(3) * No consideration of the effect on those downstream of the pumping site
(4) *No minimum flow levels have been set to define when pumping will cease
(5) *No consideration of the effect on the aquatic life; no study has been done to establish if the reduced amount of water in the river will affect the fish and other aquatic life.
(6) *No figures are given for the current level of water in the river. We have been drought declared and the water is at a very low level. It would be impossible to take the required water from the river under these conditions.
(7) *The mine requires 783 million litres of water every year (to replace water lost through evaporation for example). This amount will be required from the Timbarra River in the first year of operation. In addition, water will be needed to set up the leach heap pads. No figure has been given in the EIS for the total start up demands of the project (including the start up of the leach heap pad).
(8) *The open cut mines are across 2 creeks and so the water from these creeks will no longer flow into the Timbarra.
(9) * At the completion of mining, these mines will fill up with water. It is calculated that this will take 10 to 12 years in the case of one mine (Big Hill mine). After this the mine will overflow. Thus the catchment of this area will be lost for 10 to 12 years.
(10) *When the mines overflow the water containing sediment and possible cyanide will flow into the creek and thence the river.
(11) *The Timbarra River is one of the major recreation areas for the Drake and Tabulam community.
(12) *Extraction of water from the river will also reduce

underground water flows thus reducing the visible surface water supplies.

(13) *The Timbarra River is the only source of water for the Aboriginal community and many others downstream of the proposed mine.
(14) *The Timbarra River is also a source of water for primary producers and any reduction of flow will seriously affect the economics of the area.
(15) *The Timbarra River is the headwater of the Clarence River which is already closed because of pollution.

ECONOMICS

The following concerns are submitted in relation to the economics of the proposed project;

(16) * It is estimated that total gold sales will be $104 million during the life of the mine. The report states that $16.2 million will be expended on wages and government royalties and taxes every year. Given this, over the projected 4 year life of the mine, only $39.2 million would be left for profits, dividends, rehabilitation and other costs. The economic viability of the project is therefore questionable.
*There is concern about the financial status of the company. If they go broke and leave before the end of the life of the proposed project what happens if the bond is not enough to clean up the mess? Will it be left to the community like the last mine?
*The ore is only low grade (0.8g/t) which also makes the economic viability of the mine questionable.

LEACH HEAP PADS

In relation the this concern the following is submitted:

(17) *The computer prediction for a spill of cyanide is 2%. This is not acceptable given that the cyanide will contaminate the Timbarra River and the ground water rendering the water system DEAD.(unable to sustain any life)
(18) *Possible perforation of the HDPE liner in the leach heap pad and leakage of cyanide.
*Lack of an adequate monitoring program for any cyanide leaks.
(19) *Lack of a plan and disinterest in warning people affected by any cyanide leaks.
(20) *The contingency plan in the event of heavy rainfall onto the pad is to pump the cyanide solution into the Big Hill mine. There are no details of how this is to be done and who would do it. Also in the event of heacy rain it is possible that the mine could overflow into Duncans Creek and thus take cyanide into the Timbarra River catchment.
(21) *The leach heap pad is located on an area of rare

wetland/sedgeland vegetation. The pad will be 29ha in area. There is only 650ha of this type of vegetation in the whole area of some 22,000ha.

(22) *The mining company plans to leave the HDPE liner there when it completes mining. This is not satisfactory. Neither is its plan to cover it with dirt and plant trees on it. *The

(23) land where the pad is planned to go is not stable and it is feared that with stresses and strains on the land the pad will subside. The cyanide in the pad will then spill with devastating results.

(24) *The ability of the cyanide solution ponds to handle spills from the leach heap pad is in doubt especially given the heavy rains that we have here. It states on page 25 of the Surface water report that "any spill will contain residual cyanide levels that are higher than acceptable for release into natural waterways." Any possibility of spill is therefore not acceptable.

(25) *To the best of my/our knowledge white ants are found in the area of the proposed project site. White ants will eat plastic thus being a threat to the integrity of the leach heap pad liner.

(26) *There is no way of detecting possible white ant infestation in the leach heap pad liner.

BOND

(27) * It is understood that the mining company has to give the Government an amount of money equal to the cost of cleaning up and rehabilitating the site at the end of the mine. Thus amount has not been set. The amount shoud be substantial given the risk of accidents occurring and the cost of the clean up process.
*It should be an up-front payment and not a progressive payment in case they bail out during the expected life of the mine.
*The method of calculating the bond amount has also not been worked out

FLORA AND FAUNA

In relation to this concern the following is submitted:-

(28) *There is one endangered species and 14 rare/vulnerable species which will be effected. In some cases their gabitat will be lost forever. In addition there are some 10 vegetation types represented in the area. At page 123 of the EIS says the the proposed project site is "relatively undisturbed bushland".
*I/we do not approve of the issue of a S 120 licence (NPWS)as there are many rare/vulnerable and endangered species in the area.
*As stated on page 200 of the EIS it is planned to relocate the Hastings River Mouse (an endangered species). This will not work as animals will return to their previous habitat.

(29) *No protective covering is planned for the leach heap pad to protect fauna from ingesting the cyanide solution.

COMMUNITY CONSULTATION

In relation to this concern the following is submitted:-

(30) *There has been a distinct lack of community consultation during the preparation and exhibition of the EIS. The method of community consultation, as detailed in Section 1.8.2 of the EIS, has not in my opinion, enabled adequate consultation to have been undertaken. The people of Drake and Tabulam have not been consulted.

(31) *Distribution of the EIS is also a matter of concern. Copies were only abailable in Sydney by post thus reducing the amount of time to read the EIS.

(32) *No public meetings were gild in the local area to inform residents of the proposed development and its impacts.

(33) * There has been minimal consultation with the Aboriginal people in the Tabulam community.

SAFETY/SECURITY

In relation to this concern the following is submitted:-

(34) * Access to Bold Top Mountain will be denied to the Aboriginal community due to the closing of access roads to the project site.

(35) *Storage of cyanide is by plywood covering and a waterproof polythene liner. This is not satisfactory and it is feared accidents will occur.

(36) * The EIS states at pafe 69 that "The Tenterfield District as a whole does not have a particularly severe fire climate". This is certainly not true in the case of our area. The fuel load in the Timbarra is high with a bush fire having ocurred only a few days ago. This fire was attended by the Drake and Tenterfield Bush Fire Brigades. It is therefore important to have a fire plan for the area.

(37) *What measures are in place in the event of a robbery given that one weeks gold production will be kept on site.

(38) *The storage and transport of explosives, sodium cyanide, HCl, caustic soda and LPG are a source of concern to the community.

BENEFITS TO THE COMMUNITY

(39) The benefit to the community of the proposed development is questionable. The few jobs in the project and not guaranteed to local people in the Drake/Tabulam area who it seems will receive only the negative impacts (such as pollution, destruction of the environment) of the project.

ENERGY

(40) There is no consideration of the use of a quiet source of power such as solar power. The use of generators is not agreed with as it will cause unacceptable noise levels.

ARCHAEOLOGY

(41) *As stated in the Summary of the Historical Record of the Archaeological Investigation (page 58) ..."None of the mining sites can be accurately dated on the basis of surficial evidence and until more regional and thematic studies are completed on historical mining sites in the New England Region it is not possible to assess the significance of the sites at Poverty Point at a state level." I/we object that only surficial study has been done on what I/we consider to be of historical and cultural significance to this area.

(42) *The consultation process with local Aborigines, namely Tabulam residents, leaves a lot to be desired. Only 3 meetings took place (page 11 Archaeological Investigation) with Tabulam Aboriginal representatives.

(43) *The archaeolohical investigation is not comprehensive enough. Only 39 person hours were spent on prehistoric investigation with the author, John Appleton, spending only 10 hours personally on the survey. I/we feel that it is totally inadequate and unacceptable (6.2 Method of Survey Page 29 Archaeological Investigation).

*In his report on the Investigation of the Anthropological Significance of Portion 57, Parish Bloxome, County of Clive, 1991 (which is located within the mine site area) Dallas Donnelly states "I have been personally at two minds as to whether or not to even complete this report because of some information that I have attained that I feel that should not be available to the general public (both Aboriginal and non-Aboriginal)". It would appear from this statement that this is a place of great significance to the Aboriginal people and their history and shoud not be mined at any cost until a detailed investigation by the National Parks and Wildlife Service is completed.

OTHER ISSUES

(44) *This is a unique geological deposit; Brian Roach has stated that "only one in the world like this." Such a rare and unique geological feature should not be destroyed.

(45) * Rehabilitation of vegetation depends in part, on the collection of seed. As the plant species set seed at different times of the year, there should be a detailed plan of seed collection over a 12 month period. This does not appear in the EIS.

(A6) * The EIS fails to recognise that there are permanent residents within 5 km of the proposed project site. The EIS, at page xii, states that the nearest permanent residents are located 13km from the project site. If this simple mistake has been made, how many more discrepancies are in the EIS??

SIGNED

DATE 28-8-95

NAME B. A. REED

ADDRESS SUGARBAG RD DRAKE

SIGNATURE B A Reed

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SIGNED

DATE

NAME	ADDRESS	SIGNATURE
Maree Smithers	Bruxner Hwy Drake	M Smithers
Chris Laurie	Bruxner Hwy Drake	C M Laurie
Michelle Laurie	ARDONA, Qld	M.M. Laurie

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SIGNED

DATE

NAME	ADDRESS	SIGNATURE
K. Laurie	Simpson St. Drake	K. E Laurie
G.D. LAURIE	SIMPSON ST. DRAKE	G.D. Laurie
KEN WRIGHT	LESLIE CREEK RD DRAKE	Ken Wright
Christine Wright	" "	C. Wright
Matthew Casey	Sugar bag RD drake	Matthew. C
L. COFFMAN	SUGARBAG R D drake	L Coffman
A COFFMAN	"	A Coffman
H. WATSON	Sugarbag Rd Drake	H J Watson
C. Koeford	"	C Koeford.

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SIGNED

DATE 28.8.95

NAME	ADDRESS	SIGNATURE
B.W. Keiso	Bruxner Hwy Drake	[illegible]
[illegible]	BRUXNER Hwy DRAKE	[illegible]
Don Laurie	Bruxner Hway DRAKE	D.R. Laurie
SALLY CAMPBELL	Rocky River Rd. Drake	S Campbell
James Laurie	DRAKE	J B L

AME	ADDRESS	COMMENT	SIGNATURE
Campbell	Mud Flat Rd.	Because of total environment destruction at the	[illegible]
Baker	Sugarbag Rd	where do the children play?	R Baker
Power	Bruxner Hwy	It stinks! (full of chemical)	J. Power
[illegible]	Sugar Bag Rd	Not needed.	[illegible]
Howitt.	Drake	My spring water is no more	[illegible]
Laurie	Drake	S	[illegible]
Stevens	Drake	Why destroy?	R. Stevens
Blewitt.	DRAKE		L Blewitt
ALFORD	DRAKE		[illegible]
MITCHELSON	DRAKE		[illegible]
GRAY	DRAKE	LIFE OR MONEY.	J McGeary
LAURIE	DRAKE	NOT NEEDED OR WANTED	K. E Laurie

Rec'd 31/8/95

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SIGNED

DATE

NAME	ADDRESS	SIGNATURE
John Phillip	Zmegac Drake	[signature]
DEL IVES	ALLISON ST DRAKE	[signature]
Robert DeJong	TABULAM ST DRAKE	R. DeJong
Melanie Smith	Pretty Gully	Melanie Smith
Jodi Smith	Koreelah Rd Drake	J. Smith
B Hobbs	Drake	B A Hobbs
S. Smith	Drake	S. Smith
J. LEONARD	Sugarbag Rd DRAKE	J. Leonard
TED KIRKPATRICK	DRAKE	I.M. Kirkpatrick
Neil Hynes	DRAKE	
Amanda Scofield	Drake	amanda
Valda Scofield	Drake	Valda Scofield
[illegible]	[illegible] DRAKE	[signature]

Diane Giovine	Bruxner Rd Drake
Trish Nielsen	Lot 1 Mudflat Rd Drake
Peter Johnston	Mudflat Rd Drake
Jill Wills	" " "
Janelle Johnston	c/- P.O. Drake
James McHugh	" " "
Judy Breakley	" " "
Patricia Walker	Tabulam
R G Lindsay	Long Gully Rd Drake
Charmaine Jas	Lot 9 Mudflat Rd "
M Flynn	Bruxner H'way Drake
A Sinclair	" " "
Ian Greggs	Pakenham Rd Drake
Marlene Greggs	" " "
L Maier	Lot 5 Red Rock Rd
Karen Walker	Ewingar
John Hamilton	c-Po Tabulam
Robert Hickling	" "
Douglas Walker	
Thomas Bell	
David Walker.	
A.M. Austin	Pond St Tabulam
David Walker	Bonalbo
Jennifer Hickling	~~Hickling~~ "
William Hickling	"
Thomas W Avery	Tabulam
A Gilligan	Tabulam Hotel
C. McGrady	Lawrence St Tabulam
Glen Cook	2 Clarence St Bonalbo
Una Walker	Tabulam
J. Austin	"
Peter Estel	"

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SIGNED

DATE	NAME	ADDRESS	SIGNATURE
	BRYONY ALLAN	POND ST. TABULAM	
		Tabulam	
		TABULAM	
	MARJORIE WALKER	TABULAM	
	Nancy Walker	Tabulam	
	Bruce Walker	Tabulam	
	Philomena Walker	Tabulam	
	Emily F Walker	Tabulam	
		"	
		"	
		"	

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SIGNED

DATE 20.8.95.

NAME	ADDRESS	SIGNATURE
Chrissie Gunnis	P.O. BOX 44	[signature]
Trevor McGarry	PO Box 34	T McG
BRENT MATTHEWS	6/40 BARKER ST CASINO	B Matthews
STEPHEN WALKER	TABULAM	[signature]
BARBARA FRASER	TABULAM	Barbara Fraser
DEBRA CHERRY	TABULAM	Debra Cherry
HAROLD J AVERY	TABULAM	Harold J Avery
ROBERT COLLINS	TABULAM	Robert Collins
JAMES MCKEAN	TABULAM	[signature]

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SIGNED

DATE 26-8-95

NAME	ADDRESS	SIGNATURE
H. SCHULTZ	PATEMANS RD. DRAKE	M. Schultz
Lynda Bellamy	PATEMAN RD DRAKE	Lynda Bellamy
C SMEDLEY	ENT FARM, DRAKE	C. Smedley
R. PEARSE.	PATEMANS RD. DRAKE.	R. Pearse
RON PEARSE	" " "	

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SIGNED R.G. Griffiths M.H. Griffiths

DATE 30/8/95

NAME R.G. GRIFFITHS M.H. GRIFFITHS ADDRESS "CHANNELPARK" TABULAM, N.S.W.

SIGNATURE R.G. Griffiths M.H. Griffiths

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SIGNED

DATE 30/8/95

NAME	ADDRESS	SIGNATURE
D. SORENSEN	LOT 1 BROXNER RD DRAKE	
M. SMEDLEY	LOT 12 BRUNNER RD DRAKE	

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SIGNED

DATE

NAME	ADDRESS	SIGNATURE
Dianne Clarke	Bulldog Rd	[signature]
TERRY KEFT	Leslie Ck Drive	[signature]

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SIGNED

DATE 4/8/95

NAME	ADDRESS	SIGNATURE
Peter Johnston	Lot 9 Moffat Rd DRAKE	
TERRY JOHNSTON	AS ABOVE	T Johnston
Wendy Jukes	Moffat Rd	WEjukes

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SIGNED

DATE 26/8/95

NAME	ADDRESS	SIGNATURE
PETER J. HARTLEY MAGDALENA HARTLEY	PATEMAN ROAD DRAKE, NSW 2469	
Deb. S. Stewart. Margot McCarthy	BRUXNER HWY DRAKE NSW	D.S.Stewart M/C
PHIL TORNTON	RED ROCK RD DRAKE.	

OM MRAB

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SIGNED

NAME	ADDRESS	SIGNATURE
DATE		
PETE STANTON	DRAKE 2469	Pete S
DAVID ANDERSON	TABULAM	
Ernest Hickling	TABULAM	Ernest Hickl
TONY WAIKER	TABULAM	TONY WAIKER
William Hickling	TABULAM	William Hickli
Roslyn Exton	TABULAM	Roslyn

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SIGNED

DATE	NAME	ADDRESS	SIGNATURE
	SHELLEY DILLON	20 CYPRESSMITH CIRC.	
	JEAN BELL	TABULAM	
	DANELLA AVERY	TABULAM RESERVE	
	KERRY WALKER	TABULAM RESERVE	
	DARRYL WALKER	CASINO	
	CHRIS WALKER	CASINO	
	ANITA WALKER	CASINO	
	PRISCILLA ROBERTS	CASINO	
	KEVIN WALKER	TABULAM	
	TRISHA WALKER	TABULAM	

*** END OF DOCUMENT ***

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Dianne W Burgess

SIGNED Frank Burgess

DATE 26-8-95

NAME	ADDRESS	SIGNATURE
FRANK Burgess	Eagles Nest - TABULAM	F Burgess
Thomas Avery	TABULAM	Thomas Avery
Eileen Rillinger		
Charles H. W. Collins		
Phyllis Roberts		
Donna Collins		
Alana Collins	TABULAM	Alana Collins
Kevin Col	TABULAM	Kevin Collins
Susan Collins	TABULAM	
Rob Whyman	TABULAM	RFO
Fiona Oehlkers	Tabulam	
Julie Robinson	Tabulam	
Ivana Carlton	Beardy River Via Tenterfield	
BENJAMIN J HUDSON	Beardy R. Via Tenterfield	Ben Hudson

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SIGNED Sandra GIBSON

DATE 28-6-95

NAME	ADDRESS	SIGNATURE
J GIBSON	ECCLESIAR ST DRAKE	S Gibson
D GIBSON	2/6 Meadow Dr Sth Lismore	D Gibson 6/95

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SIGNED

DATE

NAME	ADDRESS	SIGNATURE
[illegible] (TRACY HEWILL)	[illegible] OWNER MANAGER	
HEIDI BALDWIN	c/ DRAKE HOTEL	
JOHN BLEAKLEY	RUBY ST. DRAKE	
KERRY BLEAKLEY	RUBY ST DRAKE	
Mick Laurie	Lot 5 Sugarbag Rd	
Heike KNUR	LOT 4 Sugarbag Rd.	H KNUR
BETH KNUR	LOT 4 Sugarbag Rd.	
DIRK KNUR	LOT 4 SUGARBAG RD	D Knur
JOANNE ASKEW	LOT 3 SUGARBAG RD.	
TANYA ASKEW	LOT 3 SUGARBAG RD.	
BOB BETTERTON	LOT 3 SUGARBAG RD.	
SANDRA ASKEW	LOT 3 Sugarbag	
LES ASKEW	LOT 3 sugarbag	
Troy Arscott	Lot 5 Long gully Rd.	
Mary-Ann Turner	Lot 22 Mudfat Rd.	M.G. Turner
Debbie Carmichael	Brunner rd Drake	

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NAME	ADDRESS	SIGNATURE
DATE		
SIGNED		
J M Power	Bruxner Hwy Drake	J Power
Josie Laurie	Rocky River Drake	J Laurie
Heavenly Laurie	Rocky River Rd Drake	H J Laurie
Justine Buckley	DRAKE	J Buckley
Paul Osborn	Lobs Lk Rd Drake	P D Osborn
shelaneosborn	"	Shelane Osborn
Maia Osborn	"	Maia Osborn
G W Smith	Drake	G W Smith
S.P Leitch	DRAKE	S P Leitch
P.L. LEITCH	MODELAT RD DRAKE	P L Leitch
R Williamson	Tabulam	R Williamson
Michael Kaplan	* Drake	Damian Kaplan
Damian Kapan	Drake	Michael Kapl

The director-General
Dept of Mineral Resources.

To Whom it may Concern

Dear Sir/Madam

I was chemically poisioned at Colledge in Darwin. I was intending to add a B.A in Fine Arts and an M.A. in Education to my resume.

I was told by several Specialists that my body was so damaged that I had two to a possible six months to live.

I was offered a glass bubble to live in. I sought (1)
more opinions interstate as well as following up other avenues. When I was told I "might" have two months to live, I followed my instints and having read of the family living on Kangaroo Island, I saught something smilar on the mainland.

I looked at what crops had been grown, at where the winds worldwide carried pollution and where they dropped it.

What the waters had in them, what was carried on the currents Rains and cloud formation.

Statistics have been a lifelong interest so I looked at births, deaths and disease all over

Australia

[redacted] conditions average and extreme. Our information network here in Australia is extensive so I read & I studied; the places, in Australia, where I would have liked to live, I coudn't because of the dirtiness & pollution.

The one place that was habitable for a woman with disabilities caring for two children is THIS area of DRAKE.

I live on the junction of M°Cleods Creek & the Timbara River, inside the "closest permanent resident" distance cited in the E.I.S. report & have done for years. I live just below where any "ACCIDENTS" that happen at the proposed mine site will effect me directly, immediately.

I recently spent time in Bonalbo Hospital because of chemical poisioning. In this instance I had driven to Casino for supplies as I need to do sometimes. In this instance the roadsides had been sprayed with weedkiller the day before. (MEKILLER)

I live where I can grow my own veges and eat the catfish & eels from the river when I am unable to eat or function away from my home.

live where I live and how I live "BECAUSE" this is the only way I can live and have quality of life. The are a LIFE.

There are a number of people in the area with similar stories who "WOULD NOT BE ALIVE TODAY" (their words), if they lived elsewhere.

We live here because it is clean enough to live here for us.

Any spill or pollution from any sources has potentially serious consequences for the environment & welfare of residents and may/would possibly result in the deaths of some especially those directly affected by the contamination. Even worse Where would people go, if this last mainland bastion of inhabited Australia were to disappear?

It would be far better to start cleaning up the pollution that already exists, before even contemplating making more of a mess in this "SPECIAL ENVIRONMENT" that exists only here in Drake.

Sincerly

Elizabeth Mitchelson

Boorook Rd
Sandy Hills via
Tenterfield.
August 24th/95

Director General,
Dept of Mineral Resources
PO Box 536
St Leonards N.S.W 2065,

Dear Sir,

We are writing to express our extreme concern over the proposed Timbarra Plateau Gold Mining project. Please do not let this mine take place.

Our list of concerns is big after reading the E.I.S. on the project site, the water catchment report, and knowing the whole area personally after living here for 15 years.

Our main points of concern are as follows,

P.T.O

29/8/95

[redacted]

Pg 2.

(1) (1) The pumping of 2½ megalitres of water from the Timbarra River every day to the project site in the time of extreme drought

(2) (2) The proposed destruction of the head waters of Duncans Creek, stopping all water flow.

(3) (3) Directly below is rainforest containing flora and fauna which will be destroyed

(4) (4) The archeological significance in terms of aboriginal history particularly initiation sites makes it imperative that further study is needed

(5) (5) All flauna & flora mentioned in section 12 on the rare/endangered list

PTO.

Summary

I feel this whole area should not be touched
Given its gentle, fragile, earth extensive swamp, wetlands, creek systems, wildlife, 12 different areas of different vegetation it should be left alone
I feel for any mining in this area would be so destructive and should not be allowed to happen
(6) The use of cyanide in this area could also mean a disaster for the river systems something that should be treated very seriously in light of what has happened in South America this week

yours sincerely,

Helen M CHAPLIN — Helen Chaplin
ANDREW M. VOLKOV — Andrew M. Volkov
C W SMITH — C.W. Smith

Rec'd 14-8-95

NORTH COAST ENVIRONMENT COUNCIL INC

C/- P Wrightson
P.O. Box 91
Maclean 2463

14th August 1995

The Director General
Department of Mineral Resources
P.P Box 536
St Leonards

Attention: Vince Fallico

Dear Sir,

re: Environmental Impact Statement for
the Timbarra Gold Project.

On behalf of the North Coast Environment Council is wish to object to the above EIS.

Detailed reasons in support of this objection will follow as soon as possible.

Yours sincerely

Peter Wrightson
For/- Secretary North Coast Environment Council.

Rec'd 31/8/95

C/- P.O.
Drake
NSW 2469
30.8.95

The Director General,
Dept of Mineral Resources,
P.O. Box 536
St LEONARDS
NSW 2065.

RE: PROPOSED TIMBARRA GOLD PROJECT via Tenterfield NSW

I object to the development application by Capricornia Prospecting Pty Ltd for an open cut gold mining operation on the Timbarra Plateau and request (1) that a Commission of Inquiry be held into the proposed mine and its environmental impacts. This submission is additional to that sent by myself on 29.8.95.

My objection is based on the following concerns:-

(1) COMMUNITY CONSULTATION

I submit that there has been a distinct lack of (2) community consultation during the preparation of the E.I.S.

The method of community consultation as detailed in Section 1.8.2 of the E.I.S. inadequately addresses this issue. Inadequacies in the consultative process include:-

(i) Those downstream of the proposed project do not appear to have been consulted and do not appear in the E.I.S. For example, ie Clarence River Catchment Committee, ... Aboriginal communities do not appear

result, both groups have raised their concerns about reduced water flow and quality since the publication of the E.I.S. The Aboriginal community have been consulted, to a small degree, in preparation of the archaeology report but not about other environmental impacts; the EIS shows no proof of this.

Those downstream, not represented by the above mentioned groups, do not appear to have been consulted; there is no evidence in the E.I.S.

(3) No public meetings or other avenues of information dissemination were employed in the community consultation process. This was highlighted by a request from the Drake community for a public meeting following publication of the E.I.S. The request came from 3 sources; the Drake Progress Association, our local Tenterfield Shire Councillor Arthur Ramsay, and a candidate for the Council Elections, Elizabeth Kunneir-Tarle. As a result of these requests a public meeting was held at Drake NSW on 10th August 1995. This meeting fell short of the community consultation process in that:-

a) it was held at 48 hrs notice excluding many community members from attending.

b) only 2 speakers attended - a representative from the Dept. of Mineral Resources and a representative of R.W. Corkery & Co. Pty Ltd. Mining company representatives (of the applicant) were present but stood at the back of the room and took a minor participatory role in

of any other consenting authorities (eg CALM, NPWS, EPA) to enable community consultation to occur.

c) The meeting was held at 11am thus excluding many community members from attending.

d) The meeting was held 4 days before the then final date for close of submissions to the EIS.

Following representations from the community and in consultation with local landowners, Mr & Mrs Petrie, an on-site inspection of the mine site was held on 14th August 1995. Once again, this was at short notice and not well advertised.

After requests from community members, 2 representatives of the EPA attended a public meeting in Drake so hear the concerns of the community and answer their questions

Thus the EIS has failed to address community consultation. It is a disgrace on the part of the Applicant, that all public meetings held after publication of the EIS have been at the request of community members. This indicates a zero input by the applicant in organising avenues for information dissemination and community consultation.

I note that community consultation for the planned SEPP No 46 is for a period of some 18 months. The proposed mine is in an ecologically diverse area; the fact that there has only been minimal community consultation where the environmental impacts are great is

P.T.O.

of great concern.

(iii) (4) Distribution of the EIS is also a matter of concern as

a) copies were available for purchase only from the Dept of Mineral Resources in SYDNEY. Allowing for postal delivery, it took at least one week for a purchased copy to be delivered. Mail service to this area is slow. Thus there was a possible reduction in reading time of 25% of the period allowed (30 days) for submission of EIS comments.

b) Copies were made available for purchase at the Drake Co-op and Tenterfield Shire Office only *after* requests by the community. It is inadequate administration on behalf of the consenting authority, the Dept of Mineral Resources, that more thought was not put into the dissemination of the EIS to allow full and reasonable access to the EIS documents.

(iv) Only 30 days from the date of publication of notice in the newspaper were allowed for preparation of submissions to the EIS. Given that there were 7 substantial reports and an EIS document of some 283 pages, I submit that the 30 day period was inadequate to allow informed community consultation and comment to occur. This was recognised by the Dept of Mineral Resources, when after community request, they allowed submissions to be received [illegible] [illegible] [illegible]. [illegible] letter is attached here at Attachment 1

In light of the above comments, I submit that the EIS does not comply with the principles

(5) of Ecologically Sustainable Development. In particular, the objective "to improve the material and non-material well-being." (page 225 of EIS).

(6) The EIS states at page 226 "Community consultation during the development of the proposal has been undertaken to develop an awareness of issues concerning overall standard of living which have been addressed throughout the Statement". I dispute strongly this assertion due to the points made above.

At p. 227 of the EIS it is stated that - "The approach taken in planning the proposal has been multi-disciplinary, with foresight, Community involvement and extensive consultation with professionals and various Government Authorities." The lack of community consultation would hardly lead one to conclude that the proposal is "socially desirable" or that there has been "community involvement" in preparation of the EIS.

(2) WATER DEMAND

(7) (1) The surface water and ground water studies fail to address the amount of water required for the start up of the leach heap pad and other operations; no figures are given in the EIS or reports. What is the total start-up demand for all operations in the valley?

page 6

(8) ephemeral, how baseflows ~~to~~ persist for extended periods during "dry times" then how will the present water flow in the Timbarra positively enable the Applicant to extract their demands from such a diminished supply?! No figures have been given for the current level of water in the river. We are still drought declared and the water is at a very low level. It would be impossible to supply the required amount from the river under these conditions.

(iii) (9) No minimum levels have been set to define when pumping will commence and/or cease.

(iv) No study has been done to determine (10) the environmental impact of extraction of water from the Timbarra River on the existing aquatic life. The EIS assumes no impact will occur but has done no study to determine if and how this is so.

(3) Climatic DATA.

(11) The climatic data used throughout the EIS and associated reports is inferred from climatic data collected at Tenterfield Post Office (some 27 km to WNW of mine) and Glen Innes Agricultural Station (some 85 km SW of mine). It also utilises records from 'Timbarra' homestead which have been kept since only 1987. It is therefore inferred that rainfall at the mine site

How and why they come to this figure is not shown.

(12) If the "current mineral exploration program has been underway for about 8 years" (page 1 of Hydrogeology, Infrastructure & Site Geotechnical Studies) why then did the Applicant not keep climatic records for the proposed mining site? Even a short period of 8 years would be some indication of the climatic pattern of the proposed site.

Given the impact of rainfall and wind on the proposed operations, the EIS has failed to adequately address climatic data and its impacts on the proposed site.

(4) ECONOMICS.

(13) In relation to the economics of the proposed operations, I submit that the EIS has failed to address this issue. There is no mention of the anticipated profit from the operations, no assessment of the cost to the community of the environmental impacts and degradation. No cost-benefit analysis has been prepared. As it is in a proposed National Park I submit that this is unacceptable. The economics of the proposed operations need to be fully investigated.

(14)

(5) TRANSPORT OF DANGEROUS GOODS

The minutes of the Tenterfield Council

Meeting of 22nd August 1995 states that their submission to the Dept of Mineral Resources for inclusion in the conditions of consent for approval includes:-

"15) Prior to the commencement of mining operations the Company is to liaise with the Tenterfield Shire local Emergency Management committee to discuss emergency issues which may affect the mine and transportation of goods to and from the mine."

Why did this not take place when the EIS was prepared? Has it been determined if the local community has the services to cope with any emergency which may occur and what would the response time be? The EIS fails to adequately address these issues & the issue of overall safety of the community and potential employees.

(15) (6) MONITORING

The EIS fails to address adequate monitoring of water quality, leakage of cyanide and water levels in the Tumbarumba & downstream from the Tumbarumba River.

It also fails to address on-going community consultation by way of a forum in complaint

nor annually - to the community.

CONCLUSION.

(16) Despite the lack of time available to seek independent expert advice about the issues raised in this submission, I have responded in good faith.

As a result of the deficiencies in this EIS I am unable to form a final view on the acceptability of the proposed mine.

I reserve the right to make further submissions on the proposed development.

Janelle Johnston.

SUBMISSION RE: TIMBARRA GOLD MINING PROJECT

I am writing in response to reading the EIS prepared for Capricornia Prospecting Pty Ltd. On viewing the plans and site layout it was obvious to me that the area in question would be vulnerable to possible pollution and degradation mainly due to the lay of the land and the multiple number of creeks and tributaries surrounding and running through the area. On behalf of the Clarence Environment Centre I strongly object to the proposal and believe the area in question warrants status as a National Park.

(1) THE PROPOSED DEMON NATIONAL PARK NOMINATION

The site is perched right on the edge of the Timbarra Plateau. This southern facing slope of the Plateau a valuable area to conserve in a National Park. Due to the usual diversity that occurs on southern slopes and the occurrence of a wide spectrum of plant and animal species I feel it should be seriously considered for some form of protection. Both flora and fauna in the area have high conservation value. Wet Heath communities present on the site are of restricted extent and should be considered of significance. Closed heath/sedgeland and Closed sedgeland are an example of these communites and both these vegetation types will be affected by the proposal permanently. Have the attributes of Wet Heath communities in the region been adequately conserved? Over an area of 22,000 ha there is only 650 ha of wet land/sedgeland vegetation. There is representation of 10 vegetation types in the area, therefore this project will definitely affect the diversity of the region as rehabilitation will almost certainly replace vegetation communities of a wetter nature with a more predominantly drier forest type. Two plant species of particular significance are Eucalyptus scias ssp. apoda and Syzygium oleosum, little is known of the former species. The adequacy of it's reservation is unknown and distribution is sporadic and uncommon. The latter species is a new record for the locality and is usually found in coastal areas. This indicates to me it's extent in the region is unknown and more research is needed to determine how rare it is. The small area of Old Growth New England Blackbutt is potentially significant. How much is represented in the region? It may generally be an adequately conserved vegetation community but what about in this locality and of this age?
In regards to Fauna, one species listed as (V/R Schedule 12) Troughton's Vespadelus may occur on the site it has only just recently been described and little is known of it's food source and breeding patterns. Obviously more research is needed to understand more of it's extent in the region. 15-18 endangered species have been recorded on and near the site. Will the continued disregard for this type of impact on populations lead individual species to a more serious Schedule 12 status? Many people in the area use the Timbarra River as a scenic and recreational site already. The presence of mining activities and noise levels in the area would deter people form using the river.

POLLUTION

(2) The Leaching pad and Ponding systems would be situated directly above and adjacent to the tributaries leading to Nelson Creek. Although mitigation measures will be taken in an attempt to safeguard contamination I believe the potential for poisoning and contamination to occur is
(3) inevitable. Netting on the ponds for avifauna is one thing but will this netting ensure small mammals will not drink the solution? The EIS claims the concentration of chemicals in the solution would not be enough to cause toxicity in living organisms, this may be the case if animals were subjected to this level of toxicity once or twice but if the storage ponds will remain in place

for many years to come then how can one guarantee that repetitive intake over extended periods of time especially for small mammal species such as the Hastings River and Eastern Chestnut Mouse would not be fatal. The storage ponds will be lined but how long will the lining survive
(4) the obvious corrosive properties of the substances contained and possible deterioration or perforation. Has all the factors potentially affecting the long term and indefinite survival of the
(5) HPDE liner been considered? If these ponds will remain in the area for many years with an accumulation of cyanide and hydrochloric acid they are bound to have a considerable affect on the flora, fauna and waterways of the area. I would like to see the evidence or examples of how this method has worked in similar mining projects and the results of monitoring ground water pollution and if poisoning or contamination occurs. Over 4 years, 2800 tonnes of Sodium cyanide, 240 tonnes of Hydrochloric acid, 300 tonnes of Caustic soda, 1200 tonnes of Polymer and 40 tonnes of Antiscalant sounds disastrous to me. The Accumulation of all of these substances combined even after watered down leaching processes is bound to lead to some
(6) form of contamination. The surrounding slopes are steep most well over 18 degrees, particularly in the area of Big Hill open cut mine and waste rock emplacement. Mitigative measures would need to be completely fail safe if run-off and erosion was to be avoided. The
(7) amount and range of substances to be used points out that storage of these chemicals in such a small area is potentially dangerous. To my knowledge members of the local community are deeply concerned about the implications of having Sodium Cyanide, Hydrochloric Acid and Caustic Soda stored and used in the catchment of the Timbarra River. Mitigation measures
(8) sound pretty convincing but what if's and potential accidents come to mind and will never be satisfied considering the terrain. The plan concerning safeguards if overflows of stored solutions from the ponds occur, sounds complex and potential mis-haps could occur. In the Surface Water Report it states that "any spill will contain residual cyanide levels that are higher than acceptable for release into natural waterways". To contain/withhold this level of toxicity in the area noting the steep slopes
and level of groundwater surrounded by creeks, waterways and drainage lines seems impossible and ludicrous to me. Overflow from the sedimentation pond will flow into the
(9) adjacent natural drainage line. Groundwater contamination caused by fuel spillage is always a threat. All in All Gabion rock barrier filters, a 10ML sump, sedimentation pond and silt fences, earth banks etc. sound good in theory but have they been used in similar situations? What were
(10) the results of these measures? If there will be any installation of drainage controls, water management, soil erosion and sediment control plans I'm sure the community would like to be informed of the way the Company intend to deal with potential hazards or disasters. All of the ponds and the heap leach pad are in close proximity to waterways and drainage lines, control
(11) and monitoring would need to be comprehensive and effective. From the maps provided in the EIS it appears that the drain from the Big Hill open cut mine runs right into Duncan's creek and one of the Storage ponds is located right on the head water of another creek/waterway dropping from an elevation of 980m down.

TIMBARRA RIVER AND TRIBUTARY CREEKS

(12) The project would require pumped inflows from the Timbarra River to meet 100% of the water demand for the proposal (12,200 cubic metres > 15, 250 cubic metres) in the first year and 63% in the second year. Can the Timbarra River afford to lose this much water? The EIS claims that pumping from the Timbarra River would only affect residual flows during very low flow conditions. Based on the new Environmental Flow legislation this may not be possible in order to sustain the health of the river and it's inhabitants. How realistic is this when year to year streamflows in the Clarence catchment can be extremely variable. The full implications of extracting water from the Timbarra River and the effect it will have on aquatic life and people

downstream have certainly not been discussed in enough detail considering that already there is two unrestricted licenses for water extraction downstream of the project site. To take 30%
(13) from the river at minimal flow levels would be more than recommended environmental flow percentages, especially if ground and surface water do not suffice. Has the company considered what will happen if lack of rain and reduced or fluctuating ground water levels over 4 years leads to more water required from the Timbarra River? Harvesting surface run-off will affect
(14) all the waterways surrounding the project site considering it's location. Creeks surrounding the project site include Williams, Duncans, Nelson, Spring and McLeans all have tributaries within the site and drain into the Timbarra River. As the open cut mines and dams will be left at the end of the project surface run-off will be withheld from flowing into the creeks and waterways. Surely both the rainforest areas and it's inhabitants will be affected by a reduced flow of water. The Timbarra River is the only source of water for both the Aboriginal community downstream and primary producers relying on the river for irrigation

NOISE POLLUTION

(15) The EIS states that in some stages of the project operations will be in progress 24 hrs a day. Nearby fauna populations will surely be disrupted by the constant noise and lighting, therefore the effects of this operation on the fauna of the region would be far greater than discussed in the EIS. Are the private landholders in the vicinity of the proposed site fully aware of the hrs of operation and the traffic produced by such a venture? Over 4 years local community members are bound to feel affected even though most residencies are quite a way from the site to my knowledge people use the area for recreational reasons. The use of huge generators has also been mentioned by members of the community. Have any alternatives been considered?
(16) The EIS claims that there are no permanent residents within 13 km of the site but according to a submission sent by a local resident this is untrue. Apparently there are permanent residents within 5km of the project site. This seems to be quite a major point to overlook and should be re-evaluated. These residents deserve consultation on the mining proposal.

ROADING

(17) The construction of the Main Haul Road and various tracks around the site make perfect passage for feral animals and exotic weeds. These factors will have a significant impact on local populations of native flora and fauna. The amount of vehicles moving along the roads over the span of the project may be detrimental to moving fauna populations.

LOW GRADE ORE

(18) If there is only 0.8 to 0.9 g of gold to a tonne of rock/ore then a huge amount of energy and resources will be involved in this extraction process. Is it worth the potential continual environmental implications after wages, taxes, government royalties, the bond and all running costs are paid for?

WASTAGE

(19) 90% of the water being used is "make-up" demands lost during evaporation and absorption by the waste rock and ore heaps therefore this water is totally lost and not cycling back into the surrounding environment. This is another obvious fluctuating factor which cannot be definitely determined until the project is well under way. Approx. 12.95 Million tonnes of rock/soil/ore will be removed from the open cut digging and blasting away this much material is bound to have a detrimental affect on the surrounding environment.

COMMUNITY CONSULTATION

(20) It appears that members of the Tenterfield district are in favour, of the operation just how many are in favour? The people of Drake and Tabulum claim not to have been consulted. Therefore the consultation process undertaken by the company must not have been totally effective. The speed at which the proposal has moved along is evident as members of the community mention not even being aware of the project until 2 weeks before submissions were due to close.

(21) Access to EIS is always time consuming and for some people virtually impossible. No public meetings were organised or called to inform the public of the process involved in mining and all the possible outcomes of such a project. Aboriginal groups have been to the site but were all their concerns taken into consideration?

PLANNING FOR HAZARDS

(22) The Tenterfield district is particularly prone to fire and the area of the project site is right on top of steep slopes and areas of dry forest. The EIS fails to document plans for potential fire occurrence. Burning off in the area is a yearly practice. Has there been any liaisons with landholders about ensuring burn offs are properly controlled? Of great concern to the

(23) community is the transportation of explosives, sodium cyanide, HCL, caustic soda and LPG. Will there be effective and fast acting safety measures available in the event of a major spill? The storage of these substances is also of concern to members of the community.

BENEFITS TO THE COMMUNITY

(24) The jobs offered in the project are not guaranteed to the local people of Drake and Tabulum. Weighing up the short term span of the project and the long term implications of the left overs indicates it will not be a sustainable benefit. Will the injection of funds create a sense of quick cash when really the Tenterfield/Tabulum and Drake areas need some long term sustainable future employment projects and options.

ABORIGINAL SITES

(25) Access to Bod Top Mountain will be restricted to the Aboriginal community due to the closing of access roads to the project site. Three rock engraving sites occur on large granite boulders in the area. Will these be disturbed? Is there going to be enough protection for these areas? Mr Eric Walker and elder of the Bundjalung people identified Bold Top Mountain as a potential "Aboriginal Place". Has the site been registered with NPWS? Will great care and respect be taken in relation to this site? Have all the concerns brought up by visiting members of different Aboriginal groups and individuals been taken into consideration? Not only individual sites but whole areas can be of significance, was this issue discussed? Are the

(26) members of the Tabulum Aboriginal community satisfied with the outcomes of the consultation process? Have they even been asked this question?

ARCHAEOLOGY

(27) A more detailed regional and thematic study needs to be done in order to assess the real historical significance of the old mining sites in the region. Mr Dallas Donnelly states in his report on the investigation of the Anthropological significance of Portion 57, Parish Moxome, County of Clive, 1991 (which is located within the mine site area)"I have been personally of two minds as to whether or not to even complete this report because of some information that I have attained that I feel should not be available to the general public (both aboriginal and non-aboriginal)".

This indicates that the area in question is of great significance to the Aboriginal people and their history and should not be mined until a more detailed investigation is carried out by the Aboriginal community and NPWS.

RE-HABILITATION

(28) In the re-hab plan it shows there will be 4 ponds left over. What will the contamination levels in these ponds be after 4 years of accumulation. The re-vegetation around the edges will encourage small animals to come after the mine is closed down. Where are the safety guards for this? (29) From plates 2.9 and 2.10 in the EIS, re-generation of trees has occurred on the edges of major disturbance but not much seemed to be growing directly on the previous roads. In the aerial photographs shown in the EIS it is obvious and evident that mining had occurred there many many years ago. Isn't this enough for the area to cope with? In the EIS it mentioned that 'on inspection of the rehabilitation since the last mining operations, although some recolonisation of major trenches and races had occurred the long term impact on the affected area has been significant, Page 24 (iii) Gold mining. Finally, according to Brian Roach the (30) area is a unique geological deposit of international significance " the only one in the world like this". The area in question is obviously diverse and unique on many different levels, a special place and should not be further disturbed or destroyed. I urge you to reject the EIS and suggest that futher investigation is needed in the area. Have the appropriate people been to the area in question to see for themselves the value of this area for conservation? It deserves a fair trial.

Jessica Bowden
Clarence Environment Centre
PO Box 1073
Grafton NSW 2460

*** END OF DOCUMENT ***

TIMBARA EIS RESPONSES

	RESPONDER		ISSUE AND COMMENTS
			Flora/Fauna Regional Conservation Value
8	National Parks & Wildlife Service	a	Timbara Plateau an area of outstanding and unique conservation value
30	NSW Aboriginal Land Council	c	Nearby rainforest will be destroyed
11	Forest Protection Society Ltd	b	Incorrect labelling of forest type in EIS (wet eucalypt being named rainforest)
3	National Parks Association of NSW	b	project area contains rare plants and endangered fauna
20	North East Forrest Alliance	h	Outstanding flora values. Moratorium until a representative reserve established
30	NSW Aboriginal Land Council	e	Concerns for endangered flora and fauna
			Flora/Fauna: Rare and threatened plants
8	National Parks & Wildlife Service	c	Project site includes rare and threatened Australian plants with limited distribution and high conservation value
8	National Parks & Wildlife Service	f	Impact of loss of habitat not adequately assessed. Impacts likely to be potentially large and significant
29	NSW Aboriginal Land Council	o	a unique and rare geological feature should not be disturbed.
27	Richmond Clarence Greens	b	Movement of rare species across site will be stopped
			Flora/Fauna: Endangered species
8	National Parks & Wildlife Service	b	A large number of endangered species on schedule 12
8	National Parks & Wildlife Service	e	Fauna survey considered comprehensive. Sampling procedures adequate
20	North East Forrest Alliance	e	Outstanding fauna values
29	NSW Aboriginal Land Council	j	Loss of habitat for rare and endangered species
27	Richmond Clarence Greens	c	Rare species will need to be cleared
7	UCARE Tabulum Inc	d	15 rare/vunerable species will be affected
			Flora/Fauna : Sampling methodology
8	National Parks & Wildlife Service	o	Stratification chosen not the most appropriate. Transect sampling appears biased. Done at a poor time of year
			Flora/Fauna: Future research projects
8	National Parks & Wildlife Service	q	Research project recommended on some flora species
			Flora/Fauna: Impact of Noise
8	National Parks & Wildlife Service	y	May affect fauna
3	National Parks Association of NSW	c	fauna would be driven away
			Flora/Fauna: Feral predators
8	National Parks & Wildlife Service	d	Feral predators are absent at present
8	National Parks & Wildlife Service	n	Rubbish which attracts feral predators (or their prey), cats and dogs should be banned
20	North East Forrest Alliance	f	Concerns that development will encourage introduced predators

Leach Pad: Buffer to wetland

8	National Parks & Wildlife Service	g	Buffer to wetland important. Inadequate with present placement of leach pad

Leach Pad: Water management

10	Clarence Catchment Management Committee	a	Essential to retain all storm water on site
24	Dept Land & Water Conservation	m	Storm pond will require HDPE liner. Soil testing is required on all dam/pond sites.
22	Dept Land & Water Conservation	f	No assessment of potential impact of a leak has been done
18	Environment Protection Authority	d	Concerns re effect of groundwater on integrity of liner and implications if liner fails.
18	Environment Protection Authority	i	Post mining direction of runoff. EIS does not consider impacts on downstream wetlands
21	Marilyn Heinz	a	pollutants such as CN finding their way into watercourses
21	Marilyn Heinz	e	Lack of proposals to net and fence leach dam
8	National Parks & Wildlife Service	i	impact of CN to wetland should be assessed. Monitoring of critical importance
2	NSW Aboriginal Land Council	c	Insufficient details of contingency plan
2	NSW Aboriginal Land Council	d	cyanide risks from contaminated groundwater
27	Richmond Clarence Greens	d	Breakdown leakage. Risks if contingency plans fail
9	State Forests	d	Where does water for flushing come from and go to
1	The Big Scrub Environment Centre	d	lifetime of liner, post mining water quality

Leach Pad: Contingency plans

16	Brian Watt	d	No amount of safeguards or contingency plans could ever be sufficient
22	Dept Land & Water Conservation	g	No mention of infrastructure to implement pumping to Big Hill OC
18	Environment Protection Authority	b	1:100 discharge will be very high in CN. Contingency plan is not justified and impact has not been provided.
8	National Parks & Wildlife Service	h	Contingency plans should detail movement of water to and from Big Hill open cut
3	National Parks Association of NSW	i	contingency pumping details not provided in EIS
23	National Parks Association of NSW	b	Contingency plan does not cover extreme event in early stage of operations
23	National Parks Association of NSW	c	Contingency plan does not detail pumping requirements
23	National Parks Association of NSW	d	Impact of contaminated water spill has not been assessed
20	North East Forrest Alliance	b	Lack of contingency planning until open cuts are available
29	NSW Aboriginal Land Council	c	2% risk of spill is unacceptable
29	NSW Aboriginal Land Council	e	Lack of plan to warn of CN leaks
29	NSW Aboriginal Land Council	f	Lack of detail re transfer of overflow to Big Hill
25	Peter Elworthy	c	Concerns re catastrophic spill/failure (ref to Guina)
7	UCARE Tabulum Inc	a	1 in 100 flood design is not adequate, CN in Big Hill open cut may allow CN to groundwater

Leach Pad: Pollution monitoring

29	NSW Aboriginal Land Council	d	Lack of adequate monitoring program
22	Dept Land & Water Conservation	h	No discussion as to how drift will be prevented. No assessment of impact should drift occur.
8	National Parks & Wildlife Service	j	Concerns raised on likelihood of spray drift
23	National Parks Association of NSW	a	Automatic shut off of spray system during wind storms and identification of hazards if they do not
9	State Forests	e	Scepticism about lack of spray drift even in slight winds

			Leach Pad : Precedents
9	State Forests	b	Concerns about lack of precedents re terrain, geology and rainfall
			Leach Pad: Cyanide fate
9	State Forests	c	Where does 700 tonnes/pa of CN go
24	Dept Land & Water Conservation	h	Extent of peat to be removed should be detailed
18	Environment Protection Authority	c	Concerns of capacity of soil to bear the weight of the heap.
21	Marilyn Heinz	b	Stability of ground - integrity of HDPE liner should ground shift.
29	NSW Aboriginal Land Council	f	Pad will destroy 29ha of only 650ha of this type of vegetation
29	NSW Aboriginal Land Council	g	Long term stability of pad - fear of catastrophic collapse
29	NSW Aboriginal Land Council	g	White ants will eat HDPE liner
25	Peter Elworthy	b	Concerns re integrity of liner
			Leach Pad: Cyanide wildlife deaths
3	National Parks Association of NSW	e	visiting mice, un-netted leach pad area and birds
3	National Parks Association of NSW	h	Hazards of pad area. Comparisons with North Parkes
25	Peter Elworthy	a	Concerns over wildlife
			Leach Pad: Rehabilitation
10	Clarence Catchment Management Committee	c	Decommissioning detail is lacking
24	Dept Land & Water Conservation	e	Concerns that porosity of leach pad will prevent rehabilitation
24	Dept Land & Water Conservation	i	No evidence submitted to support that heap leach pad can be rehabilitated by method proposed. Concerns re void volumes, water retention capacity, and pH at 7 rather than the natural 4.3-5.6. Trials essential
22	Dept Land & Water Conservation	i	More details needed on pond decommissioning
22	Dept Land & Water Conservation	j	Post mining flows will go to different catchments than at present.
18	Environment Protection Authority	h	Concerns about rehab arising form free draining design of pad. Demonstration of ability to successfully rehabilitate will be required before approval
8	National Parks & Wildlife Service	w	Concerns expressed as to whether will be successive. Refer to precedents
9	State Forests	h	Need for trials re Eucalyptus Olida. Exposure from height of pad (24M) will need to be considered
26	UCARE Tabulam Inc	b	proposed strategy is not feasible

		Waste Rock: Arsenic content
9 State Forests	f	Concerns of arsenic production from waste rock.
		Waste Rock: Emplacement design
10 Clarence Catchment Management Committee	b	Design detail lacking
18 Environment Protection Authority	f	EPA will need to be satisfied that placement is appropriate and design is stable
8 National Parks & Wildlife Service	s	Redesign Waste rock dumps considering backfill options to minimise fauna and flora impacts
8 National Parks & Wildlife Service	u	Alternative sites to Big Hill dump need to be considered
		Waste Rock: Erosion Management
24 Dept Land & Water Conservation	e	Plan needed prior to commencement
18 Environment Protection Authority	e	EPA will require considerable design detail on engineering and erosion control
18 Environment Protection Authority	j	Detailed sediment and erosion control plans must be submitted and approved before approval. DLaWC endorsement will be needed
20 North East Forrest Alliance	c	long term stability is a problem
		Haul Road: Fauna impact
8 National Parks & Wildlife Service	k	Width will be a barrier. Impacts not adequately assessed
		Haul Road: Erosion management
24 Dept Land & Water Conservation	g	Insufficient design detail. Redesign needed
18 Environment Protection Authority	k	Detailed sediment and erosion control plans must be submitted and approved before approval. DLaWC endorsement will be needed
		Haul Road: Design & Maintenance
10 Clarence Catchment Management Committee	d	LaWC should be involved in design and maintenance
		Big Hill OC: Erosion management
18 Environment Protection Authority	l	Detailed sediment and erosion control plans must be submitted and approved before approval. DLaWC endorsement will be needed
8 National Parks & Wildlife Service	m	Particular attention should be paid to sediment control near Big Hill
25 Peter Elworthy	e	Risks of catastrophic erosion if Big Hill containment breached
		Big Hill OC: Water Management
24 Dept Land & Water Conservation	f	Control of run off above pit has not been adequately addressed
30 NSW Aboriginal Land Council	b	Concerns about stopping of Duncan Ck Flow
		Big Hill OC: Water Pollution
26 UCARE Tabulam Inc	a	Erosion of dumped rock will erode with time and pollute downstream
		Big Hill OC: Rehabilitation
18 Environment Protection Authority	g	No consideration of alternative proposals. How about backfilling.
8 National Parks & Wildlife Service	v	Alternate plans need to be considered

			Access Road: Flora impacts
8	National Parks & Wildlife Service	p	No assessment has been carried out. Communities of significance to be identified and relocated
			Access Road: Widening
24	Dept Land & Water Conservation	j	Widening and realignment will effect crown lands. DLWC consent needed.
			Access Road: Traffic descriptions
11	Forest Protection Society Ltd	d	Hazards to stock from increased traffic
9	State Forests	j	EIS appears to under estimate increase in traffic
			Access Road: Intersections and standards
5	Michael Combe	d	Need for speed limits
17	Tenterfield Shire Council	a	Proposal of design and construction detail undertakings for Company
			Access Road: Future maintenance
5	Michael Combe	c	Who will be responsible for future (post mining?) road maintenance
			Pipeline: Erosion management
24	Dept Land & Water Conservation	l	Details needed, including of branch lines on mine site.
18	Environment Protection Authority	m	Detailed sediment and erosion control plans must be submitted and approved before approval. DLaWC endorsement will be needed
9	State Forests	1	Granite is prone to erosion. Greater traffic will exacerbate problems
			Pipeline: Approvals
24	Dept Land & Water Conservation	k	DLWC approvals required to clear protected lands.

Hydrology: Adequacy of study

21 Marilyn Heinz	c	Possibility of massive erosion of Timbara River
8 National Parks & Wildlife Service	l	Impact of Big Hill OC and Waste rock should be determined in more detail
8 National Parks & Wildlife Service	x	No EIS information provided re timing, frequency and size of flood events
3 National Parks Association of NSW	g	Rainfall data extrapolation from Tenterfield invalid

Hydrology: Riparian flows

11 Forest Protection Society Ltd	f	concerns for water users (no just those with pumping licences)
19 Jim Laurie	a	Gross exploitation of the limited and drought affected water supply.
4 Jubulum Local Aboriginal Land Council	b	Concern about extraction of 2.5 ML/day
21 Marilyn Heinz	d	Big Hill pit may take 12 years to fill. During that time the flow of Duncans Ck and Hence Timbara will be effected
23 National Parks Association of NSW	e	EIS interpretation of historic river flow data is not accepted. Implications for day to day management need to be considered
20 North East Forrest Alliance	k	LaWC ban on further pumping licences. Defer proposals until after good rain
2 NSW Aboriginal Land Council	b	Extraction of 2.5 Ml/day. Assessment of impact inadequate.
29 NSW Aboriginal Land Council	a	No minimum flow levels have been set. Impact of filling big Hill Pit
30 NSW Aboriginal Land Council	a	Concerns about pumping from Timbara in time of drought
25 Peter Elworthy	f	Big Hill will take 12 years to fill drying Duncans Ck for that time
27 Richmond Clarence Greens	a	Inadequate detail from which to assess impacts
7 UCARE Tabulum Inc	b	Concern about consequent of extracting 2.5ML/day

Hydrology: Downstream water quality

16 Brian Watt	f	Pumping form river will degree and pollute
19 Jim Laurie	b	Alarmed at prospects of poison leaking into environment as at Drake.
4 Jubulum Local Aboriginal Land Council	c	Concern about cyanide being fully contained
21 Marilyn Heinz	f	Timbara is used recreationally and many people depend upon it
20 North East Forrest Alliance	a	Impact on water ways

Hydrology: Monitoring

22 Dept Land & Water Conservation	k	Strategy should be implemented including criteria which justify shut down of operations
11 Forest Protection Society Ltd	a	Need for monitoring to detect contamination of waterways

Hydrology: General Impacts

24 Dept Land & Water Conservation	b	A detailed water management erosion and sediment control plan is needed
22 Dept Land & Water Conservation	b	Licences required to excavate and pump form Big hill pit (on Duncans Ck), and Poverty hill Pit (on a tributary of Williams Ck)
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22 Dept Land & Water Conservation	e	Proposal will inhibit Duncan's Ck flows for 10 to 12 years after project completion. Strategy is needed to maintain environmental flow
9 State Forests	g	Comparison drawn to cadmium and CN pollution at Drake

Hydrology: Post mining impacts

1 The Big Scrub Environment Centre	e	Irresponsible attitude in EIS by lack of mention of post mining water quality

General: Topsoil stockpiles

24	Dept Land & Water Conservation	d	topsoil management not sufficiently detailed. Is sufficient area available?
8	National Parks & Wildlife Service	t	More study needed on topsoil storage areas and whether proposed sites allow adequate space

General: Additional gold deposits

5	Michael Combe	e	Concerns about expansion of scope of mining operations
8	National Parks & Wildlife Service	r	Development of additional areas must not proceed without EIS
3	National Parks Association of NSW	d	expansion of mining would further disrupt fauna

General: Cultural heritage

6	B. S. Blackford & K Cockburn	a	Water race tunnel is a significant feature, part of a much larger water supply
5	Michael Combe	g	Historic values of previous mining have been understated and will be destroyed
8	National Parks & Wildlife Service	z	NPWS disagrees with EIS view that Bold Mountain is not a potential impediment
3	National Parks Association of NSW	f	Bold Top Mountain - effect of blasting
2	NSW Aboriginal Land Council	a	Claim that native title has been extinguished is premature
29	NSW Aboriginal Land Council	l	Access to Bold Mountain
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27	Richmond Clarence Greens	g	Native title not extinguished. Site is of significance to Aboriginal community
1	The Big Scrub Environment Centre	c	1 km exclusion zone surrounding Bold Mountain
7	UCARE Tabulum Inc	c	Portion 57 was overlooked by EIS and is suggested to be of great significance to Aboriginal people
4	Jubulum Local Aboriginal Land Council	a	EIS claim that native title extinguished is not accepted

General: Time to respond to EIS

13	Drake Environmental Association	a	Request to accept late submissions
5	Michael Combe	a	review period inadequate
1	The Big Scrub Environment Centre	a	inadequate time for submission
7	UCARE Tabulum Inc	e	Submission in haste because of limited and late availability

General: Community consultation

16	Brian Watt	a	As a local landholder I was not consulted
13	Drake Environmental Association	b	Lack of community consultation
15	J. A. Bleakley	b	I was not consulted
12	Janelle Johnston	a	Lack of adequate community consultation
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19	Jim Laurie	c	Request for Commission of Inquiry

General: Forestry issues

24	Dept Land & Water Conservation	c	Sediment management must include logging activities

18	Environment Protection Authority	a	Any forestry practices must comply with Pollution control licences held by NSW State Forests.
9	State Forests	a	Compensation for loss of forest will have to be finalised. Also negotiations regarding clearing
10	Clarence Catchment Management Committee	c	contingency plan needed
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16	Brian Watt	b	Call for Commission of enquiry
16	Brian Watt	e	Access to Portion 57 of grazing lease LI85403 will be lost
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25	Peter Elworthy	g	Dust and noise concerns
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9	State Forests	k	Indemnification of State Forests from legal liabilities
9	State Forests	l	Comments on proposed conditions

TIMBARA EIS RESPONSES

	RESPONDER		ISSUE AND COMMENTS
			Flora/Fauna Regional Conservation Value
8	National Parks & Wildlife Service	a	Timbara Plateau an area of outstanding and unique conservation value
30	NSW Aboriginal Land Council	c	Nearby rainforest will be destroyed
11	Forest Protection Society Ltd	b	Incorrect labelling of forest type in EIS (wet eucalypt being named rainforest)
3	National Parks Association of NSW	b	project area contains rare plants and endangered fauna
20	North East Forrest Alliance	h	Outstanding flora values. Moratorium until a representative reserve established
30	NSW Aboriginal Land Council	e	Concerns for endangered flora and fauna
			Flora/Fauna: Rare and threatened plants
8	National Parks & Wildlife Service	c	Project site includes rare and threatened Australian plants with limited distribution and high conservation value
8	National Parks & Wildlife Service	f	Impact of loss of habitat not adequately assessed. Impacts likely to be potentially large and significant
29	NSW Aboriginal Land Council	o	a unique and rare geological feature should not be disturbed.
27	Richmond Clarence Greens	b	Movement of rare species across site will be stopped
			Flora/Fauna: Endangered species
8	National Parks & Wildlife Service	b	A large number of endangered species on schedule 12
8	National Parks & Wildlife Service	e	Fauna survey considered comprehensive. Sampling procedures adequate
20	North East Forrest Alliance	e	Outstanding fauna values
29	NSW Aboriginal Land Council	j	Loss of habitat for rare and endangered species
27	Richmond Clarence Greens	c	Rare species will need to be cleared
7	UCARE Tabulum Inc	d	15 rare/vunerable species will be affected
			Flora/Fauna : Sampling methodology
8	National Parks & Wildlife Service	o	Stratification chosen not the most appropriate. Transect sampling appears biased. Done at a poor time of year
			Flora/Fauna: Future research projects
8	National Parks & Wildlife Service	q	Research project recommended on some flora species
			Flora/Fauna: Impact of Noise
8	National Parks & Wildlife Service	y	May affect fauna
3	National Parks Association of NSW	c	fauna would be driven away
			Flora/Fauna: Feral predators
8	National Parks & Wildlife Service	d	Feral predators are absent at present
8	National Parks & Wildlife Service	n	Rubbish which attracts feral predators (or their prey), cats and dogs should be banned
20	North East Forrest Alliance	f	Concerns that development will encourage introduced predators

Leach Pad: Buffer to wetland

8	National Parks & Wildlife Service	g	Buffer to wetland important. Inadequate with present placement of leach pad

Leach Pad: Water management

10	Clarence Catchment Management Committee	a	Essential to retain all storm water on site
24	Dept Land & Water Conservation	m	Storm pond will require HDPE liner. Soil testing is required on all dam/pond sites.
22	Dept Land & Water Conservation	f	No assessment of potential impact of a leak has been done
18	Environment Protection Authority	d	Concerns re effect of groundwater on integrity of liner and implications if liner fails.
18	Environment Protection Authority	i	Post mining direction of runoff. EIS does not consider impacts on downstream wetlands
21	Marilyn Heinz	a	pollutants such as CN finding their way into watercourses
21	Marilyn Heinz	e	Lack of proposals to net and fence leach dam
8	National Parks & Wildlife Service	i	impact of CN to wetland should be assessed. Monitoring of critical importance
2	NSW Aboriginal Land Council	c	Insufficient details of contingency plan
2	NSW Aboriginal Land Council	d	cyanide risks from contaminated groundwater
27	Richmond Clarence Greens	d	Breakdown leakage. Risks if contingency plans fail
9	State Forests	d	Where does water for flushing come from and go to
1	The Big Scrub Environment Centre	d	lifetime of liner, post mining water quality

Leach Pad: Contingency plans

16	Brian Watt	d	No amount of safeguards or contingency plans could ever be sufficient
22	Dept Land & Water Conservation	g	No mention of infrastructure to implement pumping to Big Hill OC
18	Environment Protection Authority	b	1:100 discharge will be very high in CN. Contingency plan is not justified and impact has not been provided.
8	National Parks & Wildlife Service	h	Contingency plans should detail movement of water to and from Big Hill open cut
3	National Parks Association of NSW	i	contingency pumping details not provided in EIS
23	National Parks Association of NSW	b	Contingency plan does not cover extreme event in early stage of operations
23	National Parks Association of NSW	c	Contingency plan does not detail pumping requirements
23	National Parks Association of NSW	d	Impact of contaminated water spill has not been assessed
20	North East Forrest Alliance	b	Lack of contingency planning until open cuts are available
29	NSW Aboriginal Land Council	c	2% risk of spill is unacceptable
29	NSW Aboriginal Land Council	e	Lack of plan to warn of CN leaks
29	NSW Aboriginal Land Council	f	Lack of detail re transfer of overflow to Big Hill
25	Peter Elworthy	c	Concerns re catastrophic spill/failure (ref to Guina)
7	UCARE Tabulum Inc	a	1 in 100 flood design is not adequate, CN in Big Hill open cut may allow CN to groundwater

Leach Pad: Pollution monitoring

29	NSW Aboriginal Land Council	d	Lack of adequate monitoring program
22	Dept Land & Water Conservation	h	No discussion as to how drift will be prevented. No assessment of impact should drift occur.
8	National Parks & Wildlife Service	j	Concerns raised on likelihood of spray drift
23	National Parks Association of NSW	a	Automatic shut off of spray system during wind storms and identification of hazards if they do not
9	State Forests	e	Scepticism about lack of spray drift even in slight winds

			Leach Pad : Precedents
9	State Forests	b	Concerns about lack of precedents re terrain, geology and rainfall
			Leach Pad: Cyanide fate
9	State Forests	c	Where does 700 tonnes/pa of CN go
24	Dept Land & Water Conservation	h	Extent of peat to be removed should be detailed
18	Environment Protection Authority	c	Concerns of capacity of soil to bear the weight of the heap.
21	Marilyn Heinz	b	Stability of ground - integrity of HDPE liner should ground shift.
29	NSW Aboriginal Land Council	f	Pad will destroy 29ha of only 650ha of this type of vegetation
29	NSW Aboriginal Land Council	g	Long term stability of pad - fear of catastrophic collapse
29	NSW Aboriginal Land Council	g	White ants will eat HDPE liner
25	Peter Elworthy	b	Concerns re integrity of liner
			Leach Pad: Cyanide wildlife deaths
3	National Parks Association of NSW	e	visiting mice, un-netted leach pad area and birds
3	National Parks Association of NSW	h	Hazards of pad area. Comparisons with North Parkes
25	Peter Elworthy	a	Concerns over wildlife
			Leach Pad: Rehabilitation
10	Clarence Catchment Management Committee	c	Decommissioning detail is lacking
24	Dept Land & Water Conservation	e	Concerns that porosity of leach pad will prevent rehabilitation
24	Dept Land & Water Conservation	i	No evidence submitted to support that heap leach pad can be rehabilitated by method proposed. Concerns re void volumes, water retention capacity, and pH at 7 rather than the natural 4.3-5.6. Trials essential
22	Dept Land & Water Conservation	i	More details needed on pond decommissioning
22	Dept Land & Water Conservation	j	Post mining flows will go to different catchments than at present.
18	Environment Protection Authority	h	Concerns about rehab arising form free draining design of pad. Demonstration of ability to successfully rehabilitate will be required before approval
8	National Parks & Wildlife Service	w	Concerns expressed as to whether will be successive. Refer to precedents
9	State Forests	h	Need for trials re Eucalyptus Olida. Exposure from height of pad (24M) will need to be considered
26	UCARE Tabulam Inc	b	proposed strategy is not feasible

			Waste Rock: Arsenic content
9	State Forests	f	Concerns of arsenic production from waste rock.
			Waste Rock: Emplacement design
10	Clarence Catchment Management Committee	b	Design detail lacking
18	Environment Protection Authority	f	EPA will need to be satisfied that placement is appropriate and design is stable
8	National Parks & Wildlife Service	s	Redesign Waste rock dumps considering backfill options to minimise fauna and flora impacts
8	National Parks & Wildlife Service	u	Alternative sites to Big Hill dump need to be considered
			Waste Rock: Erosion Management
24	Dept Land & Water Conservation	e	Plan needed prior to commencement
18	Environment Protection Authority	e	EPA will require considerable design detail on engineering and erosion control
18	Environment Protection Authority	j	Detailed sediment and erosion control plans must be submitted and approved before approval. DLaWC endorsement will be needed
20	North East Forrest Alliance	c	long term stability is a problem
			Haul Road: Fauna impact
8	National Parks & Wildlife Service	k	Width will be a barrier. Impacts not adequately assessed
			Haul Road: Erosion management
24	Dept Land & Water Conservation	g	Insufficient design detail. Redesign needed
18	Environment Protection Authority	k	Detailed sediment and erosion control plans must be submitted and approved before approval. DLaWC endorsement will be needed
			Haul Road: Design & Maintenance
10	Clarence Catchment Management Committee	d	LaWC should be involved in design and maintenance
			Big Hill OC: Erosion management
18	Environment Protection Authority	l	Detailed sediment and erosion control plans must be submitted and approved before approval. DLaWC endorsement will be needed
8	National Parks & Wildlife Service	m	Particular attention should be paid to sediment control near Big Hill
25	Peter Elworthy	e	Risks of catastrophic erosion if Big Hill containment breached
			Big Hill OC: Water Management
24	Dept Land & Water Conservation	f	Control of run off above pit has not been adequately addressed
30	NSW Aboriginal Land Council	b	Concerns about stopping of Duncan Ck Flow
			Big Hill OC: Water Pollution
26	UCARE Tabulam Inc	a	Erosion of dumped rock will erode with time and pollute downstream
			Big Hill OC: Rehabilitation
18	Environment Protection Authority	g	No consideration of alternative proposals. How about backfilling.
8	National Parks & Wildlife Service	v	Alternate plans need to be considered

			Access Road: Flora impacts
8	National Parks & Wildlife Service	p	No assessment has been carried out. Communities of significance to be identified and relocated
			Access Road: Widening
24	Dept Land & Water Conservation	j	Widening and realignment will effect crown lands. DLWC consent needed.
			Access Road: Traffic descriptions
11	Forest Protection Society Ltd	d	Hazards to stock from increased traffic
9	State Forests	j	EIS appears to under estimate increase in traffic
			Access Road: Intersections and standards
5	Michael Combe	d	Need for speed limits
17	Tenterfield Shire Council	a	Proposal of design and construction detail undertakings for Company
			Access Road: Future maintenance
5	Michael Combe	c	Who will be responsible for future (post mining?) road maintenance
			Pipeline: Erosion management
24	Dept Land & Water Conservation	l	Details needed, including of branch lines on mine site.
18	Environment Protection Authority	m	Detailed sediment and erosion control plans must be submitted and approved before approval. DLaWC endorsement will be needed
9	State Forests	1	Granite is prone to erosion. Greater traffic will exacerbate problems
			Pipeline: Approvals
24	Dept Land & Water Conservation	k	DLWC approvals required to clear protected lands.

Hydrology: Adequacy of study

21 Marilyn Heinz	c	Possibility of massive erosion of Timbara River
8 National Parks & Wildlife Service	l	Impact of Big Hill OC and Waste rock should be determined in more detail
8 National Parks & Wildlife Service	x	No EIS information provided re timing, frequency and size of flood events
3 National Parks Association of NSW	g	Rainfall data extrapolation from Tenterfield invalid

Hydrology: Riparian flows

11 Forest Protection Society Ltd	f	concerns for water users (no just those with pumping licences)
19 Jim Laurie	a	Gross exploitation of the limited and drought affected water supply.
4 Jubulum Local Aboriginal Land Council	b	Concern about extraction of 2.5 ML/day
21 Marilyn Heinz	d	Big Hill pit may take 12 years to fill. During that time the flow of Duncans Ck and Hence Timbara will be effected
23 National Parks Association of NSW	e	EIS interpretation of historic river flow data is not accepted. Implications for day to day management need to be considered
20 North East Forrest Alliance	k	LaWC ban on further pumping licences. Defer proposals until after good rain
2 NSW Aboriginal Land Council	b	Extraction of 2.5 Ml/day. Assessment of impact inadequate.
29 NSW Aboriginal Land Council	a	No minimum flow levels have been set. Impact of filling big Hill Pit
30 NSW Aboriginal Land Council	a	Concerns about pumping from Timbara in time of drought
25 Peter Elworthy	f	Big Hill will take 12 years to fill drying Duncans Ck for that time
27 Richmond Clarence Greens	a	Inadequate detail from which to assess impacts
7 UCARE Tabulum Inc	b	Concern about consequent of extracting 2.5ML/day

Hydrology: Downstream water quality

16 Brian Watt	f	Pumping form river will degree and pollute
19 Jim Laurie	b	Alarmed at prospects of poison leaking into environment as at Drake.
4 Jubulum Local Aboriginal Land Council	c	Concern about cyanide being fully contained
21 Marilyn Heinz	f	Timbara is used recreationally and many people depend upon it
20 North East Forrest Alliance	a	Impact on water ways

Hydrology: Monitoring

22 Dept Land & Water Conservation	k	Strategy should be implemented including criteria which justify shut down of operations
11 Forest Protection Society Ltd	a	Need for monitoring to detect contamination of waterways

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