



**MATRIX METALS**  
LIMITED

# Quarterly Activities Report

for the quarter ended  
30 September 2004

MATRIX METALS LIMITED  
ACN 082 593 235

[www.matrixmetals.com.au](http://www.matrixmetals.com.au)

## CONTENTS

1.0	HIGHLIGHTS .....	3
2.0	EXPLORATION REPORT.....	4
3.0	MT WATSON METALLURGICAL TESTWORK.....	8
4.0	WHITE RANGE BANKABLE FEASIBILITY STUDY.....	9
5.0	EXPENDITURE .....	10
6.0	OUTLOOK FOR THE DECEMBER 2004 QUARTER .....	10
7.0	COMPANY INFORMATION.....	14

## LIST OF FIGURES

### MT WATSON DEPOSIT

FIGURE 1: MIMDAS CONDUCTORS AND PLANNED DIAMOND DRILLING .....	4
FIGURE 2: MIMDAS ANOMALY AND DRILLHOLE MWRCD03 .....	6
FIGURE 3: MT WATSON RESOURCE AND EXPLORATION EXTENSION AREAS .....	8

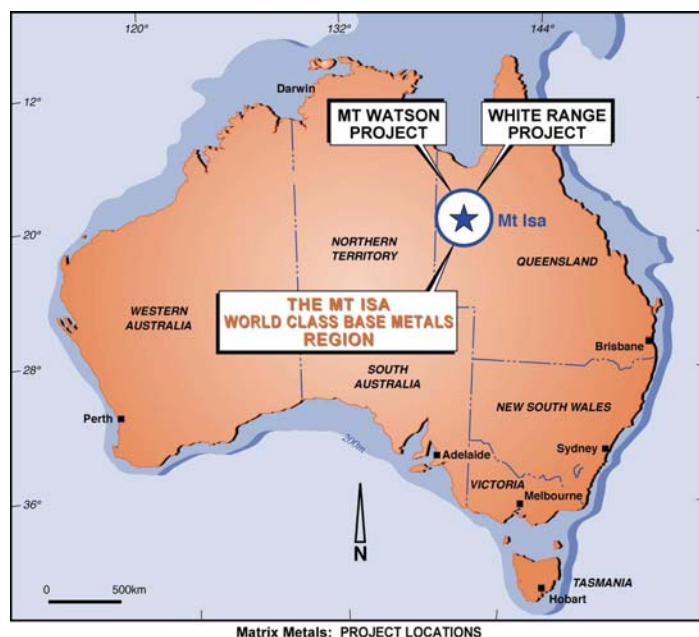
## LIST OF TABLES

### MT WATSON DEPOSIT

TABLE 1: COPPER RESOURCES JULY 2004 .....	7
TABLE 2: METALLURGICAL TESTWORK PROGRAM, SUMMARY OF RESULTS .....	9
TABLE 3: DIAMOND DRILLHOLE MWRCD03, DETAILS OF COPPER INTERSECTIONS.....	11
TABLE 4: DIAMOND DRILLHOLE MWRCD03, DRILLHOLE DETAILS AND LOCATION .....	11

### MT EARL DEPOSIT

TABLE 5: RC DRILLING PROGRAM AUGUST 2004, DETAILS OF COPPER INTERSECTIONS	12
TABLE 6: RC DRILLING PROGRAM AUGUST 2004, DRILLHOLE DETAILS AND LOCATION	13



The Mt Watson and White Range Projects are contained within a tenement position totalling approximately 3,000 square kilometres. The tenements are located in the world class Mt Isa base metal province of North West Queensland.

The region hosts a number of world class base metal mines offering Matrix the potential for ongoing and significant exploration success.

## **1.0 HIGHLIGHTS**

### **White Range Feasibility Study**

The White Range Project Bankable Feasibility Study (BFS) continues to progress and nears completion. The Company anticipates successful completion of the BFS in December 2004.

### **MIMDAS Geophysical Survey Identifies Large Anomaly**

In July 2004 it was reported that a "MIMDAS" geophysical survey at Mt Watson had identified a major geophysical anomaly underneath the existing leachable copper resource.

### **196 metre Wide Primary Sulphide Intersection at Mt Watson**

In September 2004 it was reported that a drillhole targeting the eastern end of a strong anomaly had intersected visible chalcopyrite copper mineralisation commencing at 187 metres down hole, which continued as intermittent veins and disseminations to a downhole depth of 383 metres. Overall, the drillhole, MWRCD03, reported a mineralised intersection of 196 metres @ 0.32% Cu. The sulphide exploration program continues.

### **Mt Watson Leachable Resource Increased to 6.54 million tonnes @ 1.0% Copper**

In July 2004 it was reported that the leachable copper component of the Mt Watson resource had increased to 6.54 million tonnes @ 1.0% Copper. This represented an increase in the contained leachable copper metal from 26,000 tonnes to 65,000 tonnes.

### **Initial Primary Sulphide Resource estimated at Mt Watson**

An initial primary sulphide resource has been estimated at 1.49 million tonnes @ 1.07% Copper.

### **Total Copper Resource at Mt Watson**

Total Mt Watson oxide, transitional and sulphide copper resource is currently 8.03 million tonnes @ 1.01% copper.

### **Positive Metallurgical Testwork Results**

In July 2004 it was reported that a metallurgical column testwork program on Mt Watson oxide resources reported rapid and high total recovery rates plus very low acid consumption.

### **Continuing Positive Mt Earl Oxide Drilling Results**

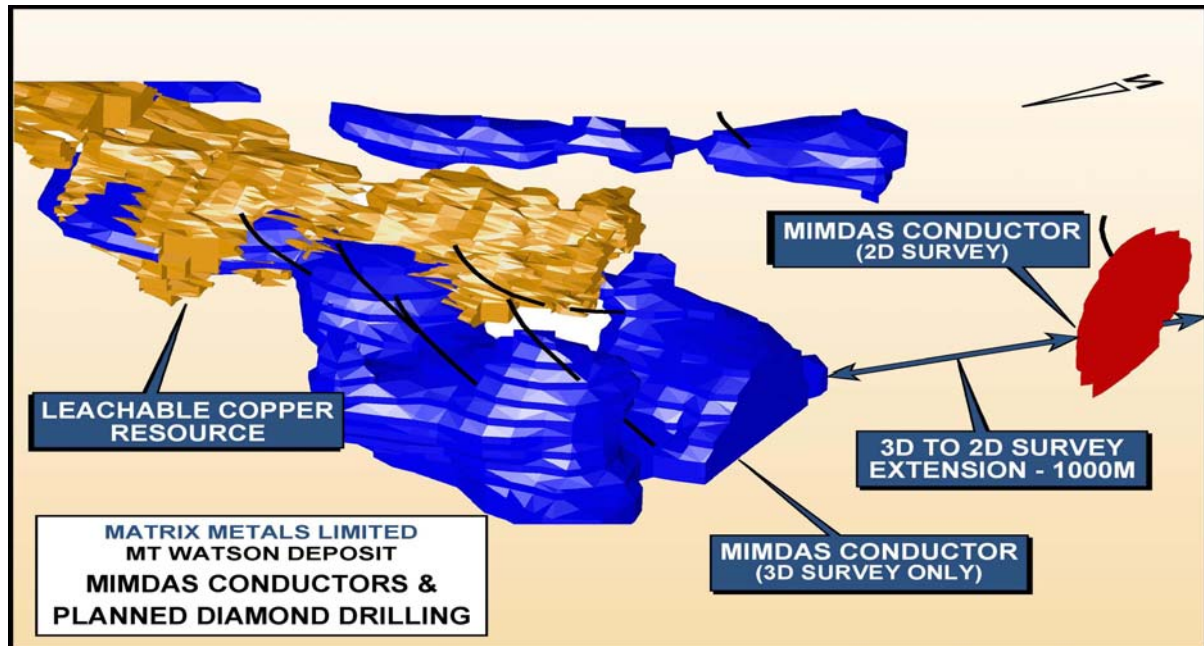
In October 2004 the results of a second scout-drilling program of 23 holes for 1,452m at Mt Earl was announced. The program reported the following significant intersections - MERC18: 3m @1.22 % Cu and 14m @ 1.24 % Cu and 3m @ 2.42 % Cu and 24m @ 0.82 % Cu, MERC21: 16m @1.17 % Cu, MERC31: 3m@1.00 % Cu and 16m @ 1.46 % Cu, MERC32: 9m @ 0.86 % Cu.

### Mt Watson Deposit ~ Geophysical Survey Identifies Major Anomaly

In July 2004 the Company announced that a "MIMDAS" geophysical survey completed at Mt Watson has identified a major geophysical anomaly underneath the existing leachable copper resource. A diamond drilling program comprising 7 holes for 2,800 metres to test the anomaly commenced in late July 2004. A representation of the anomaly in the Western Zone is presented in Figure 1.

#### MT WATSON DEPOSIT

**FIGURE 1: MIMDAS CONDUCTORS AND PLANNED DIAMOND DRILLING**



The MIMDAS survey was commissioned based on geological concepts supporting the possible existence of a primary sulphide body that were developed based a series of primary sulphide mineralised intercepts at Mt Watson including the "underground mining ore grade and width" intercept in drillhole MWRC130 of 37.3m @ 2.18% copper, including 20m @ 3.03%, which includes 8m @ 4.89% Cu.

The MIMDAS survey was successful with the following results and conclusions reported:

1. A large geophysical anomaly, being a strongly conductive body, exists from section line 9400E (the section line for the MWRC130 intercept) extending some 1,400m to the western end of the survey at section line 8,000E. The anomaly also extends to the east of the 9,400 section line, but with less intensity. An earlier "GEOTEM" airborne electro magnetic survey flown several years ago by a third party detected this conductor and also identified its existence over this length.
2. The conductor correlates very closely with the recently drilled mineralisation, specifically the drill confirmed primary sulphide mineralisation in MWRC130 on section line 9,400E at the eastern end of the conductor. The conductor is also confirmed up dip by its correlation with the oxide/transitional mineralisation on other sections to the west of 9,400E.

3. The correlation of the anomaly with the drilled primary sulphide copper mineralisation, indicates that the conductor may be caused by chalcopyrite mineralisation rather than the alternative of being a pyrite or graphite conductor.
4. A second strong anomaly was detected in two dimensional lines to the north west of the main anomaly. Further investigation of this anomaly by field mapping is planned.
5. A third anomaly is present to the south of the main anomaly. Its source is not presently understood but analysis of shallow drillholes in the area that report increased grade in the bottom of these holes, suggest a possible mineralisation origin, and hence the potential significance of this anomaly. This anomaly will also be further investigated.

A diamond core drilling program to test the anomalies commenced in late July 2004.

### **196 m Wide Primary Sulphide Intersection at Mt Watson**

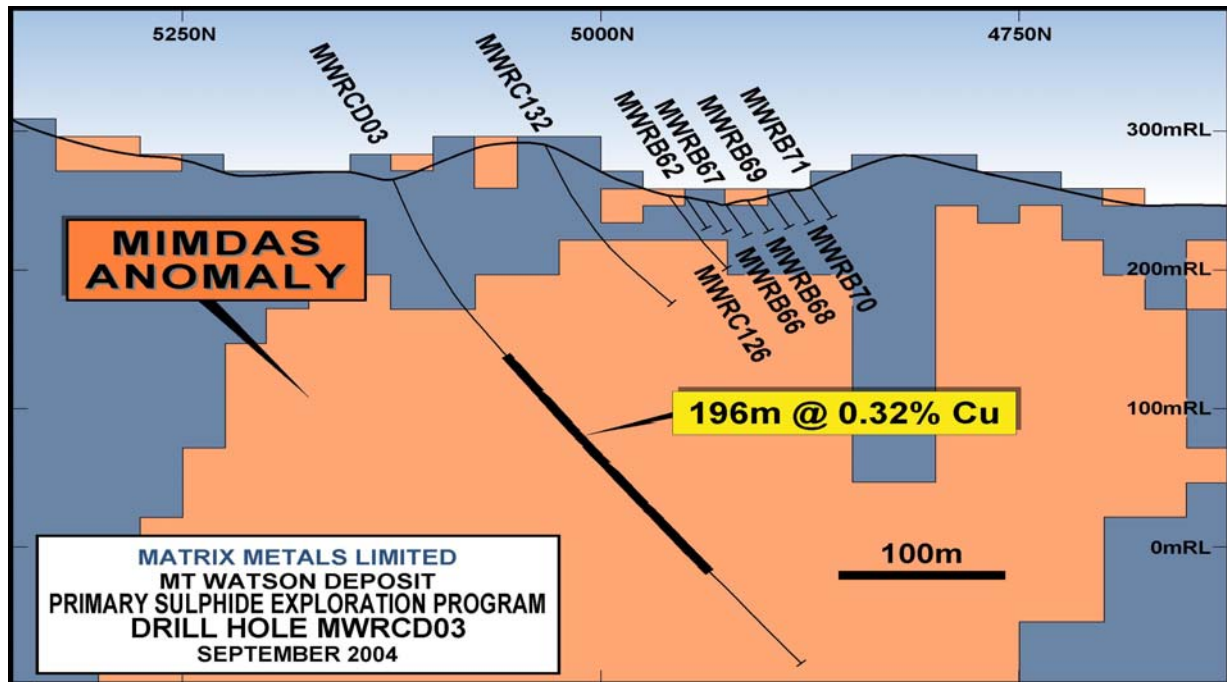
The sulphide drilling and exploration program continues at Mt Watson.

In early September 2004, the Company announced that the initial diamond core drilling program targeted the eastern end of a strong conductor defined by the MIMDAS survey in the vicinity of the previous primary sulphide intersections. A drillhole, MWRCD03, reported visible chalcopyrite copper mineralisation commencing at 187 metres down hole with the mineralisation continuing as intermittent veins and disseminations to a downhole depth of 383 metres. Overall, the drillhole reported a mineralised intersection of 196 metres @ 0.32% Cu (approximate true width of 180m). Within this intercept, the following widths and grades of mineralisation are highlighted:

2.0m	@	0.75%	Cu from 74m
3.0m	@	1.00%	Cu from 187m
28.2m	@	0.75%	Cu from 197m
1.0m	@	8.52%	Cu from 254m
4.3m	@	0.71%	Cu from 295m

Figure 2 presents a diagrammatic representation of the MWRCD03 drill intercept on section and its relationship to the MIMDAS anomaly. The previous mineralised oxide copper drillholes on the section are also shown.

**MT WATSON DEPOSIT**  
**FIGURE 2: MIMDAS ANOMALY AND DRILLHOLE MWRCD03**



**Mt Watson Leachable Copper Resource Increased**

On 20 July, the Company announced the re-estimation of the copper resource at its 100% owned Mt Watson Project following the drilling programs completed during the period February to June 2004.

Highlights included:

- The leachable copper component of the Mt Watson resource increased to 6.54 million tonnes @ 1.0% copper. This represented an increase in the contained leachable copper metal from 26,000 tonnes to 65,000 tonnes.
- The leachable component of the copper resource forms the foundation for an SX/EW development at Mt Watson. A bankable feasibility study is scheduled to commence before the end of the year.
- Importantly, the drilling has confirmed the continuity of the deposit and has now linked the previously identified semi discontinuous resource areas. The deposit continues to remain open to the west, east and at depth.
- The total Mt Watson copper resource, which now includes a primary sulphide resource, has increased by in excess of 300% for a total combined oxide, transitional and sulphide resource of 8.03 million tonnes @ 1.01% copper.

The significant increase in the Mt Watson resource, the confirmation of the strong continuity of the deposit and the fact that the resource remains open both along strike and at depth all highlight the ongoing success and potential of Mt Watson and the surrounding areas.

The re-estimated Mt Watson resource that now comprises oxide, transitional and primary zones, is a result of the successful drilling programs completed during the period February to June 2004. The resource now extends over a continuous strike length in excess 1,500 metres, to a depth of 180 metres and remains open to the west, east and at depth.

### Initial Primary Sulphide Resource estimated at Mt Watson

In addition to the upgrade of the leachable resource, an initial primary sulphide resource has been estimated at 1.49 million tonnes @ 1.07% Copper. This results in the total Mt Watson copper resource being increased by in excess of 300% for a total combined oxide, transitional and sulphide resource of 8.03 million tonnes @ 1.01% copper.

The distribution of resources across the various ore types and JORC code classifications are presented in the following table.

**MT WATSON PROJECT**  
**TABLE 1: COPPER RESOURCES JULY 2004**

Ore Type	Confidence	Millions of Tonnes	Cu%
<b>Oxide</b>	Measured	0.74	1.16
	Indicated	2.03	1.01
	Inferred	0.11	0.95
<b>Oxide Total</b>		2.88	1.05
<b>Transitional</b>	Measured	0.17	0.84
	Indicated	2.97	0.96
	Inferred	0.52	0.94
<b>Transitional Total</b>		3.66	0.95
<b>Primary</b>	Measured	0.00	
	Indicated	0.44	1.08
	Inferred	1.05	1.07
<b>Primary Total</b>		1.49	1.07
<b>Measured Total</b>		0.91	1.10
<b>Indicated Total</b>		5.44	0.99
<b>Inferred Total</b>		1.68	1.02
<b>Grand Total</b>		8.03	1.01

#### Notes

Updated estimates are based on Multiple Indicator Kriging

Estimates are at 0.5% Cu cut-off

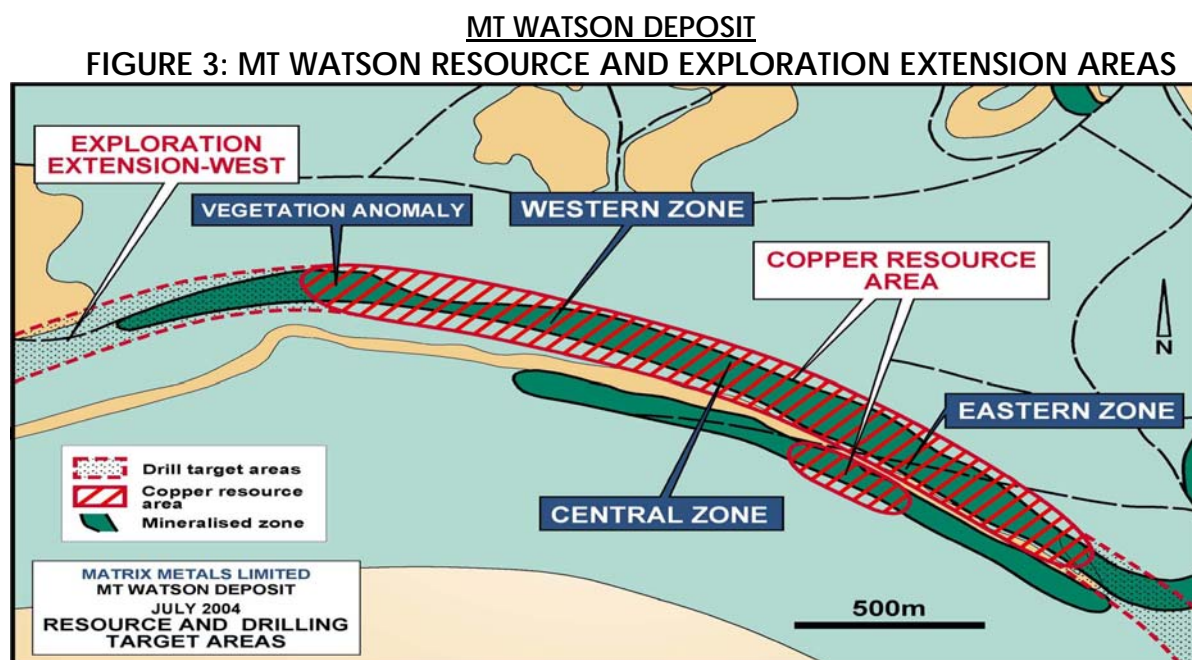
Drilling methods are RC, diamond coring and open hole percussion

Bulk density is based on pycnometer and bulk core determinations

Ore type is based on acid and cyanide soluble assaying

Assay is by AAS

The attached diagram presents a general layout of the Mt Watson area showing the resource area and strike length of the deposit and the now extended target areas to the west and east.



### White Range Exploration

Ongoing geological activities related to completion of the feasibility study were carried out at White Range during the period.

### 3.0 MT WATSON METALLURGICAL TESTWORK

Following the announcement of an increase in the leachable copper resource at Mt Watson to 6.54 million tonnes @ 1.0 % Cu for 65,000 tonnes of copper metal, the results of a metallurgical column test-work program on Mt Watson ore were also announced.

The column testwork program reported rapid and high total recovery rates plus very low acid consumption. With the quantum of and rates of copper recovery and acid consumption being the key drivers of profitable solvent extraction/electrowinning (SX/EW) copper cathode production, the reported results are very positive in regard to the likely economics of the Mt Watson project.

The column testwork program tested a range of oxide ores from the Eastern zone of the deposit. The results reported were exceptional, with the key outcomes being:

- total copper recoveries were very high;
- copper recovery rates were exceptionally high; and
- acid consumption was very low

The testwork was completed following the initial discovery of Mt Watson, and at the time when Matrix began to develop confidence that a significant resource would

be delineated at Mt Watson. The Mt Watson resource now forms the foundation of an SX/EW project, and hence the results are now of considerable significance. The highly encouraging testwork results will support a rapid and confident progression of the Mt Watson project into the bankable feasibility study phase.

Testwork results of this nature have not been experienced on previous ore treated at the Mt Cuthbert Operation. The positive results are likely driven by the host rocks and characteristics of the Mt Watson deposit, which is the first deposit of this type to be systematically tested in the Western Succession area of the Mt Isa Inlier.

The testwork program comprised three test columns which ran for 70 days and reported total copper recoveries in excess of 93 % in all columns with recoveries in excess of 76 % in the first 20 days.

Overall results for the column test-work program are summarised in the table below:

**MT WATSON DEPOSIT**  
**TABLE 2: METALLURGICAL TESTWORK PROGRAM, SUMMARY OF RESULTS**

Column	Copper Recovery, %	Net Acid Consumption, kg/tonne ore	Time under irrigation, Days
MW 1	95	-5.4	70
MW 1	79	-2.7	18
MW 2	93	-2.7	70
MW 2	76	-0.2	21
MW 3	96	-6.2	70
MW 3	78	-2.1	18

As noted above, such rapid recovery rates and high levels of total copper recoveries have not been experienced on ore previously treated at the Mt Cuthbert Operation. In addition, initial interpretations of the Mt Watson results indicate acid consumptions to be exceptionally low relative to that previously experienced.

The testwork reported relates to oxide samples from the eastern zone of the deposit. Mineralogical assessments across all oxide zones defined to date, including the Central zone and the Western zone, confirm all the oxide resources are hosted in the same lithologies and it would therefore be expected that the metallurgical performance reported to date would be repeated across all oxide zones comprising the Mt Watson deposit. This will be confirmed by a planned feasibility study for Mt Watson.

#### **4.0 WHITE RANGE BANKABLE FEASIBILITY STUDY**

##### **Study Nears completion**

The Bankable Feasibility Study (BFS) for the White Range Project is progressing. The Company anticipates successful completion of the BFS in December 2004.

The Project consists of four deposits being Greenmount, Kuridala, Vulcan and McCabe. The BFS proposes a heap leach solvent extraction/electrowinning

(SX/EW) processing facility to be established at the Greenmount deposit, producing 15,000 tpa of copper cathode. The SX/EW plant is made up largely from the existing Mt Cuthbert plant, together with plant components previously purchased from the Great Australia Mine site and some new components.

### **Project Financing**

Negotiations are continuing with four banks for the proposed bank debt component of the project funding.

### **Offtake Arrangements**

Negotiations are also continuing with several parties for an off-take agreement which will include a project funding component.

## **5.0 EXPENDITURE**

Expenditure on exploration and feasibility activities was \$1,989,451.

Expenditure on production activities was \$154,172.

No production activities occurred during the quarter, the expenditure described above is for care and maintenance activities.

## **6.0 OUTLOOK FOR THE DECEMBER 2004 QUARTER**

The Board of Directors has approved a budget of up to \$1,700,000 for exploration and development expenditure during the December 2004 quarter. The budget comprises drilling and field work related to the following activities, plus expenditure to complete the White Range Bankable Feasibility Study.

### **Mt Watson Deposit & Mt Earl & Tewinga Prospects Exploration**

Drilling targeting the delineation of additional leachable copper resources at Mt Watson will continue throughout the quarter.

Subsequent to the successful results from the second scout drilling program at Mt Earl, a resource delineation program is scheduled to commence during the quarter. In addition, an initial scout drilling program is planned for the Tewinga prospect. Tewinga is located 4 kilometres north of Mt Watson and demonstrates strong oxide copper prospectivity but to date has not been drill tested.

Upon completion of the current primary sulphide drilling program at Mt Watson, a program of interpretation, including the incorporation of the results of the major mapping program carried out over the past months, will proceed. The encouraging results to date, promote a positive outlook for ongoing primary sulphide exploration at Mt Watson and in the region overall.

### **White Range Exploration**

Exploration at White Range area will continue. Prospects to be targeted include Greenmount North, Greenmount South, Desolation and Vulcan Extended. Evaluations will also proceed to determine the sulphide zone potential within the overall White Range Project area.

Yours Faithfully



Andrew Chapman  
Chief Executive Officer

The information in this report that relates to Mineral Resources and Ore Reserves is based on information compiled by Messrs Phil Frank and Bob Dennis. Mr Frank is a Fellow of the Australasian Institute of Mining and Metallurgy and is employed by PH Frank and Associates and Mr Bob Dennis is a Member of the Australasian Institute of Mining and Metallurgy and a full-time employee of the Company. Both Messrs Frank and Dennis have sufficient experience which is relevant to the style of mineralisation and the type of deposit under consideration and to the activity which they are undertaking to qualify as a Competent Person as defined in the 1999 edition of the "Australasian Code for Reporting of Mineral Resources and Ore Reserves". Messrs Frank and Dennis, each consents to the inclusion in the report of the matters based on information in the form and context in which it appears.

**MT WATSON DEPOSIT**

**TABLE 3: DIAMOND DRILLHOLE MWRCD03, DETAILS OF COPPER INTERSECTIONS**

(Cut-off of 0.5% Cu, including up to 2m internal dilution)

Hole No	Intersection					
MWRCD03		2.0	m @	0.75	% Cu	from 74m
	and	0.4	m @	1.09	% Cu	from 159.7m
	and	3.0	m @	1.00	% Cu	from 187m
	and	28.2	m @	0.75	% Cu	from 197m
	and	1.2	m @	0.00	% Cu	from 101m
	and	1.0	m @	8.52	% Cu	from 254m
	and	1.3	m @	0.43	% Cu	from 291m
	and	4.3	m @	0.71	% Cu	from 295m
	and	1.0	m @	0.60	% Cu	from 334m

Assays from half NQ & HQ core, by AAS

**MT WATSON DEPOSIT**

**TABLE 4: DIAMOND DRILLHOLE MWRCD03, DRILLHOLE DETAILS AND LOCATION**

Hole No	Northing	Easting	RL	Dip	Azimuth (mag)	Hole Depth (m)
MWRCD03	5124.0	9258.3	265.1	-70	198.3	456

**MT EARL DEPOSIT**

**TABLE 5: RC DRILLING PROGRAM AUGUST 2004, DETAILS OF COPPER INTERSECTIONS**

(Cut-off 0.5% Cu, including up to 2m internal dilution)

Area	Hole	Intercept				
<b>Rita Grid</b>	MERC 18	3	m @	1.22	% Cu	from 0m
	And	14	m @	1.24	% Cu	from 8m
	And	1	m @	0.63	% Cu	from 27m
	And	1	m @	0.51	% Cu	from 32m
	And	2	m @	0.68	% Cu	from 38m
	And	3	m @	2.42	% Cu	from 43m
	And	24	m @	0.82	% Cu	from 50m
	MERC 19	1	m @	0.70	% Cu	from 47m
	MERC 21	7	m @	0.51	% Cu	from 1m
	And	9	m @	0.76	% Cu	from 13m
	And	1	m @	0.75	% Cu	from 26m
	And	16	m @	1.17	% Cu	from 62m
	MERC 24	1	m @	0.93	% Cu	from 20m
	MERC 25	1	m @	0.53	% Cu	from 7m
	And	1	m @	0.72	% Cu	from 20m
	MERC 26	1	m @	0.52	% Cu	from 38m
	And	1	m @	0.98	% Cu	from 54m
	MERC 37	1	m @	0.61	% Cu	from 17m
	And	4	m @	0.71	% Cu	from 25m
	And	2	m @	0.91	% Cu	from 48m
<b>Sally Grid</b>	MERC 28	3	m @	0.55	% Cu	from 8m
	And	2	m @	0.51	% Cu	from 15m
	And	1	m @	0.65	% Cu	from 27m
	MERC 29	3	m @	0.56	% Cu	from 22m
	MERC 30	1	m @	0.57	% Cu	from 8m
	MERC 31	3	m @	1.00	% Cu	from 6m
	And	16	m @	1.46	% Cu	from 29m
	MERC 32	9	m @	0.86	% Cu	from 53m
	MERC 33	1	m @	1.00	% Cu	from 0m
	And	5	m @	0.64	% Cu	from 3m
	MERC 34	11	m @	1.02	% Cu	from 57m
	MERC 36	3	m @	0.61	% Cu	from 43m
<b>Marli Grid</b>	MERC 17	1	m @	1.15	% Cu	from 65m
	and	1	m @	0.78	% Cu	from 76m
	and	1	m @	0.78	% Cu	from 79m

**MT EARL DEPOSIT**

**TABLE 6: RC DRILLING PROGRAM AUGUST 2004, DRILLHOLE DETAILS AND LOCATION**

<b>Hole</b>	<b>Northing</b>	<b>Easting</b>	<b>RL</b>	<b>Depth</b>	<b>Dip</b>	<b>Azim (mag)</b>
MERC 17	7,821,204	386,330	136	0	-60	282.3
MERC 18	7,821,134	386,133	151	0	-60	132.3
MERC 19	7,821,150	386,119	151	0	-60	132.3
MERC 20	7,821,086	386,076	149	0	-60	132.3
MERC 21	7,821,069	386,091	140	0	-60	132.3
MERC 22	7,821,028	385,962	142	0	-60	97.3
MERC 23	7,821,030	385,946	139	0	-60	97.3
MERC 24	7,821,018	386,171	132	0	-60	222.3
MERC 25	7,821,008	386,160	134	0	-60	222.3
MERC 26	7,820,844	386,271	131	0	-60	243.3
MERC 27	7,820,798	386,214	131	0	-60	332.3
MERC 28	7,820,750	386,286	136	0	-60	152.3
MERC 29	7,820,744	386,261	137	0	-60	152.3
MERC 30	7,820,729	386,267	135	0	-60	152.3
MERC 31	7,820,722	386,162	135	0	-60	152.3
MERC 32	7,820,736	386,156	133	0	-60	152.3
MERC 33	7,820,710	386,151	138	0	-60	152.3
MERC 34	7,820,745	386,127	133	0	-60	152.3
MERC 35	7,820,704	386,116	139	0	-60	152.3
MERC 36	7,820,718	386,110	138	0	-60	152.3
MERC 37	7,820,895	385,958	137	0	-60	222.3
MERC 38	7,820,874	385,933	133	0	-60	222.3
MERC 39	7,821,207	386,355	136	0	-60	222.3

**COMPANY INFORMATION****DIRECTORS**

**David J. Humann**  
Chairman

**Andrew P. Chapman**  
Managing Director & Chief  
Executive Officer

**Ian C. Burvill**  
Non Executive Director

**Shane Mc Bride**  
Executive Director, Chief  
Financial Officer and Company  
Secretary

**PRINCIPAL OFFICE**

1131 Hay Street  
West Perth WA 6005  
PO Box 1036,  
West Perth WA 6872  
Telephone: (08) 9486 7100  
Facsimile: (08) 9486 7300  
Email: [email@matrixmetals.com.au](mailto:email@matrixmetals.com.au)  
Website: [www.matrixmetals.com.au](http://www.matrixmetals.com.au)

**ASX Code: MRX**