M E R I W A

MERIWA Annual Report 2009-2010

MINERALS AND ENERGY RESEARCH INSTITUTE OF WESTERN AUSTRALIA

"To encourage the development of the Minerals and Energy Industries within the State by fostering and promoting all aspects of minerals and energy research"

Contents

Letter of Transmittal

MINERALS AND ENERGY RESEARCH INSTITUTE OF WESTERN AUSTRALIA

Annual Report 2009-2010

Hon. Norman Moore MLC
Minister for Mines and Petroleum
Parliament House
PERTH WA 6000

On behalf of the Board of Directors, I am pleased to submit the Annual Report of the Minerals and Energy Research Institute of Western Australia (MERIWA) for the year ending 30 June 2010, for your information and presentation to Parliament.

MERIWA's objectives are to promote and co-ordinate research for the development of the minerals and energy industries in this State, and the Board is satisfied with the results of MERIWA's operations for the year and its performance towards the achievement of these objectives.

The Board acknowledges the valuable support given to the Institute by your office and by the Department of Mines and Petroleum during the year, and by the Minerals Research Advisory Committee, many of the members of which have contributed their time and assistance in an honorary capacity.

P C Lockyer
Chairman
Board of Directors

13 September 2010

Statement of Compliance with Relevant Written Law

Enabling Legislation

The Minerals and Energy Research Institute of Western Australia is established under the Minerals and Energy Research Act, 1987, as amended by The Energy Legislation Amendment Act, 2003 and the Minerals and Energy Research Amendment Bill, 2006.

Legislation Administered

The Institute does not administer legislation.

Legislation Impacting on the Institute's Activities

In the performance of its functions, the Institute complies with all relevant written laws including the following:

- Financial Management Act, 2006; (FMA)
- Public Sector Management Act 1994
- Equal Opportunity Act 1984
- Occupational Safety and Health Act 1984
- State Records Act 2000
- Government Financial Responsibility Act 2000
- Interpretation Act 1984
- Minimum Conditions of Employment Act 1993
- Industrial Relations Act 1979
- Library Board of Western Australia Act 1951
- Disability Services Act 1993
- Freedom of Information Act 1992
- Public Interest Disclosure Act 2003
- Electoral Act 1907
- Superannuation Guarantee (Administration) Act 1992

In the financial administration of the Minerals and Energy Research Institute of Western Australia we have complied with the requirements of the FMA and every other relevant written law, and exercised controls which provide reasonable assurance that the receipt and expenditure of moneys, the acquisition and disposal of public property and incurring of liabilities, have been in accordance with legislative provisions.

In its general administration, MERIWA has also complied with public sector standards for human resource management and the code of ethics and code of conduct, as required by the Public Sector Management Act 1994, and report that no applications for breaches of these standards have been lodged during the 2009/2010 year.

The Board continues to support regional research centres, particularly the Western Australian School of Mines at Kalgoorlie.

Statement of Compliance with Relevant Written Law

Compliance Statements

Advertising and Sponsorship

Expenditure incurred by the Minerals and Energy Research Institute of Western Australia during 2009/2010 in relation to section 175ZE of the Electoral Act 1907 was as follows:

	$
Advertising agencies	Nil
Market research organisations	Nil
Polling organisations	Nil
Direct mail organisations	Nil
- West Australian Newspapers	2,942

Freedom of Information

There were no applications under the Freedom of Information Act during the year. A copy of the Information Statement is available by contacting the Executive Officer on 9222 3397 or by writing to the Minerals and Energy Research Institute of Western Australia, 100 Plain Street, East Perth 6004.

Disability Services Plan

The Institute is housed within the Department of Mines and Petroleum building, Mineral House, 100 Plain Street, East Perth, which has a comprehensive and effective plan to ensure compliance with the Disability Services Act, 1993.

Customer Group Outcomes

Due to the small size of the Institute matters concerning women, family and domestic violence, equal employment opportunities, language, cultural diversity and youth will be addressed on an individual basis as required.

Corruption Prevention

The Board of MERIWA is satisfied that the processes and procedures followed by the Agency, its staff and committees are robust and effective in the requirement to eliminate the possibility of corruption.

Information Systems and Services

In accordance with the State Records Act of 2000, the effectiveness and efficiency of the record keeping and disposal schedule was approved in 2009 and will be reviewed in 2014.

- Staff were familiarised with the Plan.
- Due to the small size of the Agency, training and familiarisation for new employees will be undertaken on a “one on one” basis as required.
- The effectiveness of the Plan was reviewed and the plan updated to reflect name changes to government departments.

Statement of Compliance with Relevant Written Law

All research completed is published as reports that are available to the public at cost of production. Reports are available in both CD-ROM and hardcopy formats. Some earlier copies are only available as hardcopies or microfiche.

At the date of signing, we are not aware of any circumstances which would render the particulars included in this statement misleading or inaccurate.

P C Lockyer
CHAIRMAN,
BOARD OF DIRECTORS

A Webster
DIRECTOR

13 September 2010

Functions

The Minerals and Energy Research Institute of Western Australia (MERIWA) was established under the Minerals and Energy Research Act, 1987 (No. 89 of 1987), and is a statutory authority. The function of the Institute is to encourage the development of the minerals and energy industries for the benefit of the State by fostering and promoting all aspects of minerals research and energy research through:-

(a) undertaking, in its own right or in conjunction with other persons, such research projects as it thinks fit, and evaluating research projects so undertaken;

(b) investigating matters, and undertaking research projects relevant to the development of those industries, referred to it by the Minister;

(c) co-ordinating, when appropriate and practicable, research projects undertaken by persons who -

(i) have received financial assistance or any other form of support from; or
(ii) seek or agree to have their research projects co-ordinated by,

the Institute;

(d) receiving and considering applications from persons undertaking or wishing to undertake research projects and seeking financial assistance from the Institute;

(e) allocating, at its discretion to persons, out of the Account, financial assistance to enable or assist persons referred to in paragraph (d) to undertake or continue research projects;

(f) entering into agreements with persons to whom the Institute has allocated financial assistance with respect to the terms and conditions of the allocation of that financial assistance, which terms and conditions may include a condition that such a person shall comply with any directions or guidelines issued by the Institute in relation to the conduct of a research project;

(g) monitoring and evaluating research projects in respect of which the Institute has allocated financial assistance and other minerals research work or energy research work within the State and elsewhere;

(h) maintaining a collection of all reports or other literature or information issued or compiled by the Institute or by the Mining Institute;

(i) the reports produced by the Institute; and
(ii) the reports produced by the Mining Institute formerly established by the *Mining and Petroleum Research Act 1981*;

(i) conferring and collaborating on matters relating to minerals research and energy research with the Department and other appropriate authorities and institutions within the State and elsewhere; and

(j) promoting public awareness of matters relating to minerals research and energy research, informing the public concerning the latest developments in the fields of minerals research and energy research and receiving and considering submissions from the public concerning -

(i) the performance by the Institute of its function; or
(ii) matters relating to minerals research and energy research in general.

[Section 5 amended by No. 89 of 1994s. 109; No. 53 of 2003s. 76 and 90]

Structure

MINISTER FOR MINES AND PETROLEUM
THE HON NORMAN MOORE MLC

BOARD OF DIRECTORS

MR P C LOCKYER
CHAIRMAN
(Appointed May 2010)

MR S D ELLIS
DEPUTY DIRECTOR GENERAL STRATEGIC POLICY
DEPARTMENT OF MINES AND PETROLEUM

MS A WEBSTER
LEGAL COUNSEL & COMPANY SECRETARY
BARRICK GOLD OF AUSTRALIA

PROFESSOR B EVANS
HEAD – PETROLEUM ENGINEERING
CURTIN UNIVERSITY OF TECHNOLOGY

MINERALS RESEARCH ADVISORY COMMITTEE
CHAIRMAN: PROFESSOR ODWYN JONES

EXECUTIVE OFFICER
MR ROSS MARSHALL

CHIEF FINANCE OFFICER
MR JOE FORTUNA

PROJECT COORDINATOR
DR PAMELA SMITH

Board of Directors' Report

MERIWA is a Statutory Authority established under the Minerals and Energy Research Act (1987) to promote minerals and energy research which will encourage the development of the Minerals and Energy Industries in this State. The desired outcome is that the amount of research undertaken will achieve the level of technological advancement required to meet the future technical challenges of these industries, ensuring their competitiveness and hence continued development.

MERIWA's financial results and research achievement for 2009/2010 are summarised in this report from the Board. The outputs produced and performance indicators are examined in more detail in a later section of the report, as well as the detailed financial statements for the 2009/2010 year.

Overview

MERIWA's financial results and research achievement for 2009/2010 for minerals research are summarised and compared with the results for 2008/2009 in Table 1. Points of note for the year are -

- Total value of new minerals research projects was $2.366 million, a decrease of $1.042 million on the 2008/2009 figure of $3.408 million.
- Industry sponsorship was $2.025 million compared to $2.767 million in 2008/2009. The proportion of industry sponsorship for minerals research was 86% against a target of 65%.
- For every dollar expended by the Government through MERIWA, $2.28 of minerals research was generated.
- Administration costs were 9.48% of the value of research generated.

Research Activities

MERIWA's minerals and petroleum research results are identified in Table 4 (refer "Operating Report"). Five new research projects were commenced in 2009/2010 for a total value of $2.366 million. This compares with $3.408 million in 2008/2009. It is evident that there is a decrease in geoscience but an increase in environmental projects.

New industry sponsorship coordinated through MERIWA for the year was $2.025 million, while at year's end the sponsorship vested under MERIWA control was $818 152.

TABLE 1: Summary of Results

	2009/10 $'000	2008/09 $'000
FINANCIAL		
ACCUMULATED FUNDS		
Opening balance at 1 July	***3 831**	***2 597**
Plus funds received and sponsorship committed	****3 104**	**3 543
Less funds expended and committed	*****3 117**	*****3 056**
ACCUMULATED FUNDS		
As at 30 June	**3 014**	**3 831**
Total value of research commenced	**2 366**	**3 408**
% sponsorship to new research commenced	86%	81%
Ratio of research value to government funds utilised (grants and administration)	2.28	2.81

*** Cash plus investments held in trust or yet to be collected from industry sponsors for committed research activities over the next three years.**
**** Government funding, industry sponsorship, interest.**
***** Research grants, scholarships, administration**

Industry sponsorship for the year in review was 86% of the research value of projects against a target of 65%.

No projects were abandoned or completed below budget during the year. Government funds utilised by MERIWA for minerals research, including funds brought forward from 2008/2009 and resources received free of charge, totalled $893 881 of which $598 552 was applied to research grants and $50 000 to scholarships with the remainder for administration.

The actual administration cost of $244 169 was 9.48% of the value of research generated. Real expenditure on new applications was $341 785.

Table 2 shows the allocation of funds among different research areas as well as the industry support achieved in each, while Table 3 shows the organisations that have contracted to undertake MERIWA research projects and have been recipients of MERIWA post-graduate scholarships this year. The quality of research projects, their innovation and potential benefits to Western Australia continue at a very high standard.

Board of Directors' Report (Continued)

TABLE 2: Allocation of Funds

Research categories	No. projects	MERIWA $'000	Industry $'000	Total $'000
Geoscience	1	77	149	226
Hydrocarbons	-	-	-	0
Engineering	1	-	1 140	1 140
Minerals processing	1	30	57	87
Environmental-rehabilitation	2	234	679	913
Total	**5**	**341**	**2 025**	**2 366**

This year one project totalling $115,000 that was approved by the Board is not contracted to receive funding this financial year but will be carried forward to 2010/11. Three projects carried forward from last year and two projects approved this year, totalling $2,366,385, are all contracted to receive funding this financial year. This year the research activities involved the University of Western Australia, Murdoch University, CSIRO, Australian Centre for Geomechanics and Central Chemical Consulting all with one project each. The minerals sector has continued its research resurgence with all of the projects being related to this area.

Projects

Three projects were approved by the Board during the year, covering a variety of research themes. These included an investigation into the use of mulga foliage samples as an indicator of underlying mineral deposits, an investigation to identify suitable materials that will form non-conductive coatings on high tension electrostatic separators for the mineral sands industry, and the development of a novel system for recovering gold from currently uneconomic oxide gold deposits.

M407 – *North East Yilgarn Biogeochemistry Project*

Using biogeochemical methods, the chemical contents of plant samples can be analysed for their elemental content with useful results for mineral exploration. This emerging scientific discipline in Australia can identify elemental metals of economic interest in plants and thus aid exploration companies seeking new deposits that are buried beneath transported overburden. Numerous independent prospect-scale studies have categorically demonstrated that native Australian vegetation is indeed drawing such metals as Au, Zn and Cu from depths well below regolith, bringing them to the surface. Therefore a longer term strategy, of which this project forms a part, is being developed to investigate the use of biogeochemistry in mineral exploration at scales including prospect, district, regional and national. This investigation will test the potential of biogeochemistry as a robust exploration tool, and give industry clear indication as to where, how and why it should be used.

TABLE 3: Allocation of Mineral Research Funds to Research Organisations

Research Organisation	No. projects	Funding $'000
The University of Western Australia	1	700
Murdoch University	1	213
C.S.I.R.O.	1	226
Australian Centre for Geomechanics	1	1 140
Central Chemical Consulting	1	87
Total research	**5**	**2 366**
SCHOLARSHIPS		
The University of Western Australia	2	15
Murdoch University	-	-
Curtin University of Technology	2	20
Edith Cowan University	-	-
WA School of Mines	2	15
Total scholarships	**6**	**50**
Total funding		**2 416**

During a previous MERIWA project (M402), plant samples were opportunistically collected and the lead researchers, Mr Mel Lintern and Dr Ravi Anand of CSIRO Exploration and Mining, and their team will analyse more than 1300 mulga (Acacia aneura) foliage samples from alongside boreholes and wells for about 60 elements using ICP-MS and ICP-OES. The data obtained will be analysed to investigate geochemical trends, elemental correlations and metal anomalies and the findings delivered to sponsors at the end of the 12-month study. Because of the co-location of the samples from this project with the groundwater samples of Project M402, this research can also test the validity of a correlation between vegetation and groundwater, which if demonstrated would permit using vegetation as a proxy for groundwater. The following companies are sponsoring the project, each for $5,800: Agnew Gold, Anglo-American, Anglogold Ashanti Australia, Barrick Gold Australia, Cameco Australia, Emu Nickel, Encounter Resources, Heron Resources, Minara Resources, Newmont Mining, Regal Point Exploration, Teck Australia, Tora Energy, Triton Gold, Troy Resources, and AREVA-NC Mining, as well as the Dept. of Water at $5,800, Geological Survey of WA at $50,000, and MERIWA for $77,467.

Board of Directors' Report (Continued)

M408 – *Enhanced Electrostatic Separation by Reducing Stains on HT Roll Separators*

A significant hindrance to clean, efficient mineral separation in electrostatic separators is the presence of non-conductive stain coatings on the high tension (HT) roll. Recent improvements in the design of separators do not reduce the formation of surface coatings, which increase resistance and reduce separation efficiency. The current project has the objective of identifying suitable electrically conductive materials and coatings for HT rolls which do not form mineral stains or oxidative films under appropriate conditions. In the laboratory the researchers, Dr Bob van Emden and Dr Vince Patrick of Central Chemical Consulting, will evaluate selected conductive materials by using the continuous mechanical action of sand with test pieces of conductive materials which resist stain formation on their surfaces. Materials showing potential usefulness will then be either applied as coatings or attached as test strips to the surface of an individual sponsor's HT roll separators, to evaluate their performance. Additional project objectives include testing surface modifying chemicals added to the mineral feed or applied to the surface of plant HT rolls to prevent stain build-up, and identifying changes to the operation of HT rolls to achieve optimal electrostatic separation. These investigations will be conducted in close collaboration with the technical staff of each sponsor, including visits to each separation facility. The three sponsors of this 8-month study are Tiwest JV, Doral Mineral Sands and BEMAX Resources Ltd at $19,000 each, with MERIWA contributing $30,000.

M409 –*In-Place Leaching of Oxidised Gold Ores*

The principal aim of this research is the development of a novel system for recovering gold from currently uneconomic oxide gold resources. This work will focus on using gold-complexing reagents (lixiviants) other than cyanide and oxidants that can function effectively in an anaerobic environment. This multi-disciplinary research project led by Mr Paul Roberts of CSIRO is aimed at identifying sites which may be particularly suited to in-place leaching of the gold. Oxide gold mineralisation permeabilities may be too low for economic gold recovery without some artificial enhancement. The project is focused on the critical parameters (a combination of blasting, hydraulic fracturing and chemical dissolution) that will increase bulk and fine-scale permeability and hence extraction rates which, in turn, will affect the financial viability of such a novel metal extraction method.

The following companies and agencies are sponsoring this 9 month project each for $10,000; Minotaur Exploration Ltd, Gold Fields Australia Pty Ltd, Newmont Asia Pacific, Newcrest Mining Limited, Orica Mining Services and BASF Australia Ltd together with the Geological Survey of WA and the Department of Primary Industries & Resources of South Australia. MERIWA will contribute $35,000. CSIRO will also spend $512,000 in-kind on the project.

Scholarships

In keeping with its policy to encourage PhD students to embark upon careers in the minerals and petroleum industry, MERIWA has again offered Supplementary Scholarships to help finance students and their projects. The selection committee awarded six scholarships. Mr Andrew Greenwood, Mr Mohammad Sarmadivaleh both of Curtin University of Technology, Mr Simon Assmann and Mr David Grimsey from the WA School of Mines and Ms Talitha Santini and Zoja Vukmanovic of the University of Western Australia. Four comprise of a $5 000 stipend and $5 000 for project maintenance and two comprise of a $5 000 stipend.

Andrew Greenwood

Andrew is entering his third year of PhD studies at Curtin University, in the Department of Exploration Geophysics. His thesis topic is *Application of Vertical Seismic Profiling for Characterisation of Hard Rock*, and is supervised by Associate Professor Milovan Urosevic. The research is intended to evaluate fully the origins of reflectivity in a shear zone and characterize the surrounding hard rock using borehole seismic methods. Then, improved imaging of shear zones by applying 2D and 3D vertical seismic profiling methodologies will be attempted. These challenging objectives are intended to address problems in both acquisition and processing of data where shear zones in hard rock contain exploration targets.

Mohammad Sarmadivaleh

Mohammad is in his second year of PhD studies at Curtin University of Technology in the Department of Petroleum Engineering. His project is *Experimental and Numerical Study of Interaction of a Pre-Existing Natural Fracture and an Induced Hydraulic Fracture.* His research objectives are specifically to investigate the mechanical process of a pre-existing fracture, and to improve numerical code to more realistically study this interaction. Results are to be validated against available analytical solutions and experimental outcomes obtained using newly developed equipment at Curtin, where he is supervised in this work by Dr Varmegh Rasouli of the same department.

Board of Directors' Report (Continued)

Simon Assmann

Simon received a MERIWA scholarship in 2009 to begin his PhD research on *Improving Mass Transfer in Electrostatic Liquid-Liquid Extraction (ELX) Contactors*, under Associate Professor Don Ibana at Curtin University's Western Australian School of Mines (WASM) in Kalgoorlie. His project's goal is to improve upon current technology used to achieve phase dispersion, which uses mechanical agitation, and one aspect that remains poorly understood is mass transfer. Objectives of Simon's PhD study thus include investigating the fundamentals of electrostatically induced dispersion, and using experimental data to optimise mass transfer in an ELX contactor, for hydrometallurgical application. A prototype of an ELX contactor will be designed which exploits the advantage of electrostatic agitation, using the data obtained.

David Grimsey

David is pursuing his second year of post-graduate studies at Curtin's WASM where his topic is *Application of Segregation Roasting to Western Australian Laterites.* He is supervised in this project by Associate Professor Don Ibana of WASM. The research concerns an alternative to high pressure acid leaching for extraction particularly of nickel from WA's laterite deposits.

Talitha Santini

Talitha received a MERIWA scholarship last year and is in her second year of PhD studies at UWA's School of Earth and Environment. She is supervised by Professors Martin Fey and Christoph Hinz and Associate Professor Andrew Rate of that department. The scope of her project *A Pedogenic Treatment for Rehabilitation of Bauxite Residue Mud* has become focused onto geochemical aspects of soil formation upon bauxite residue. Two reasons for this focus are the currently inadequate understanding of weathering of bauxite residue, and very high levels of ameliorant incorporation in some study sites. Her project now aims to identify triggers and thresholds in soil formation on bauxite residue, to achieve rapid soil formation, by investigating soil formation largely in response to inorganic treatments. Four experimental stages are planned, including laboratory simulation to predict the weathering trajectory of bauxite residue under some common treatments, as well as computer modelling of field-weathered residues and for prediction of soil formation trajectories.

Zoja Vukmanovic

Zoja's research project, *Micromechanical and Geochemical Analysis of Remobilization of Komatiite-Hosted Ni Sulphide Ores*, also promises an important contribution to the development of WA's nickel resources. Primary nickel sulphide ores often were remobilized in shear zones, and a detailed understanding of the micro-scale environment in which this occurs is lacking. Zoja's research is supervised by Dr Steven Barnes of CSIRO and Dr Florian Fusseis and Dr Marco Fiorentini of UWA and is in its first year.

Finance

The financial statements for MERIWA for 2009/2010 appear later in the report.

The net assets reflect industry sponsorship yet to be received of $818 152, contracted for the next 3 years.
The total cost of services was $3 117 147 ($3 055 733 in 2008-09) of which $2 821 818 was paid for research grants. Revenue of $2 022 600 was received from industry and $57 717 from interest and other income related to services. The net cost of services was thus $1 036 830 ($177 395 in 2008-09) which was funded by government appropriation and resources free-of-charge of $1 023 917 ($664 500 in 2008-09). The surplus was added to previous accumulated surplus.

Publications

Six final reports on minerals projects were published during the year and distributed in CD-ROM form to technical libraries in Western Australia and interstate. A synopsis of each of the reports is included in later pages of this document.

The number of reports published by MERIWA since its inception now totals 278, and it has been pleasing to see an ongoing demand for copies of them. Reports in hard copy, microfiche or CD-ROM are provided to companies or private individuals on request, at nominal prices, sufficient to recover the cost of reproduction. In 2009/2010 11 hard copy and 24 CD-ROM reports were sold, producing revenue of $2 057.00.

Office Services

Services provided by the Department of Mines and Petroleum, notably the provision of office space, along with its continued support in associated areas, are much appreciated by the Board.

Board of Directors' Report (Continued)

Code of Conduct for Government Boards and Committees

The Board and the Minerals Research Advisory Committee adopted individual Codes of Conduct in accordance with the recommendations of the Commissioner of Public Sector Standards.

Changes to the Board

As of 1 May 2010, Mr Phil Lockyer, a Board member of MERIWA since September 2006 and previously a deputy member of the Minerals Research Advisory Committee for 7 years, commenced serving as Chairman, replacing Mr Rex Baker who stepped down from the Chair after 6 years.

Mr Baker was the inaugural (and only) Chairman of the Minerals and Petroleum Advisory Committee of WAMPRI (1981 – 1988) and the inaugural Chairman of MERIWA's Minerals Research Advisory Committee (1988 – 1990). In 1993 Mr Baker joined the Board of MERIWA and was appointed Chairman in 2004. Mr Baker provided the Board with applied research skills and under his leadership MERIWA has maintained the pr-e-eminence in supporting WA-based minerals and energy research. The Board wishes him well in his retirement.

As of 30 June 2009, Professor Beverley Ronalds retired from the Board of Directors. Professor Ronalds was first appointed to the MERIWA Board on 1 July 2004. She brought more than two decades of petroleum engineering experience to the Board and was a valuable participant in the MERIWA scholarship selection committee, which was greatly appreciated.

Professor Brian Evans, Head, Petroleum Engineering, Curtin University of Technology replaced Professor Ronalds as a Board member on 1 July 2009. Up until that time he was a member of the Minerals Research Advisory Committee for 5 years.

Mr Stedman Ellis, Deputy Director General Strategic Policy, Department of Mines and Petroleum was appointed to the MERIWA Board on 1 May 2010.

Staff and Committees

The Board again acknowledges the valuable assistance that has been provided to the Institute by the Minerals Research Advisory Committee under the able Chairmanship of Professor Odwyn Jones.

Both the members and deputy members met on a regular basis during the year, in sub-committee or in committee, to assess the research proposals received, and to advise the Board of their suitability and technical merit before grants were approved. This takes considerable time, and as the great majority is provided on an honorary basis, MERIWA is most appreciative of this contribution.

Finally, the Board acknowledges the contribution and competence of the four part-time contractors and consultants in coordinating and administering the affairs of the Institute.

P C Lockyer
CHAIRMAN,
BOARD OF DIRECTORS

Operating Report

MERIWA's Minerals Research Program

MERIWA's mission is:

"To encourage the development of minerals and energy industries within the State by fostering and promoting all aspects of minerals and energy research".

Mineral deposits and oil and gas accumulations are finite, and new discoveries must continue to be made and developed to replace depleted deposits. If this is not achieved, and the industry does not sustain itself but slowly degenerates, the effects on the State's economy would be quite disastrous.

Much of the industry is international, and companies operating internationally will compare the prospectivity and exploration and mining costs in Western Australia with those applying in other countries, before deciding on where their exploration budget will be most profitably spent. Investment in mining project development is also based on the quality and cost of supporting services, such as infrastructure, but also in the downstream processing-orientated industries and the availability of highly skilled technical "problem solvers".

Western Australia has established itself as a reliable provider of not only physical resources to the world but also as centre for excellence in many areas of mineral and hydrocarbon research. The Board of MERIWA continues to foster and encourage this "intellectual" development process knowing from past experiences that industry, research institutes, government and individuals profit from investments in "ideas".

There is also a continuing need to promote research on regulatory issues of concern to the community at large, such as minesite rehabilitation, tailings disposal and containment, and occupational health and safety issues in the industry. The advances made in these fields and the support from the mining industry in undertaking this research have been excellent over recent years.

To achieve its mission, MERIWA aims for an outcome by which the amount and quality of research undertaken by the Minerals and Petroleum Industries achieves the level of technological advancement required to meet the future technical challenges of these industries, and helps ensure their competitiveness and continued development.

Promotion of Research

The key incentive provided by governments to encourage more research is to subsidise its cost. MERIWA's policy has been to retain the magnitude of the subsidy to a maximum of 35% of the cash cost, encouraging a higher level of participation from industry. This allows a larger volume of research to be supported and ensures that the key objective of promoting research relevant to industry is achieved.

The level of subsidy must be such, however, to allow MERIWA to maintain the authority to rigorously assess research programs and to establish "Conditions of Grant" that facilitate coordination and accountability, and ensure that final reports can be published and widely distributed. The subsidy must be of a level to enable promotion of research on regulatory issues such as occupational health and safety and minesite rehabilitation.

Value of Minerals Research Financed Jointly with the Minerals and Petroleum Industries

The table below compares the value of research commenced for each of the last five years, jointly financed by MERIWA and industry sponsorship. The level of research funding has fluctuated over the period, a direct reflection of industry's economic performance. The variation in commodity prices, exchange rates and levels of activity continues to be erratic across all sectors. Continued consolidation in the corporate sector has also changed research investment patterns. It is expected that the levels of investment will remain within these limits for the foreseeable future capped mainly by the limited funds available from budget appropriation.

	$'000				
	2009-10	2008-09	2007-08	2006-07	2005-06
Value of minerals research commenced	2 366	3 408	1 189	2 911	2 547
Scholarships	50	40	50	30	60
Total	**2 416**	**3 448**	**1 239**	**2 941**	**2 607**

Operating Report (Continued)

	2009-10	2008-09	2007-08	2006-07	2005-06
Industry sponsorship achieved	86%	81%	81%	75%	71%
Target	65%	65%	65%	65%	65%

Industry Participation

Industry participation is encouraged by MERIWA through every phase of a project.

- Industry involvement from the initial draft proposal stage ensures that the project is focussed to its particular needs.
- Industry sponsorship encourages ongoing participation through regular sponsor meetings; this creates closer communications between industry and the research groups and is beneficial to both sides.
- Its investment in the research means that the research results are more likely to be applied.
- Its participation facilitates the provision and availability of data to the research group, and by working closely with researchers, creates a more research and technically oriented industry, and a more practical research group attuned to the technical challenges faced by industry.

The table above shows the average level of industry sponsorship achieved as a percentage of the research value.

Technology Transfer

Research benefits will best eventuate if the results are made widely available and are applied. The importance of this aspect of MERIWA's operations is recognised in the functions of the Institute as listed in the Minerals and Energy Research Act (1987). Because of their financial commitment and participation throughout the study, sponsoring companies require a return on their research investment by application of the results. In a broader, industry-wide sense, however, technology transfer is encouraged by publication of the final reports and their distribution to most universities, CSIRO and state technical libraries, or by the provision of copies directly by MERIWA.

The benefits of publication are two-fold:

- Publication of reports gives all companies relatively cheap access to the technology.
- Publication benefits the researchers and their institutions, by enabling their work to be acknowledged internationally and increasing their profile professionally. This attracts students and external funding, which in turn is beneficial to both industry and the State.

MERIWA has published 278 reports on the research projects it has supported since its inception. CD-ROM copies are distributed widely to all relevant technical libraries in Western Australia and to most Australian universities. Reports in microfiche, CD-ROM or hard copy format are sold to industry at prices which cover production and distribution costs. The table below shows that 2,260 research project reports have been distributed or sold to industry and technical libraries over the past 5 years.

Synopses of all reports published during 2009/10 are included in this annual report, and complete lists of reports available are included with the publication "Research News" and on the MERIWA webpage at:
www.dmp.wa.gov.au/meriwa/reports/reports.html

Measures of Performance

The predominant measure of performance is the value of research undertaken, but as MERIWA is often limited by the funds available, its effectiveness is measured by the ratio of the total value of research commenced to the Government funds utilised.

MERIWA measures its efficiency by the administration cost as a percentage of the value of research generated. This is calculated on a three-year moving average basis to reflect the average duration of projects, covering the project development assessment and funding phase, coordination while in progress, and the final reporting and publication phase of the project.

No. of reports distributed or sold	2009-2010	2008-2009	2007-2008	2006-2007	2005-2006
Microfiche	1	2	2	8	-
Hard copy	96	121	83	99	150
CD-ROM	282	369	267	302	478
Total	**379**	**492**	**352**	**409**	**628**

Operating Report (Continued)

Effectiveness

The table below indicates that for every dollar of government funds expended on research in 2008/2009 (excluding scholarships), $2.28 of research was commenced.

	2009-2010	2008-2009	2007-2008	2006-2007	2005-2006
Ratio of research value to government funds utilised	2.28	2.81	2.82	1.99	3.32

Efficiency

MERIWA's overall efficiency decreased slightly in 2009/2010 due to a lower value of research commenced. (Three year moving average).

	2009-2010	2008-2009	2007-2008	2006-2007	2005-2006
Administration cost as a percentage of value of research generated	9.48	8.23	9.09	12.18	10.41

Table 4 summarises the key components of MERIWA's performance over the past five years.

Operating Report

TABLE 4: MERIWA Results

Factors	2009/10	2008/09	2007/08	2006/07	2005/06
PROJECTS					
Applications received	4	2	8	10	12
Projects approved	3	3	7	7	7
Projects completed	6	9	6	7	11
TECHNOLOGY TRANSFER					
No. reports published	6	9	6	7	11
No. microfiche issued or sold	1	2	2	8	0
No. hard copies issued or sold	96	121	83	99	150
No. CD ROM copies issued or sold	282	369	267	302	478
Other publications (Research News)	2	1	2	2	2
FUNDS UTILISED ($'000)					
Budget appropriation - Consolidated Revenue Fund	641	633	630	657	649
- Exploration Incentive Scheme	350	0	0	0	0
Interest on cash flow	56	89	119	77	76
Other income	2	3	3	3	3
Transferred from (to) reserves	(13)	487	(330)	725	39
Total Government funds utilised	**1 036**	**1 212**	**422**	**1 462**	**767**
Less administration costs	*244	* 205	*211	*203	*190
Funds utilised to support research	**792**	**1 007**	**211**	**1 259**	**577**
MERIWA GRANTS					
For research projects	341	641	222	725	747
For scholarship	50	40	50	30	60
Total grants	**391**	**681**	**272**	**755**	**807**
INDUSTRY SPONSORSHIP					
Total industry sponsorship coordinated through MERIWA	2 025	2 767	967	2 186	1 800
Total value of new research projects	**2 366**	**3 408**	**1 189**	**2 911**	**2 547**
Value of research generated to government funds utilised	**2.28**	**2.81**	**2.82**	**1.99**	**3.32**
Administration cost to value of research generated**	**9.48%**	**8.23%**	**9.09%**	**12.18%**	**10.41%**

* Three-year moving average.

Minerals Research Advisory Committee

Nominated by the Minister	Professor I O Jones (Chairman)	Consulting Mining Engineer
	Mr I M Suckling	Senior Manager Technical and Site Services, Newmont Australia Limited
	Position Vacant (Deputy Member)	
	Position Vacant	
	Mr R J Rowe (Deputy Member)	Chief Geologist, Barrack Gold of Australia
	Ms D Lord	Senior Consultant - Geologist, SRK Consulting
	* Mr P W Baillie (Deputy Member)	Chief Geologist Asia Pacific, TGS NOPEC Geophysical Company
	Professor W Stock	Centre for Ecosystem Management, Edith Cowan University
	Dr E van Etten (Deputy Member)	Faculty of Computing, Health & Science, Edith Cowan University
	Mrs A Meakins	Principal Consultant (AMEC)
	Dr B Smith (Deputy Member)	Consulting Geologist - Geochemist (AMEC)
Nominated by: Department of Mines and Petroleum	Ms B S Bower	General Manager – Petroleum Tenure & Land Access
	Position Vacant (Deputy Member)	
Commonwealth Scientific and Industrial Research Organisation (CSIRO)	Dr C R M Butt	Chief Scientist, Exploration and Mining
	Dr B McInnes (Deputy Member)	Program Leader, Exploration Geoscience
The University of Western Australia	Professor M B Bush	Faculty of Engineering, Computing and Mathematics
	Professor R J Gilkes (Deputy Member)	Centre for Land Rehabilitation
Murdoch University	Professor P Bahri	School of Electrical, Energy and Process Engineering
	* Mr W Staunton (Deputy Member)	Principal Gold Metallurgist
Curtin University of Technology	* Professor B Evans	Department of Exploration Geophysics
	Professor E Villaescusa (Deputy Member)	Project Leader, WA School of Mines
Chamber of Commerce and Industry of WA	Dr C L Baker	Program Manager, Impurity Removal, Alcoa World Alumina
	* Ms B Pavey (Deputy Member)	Senior Adviser Environmental Policy
Chamber of Minerals and Energy of WA (Inc.)	*Positions Vacant*	
Australian Petroleum Production and Exploration Association	Mr N Kavanagh	Development Planner and Technology Leader, Woodside Energy Ltd.
	Dr J D Gorter (Deputy Member)	New Ventures Manager, Eni Australia Limited

* Member resigned during year.

Minerals Research Advisory Committee

The past year (2009/2010) has been one of the quietest in the history of the Institute with only three projects approved for funding. This was largely due to a combination of increased funding allocations for individual projects and a reduction in the real value of the government grant over many years. Thankfully this situation has been ameliorated with the government allocating a further $350 000 per annum from its Exploration Incentive Scheme over the next four years. This supplementation provides the Institute with an annual grant of some $1 million which ensures its capacity to continue to provide seed funding for embryonic applied research and technology transfer programs of relevance to the immediate and developing needs of the State's mineral industry.

The Institute has always placed great importance on its supplementary research scholarship scheme for locally based minerals-related PhD students. These scholarships valued at $10 000 per annum are highly valued by researchers and on this occasion despite the Institute's tight financial situation, four full scholarships and two half-value ($5 000) incentive scholarships were awarded to the following recipients:

Full value scholarships

Ms Talitha Santini, School of Earth and Geographical Sciences at the University of Western Australia, who is investigating "A Pedogenic Treatment for Rehabilitation of Bauxite Residue Mud".

Mr Simon Assmann, WA School of Mines, Curtin University of Technology who is researching the "Mass Transfer in Electrostatic Liquid-Liquid Extraction Contactors".

Mr Andrew Greenwood, Department of Exploration Geophysics at Curtin University of Technology who is investigating the "Application of Vertical Seismic Profiling for Characterisation of Hard Rock".

Mr Mohammad Sarmadivaleh, Department of Petroleum Engineering at Curtin University of Technology who is studying the "Interaction of Pre-Existing Natural Fractures and Induced Hydraulic Fracture".

Half value "incentive" scholarships

Ms Zoja Vukmanovic, School of Earth and Environment at the University of Western Australia whose project involves a "Micromechanical and Geochemical Analysis of Remobilization of Komatiite – Hosted Ni Sulphide Ores".

Mr David Grimsey, WA School of Mines, Curtin University of Technology who is studying the "Application of Segregation Roasting to Western Australian Laterites".

Following are the three research projects approved for funding during the past year.

M407: "North East Yilgarn Biogeochemistry" submitted by researchers at CSIRO.

M408: "Enhanced Electrostatic Separation by Reducing Stains on HT Roll Separators" submitted by researchers at Central Chemical Consulting.

M409: "In-Place Leaching of Oxidised Gold Ores" submitted by a researcher at CSIRO.

The total value of these projects were $429 067 with MERIWA's total contribution being $142 467.

The assessment and appraisal of all research projects is carried out by the Minerals Research Advisory Committee (MRAC) and as Chairman I wish to record and emphasis my gratitude and admiration for the dedication of fellow members and in particular the work of the sub-committees. Having examined the details of each submission and interviewed the applicant(s), the sub-committees make their written and oral recommendations to the MRAC, where a further in-depth investigation of the proposals is made before a final recommendation is made to the Board.

Members and deputy members of MRAC are normally appointed for a three year term and 2010 happens to be the end of the tenure for fourteen members of the committee. Whereas they will all be sorely missed it provides their replacements with the challenge of emulating their valuable and selfless service; a few have been members of MRAC for two, three and sometimes four and more three year terms.

Minerals Research Advisory Committee (Continued)

When all is said and done our main task is to encourage and nurture those with the knowledge, intellect and imagination to think of new and/or more efficient means by which we can discover and exploit our mineral resources. This I believe we continue to do with sensitivity, care and diligence. In doing so we must acknowledge the work of the small support group employed by the Institute. These three individuals, the Executive Officer, Project Coordinator and Administration Assistant ensure the smooth running of all the Institute's activities including the onerous task of processing all research proposals and administering all those projects sponsored by the Institute, of which eighteen are currently ongoing.

Emeritus Professor Odwyn Jones, AO
Chairman.

Reports Published in 2009/10

M366 HIGH RESOLUTION SEISMIC MONITORING IN OPEN PIT MINES

Report No. 279

Grantee: *Australian Centre for Geomechanics*
Applicants: *Prof.Y Potvin*
Grant Amount: *$553 666*
Duration: *3 years*
Commenced: *July, 2004*
Sponsors: *Western Mining Corporation (Mt Keith Operation), Mt Isa Mines Black Star Open Cut.*

This project was undertaken to provide the first systematic study of applying high resolution micro-seismic (MS) monitoring to the problem of slope stability in open pit mines. This well established, powerful technology to identify the location of failure initiation offered the potential to enhance the capability to monitor open pit slopes. The increasing depth of mines introduces increasing stress environments, with greater uncertainty regarding the mechanical behaviour of slopes. The two project sites, (now) BHPB's Mt Keith Operation (MKO), and (now) Xstrata's Black Star mine in Queensland, had uniaxial accelerometers and geophones installed, the Black Star array at a late stage in the project. The main findings from these monitoring arrays included: 1. MS monitoring can provide valuable insights into the brittle fracture processes in rock slopes, and may also provide data to calibrate numerical models and further develop material models of processes governing rock slope behaviour. 2. At MKO the seismicity is limited to the first stages of brittle fracturing. 3. The biaxial loading state occurring closer to the slope face is conducive to generation of larger fractures. 4. In general, the chosen sensor arrays are too sparse to provide meaningful microseismic data on failure mechanisms, and thus guidelines for conceptual design of seismic systems for this application were developed. Recommendations in the report in addition to these design guidelines include further work needed to understand the failure mechanisms, and slope monitoring of failures at smaller as well as larger scales. In particular it is suggested that slope monitoring using MS/acoustic emission could in many instances identify failure development from smaller volume, higher frequency monitoring, also providing a faster return to users of MS monitoring.

M377 SCALE-INTEGRATED, ARCHITECTURALLY, GEODYNAMICALLY AND GEOCHEMICALLY CONSTRAINED TARGETING MODELS FOR GOLD DEPOSITS IN THE EASTERN GOLDFIELDS PROVINCE, YILGARN CRATON

Report No. 275

Grantee: *CSIRO / The University of WA*
Applicant: *Dr J Walshe / Dr P Neumayr*
Grant Amount: *$1 153 040*
Duration: *2 years*
Commenced: *January, 2006*
Sponsors: *St Ives Gold Mining Co., Placer Dome / Barrick Gold.*

Following the successful 3-year M358 project, M377 was proposed to build and test exploration targeting models. Data on crustal architecture, geodynamics and geochemistry would be integrated from deposit to district scale, at two gold camps, in close collaboration with the industry sponsors using 'embedded' researchers. The nature and role of fluids in Eastern Yilgarn gold systems and their interplay with crustal architecture were evaluated, which led to the recognition that gold deposits are related to mappable chemical gradients. Redox and pH gradients could be mapped in terms of variations in alteration mineralogy, mineral compositions or element abundances. A multi-fluid model, favoured over a single-fluid one, assumed three major types of fluids; one upper crustal, and two in the deep crust or mantle. The model is based on integration of geochemical data such as fluid inclusions and mineralogy with lithological and structural architectural constraints. The water in the gold systems is argued to have been sourced in the upper crust, some of the CH_4 derived from the deep crust, and CO_2-rich fluids to have a mixed crustal–mantle origin. This targeting model relies on mapping of reduced and oxidized anhydrous fluid pathways into possibly "productive mixing architectures". An important outcome for one gold camp was the recognition of previously unidentified structures with significant influence on patterns of fluid flow and therefore the distribution of gold. The improved understanding of the complex relationships among structures, lithology, alteration and gold occurrences is also aiding more efficient mining and discovery of additional lodes in known mines.

Reports Published in 2009/10

M382 EVALUATION OF MONORAIL HAULAGE IN METALLIFEROUS UNDERGROUND MINING

Report No. 276

Grantee: *Curtin University of Technology*
Applicant: *Dr E Chanda / Dr M Kuruppu*
Grant Amount: *$65 648*
Duration: *15 months*
Commenced: *January, 2007*
Sponsors: *Newmont Australia Ltd.*

This background study was undertaken at WA School of Mines as part of a search for more cost-effective and environmentally friendly material handling and transport systems, since currently no Australian metalliferous underground mines use monorail systems. Conventional mining of the decline in metalliferous mining to access the ore body poses challenges that require innovative responses, one of which could be a monorail system. A literature review was undertaken followed by the evaluation of several case studies of applications of monorail systems in underground metalliferous mines. In this study, computer simulation together with systems analysis and engineering economics were used to evaluate the feasibility of the monorail mining system for decline development. In-kind support and technical data relating to the operation of monorails in underground mining was obtained from Scharf Mining Solutions of Germany, a company which manufactures monorails. A feature of the design is a proposed drill system mounted on the monorail and accompanied by a pneumatic transport system for loading rock into monorail containers. The concept was applied to a narrow vein ore deposit, with the result that a monorail haulage system could be a feasible proposition for decline development in some metalliferous underground mines.

An electro-monorail offers a means for industry to achieve reductions in costs and emissions, and improve mining rates. Further work proposed includes the analysis of electrically operated monorail systems in conjunction with more conventional means of transferring the blasted material into the monorail containers.

M384 GOLD PROCESSING TECHNOLOGY (AMIRA P420C)

Report No. 278

Grantee: *Parker Centre Limited*
Applicant: *Mr W Staunton*
Grant Amount: *$140 800*
Duration: *3 years*
Commenced: *January, 2006*
Sponsors: *MERIWA acts as a sponsor.*

For this third phase of AMIRA's long running gold processing project, four modules of work were proposed. MERIWA sponsorship concerned modules 2 and 3, which were of particular significance for Western Australian gold operators. Module 2 on Thiosulfate Process Development aimed ultimately to demonstrate a complete thiosulfate process, as a replacement for cyanide, for leaching and recovery of gold from ores. Module 3 on Sustainable Cyanide Management was intended to provide operations with the knowledge and tools to ensure that total management of cyanide meets all recognized benchmarks for community acceptance. It would include surveys of sponsors' sites to obtain necessary data for refinement of models of behaviour of all cyanide species on mining leases.

From the thiosulfate process development electrochemical and dissolution studies showed that thiosemicarbazide (Tsc) was similar to thiourea in promoting gold oxidation, at a concentration of 10mM but not at increased concentrations. Stability of Tsc was found to decrease with increasing concentration and decreasing pH. The Fe-EDTA complexes investigated seemed to have the most potential among oxidants; the best performances was obtained with Fe-EDTA of about 1:2 Recommended future studies of this process include the investigation of possible ways to depress the catalytic effect of sulphide minerals and carbonaceous materials, studies of the treatment of polythionates prior to the ion exchange step, and application of thiosulfate leaching systems for gravity concentrates. Outcomes of the sustainable cyanide management module include a model for use by site personnel to track the cyanide chemistry in their circuit, as the main deliverable. This established processes for treatment of cyanide waste to enable gold producers to adhere to the International Cyanide Management Code. However, alternative detoxification strategies for cyanide besides natural degradation in tailings facilities are likely to be needed in the future.

Reports Published in 2009/10

M386 BROADENING THE APPLICATION OF SEISMIC MONITORING IN UNDERGROUND MINES

Report No. 281

Grantee: *Australian Centre for Geomechanics*
Applicant: *Prof. Yves Potvin / Mr D Heal*
Grant Amount: *$1 193 000*
Duration: *3 years*
Commenced: *January, 2006*
Sponsors: *Agnew Gold Mining Co. P/L, Agnico-Eagle Mines Limited, AngloGold Ashanti Australia Limited, Barrick Gold Australia, BCD Resources (Operations) NL, BHP Billiton Nickel West, Gold Fields (SIGM), Harmony Gold Australia, Independence Group NL, Kalgoorlie Consolidated Gold Mines, Kirkland Lake Gold Inc., Lionore Australia P/L, Newcrest Mining Limited, Newmont Mining Services P/L for Newmont Asia Pacific, Oxiana Limited, Perilya Broken Hill Limited, Reliance Nickel P/L, Sir Samuel Mines NL, Xstrata Copper (Kidd Creek Mine).*

The work proposed for this study spanned three areas: regional seismic monitoring, cave mining, and seismic data analysis. Regional seismic monitoring is intended to better evaluate the role of large events in mines. The understanding of rockmass failure mechanisms through comprehensive seismological and numerical analysis of data could benefit caving operations, and techniques to interpret data in high stress and rockburst prone mines can be improved by the proposed seismic data analysis. These research areas in turn led to several sub-projects in the ongoing Mine Seismic and Rockburst Risk Management (MSRRM) campaign of the ACG, including further developments to the MS-RAP software platform. One important achievement in managing seismic risk has been the creation of the generic Seismic Risk Management Plan which offers detailed guidance to site personnel.

Numerical modelling in which seismic data are used to calibrate elastic models were investigated using data from several different mine sites; it was found that given good data and models, representative rock mass failure criteria could be calculated by back analysis. Regional seismic network sensors were installed in the Kambalda-Kalgoorlie region in 2006-07, and the Leinster Regional Seismic Network was established in late 2006. It is proposed these be maintained and the data continue to be made available to MSRRM project sponsors.

M402 HYDROGEOCHEMICAL MAPPING OF THE NORTHEAST YILGARN

Report No. 280

Grantee: *CSIRO Exploration and Mining*
Applicants: *Dr Gray / Dr R Noble*
Grant Amount: *$207 953*
Duration: *15 months*
Commenced: *January, 2008*
Sponsors: *Agnew Gold Mining Company, Anglo American plc, Aura Energy Ltd, Australian Mineral Fields, Avoca Resources Ltd, Barrick Gold of Australia, BHP Billiton Minerals, Cameco Australia Pty Ltd, Cazaly Resources Limited, Crescent Gold Limited, Cullen Resources Limited, Echo Resources Limited, Emu Nickel NL, Encounter Resources Ltd, Enterprise Metals Limited, Heron Resources Limited, Independence Group NL, Jindalee Resources, Maximus Resources Limited, Mega Redport Pty Ltd, Newmont Mining Corporation, Norilsk Nickel Australia Pty Ltd, Regalpoint Exploration Pty Ltd, Thundelarra Exploration Ltd, Troy Resources NL, Venture Minerals Ltd, Windy Knob Resources, Toro Energy Ltd.*

Following on from successful groundwater sampling along the Leonora-Wiluna Greenstone Belt, this proof-of-concept investigation was proposed for hydrogeochemical mapping of the northeastern Yilgarn. Such mapping was considered to have potential for establishing environmental background and mineral exploration across other areas in Western Australia, particularly outside recognised mineralisation belts. A very broad support base was sought, not least for the required statistical and chemically based development of the data base. This allowed the sampled groundwater chemistry at 4-10 km scale to delineate large scale mineral system signatures. The data set also has significant benefits for guiding human and livestock drinking water supplies. The hydrogeochemical mapping was particularly successful in defining prospective areas for U and Au. The groundwater geochemistry, especially the carnotite mineral saturation index, predicted most known U deposits in the northeast Yilgarn Craton, while hydrogeochemical exploration for Au delineated the two world class gold camps gave prospectivity estimates for various greenstone belts. A derived lithology index distinguishes greenstones from granites. Thus the project demonstrated how groundwater geochemistry can effectively map large-scale variations and reduce uncertainty about prospectivity in the northeast Yilgarn.

Projects in Progress: 30 June 2010

No.	Project Title	Applicants	Institute	Term (years)	Cash Cost ($)	Notional Value ($)
M349A	Dynamic testing of ground control systems	Prof E Villaescusa Dr A Thompson	WASM	3	474 000	474 000
M381	Ecohydrological characterisation of the natural and rehabilitation ecosystems at Newcrest's Telfer Gold Mine	Prof H Lambers Dr C Hinz	UWA	4	650 000	2 175 000
M388	Controls on platinum group element variation in mafic and ultramafic magmatic systems	Prof M Barley Dr S Barnes	UWA	3	75 000	75 000
M389	A four-dimensional interpretation of the geological evolution of the Proterozoic West Tanami Region and its mineral systems	Dr F Bierlein Dr W Brown	UWA	3	242 363	242 363
M390	Measuring particle surface charge and particle interactions in process liquors	Dr V Patrick Dr E Karakyriakos	Central Chemical Consulting	3	474 000	474 000
M393	Banded iron formations and iron ores of the Hamersley Province: New insights from field, petrographic and geochemical studies	Dr B Rasmussen Dr B Krapez	UWA	3	435 000	435 000
M394	Integrating novel tools to mitigate total grazing pressure following fire and mining. 1: Olfactory fear cues	Dr M Parsons Mr K Dods	Murdoch	3	213 318	218 318
M395	Modelling of submarine landslides and their impact on pipelines	Dr D White Prof M Randolph	UWA	3	1 124 000	2 033 000
M396	Establishing a chronostratigraphic framework for the Devonian Canning Basin Reef Complex	Dr P Cawood Dr E Tohver	UWA	3	440 000	650 160
M397	Impact of low liquid hold-up levels within natural gas transmission pipelines and the influence on particle deposition	A/Prof D Pack Dr Robert Amin	Curtin	3	75 000	557 610
M399	Susceptibility to *Phytophthora cinnamomi* and sensitivity to phosphate in native Australian plants: why are they linked?	Prof H Lambers A/Prof G Hardy	UWA / Murdoch	5 yrs	700 000	1 375 000
M400	On-site validation and implementation of new hylogging technologies – technology transfer and re-skilling	Dr T Roache Dr J Walshe	CSIRO	2	390 000	510 000
M401	Improving solvent extraction technology	Dr D Robinson	CSIRO	3	1 060 000	1 210 000
M405	Application of U-Th-Pb-He double-dating techniques to diamond exploration	Dr B McInnes Dr N Evans	CSIRO	2	188 800	628 800

Projects in Progress: 30 June 2010 (Continued)

No.	Project Title	Applicants	Institute	Term (yrs)	Cash Cost ($)	Notional Value ($)
M406	Advancing the strategic use of seismic data in mines	Prof Y Potvin Dr J Wesseloo	ACG	3	1 140 000	1 140 000
M407	North East Yilgarn biogeochemistry project	Mr M Lintern Dr R Anand	CSIRO	1	226,067	348,854
M408	Enhanced electrostatics separation by reducing stains on HT roll separators	Dr B van Emden Dr V Patrick	Central Chemical Consulting	8 mths	87,000	87,000
M409	In-place leaching of oxidised gold ores	Mr P Roberts	CSIRO	9 Mths	115,000	627,000

Research Assistance

The function of the Institute is to encourage the development of the minerals and petroleum industries in Western Australia by fostering and promoting research in the exploration, development and production of minerals, hydrocarbons and fossil fuels.

Applications for financial assistance for funding of projects may be submitted to the Executive Officer at any time throughout the year. The approval process generally takes 3 to 4 months. These are scrutinised first by the Minerals Research Advisory Committee before its recommendations are considered by the Board.

Organisations with research proposals that have the potential to benefit the minerals or petroleum industries in this State may seek further information by contacting:

The Executive Officer, MERIWA
3rd Floor, Mineral House
100 Plain Street
EAST PERTH WA 6004

Telephone: (08) 9222 3397
Facsimile: (08) 9222 3727
Email address: Gwen.DAVIES@dmp.wa.gov.au
Website: www.dmp.wa.gov.au/meriwa

Financial Assistance from Industry

The following list is of companies and organisations which provided financial sponsorship in 2009/10 for projects in progress. The Board of Directors thank these groups for their sponsorship and support.

MINERALS RESEARCH

Agnico-Eagle Mines Limited – LaRonde Division

Alcoa World Alumina Australia

Anglo American PLC

AngloGold Ashanti Australia Limited

AREVA NC-Mining BU

Barrick (Australia Pacific) Limited

Barrick Gold
- Darlot Gold Mine
- Granny Smith
- Lawlers Gold Mine
- Plutonic Gold Mine

Barrick (Kanowna) Limited

BCD Resources (Operations) NL

BEMAX Resources Limited (Cable Sands)

BHP Billiton Iron Ore Pty Ltd

BHP Billiton Nickel West

BHP Billiton Olympic Dam

BHP Billiton Petroleum Pty Ltd

BHP Billiton – Ravensthorpe Nickel Operations

BHP Billiton – Worsley Alumina Pty Ltd

BP Exploration Operating Company

Buru Energy Limited

Cameco Australia Pty Ltd

Central Chemical Consulting Pty Ltd

Chemistry Centre (WA)

Chevron Energy Technology Company

CODELCO Chile, División El Teniente

Department of Water

Doral Mineral Sands Pty Ltd

Emu Nickel NL

Encounter Resources Ltd

Flinders Diamonds Ltd

Geological Survey of Western Australia

Gold Fields Australia (Pty) Limited – S.I.G.M.

Heron Resources Limited

Kalgoorlie Consolidated Gold Mines Pty Ltd

Kimberley Diamond Company

Kirkland Lake Gold Inc.

Lightning Nickel Pty Ltd

Luossavaara-Kiirunavaara AB

Minara Resources Limited

Minotaur Exploration Ltd

MMG Golden Grove Pty Ltd

Newcrest Mining Limited, Cadia Valley Operations

Newcrest Mining Limited, Telfer Gold Mine

Newmont Mining Corporation Asia Pacific

Norilsk Nickel Australia Pty Ltd

North Australian Diamonds Ltd

NT Geological Survey

Parker Centre Limited

Perilya Broken Hill Limited

Petróleo Brasileiro S.A. – PETROBRAS

Primary Industries and Resources SA (PIRSA)

Regalpoint Exploration Pty Ltd

Rio Tinto Iron Ore

Shell Development (Australia) Pty Ltd

Tanami Gold NL

Teck Australia Pty Ltd

Tiwest Joint Venture

Tiwest Pty Ltd

Toro Energy Limited

Triton Gold Ltd

Troy Resources NL

Vale Exploration

Venus Resources Limited

Verve Energy

WA-ERA

Woodside Energy Ltd

Xstrata Copper - Kidd Creek Mine

Xstrata Nickel (Cosmos Nickel Project)

Audited Statements

Performance Indicators
for the year ended 30 June 2010

Minerals Research Program

Outcome

"Promote all aspects of minerals research"

The key incentive provided by governments to encourage more research is to subsidise its cost. Government research funding schemes generally provide this subsidy on a dollar-for-dollar basis, in which case the amount of research undertaken is theoretically doubled. MERIWA's policy is that the magnitude of the subsidy is nominally 35% of the cash cost, encouraging a higher level of participation from industry.

The subsidy level must be such, however, to give MERIWA the authority to rigorously assess research programs and to establish "Conditions of Grant" that facilitate coordination and accountability, and ensure that final reports can be published and widely distributed. The subsidy must be of a level to enable promotion of research on regulatory issues such as occupational health and safety, and minesite rehabilitation.

In addition, research at PhD level is encouraged by the awarding of six supplementary research scholarships this year.

Effectiveness Indicator

Research was promoted by subsidy to the extent of the funds available. To maximise the effectiveness of this investment, sponsorship was maximised and the involvement of industry in each phase of the research was promoted to focus the scope of the study on the needs of industry and maximise technology transfer. By publishing reports, the research results were disseminated as widely as possible.

The average level of industry sponsorship as a percentage of research value in 2009/2010 was 86% against a target of 65%. The target was exceeded due to the attraction of a higher level of industry sponsorship than anticipated. The effectiveness of postgraduate doctoral research scholarships in promoting research will be gauged by the success of students in ultimately achieving their PhDs and in presentations of technical papers and posters at Australian and international symposia. Six scholarships were awarded in 2009/2010.

Service

"Finance and coordinate minerals research"

Efficiency Indicator:

The indicator is a function of the number of projects and administration costs. Costs of administration are rising due to normal indexed increases to wages and supplies. This year the administration costs have risen to $244,169 from $204,518 in the previous year, due to increased salary and superannuation costs, board and committee fees, equipment upgrades, accommodation expenses and administration fees, all of which have risen from the previous year. The current trend is for fewer projects that cost more to be funded. This year the target of $11,000 was exceeded due to a reduction in the number of projects from 20 to 18 resulting in an overall increase in the cost of each grant administered.

Effectiveness Indicator – Outcome	2009/2010	2008/2009	2007/2008	2006/2007	2005/2006
% Industry sponsorship achieved	86%	81%	81%	75%	71%
Target.	65%	65%	65%	65%	65%
Research value	2 366 385	3 407 752	1 189 334	2 911 164	2 546 559

Efficiency Indicator – Service	2009/2010	2008/2009	2007/2008	2006/2007	2005/2006
$cost per minerals research grant administered	13 565	10 226	8 435	8 114	7 922
Target	11 000	10 000	10 000	10 000	10 000

Certification of Performance Indicators
for the year ended 30 June 2010

We hereby certify that the performance indicators are based on proper records, are relevant and appropriate for assisting users to assess the Minerals and Energy Research Institute of Western Australia's performance, and fairly represent the performance of the Minerals and Energy Research Institute of Western Australia for the financial year ended 30 June 2010.

P C Lockyer
CHAIRMAN,
BOARD OF DIRECTORS

A Webster
DIRECTOR

13 September 2010

Opinion of the Auditor General on Performance Indicators for the year ended 30 June, 2010

Auditor General

INDEPENDENT AUDIT OPINION

To the Parliament of Western Australia

MINERALS AND ENERGY RESEARCH INSTITUTE OF WESTERN AUSTRALIA
FINANCIAL STATEMENTS AND KEY PERFORMANCE INDICATORS
FOR THE YEAR ENDED 30 JUNE 2010

I have audited the accounts, financial statements, controls and key performance indicators of the Minerals and Energy Research Institute of Western Australia.

The financial statements comprise the Statement of Financial Position as at 30 June 2010, and the Statement of Comprehensive Income, Statement of Changes in Equity and Statement of Cash Flows for the year then ended, a summary of significant accounting policies and other explanatory Notes.

The key performance indicators consist of key indicators of effectiveness and efficiency.

Board's Responsibility for the Financial Statements and Key Performance Indicators
The Board is responsible for keeping proper accounts, and the preparation and fair presentation of the financial statements in accordance with Australian Accounting Standards and the Treasurer's Instructions, and the key performance indicators. This responsibility includes establishing and maintaining internal controls relevant to the preparation and fair presentation of the financial statements and key performance indicators that are free from material misstatement, whether due to fraud or error; selecting and applying appropriate accounting policies; making accounting estimates that are reasonable in the circumstances; and complying with the Financial Management Act 2006 and other relevant written law.

Summary of my Role
As required by the Auditor General Act 2006, my responsibility is to express an opinion on the financial statements, controls and key performance indicators based on my audit. This was done by testing selected samples of the audit evidence. I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my audit opinion. Further information on my audit approach is provided in my audit practice statement. This document is available on the OAG website under "How We Audit".

An audit does not guarantee that every amount and disclosure in the financial statements and key performance indicators is error free. The term "reasonable assurance" recognises that an audit does not examine all evidence and every transaction. However, my audit procedures should identify errors or omissions significant enough to adversely affect the decisions of users of the financial statements and key performance indicators.

Minerals and Energy Research Institute of Western Australia
Financial Statements and Key Performance Indicators for the year ended 30 June 2010

Audit Opinion
In my opinion,

(i) the financial statements are based on proper accounts and present fairly the financial position of the Minerals and Energy Research Institute of Western Australia at 30 June 2010 and its financial performance and cash flows for the year ended on that date. They are in accordance with Australian Accounting Standards and the Treasurer's Instructions;

(ii) the controls exercised by the Institute provide reasonable assurance that the receipt, expenditure and investment of money, the acquisition and disposal of property, and the incurring of liabilities have been in accordance with legislative provisions; and

(iii) the key performance indicators of the Institute are relevant and appropriate to help users assess the Institute's performance and fairly represent the indicated performance for the year ended 30 June 2010.

GLEN CLARKE
ACTING AUDITOR GENERAL
13 September 2010

Statement of Comprehensive Income
for the year ended 30 June 2010

	Note	2010	2009
		$	$
COST OF SERVICES			
Expenses			
Research grants	6	2,821,818	2,823,865
Scholarships	7	49,960	26,555
Institute Contract Staff fees	8	129,621	110,340
Superannuation expense	9	11,666	9,931
Board and committee fees and costs	10	42,929	34,828
Administration expenses	11	27,036	17,919
Accommodation expenses	12	32,917	31,500
Depreciation expense	13	801	795
Loss on disposal of non-current assets	14	399	-
Total Cost of Services		**3,117,147**	**3,055,733**
Income			
Interest Revenue	15	55,550	88,689
Other Revenue	16	2,167	2,714
Revenues from Industry Sponsorship	17	2,022,600	2,786,935
Total income other than income from State Government		**2,080,317**	**2,878,338**
NET COST OF SERVICES		**1,036,830**	**177,395**
Income from State Government			
Service Appropriation	18	991,000	633,000
Resources received free of charge	19	32,917	31,500
Total income from State Government		**1,023,917**	**664,500**
SURPLUS/(DEFICIT) FOR THE PERIOD		**(12,913)**	**487,105**
OTHER COMPREHENSIVE INCOME			
Other		-	-
Total other comprehensive income		**-**	**-**
TOTAL COMPREHENSIVE INCOME FOR THE PERIOD		**(12,913)**	**487,105**

The Statement of Comprehensive Income should be read in conjunction with the accompanying notes.

Statement of Financial Position as at 30 June 2010

	Note	2010	2009
			$
ASSETS			
Current Assets			
Cash and cash equivalents	20	9,481	7,525
Restricted cash and cash equivalents	21	2,222,866	2,485,191
Receivables	22	777,211	1,299,150
Other Current Assets	23	4,423	38,693
Total current assets		**3,013,981**	**3,830,559**
Non-current Assets			
Receivables	22	173,811	35,000
Plant and equipment	24	5,392	1,061
Total non-current assets		**179,203**	**36,061**
TOTAL ASSETS		**3,193,184**	**3,866,620**
LIABILITIES			
Current liabilities			
Payables	26	393,969	728,508
Other Current Liabilities	27	35,168	361,152
Total current liabilities		**429,137**	**1,089,660**
TOTAL LIABILITIES		**429,137**	**1,089,660**
NET ASSETS		**2,764,047**	**2,776,960**
EQUITY			
Accumulated Surplus	28	2,764,047	2,776,960
TOTAL EQUITY		**2,764,047**	**2,776,960**

The Statement of Financial Position should be read in conjunction with the accompanying notes.

Statement of Changes in Equity for the year ended 30 June 2010

2009	Note	Accumulated Surplus
		$
Balance at 1 July 2008	**28**	**2,289,855**
Total comprehensive income for the year		487,105
Balance at 30 June 2009		**2,776,960**

2010		
		$
Balance at 1 July 2009	**28**	**2776,960**
Total comprehensive income for the year		(12,913)
Balance at 30 June 2010		**2,764,047**

The Statement of Changes in Equity should be read in conjunction with the accompanying notes.

Statement of Cash Flows
for the year ended 30 June 2010

	Note	2010	2009
		$	$
CASH FLOWS FROM STATE GOVERNMENT			
Service appropriation	2(d)	830,750	793,250
Net cash provided by State Government		**830,750**	**793,250**
Utilised as follows:			
CASH FLOWS FROM OPERATING ACTIVITIES			
Payments			
Research Grant payments		(3,142,244)	(2,274,538)
Institute Contract Staff Fees		(125,706)	(118,726)
Other Operating Payments		(81,280)	(53,180)
GST Payments on Purchases		(377,571)	(224,641)
GST payments to Taxation Institute		-	-
Receipts			
Receipts from Sponsors		2,189,748	2,478,617
Interest received		56,120	84,427
Other receipts		2,167	2,714
GST receipts on sales		178,949	224,330
GST receipts from Taxation Institute		214,228	13,076
Net cash provided by/(used in) operating activities	29 (b)	**(1,085,589)**	**132,079**
CASH FLOWS FROM INVESTING ACTIVITIES			
Purchase of non-current physical assets		(5,530)	-
Net cash provided by/(used in) investing activities		**(5,530)**	**-**
Net increase/(decrease) in cash and cash equivalents		(260,369)	925,329
Cash and cash equivalents at the beginning of period		2,492,716	1,567,387
Cash and cash equivalents at the end of period	29 (a)	**2,232,347**	**2,492,716**

The Statement of Cash Flows should be read in conjunction with the accompanying notes

Notes to the Financial Statements for the year ended 30 June 2010

1. Australian Accounting Standards

General

The Institute's financial statements for the year ended 30 June 2010 have been prepared in accordance with Australian Accounting Standards. The term 'Australian Accounting Standards' refers to Standards and Interpretations issued by the Australian Accounting Standards Board (AASB).

The Institute has adopted any applicable, new and revised Australian Accounting Standards from their operative dates.

Early adoption of Standards

The Institute cannot early adopt an Australian Accounting Standard unless specifically permitted by TI 1101 'Application of Australian Accounting Standards and Other Pronouncements'. No Australian Accounting Standards that have been issued or amended but not operative have been early adopted by the Institute for the annual reporting period ended 30 June 2010.

2. Summary of significant accounting policies

(a) General Statement

The financial statements constitute general purpose financial statements that have been prepared in accordance with the Australian Accounting Standards, the Framework, Statements of Accounting Concepts and other authoritative pronouncements of the Australian Accounting Standards Board as applied by the Treasurer's Instructions. Several of these are modified by the Treasurer's Instructions to vary application, disclosure, format and wording.

The Financial Management Act and the Treasurer's Instructions are legislative provisions governing the preparation of financial statements and take precedence over the Australian Accounting Standards, the Framework, Statements of Accounting Concepts and other authoritative pronouncements of the Australian Accounting Standards Board.

Where modification is required and has had a material or significant financial effect upon the reported results, details of that modification and the resulting financial effect are disclosed in the notes to the financial statements.

(b) Basis of Preparation

The financial statements have been prepared on the accrual basis of accounting using the historical cost convention.

The accounting policies adopted in the preparation of the financial statements have been consistently applied throughout all periods presented unless otherwise stated.

The financial statements are presented in Australian dollars and all values are rounded to the nearest dollar.

The judgements that have been made in the process of applying the Institute's accounting policies that have the most significant effect on the amounts recognised in the financial statements are disclosed in note 3 'Judgements made by management in applying accounting policies'.

Notes to the Financial Statements for the year ended 30 June 2010

The key assumptions made concerning the future, and other key sources of estimation uncertainty at the end of the reporting period that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year are disclosed at note 4 'Key sources of estimation uncertainty'.

(c) Reporting Entity

The reporting entity comprises the Institute. There are no related bodies.

(d) Income

Revenue recognition

Revenue is measured at the fair value of consideration received or receivable. Revenue is recognised for the major business activities as follows:

Interest

Revenue is recognised as the interest accrues.

Sponsorship Revenue

Sponsorship from Industry is recognised as revenue when the Institute obtains control over the assets comprising the contributions. Control is normally obtained upon signing of the sponsorship agreement.

Service Appropriations

Service Appropriations are recognised as revenues at nominal value in the period in which the Institute gains control of the appropriated funds. The Institute gains control of appropriated funds at the time those funds are deposited to the bank account.

Sale of goods

Revenue is recognised from the sale of goods when the significant risks and rewards of ownership transfer to the purchaser and can be measured reliably.

(e) Plant and Equipment

Capitalisation/Expensing of assets

Items of plant and equipment costing $5,000 or more are recognised as assets and the cost of utilising assets is expensed (depreciated) over their useful lives. Items of plant and equipment costing less than $5,000 are immediately expensed direct to the Statement of Comprehensive Income (other than where they form part of a group of similar items which are significant in total).

Initial recognition and measurement

All items of plant and equipment are initially recognised at cost.

For items of plant and equipment acquired at no cost or for nominal cost, the cost is their fair value at the date of acquisition.

Notes to the Financial Statements for the year ended 30 June 2010

Subsequent measurement

After recognition as an asset, the cost model is used for the measurement of plant and equipment and stated at historical cost less accumulated depreciation and accumulated impairment losses.

Derecognition

Upon disposal or derecogintion of an item of plant and equipment, any revaluation reserve relating to that asset is retained in the asset revaluation reserve.

Depreciation

All non-current assets having a limited useful life are systematically depreciated over their estimated useful lives in a manner that reflects the consumption of their future economic benefits.

Depreciation is calculated using the straight line method, using rates which are reviewed annually. The expected useful life for plant and equipment is 3 to 7 years.

(f) Impairment of assets

Plant and equipment assets are tested for any indication of impairment at the end of each reporting period. Where there is an indication of impairment, the recoverable amount is estimated. Where the recoverable amount is less than the carrying amount, the asset is considered impaired and is written down to the recoverable amount and an impairment loss is recognised. As the Institute is a not-for-profit entity, unless an asset has been identified as a surplus asset, the recoverable amount is the higher of an asset's fair value less costs to sell and depreciated replacement cost.

The risk of impairment is generally limited to circumstances where an asset's depreciation is materially understated, where the replacement cost is falling or where there is a significant change in useful life. Each relevant class of assets is reviewed annually to verify that the accumulated depreciation reflects the level of consumption or expiration of asset's future economic benefits and to evaluate any impairment risk from falling replacement costs.

The recoverable amount of assets identified as surplus assets is the higher of fair value less costs to sell and the present value of future cash flows expected to be derived from the asset. Surplus assets carried at fair value have no risk of material impairment where fair value is determined by reference to market-based evidence. Where fair value is determined by reference to depreciated replacement cost, surplus assets are at risk of impairment and the recoverable amount is measured. Surplus assets at cost are tested for indications of impairment at the end of each reporting period.

See note 25 'Impairment of assets' for the outcome of impairment reviews and testing.

(g) Financial Instruments

In addition to cash, the Institute has two categories of financial instrument:

- Loans and Receivables; and
- Financial liabilities measured at amortised cost.

Financial Instruments have been disaggregated into the following classes:

Financial Assets

- Cash and cash equivalents
- Restricted cash and cash equivalents
- Receivables

Notes to the Financial Statements for the year ended 30 June 2010

Financial Liabilities

- Payables
- Other Liabilities

Initial recognition and measurement of financial instruments is at fair value which normally equates to the transaction cost or the face value. Subsequent measurement is at amortised cost using the effective interest method.

The fair value of short-term receivables and payables is the transaction cost or the face value because there is no interest rate applicable and subsequent measurement is not required as the effect of discounting is not material.

(h) Cash and cash equivalents

For the purpose of the Statement of Cash Flows, cash and cash equivalents (and restricted cash and cash equivalents) assets comprise cash on hand and short-term deposits that are readily convertible to a known amount of cash and which are subject to insignificant risk of changes in value.

More specifically, the Institute has Short term investments comprised of term deposits and bank bills invested in such securities as approved by the Treasurer.

(i) Receivables

Receivables are recognised and carried at original invoice amount less an allowance for any uncollectible amounts (ie impairment). The collectability of receivables is reviewed on an ongoing basis and any receivables identified as uncollectible are written-off against the allowance account. The allowance for uncollectible amounts (doubtful debts) is raised when there is objective evidence that the Institute will not be able to collect the debts. The carrying amount is equivalent to fair value as it is due for settlement within 30 days. See note 2(g) 'Financial Instruments' and note 22 'Receivables'.

(j) Payables and Accrued Expenses

Payables including accruals not yet billed are recognised at the amounts payable when the Institute becomes obliged to make future payments as a result of a purchase of assets or services. The carrying amount is equivalent to fair value, as they are generally settled within 30 days. See note 2(g) 'Financial Instruments' and note 26 'Payables'.

(k) Research Grants

All minerals research projects are funded partly by MERIWA grants and partly by Industry sponsorship. Sponsorship is allocated by a company (the sponsor) to a research project, which by agreement, is paid through MERIWA, who on behalf of the sponsor, maintain financial control over the project and progressively advance the funds to the research grantee.

Grants expense is recognised when the Institute becomes obliged to make payment to the grantee. The Institute becomes obliged to make payment when the grantee has met the conditions of the grant agreement, normally on a quarterly basis.

(l) Scholarships

Scholarships represent the Institute's obligation to fund approved scholarships.

Current liabilities include payments expected to be made within the next 12 months from the reporting date.

Notes to the Financial Statements for the year ended 30 June 2010

(m) Superannuation

The Government Employees Superannuation Board (GESB) in accordance with legislative requirements administers public sector superannuation arrangements in Western Australia.

The superannuation expense in the Statement of Comprehensive Income comprise solely of employer contributions paid to the West State Superannuation (WSS) Scheme and the GESB Super Scheme (GESBS). The Institute's Contract Staff are non-contributory members of the WSS and GESBS, both accumulation schemes. The Institute makes concurrent contributions to the GESB on behalf of Contract Staff in compliance with the Commonwealth Government's Superannuation Guarantee (Administration) Act 1992. These contributions extinguish the liability for superannuation charges in respect of the WSS and the GESBS.

(n) Resources Received Free of Charge

Resources received free of charge or for nominal cost that can be reliably measured are recognised as income and as assets or expenses as appropriate, at fair value.

(o) Comparative Figures

Comparative figures are, where appropriate, reclassified to be comparable with the figures presented in the current financial year.

3. Judgements made by management in applying accounting policies

The judgements that have been made by management in the process of applying accounting policies will have no significant effect on the amounts recognised in the financial statements.

4. Key sources of estimation uncertainty

There were no key assumptions made concerning the future, and no other key sources of estimation uncertainty at the reporting period that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year.

5. Disclosure of changes in Accounting policy and Estimates

Initial application of an Australian Accounting Standard

The Institute has applied the following Australian Accounting Standards effective for annual reporting periods beginning on or after 1 July 2009 that impacted on the Institute:

AAS B101 — *Presentation of Financial Statements (September 2007).* This Standard has been revised and introduces a number of terminology changes as well as changes to the structure of the Statement of Changes in Equity and the Statement of Comprehensive Income. It is now a requirement that the owner changes in equity be presented separately from non- owner changes in equity. There is no financial impact resulting from the application of this revised Standard.

AASB 2007-10 — *Further Amendments to Australian Accounting Standards arising from AASB 101.* This Standard changes the term 'general purpose financial report' to 'general purpose financial statements', where appropriate in Australian Accounting Standards and the Framework to better align with IFRS terminology. There is no financial impact resulting from the application of this Standard.

Notes to the Financial Statements for the year ended 30 June 2010

Initial application of an Australian Accounting Standard

AASB 2008-13 *Amendments to Australian Accounting Standards arising from AASB Interpretation 17 – Distribution of Non-cash Assets to Owners [AASB 5 & AASB 110]*. This standard amends AASB 5 Non-current Assets Held for Sale and Discontinued Operations in respect of reclassification, presentation and measurement of non-current assests held for distribution to owners in their capacity as owners. This may impact on the presentation and classification of Crown land held by the Institute where the Crown land is to be sold by the Department of Regional Development and Lands (formerly Department for Planning and Infrastructure). The Institute does not expect any financial impact when the Standard is first applied prospectively.

AASB 2009-2 *Amendments to Australian Accounting Standards – Improving Disclosures about Financial Instruments AASB 4, AASB 7, AASB 1023 & AASB 1038*. This Standard amends AASB 7 and will require enhanced disclosures about fair value measurements and liquidity risk with respect to financial instruments. There is no financial impact resulting from the application of this Standard.

Future impact of Australian Accounting Standards not yet operative

The Institute cannot early adopt an Australian Accounting Standard unless specifically permitted by TI 1101 *'Application of Australian Accounting Standards and Other Pronouncements'*. Consequently, the Institute has not applied early any of the following Australian Accounting Standards that have been issued that may impact the Institute. Where applicable, the Institute plans to apply these Australian Accounting Standards from their application date:

	Australian Accounting Standard	Operative for reporting periods beginning on/after
AASB 2009-11	Amendments to Australian Accounting Standards arising from AASB 9 [AASB 1, 3, 4, 5, 7, 101, 102, 108, 112, 118, 121, 127, 128, 131, 132, 136, 139, 1023 &1038 and Interpretations 10 &12]. The amendment to AASB 7 requires modification to the disclosure of categories of financial assets. The Institute does not expect any financial impact when the Standard is first applied. The disclosure of categories of financial assets in the notes will change.	1 Jan 2013

Changes in accounting estimates

There were no changes in accounting estimates that will have an effect on the current period or any prior or future periods.

Notes to the Financial Statements
for the year ended 30 June 2010

6. Research Grants

	2010	2009 $
Research Grants – MERIWA	598,552	598,060
Research Grants – Industry Sponsorship	2,223,266	2,225,805
	2,821,818	**2,823,865**

7. Scholarships

Scholarships	49,960	26,555
	49,960	**26,555**

8. Institute Contract Staff Fees

Institute Contract Staff Fees	129,621	110,340
	129,621	**110,340**

9. Superannuation expense

Superannuation expense	11,666	9,931
	11,666	**9,931**

10. Board and Committee fees and costs

Board of Director's remuneration	40,700	32,550
Advisory Committee attendance fees	1,680	1,960
Board and Advisory Committee's expenses	549	318
	42,929	**34,828**

11. Administration expenses

Printing and Stationery	1,717	1,020
Advertising	2,942	1,055
Audit fees	14,300	13,000
Worker's Compensation premium	2,048	-
Other	6,029	2,844
	27,036	**17,919**

12. Accommodation expenses

Rental (notional)	32,918	31,500
	32,918	**31,500**

13 Depreciation expense

Plant and Equipment	801	795
	801	**795**

Notes to the Financial Statements
for the year ended 30 June 2010

	2010 $	2009 $
14. Loss on disposal of non-current assets		
Cost of disposal of non-current assets – Plant and Equipment	399	-
Proceeds from Disposal of non-current assets – Plant and Equipment	-	-
	399	**-**
15. Interest Revenue		
Interest on Investments – Term Deposits	55,550	88,689
	55,550	**88,689**
16. Other Revenue		
Sale of Publications	2,167	2,714
	2,167	**2,714**
17. Revenue from Industry Sponsorship		
Sponsorship from Industry	2,022,600	2,786,935
	2,022,600	**2,786,935**
18. Service Appropriation		
Appropriation Revenue	991,000	633,000
	991,000	**633,000**

Service appropriations are accrual amounts reflecting the net cost of services delivered. The appropriation revenue is comprised of a cash component.

19. Resources received free of charge

Resources received free of charge have been determined on the basis of the following estimates provided by agencies.

Department of Mines and Petroleum	32,918	31,500
	32,918	**31,500**

Where services have been received free of charge or for nominal cost, the Institute recognises revenues equivalent to the fair value of the services that can be reliably determined and which would have been purchased if not donated, and those fair values shall be recognised as expenses. Where the contributions of services are in the nature of contributions by owners the Institute makes an adjustment direct to equity.

Notes to the Financial Statements for the year ended 30 June 2010

	2010 $	2009 $

20. Cash and cash equivalents

Cash at bank	9,281	7,325
Cash on hand	200	200
	9,481	**7,525**

21. Restricted cash and cash equivalents

Research Grants	2,222,866	2,485,191
	2,222,866	**2,485,191**

Cash held in the account is to be used only for the purpose of providing grants for research and development of projects to grantees.

22. Receivables

Current		
Grants Receivable – Sponsorship	665,115	1,181,557
GST Receivable	112,096	117,593
	777,211	**1,229,150**
Non – Current		
Grants Receivable – Sponsorship	173,811	35,000
	173,811	**35,000**

There are no receivables individually determined as impaired at the end of the reporting period.
See also note 2(i) 'Receivables, 2(d) 'Sponsorship Revenue', and note 32 'Financial Instruments'

23. Other Current Assets

Accrued Interest on Short Term Investments	4,423	4,993
Prepayments	-	33,700
	4,423	**38,693**

24. Plant and equipment

Plant and equipment		
At cost	5,530	8,970
Accumulated depreciation	(138)	(7,909)
	5,392	**1,061**

Reconciliation of the carrying amounts of plant and equipment at the beginning and end of the reporting period are set out below:

Plant and equipment		
Carrying amount at start of year	1,061	1,856
Additions	5,531	-
Depreciation	(801)	(795)
Disposals	**(399)**	**-**
Carrying amount at end of year	**5,392**	**1,061**

25. Impairment of assets

There were no indications of impairment to plant and equipment assets at 30 June 2010.
The Institute held no goodwill or intangible assets or surplus assets at the end of the reporting period.

Notes to the Financial Statements
for the year ended 30 June 2010

	2010 $	2009 $
26. Payables		
Current		
Grants Payable – Research	368,872	702,960
Grants Payable – Scholarship	25,097	25,548
	393,969	**728,508**

See also note 2(j) 'Payables, 2(k) 'Research Grants', 2(l) 'Scholarships' and note 32 'Financial Instruments'

27. Other Current Liabilities

Accrued Expenses		
Institute Contract Staff fees	13,709	9,794
Superannuation	1,252	882
Printing and stationery	-	53
Committee expenses	21	41
Other miscellaneous	186	132
	15,168	**10,902**
Revenue received in advance		
Appropriation revenue received in advance	-	160,250
Grants Received in advance - Sponsorship	20,000	190,000
	20,000	**350,250**

28. Equity

Equity represents the residual interest in net assets of the Institute. The Government holds the equity interest in the Institute on behalf of the community.

Accumulated Surplus		
Balance at start of year	2,776,960	2,289,855
Result for the period	(12,913)	487,105
Balance at end of year	**2,764,047**	**2,776,960**

29. Notes to the Statement of Cash Flows

(a) Reconciliation of Cash

Cash at the end of the financial year as shown in the Statement of Cash Flows is reconciled to the related items in the Statement of Financial Position as follows:

Cash at bank	9,281	7,325
Cash on hand	200	200
Restricted Cash and cash equivalents	2,222,866	2,485,191
	2,232,347	**2,492,716**

Notes to the Financial Statements for the year ended 30 June 2010

(b) Reconciliation of Net Cost of Services to Net Cash Flows Used In Operating Activities

Net cost of services	(1,036,830)	(177,395)
Non-cash items:		
Resources received free of charge	32,917	31,500
Depreciation	801	795
Net loss on disposal of non-current assets	399	-
(Increase)/Decrease in assets:		
Accrued Interest	570	(4,263)
Grants Receivable – Sponsorship	377,630	8,933
Prepayments	33,700	(33,700)
Increase/(Decrease) in liabilities:		
Grants Payable -Research	(334,539)	673,508
Grants Payable –Scholarship		
Sponsorship received in advance	(170,000)	(295,386)
Accrued expenses	4,266	1,113
Net GST (receipts)/payments	15,606	12,765
Change in GST in receivables/payables	(10,109)	(85,791)
Net Cash used in operating activities	**(1,085,589)**	**132,079**

30. Commitments

At the end of the reporting period the Institute has $2,525,389 (2009 $3,286,519) of research grant commitments that are not recognised in the Income Statement. The Institute is obliged to make payment when the grantee has met the conditions of grant (see note 2k) and are payable as follows:

	2010 $	2009 $
Within 1 year	1,384,377	2,454,519
Later than 1 year but not later than 5 years	1,141,012	832,000
Total	**2,525,389**	**3,286,519**

These commitments are not inclusive of GST

31. Explanatory Statement

Significant variations between estimates and actual results for income and expenses are shown below. Significant variations are considered to be those greater than 10% and $2,000.

(i) Significant variances between estimated and actual result for 2010

	2010 Estimate $	2010 Actual $	Variation $
Administration costs	45,200	27,435	17,765
Interest revenue	100,000	55,550	44,450
Revenue from Industry Sponsorship	1,832,000	2,022,600	190,600

- Administration costs were lower than the estimate due to lower costs being incurred during the year than was expected.
- Interest revenue was lower than the estimate due to commercial interest rates falling significantly quicker than was expected.
- Revenue from Industry Sponsorship was higher than the estimate due to a greater value of projects being processed during the year than expected.

Notes to the Financial Statements for the year ended 30 June 2010

(ii) Significant variances between actual results for 2009 and 2010

	2010 $	2009 $	Variance $
Scholarships	49,960	26,555	23,405
Institute Contract Staff Fees	129,621	110,340	19,281
Board and Committee costs and allowances	42,929	34,828	8,101
Administration costs	27,435	17,919	9,516
Interest revenue	55,550	88,689	33,139
Revenue from Industry Sponsorship	2,022,600	2,786,935	764,335
Service Appropriation	991,000	633,000	358,000

- Scholarships – the variance is due to an increase in the number of scholarships being awarded during the year as a consequence of a high calibre of applicants.
- Board and Committee costs and allowances – the variance is due to an approved increase in fees.
- Institute Contract Staff Fees – the variance is due to higher project co-ordination costs than the previous year.
- Administration costs – the variance is due to an increase in costs such as advertising, audit fees, the review of the 'Conditions of Grant' and minor equipment.
- Interest revenue - the variance is due to significantly lower commercial interest rates than the previous year.
- Revenue from Industry Sponsorship – the variance is due to a lower number of projects being processed during the year.
- Service Appropriation – the variance is mainly due to the Exploration Incentive Scheme.

32. Financial Instruments

(a) Financial Risk Management Objectives and Policies

Financial instruments held by the Institute are cash and cash equivalents, restricted cash and cash equivalents, receivables and payables. The Institute has limited exposure to financial risks. The Institute's overall risk management program focuses on managing the risks identified below.

Credit Risk

Credit risk arises when there is the possibility of the Institute's receivables defaulting on their contractual obligations resulting in financial loss to the Institute.

The maximum exposure to credit risk at the end of the reporting period in relation to each class of recognised financial assets is the gross carrying amount of those assets inclusive of any provisions for impairment as shown in the table at Note 32(c) and Note 22 'Receivables'.

The Institute trades only with recognised, creditworthy third parties. The Institute has policies in place to ensure that sale of products and services are made to customers with an appropriate credit history. In addition, receivable balances are monitored on an ongoing basis with the result that the Institute's exposure to bad debts is minimal. At the end of the reporting period there are no significant concentrations of credit risk.

Allowance for impairment of financial assets is calculated based on objective evidence such as observable data in client credit ratings. For financial assets that are either past due or impaired, refer to Note 32 (c) 'Financial Instrument Disclosures'.

Notes to the Financial Statements for the year ended 30 June 2010

Liquidity risk

Liquidity risk arises when the Authority is unable to meet its financial obligations as they fall due. The Institute is exposed to liquidity risk through its trading in the normal course of business.

The Institute has appropriate procedures to manage cash flows including draw downs of appropriations by monitoring forecast cash flows to ensure that sufficient funds are available to meet commitments.

Market risk

Market risk is the risk that changes in market prices such as foreign exchange rates and interest rates will affect the Institute's income or the value of its holdings of financial instruments. The Institute does not trade in foreign currency and is not materially exposed to other price risks. The Institute's exposure to market risk for changes in interest rates relate primarily to Short-term investments comprised of term deposits and bank bills. The risk is managed by the Institute through diversification and variation in maturity dates.

(b) Categories of Financial Instruments

In addition to cash, the carrying amounts of each of the following categories of financial assets and financial liabilities at the end of the reporting period are as follows:

	2010 $	2009 $
Financial Assets		
Cash and cash equivalents	9,481	7,525
Restricted cash and cash equivalents	2,222,866	2,485,191
Loans and Receivables [(a)]	838,926	1,216,557
Financial Liabilities		
Financial liabilities measured at amortised cost	429,137	1,089,660

(a) The amount of Receivables excludes GST recoverable from the ATO (statutory receivable).

(c) Financial Instrument disclosures

Credit Risk and Interest Rate Risk Exposure

The following table details the Institute's maximum exposure to credit risk, interest rate exposures and the ageing analysis of financial assets. The Institute's maximum exposure to credit risk at the end of the reporting period is the carrying amount of the financial assets as shown below. The table discloses the ageing of financial assets that are past due but not impaired and impaired financial assets. The table is based on information provided to senior management of the Institute.

The Institute does not hold any collateral as security or other credit enhancements relating to the financial assets it holds.

The Institute does not hold any financial assets that had to have their terms renegotiated that would have otherwise resulted in them being past due or impaired.

Notes to the Financial Statements for the year ended 30 June 2010

Interest rate exposures and ageing analysis of financial assets [(a)]

		Interest rate exposure			Past due but not impaired		
	Weighted average effective interest rate	Carrying Amount	Variable Interest Rate	Non-interest Bearing	Up to 3 months	3 – 12 months	More than 1 year
	%	$	$	$	$	$	$
2010							
Cash and cash equivalents	0.20	9,481	9,481				
Restricted cash and cash equivalents	1.05	2,222,866	2,222,866				
Receivables		838,927		838,927		68,800	10,000
Other assets		4,423		4,423			
Total		**3,075,697**	**2,232,347**	**843,350**	**-**	**68,800**	**10,000**
2009							
Cash and cash equivalents	2.28	7,525	7,525				
Restricted cash and cash equivalents	2.75	2,485,191	2,485,191				
Receivables		1,216,557		1,216,557	52,500	21,500	
Other assets		38,693		38,693			
Total		**3,747,966**	**2,492,716**	**1,255,250**	**52,500**	**21,500**	**-**

(a) The amount of Receivables excludes GST recoverable from the ATO (statutory receivable).

Liquidity Risk

The following table details the contractual maturity analysis for financial liabilities. The contractual maturity amounts are representative of the undiscounted amounts at the end of the reporting period. The table includes interest and principal cash flows. An adjustment has been made where material.

Interest rate exposures and maturity analysis of financial liabilities [(a)]

		Interest rate exposure			Maturity dates		
	Weighted average effective interest rate	Carrying Amount	Variable Interest Rate	Non-interest Bearing	Up to 3 months	3 – 12 months	More than 1 year
	%	$	$	$	$	$	$
Financial Liabilities							
2010							
Payables	-	393,969		393,969	393,969		
Other Liabilities	-	35,168		35,168	35,168		
Total		**429,137**		**429,137**	**429,137**	**-**	**-**
2009							
Payables	-	728,508		728,508	728,508		
Other Liabilities	-	361,152		361,152	361,152		
Total		**1,089,660**		**1,089,660**	**1,089,660**	**-**	**-**

Notes to the Financial Statements for the year ended 30 June 2010

Interest rate sensitivity analysis

The following table represents a summary of the interest rate sensitivity of the Institute's financial assets and liabilities at the end of the reporting period on the surplus for the period and equity for a 1% change in interest rates. It is assumed that the change in interest rates is held constant throughout the reporting period.

	Carrying Amount	-1% change		+1% Change	
		Profit	Equity	Profit	Equity
	$	$	$	$	$
2010					
Financial Assets					
Cash and cash equivalents	9,481	(95)	(95)	95	95
Restricted cash and cash equivalents	2,222,866	(22,229)	(22,229)	22,229	22,229
2009					
Financial Assets					
Cash and cash equivalents	7,525	(75)	(75)	75	75
Restricted cash and cash equivalents	2,485,191	(24,852)	(24,852)	24,852	24,852

Fair values

All financial assets and liabilities recognised in the Statement of Financial Position, whether they are carried at cost or fair value, are recognised at amounts that represent a reasonable approximation of fair value unless otherwise stated in the applicable notes.

33. Remuneration of members of the Accountable Institute and Senior Officers

Remuneration of Members of the Accountable Institute

The number of members of the Accountable Institute whose total of fees, salaries, superannuation, non-monetary benefits and other benefits for the financial year, fall within the following bands are:

			2010	2009
$ 0	-	$ 10,000	3	2
$ 10,001	-	$ 20,000	1	1

The total remuneration of the members of the Accountable Institute is:

$	$
40,700	**32,550**

No amounts were paid or become payable to any superannuation fund for the financial year for any of the members of the Accountable Institute.

No members of the Accountable Institute are members of the Pension Scheme.

Notes to the Financial Statements for the year ended 30 June 2010

Remuneration of Senior Officers

The number of Senior Officers other than senior officers reported as members of the Accountable Institute whose total fees, salaries, superannuation, non-monetary benefits and other benefits for the financial year, fall within the following bands are:

			2010	2009
$ 0	-	$20,000	1	-
$ 30,001	-	$ 40,000	1	-
$ 40,001	-	$ 50,000	-	1

The total remuneration of Senior Officers of the Accountable Institute is:

	$	$
	50,089	**42,674**

The total remuneration includes the superannuation expense incurred by the Institute in respect of Senior Officers other than senior officers reported as members of the Accountable Institute.

No Senior Officers are members of the Pension Scheme.

34. Remuneration of Auditor

Remuneration payable to the Auditor General for the financial year is as follows:

	2010 $	2009 $
Auditing the accounts, financial statements and performance indicators	14,300	13,000
	14,300	**13,000**

The expense is included at note 11 ‘Administration expenses’

35. Supplementary Information

The Institute has no contingent liabilities and contingent assets, or any related or affiliated bodies.

There were no events occurring after the end of the reporting period, or write-offs or losses through theft, defaults and other causes.

No gifts of public property were provided by the Institute.

36. Schedule of Income and Expenses by Service

Treasurer's Instruction 1101(9) requires that statutory authorities provide segment information in the form of services.

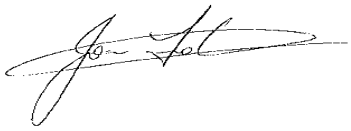
MERIWA has one sole activity (or service) which is to finance and coordinate minerals and energy research.

No schedule is prepared as this information is reported in the Statement of Comprehensive Income.

Certification of Financial Statements
for the year ended 30 June 2010

The accompanying financial statements of the Minerals and Energy Research Institute of Western Australia have been prepared in compliance with the provisions of the Financial Management Act 2006 from proper accounts and records to present fairly the financial transactions for the financial year ended 30 June 2010 and the financial position as at 30 June 2010.

At the date of signing we are not aware of any circumstances which would render the particulars included in the financial statements misleading or inaccurate.



P Lockyer	A Webster	J Fortuna
CHAIRMAN,	DIRECTOR	CHIEF FINANCE OFFICER
BOARD OF DIRECTORS		

13 September 2010

Opinion of the Auditor General on Financial Statements for the year ended 30 June, 2010

Auditor General

INDEPENDENT AUDIT OPINION

To the Parliament of Western Australia

MINERALS AND ENERGY RESEARCH INSTITUTE OF WESTERN AUSTRALIA
FINANCIAL STATEMENTS AND KEY PERFORMANCE INDICATORS
FOR THE YEAR ENDED 30 JUNE 2010

I have audited the accounts, financial statements, controls and key performance indicators of the Minerals and Energy Research Institute of Western Australia.

The financial statements comprise the Statement of Financial Position as at 30 June 2010, and the Statement of Comprehensive Income, Statement of Changes in Equity and Statement of Cash Flows for the year then ended, a summary of significant accounting policies and other explanatory Notes.

The key performance indicators consist of key indicators of effectiveness and efficiency.

Board's Responsibility for the Financial Statements and Key Performance Indicators
The Board is responsible for keeping proper accounts, and the preparation and fair presentation of the financial statements in accordance with Australian Accounting Standards and the Treasurer's Instructions, and the key performance indicators. This responsibility includes establishing and maintaining internal controls relevant to the preparation and fair presentation of the financial statements and key performance indicators that are free from material misstatement, whether due to fraud or error; selecting and applying appropriate accounting policies; making accounting estimates that are reasonable in the circumstances; and complying with the Financial Management Act 2006 and other relevant written law.

Summary of my Role
As required by the Auditor General Act 2006, my responsibility is to express an opinion on the financial statements, controls and key performance indicators based on my audit. This was done by testing selected samples of the audit evidence. I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my audit opinion. Further information on my audit approach is provided in my audit practice statement. This document is available on the OAG website under "How We Audit".

An audit does not guarantee that every amount and disclosure in the financial statements and key performance indicators is error free. The term "reasonable assurance" recognises that an audit does not examine all evidence and every transaction. However, my audit procedures should identify errors or omissions significant enough to adversely affect the decisions of users of the financial statements and key performance indicators.

Minerals and Energy Research Institute of Western Australia
Financial Statements and Key Performance Indicators for the year ended 30 June 2010

Audit Opinion
In my opinion,

(i) the financial statements are based on proper accounts and present fairly the financial position of the Minerals and Energy Research Institute of Western Australia at 30 June 2010 and its financial performance and cash flows for the year ended on that date. They are in accordance with Australian Accounting Standards and the Treasurer's Instructions;

(ii) the controls exercised by the Institute provide reasonable assurance that the receipt, expenditure and investment of money, the acquisition and disposal of property, and the incurring of liabilities have been in accordance with legislative provisions; and

(iii) the key performance indicators of the Institute are relevant and appropriate to help users assess the Institute's performance and fairly represent the indicated performance for the year ended 30 June 2010.

GLEN CLARKE
ACTING AUDITOR GENERAL
13 September 2010

MERIWA

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