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House of Representatives Standing Committee
on Industry and Resources

Submission No: 108

Date Received: 24 March '03

Secretary: J. Cook

March 24, 2003

Ref: RW03-027

To: Mr Fred Cook

No. of Pages (including this page): 4

Fax No: 02 6277 4516

Subject: Resources Exploration Impediments Inquiry

The House of Representatives Standing Committee on Industry and Resources may be interested in my views on subjects relevant to the above inquiry.

Background to my experienceWestern Mining Corporation Limited (Now WMC Resources Ltd.)

1953-1955	Geologist
1955-1957	University of California, M.Sc. Degree completed
1958-1961	Geologist
1962-1967	Assistant Chief Geologist
1967-1968	Chief Geologist
1968-1978	Exploration Manager and Chief Geologist
1978-1995	Director of Exploration
1995-2001	Non- Executive Director of WMC
1996 -	Earthsearch Consulting Pty Ltd, Consulting Geologist and Director.

Business Affiliations

Directorships:
Rothschild Australia Golden Arrow Investors Limited
Rothschild Australia Global Resources Fund
Gympie Gold Mines Pty Ltd
Bendigo Mining N.L.
Strike Oil N.L.

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1. The Nature of Scientific Mineral Exploration

Modern mineral exploration is scientific enquiry and research. First there is the idea, the vision, or the intuitive thought, then the experiments follow. These experiments involve repeated phases of data gathering, data interpretation and concept testing through drilling. With each mineral exploration experiment often consisting of many years of costly work, money and time are needed for success.

2. Ingredients of Exploration Success

Superior Scientific and Technical Skills

To be successful in exploration, a company primarily must be prepared to invest in the human resources required to perform well above average.

Chain of Confidence in the Mining Company

A chain of confidence is required, running from the directors to the field geologists, and from the field geologists to the directors.

Hunting Band Size

The exploration team should have an entrepreneurial type of professional and economic motivation dedicated to the discovery of economic mineral deposits.

Economic Guidelines

Economic guidelines are required to justify the commitment needed to be successful, and to control strategic exploration decisions.

Positive Government Policy Environment

To motivate successful exploration, government must recognize the special features of and the high risk nature of mineral exploration.

Reference: "The Mineral Wealth of Nations"

Professor Brian W. Mackenzie

Department of Geological Sciences &

Centre for Resource Studies

Queen's University, Kingston, Ontario Canada K7L 3N6

Paper presented for presentation at PACRIM Congress 1995 Auckland, New Zealand.

3. Is there sufficient rigour in the conceptual thinking displayed by today's exploration geologists?

Most definitely, yes.

4. The adequacy of Geoscience education in Australian Universities?

University Earth Science departments such as:

- ARC Special Research Centre for Ore Deposit Research, University of Tasmania,
- The Centre for Global Metallogeny (previously Key Centre for Teaching and Research in Strategic Mineral Deposits), University of Western Australia,
- Department of Geophysics, Curtin University,

have produced and are still producing some of the best exploration geoscientists in the world.

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5. Are there social pressures on exploration geologists that prevent them being effective as exploration professionals?

I don't believe this is an issue.

6. Are geologists and management afraid to pursue greenfields targets, seriously?

Greenfields exploration is extremely high-risk. Few succeed: most fail.

"Less than one-tenth of world-class discoveries embody two-thirds of the total wealth created. Generalizing, the economic viability of the mineral sector critically depends on our ability to discover and develop the few exceptional giant orebodies."

*Reference: Professor Brian W. Mackenzie
PACRIM Congress, 199*

7. A most important corollary (ie a self evident inference) from point 6, is that the few that succeed must be rewarded handsomely or there will not be the incentive to risk investment dollars.

8. If more geoscientific data acquisition work is undertaken by Geoscience Australia and State Government Surveys to what degree should it become involved in project exploration targeting particular commodities, or should it stick solely to regional work?

Generating regional geological, geophysical and geochemical data by organisations such as Geoscience Australia is critical to the stimulus of mineral exploration. However, their role is not project exploration and evaluation. What they should have the resources to do is to gather subsurface information by having adequate resources for drilling, to gather "ground-truth" to support their regional surveys. Their role in mapping what is obvious in outcrops is no longer sufficient because, the yet as undiscovered "world-class" ore deposits are most probably concealed by barren soils or barren cover rock sequences.

9. How can the community's interest and support in minerals exploration (ie R & D) be captured?

There is only one sure way: taxation incentives. Also there must be no doubt that if people to risk their investment dollars in the high-risk business of mineral exploration (rather than safer low-risk investments), they will be allowed to be richly rewarded in the event that the projects they finance are successful. Remember, most will lose their money!

10. Australia is not the only country prospective for world-class ore deposits. So it is false to assume that companies and people will invest in mineral exploration in Australia if they can do so with less risk and a higher chance of reward (after tax) in another country.


ROY WOODALL

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