Toitu te whenua
Land Information
New Zealand

Crown Pastoral Land Tenure Review

Lease name: Wyuna

Lease number: Po 299

Part Four

Public submissions

These submissions were received as a result of the public advertising of the preliminary proposal for tenure review.

September 03

Glenorchy Battery Association
Box 14
Glenorchy
15 August 2003

The Commissioner of Crown Lands
c/ - Quotable Value New Zealand
PO Box 13 - 433
CHRISTCHURCH

Dear Sir,

RE : Submission Wyuna Tenure Reveiw

Summary

The Glenorchy Battery Association (GBA) officially represents community members and miners who have historic, current and future interests in mining.
Scheelite contains tungsten which is a strategic mineral. Glenorchy is the scheelite mining capital for the southern hemisphere and has both a rich history and potential future for scheelite and gold mining.

The preliminary proposal addresses many issues involving *mining history* and *heritage* for the gold and scheelite bearing lands of the Richardson Mountains. However, the proposal presents limited scope for mining interests.

As it is the intention of the Tenure Review process that land with significant inherent values is retained with Crown ownership then it appears that the LINZ objectives for Tenure Review are not being fully met by the preliminary proposal as one of the most significant inherent value of the land under reveiw is the mineral content and the review does not address this.

In this respect it is hoped that the Commissioner will consult with key Ministers and the MED who are also aware of the importance of outcomes from this particular Tenure Review.

Points discussed in this submission :

1. Requirement for ' Special Mining Area ' designation
2. Mt Judah Road to become a legal road
3. Easements required on land to be disposed of as freehold
4. GBA to continue to lease battery building and equipment

1. Requirement for ' Special Mining Area ' Designation

Overview

History has demonstrated that the Wyuna lands have a compatible mixture of values relating to recreation,conservation, farming and mining.

However, the current Tenure Review process has **NO** ability to recognize lands that have potential mineral worth. This ability is left for the mining industry to trigger, in the form of mining applications.

The tenure review process should involve opportunity for the Ministry of Economic Development (MED / Crown Minerals) to identify and assess inherent values which have sufficent worth or utilty or desirability for ***mining reasons*** to rank as ' signifcant inherent values '.

Currently - the tenure process only takes into account policy from the CPLA Manual, DOC, Appendix 4 part 1. stating -"*for the purposes of Tenure Review process it is assumed that DOC is the expert on the identification and assessment of those inherent values which have sufficient worth or utility or desirability for conservation reasons to rank as ' significant inherent values ' ".*
MED / Crown Minerals require similar opportunity in tenure review process to have mining interests met by the identification and assessment of significant inherent values important to this ministry.

Recognition of these values could then be reasonably considered to direct Land Title designation and management - allowing mining, grazing, public access and recreation for the area to continue, administered by LINZ as a Special Mining Area.
This may be a more appropriate administration to advocate for protection of significant inherent values unique to this tenure review under the CPLA Tenure Review section 24 rather than administration by DOC.

Outcome sought

That the above considerations result in the Wyuna lands, as areas CA2, CA3,CA5 and land to be disposed of as freehold - being designated for LINZ administration as Special Mining Area. - see Appendix 1.

REASONS :

* The GBA understands that :

1. The Crown owns the minerals under the land. This is the same for freehold lands, pastoral lease lands and Conservation lands.

2. The Crown Minerals Act 1991 deals with the mine permitting process and this is the same for freehold land, pastoral lease land and Conservation land.

3. Even though the Crown owns the minerals beneath Conservation land, DOC can challenge mining on it's land in two ways - and this is the same for freehold land owners and the Commissioner of Crown Lands -
(i) Access can be opposed
(ii) Resource Consent can be opposed.

4. Mining rights are reasonably realistic to acheive on freehold land as the parties can negotiate terms.This is supported by Crown Minerals Act section 54 (2) (a) and (b) - *an arbitrator can assist with determining access for mining in accordance with an Order in Council .*

5. Mining rights are more difficult to achieve on conservation lands as there are limited processes allowing the parties to negotiate. This is supported by CMA section 55 (1) and (2) - *an arbitrator shall* ***not*** *be entitled to determine mining access arrangement on (a) Any lands held under the Conservation Act.....*

* The recently designated Sam's Creek Special Mining Area adjacent to the newly formed Kahurangi National Park in northwest Nelson may have relevance to study but there is a difference in that *no mining applications* are currently in process for the Wyuna lands.
However - current **exploration** rights are in place for New Zealand Tungsten Mining Ltd for tungsten, gold & silver applying to an area of 3548 ha of the Wyuna lands, comprising both land to be disposed of as freehold and conservation lands.
- as detailed in appendix

A model that demonstrates how previous planning processes may lead to complications, might be applied to the recent situation at Reefton where Macraes Mining operation has been seeking rights for access and mining on DOC administered lands.

* Mr. Paul Swain in his capacity as Associate Minister of Energy has advised the GBA (Appendix) that ' *the Commissioner of Crown Lands is receptive to submissions on the subject* (future land ownership and access) *and my officials have been assured that the Commissioner will take your concerns into account in making a final decision in Tenure Review* '.. and that... ' *vesting the land in the Department of Conservation is only one possible outcome...* '

* The Proposed Designations Report (PDR) Section 2.1.4 - Richardson Mountains / Management and Boundary issues, states -
' *while there is no current interest in scheelite mining, this activity is regulated by world events. If there is demand, then mining applications may result* '
The price of scheelite is currently rising in response to two factors -
(i) change in the nature of both foreign and domestic armament policies (Ie - in NZ, for instance, lead shot is being phased out, replaced by tungsten hardened steel shot)
(Ii) change in availability of scheelite production in other countries.

* The Conservation Resources Report (CRP) identifies that '*...not only were (the mines) a significant source of employment to the Glenorchy region, they were almost from their inception the major producers of scheelite in NZ....* '
Ie - the Glenorchy mining industry could at some point in the future be an employer and contributor to GDP.

* The CRP section iv A Brief History of Scheelite Mining - reports, that the Glenorchy scheelite mining industry has repeatedly been assessed as finished and over. Subsequently, the industry has repeatedly reactivated in relation to price/supply issues associated with world events.
<u>This demonstrates that the issue of the *mining industry being finished* cannot be accurately assessed by anyone.</u>

* At the time of writing the Conservation Resources Report (CRR) section f(ii) District Plan Zoning defines ;
RURAL MINING ZONE (**RMA**) applying to the Wyuna lands - ' *this is a special zone which recognizes the scheelite mining activity in the Glenorchy area...* ***Mining may be a pre-dominate or conditional use*** *depending on the scale of the operations proposed. It is acknowledged that some land contained within the zone would be subject to conservation controls of the rural C zone.....'*

2. Mt. Judah road to become a legal road.
- represented as **easement a-b-c** in the proposal

Reasons

The planned conservation areas represented on map 1 as CA3, CA5, parts of CA2 and CA1 are the main areas where mining is likely to resume.
Miners and the Crown have already paid for the development of the bridal tracks, bulldozed tracks and the Mt. Judah roadway which is the main access way to deliver mining resources into the area, to deliver ore to the battery for processing and to freight processed ore out.

*The Proposed Designations Report (PDR) page 8 identifies *' that many mine sites are readily accessible via the Mt. Judah road '*

*The Conservation Resources Report (CRR) part iv, page 9 states - *'... The Glenorchy Scheelite lode (or reef) was discovered in 1884..... a company was formed to exploit the discovery. A road was constructed from the reef to Blanket Bay to allow the scheelite to be shipped out. This road is essentially the same one that still climbs the lower slopes of Mt Judah...*

*Also, CRR page 9 states *' in order to increase production the Govt gave financial assistance to miners to improve roads* -(circa 1941) '

* The PDR section 2.5.2 identifies that *' the Queenstown Lakes District Council (QLDC) has expressed some interest in legalising the road and this initiative will be pursued... '* and that it *' is the main strategic entry to the Richardson Mountains and the proposal attempts to use as much as the road for access as possible... '*

* A **possible legal process** for administration of the road to pass from DOC to QLDC is :
- the Mt. Judah road (from Glenorchy - Queenstown highway to Bonnie Jean Creek) be taken over as a conservation area. DOC then vest the land area of the roadway to QLDC for the council to administer as a road.

3. Easements required on land to be disposed of as freehold

Reasons

The diverse history of the Glenorchy mining community's endeavours in the Richardson Mountains has resulted in many intact and well formed bulldozed access tracks to mines and through mining resource lands, in areas designated as conservation and freehold lands.
These features have strong linkages and there is a definite overlap onto land to be disposed off as freehold hence a requirement for easements.
Existing registered water race rights belonging to the Glenorchy Battery also require protection by way of easement as the water race is postioned on land to be disposed off as freehold.

Easements required :

(A) Water Race easement for water race from Stoneburn Creek, accross the west face of Mt. Judah to the Glenorchy Battery Site : see Appendix

New Information - The Glenorchy Battery is currently being refurbished by mine history enthusiasts and is 90% operational The Battery is powered by water race delivered water and the race is soon to be re-instated.
It is necessary that the water race is physically protected as it is on land to be disposed of as freehold.
The GBA has current water rights and resource consent : see Appendix 6 - detailed as WR117Q and WR 146Q ; Queenstown Lakes District Council, Holder Ministry of Energy.

(B) Vehicle and mining resource access easement on existing 4WD track zig zagging up west face of Mt. Judah, from Mt. Judah road up to 'Casey's Mine ' at conservation area CA3 boundary and accross face to Stoneburn creek : see appendix

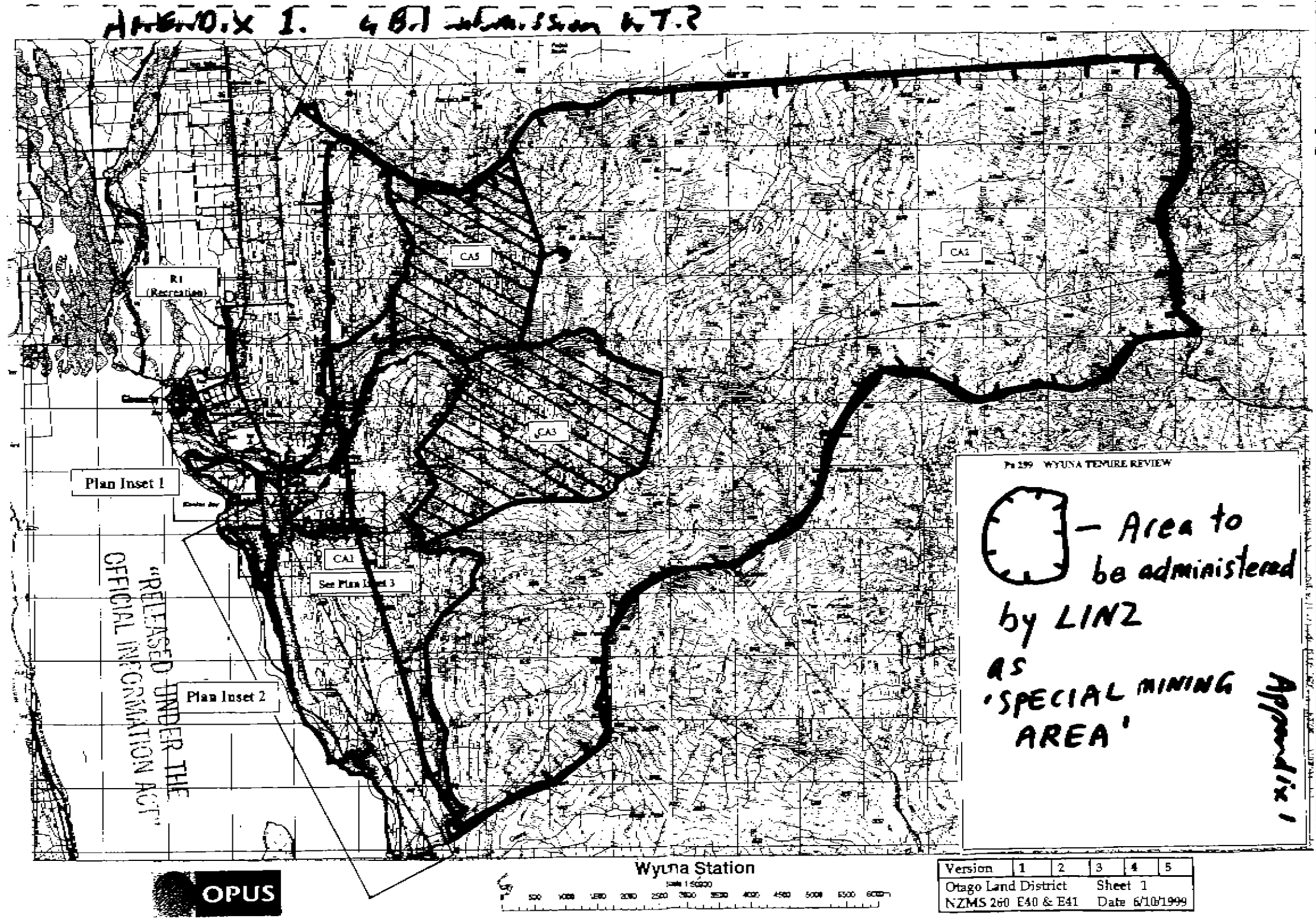
(C) Vehicle and mining resource acess easement on existing 4WD track zig zagging up west face of slope above Chinaman's Flat to the trig marked R and boundary with area CA5 : refer to appendix
It is hoped that this easement will link with a yet to be formed, unformed **legal** road that branches off the Glenorchy - Paradise road and terminates on the lease boundary midway between Trig C and Preicipice Creek. (as identified in CRR part c)

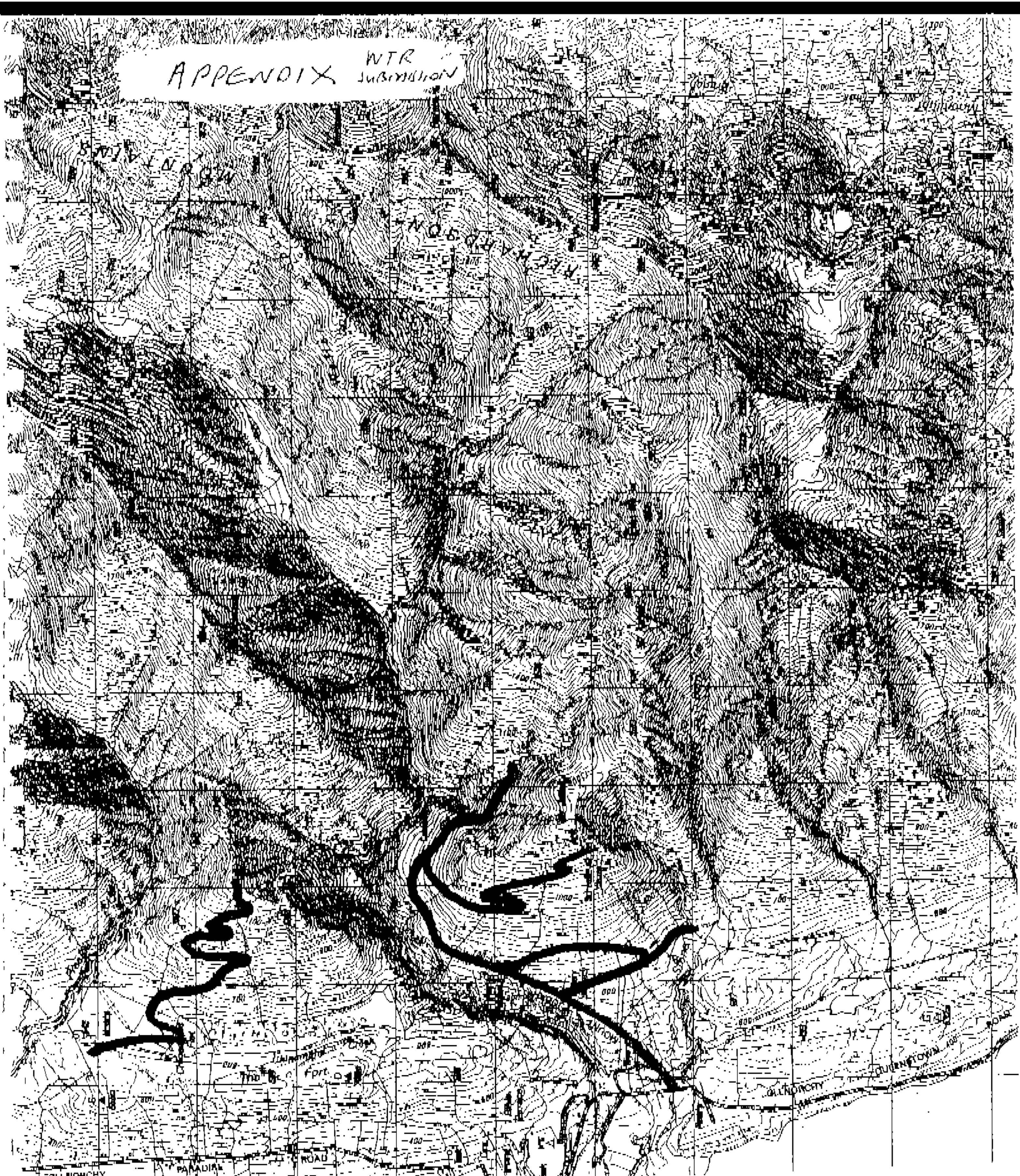
4. Glenorchy Battery Association wish to continue to lease mining battery and equipment.

As referred to in the CPL Due Diligence Report Pre Tenure Review Assessment Standard 6 , 2 (h)

- the GBA are interested to continue leasing the battery building and equipment from Ministry Of Commerce or who the owner may be via a sub-lease.

APPENDIX 1. 4B.1 submission to T.R





EASEMENTS REQUIRED

GBA SUBMISSION – map of Wyuna showing

VEHICLE AND MINING RESOURCE ACCESS (B) + (C)

water race, as described in (A)

MT. JUDAH Rd to become legal road.

1. WTR SUBMISSION APPENDIX

Resource Consent Detail Report For WR117Q

At 18/06/2001

Resource Consent Number: WR117Q
Status: Current
Job Number:
Debtor Code:
File Number: NOFILE No File In database
District: QUEENSTOWN-LAKES DISTRICT
Purpose: Mining Priv: WR117Q Share: / Take Stoney Creek, Glenorchy Battery Race. See also WR1496Q
Document Directory: \\kosh\Consentdocs\Mining Privileges\WR117Q
Holder: Ministry of Energy
Private Bag
Wellington
Consent Replaces:

Classifications:

Type: Water Permit
SubType: Surface Take
Contaminants:

Location:

Map References

E41:484-830 1:50000 Topo Map

100

Common Address: WR117Q - Stoney Creek. Glenorchy
Rural Location No:
Dairy Supply No:

Land Parcels

River No	River Name	Locality Grouping	Parent Catchment
752749	Dart,Rees,Routeburn,Greenstone	Lakes	Clutha River

Applications:

New Resource Consent	12/02/1900	12/02/1900	Granted

Parameters:

Corrected Days	0	days
Maximum Rate	194.44	l/s
Maximum Rate	194.44	l/s
Mining Privilege No	WR117Q	
Priority Date	12/02/1900	
Purpose/activity	Mining	
Race Name	Glenorchy Battery Race	
Uncorrected Days	0	days
Water Body	Stoney Creek	

Decision Events:

Commence	12/02/1900
Expire	01/10/2021

Conditions:

Compliance Monitoring:

General Comments:

WTR SUBMISSION APPENDIX

Resource Consent Detail Report For WR1496Q

At 18/06/2001

Resource Consent Number: WR1496Q

Status: Current

Job Number:

Debtor Code:

File Number: NOFILE No File in database

District: QUEENSTOWN-LAKES DISTRICT

Purpose: Mining Priv: WR1496Q To take 100,000 lphfrom Little Stoney Creek MINES DEPT for mining - supplementary to WR117Q -(from field notes) In 1975 still used to drive battery once a year & for pastoral purposes. Probably less than 7 cusecs runs through battery continually, excess used for stock.

Document Directory: \\kosh\Consentdocs\Mining Privileges\WR1496Q

Holder: Ministry of Energy
Private Bag
Wellington

Consent Replaces:

Classifications:

Type: Water Permit
SubType: Surface Take
Contaminants:

Location:

Map References

E41:484-830 1:50000 Topo Map

Common Address: WR1496Q - Little Stoney Creek

Rural Location No:

Dairy Supply No:

Land Parcels

River No	River Name	Locality Grouping	Parent Catchment
752749	Dart,Rees,Routeburn,Greenstone	Lakes	Clutha River

Applications:

New Resource Consent	23/01/1913	23/01/1913	Granted

Parameters:

Authorisation	MIN A	
Corrected Days	0	days
Maximum Rate	27.78	l/s
Mining Privilege No	WR1496Q	
Priority Date	23/01/1913	
Purpose/activity	Mining	
Uncorrected Days	0	days
Volume	27.77	
Water Body	Little Stoney Creek	

Decision Events:

Commence	23/01/1913
Expire	01/10/2021

Conditions:

Compliance Monitoring:

WTR SUBMISSION APPENDIX

GLENORCHY BATTERY ASSOCIATION

BOX 14
GLENORCHY 9195
29.6.01

Mr C.J. Gouch,
Crown Minerals Section,
Ministry of Economic Development,
Wellington.

Dear Sir,

Further to our earlier phone conversation I have enclosed for your reference a list of committee members, a water meter update and a copy of the individual report by Jim Dodge, which is well presented and appreciated.

At this writing the committee wishes to retain the Battery for the purpose it was constructed for. Obviously some refurbishment is required to regain its operational status and further meetings will hopefully resolve this and other problems which may arise, possibly with some input from Crown Minerals Dept.

The Land Tenure Review of Lyons Station which is pending and earlier interference by D.O.C. casts a shadow on the future of the Battery, which hopefully can be overcome.

Your comments would be appreciated.

Yours faithfully

A. B. Railton, Chairman

P.S. I have enclosed an earlier letter to Alan King 2.3.98 expressing my earlier concern.

A.B.R.

WTR SUBMISSION APPENDIX

Box 14
Blenheim 9195
25 5 02

The Hon Paul Swain
Associate Minister of Energy
Parliament Buildings
Wellington.

Dear Sir,

Further to earlier correspondence regarding a Land Tenure Review of Wynn Station, Blenheim, to yourself 12.3.02, (Dan Kelly) the Blenheim Batting Association invites you to visit the area for a familiarisation inspection and gain an insite of the need to retain the Richardson Mountains as a mining area, along with the assurance of access to the Batting and surrounding mining areas.

The world climate is such that there is a growing demand for scheelite (Tungsten) and the reserves in this area are large and of high quality. Placer Pacific in a recent survey report good gold assays on the Black Peak area

The need to retain this area for mining was earlier demonstrated by the NZ Govt. undertaking to supply the British Govt. with Scheelite in past times of conflict, but there are many other uses for Scheelite.

We note your reply by 12.4.02 but also look forward to your availability of meeting on site in the near future.

L. S. Railton
Chairman
Blenheim Batting Association

GBA APPENDIX
WTR submission

pilot project

The schools are one of five in Otago involved in the pilot project on Environ-

...ation.

...hool teacher Tania McLean was focusing on edible gardens, while Glenorchy was looking at zero waste.

Mr McLean said the aim was to share

...discoveries on the environmental ... path.

Pictured inspecting ... School's project are ...

Summer all year round

Glenorchy

By Debbie Jamieson

He has lived in countries all over the world but Canadian miner Jim Dodge prefers summers in Glenorchy these days.

Actually, he just prefers summers and, with winter approaching he has headed for warmer climes.

After visiting family in Mexico and the United States he will return to the Yukon Valley to prospect for diamonds.

The retired geologist and miner has a long history of mining and has worked on almost every continent and in countries from Morocco to Peru, seeking mainly base metals.

During recent years he has received a government grant to prospect for diamonds in Canada but this year things will be different — Canadian authorities are insisting that, at the age of 81, Mr Dodge must have an assistant.

"It will have to be somebody very compatible who eats soy and fresh meat and doesn't panic in the presence of a bear," he said.

A "face-off" with a bear which had taken over his camp convinced him that skill was necessary.

The lack of predators, besides humans, was one of the factors that made New Zealand a wonderful place to trek in, he said. However the most special spot was Glenorchy.

"I love the mountains and I like the geology and I like Glenorchy. I like its people, its size and I just feel comfortable here."

He was a veteran of three stays in the community and had almost become a local there. Last year he uncovered and restored a 1940s scheelite milling operation on the hills above the Glenorchy-Queenstown Rd.

This year he went fishing, camping, tramping, met interesting people and studied the Glenorchy community's development plan.

Planning is something that interests him after the 20 years he lived in Aspen, Colorado, watching it "explosively growing out of control" as he was now witnessing in Queenstown.

PHOTO DEBBIE JAMIESON

International miner Jim Dodge prepares to leave his New Zealand summer home.

WTR Submission APPENDIX

Draft

SUBMISSION FROM JAMES DODGE MINING GEOLOGIST NOW ARROWTOWN

Application for Tenure

Unique inasmuch as the leased lands are contiguous with the tourist resort town of Glenorchy at the head of Lake Wakatipu and in part covers New Zealand's principal scheelite (a tungsten mineral) district with a century old history of intermittent mine production.

Senior review of the Application should focus on the impact that tenure will have on tourism and prospective mining , both of which require a continued public use of the 117-year old access roads.

Senior review should study the Upper Wakatipu/Glenorchy Plan (2001) to clearly understand the will and determination of the community in preserving the pristine qualities of its unique environment through slow and considered growth guidelines. The apparent size of the Wyunal Station land and its physical proximity to Glenorchy leave little doubt that subdivison of the tenured land will – without Glenorchy's input – ~~will~~ gravely impact the prime values of its residents. Moreover, the developer's plans must be reviewed openly in order for the community to assess the rate burdens to which it may be faced with by infrastructure costs connected with the initial and subsequent subdivisions.

WTR SUBMISSION APPENDIX

A disturbing thought comes to mind after reading the newspaper biographical coverage of John Darby which might play a part in the developers' future activities with respect to assuring next-stage investors a free rein beyond the "20 50-acre" parcels reportedly to be part of the Application.

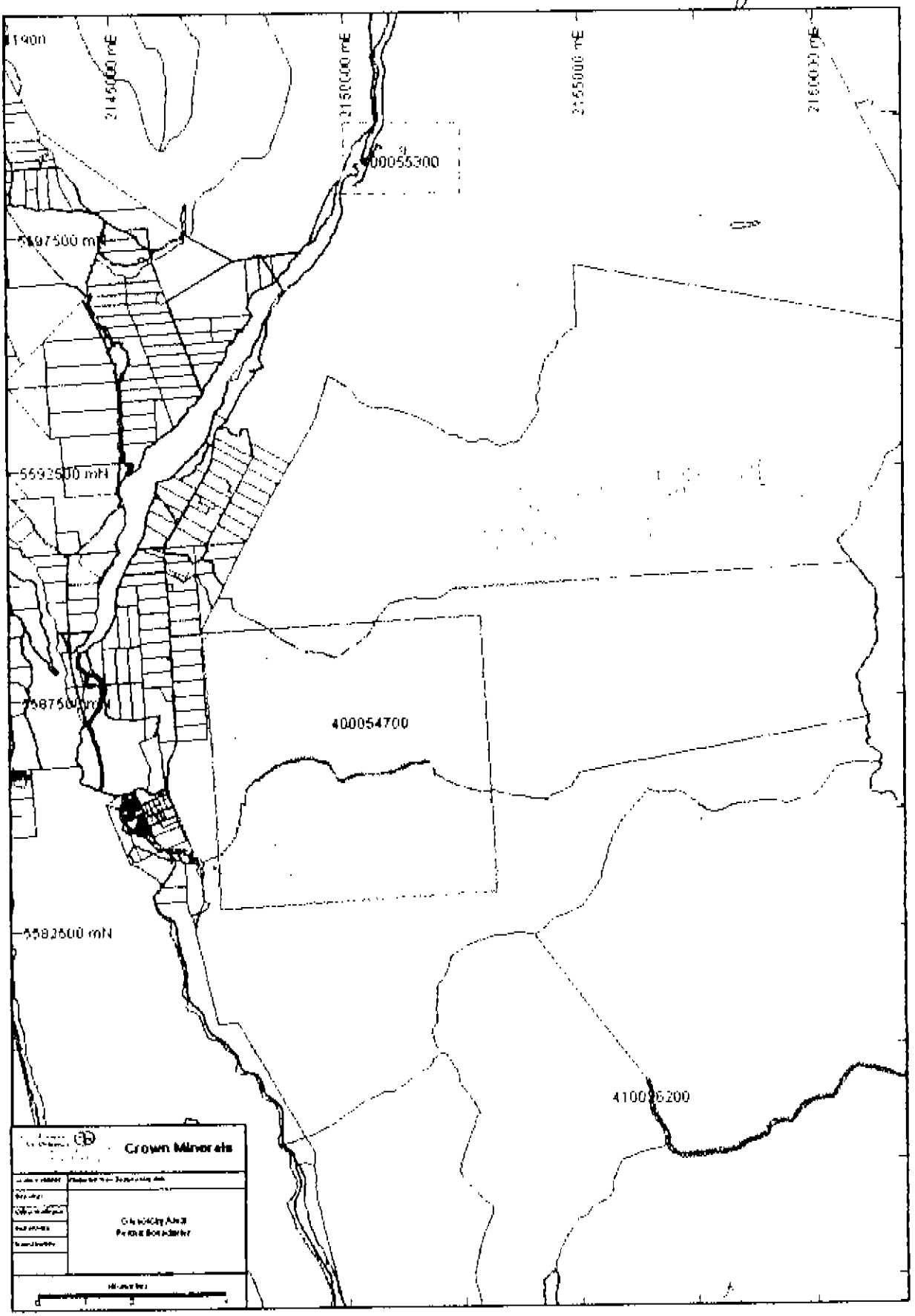
The stormy vehicular access issue may be more than meets the eye, inasmuch as the 20 sections would all be well south of the existing old Battery road. Thus, it is for the future (after Darby) that Darby is crafting his Application, knowing very well that strong opposition from Glenorchy might restrict an avalanche of subdivided mini-sections from sweeping through all the tenured area for several kilometers north of the Battery road and down to the town's east boundary. Thus it would appear that opposing submissions to the Application should be crafted in such a way that Glenorchy is 'drawing a line in the sand' beyond Darby's 20-section portion of the Application.

It is suggested that coincident with senior review's approval of the Application that there would be implemented a subdivison moratorium (10 yr) by the Queenstown District on all tenure lands north of the Battery road.

Perpetual vehicular access to the high-country via the Battery Road and the Chinamans Flat track must be 'written in stone'. In conversation with John Darby, he indicated that his Application will exclude the Battery as well as the old scheelite workings of the former State or Glenorchy properties adjoining the Battery. Key to reaching this area is the Battery road which would not impact the Application's 20-section (gated ?) up-scale residential properties. The road can be signed to establish no-liability provisions and stock gate rules-of-the-road. Here, "perpetual" is a fundamental issue – especially with regard to all the tenure land north of Darby's initial 20-section subdivision – when less sympathetic secondary-investors may become new developers. An additional point: access up the Battery is to be for mechanized vehicles but perhaps with the caveat that attenuated noise levels be met.

WTR Submission Appendix

Current Exploration Rights
Granted in Glenorchy/Nyguna.



WTR SUBMISSION APPENDIX

Viw_Current

Reference	Infomap	Mineral Type	Applicant	Area	Lodgement Date	Granted Date	Term	
40 547	E41/2	Tungsten, Gold & Silver	New Zealand Tungsten Mining Ltd	3548.0000	6/12/00	11/9/01	5	Expire 10/9/06
40 555	E40/2	Gold & Silver	Professional Explorers Ltd	382.0000	3/1/00	31/1/02	3	30/1/07

WTR SUBMISSION APPENDIX

MINING INSPECTION
ENERGY & RESOURCES DIVISION

National Mutual Building,
Cnr Octagon & George Street
P.O. Box 5043 Moray Place,
Dunedin, New Zealand
Telephone (03) 477 3056
Fax (03) 474 0250

COMMERCE
MINISTRY OF COMMERCE
Te Manatū Tauhokohoko

10 March 1998

L S Railton
Lake Hayes
RD 2
QUEENSTOWN

RELEASED UNDER THE OFFICIAL INFORMATION ACT

RE : GLENORCHY BATTERY'S FUTURE

Dear Mr Railton

I have sent a copy of your letter of 3 March 1998 to the Crown Minerals Group in Wellington, Ministry of Commerce and to the company in Alexandra, Knight Frank (New Zealand) Ltd.

My suggestion to them has been in the meantime to reactivate the agreement between the Crown and the Glenorchy Battery Association while the transfer is arranged to pass between the Glenorchy Battery Association and the Glenorchy District Council permanently.

Whether this advice will be taken I don't know but I will follow it through. Thank you for your telephone calls and correspondence.

Yours sincerely

Ronald J King
CHIEF INSPECTOR OF MINES, QUARRIES AND TUNNELS

Colin J Douch
Crown Minerals Sect.
Min. Ec. Development
Box 1473 Wgtn.

/ WTR SUBMISSION APPENDIX

Lake Hayes
Queenstown RD2
2 3 98

Mr R King
Mines Dept.,
Dunedin.

"RELEASED UNDER THE OFFICIAL INFORMATION AC

Dear Sir,

Re: State Battery - Mt. Judah
and Tenure Review of Wyuna Station.

My concern is what will happen to the Battery, buildings and access road should the above review put the land into either freehold or D.O.C. hands

I believe neither of these options are desirable and respectfully request that you investigate the present tenure of access & buildings

It should be recalled that the access was constructed by miners. In the past the old Lakes District Council administered funds made available by the Mines Dept for upgrading and maintenance of the access and the Mines Dept. made funding available for a new building to contain the table & drier e.t.c.

All equipment is in working order but for two burst pipes and possibly questional drive belts

A few years back the old stamps and a compressor were removed off site by D.O.C. unbeknown to anyone, I believe to end up in the Cromwell Gorge. The D.O.C. enterprise was later sold to private owners.

WTR SUBMISSION APPENDIX

That equipment was part of the mining history of Glenorchy and should have remained there.

The general feeling is that the battery house and or Glenorchy community council retain the administration of the battery to ensure the plant, easement and water rights are preserved and perhaps made into a working exhibit and or put to use when conditions are suitable.

I write as ex holder of ML 32701 Black Peak.

Yours faithfully
H S Railton.

WTR Submission APPENDIX

Office of Hon Paul Swain
MP for Rimutaka
Minister of Commerce
Minister of Communications
Minister for Information Technology

Minister for Land Information
Minister of Statistics
Associate Minister of Energy
Associate Minister of Justice

AER 2002/18

12 APR 2002

Mr Dan Kelly
PO Box 29
GLENORCHY

Dear Mr Kelly

Thank you for your letter in which you express concerns about future land ownership and access to the Glenorchy scheelite field.

Officials from Crown Minerals in the Ministry of Economic Development are aware of the Tenure Review and are seeking further information from the Commissioner of Crown Lands with reference to the Pastoral Leasehold land in the Glenorchy area.

The Commissioner of Crown Lands is receptive to submissions on the subject from all interested parties and my officials have been assured that the Commissioner will take your concerns into account in making a final decision on the Tenure Review. You should therefore make your submission directly to the Commissioner of Crown Lands in Christchurch.

Vesting the land in the Department of Conservation is only one possible outcome. With regards to your concerns about access it is possible that any of the land in the area may be freeholded in which case it will become subject to the need for access arrangements under the Crown Minerals Act.

Please be assured that I am aware of your concerns and are keen to see the best possible outcome.

Yours sincerely

Hon Paul Swain
Associate Minister of Energy

Parliament Buildings, Wellington, New Zealand. Telephone: (04) 470 6565. Facsimile: (04) 495 8466

Department of Botany

University of Otago
Te Whare Wananga o Otago

Division of Sciences
PO Box 56, Dunedin
NEW ZEALAND

Tel: National 03 479 7573 International 64 3 479 7573
Fax: National 03 479 7583 International 64 3 479 7583
Email: amark@otago.ac.nz

August 21, 2003.

Manager,
Q V valuations,
PO Box 13,443,
CHRISTCHURCH.

SUBMISSION ON PROPOSED TENURE REVIEW: WYUNA PASTORAL LEASE

Dear Sir,

Thank you for sending me a copy of the proposal for tenure review of Wyuna Pastoral Lease. I appreciate you sending me a copy of the Preliminary Proposal to comment on since I know the area reasonable well from my time in the area, particualrly conducting an ecological survey of nearby Mt Aspiring National Park..

This is a complex proposal for an area which has considerable conservation values. Clearly the bulk of the area is to revert to full Crown ownership and control but all of it with concessions of one sort or another. The area designated CA1of 15.7 ha in Stone Creek is clearly of importance, among other things, for public access, and therefore needs to be extended upslpoe to provide continuity with Conservation area CA3. This CA1 area should also be extended down to the Queenstown-Glenorchy Road.

Proposed Conservation Area CA2 of 8028 ha is the large back block which has a proposal for concessions for guided walks and horse trekking for a period of 10 years and for heliskiig and heliboarding also for a period of 10 years only. The monitoring of the former activities will be important to ensure the maintenance of the present natural values.

Block CA3 of 800 ha also has provision foy grazing for a 10-year term with a further extension of one 10-year period plus guided walks and horse trekking as for Block CA2

Block CA5 of 540 ha has provision for a grazing concession for one 3-year period only, plus guided walks and horse trekking as for Block CA2.

The grazing concessions proposed for the Recreation Reserves R2 (36 ha) and R3 (4.3 ha) are both for 33 years as it is also for Block CA4 (3.4 ha) area.

With regards to the "Exchange" land I am very concerned with the proposed Exch 1, being a 135 ha strip above the Queenstown-Glenorchy highway with considerable landscape value and currently with reserve status. There is a current shrub-weed problem, particularly with Spanish heath, on this block which should be dealt with to ensure it does not become a source of infestation for other land in the area. This should certainly not be an excuse for the Departmnet of Conservation's apparent willingness to dispose of it. There should be a landscape covenant at least, placed on this area if it is to be freeholded so as to ensure it does not become developed for housing. The other "Exchange" land

is less serious and apparently includes the opportunity to formalise an earlier mistake of erecting a dwelling on reserve land.

Public access is an essential of this proposal and it appears to be generally inadequate. The issue in Stone Creek has already been addressed but there is a clear need for public walking access near the southern end of the property, on to the conservation land of area CA2, preferably on the ridge leading to Stone Peak and Mt Larkins. In addition, the existing formed road behind Wyuna homestead up the Bonny Jean Creek should be available for public vehicle access as well as "for management purposes" on to the edge of the conservation land. This area is valuable for elderly people to gain some height and obtain the benefit of the magnificent view available from this roadway.

Thank you for the opportunity to comment on this proposal. I trust you will give my recommendations your serious consideration.

Sincerely,

Alan F. Mark.
Professor Emeritus

SUBMISSION OF THE QUEENSTOWN LAKES DISTRICT COUNCIL ON THE WYUNA STATION TENURE REVIEW PROPOSAL

DATE: 22 August 2003

SUBMITTER:
Queenstown Lakes District Council

ADDRESS FOR SERVICE:
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Dear Sir/Madam

This submission is lodged on behalf of the Queenstown Lakes District Council.

The Queenstown Lakes District Council appreciates the opportunity to submit on the Wyuna Station tenure review proposal. The Queenstown Lakes District Council also appreciates this submission being accepted late as per the agreement with Barry Dench.

The Council has an interest in tenure review proposals within this District for four reasons:

- Ensuring sufficient public access is provided;
- Ensuring indigenous biodiversity values are identified and managed appropriately;
- Ensuring heritage values are recognised and provided for;
- Ensuring outstanding natural landscapes, outstanding natural features and other significant visual amenities are protected.

The Wyuna Station tenure review is considered to contain positive aspects, particularly in terms of restoring land to full Crown ownership. The Council believes this will assist in maintaining and enhancing conservation and historical values in the area into the future. However, the Council raises the following matters:

1. **The Council requests that public four-wheel drive vehicles be permitted on Judah Road in its entirety (i.e. between Queenstown-Glenorchy Road and Bonnie Jean Creek).**

Reasons:

A) Judah Road has traditionally been the main road for the community to access a large part of the Richardson Mountains (as stated in the Proposed Designation Report for this Tenure Review).
B) Significant public money has been spent establishing and maintaining this road (Lakes County Council funded).
C) The majority of recreationalists presently use four wheel drive or mountain bike to begin their walk/ski-tour/climb from Bonnie Jean Creek, which is considerably higher in altitude than the Glenorchy-Queenstown Road.
D) The end of Judah Road (at Bonnie Jean Creek) is a more logical starting point for beginning recreational activity than the Queenstown-Glenorchy Road because of its

altitude, which enables quick access to country which contains higher recreational values (as described in the Conservation Resources Report for this Tenure Review).

E) Vehicle presence along this road would not have a significant adverse effect upon conservation values.

2. Council requests that sheep grazing concessions are not granted on areas CA3 and CA5.

Reasons:

A) Each of these two areas rise to an altitude of approximately 1600m above sea level, and contain dense snow tussocks, mixed shrublands and some beech forest.

B) It is more appropriate to keep sheep grazing off these slopes. This would allow the "high degree of naturalness above 1000m" (as stated in the Conservation Resources Report for this Tenure Review) to flourish, and be enjoyed by recreationalists.

3. Council requests that a 'Historic Reserve' be designated to preserve and protect significant heritage sites and features within parts of CA3 and CA5, and parts of land proposed to be freehold.

Reasons:

A) This is only one of two locations where Scheelite has been mined in New Zealand (as discussed in the Proposed designation Report for this Tenure Review).

B) Many of the scheelite mine sites and associated heritage features such as huts, tracks and machinery are contained within 1) CA3, 2) CA5 and 3) the area located south-east of Judah Road (before the road reaches Bonnie Jean Creek)(land which is proposed to become freehold).

C) A greater level of 'protection' should be provided for these heritage sites and features. A specific 'Historic Reserve' should be included in the land designations to protect these rare sites and features, which would not provide for grazing (as recognised in the Conservation Resources Report for this Tenure Review).

D) Heritage sites and items should be retained in public ownership, where the original owners have abandoned them. It is not considered appropriate for their ownership to default to the new landowner.

4. Council requests that public foot access be permitted up Stone Creek to the Mt Larkin area.

Reasons:

A) Stone Creek (located to the south of the Buckler Burn, also referred to as 'Stoney Creek') is a popular access point, especially with more experienced tramping parties, and local tramping club parties.

B) The tenure review proposal designates 15.7 hectares to be retained in full Crown ownership and control in lower Stone Creek as conservation area. Council considers it unfortunate that this area does not link up with the higher altitude conservation areas which are used for walking and climbing.

C) Designating a further 12 hectares (approximately) further upstream in Stone Creek would ensure that Stone Creek can be used to gain access to the high country.

5. **Council requests that public foot access be permitted between the Glenorchy - Paradise Road to Trig Station 700m (along the fence line directly west of the Trig), and also and from the Trig north (parallel to the fence line) to Precipice Creek, to enable access to Conservation Area CA5.**

Reasons:

A) The walk from the Glenorchy-Paradise Road to Trig Station 700 is a popular and much appreciated walk by local residents and visitors.

B) The crossing from the Glenorchy-Paradise Road, to Trig Station 700m, and then north to Precipice Creek is a popular hike, and combined with public access that may be provided under the Temple Peak Station Tenure Review, would make an excellent tramping experience.

C) Access to Conservation Area CA5 from the trig and Precipice Creek would greatly complement the only proposed access to CA5, Mt Judah Road.

D) There are few walks/tramps, such as those above, that are available near Glenorchy Township for the community and visitors.

6. **The wetland (Wildlife Management Reserve) north-east of Trig Station 700m should be fenced off from stock.**

Reasons:

A) The wetland north-east of Trig Station 700 is a rare and significant natural feature that should be preserved.

B) It is appropriate that this wetland is fenced from stock. Stock currently badly pug and foul the wetland (as recognised in the Conservation Resources Report for this Tenure Review).

7. **Council requests that land within 'R3 (Recreation)/Grazing' and 'CA4/Grazing' be designated for the Glenorchy Riding Club and other Glenorchy sporting clubs that currently have no land to base their activities from.**

Reasons:

A) The Glenorchy community is in urgent need of land for the Riding Club and other recreational clubs to use as a base for their activities. Recently sub-divided land west of Glenorchy has meant these clubs have no land to use for their activities.

B) Areas 'R3(Recreation)/Grazing' and 'CA4/Grazing' contain suitable sites for the above.

C) This land is particularly suitable for recreational sports club activities because of its proximity to Glenorchy Township and the flat gradient.

8. **Council requests that the 'Special Scheelite Mining Area' and associated management plan be recognised in the Tenure Review.**

Reasons:

A) To ensure that areas of future potential mining are identified.

B) To ensure that potential economic gains are maximised for the District.

C) To be consistent with District Council policies.

9. **Council wishes to support the following clause in the grazing licence for the land occupied by the Glenorchy airfield (located within "R2(Recreation)/Grazing"). This clause states that should Council require use**

of the airstrip, they only need to give one months notice to the concessionaire, for grazing to cease. In addition, Council submits that when a request for grazing to cease is made, that the concessionaire is not required to be compensated by Council in any form for loss of grazing.

Reasons:

A) The airfield cannot be utilised unless the area is clear of stock.
B) The airfield is a vital piece of infrastructure in the Glenorchy area.
C) There is not another airfield in the Glenorchy area.

10. Council requests that suitable land within Wyuna Station be designated for a site for Glenorchy Township wastewater effluent disposal.

Reasons:

A) Glenorchy Township is in need of land to be used for wastewater effluent disposal site for its growing population. Whilst options have been considered to date, no obvious or suitable site has been identified.
B) Wyuna Station land appears to be suitable for the above.
C) This land is particularly suitable for effluent disposal because of its proximity to Glenorchy Township and its flat gradient.

Please do not hesitate to contact the writer if you have any questions with respect to this submission.

Yours faithfully

Peter Barnes
POLICY PLANNER

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29 August 2003

Commissioner of Crown Lands
C/- Quotable Value New Zealand Ltd
P O Box 13 443
Christchurch

Attention: Barry Dench
Tenure review Team Leader

Submission on Wyuna Tenure Review

SUMMARY

1. The Crown Minerals Estate is a significant national asset, and it is in the national interest that minerals, in particular strategic commodities, must be considered in every land use proposal.

2. Minerals are important for regional development, so access for current and future exploration and extraction of minerals must be provided for.

3. The Crown should retain ownership of land containing its valuable mineral estate, and access to those minerals. The Preliminary Tenure Review Proposal makes no provision for this.

4. The proposed transfer of land to the Department of Conservation to be managed under the Conservation Act will prevent mineral exploration and extraction, and so sterilise the Crown's asset, as the land would be managed only for its conservation values and not its mineral values.

5. Tungsten is a strategically important commodity in many applications because of its special properties.

6. The Glenorchy Scheelite Field is New Zealand's primary source of scheelite, a tungsten mineral.

7. The Preliminary Tenure Review Proposal makes no mention of the mineral value of the area; it only considers pastoral, recreational, historical and ecological values.

8. In particular, there is no recognition of the strategic importance of the Glenorchy Scheelite Field to the nation.

9. There has been a long history of scheelite exploration and mining at Glenorchy since 1881, but mining is not complete. Exploration and mining are ongoing activities.

10. The price of tungsten varies widely depending on supply and world political factors. Currently the price is low due to oversupply resulting from the weak world economy. However, the tungsten price has been rising, since late 2000, and is expected to keep rising.

11. Exploration and mining are related to the price of tungsten. Increased investment and activity is expected as the price increases.

12. Scheelite production to date is valued at NZ$16.5 million, but only a small proportion of the total scheelite resource has been extracted.

13. There is potential for NZ$3 billion worth of scheelite remaining, based on resource estimates of 250,000 tonnes of WO_3 (at the average price of NZ$11,600 per tonne since 1959).

14. This is of national significance to the New Zealand economy and is also significant to the local economy of the Glenorchy area.

15. There is additional potential for gold, as evidenced from alluvial gold workings since the early 1860's and the Invincible gold mine.

16. The Glenorchy Scheelite Field is of sufficient national importance to warrant inclusion in a special "Mineral Reserve" or "Mining Area" to provide access to and utilisation of this valuable resource.

INTRODUCTION

I am a Geological Consultant based in Christchurch. I have a B.Sc. Honours degree in geology, and am a member of: The Australasian Institute of Mining and Metallurgy, the Australian Institute of Geoscientists and the New Zealand Institute of Directors.

I have 28 years experience in the mineral exploration industry, and have held management and senior management positions. My experience has covered a wide range of mineral commodities, in a variety of geological settings and geographical environments in four countries: New Zealand, Australia, Papua New Guinea and Argentina.

In particular, my experience has included exploration for scheelite in the Glenorchy Scheelite Field and the Richardson Mountains to the east, and also throughout the Southern Alps.

TUNGSTEN

The area under tenure review includes the Glenorchy Scheelite Field. Scheelite is a tungsten (chemical symbol W) mineral, having the formula $CaWO_3$. Tungsten is an important commodity, used as a steel hardener and in tools, light filaments, heating elements, and in wear-resistant applications.

Shedd gives an overview of the uses of tungsten:

"Tungsten has a wide range of industrial uses. The largest use is as tungsten carbide in cemented carbides. Cemented carbides (also called hardmetals) are wear-resistant materials used by the metalworking, mining, and construction industries. Tungsten metal wires, electrodes and/or contacts are used in lighting, electronic, electrical, heating, and welding applications. Tungsten is also used to make tool steels, wear-resistant alloy parts and coatings, superalloys for turbine blades, and heavy metal alloys for armaments, heat sinks, and high-density applications, such as weights and counterweights. Chemical uses of tungsten include catalysts, inorganic pigments, and high-temperature lubricants."

Christie and Brathwaite, 1996, give a description of the uses of tungsten:

"Tungsten is used mainly in the manufacture of cutting and wear resistant materials such as tungsten carbide and steel alloys. More than half of the tungsten production is used in tungsten carbide (WC), which is noted for its hardness (9.5 on Mohs scale). Tungsten carbide is used alone or with other metals for cutting tools, mining and drilling tools, dies, gauges, bearings and the cutting edge of saws and drills. Stellites (Co-Cr-W alloys) are used for metal-cutting tools and as hard-facing materials for items such as valves, bearings, rock crushers and marine propeller shafts. Tungsten steels are used for high-speed cutting tools, dies, pneumatic tools, punches, bushings and taps, and some have also been used in the aerospace industry to fabricate rocket nozzle throats and leading-edge re-entry surfaces.

Unalloyed tungsten, in the form of wire, is used as filaments for electric lamps, in electron and television tubes, and as heating elements for electrical furnaces and heaters. Tungsten rods are used as lamp filament supports, electrical contacts and electrodes for arc lamps.

Tungsten compounds have a number of industrial applications. Calcium and magnesium tungstates are widely used as phosphors in fluorescent lighting and television tubes. Sodium tungstate is used in the fireproofing of fabrics and in the preparation of tungsten-containing dyes and pigments used in paints and printing inks. Other salts of tungsten are used in the chemical and tanning industries. Tungsten disulphide and tungsten diselenide are used as dry, high-temperature (stable to 500°C), lubricants."

TUNGSTEN MARKET

Because of its special properties, tungsten is a strategic commodity. The world supply of tungsten is dominated by China (85%), with lesser quantities from the CIS (12%), Bolivia (1%), Peru (1%) and North Korea (0.5%), and minor quantities (0.5%) from several other countries. Since 1999, the Chinese Government has moved to control the supply of Chinese tungsten to the world market (Shedd, 2003).

The western world (including New Zealand) has always been concerned about the supply of tungsten due to:

- China's dominance as the world's largest producer
- Reliance on supply from Communist or formerly Communist countries
- Differing political, social and economic objectives of producing countries
- The lack of production from western countries

Western countries are keen to reduce risks in the supply of tungsten by developing alternative sources in more politically stable countries. Therefore it is important for New Zealand to keep its options open, including the Scheelite Field.

The price of tungsten has fluctuated widely, and is controlled by political factors (eg, periods of conflict) because it is a strategic commodity. The price of WO_3 since 1959 has averaged US$61.71 per short ton unit WO_3 in current dollars (i.e. NZD$11,600 per tonne WO_3). The price peaked in 1977 at US$149 per short ton unit WO_3 in current dollars (i.e. NZD$28,000 per tonne WO_3).

Currently the price of tungsten is low due to oversupply resulting from the weak world economy. However, the tungsten price has been rising, since late 2000, and is expected to keep rising (Roskill, 2003).

GLENORCHY SCHEELITE FIELD

The Glenorchy Scheelite Field is New Zealand's primary source of scheelite (i.e. tungsten). The scheelite field is located in the Mt Alaska / Mt Judah / Mt McIntosh / Black Peak area on the western flanks of the Richardson Mountains and east of the township of Glenorchy.

The scheelite occurs in quartz veins/lodes with minor amounts of gold and other minerals, hosted by schist of Mesozoic age. There are 81 known scheelite deposits.

"Seven lodes have been mapped within an area of 12 sq. miles (i.e. 31 square kilometres) and extensions can reasonable be expected beyond it.

The length over which individual lodes can be traced with a reasonable degree of certainly, is at least six miles (i.e. 10km)." (NZGS, 1970).

A number of lodes were mined over a long period from 1881 to 1965, and production has been from a large number of underground mines and surface workings.

"The total estimated production to 1965 from the five main producing lodes on the Glenorchy Field was 2188 tonnes of scheelite concentrate" (Brathwaite & Pirajno, 1973). Of this, about 900 tonnes came from the Glenorchy State Mine on the Glenorchy lode (NZGS, 1970). The scheelite concentrate contained 65% WO_3 content.

The total production from the Glenorchy Scheelite Field is valued at NZ$16.5 million. This is based on the average price since 1959 of US$61.71 per short ton unit WO_3 in current dollars, equivalent to NZD$11,600 per tonne WO_3.

NOTE Definition of technical terms:
Vein: An occurrence of ore minerals in a tabular body; a more scientific term for a lode
Lode: A mineral deposit consisting of a zone of veins; a miner's name for a vein

HISTORY OF SCHEELITE EXPLORATION AND MINING

Williams, 1974, gives a history of scheelite exploration and mining in the Glenorchy Scheelite Field:

"Some alluvial gold was found in the early 1860's in Buckler Burn ... In the Buckler Burn, difficulty was experienced in saving the gold, for the riffles became encumbered with a heavy mineral which was identified as scheelite ...

During the 1880's, the alluvial scheelite in the Buckler Burn was traced to a source in what became known as the Glenorchy lode, and some attempt was made to work this and other neighbouring lodes, but low prices brought activities to a close in 1892.

Mining was resumed about 1904, at first in the form of sluicing operations on scree, and later by lode-gophering. In 1915, scheelite was requisitioned for strategic purposes, activity increased, and the Paradise lode was discovered, but operations were suspended when the Imperial Government contract was cancelled in 1919.

From the outbreak of the Second World War all scheelite was purchased by the New Zealand Government, which took over the Glenorchy and Paradise mines. State participation ceased in 1945, but mining continued on a small scale.

In 1951 the sharp increase in scheelite prices resulting from the Korean War gave an impetus to activities, including some "farming" of scree

material from very inaccessible high mountain localities. Subsequently small-scale mining lingered, though in 1963 some improvement in scheelite prices resulted in the reopening of the Heather Jock mine."

Extensive exploration, including drilling, was undertaken in the late 1960's and early 1970's by New Zealand Tungsten Mining Ltd, a subsidiary of Alex Harvey Industries.

The history of scheelite exploration and mining at Glenorchy is related to the price of tungsten.

REFERENCES

Brathwaite, R.L. and Pirajno, F., 1993: Metallogenic Map of New Zealand, Monograph 3, Institute of Geological & Nuclear Sciences Ltd.

Christie, A.B. and Brathwaite, R,L., May 1996: Mineral Commodity Report 12 – Tungsten; new Zealand Mining, Vol. 19, p19-27; New Zealand Crown Minerals, Energy and Resources Division, Ministry of Commerce.

Roskill, 2003: Tungsten; Roskill Metals and Minerals Reports, www.roskill.com/reports/tungsten

Shedd, K.B., January 2003: Tungsten; Mineral Commodity Summaries, U.S. Geological Survey,
http://minerals.usgs.gov/minerals/pubs/commodity/tungsten/680303.pdf

Shedd, K.B.; U.S. Geological Survey,
http://minerals.usgs.gov/minerals/pubs/commodity/tungsten/680798.pdf

Staff of the New Zealand Geological Survey (NZGS), 1970: Minerals of New Zealand: A summary of resources, prospects and other occurrences (Part A: Metallics); Report 38A, New Zealand Geological Survey.

Turnbull, I.M. (compiler), 2000: geology of the Wakatipu Area; Scale 1:250,000 geological Map 18, Institute of Geological & Nuclear Sciences Ltd.

Williams, G.J., 1974: Economic Geology of New Zealand; Monograph Series No. 4, The Australasian Institute of Mining and metallurgy.

Yours sincerely,

G D PRICE

Submission by the
New Zealand Branch of
The Australasian Institute of Mining and Metallurgy
On the
Tenure Review of the Wyuna Pastoral Lease

Purpose

- In general the AusIMM wishes to ensure that access to the New Zealand's minerals are preserved and in particular, in this instance, that access to the mineral values of the Wyuna Lease are preserved.

- That the process of High Country Tenure Review should include Crown Minerals/MED as an equal partner with DoC/LINZ.

- That equal values be assigned to conservation and mineral values, both estates being held by the Crown on behalf of all New Zealanders.

Terms of Reference

- For this and future reviews that the terms of reference require accountability of minerals values and subsequent disposition.

- Why "privatising" the minerals into DoC or private hands is not in the public interest.

- What minerals are potentially at stake : In the South Island and on the Wyuna/Glenorchy Station.

Solutions

Under the present construct of the process, the options appear to be to privatise without consideration of minerals, as has been the case until now. The results are:

(a) Crown minerals under access to private lands become subject to the "owner access power of veto". The potential net result is for the sterilisation of the minerals present, reducing their value to the benefit of all New Zealanders to zero.

(b) Access to minerals under the DoC estate is complicated further by:
  (i) the preserve and protect mandate of the Conservation Act;
  (ii) strategies and agenda, which drive DoC lands classification towards mining prohibitions which sterilize access to minerals. This is not a rational use of the country's mineral estate.

Alternatives

It is proposed that two actions be taken to protect the inherent value of the minerals below the surface of land subject to the tenure review, for the following categories of land, for:

Private - Caveat preserving access to the minerals under newly privatised lands.

Government - Discretionary classification by DoC to create minerals reserves/covenants and preserve access to them under the High Country Tenure Review process. (Create a new category in DoC's 'Manual for Standard Operating Procedures for Tenure Review and Discretionary Actions on Pastoral Land'. Take whatever actions are necessary in regulatory/legislative amendment processes to accomplish meaningful protections on minerals and access to them. Alternatively create companion document: "Ministry of Economic Development; Manual of Standard Operating Procedures for (Minerals) Tenure Review and Discretionary Actions on Pastoral Land".

Provide a minerals seat for MED, equal to DoC, in the High Country Tenure Review process to ensure consideration of the land's inherent mineral value.

Objectives for High Country Tenure Review

Objectives derived from the Crown Pastoral Land Act are:

1. To promote the management of the Crown's high country land in a way that is ecologically sustainable.

2. To enable reviewable land that is capable of economic use to be freed of current management constraints.

3. To protect significant inherent values of reviewable land by the creation of protective measures; or preferably by restoration of the land concerned to full Crown ownership and control.

4. To secure public access to enjoyment of high country land.

5. To take into account the principles of the Treaty of Waitangi.

6. To take into account any particular purpose for which the Crown uses, or intends to use, the land.

New complementary objectives:

1. To ensure that conservation outcomes for the high country are consistent with the New Zealand Biodiversity Strategy.

2. To progressively establish a network of high country parks and reserves.

3. To foster sustainability of communities, infrastructure and economic growth and the contribution of the high country to the economy of New Zealand.

4. To obtain a fair financial return to the Crown on its high country land assets.

(NB "reviewable land" refers to lease and licence land)

Minerals and the Objectives (derived from the Crown Pastoral Land Act)

1. Minerals can be managed in a manner that is ecologically sustainable. Because minerals can only be mined where they occur physically, and because ecological values are more ubiquitous in space, the case for preservation of the minerals and access to them can be made. Equally so can the case for the preservation specific ecological features of value. Where they overlap a procedure needs to be established whereby both values can be accommodated, or an objective judgement made of which set of values predominate, in the national interest.

   Presently the model only considers values of the biosphere and does not consider the geosphere and is therefore flawed. Consideration should be mutually inclusive, not exclusive of minerals as it now is. Minerals are the essential foundation enabling the existence of the biosphere, and of course our society.

2. To date the review has considered only the options of conservation under its preserve and protect mandate or privatisation. Assuming minerals can be dealt with under the present management status quo. This tends to discount minerals values to zero and is not acceptable.

   These two management options if allowed to proceed without specific minerals consideration, will only further constrain the capability of reviewable lands with economically valuable minerals beneath them to yield their inherent value for regional and national benefit.

   Privatising the lands effectively privatises the Crown minerals beneath them and sterilizes their use. Without a caveat for access the new owner can sterilize the mineral in favour of an alternative use. Putting the lands into DoC hands without specific provision for reserving the minerals and preserving access to them, again effectively sterilizes the minerals.

3. Directs protection of inherent (minerals) values by creation of protective measures; or preferably by restoration of the land concerned (with minerals beneath it) to full ownership and control (see Solutions, Alternatives).

4. Directs securing public access to the enjoyment of (significant mineralisation within areas of) high country land (see Solutions, Alternatives).

5. Directs account be taken of the principles of the Treaty of Waitangi (taonga; pounamu, forestry, fisheries, lands) (see maps, South Island pounamu, greenstone mines).

6. Directs the review process to take into account any particular purpose (ownership, management, development – jobs, skills, GDP, household welfare, exports, import substitution, regional/national development, transport/roads/energy/water – of the minerals and the Crown minerals estate) for which the Crown uses, or intends to use, the land (and the minerals beneath it).

Minerals and the New Complementary Objectives:

1. Ensure conservation (of surface conservation values and subsurface minerals values) outcomes for the high country are consistent with the New Zealand Biodiversity Strategy (and National Minerals, Conservation and Development Strategy).

2. Progressively establish a network of high country parks (conservation and minerals) and reserves.

3. Foster sustainability of communities, infrastructure (by (a) ensuring their access to the psycho generative qualities, biodiversity values and amenity values inherent in surface conservation parks and reserves) and economic growth (by (b) ensuring community connection and access to the socio economic values inherent in the minerals parks and reserves within the high country), and the contribution (conservation values and minerals values) of the high country to the economy of New Zealand.

   Foster sustainability of communities, infrastructure and economic growth and the contribution of the high country to the economy of New Zealand, acknowledging the opportunity cost of minerals.

4 Obtain a fair financial return to the Crown on its high country land assets (including that portion of the Crown mineral estate beneath it).

Minerals and the (Wyuna) Area Under Review

1. The Tenure Review map shows proposed changes to land tenure with minerals (tungsten) deposits, veins systems and exploration and prospecting permits.

2. A map showing an enlarged view of prospective tungsten area with mines and veins.

The URL for both maps is:

http://www.kenex.co.nz/nzmia.htm

Password for the Tenure Review is: **Glenorchy**

Note:

1. Tungsten is regarded in the world as a strategically important mineral to developed economies because it is used in the hardening of steel. Prices for tungsten (wolframite) between 1959 to the present have reached US$149 per short tonne in 1977 to US$46 in 2003. The intensity of mining at Glenorchy has varied in response to price and social dictates, such as World War II when the area was actively mined.

2. Mining in the area under review historically has not adversely affected the environment and any future activity would be subject to resource consent, and again expected to have a similarly benign effect.

National Minerals and the South Island High Country Tenure Review

1. The map of the South Island shows the green area, which includes national parks and land under DoC control together with areas above 700 metres. The land potentially to come under DoC control.

2. The map showing pounamu and potential sources of greenstone, pounamu mines and land over 700 metres.

3. The map showing potential coal resources (in black) compared to high country under review by DoC (over 700 metres).

4. The map showing all known minerals including pounamu, within the 700 metres contour.

5. The map showing gold potentials (good and high) within the 700 metres contour.

The URL is the same as for the Tenure Review maps: http://www.kenex.co.nz/nzmia.htm

Password for the South Island is: **South**

The National Interest

Should the tenure review process continue without due consideration of the value of minerals under the land, yet more of the country's wealth will be sterilised.

A comparison of the areas under review and the areas of potential and identified mineralisation provide a stark view of the mineral values that will be sterilised if the review proceeds without a considerstion of the mineral values of the land.

We urge that the tenure review:

1. Provide a basis for a consideration of the mineral value of all the land under review, as outlined above, and
2. Take into account the tungsten mineralisation value of the Wyuna Pastoral Lease in particular.

New Zealand Branch
The Australasian Institute of Mining and Metallurgy

Attention :- Barry Dench

from:- Jim Veint
Arcadia Station
Glenorchy
phone & fax 03 4429930

to :- Barry Dench
OV valuations
62 Riccarton Rd
Christchurch.

Dear Barry

re Wyuna Tenure Review.

Thank you for allowing me to send in a late submission. However my submission that :- "The option of ever freeholding Recreation Reserve land R3 and CA4 be elimated" was not carried.

Some committee members it had already been made clear in the Glenorchy Community Association submission which included the statement that "There are virtually no alternative locations for the recreation other than the DOC lands occupied.

It was also felt the freeholding of this land (Recreation Reserve) could not happen.

Thanks again Yours faithfully
Jim Veint

L. J. Veint

HIGH COUNTRY TENURE REVIEW
WYUNA STATION

SUBMISSION OF
NEW ZEALAND MINERALS INDUSTRY ASSOCIATION

Introduction

Thank you for the opportunity to make submissions on the High Country Tenure Review process and Wyuna Station.

New Zealand Minerals Industry Association Incorporated (NZMIA) is comprised of 11 operating minerals companies who employ around 3,000 people and account for approximately 80% of the volume and value of the New Zealand minerals; aggregates and building stone, industrial minerals, coal, precious and base metals.

NZMIA is also comprised of 15 Associate Member companies, which supply various services to the Industry from equipment, applied computer technology, legal and environmental services.

The minerals industry presently accounts for about 1% of New Zealand's GDP, employs over 3,000 people directly and 8,000 indirectly. The conservative potential is treble these values. The 1999 Institute of Geological and Nuclear Sciences *Minerals Potential of New Zealand* reports base and precious metals value potentials alone in excess of $85.5 billion.

The attached paper by Walton, Barker and Christie summarises an independent New Zealand Institute of Economic Research (NZIER) study *Quantifying the opportunity cost of New Zealand's mineral potential*.

The attached National Minerals Strategy *Mineral Resources of New Zealand*; converting resource potential to community benefits, gives an indication of what is possible in an Industry-Government partnership. Minerals potentials are too valuable for Government to ignore in its growth and innovation framework for regional and national development, as well as in this High Country Tenure Review process.

It is NZMIA's submission that the existence of and nature of Crown Minerals in land be explicitly taken into account throughout the Tenure Review process. That minerals be given as much consideration as conservation values and/or privatisation values and be weighed against any other use or value potential for the land, both in the case of Wyuna Station, and as the process of tenure review is rolled out throughout the South Island.

Minerals and the Government's Objectives for the South Island High Country

The following comments are NZMIA's suggested treatment of minerals under the Government's objectives for the High Country Tenure Review process. The numeration in the margin corresponds to the Government's numbered objectives derived from the Crown Pastoral Land Act followed by the Government's numbered New Complementary Objectives agreed in August 2003.

1. Minerals can only be mined where they occur physically. Minerals can be managed in a manner that is environmentally and ecologically sustainable. Keeping open access to minerals is essential. This should be balanced against specific ecological features. The aim should be to provide for both.

   Presently the model is heavily weighted in favour of values of the biosphere and does not consider the minerals of the geosphere and is therefore fundamentally flawed. Minerals are the essential foundation enabling the existence of the biosphere and biodiversity including human, social and economic structures here.

2. To date the review has considered only the options of conservation (under its preserve and protect mandate) or privatisation; assuming minerals can be dealt with under the present management status quo. This values minerals at zero.

   Restricting the review to only these two options without specific minerals consideration, will deprive New Zealand and New Zealanders the opportunity to access the national mineral estate and deprive the country of the huge benefits to be gained from using those minerals.

   Privatising the lands effectively privatises the Crown minerals beneath them and sterilizes their use. Without a caveat for access the new owner can sterilize the mineral in favour of an alternative use (e.g. subdivision). Putting the lands into DoC hands without specific provision for reserving the minerals and preserving access to them, again effectively sterilizes the minerals.

3. Directs protection of inherent values, which should include mineral values by creation of protective measures; or preferably by restoration of the land concerned (with minerals beneath it) to full Crown ownership and control.

4. Directs securing public access to the enjoyment of high country land, which should include that land with significant mineralisation beneath it.

5. Directs account be taken of the principles of the Treaty of Waitangi. Has pounamu been considered? See maps, South Island pounamu, greenstone mines.

6. Directs the review process to take into account any particular purpose, which should include ownership, management, development – jobs, skills, GDP, household welfare, exports, import substitution, regional/national development, transport/roads/energy/water – of the minerals and Crown Minerals estate for which the Crown uses, or intends to use, the land and the minerals beneath it.

Minerals and the Government's New Complementary Objectives for the South Island High Country

1. Ensure conservation outcomes for the high country are consistent with the New Zealand Biodiversity Strategy. This should include both surface conservation values and subsurface minerals values, which are consistent with both the New Zealand Biodiversity Strategy and National Minerals Strategy.

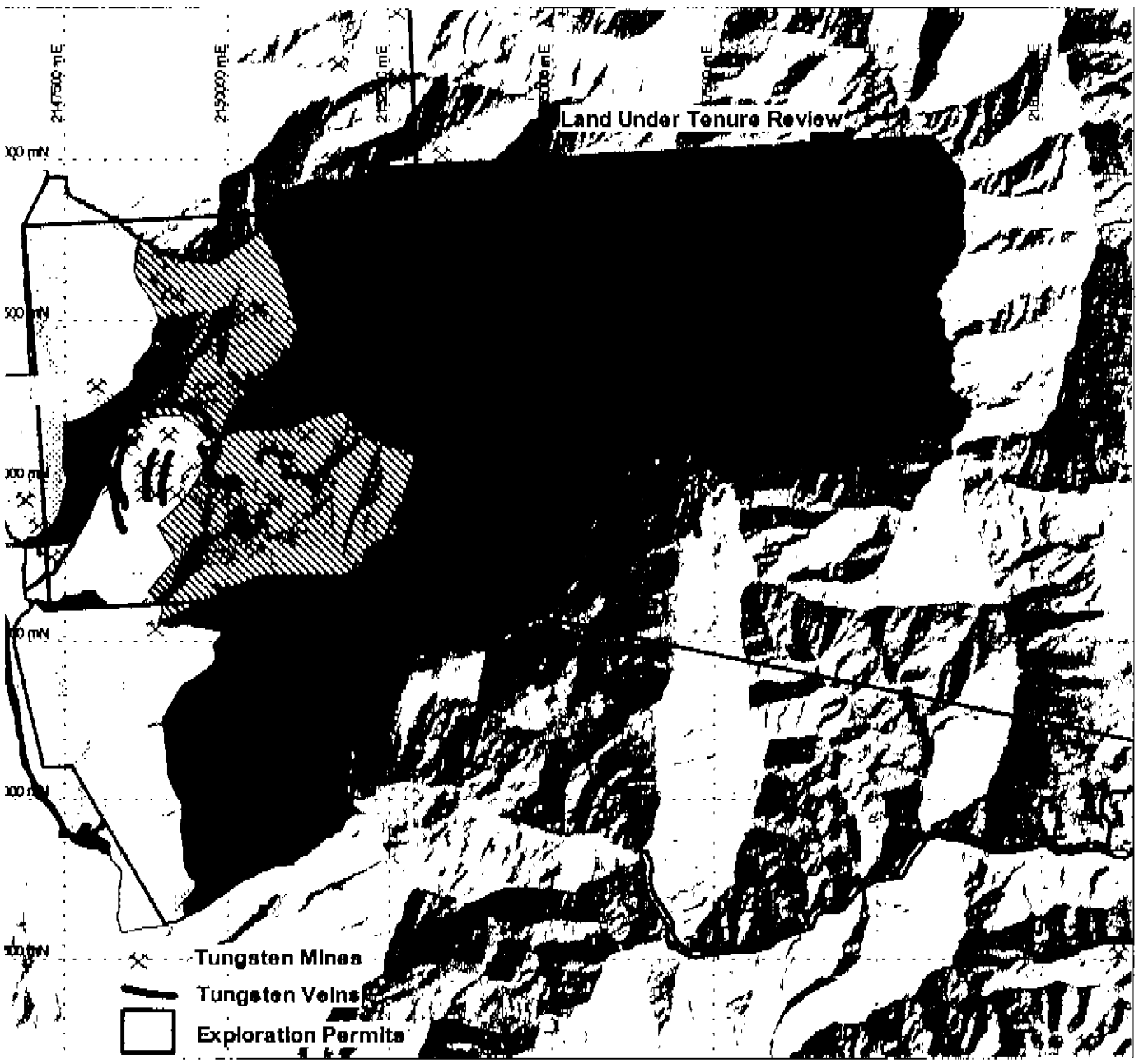
2. Progressively establish a network of high country parks and reserves. This should include consideration of both surface conservation and subsurface minerals values.

3. Foster sustainability of communities, infrastructure (by (a) ensuring their access to the psycho generative qualities, biodiversity values and amenity values inherent in surface conservation parks and reserves) and economic growth (by (b) ensuring community connection and access to the socio economic values inherent in the subsurface minerals parks and reserves within the high country), and the contribution (surface conservation values and subsurface minerals values) of the high country to the economy of New Zealand.

   Foster sustainability of communities, infrastructure and economic growth and the contribution of the high country to the economy of New Zealand (by acknowledging the opportunity cost of minerals (IGNS 1999 *New Zealand Minerals Potential*: NZIER Report : *Quantifying the opportunity cost of New Zealand's mineral potential).*

4. Obtain a fair financial return to the Crown on its high country land assets (including, where significant mineralisation occurs, that portion of the Crown Minerals estate beneath it).

Minerals and the Area (Wyuna Station) Under Review



Tenure review map (Po299) showing designations overlayed with mineral (tungsten) deposits, veins systems and exploration and prospecting permits. Significant Crown minerals need to be accounted for, reserved, and their public access preserved in the High Country Tenure Review process. The proposed designations discount to zero the inherent value of strategically important minerals. Subsurface minerals should be weighed equally with surface conservation values.
Crown Minerals, Ministry of Economic Development should have standing equal to DoC in the Tenure Review process.

Map showing an enlarged view of prospective tungsten area with mines and veins.

Red - Proposed DoC managed conservation area for recreation concessions
Red cross hatched - Proposed DoC managed conservation area for grazing and recreation concessions
Yellow – Land to be sold

The URL for both maps is:

http://www.kencx.co.nz/nzmia.htm

Password for the Tenure Review is: **Glenorchy**

The Area Under Review is Prospective for Gold and Rich in Tungsten, a Strategically Important Mineral.

Tungsten is regarded in the world as a strategically important mineral to developed economies because it is used in the hardening of steel. Prices for tungsten (wolframite) between 1959 to the present have reached US$149 per short tonne.

A description of the uses of tungsten is given by Christie and Brathwaite, 1996:

Tungsten is used mainly in the manufacture of cutting and wear resistant materials such as tungsten carbide and steel alloys. More than half of the tungsten production is used in tungsten carbide (WC), which is noted for its hardness (9.5 on Mohs scale). Tungsten carbide is used alone or with other metals for cutting tools, mining and drilling tools, dies, gauges, bearings and the cutting edge of saws and drills. Stellites (Co-Cr-W alloys) are used for metal-cutting tools and as hard-facing materials for items such as valves, bearings, rock crushers and marine propeller shafts. Tungsten steels are used for high-speed cutting tools, dies, pneumatic tools, punches, bushings and taps, and some have also been used in the aerospace industry to fabricate rocket nozzle throats and leading-edge re-entry surfaces.

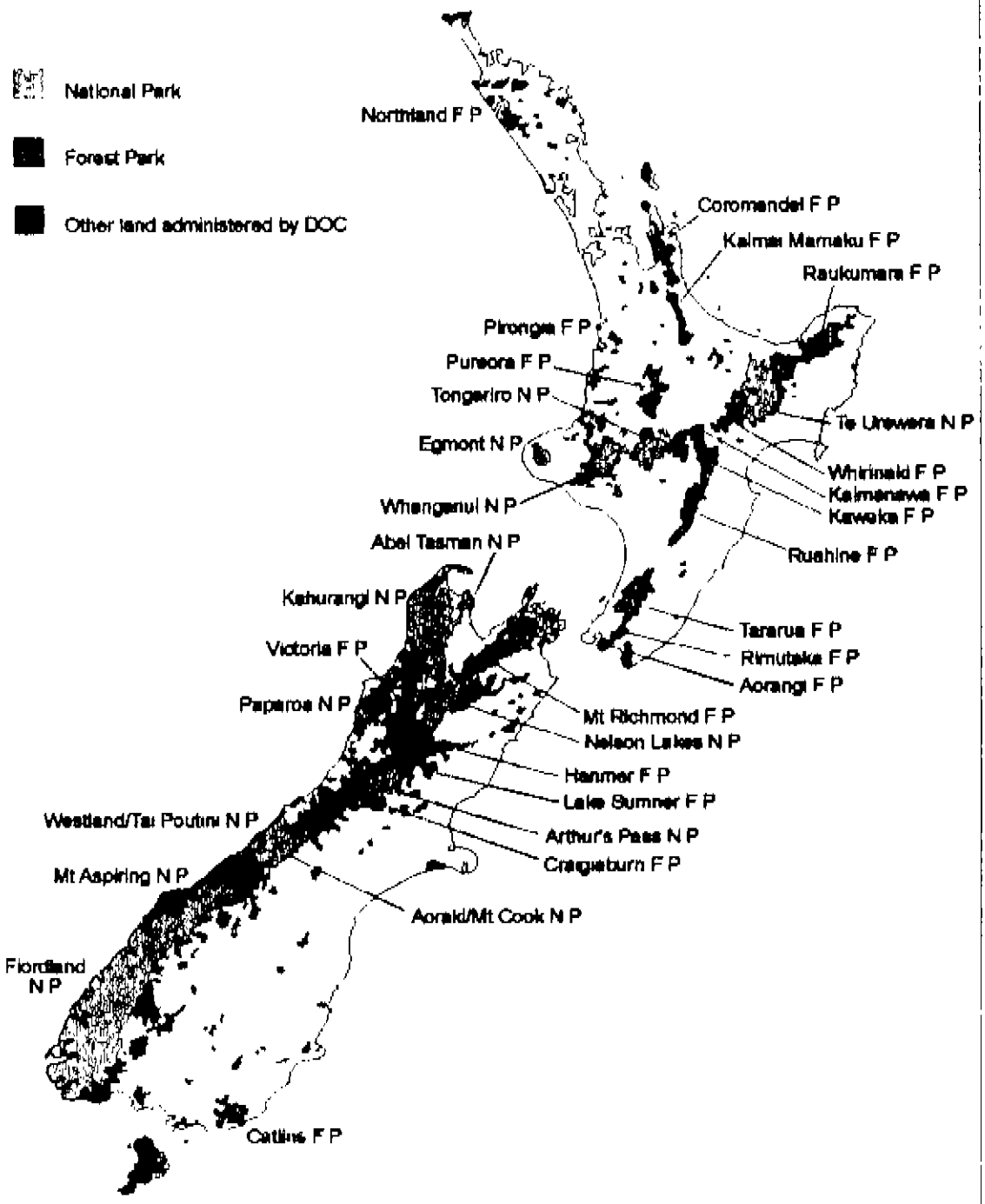
Unalloyed tungsten, in the form of wire, is used as filaments for electric lamps, in electron and television tubes, and as heating elements for electrical furnaces and heaters. Tungsten rods are used as lamp filament supports, electrical contacts and electrodes for arc lamps.

Tungsten compounds have a number of industrial applications. Calcium and magnesium tungstates are widely used as phosphors in fluorescent lighting and television tubes. Sodium tungstate is used in the fireproofing of fabrics and in the preparation of tungsten-containing dyes and pigments used in paints and printing inks. Other salts of tungsten are used in the chemical and tanning industries. Tungsten disulphide and tungsten diselenide are used as dry, high-temperature (stable to 500°C), lubricants.

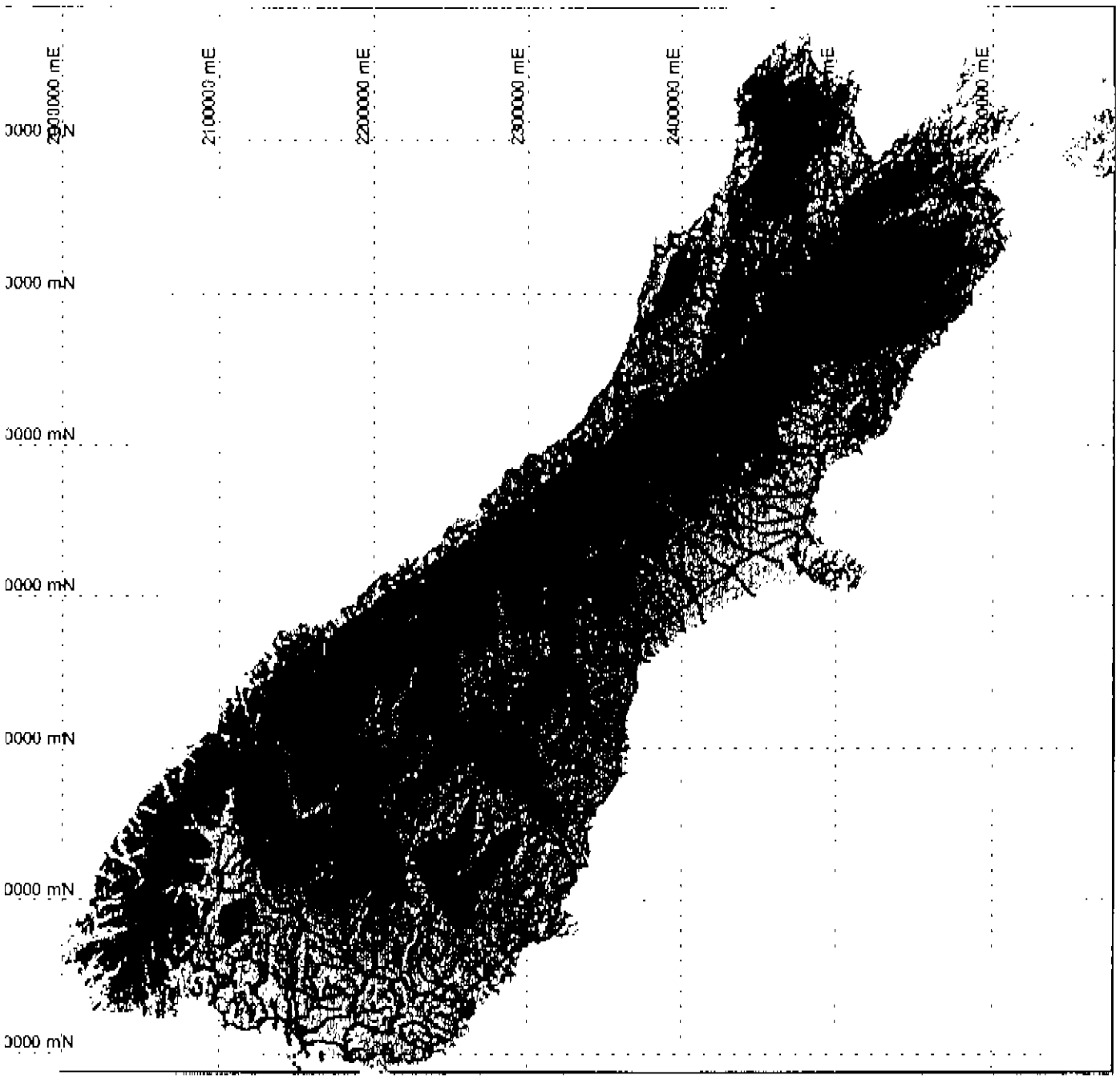
Christie, A.B. and Brathwaite, R.L., May 1996; Mineral Commodity Report 12 Tungsten; New Zealand Mining, Vol. 19, p19-27; New Zealand Crown Minerals, Energy and Resources Division, Ministry of Commerce.

It is also to be noted the area contains former mine workings including adits and tunnels, which may warrant consideration of liability issues.

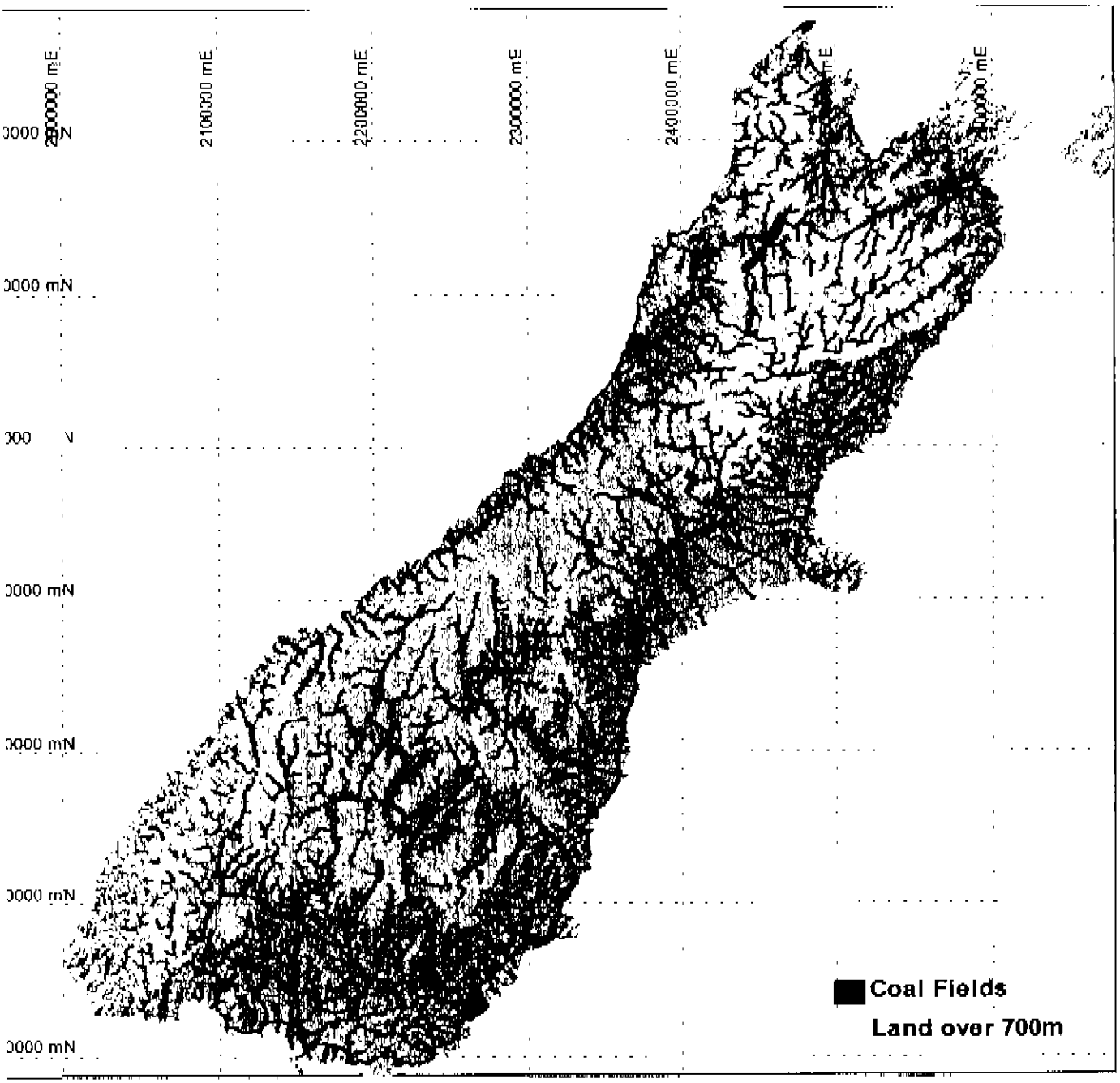
PUBLIC CONSERVATION LAND



National Minerals and the South Island High Country Tenure Review

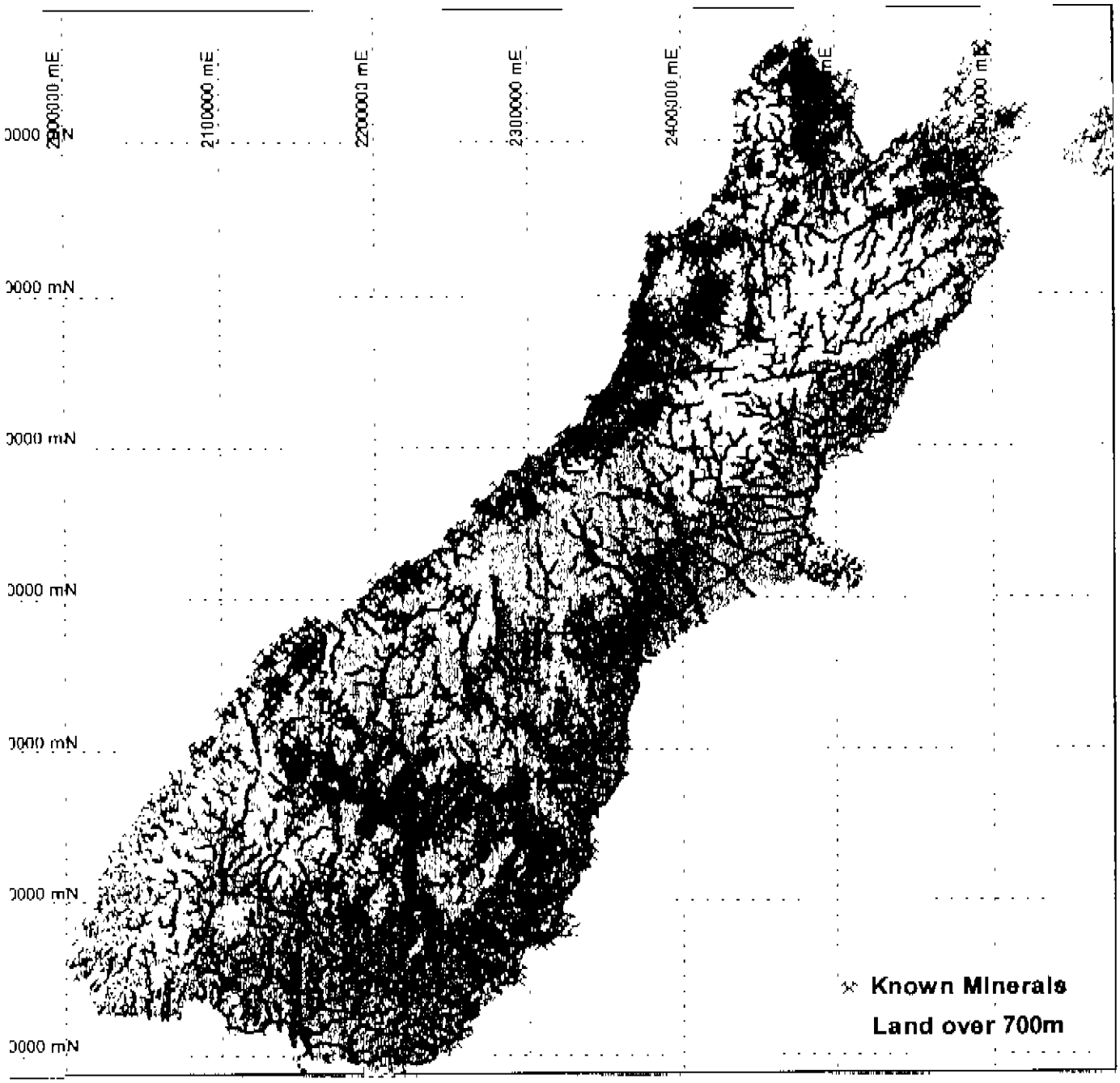


South Island Map shows the green area, which includes national parks and land under DoC control together with areas above 700 metres. The land potentially to come under DoC control.



Map showing potential coal resources (in black) compared to high country under review by DoC, within the 700 metres contour.

For energy security coal needs to be reserved, and public access preserved.

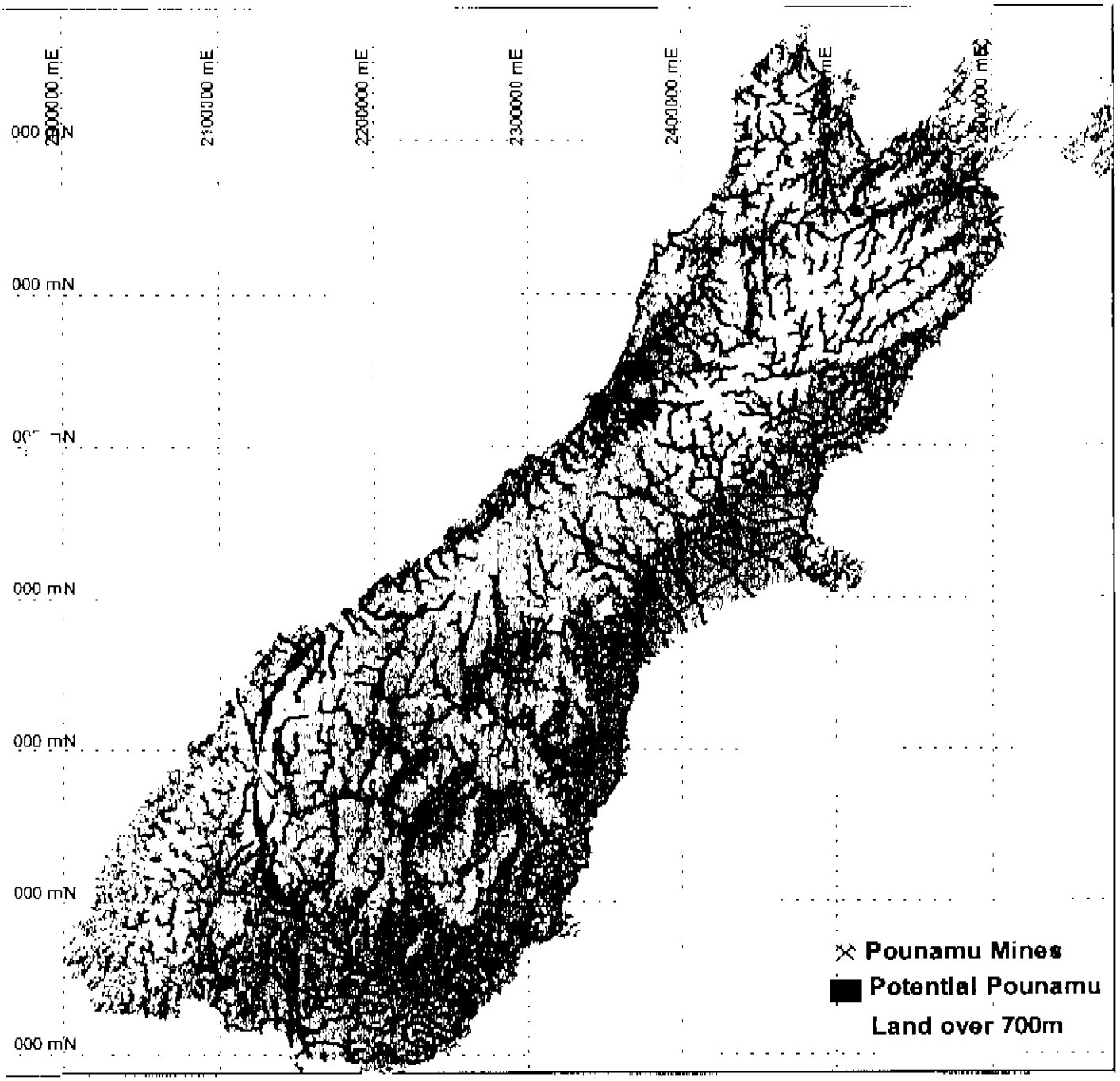


Map showing all known minerals including pounamu, within the 700 metres contour.

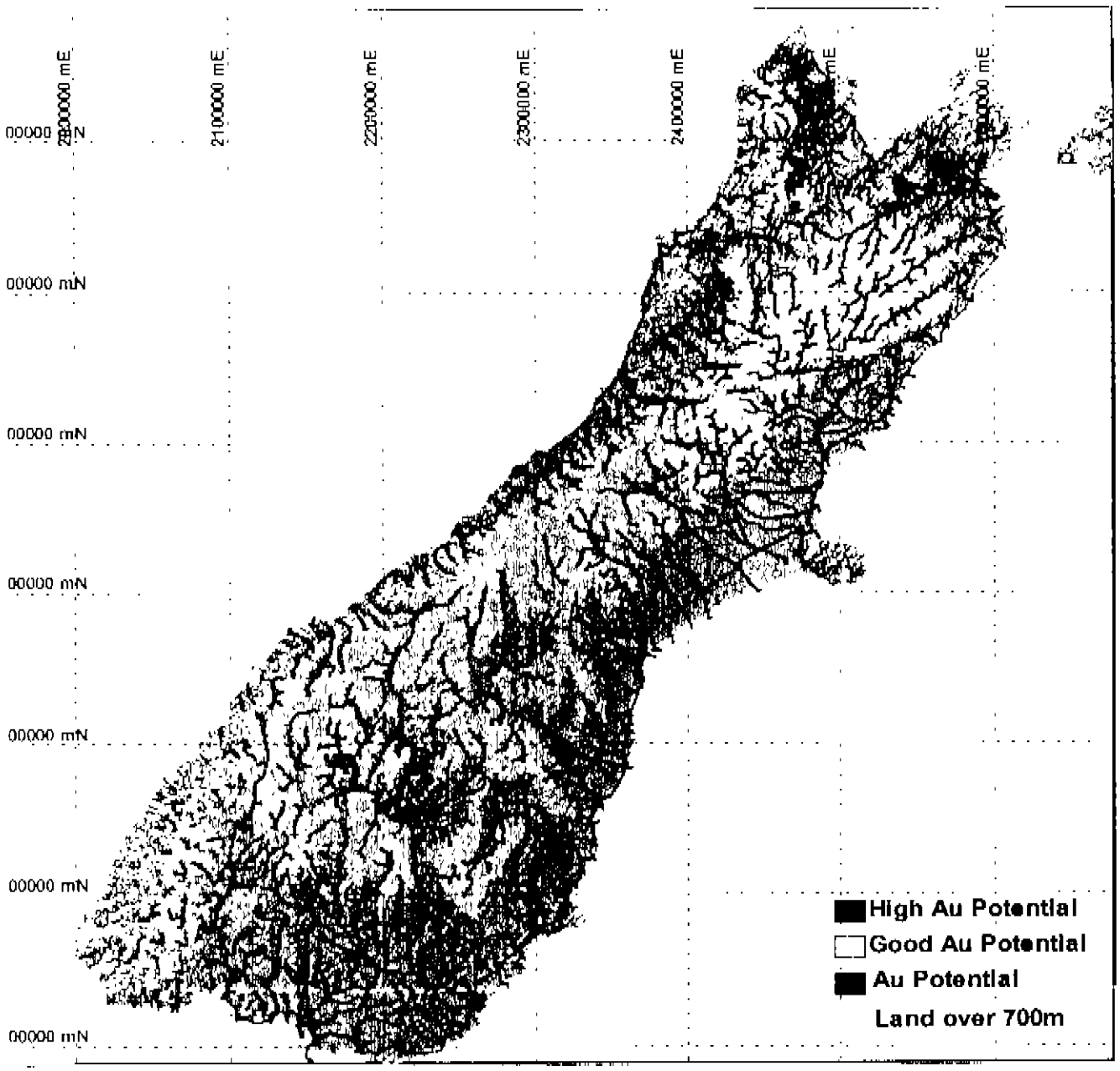
The Economic Case: Within 10 years New Zealand has the minerals resource potential to sustain an increase in output to more than $2billion per year; employment potential of 25,000+ jobs; increase overall household incomes by 1.7%; increase overall exports by 4%.

Longer term: GDP growth of 2.9% possible; potential for export growth of 7%; employment potential of 35,000 jobs; households 2.3% better off.

Both scenarios without access to national parks and sensitive areas now closed to mining.



Map showing pounamu and potential sources of greenstone, pounamu mines and land over 700 metres



Map showing gold potentials (good and high) within the 700 metres contour

The URL is the same as for the Tenure Review maps: http://www.kenex.co.nz/nzmia.htm

Password for the South Island is: **South**

Conclusion

Section 2 of Crown Pastoral Lands Act (CPLA) provides for significant inherent values in relation to the land under review deserving of protection of management under the Reserves Act 1997 or the Conservation Act.

Inherent value in relation to any land is a value arising from, among other things, a characteristic of a natural resource, including a geological feature, which may include minerals.

NZMIA submits that relying on the status quo in regards minerals management in general or the modus operandi of the High Country Tenure Review to date amounts to a de facto sterilization of minerals of significant regional and national socio economic, and sometimes cultural, value.

Presently, we believe conservation objectives alone are being addressed, whereas values regarding minerals potential are effectively being discounted to zero by not considering or accounting for minerals in the process. Implementing the new complementary objectives within the process should ensure inherent geological minerals values are appropriately accorded their rightful place and are accounted for within the review process.

It is correct that leaseholders and the Crown need to accept the concept of 'significant inherent values' as it relates to minerals. And further, that the concept within the review process be applied to the subsurface minerals values both on lands which may be privatised, and which may be retained by the Crown including minerals beneath lands, which may or may not become Conservation lands as a result of the High Country Tenure Review process.

NZMIA submits additional to Resource Management Act requirements within the discretionary consent requirements from the Commissioner of Crown Lands for soil and vegetation disturbing activities, that prospecting, exploration and mining for minerals be included along with forestry and commercial recreation.

NZMIA acknowledges the case with which the CPLA allows, under the tenure review, pastoral leases to be split into freehold or conservation land where the land has definite conservation or economic value. And that the process may be considered by some to work well in this either or situation. However, NZMIA submits that for the consideration of minerals the present process is short sighted in that minerals may be beneath either the land to be freeholded or the land to be conserved or both. And therefore minerals, because of their inherent value are deserving of consideration equal to that of surface conservation values or other socio economic values on land to be retained by the Crown or privatised.

Further, because of facts surrounding minerals, their physical position in space, the need for their identification, protection and preservation of access to them, it may not be actually appropriate for DoC under its 'preserve and protect' mandate in its present form, to automatically assume the position of manager post review. Neither should the freeholder be permitted to either sterilize or assume de facto ownership of the subsurface minerals.

Presently it does not appear that minerals inherent values have been weighed up in the various cost and benefits relating to environmental, economic, social or cultural outcomes within the tenure review process. In fact, minerals appear to be being discounted to zero pre and post High Country Tenure Review process. However, benefits from minerals can contribute to sustainable land management, ecological considerations and the Government's growth and innovation framework at various levels of regional and national development.

NZMIA submits minerals values are a significant inherent value, which warrants their accounting for and management under the High Country Tenure Review process. Logically Crown Minerals of the Ministry of Economic Development should have an equal seat at the top table of the review process. And mechanisms be created to identify and account for Crown Minerals, their protection, and preservation of public access to them, within the High Country Tenure Review process.

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5 September 2003

Mineral Resources of New Zealand

Converting resource potential to community benefits

Vision

To create a sustainable minerals industry which realises its potential contribution to the economic, social and environmental wealth of New Zealand by 2015.

Strategic goals

To double the economic contribution of the NZ mining industry by 2015 and:

- Increase minerals industry contribution to GDP to $2.2 billion each year.
- Increase mineral exports by $700 million to more than $1 billion each year
- Create more than 25,000 new jobs in the minerals industry mainly in rural NZ, where Maori unemployment is highest
- Increase tax revenue by more than $500 million each year;

through a partnership that reflects appropriate Government and Industry contributions.

The mining industry in New Zealand is an integral part of the wider economy. Mining's relatively small contribution to GDP belies its importance as a supplier of essential inputs into other sectors. Growth sectors such as the forestry and dairy industries depend heavily on fertilisers and road transport for which industrial minerals and aggregates are essential. Coal is an important source of energy for both industrial and domestic purposes. And high value minerals have increasingly become a means of earning export revenue.

NZ Institute of Economic Research, 2002

The Partnership

Industry's Contribution

- Increase annual investment in exploration, and research and development to $60 million
- Discover and develop new minerals, materials and markets
- Apply new technology to add value and improve the industry's performance
- Increase public awareness to ensure minerals are recognised as a key productive sector that is an environmental leader.
- Develop highly skilled workforces through education and training.

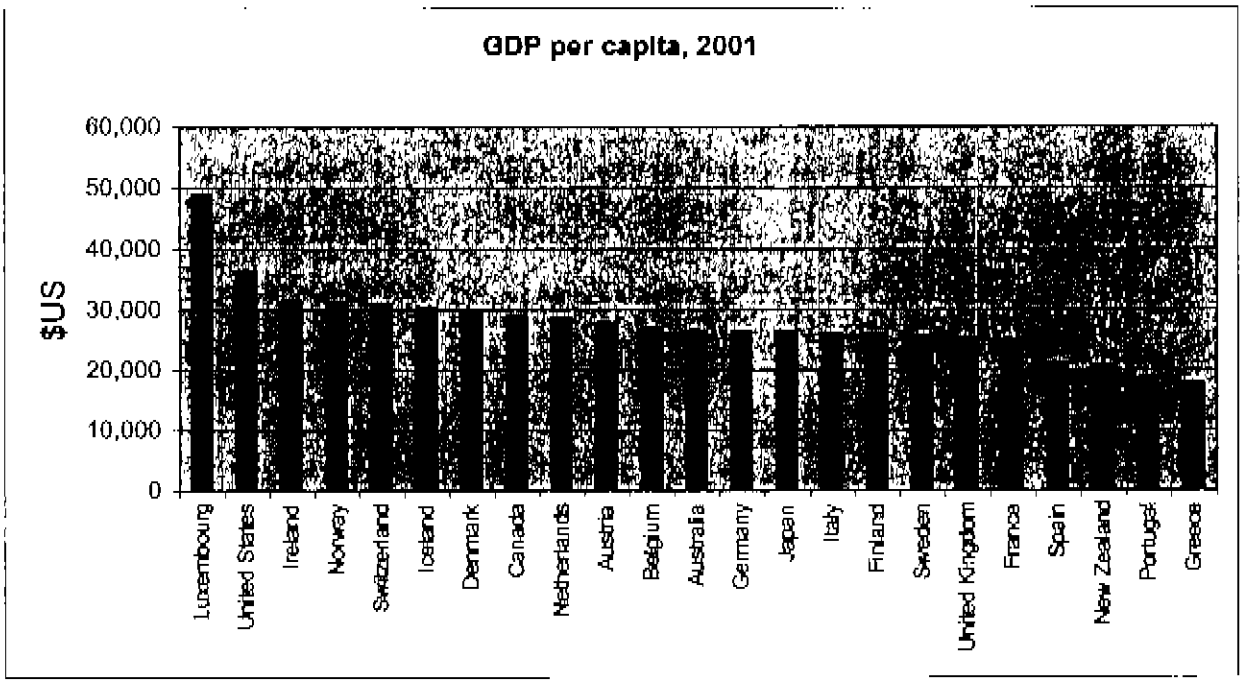
Government's Contribution

- Create an internationally competitive environment for minerals investment
- Facilitate access to minerals on Crown lands
- Create an advocacy role within Government for the minerals estate
- Develop and maintain an inventory of mineral resources, and support minerals research

Photo: Staff of the Golden Cross mine, 1997. Photo: DesignShed, Waihi.

Context

New Zealand is rich in resources (including mineral potential), but is geographically isolated and has a small population. While the type and destination of our exports has diversified, a large proportion of exporting effort will continue to be based on resource-intensive sectors. These sectors contribute a growing share of our exports.



Source: Organisation of Economic Cooperation and Development, 2002

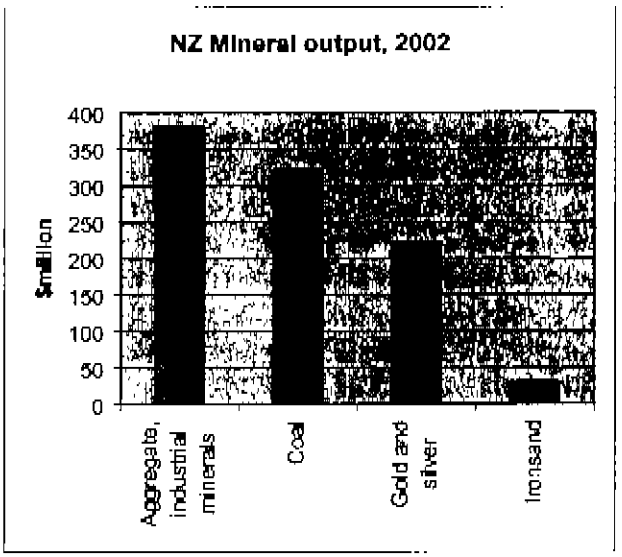
New Zealand's economic performance has lagged behind that of other countries and now ranks 21st of the 30 OECD countries for economic output per capita . Ireland, Canada and Australia, also resource-rich countries like New Zealand, rank 3rd, 8th and 12th respectively. Consequently, resource intensity does not inhibit economic performance. New Zealand ranks second in the world for natural capital per head of population, in a study carried out for the World Bank that estimated the value of the natural resources of 92 countries.

Our future prosperity will be derived from value added products and services in our core, resource-intensive sectors, with innovative industries developing as spin-offs. Virtually all of this prosperity requires a healthy, productive minerals industry to underpin the growth and development of associated infrastructure.

Strategic Implications

Economic growth and rising living standards rely on a healthy, productive mineral sector, which can contribute through:

- Minerals sector growth underpinning the development of other sectors
- Growth and development of the mineral sector itself.



Source: Ministry of Economic Development, 2003

The NZ mineral industry produces more than 40 million tonnes of minerals each year, with aggregate for building, construction and road-making accounting for close to 70% of this total. The total value of New Zealand's annual mineral output is now close to $1 billion.

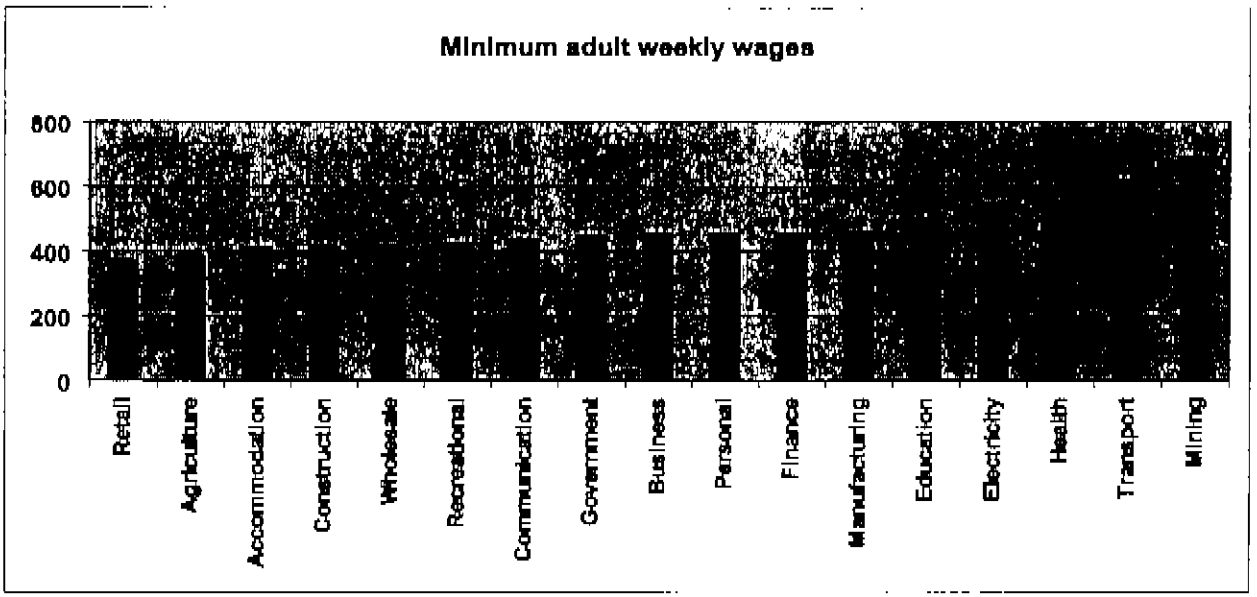
Strategic significance of mineral industry sectors

	Aggregates	Industrial minerals	Coal	Metals
Infrastructure	●	●	●	
Exports, import substitution		●	●	●
Energy security			●	
Transport	●	○		○
Rural and Maori employment	●	○	○	●

● *Critically important*

○ *Significant*

The greatest value of the minerals sector to NZ is through its vital, supportive function for other industry sectors. Growth sectors such as the forestry and dairy industries depend heavily on fertilisers and road transport for which industrial minerals and aggregates are essential. Forest industry forecasts show an increase in the wood supply over the next three years of 58%, with predictions of 298% in Northland, 265% in eastern North Island and 380% in the southern North Island. These volumes cannot be transported without major expansion in aggregate output to provide the necessary roads and bridges.



Source: ERA Info, Department of Labour, July 2003

NZ is the world's largest user of fertiliser minerals on a per capita basis, with a value of $600 million annually. Most of this is imported, and there are numerous opportunities for import substitution. Moreover, New Zealand agriculture is totally dependent on overseas supplies of fertiliser minerals. Their production is relocating to third world countries while fewer, larger companies are becoming dominant, with a resulting risk to the competitive choice of consumers.

Likewise, coal is our largest proven energy source, and is an important component of energy supply,

Mineral exports 2002

	Value $Million
Gold	239
Coal	208
Ironsand	22
Clay (estimate)	15
Cement	13
Silver	9
Salt	7
Limestone	4
Decorative stone	2
Silica sand	<1
Dolomite	<1
Total	**519**

Source: Statistics NZ

particularly for industry. For example, three tonnes of coal are needed to produce one tonne of milk powder.

In recent years high value metals (gold, silver), coal and industrial minerals (china clay and lime) have led to a surge in the value of mineral exports, now exceeding $500 million annually.

NZ has excellent potential for the discovery of new, high value minerals including platinum, gold and other metals. A 1999 study by the Institute of Geological and Nuclear Sciences identified potential for 16 metals in 32 deposit types. These potential metallic mineral resources were valued at $86 billion.

The economic case

A 2002 economic study of the NZ minerals industry by the NZ Institute of Economic Research, built on a 1999 study of NZ's mineral potential. It modelled the economic effects of mining industry growth on the NZ economy and made the following key findings:

Within 10 years

- NZ has the mineral resource potential to sustain an increase in output to more than $2 billion per year.
- Employment potential of +25,000 jobs
- Overall household incomes increase by 1.7%
- Overall exports increase by 4%

Longer term

- GDP growth of 2.9% possible
- Potential for overall export growth of 7%
- Employment potential of 35,000 jobs
- Households would be 2.3% better off

Both scenarios can be achieved without access to National Parks and other sensitive areas that are now closed to mining.

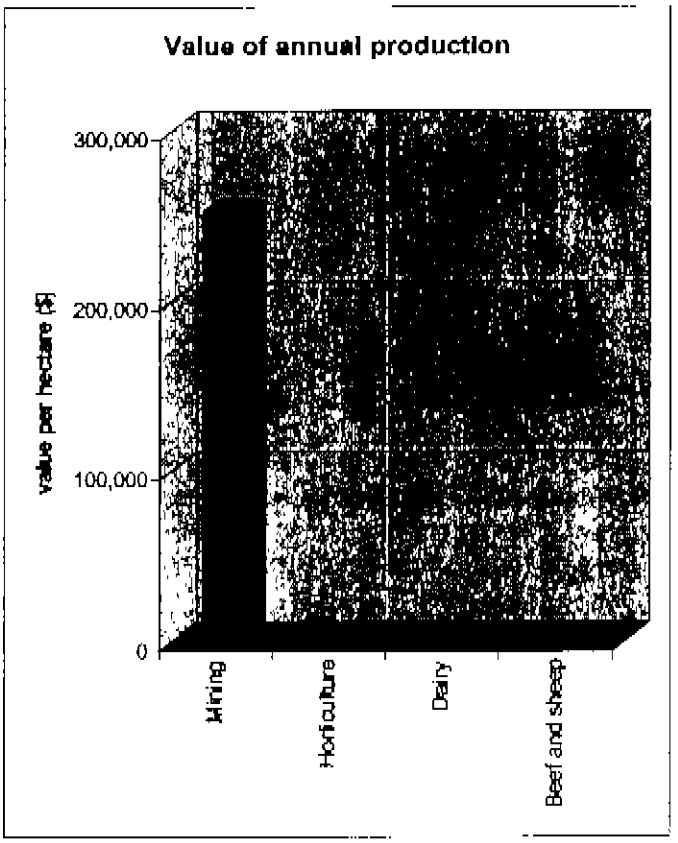
Among non-metallic resources, industrial minerals and coal have potential for producing new, high value products. Northland china clay and Canterbury bentonite are examples of how niche markets for high value, unique minerals can be developed successfully, and there is potential to repeat these.

Mining and related activities are situated where the mineral deposits occur, and more than 80% of the jobs created are located outside the main urban centres in areas of high rural and Maori unemployment. Moreover, Maori are significant mineral owners, and will benefit from their use.

Growth in the minerals sector, both proactive and responsive, is beneficial for the economy and its growth.

There are sectors of the minerals industry, which will grow in response to demand from its New Zealand users. For example, fertiliser minerals required by agriculture and horticulture; aggregates required for the built environment and the roading requirements of forestry growth. A purpose of this strategy is to ensure that such response can take place efficiently, so that New Zealand industries relying on minerals do not lose their competitive advantage.

Proactive growth and development of the minerals sector itself is key to delivering benefits associated with exports, innovation and the development of new



technologies, creation of new skills and jobs. Another purpose of this strategy is to create certainty of access to the mineral wealth locked up within New Zealand.

Critical issues

Knowledge economy

Technology is being applied to mineral exploration, mine design and mineral production and processing, leading to more effective management, improved working environments and reduced environmental impacts. Exploration and information technology can build a resource inventory, greatly enhancing private sector investment in minerals.

Within 10 years, government investment in research and development related to minerals will need to have increased to up to $26 million per year, allowing continuation of current projects and funding of a range of new initiatives. Private sector investment in mineral-related research and development (including exploration) is projected to increase from the present level of less than $15 million to more than $60 million annually.

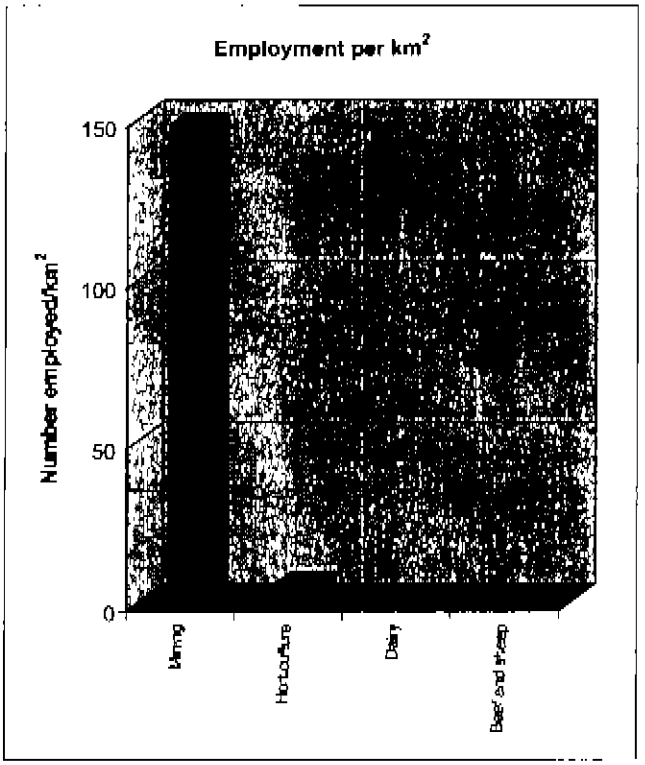
INVESTMENT REQUIRED OVER 10 YEARS	
	Cost estimate
Research Category	**$million/year**
Geological mapping	2.5 - 4.0
Geochemical surveys	2.5 - 3.5
Airborne geophysical surveys	4.0 - 7.0
Offshore geology and mineral deposits	2.0 - 4.0
Social and environmental research	1.5
Mineral deposit studies	4.0 - 6.0
Resource modelling and database development	2.5
Mineral extraction and processing	1.5
Ground geophysical surveys	1.5
Total	**23.0 - 26.0**

NZ is internationally recognised for the quality of its geological research and education. Mining industry-university links have a knowledge spin-off that helps to attract overseas students to this country. The recent improvement in the relationship between the minerals industry and research funders and providers will lead to the more effective application of science and technology to sector growth.

Environmental excellence

The minerals sector now controls the effects of its operations, rehabilitates operating sites and contributes to conservation initiatives. Examples of recent award-winning initiatives include:

- Ministry for the Environment green ribbon award – conversion of quarry and cleanfill site to a vineyard in Marlborough
- Habitat Enhancement and Land-care Project - Martha mine, Waihi
- Integrated environmental manage-ment - lime producer, Waikato
- Ministry for the Environment Green Ribbon Award - quarry rehabilitation, Dunedin
- Community environmental project - Lake Waahi, Huntly Coalfield, Waikato
- Environmental enhancement - Golden Cross project, Waihi.



The public is generally unaware of the present-day performance of the industry.

Maori advancement

At present, exploration and mining in co-operation with Maori landowners includes gold and silver, ironsand and coal in the North Island, and alluvial gold in the South Island. As Treaty claims for land and minerals are settled, opportunities for Maori participation in the minerals industry will increase.

Maori unemployment is highest in regional NZ (eg 24% in Northland in 1996). The regions have the greatest potential for mineral discovery and development. Growth of the mineral industry will create employment and training where the demand for jobs is greatest.

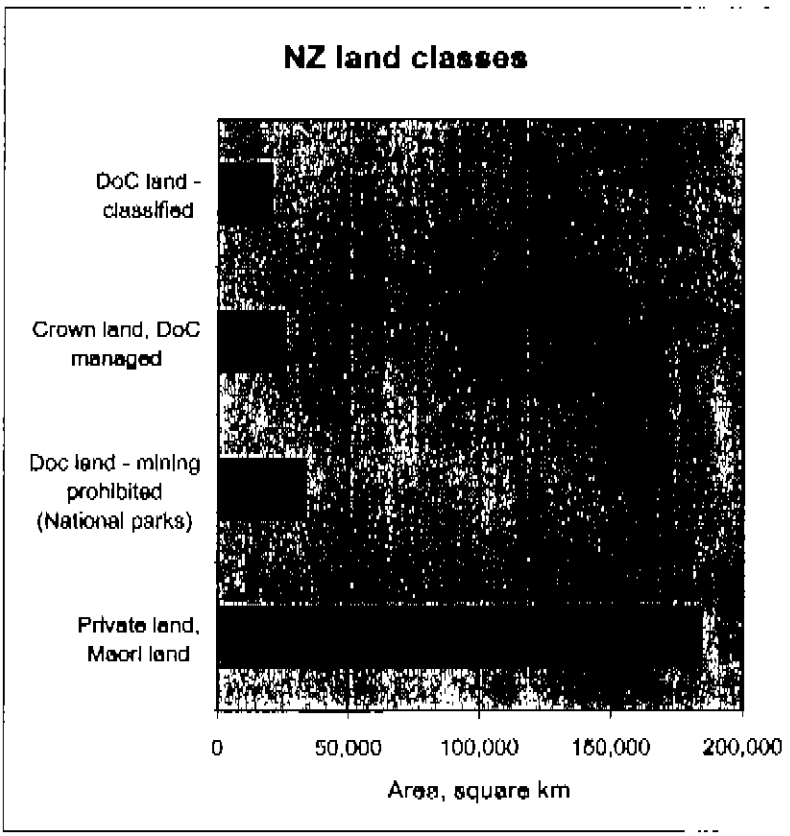
Land access for exploration

Mining activities in New Zealand are directly affecting about 0.014% of the country's land area. Mining is critically dependent on access to land to explore. Access to public land is particularly important as an estimated 70% of New Zealand's high value mineral resources are located within the 30% of New Zealand's total land area that is administered by the Department of Conservation. Much of this public land is outside of National Parks. Risk averse, fragmented and inconsistent resource management policies and procedures impede rational decision-making on access.

Equity and responsibility

Most of our mineral endowment and more than 30% of the land area of this country is Crown-owned and thus belongs to all New Zealanders. The public interest should not be confined to management of the land surface, but should also be directed at wisely using sub-surface resources. To engage in this debate, the public needs to understand the economic and social role of the industry. Factual information will enable rational balance and compromise, allowing minerals to play their fundamental role in our economy.

New Zealand has the capacity to develop its resources while controlling the effects of their development, and should do so. If we don't, we will contribute to an accelerating shift in resource development to third world countries that lack our advantages of low population density, an educated workforce, well-



Private, Maori and Crown leasehold land accounts for nearly 70% of New Zealand's land area. Public land, managed by the Department of Conservation, makes up the other 30%, but contains more than 70% of NZ's potential high value mineral resources.

developed infrastructure and world-class environmental performance. If we commit as a nation to playing our part in global climate management, then so too should we produce the minerals we consume wherever we can as this allows us to balance economic growth with environmental consequences and meet our international moral obligations.

Government policy

The lack of clear objectives in Government minerals management is contributing to the decline in exploration investment. The Government has a stake in the industry, not just as a regulator, but as owner of all minerals on land owned by the public (which comprises 70% of the prospective area of NZ), all gold and silver, and a large proportion of other minerals on privately owned land.

Government administration and advocacy

A public sector organisation that takes an active part in constructive policymaking and advocacy relating to minerals at the national, regional and district levels is needed. Effective participation is essential in the preparation and review of Central and Local Government plans and strategies to ensure that mineral potential is recognised and provided for, and consistent rules apply to exploration. Achieving this is well beyond the capacity of the minerals industry. New Zealand needs a mineral ownership regime and a framework for access to Crown owned minerals on private and public land that is equal to regimes operating in Australia and Canada.

The administration of minerals is now split between numerous central, regional and local government agencies. The Department of Conservation administers most of New Zealand's mineral estate, yet is not required to consider the value of that estate when administering the Conservation Act. The minerals permits granted by the Crown Minerals Group of the Ministry of Economic Development carry virtually no rights – just obligations.

The need for resource consents from regional and district councils adds another layer of controls, often at odds with those imposed by the Department of Conservation and Ministry of Economic Development. There is no overall coherent policy being applied by the Crown.

The New Zealand mineral industry now produces more than 30 million tonnes of minerals and coal each year, with an output value of close to $1 billion. However, this level of production is being achieved by accessing just a fraction of New Zealand's estimated mineral resources. The mining industry's potential for growth is illustrated in a 1999 study published by the Institute of Geological and Nuclear Sciences (GNS).[1] The authors outline a scenario that leads to a doubling of mineral production. Perhaps even more significantly, the study places a value on New Zealand's metallic mineral resources of $86 billion.

NZ Institute of Economic Research, 2002

Resource information is no longer seen as secure. Information from exploratory activities held by the Ministry of Economic Development for use by future explorers makes a major contribution to efficient exploration here, as it does overseas. Uncertainty about the security of the information under current legislation is leading to under-reporting, with the potential for permanent loss of irreplaceable exploration data. The partnership between risk-taking investors and the Government has broken down.

Role of Industry

The industry will contribute to implementing the strategy through increased investment, and new public education initiatives. Increased investment by the minerals industry will:

- Expand exploration investment
- Increase mineral production & processing
- Create regional jobs
- Employ local people including Maori

Public perceptions are recognised by the sector as a key issue and the industry is expanding its public education programme through:

- Further developing internet communication (www.minerals.co.nz)
- Providing direct resourcing to schools
- Requiring TEC to sharpen the focus of Earth Sciences

There are joint roles for both partners such as in public education and which extend to technical education, manpower and training.

Role of Government

Strategic significance

Recognise the strategic significance of the minerals industry to:

- Infrastructure and energy that is vital for key parts of the economy
- Export growth

Strategic partnership with minerals industry

Develop a strategic partnership between the Government and the minerals industry via the Minerals Industry Advisory Committee to develop and implement the strategy.

Minerals management

Task the Ministry of Economic Development to adopt an advocacy role with respect to policy making by central, regional and local government. In particular:

- Take an active role in government policy-making that affects the minerals sector.
- Monitor and actively participate in the preparation and application of regional and district plans, and conservation management strategies
- Work in partnership with minerals sector organisations to ensure that consistent, practical policies apply to prospecting, exploration and mining throughout NZ.
- Investigate the role of the minerals industry in NZ, its value (both current and potential) and its contribution to economic output, employment and regional development.
- Propose changes to the Crown Minerals Act to facilitate the responsible development of Crown owned minerals

Research, development and education

Extend the government-industry partnership to maximise the contribution that research, development and education can make to achieve the industry's goals by:

- Conducting research, with the advantage of modern knowledge and technology, into New Zealand's geology and mineral deposits, both onshore and offshore
- Developing and maintaining a database of New Zealand's mineral resources and potential deposits, providing a rational basis for public policy and decision making
- Funding education and student research.

Within 10 years, government investment will need to have increased 10-fold - from less that $3 million per year to up to $26 million per year, allowing continuation of current projects and funding of a range of new initiatives. Private sector investment in mineral-related research and development (including exploration) is projected to increase from the present level of less than $15 million to more than $60 million annually. Specific issues and recommended areas of research are discussed in minerals research strategies prepared for the Foundation for Research Science and Technology's Foresight project (1998) and for Technology NZ (2002).

Land management

Review the management of minerals under Crown Land administered by the Department of Conservation outside the area closed to mining by the Crown Minerals Amendment Act 1997, with the aim of developing balanced policies for the management of subsurface values on public land.

Land access

Review the mineral ownership and access provisions of the Crown Minerals Act and other statutes to:

- Create a framework for access to Crown owned minerals on both private and public land that compares with regimes in Australia and Canada.
- Amend the Conservation Act to require consideration of the value of the mineral estate.
- Develop a workable system for the registration of mineral ownership and access rights that provides clear, secure property rights and overcomes the problem of dormant mineral ownership and access.

Information management

Ensure that the statistical information on the minerals industry that is necessary for implementing the strategy and monitoring the development of the industry is collected and published.

Review the provisions of the Crown Minerals Act for collecting, maintaining and publishing technical information provided by permit holders with the aim of achieving full reporting of significant new data through a balance between protecting the interests of those providing the information, and the benefits from making the information available.

Maximise the opportunities to use information technology and the Internet to publish information for the benefit of the sector, and establish an efficient public information system for minerals permits and applications.

Resource Management Act

Like most sectors, the minerals industry supports the reduction of compliance costs, uncertainty and delays caused by the operation of the Resource Management Act.

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Quantifying the opportunity cost of New Zealand's mineral potential

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Abstract

Recent studies carried out to support the development of a strategy for the New Zealand mineral industry by the NZ Minerals Industry Association have included investigations of mineral potential, and the development of scenarios for realising this country's mineral potential by 2010. New economic research is applying a general equilibrium model to quantify the opportunity cost of this potential. The model analyses separately four categories of land (private land and three categories of Crown land) and identifies four distinct mineral classes -- precious metals, industrial minerals, coal and aggregate. It investigates the economic effect of the increased availability of mineral resources on the mining industry itself, on other industry sectors and on the NZ economy generally, including its impact on unemployment, GDP and household welfare.

The analyses suggest that increases in the level of GDP of between 1.3% and 3.4% may be obtained by utilising New Zealand's mineral wealth to varying degrees. The mineral industry sectors are significant beneficiaries under all scenarios; mineral output increases by between 2 and 5 times its current level. However, the flow-on effects to the rest of the economy, and to households, are also significant. The analyses show that household income, adjusted for changes in consumer prices, can be expected to increase by between 0.9% and 2.7%. This results largely from increased employment.

Introduction

During the last four years the NZ Minerals Industry Association has produced three mineral industry strategies with the objective of revitalising the minerals industry in New Zealand. In 1998 the Association led the production of a research and development strategy via the Foresight Project of the Ministry of Research, Science and Technology, and a national mineral strategy with the goal of doubling the economic contribution of the minerals sector to NZ (Gordon et al, 1998). In 2001 this was followed by the production of a technology strategy for the industry. The strategies grew out of the widely held view that the minerals industry could greatly increase its contribution to New Zealand's economic and social wellbeing.

The Institute of Geological and Nuclear Sciences contributed to these strategies by preparing an assessment of New Zealand's mineral potential (Christie and Brathwaite, 1999), that developed a scenario for achieving the strategies' economic goals by doubling the value of New Zealand's mineral output by 2010, and valued NZ's potential metallic mineral resources at $NZ86 billion. This report is the basis for the economic study (NZIER 2002) carried out by the NZ Institute of Economic Research. The results of the economic study will be incorporated into a new industry strategy in 2002.

This study uses a computable general equilibrium (CGE) approach to value the direct and flow-on effects of New Zealand's mineral potential. CGE models describe the national economy using stylised representations of the micro-economic agents in the economy: producers, consumers and government (local and central). Producers choose the mix of inputs and the amounts they produce so as to maximise profits. Consumers decide on how much to spend on various goods to maximise their wellbeing. The modeller specifies government decisions so that the model can be used for policy analysis.

CGE models are primarily designed to assess the economic impact of a 'shock' to the economy; in the instance of this project, the shock would be equivalent to a change in government policy that enabled regulated access to New Zealand's restricted mineral resources. The primary advantage of CGE modelling is that it takes account of the inter-relationships between all agents in an economy, and is thus able to quantify, in a consistent manner, the impact that such a shock might have on each of these agents. Specifically, the CGE model is able to quantify changes at both an industry level (in terms of, for example, prices, employment and output) and a national level (in terms of GDP and household wellbeing).

Land and Mineral Categories

To evaluate the distribution of mineral production and potential, New Zealand's land area was divided into 4 categories (Table 1); private land and three categories of public land, administered mainly by the Department of Conservation (DoC). The 4th category is land subject to mining restrictions under the Crown Minerals Amendment Act 1997 which is, in effect, closed to mining. National Parks account for more than 90% of this category. A 5th category (urban areas and large lakes) was excluded from the analysis.

Table 1 - Land categories

Category	Land ownership or classification	Area (km^2)	% of NZ's land area
1	Private land, Maori land, Crown leasehold land	184,300	69
2	Crown land, DoC administered stewardship land	25,500	9
3	DoC administered land including forest parks and conservation parks	20,600	8
4	DoC administered land subject to mining restrictions under Crown Minerals Act	33,600	13
5	Excluded – urban areas and lakes (+100 km^2)	4,000	1
	Total	**268,000**	**100**

Source: Statistics NZ, Department of Conservation

As a comparison, the area affected by mining in New Zealand (including mine workings and ancillary facilities) is estimated at 3,800 hectares or 0.014% of the land area of New Zealand.

For the purposes of the study, the minerals identified in Christie and Brathwaite's report have been grouped into four broad mineral classes. These are:

1. Aggregate: including limestone, building stone, rock, sand and gravel.
2. Coal.
3. Industrial minerals: including ilmenite, ironsand, silica and titanium.
4. Precious metals: gold, silver and platinum.

This study estimates the economic impact of incrementally increasing the area of land available for mining. Four scenarios are examined, in line with the four categories of land under consideration. The first scenario measures the economic impact of additional mining on category 1 (i.e. private) land; the second measures the impact of additional mining on category 1 land, as well as mining on category 2 (i.e. Crown) land; and so on to the fourth scenario, which measures the impact of mining across all land categories.

Model assumptions

Several key assumptions are employed in the CGE analysis. Most notable of these are:

1. The increase in demand for capital arising from additional mineral development and production can be met by accessing the world market, at the prevailing world price.
2. Capital obtained in world markets enters New Zealand via an exogenous increase in the balance of payments deficit. In principle, therefore, there is the potential for a change in the value of the real exchange rate. In practice, however, the value of the capital involved is sufficiently small that it does not significantly affect the exchange rate.
3. Coal, industrial minerals and precious metals are assumed to be able to be exported without constraint, and without affecting world prices. However, low unit values and high transport costs severely limit the extent to which aggregate may be exported.

Analysis of 2010 production

A scenario for mineral production in 2010 was developed by Christie and Brathwaite (1999) based on expansion of existing mining operations, the development of known resources and the partial realisation of NZ's recognised mineral potential through the discovery of new deposits and their development. These would lead to a doubling of the value of New Zealand's mineral output from about $1 billion in 1996 to $2 billion by 2010. This scenario includes:

1. The discovery and development of 2 new gold deposits and a platinum deposit.
2. Development of known mineral sands deposits.
3. An increase in coal exports from new mines, and the development of new products and markets for some non-metallic minerals.
4. Expansion of aggregate, non-metallic minerals and ironsand production to previous maximum levels.

5. Expansion of existing gold and silver mines (Martha at Waihi and Macraes in Otago).

Analysis of the land area that would be affected by these developments shows that it is confined mainly to land in categories 1 and 2 (i.e. private land and Crown land outside the areas presently managed by the Department of Conservation as protected land). The relatively minor difference in results between scenario 1 and the other scenarios reflects the distribution of mineral production across the four land categories both currently, and in 2010. As can be seen in Table 5 in the appendix, significant mineral production is already occurring in category 2 land (the Martha mine at Waihi, South Island alluvial gold and West Coast coal in particular). This study effectively compares 2010 production levels with current production, across the 4 land categories; hence, given the production values shown in Table 5, the difference in opportunity cost across the scenarios is relatively minor. The 2010 projections do anticipate significant new production on category 2 land, and to a lesser extent, category 3 land.

To achieve the 2010 scenario, annual mineral exploration expenditure would need to increase to about $40 million, which would be a five-fold increase over the present rate of expenditure of $8.01 million reported to Crown Minerals for the year to March 2000. To achieve this rate of exploration investment, New Zealand would need to develop an internationally competitive environment for exploration investment. A detailed analysis of what is required to develop such an environment is outside the scope of this study but it would need to encompass improved provisions for access for mineral exploration on land in categories 1 and 2.

Table 2 Economy-wide results: analysis of 2010 production

Cumulative percent change from business-as-usual

Measure	Scenario 1	Scenario 2	Scenario 3	Scenario 4
GDP	1.1	1.7	2.0	2.0
Welfare (household wellbeing)	0.9	1.4	1.7	1.7
Exports	2.3	3.5	4.1	4.1

The extraction values that form the basis of the 2010 production analysis, broken down by mineral class and land category, are presented in the Appendix (Table 5).

The economy-wide results of the 2010 production analysis, for each of the land category scenarios, are shown in Table 2. The results show that if mineral production in 2010 reaches the estimates made by Christie and Brathwaite, then the level of GDP can be expected to be 2.0% higher than it otherwise would have been. As Christie and Brathwaite's 2010 scenario included no new developments on category 4 land, the results for category 3 and 4 are the same.

The additional employment generated throughout the economy increases the amount of income accruing to households. This extra income, adjusted for the change in the consumer price level, is the welfare measure shown in Table 2. As can be seen, if Christie and Brathwaite's 2010 production scenario is attained, households will essentially be 1.7% better off than they would otherwise have been.

There are also significant increases in production at the sectoral level. Unsurprisingly, the mineral industry undergoes the biggest increase, which is approximately a doubling in output across all of the scenarios. There are also small but significant increases in production in the concrete, construction and wholesale/retail trade sectors, reflecting the flow-on effects of the increase in mineral production on the rest of the economy.

Analysis of resource potential

The scenario for mineral production in 2010 described in the previous section is based on expansion of existing mining operations, the development of known resources, and the discovery of new deposits and their development. Minerals with the potential to be producing beyond 2010 were analysed separately, and include high value metals and coal. Non-metallic minerals and aggregate have not been included in this analysis, as most are produced primarily for domestic consumption. While high value non-metallic minerals have export potential they have not been included as no projections of their production beyond 2010 are available on which to base the economic analysis. Thus, the mineral classes under consideration in the resource potential analysis are:

1. Coal.
2. Precious metals: gold, silver and platinum.
3. Other metals: including copper, titanium, iron and lead-zinc.

Christie and Brathwaite (1999) have estimated New Zealand's potential metallic mineral resources using internationally developed mineral deposit geological models and estimation methods. They have identified potential in New Zealand for 33 mineral deposit types containing 15 metals, as well as platinum group metals and rare earth elements, and have calculated the value of the potential resources of each deposit type, using 1999 metal prices. The results are summarised in Table 5 of their report "Known and estimated resources of metals by mineral deposit type" which was the source of the base data for the analysis that follows. For the purposes of this analysis, the 15 deposit types with the highest value have been included. These account for more than 98% of the total value of potential metallic mineral resources ($86 billion) estimated by Christie and Brathwaite. The resources have been distributed across the four land categories used in the 2010 scenario above, based on Christie and Brathwaite's description of prospective geological environments, and published land classifications (see Table 3). Most are located in land owned by the public (Crown land).

Table 3 Distribution of potential metallic mineral resources by value

Land category	1	2	3	4
Value (%)	26.6	14.0	20.6	38.9

This resource assessment is a snapshot in time, and is unable to take into account factors such as future discoveries of new mineral deposit types, and economic and technological changes. Because of this, it is conservative.

Since the CGE model employed in this study analyses flows, it was necessary to express the value of the metallic mineral resources as their corresponding annual extraction values. This was done by assuming a typical mine life of 15 years.[1] In effect, Christie and Brathwaite's estimates of metallic mineral resources were divided by 15 to represent the annual extraction value associated with those resources.

For coal, the 2010 annual production figure of 8.5Mt has been increased to 10Mt for the resource potential scenario, with most of the additional production being exported, primarily for steel making. This projection (Matheson, 2002) is supported by a prediction (World Coal Institute, 2000) that coal will remain indispensable for steel making in the foreseeable future, that New Zealand's projected coal exports (6.5Mt) would represent less than 4% of 1998 world coking coal exports, and that New Zealand's bituminous coal resources (Barry et al., 1994) are large (983 Mt coal-in-ground and 343 Mt recoverable) in relation to the projected production.

Lignite is New Zealand's largest and potentially most valuable known energy resource (Barry et al 1994). It is worked on a small scale at present, and the industry does not expect it to be produced in large volumes (more than 1Mtpa) before 2020. Because of this, lignite has not been included in either of the scenarios, though it is likely to be worked on a large scale during the 21st century. Resources are estimated at 11,700 Mt coal-in-ground and 7,200 Mt recoverable, with a potential value of more than $100 billion dollars.

For the resource potential analysis, an adjustment was made to take account of the difficulties that New Zealand's rugged terrain poses for reaching some resources. In essence, resources in prospective areas that are situated above 1000m elevation and are greater than 5km from existing roads were excluded from the analysis.

The annual extraction values that form the basis of the resource potential analysis, broken down by land category and mineral class, are listed in Table 6 in the appendix to this paper.

The economy-wide results of the metallic mineral and coal resource potential analysis, for each of the land category scenarios, are shown in Table 4. The results show that the coal and metallic mineral resources on private land alone have the potential to increase the level of New Zealand's GDP by 1.3%. However, if all of New Zealand's coal and metallic mineral wealth could be accessed, the level of GDP would increase by 3.4%. This increase equates to approximately $3.8 billion (per year) in today's prices. Obviously, this value represents significant opportunities for developing alternatives in resource management.

[1] Typical mine life was derived from an analysis of Newmont Mining Corporation and Barrick Gold Corporation resource and production data for gold from company annual reports.

Table 4 Economy-wide results: resource potential analysis

Cumulative percent change from business-as-usual

Measure	Scenario 1 Private	Scenario 2 Crown	Scenario 3 Classified DoC	Scenario 4 DoC - Mining prohibited
GDP	1.3	2.3	2.9	3.4
Welfare (household wellbeing)	1.1	1.8	2.3	2.7
Exports	3.3	5.6	7.2	8.6

As for the 2010 production analysis, the increase in GDP generated by additional mining activity leads to increased employment, which results in a rise in household income. Consequently, households are 2.7% better off in a scenario where all of New Zealand's mineral resource is accessible for mining, than they otherwise would have been.

As expected, the increases to GDP shown in the resource potential analysis are considerably larger than those for the 2010 production scenario analysis. This is because the 2010 production analysis is based on scenarios that, in the main, involve development of existing operations and known resources. Thus, it is somewhat conservative by design.

However, the resource potential analysis is not constrained in this way. Although still being somewhat conservative – by, for example, ruling out the possibility of discoveries of new mineral types, and the exclusion of resources located in areas that are physically difficult to access – the scope of this analysis is broader than that for the 2010 production scenarios. Hence, the GDP and household welfare impacts are greater in the resource potential analysis than in the 2010 production analysis. Furthermore, the resource potential analysis focuses on high value metallic minerals and coal – minerals that typically have significant potential in export markets. This is reflected in the results shown in Table 4, where exports increase markedly across all scenarios.

As in the case of the 2010 production analysis, there are significant increases in production at the sectoral level, particularly for mining. The mining sector can be expected to increase output by nearly 4 times under scenario 1, and by close to 5 times under scenario 3.

Conclusions

The results of this study show that increasing the accessibility of New Zealand's mineral resources can make significant economic gains. Direct benefits are achieved by the mineral sector. However, considerable benefits also accrue to New Zealand households (via a rise in employment and thus household income), and to the other sectors of the economy (via flow-on effects). Importantly, a share of these gains can be achieved by improving the provisions for access to privately held lands.

Resource sustainability can be enhanced if the income that accrues from mineral production is used to fund, or part fund, the development of non-resource dependent technologies. The opportunity cost of New Zealand's potential mineral wealth is equivalent to 3.4% of GDP. At today's prices, that equates to approximately $3.8 billion per year. This represents a significant opportunity to develop sustainable resource alternatives, at a time when sustainability of natural resources is high on environmental and political agendas.

Acknowledgements

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References

Christie, AB; Brathwaite, RL, (1999). The mineral potential of New Zealand. Institute of Geological and Nuclear Sciences science report 99/4.

Barry, JM; Duff WS; MacFarlan DAB, (1994). Coal Resources of New Zealand. Resource Information Report 16, Energy and Resources Division, Ministry of Commerce, Wellington.

Gordon, DB; Barker; RG, Christie, AB, (1998). New Zealand mineral industry 2010: A strategy to help rehabilitate the New Zealand economy. *Australasian Institute of Mining and Metallurgy NZ Branch Conference Proceedings:* 250-254.

Matheson, TW, (2002). Review of Solid Energy paper on New Zealand coal resources and production. CRL Report to NZ Minerals Industry Association (CRL Ref 02/11062),

June 2002.

NZIER, (2002). Quantifying the opportunity cost of New Zealand's mineral potential. Report prepared for NZ Minerals Industry Association by NZ Institute of Economic Research, July 2002.

World Coal Institute (2000). *Coal – power for progress*, World Coal Institute, London March 2000.

Appendix

Table 5 Value of mineral extraction, 1996 and 2010

1995/96 prices, $millions

Mineral class	1996					2010				
	1. Private land (Scenario 1)	2. Crown land (Scenario 2)	3. Classified DoC land (Scenario 3)	4. DOC land – mining prohibited (Scenario 4)	*1996 Extraction value (total, all land categories)*	1. Private land (Scenario 1)	2. Crown land (Scenario 2)	3. Classified DoC land (Scenario 3)	4. DOC land – mining prohibited (Scenario 4)	*2010 extraction Total*
Aggregate	409,675	77,093			*486,768*	619,330	119,990	-	-	*739,320*
Coal	64,260	145,740			*210,000*	160,650	364,350	-	-	*525,000*
Industrial minerals	53,941	239			*54,180*	169,160	20,180	-	-	*189,340*
Precious metals	143,675	101,474			*245,120*	398,790	161,280	185,730	-	*745,800*
Total	*671,551*	*324,516*	*0*	*0*	*996,067*	*1,347,930*	*665,800*	*185,730*	-	*2,199,460*

Table 6 Value of potential mineral resources – annual extraction

1995/96 prices, $millions

Mineral class	1996 extraction total	Land category				
		1. Private Land (Scenario 1)	2. Crown Land (Scenario 2)	3. Classified DoC Land (Scenario 3)	4. DoC mining prohibited (Scenario 4)	Total
Coal	210	227	390	0	0	617
Precious metals	245	359	143	224	121	847
Other metals	54	324	216	104	202	846
Total	509	910	749	328	323	2,310

Peter Atkinson
PO Box 2239
WAKATIPU 9197

5 September 2003

Barry Dench
Tenure Review Team Leader
Quotable Value New Zealand Limited
PO Box 13 443
CHRISTCHURCH

Dear Sir

Re: High Country Tenure Review - Wyuna Station

Thank you for the opportunity to make a public submission on the Wyuna Review in my capacity as a private citizen.

This is to say I support and endorse the submission of New Zealand Minerals Industry Association (NZMIA).

Further, to the extent that the Glenorchy Battery Association submission supports elements and principles of the NZMIA submission, I wish to go on record as supporting those elements of the Glenorchy Battery Association submission.

Yours faithfully

Peter Atkinson

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FOREST & BIRD

ROYAL FOREST AND BIRD PROTECTION SOCIETY OF NEW ZEALAND INC

6th September 2003

The Comissioner of Crown Lands
C/- Barry Dench
Team Leader for Tenure Review
QV Valuations
PO Box 13443
CHRISTCHURCH

Dear Barry

Submission on Preliminary Proposal for Wyuna Pastoral Lease

Thank you for the opportunity to comment on this proposal.

Introduction
I write on behalf of the Royal Forest and Bird Protection Society, which represents over 55,000 members nationwide in 57 branches. The Society has been an active advocate of the protection and conservation of New Zealand's natural and physical resources since 1923.

I have previously inspected this pastoral lease and made a submission on the earlier Land Act Proposal on 13.3.98.

The proposal as presented under the CPLA:

Land to be retained in Crown ownership and control and proposed designations:

CA1	15.7 hectares to be a conservation area along the margins of Stone Creek containing a sizeable low-altitude remnant beech forest adjacent to the public highway which provides for future walking recreation
R1	2 hectares – recreation reserve enlarging the setting of the Glenorchy Lagoon Reserve
R2	36 ha – recreation reserve (partly used as the Glenorchy airstrip) subject to the granting of a 33 year grazing concession
CA3	800 ha – conservation area subject to granting of grazing concessions and a guided walk and horse trekking concession

CA5	540 ha – conservation area subject to granting of grazing concessions and a guided walk and horse trekking concession
CA2	8028 ha – conservation area subject to granting of guided walk, horse trekking and heliskiing/heliboarding concessions
R3 & CA4	7.7150 ha – part recreation reserve and part conservation area subject to the granting of a 33 year grazing concession
R3	47.185 ha to remain as a reserve subject to granting a farming concession and a right-of-way easement as a concession
R5	4047 m² as a recreation reserve currently a land-locked dwelling site
R4	182 ha – recreation reserve – ideal public access to Lake Wakatipu with predominantly native vegetation

Land to be freeholded:

2558 ha	Subject to protective mechanisms in the way of public access and vehicles for management purposes easements
Exch 1	135 haDisposal to lessee by way of exchange
Exch 2	4.4 ha Disposal to lessee by way of exchange

Proposed Easements

3.11.1.1	Public and Vehicles for management purposes to Conservation Area – Starts 'k' on main road to 'l', recommences at 'b' and follows Judah Road to 'c'
3.11.1.2	Vehicles for management purposes – 'a' to 'b'
3.11.1.3	Public vehicle access to reserve and management purposes – 'd' to 'e'
3.12.1	New Zealand Walkways Act 1990 Easement to provide foot access from carpark on main road to Trig G – 'l' to 'j'

Land proposed for Freeholding

1 Forest and Bird strongly believes there is justification to have a protective covenant to protect the significant inherent landscape values on the front faces of Wyuna. The DOC conservation Resources report notes the visual importance of the front faces of Wyuna as they provide an open space back-drop to Glenorchy. It was recommended that the open space values be protected. Landscape values constitute significant inherent values under the CPLA and we are gravely disappointed that these have not been protected in the Preliminary Proposal, (PP).

2 We support the two proposed exchanges of 135 hectares and 4.4 hectares as a way of rationalising reserve and crown land that has no significant inherent values or recreational values.

3 In my 1998 submission I recommended that the wetland on the terrace opposite Ted's Spur deserved protection. It appears that this wetland has been considered at some stages in the process of developing the PP, as it is marked as having inherent values and proposed for conservation in the documents attached to the Drafting Instructions of

the PP. I consider this area has significant inherent values which warrant protection under the CPLA.

4 It appears that this wetland has been formed by a recent shingle slide which has blocked the creek. On our site visit we noted good numbers of water fowl, especially grey duck, a species which is now becoming more scarce and prefers remote areas, paradise shell duck, scaup, black swan and the introduced mallard and Canadian goose. The wetland is surrounded by pasture and native shrublands, including coprosma species, manuka, broadleaf, matagouri. If stock were removed this area would gradually regenerate into a native woodland. Introduced weeds include heather and wilding pines are present and will need controlling. The shingle scree is an interesting feature, and is being recolonised with matagouri, and coprosma species. This area is ecologically interesting and scenically attractive. It would make an excellent focal point for family picnics.

5 There is in existence a Government Policy which recognises that as we have lost at least 80% of our natural wetlands, protection of the remaining wetlands is important. The biodiversity values surrounding this wetland deserve protection.

6 We are pleased to see that some protection for the forest and shrubland remnants in Stone Creek, and retention of the Buckler Burn, and Little Stony Creek area in Crown ownership.

7 Similar inherent values exist in Precipice Creek, where there are some large beech trees and manuka dominated shrublands, these deserve to be recognized under the CPLA and either protected through a covenant or returned to full crown ownership and control.

Land proposed for returning to full Crown ownership and control

8 Forest and Bird strongly supports the recognition of the significant inherent values of the Wyuna Pastoral Lease by returning 8028 hectares (CA2) to full Crown Ownership and control as a conservation area.

9 We also support the returning of areas designated CA5 and CA3 to full Crown ownership and control in recognition of their significant inherent values. Forest and Bird acknowledges that a 3 year phase out grazing period may need to be provided for over CA% and CA3. However we do not consider that continued grazing beyond that term is ecologically sustainable. CA 3 is predominantly native, and class VIIe, and over 1200m. The PP contains no information to support the ecological sustainability of on going grazing in this area.

10 We support the provision of the smaller areas - CA1 and CA4 and the Recreation Reserves – R1, R2, R3, R4 and R5. We are delighted to see the guaranteeing of public access to and the enjoyment of the shores of Lake Wakatipu by setting aside these areas and providing for current and future use of the airstrip and other recreational areas of the

Glenorchy residents and visitors. It will be important to control and preferably eliminate the broom growing on some of these areas to prevent the further spread of this serious plant pest. This is also a significant improvement over the earlier Land Act proposal.

Proposed access provisions

11 We welcome the access provisions as proposed;

i. The walk to Trig G – this is an improvement on the earlier Land Act Proposal.
ii.The access for walking and vehicle for management purposes 'k' to 'l' and 'b' to 'c'.

In addition:

12 Forest and Bird supports the suggestion from our Upper Clutha Branch to create an easement to allow public walking access to Trig D from the Glenorchy-Paradise Road on to Chinamans Flat to allow the current popular tramping trip to continue. Tourist numbers will continue to increase in this beautiful area and we predict small walks close to the town will be very popular with New Zealanders and overseas tourists alike. It is important to make provision for future and as well as for current use.

13 We also endorse their suggestion that an easement be created to allow for access from the Conservation Area (CA1) in the lower reaches of Stone Creek, up the same creek to the Conservation Areas CA3 and CA2 and thus to the mountains in behind, in particular the Mt Larkin area. This would facilitate access for more experienced tramping parties.

14 The Mt Judah Road, while not a legal road could provide welcome vehicle access to the back country if it was to become a public vehicle access. While we recognise the road needs upgrading, it would be worthwhile to do this either by way of making it a legal road and thus the responsibility of the QLDC or by the owner upgrading it and charging a fee to use it. The owner will need to keep the road in reasonable condition to use it for farm management purposes and DOC will also need it useable for management vehicle access.

15 As noted in my 1998 submission I consider that the Power line track would make an excellent mountain biking route. There are precious few opportunities to create relatively easy altitude routes in the Glenorchy – Queenstown Area – the power line track could be over time developed in to something akin to the Central Otago Rail Trail.

16 Forest and Bird supports PANZ's submission with respect to the non provision of marginal strips, provision for legal access up Precipice Creek, creation of a network of routes including up Teds Spur which I

suggested in my 1998 submission. We also agree that it is highly desirable to create a southern access point to the Richardson Mountains as suggested in the Conservation Resources Report.

17 We support the PANZ recommendation for the establishment of secure public access as public paths dedicated as public roads rather than easements.

Conclusions

1 We are strongly opposed to the granting of a 10 year grazing concession with the right of renewal for a further 10 years for CA3. Three years would be the maximum we would consider appropriate.

2 An access provision to Trig D off the Glenorchy-Paradise Road is required.

3 Access from CA1 to the conservation areas CA3 and CA2 up Stone Creek is needed.

4 Public vehicle access up the Mt Judah Road is desirable.

5 Access is needed up Shepherds Hut Creek.

6 A landscape covenant to prevent inappropriate development on the land to be freeholded is desirable to protect the surrounds of Lake Wakatipu.

7 A mountain bike route should be created over the power line track.

8 Shrublands and beech remnants in Precipice Creek, and Shepherds Creek should be recognised as significant inherent values and protected, either by a covenant or return to full crown ownership and control.

9 The wetland opposite Teds spur and surrounding shrublands should be restored to full crown ownership and control.

I look forward to learning of the outcome of the public submissions and hope that the Crown and the Lessee can continue to negotiate to achieve an improved outcome for this very important pastoral lease.

Yours sincerely

Sue Maturin

Southern Conservation Officer