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HOUSE OF REPRESENTATIVES

STANDING COMMITTEE ON INDUSTRY AND RESOURCES

Reference: Resources exploration impediments

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HOUSE OF REPRESENTATIVES

STANDING COMMITTEE ON INDUSTRY AND RESOURCES

Monday, 26 May 2003

Members: Mr Prosser *(Chair)*, Mr Byrne *(Deputy Chair)*, Mr Adams, Mr Fitzgibbon, Mr Gibbons, Mr Haase, Mr Hatton, Mr Randall, Mr Cameron Thompson, Mr Tollner and Dr Washer

Supplementary members: Mr Fitzgibbon and Mr Ticehurst

Members in attendance: Mr Adams, Mr Fitzgibbon, Mr Haase, Mr Prosser, Mr Ticehurst, Mr Tollner and Dr Washer

Terms of reference for the inquiry:

To inquire into and report on:

Any impediments to increasing investment in mineral and petroleum exploration in Australia, including:

- An assessment of Australia's resource endowment and the rates at which it is being drawn down;
- The structure of the industry and role of small companies in resource exploration in Australia;
- Impediments to accessing capital, particularly by small companies;
- Access to land including Native Title and Cultural Heritage issues;
- Environmental and other approval processes, including across jurisdictions;
- Public provision of geo-scientific data;
- Relationships with indigenous communities; and
- Contribution to regional development.

WITNESSES

Committee met at 10.40 a.m.

BLIGHT, Dr David Frank, Executive Director, Minerals, Petroleum and Energy Division, Department of Primary Industries and Resources, Government of South Australia

CHAIR—I declare open this public hearing of the House of Representatives Standing Committee on Industry and Resources in their inquiry into the impediments to investment in resource exploration in Australia. I welcome everyone here today. The witnesses appearing before the committee today are from the South Australian government and the Tasmanian government. I remind witnesses appearing before the committee today that the evidence they give at this public hearing is to be considered part of the proceedings of parliament. I therefore remind them that any attempt to mislead the committee is a serious matter and could amount to a contempt of parliament. I welcome the first witness, Dr David Blight, from the South Australian government. I invite you to make a short statement before we proceed to questions.

Dr Blight—First of all, I would like to acquaint you a little with my background so that you understand where I am coming from. I spent nearly 30 years in the mining industry, approximately equally divided between government and industry. While I was in industry, I was on the boards of small junior explorers as well as being employed as a senior exploration geologist with multinational companies. So I think I have a pretty good handle on exploration. I have also spent time in government as Director of the Geological Survey Division in Western Australia, and I am in my current position as Executive Director of Minerals, Petroleum and Energy Division in South Australia. I would like to point out to you that much of the work that you are engaged in has in part been done from a South Australian perspective by the Resources Task Force, which completed its survey in 1999. That task force was set up by the previous government of South Australia. It produced a report which I have appended to the original document.

The South Australian government submission focused on six issues that we thought were significant: land access; relationship with Indigenous communities; environmental approvals process; tenement management; structure of industry and the role of small companies; and, lastly, access to capital. I would like to reiterate two points we made in our submission that are of particular concern to South Australia—firstly, the Woomera protected area. This area of Commonwealth government controlled lands occupies approximately 13 per cent of South Australia. It is prime prospective terrain. What we call the Olympic terrain, where the Olympic Dam mine sits, and Minotaur's recent copper-gold discovery sit on that land. South Australia's newest goldmine on the Gawler Craton called Challenge, which opened last November, sits on that land. We have recently been trying to pass exploration licences through to companies for petroleum exploration in the Officer Basin, which lies just south of the AP lands, which is also in the Woomera protected area.

The ability to issue licences is not easy. The conditions that the Commonwealth Department of Defence currently requires companies to meet are onerous, impose costs and significantly affect the ability of these companies to get bankability of their projects. The banks see the risks involved associated with the ability of the defence department to impose conditions on those licences and suspend operations at a moment's notice. That is quite difficult to work with, and I would urge the Commonwealth to develop a comprehensive policy of land access that is clear

and gives transparency and certainty to explorers, rather than continue with the current ad hoc approach.

The second point I wish to reiterate relates to the funding for the Aboriginal Legal Rights Movement. The Aboriginal Legal Rights Movement in South Australia receives its funding from ATSIC, and it is currently engaged in detailed negotiations with the Chamber of Mines and Energy, with the South Australian government, and, representing the Indigenous people of South Australia, in developing an Indigenous land use agreement that will cover the whole of South Australia. We are currently developing an exploration template, which is very close to being agreed to and trialed with the Anti-Kirinya in the Coober Pedy district. But the ability of the ALRM to represent the Aboriginal people is being compromised by its lack of funding. This exploration template would go substantially towards helping exploration companies under the South Australian legislative scheme to readily access Aboriginal lands by merely agreeing to the template; in other words, a signature gets you onto the land.

Whilst our submission only briefly touched on the value of precompetitive geoscience information, I would like to leave with you copies of a paper which attempts to show the linkage between precompetitive geoscience data and mineral discoveries in South Australia. I would like to table that paper, if I could.

CHAIR—Thank you.

Dr Blight—This paper sets out some of the arguments that show in an economic sense government funding of geological survey work to develop precompetitive data is actually very cost effective. In particular, I would like to draw your attention to a diagram that we have included on page 5 of your document. It is figure 2, the exploration triangle. This is meant to encompass important exploration issues. The bottom part of the triangle, if you like, or the width of the box of the diagram represents the sort of area that you are trying to target. Clearly, as you can see, at the top of that is a point, which is the mine, assuming that mines are effectively point sources.

On the left-hand side we talk about the sorts of people doing the scientific work that leads to the discovery of a particular mine. On the right-hand side is an assessment of where the risk really lies. At the high-risk/low-cost end, wide targeted area portion of the market there is a very good role for government to play in undertaking surveys. As you move further up that triangle, as the risk comes down the cost escalates, the size of the area decreases and you get junior companies coming into what is effectively grassroots exploration. As you move further up the triangle, you will find that large, major companies—which in the last few years have given away their concept of greenfields exploration and tended to resort to mergers and acquisitions, outright purchases or funding of small companies—start to come in. Finally, you have the brownfields at the top, which is the new mine exploration. That is our perception of what exploration is about. It links risk, it links cost, it links area and it links the sort of information that is required.

The other part of this paper I would like to draw your attention to is table 1, which is two pages further on. That is a series of analyses of a number of recent discoveries in South Australia and an attempt to somehow quantify how much geoscience information contributed to those discoveries. If I could just run through the top one, Olympic Dam, it was discovered in 1975. The reason it was discovered was manyfold. Firstly, Western Mining Corporation had developed

an exploration program geared around finding copper. They developed a geological model and needed to know where in Australia basaltic rocks occurred. They went to the South Australian government's precompetitive data and found that there were belts of volcanic rocks in this particular terrain that ultimately became the Olympic Dam terrain. Furthermore, Western Mining Corporation developed the model which involved the examination of lineaments, large crustal structures. These had been identified by previous geological surveys by using a combination of known geology maps and airborne magnetics and airborne geophysics.

The last point in their search was to choose, if you like, an area that had a coincident gravity and magnetic high, two distinct geophysical features, information about which was provided through the avenue of precompetitive geoscience by, in those days, the Bureau of Mineral Resources, which had flown aeromagnetic surveys and had done ground gravity surveys. On the strength of that the company elected to drill a hole.

There are lots of reasons for its success, and I do not pretend that the government geoscience precompetitive data was the only factor there. The perseverance of the geologists was incredibly important. The foresight of the management to send them into these places and the development of the geological model were all important. Nevertheless, we believe you can ascribe approximately two per cent of that to the original geological maps that told them that the basaltic rocks were present in that region. We have allocated another two per cent to the gravity survey, because the company clearly used the gravity high as an indicator; likewise the magnetics. We put in there half a per cent for legacy data, which was previous exploration work done and archived, and was accessed by the company to help in its targeting. As a consequence, we said the contribution is about 6½ per cent. These numbers were generated by a panel of geologists with a lot of experience sitting around talking about the concepts. On the strength of that, we are able to estimate what sort of impact in dollar terms that precompetitive geoscience data has had in terms of what it costs and what it delivers. I think you will find if you re-examine that table that it is a very cost-effective investment.

The last thing I want to point out to you, on the last page of the submission, is a graph which shows you the number of exploration licences and the number of companies exploring for nickel in South Australia since 1995. You can see that in 1998 and 1999 there was a sudden rise. It is not coincidental that in 1998 the government announced, and started, its TEiSA exploration program, which was going to target nickel-bearing rocks in the Gawler Craton. In other words, the very decision of government to go in there and the subsequent surveys immediately had the companies following. Thank you very much for your indulgence. I guess that is my reason for thinking that precompetitive geoscience data is very important.

CHAIR—Dr Blight, thank you for that presentation. I would like to pick up on the geoscience work and the precompetitive data held by the states. Other witnesses have mentioned that ground-truthing work needs to be carried on. What is your view on that?

Dr Blight—I think it is absolutely essential. In fact, it is exactly what we do now in South Australia. South Australia is not so much unique but has a bigger problem with the cover—the regolith. I am sure you have heard about the regolith. We call it the 'curse of cover' in South Australia. It has done two things: it has stopped exploration success, and it has also hidden the ore bodies. So we still have a lot waiting to be found. I say that in all seriousness. The ability to ground-truth is part of what we are now doing. We have flown the whole of South Australia now

with detailed aeromagnetics. We are now trying to determine what magnetic signatures relate to which rocks. In fact, part of the TEiSA, this nickel program, is designed exactly to do that. We undertook deep drilling underneath the cover and found those rocks that host nickel deposits. As I said, that ground-truthing is absolutely essential.

CHAIR—In your experience, or to your knowledge, are the other states doing that?

Dr Blight—In part they are, but by and large no.

CHAIR—Can there be a better coordination between Geoscience Australia and the state bodies to gain better data in this area through ground-truthing?

Dr Blight—I am sure the state governments would be delighted if Geoscience Australia wished to spend more money on ground-truthing. I for one would certainly welcome it. I guess it is fair to say in places like Western Australia, which I am very familiar with, the country does not have as yet detailed aeromagnetic surveys over the whole terrain. That is probably a higher priority than ground-truthing, although there are parts that are very well covered. I guess the next step would be the ground-truthing component of that. Western Australia is now moving into the position where it will need to undertake a lot of ground-truthing. We are certainly well into it. Off the top of my head, Victoria—no, I should not speak for Victoria or the rest of the states; I am not that familiar with them. I could make an assessment based on my own professional opinion.

Mr TICEHURST—Some witnesses in this inquiry have talked about the South Australian model for handling native title claims, and your submission recommends that the South Australian approach be incorporated into the Native Title Act. Could you explain how this would benefit explorers?

Dr Blight—In relation to the South Australian licensing system, we have an alternative scheme to the right to negotiate under the Native Title Act, which scheme is incorporated into the South Australian Mining Act and called part 9B. It allows us to issue an exploration licence to companies without an agreement. The ability to work on the licence becomes conditional on their presenting us with an agreement. So the government divorces itself from the negotiations. It is not taking part in the native title negotiations, which is what is required under the Native Title Act, and says it is between the companies and the native title claimants. As a consequence, we do not have a backlog of exploration licences and have not had one. We would very much like to use that sort of methodology under our petroleum system but, regrettably, the Commonwealth does not take the same view as it did in its early phases when we initially set up part 9B. So it no longer considers the provisions that we put in our act as being appropriate. It is rather strange from our perspective. It prohibits us, I might add, from being able to offer conjunctive agreements under the Mining Act. We can offer only disjunctive licensing.

Mr TICEHURST—How much of South Australia's area would be affected by native title claims?

Dr Blight—For the purposes of native title claims, I am assuming that we can include Aboriginal owned lands as part of a native title claim, even though I do not believe there are any claims over those areas. For instance, the AP lands, which are wholly owned by the Aboriginal

people, do not have a native title claim over them, although I have to say that I believe there has been some argy-bargy up in the lands where some of the AP people who are dissatisfied with their current management have threatened to put a claim over them. Nevertheless, there are no claims there. In answer to your question, of all of the most prospective terrains of South Australia—what we call the 'out of hundreds' lands—it would be in the order of 90 per cent. I can, if you wish, give you a map.

Mr TICEHURST—No, that is fair enough.

Mr HAASE—Before we go any further, please explain 'AP people'.

Dr Blight—Anangu Pitjantjatjara.

Mr HAASE—I was sure that was what you meant; thank you.

Dr Blight—I normally hesitate saying the name because it is a little difficult to pronounce.

Mr HAASE—Had we been in the west we might have referred to an area known as 'the lands'. The states have their own independent codes. I am concerned about the native title situation. You make a few references to that. You referred to the template. I would like to know a little more about that in practical terms. You also make much of this part 9B, where you are able to step out of the negotiation process. Does that make it any easier for claimants to negotiate with juniors, prospective explorers; and, if it does, how does it?

Dr Blight—I perhaps should answer the second part first while it is still fresh in my mind, and I may need to be reminded what the first question was. Firstly, there are not three parties trying to come to an agreement—that is the first thing that makes it easier—under the Native Title Act. We have now been involved in tripartite negotiations with petroleum as well as minerals under this ILUA template. It is a lot easier to deal with two parties rather than three. That is the first thing.

Secondly, one thing that I found when I went from Western Australia to South Australia as a government official was that the relationships with Indigenous peoples were probably more mature in South Australia. As a consequence, there is a longer history of being able to sit down and talk and come to an agreement. So there is an element of that in the process. The ability to issue a licence means that it becomes a lot easier for companies to commit to exploration and to attract investors, joint venture parties and things like that. So all of those things contribute to an improved exploration climate and make it easier to work. If you have the money coming in, you have good relationships going and there is only you and the native title claimants to deal with, it is a lot easier.

Mr HAASE—We get, including me personally when I move around my large Western Australian electorate, a lot of evidence that suggests that the right to negotiate clause is almost interpreted as a right to not negotiate and to hold up proceedings and that it is frustrating. Often explorers have a great deal of problem even identifying on the ground members of a claimant group. Especially in what is generally referred to as the agricultural rather than the pastoral or mining area, there are often no traces of remaining population, yet there is still an official large area claim over that part of the country. Finding somebody to negotiate with is very difficult, and

explorers find themselves negotiating with the lawyers representing the claimant group. I was particularly interested in the issue you raised about greater funding for establishing native title. Lawyers seem to have very little motivation to find solutions. The charge is made time and again that there is no will to resolve some cases because they are very difficult. I wonder whether this is experienced in South Australia. What do your junior explorers have to say about that?

Dr Blight—Leaving aside cost, which is always an emotive issue for a small, poorly funded exploration company, by and large I would say—I may be wrong but this is what I am thinking—something like 45 agreements have already been negotiated under part 9B; so it has gone very well. We have now negotiated under the Native Title Act something like—and once again I am guessing—30 petroleum exploration licences in the highly prospective Cooper Basin with something like 15 companies involved.

Mr HAASE—What is the nature of those companies—generally juniors, generally majors?

Dr Blight—Generally juniors—in fact, almost all of them are juniors. One of the more pleasing aspects of those involved the first round of that negotiation, which we called Cooper '98. It was the first agreement, I think, that was negotiated in Australia for petroleum under the Native Title Act regime. It took about three years to negotiate. Within six months of the agreements being signed, exploration was not only under way but also successful, and within 12 months of the final signing the company was pumping oil and paying royalties to the state and compensation to the claimants. So it immediately raised the profile of the industry and the ability to do deals. I would suggest to you this is one way other claimants now view what happens—they see the money going to where they would like to see it go—and are quite happy to jump on board.

Mr HAASE—Were there two stages to the negotiation of a deal there, one for exploration and one for actual mining?

Dr Blight—No, this was done under the Native Title Act, so it was in fact a conjunctive agreement. It was for petroleum.

Mr HAASE—Were the terms of the agreement made public?

Dr Blight—Yes, they were.

Mr HAASE—Is it necessary in South Australia? Do you have some sort of tool—

Dr Blight—Is it necessary to make it public?

Mr HAASE—To make those terms of the agreement public.

Dr Blight—It depends. In this particular case it was agreed before the negotiations started that the final outcome would be made public.

Mr HAASE—Once again, our experience in Western Australia is that very often the details of the arrangements are not made public.

Dr Blight—In relation to mining tenements under part 9B, most of the arrangements are probably confidential between the parties; and the state, although it sees the agreement as part of the licensing arrangements, is not always privy to the final details.

Mr HAASE—We find that of course in the eyes of future claimants the settlement sum is always extremely large, even though they do not know what it is, and future negotiators from the exploration company perspective would hope that it was a lower figure. We find that, because it is not transparent, a lot of misinformation flies around. Did you want to add anything about the practicality of the template you refer to?

Dr Blight—The exploration template is still under negotiation. We have a draft. We are still arguing over levels of payment. This is a pilot program we hope to run. I do not know the final details, but in a broad sense the arrangement is that a claimant group will agree to sign the template, the template is also signed by the government and the South Australian Chamber of Mines and Energy and any company coming into the area may choose to be bound by the conditions laid out by that template. Those conditions are currently under negotiation. The company merely signs the agreement and immediately has access to the land. It must employ appropriate clearance teams, and the rates for those are being set at the moment. That is what it is really all about.

Mr HAASE—'Appropriate clearance teams' can be a huge stumbling block, because claimants often say, 'You engage our clearance team at cost X,' and the potential explorer says, 'That is unreasonable.' Often that point, as I say, becomes a hurdle and remains unresolved for a very long time. What is the draft nature of appropriate—

Dr Blight—You are absolutely correct that what constitutes an appropriate survey team is the current—I would not say stumbling block but is the one unresolved area of the template agreement. It is my belief that it is very close to resolution.

Mr HAASE—I wonder whether there is anything in your mind or our mind, Chair, about securing details of such a template when it is resolved. What could we do to obtain that?

CHAIR—Do you mean a copy of the template?

Mr HAASE—Yes.

CHAIR—I cannot see why not.

Mr HAASE—That would be valuable, I am sure.

Mr ADAMS—Dr Blight, I take it that part 9B of the South Australian Mining Act 1971 has helped you to negotiate agreements and you would like to see other areas use a similar process but it presently does not apply to your petroleum area; is that correct?

Dr Blight—That is correct.

Mr ADAMS—But it has worked very well; you find the South Australian government is quite happy with the way it works in relation to negotiating?

Dr Blight—I think the record of the title speaks for itself. I will have to rely on my memory of briefings given to me, so I may get this slightly wrong, but when part 9B was originally drafted a process was established for how we would have our own right to negotiate process under the state Mining Act. It required agreement from the Commonwealth Attorney-General's Department that that was an appropriate thing to do that under the Native Title Act, and approval was given for the state to develop this legislation along that particular line.

Something happened in the Attorney-General's Department. I presume it was either a change of staff or an interpretation of the law, and once we had enacted the legislation we sought to change it because we wished to develop the ability to have conjunctive agreements—this was for disjunctive agreements—and the advice we received was that no longer were the Commonwealth looking on our right to negotiate process as appropriate, which we could not understand. Nevertheless, having agreed to it, they could not change their mind. But, if we were to move forward and alter the legislation, we would lose where we were going in the first instance. As a consequence, we are also unable to incorporate it into the petroleum exploration licence, and for the life of me I cannot understand why. I am not a lawyer, so that is probably why. This is a process that works and it works well.

Mr ADAMS—We might be able to ask questions along those lines when we write our report, Dr Blight. I see from your submission that you are monitoring the federal government's Environment Protection and Biodiversity Conservation Act. Do you have anything to report to us on that? How do you think it is affecting or will affect in the future South Australia's mining industry?

Dr Blight—It does not seem to have significantly impeded exploration. We chose not to enter into a bilateral arrangement with the federal government; rather, we changed our legislation such that a report submitted under the EPBC Act or as a requirement of was a valid report under any of our appropriate acts. We did not want companies to be writing two sets of reports. That way we saved our having to wear the cost, which is the way it was heading with the federal government.

Mr ADAMS—Would you like to elaborate on the distinct possibility of developing mining clusters and resource projects and being able to pool together maybe some higher value products, mineral products, or their processing?

Dr Blight—I am aware of two references to clusters in our submission. I think one of them relates to clusters of consultants. In other words, we have a relatively small industry in South Australia and we seek to maximise the available technological skills we have in the state. So the state was putting a fair bit of effort into trying to corral the so-called independent experts, if you like, the consultants, into one spot and have them thereon getting synergies from one another—in other words, try to drive that synergistic approach.

The other reference relates to clusters of processing, and we are still pursuing that. The South Australian government has an agenda geared towards trying to develop a light metals precinct in and around Port Pirie. You may well be aware of the SAMAG project. You probably are because they have been asking for federal money, magnesium being a light metal. Recent discoveries have been made in the Murray Basin of ilmenite on beach sands and so forth. The ability to set up a titanium plant in Port Pirie is being strongly investigated at the moment because it has that

history, if you like, of processing mineral products. So we would ultimately hope that that region becomes a light metal centre producing titanium and magnesium.

Mr ADAMS—Do you have the energy there to do that?

Dr Blight—We will shortly when the south-east Australian gas pipeline starts operating, which should be towards the middle of next year.

Mr FITZGIBBON—Dr Blight, you made out a strong case for the ongoing provision of public funding for precompetitive data. The big question here for me is: how long is a piece of string? What is an appropriate level of government funding, and do we have any international comparisons to go by for determining that appropriate level?

Dr Blight—You ask a very pertinent question. As most geological surveyors around Australia try to grapple with that to convince their governments that is an appropriate thing to do, the level is always raised. I guess it is very much like an advertising budget of a company: what is right? You need to benchmark it and test it. I guess the truth of the matter is that has not been done.

Mr FITZGIBBON—That has not been done?

Dr Blight—No. We have tried in various ways to do it, and I believe the chief government geologists conference is currently charged with trying to develop those sorts of measures. I can tell you from my own experience that trying to gather data for overseas things is quite difficult. I once tried to gather the information on as many countries as I could as to how many geological maps they had of their country as a measure of the amount of precompetitive geoscience information that was available. You need to take into account the scale of the maps and things like that. I plotted that against, if you like, the value of the mineral output of the country. Not surprisingly, there was a very strong linear relationship. But I might add there was one very glaring and obvious anomaly when I did this, and that was the country of Tanzania.

Mr FITZGIBBON—Prospectivity will skew the relationship too, won't it?

Dr Blight—It is not so much prospectivity; it is perceptions of prospectivity. It is the perception that is the most important thing. The perception can be changed by having information. Tanzania was right off the line. It had a lot of geological maps but virtually no exploration investment. This was back in the mid-1990s. If you look back through the papers of the mid-1990s, you will find that probably 30 per cent of Australian exploration companies were moving to Africa and almost all of them were going to Tanzania because that data was there. So in effect, if you like, it was the exception that proved the rule, from my perspective anyway.

Mr FITZGIBBON—Those who argue that the provision of public funding can cause misallocations in investments could use that as a good example, I suppose.

Dr Blight—As I said, this particular graph shows that companies really do follow where the new data is coming from. Any new data gives them an opportunity to use the exploration model that they have developed to put in place programs that will be successful. That is their only advantage: they have a different way of interpreting that data.

Dr WASHER—Just to follow that up, South Australia basically now is covered from an aeromagnetic point of view and mapped. How extensive is the gravitational mapping of that?

Dr Blight—Regrettably, the bulk of the state is still covered by only the original BMR 11-kilometre spaced grid. My personal view is that the next major step in major geophysical surveys for Australia is to refine that grid to a much closer network. There are two ways this can be done, in my view. Either you take effectively the measurement on the ground, whether that be done with helicopters or not, at something like a one- to two-kilometre space—that would have a substantial impact on the perceptions of Australia's prospectivity—or, alternatively, there is now a flying gravity gradiometer which can produce essentially the same sorts of images. They are acquiring data at very closely spaced intervals. It really depends on how close you fly the lines. So either of those two techniques is really where we ought to be going in a national sense, recognising that is also an incredibly expensive exercise.

Dr WASHER—So this can be done simultaneously with one plane? You can obtain electromagnetic and gravity data at the same time with the one—

Dr Blight—The Geological Survey of Western Australia was involved in and I was on the board of the CRC AMET, the Cooperative Research Centre for Australian Mineral Exploration Technologies. The aim there was to effectively develop a deep penetrating—because of the cover—high-resolution, airborne electromagnetic system. At the same time, one of the major private company sponsors of that CRC was endeavouring to use the plane as a platform for acquiring aeromagnetics and a digital terrain model—effectively the height, if you like—producing the digital terrain maps. There is only one flying gravity machine in Australia or in the world that I am aware of. I know that several others are under development. Whether they ever come to fruition is another question. I do know that the plane that is required for that is fairly large and the instrumentation takes up most of the plane. So at this stage it is not practical to put a gravity gradiometer, a magnetometer and an airborne EM system into one plane, but ultimately I guess we would like to see that happen, and I am sure it will with technology making the advances it does.

Dr WASHER—I do not want to sound like I am labouring this point, but it sounds so important. What you are proposing, I think, is that if we get to the point where we can gravity map, electromagnetic map, the country in a fairly extensive way we will enhance exploration. But you are also making the point that we should also do some drilling at certain sites where success is very highly probable. If you were to do that with the public purse, would you do that where you have only gravity anomalies plus electromagnetic anomalies? Where would you put your drill holes?

Dr Blight—The real issue is how much do we know about the terrain. For instance, if an area is reasonably well outcropping—and let us say 30 per cent outcrop is a reasonable amount—then probably you can do enough ground geological work to get a good handle on, if you like, the ground-truthing. Areas of South Australia where outcrop is less than one per cent is where you put the drilling dollar. It does not really matter whether you have flown high magnetics or not. The advantage of the magnetics is that in South Australia, for instance, we have done it over those areas where there is not any outcrop so we can better define where the drill holes will go to give us maximum bang for our buck. So understanding the geological framework is more important.

Dr WASHER—Coming back to the gravity issue for a moment, is that mechanism still under patent? Is it controlled by a company with a patent?

Dr Blight—My understanding is it currently is. It is proprietary technology, but it is available for general use. I am sorry, there may be conditions attached to that. For instance, the company that owns it may require equity in anything that might be found by using it.

Dr WASHER—But you feel that in the very near future we will have other techniques to overcome that?

Dr Blight—I believe at least two other airborne gravity machines are currently under development. I guess when they come around competition will work.

Dr WASHER—What should we be doing in a public way to help petroleum research?

Mr HAASE—That is the $64,000 question.

Dr Blight—Yes, it is.

Dr WASHER—We are running out of juice. It is cheaper than water still—but it won't go up.

Dr Blight—My personal view is—and I am speaking now as a state government representative—we do not have the benefit of royalties from offshore Australia, so we are almost always concerned about onshore development.

Dr WASHER—So we will ping the federal public!

CHAIR—Let's get them both!

Dr Blight—The aim really is to look at those basins about which we know least and try to raise the level of knowledge about them. For instance, in South Australia the least known basin is the Officer Basin, which also extends into Western Australia all the way up to Rudall River. That is a very old basin. It has incredibly high risk but equally very high reward, so small provisions of public funds in that can advance the geological understanding a long way, which may well bring those risk factors down quite dramatically. It is the areas of petroleum exploration that are least understood. There is no point in putting public money into the Cooper Basin. Private enterprise have done so much of that now. They know more about that than we do.

CHAIR—So if you were speaking from a national perspective?

Dr Blight—The same would apply. I have to say I do not pay a lot of attention to the offshore basins, but I guess the offshore Great Australian Bight would be one of those.

CHAIR—Thank you, Dr Blight, for your evidence before the committee today.

Dr Blight—Thank you for the opportunity.

CHAIR—Is it the wish of the committee that the additional submission by the South Australian government dated 26 May 2003 be accepted as evidence and authorised for publication as submission No. 118? There being no objection, I so order.

[11.26 a.m.]

BROWN, Dr Anthony Vincent, Director of Mines and State Chief Geologist, Mineral Resources Tasmania, Department of Infrastructure, Energy and Resources

CHAIR—I welcome Dr Tony Brown, a representative of the Tasmanian government. I invite you to make a short opening statement before we proceed to questions.

Dr Brown—Thank you, Mr Chairman. On behalf of the Tasmanian government, I appreciate this opportunity of being able to provide a few comments to complement the submission from the state. The Tasmanian government's submission, under the Premier's signature, gave an overview of the state of the minerals industry in Tasmania. Since the mid-1990s investment in exploration, mainly greenfields exploration in Tasmania, has dropped from between $20 million and $30 million a year to $4 million in 2001-02 and $2 million in the first half of 2002-03; so it will be about $4 million again this year. The decrease is due to almost zero greenfields exploration being undertaken. Some brownfields exploration is being undertaken. That is in order to extend the life of the presently operating mines.

Tasmania is approximately one per cent of the landmass of Australia, and we use that figure as a benchmark for the least amount of national exploration expenditure that we go to. However, we have estimated that expenditure of about $25 million a year is needed if we are to find new deposits to replace mines which will be closed in the next five to eight years. I am sure that obvious impediments have well been canvassed, and I have heard some of them before—amount of access to land, problems with capital raising by junior companies, taxation relief et cetera.

In Tasmania, native title issues do not significantly affect access to land for mineral exploration. We have legislation in place for the regional forest agreement, which gives defined access to land for mineral activities as well as forestry activities. The problem that Tasmania has is that throughout the rest of Australia there is the perception that Tasmania has a green lockup and that it is a hard place to explore because of its topography. The state government is trying to redress this perception through promotional activities, but it takes time to change perceptions. The rugged nature of our topography and the lack of drilling capacity within the state are things we have to live with.

The main issue I would like to highlight is some thoughts about acquisition of precompetitive data and the possibility of some assistance in infrastructure areas. Over the past five to 10 years the mineral industry has become global, with the number of major mining houses being reduced to eight. The problem with ore bodies is that they occur where they occur; they are not conveniently beneath artificially constructed land tenure. Ore bodies are formed in the earth's crust by earth-building processes. Finding them is what exploration is all about. Getting the companies to the state to look for them is what precompetitive data is all about.

The problem, as you have heard recently, in Australia is that it is covered by regolith—that is, anything from one to 200 metres of highly weathered rock, which at times represents the underlying rock and at other times doesn't. So we need remote sensing techniques to be able to look at what is below this cover. In Tasmania, on the other hand, the top 200 metres has been

reasonably explored over the past 150 years. We need information to attract and tempt explorers to test what we call the second layer—that is, from 200 metres down to a kilometre. We know ore bodies are down to there because every operating mine in Tasmania is at the moment between about 600 and 1,200 metres deep. These have all been found on the surface and they continue to depth.

The main way of obtaining data for these depths is by remote techniques, such as, as you have just heard, electromagnetic, gravity, seismic and airborne electromagnetics. I believe that Dr Neil Williams, the Chief Executive of Geoscience Australia, in his appearance before this committee, related to you the percentage of Australia covered to an acceptable industry standard by geological mapping, aeromagnetics and gravity surveys. I will not go into that. Dr Blight has just given you numerous facts about the ability of precompetitive data to attract companies to an area that has this information available.

From past experience, from the data we have already gathered and from the mines that have been found, there is a reasonable understanding of what we call mineral provinces. The west coast of Tasmania is one of 13 mineral provinces that occur within Australia. However, unlike a number of provinces which cut across a number of state or territory boundaries, western Tasmania is isolated and we cannot get into cooperative studies with other states or territories. There is a reasonable probability the western Tasmanian province continues under later cover, like younger geological cover, into eastern Tasmania, where our present geological surveys are well below the industry standard. Tasmania needs industry standard aeromagnetic covers of central and eastern Tasmania and gravity cover over the whole of the state. With changing technologies, gravity covers can now be obtained from the air, as has just been mentioned, but it is expensive and at the moment proprietary. Possibly the main outstanding data set across the whole of Australia is an aerogravity survey. It would definitely help Tasmania in allowing us to interpret whether the western Tasmanian province continues under eastern Tasmania and how far it extends.

I also mention that improving infrastructure in western Tasmania would aid exploration. There is a high probability that a new nickel mine will be operating west of Zeehan in 12 to 18 months and that another smaller lead-zinc mine may start up in the same area. We are looking at, therefore, transporting between 400,000 and 500,000 tonnes of ore from this area to mill sites in other areas of western Tasmania. Since the introduction of the twin ferries across Bass Strait, the amount of tourist traffic in western Tasmania has increased by around 30 per cent. Having this increase of tourist traffic intermingled with an increase of between 200 and 300 truck movements a day over a possible 60-kilometre trip on mountainous and winding roads will present a major safety problem.

One possible alternative would be to extend the existing rail system into the Zeehan area, find ways of moving the concentrate of ore and change it from road to rail for deliveries anywhere in Tasmania or to shipping ports. Some companies presently use rail, but transferring from road to rail to ship results in double or triple handling. The savings of these dollars could be used for exploration. I thank the committee for their time.

CHAIR—Thank you, Dr Brown. You mentioned just a moment ago globalisation. Has globalisation assisted or disadvantaged exploration in Tasmania?

Dr Brown—Disadvantaged, because most of the smaller to medium companies that were exploring in Tasmania have been bought up and funding for exploration then has to be obtained out of one bucket on a worldwide company basis. We, along with other states, attend the Prospectors and Developers Association of Canada, and we attend head offices in Canada and elsewhere in the world, to try to convince companies to come back in. Exploration has also decreased in Tasmania because of the drying up of finance from junior exploration companies.

CHAIR—Given that the decisions about where to explore are now made in boardrooms overseas, including in London, in your view what do we need to do in Australia to make them look more favourably at exploration in Australia?

Dr Brown—We need to put the precompetitive data in a digital format and have it available to be delivered across the Web so they can view it in their boardrooms or their offices whenever they can. We in Tasmania are developing a system. The government has financed a system over the past two years—hopefully it will be finished by the end of June—which will allow us to put all our precompetitive geological data on the Web not only for downloading but also to manipulate and question before you download. Downloading something like six terabytes of information on present lines takes a little bit of time and storage space.

Mr ADAMS—What do you call that system, Dr Brown?

Dr Brown—The system we are developing is called TIGER, Tasmanian Information on Geoscience and Exploration Resources.

Mr ADAMS—Will that be available on the Web?

Dr Brown—It is a Web based system. We have developed our digital databases over the past five years, and now this front-end sits on top of it to allow the information to be questioned, accessed and then downloaded via the Web.

Mr ADAMS—You feel that will be a very good opportunity for attracting exploration dollars?

Dr Brown—We hope so. April was a very interesting month. The stats came out. We have just released petroleum information, and we have also just finished digitising all the petroleum information over Tasmanian waters that we have been able to get our hands on. The level of downloading has been gradually increasing and was getting up to just under one gigabyte over the last few months. We have not advertised the system yet. However, in April the download was 16 gigabytes of information. We are able to question where this came from, and it was petroleum information that was being requested and downloaded.

Mr ADAMS—Just on that point, I saw on the television over the weekend or last Friday that a petroleum exploration company is drilling holes in the middle of Tasmania for oil or gas. How big is the exploration going on there?

Dr Brown—That exploration has been going on there for many years in a small capacity, up to the capacity of that company to be able to obtain funds. The exploration I was talking about is actually of the offshore areas, which is the extension of the Gippsland Basin down to the west of King Island and down western Tasmania. We have done some more exploration and more work

for the Bass Basin to get that going now that the Yolla field is being developed, and also some work in the Gippsland Basin to be able to bring that down . I am sorry, I said 'Gippsland before—the Otway coming off South Australia, Gippsland coming off Victoria. But the one on the mainland of Tasmania is very slow. It is a smaller registered company, but it has done some very interesting seismic work. It has targets, and now it is a matter of its progressing its exploration.

Mr ADAMS—It was certainly talking it up the other night. I read some interesting things about Bruny Island. Is exploration still going on on Bruny Island?

Dr Brown—Not that I know of.

Mr ADAMS—You mentioned that you would like more mature, I think is the term you used, companies to explore whether the belt in the west comes right across central Tasmania. Is much of that going on? Has anything about that been emailed to the forward-thinking companies presently in Tasmania?

Dr Brown—At the moment we are producing a three-dimensional model of Tasmania. This is putting together all the information we have. There are new techniques which allow us to use the remote sensing—mainly the aeromagnetics but also some broad gravity information we have—to extend the structural data which we get from surface mapping down to about eight to 10 kilometres. This will give a framework in which we are able to put the present mines with their ore grade—companies have allowed us to have this information—but we are having a lot of trouble putting it together where we do not have reasonably good information. One reason we do not have full aeromagnetic cover of Tasmania is the World Heritage area and the problems of being seen to overfly such an area. Because of the lack of exploration in the central south-east, it has not been prospective. So we have concentrated the money we have on the west and north-west. The north-east is the old tin province, but interest is again being shown in that for other elements as technology changes—and there appears to be a technology change for the elements that are now required.

Mr ADAMS—What sorts of metals are you thinking about there?

Dr Brown—Rare earths mainly, because it is a granitic terrain. That north-eastern side of Tasmania is basically an extension of the Victorian goldfields province, and we have rock types associated with gold similar to those in Victoria. This is Mangana, Mathinna, Lisle and Beaconsfield.

Mr TICEHURST—Some other witnesses to the inquiry have mentioned that the University of Tasmania is a world-class provider of geoscience information—in fact, one of the top three universities in the country. What attributes of that data do you think have made it successful?

Dr Brown—It is the research into understanding the geology, the formation of earth processes, that has made it successful. As Dr Blight said a few minutes ago, you have to understand the actual rocks to be able to understand where the ore fields go; and that is what they have been doing. They started in Tasmania and then they moved throughout Australia and also internationally, which has given them an opportunity to look at similar ore bodies in different parts of the world and then come up with what are called exploration models. So it is

from a research point of view, which is a totally different approach to the precompetitive data that the states produce.

Mr TICEHURST—Is that data sold?

Dr Brown—No, we put it in Tasmania and most of Australia now, and the Commonwealth has just come over to this way. We allow it to go to companies for cost of transfer. They can download it over the Web if it is in digital format or get it on disk or however they wish to transfer it. The reason for this is that by getting companies here to explore, if they find something, that is where the government gets its return—it gets its return in royalties, payroll tax, employment, spending on the ground—rather than trying to get the cost of some surveys that have been done in the past. When Geoscience Australia were AGSO or even BMR, the cost of recovery model shows that the amount of data that went out of there was very low compared with what is going out now.

Mr TICEHURST—You also mentioned that there was a perception problem in encouraging exploration in Tasmania and that it was a kind of green lock-up. A certain fellow over the western side of this establishment here is promoting company tax should be 49 per cent. How will you overcome those sorts of problems?

Dr Brown—The current perception can be overcome only if we provide information to show that the political risk from one area can be overcome by the practical results from another. In other words, if you can find decent mines and you can get a reasonable pay back, if enough people had the same sort of thought process and the Commonwealth changed its laws into that sort of direction, then the companies would still be viable. I cannot speak for political—

Mr TICEHURST—I did not want to put you on the spot there.

Mr HAASE—On a slightly different bent, Dr Brown, but in the same vein, I confess: has the introduction of the Environmental Protection and Biodiversity Conservation Act created any problems for Tasmania, where there is already a perception of high heritage value and perhaps large tracts of land tied up? Do you perceive any unique problems with conservation acts in getting miners onto the ground?

Dr Brown—There is a perception that it could and may. There is a perception that, even though people can explore, when it comes to mining the EPBC Act may be brought up to stop it, because it has so many clauses. The original intent of the act, I believe, was to make sure we protected areas that were under international convention. But it has been used for many other projects, like even replacing a bridge that was about to fall down at one of the major outlets of western Tasmania. We had large problems because there was a Ramsar wetlands site next to it. But we have come to an agreement with the Commonwealth that our state processes, which are fairly rigid, will in most cases satisfy the Commonwealth and will cover the EPBC Act's requirements. It is one of those acts where, until you actually ask the question whether we can do something in this area you do not know what is going to come out of the woodwork.

Mr HAASE—And often there are some surprises.

Dr Brown—It is like native title: it has the potential of really slowing down the process, locking things up.

Mr HAASE—You would concede we do not need any further hindrances; we do not need any artificial slowing down?

Dr Brown—No, we don't. I think one of the biggest problems the mining industry has is its own very poor PR. Everything we use in our modern society—everything you are wearing, everything in this room, everything in this building—is either grown or mined. If you take out what is mined and use only what is grown, I am afraid we would probably end up freezing in the dark in the not-too-distant future.

Mr HAASE—The late Lang Hancock had something similar to say about environmentalists. I think he sometimes wished they might freeze in the dark.

Dr Brown—I think the environment has to be looked after. Look at western Tasmania, where we have the Henty goldmine: that is on the edge of a World Heritage area, and it is winning environmental awards. It can be done.

Mr HAASE—It is just perception, is it not?

Dr Brown—I think it is perception now because technology would not allow, neither would any right-thinking people, another Mount Lyell.

Mr HAASE—Indeed. We have done some damage over time.

Dr Brown—We have done some damage. We are looking at how to do things differently. With modern technologies, especially with the deeper mines, those over 200 metres, there is no reason why you cannot mine under national parks, except for the emotive issues.

Mr HAASE—Exactly. Speaking of impediments, you may be aware—I certainly am—that in the very recent past a paper was delivered by the current chair of ATSIC to a United Nations group. In that he was reported as having called for freezing of all existing mining operations in Australia until such time as Indigenous ownership of minerals has been sorted out. Would you care to comment on that?

Dr Brown—No.

Dr WASHER—Dr Brown, in the submission under 'Impediments to raising capital by junior companies' you mention:

> There is increasing direct evidence ... that the increased cost of public liability insurance is a strong inhibitor of exploration, particularly to the junior public companies and syndicates of individuals that now carry out the bulk of mineral exploration in Tasmania.

Could you flesh that out a bit? I think for this committee it is the first time that public indemnity or public liability insurance has arisen as a big issue.

Dr Brown—A lot of it is downstream from occupational health and safety and is because of the fact that there are now so many issues and so many people suing their employer or the government for actions or for damage that happens to them. It is almost as if now the employer, even at total arm's length, has to be totally and utterly responsible and wrap people in cotton wool and they do not have to take responsibility for their own actions. There have been a few cases where the perception again has been built up because people have sued for such minor things as basically tripping over and breaking their arm when they should have watched where they were going and they have claimed it was the employer's fault. Then it gets to the stage where the employer has to up his ante for any insurance he covers, and with the problem the industry has with insurance the premiums keep rising.

When juniors, who are having a lot of problems getting finance just to do the exploration, have to carry a $10 million or $100 million coverage, it is placing another impost on them before they even start exploring. I do not have the figures that have been quoted by some of the juniors, but it costs them anything up to three-quarters of their budget to get on the ground and get going these days. That is because it is in western Tasmania, and part of it is the costs associated with access to the area—four-wheel drives, getting the drilling in and so forth—but over and above that they now have this impost of such large insurance coverage.

Dr WASHER—Is the situation any different in other states? Have attempts been made under legislation to modify this?

Dr Brown—I do not know; I cannot answer that question. I just know that, with the new occupational health and safety regime in Tasmania, the requirements on the employer have gone to another level.

Dr WASHER—Are you saying that it is becoming more or less onerous?

Dr Brown—It is becoming more onerous.

Mr ADAMS—You mentioned the need for more rail infrastructure on the west coast. I take it you are talking about the Melba Flats connection to the township of Zeehan?

Dr Brown—Melba Flats south, yes, because the two mines are to the other side of Zeehan. The big problem we have is that two mines go into a town and then the road from that town goes south and then back north onto the major highways, and this is also used greatly by tourists at the moment. If we could get an extension of the rail system from where it finishes now down to the Zeehan area—that is assuming that these mines get up and going; the probability looks good—then we could try to find some way of getting the trucks off the road.

Mr ADAMS—Where is the processing of the tin, lead and zinc—

Dr Brown—The DPEMPs are being done at the moment and the feasibility studies are under way for the mines, so it is all part and parcel of that. But the road infrastructure compared to rail infrastructure is something that has been brought up in the past couple of months by both of the companies. In fact, even as late as last week, the second company came in and told us what they may be doing, so it is just something that came up in the past few days.

Mr ADAMS—There was a death at the Renison Bell mine over two years ago. There still has not been a coronial inquiry. Do you think that is a long time for there not to be a coronial inquiry?

Dr Brown—With all due respect, I would rather not answer that. It is outside my experience. In 1993 the Mines Inspection Act was removed from the responsibility of the director of mines and is now on the occupational health and safety side.

CHAIR—There being no further questions, Dr Brown, thank you for your evidence today. I thank the witnesses who have appeared before the committee today.

Resolved (on motion by **Mr Haase**):

That this committee authorises publication, including publication on the parliamentary database, of the proof transcript of the evidence given before it at the public hearing this day.

Committee adjourned at 11.53 a.m.