**COMBINED TECHNICAL REPORT** 

**FINAL REPORT** 

EL 9518 "JERVOIS"

MCS 13-28, MLS 10, 16, 17, 23,51-57, 61, 62, 90

Northern Territory

Final Report for the year ending 2<sup>nd</sup> October 2006

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#### EL 9518 "JERVOIS" Northern Territory Annual Report for the Year Ending 2nd October 2006

#### SUMMARY

#### AIM

To explore and evaluate the potential for economic base and precious metal mineralisation.

#### **OBJECT of REPORT**

To document exploration activities and results achieved on Exploration Licence 9518 "Jervois" and to report these to the Department of Primary Industries, Fisheries and Mines (DPIFM), Northern Territory. Information from adjacent leases and claims is also included.

#### LOCATION

EL 9518 is located 380 kilometres north east of Alice Springs on the Huckitta 1: 250 000 map sheet (SF53 -11), and surrounds the mineral leases which cover the gossanous outcrop of the Jervois Mine and its extensions (Figure 1).

#### TENURE

EL 9518 "Jervois" was granted to C. Savage on 1st October 1996 for a period of six years. Under compulsory partial surrender provisions, 50% of the tenement was relinquished on the 30<sup>th</sup> September 1998. The tenement was subsequently transferred to M. Ruane on the 19<sup>th</sup> July 1999, who applied for a deferment of relinquishment until 2nd October 2000, which was approved by the DPIFM. M. Ruane then entered into an option to acquire agreement with Britannia Gold NL.

On 5<sup>th</sup> August 1999, M.I.M. Exploration Pty Ltd entered into a Joint Venture agreement with Britannia Gold NL, agreeing to act as manager and operator of the Jervois Project, which incorporates EL 9518 "Jervois."

M.I.M. Exploration withdrew from the joint venture in 2002. EL 9518 was transferred to Reward Minerals Limited which successfully raised \$3 million through public subscription and listed on the ASX in April 2004.

#### PRECIS

During this reporting year Reward Minerals completed a substantial drilling program focused on the known mineralisation within the smaller leases contained within EL 9518.

#### EL 9518 "JERVOIS" Northern Territory

#### Annual Report for the Year Ending 2nd October 2006

#### 1. INTRODUCTION

Exploration Licence 9518 "Jervois" (EL 9518), is located in the Proterozoic terrain of the Arunta inlier. The tenement surrounds the mineral leases which cover the gossanous outcrop of the Jervois Mine and its extensions along strike (MCS 13-18,MLS 10,16,17,23,51-57,61,62,90) and the water holdings over Lake Petrocarb (HLDS 19-21). EL 9518 has a total area of approximately 58 km2.

MIM Exploration Pty Ltd (MIMEX) farmed into the tenement in August 1999 and for 3 years was both manager and operator of the Joint Venture project. Exploration conducted by MIMEX focused on finding structurally controlled high grade Isa copper and Broken Hill base metals mineralisation, as well as Fe-oxide associated copper -gold mineralisation.

The purpose of this report is to detail exploration conducted by Reward on EL 9518 during the year ended 2nd October 2006. Because of the complicated arrangement of Mining Leases and Mineral Claims over the main lode horizons, no attempt has been made to separate data which is actually outside the area of EL 9518.

Earlier reports have described previous exploration in some detail, and this is not repeated here. Instead this report highlights the progress made by Reward since acquiring the lease.

#### 2. LOCATION and ACCESS

EL 9518 is located 380 kilometres north east of Alice Springs on the Huckitta 1:250, 000 map sheet (SF53 -11), and surrounds the mineral leases which cover the gossanous outcrop of the Jervois Mine and its extensions (See Figure 1).

Access is via the Stuart and Plenty Highways to the Lucy Creek Station Road, with the tenement located approximately 20km north of this turn off. Historical exploration and mine tracks, as well as limited station tracks provide local access throughout the tenement which is located over a portion of the Jervois Pastoral Lease.

#### 3. TENURE

EL 9518 "Jervois" was granted to C. Savage on 1st October 1996 for a period of six years. Under compulsory partial surrender provisions, 50% of the tenement was relinquished on the 30th September 1998. The tenement was subsequently transferred to M. Ruane on the19th July 1999, who applied for a deferment of relinquishment until 2nd October 2000, which was approved by the DPIFM. M. Ruane then entered into an Option to Acquire agreement with Britannia Gold NL.

On 5th August 1999, M.I.M. Exploration Pty Ltd entered into a Joint Venture agreement with Britannia Gold NL, agreeing to act as manager and operator of the Jervois Project, which incorporates EL 9518 "Jervois."

MIM withdrew from the joint venture in late May 2002. The tenement was subsequently transferred to M. Ruane and in 2004 was transferred to Reward Minerals Limited.

The tenement has now completed its 10 year and application has been made to incorporate the tenement into EL10419 as an SEL. The tenement EL 9518 therefore has expired.



#### 4. GEOLOGICAL SETTING

EL 9518 lies on the Huckitta 1: 250 000 map sheet (SF 53-11), for which geological notes are available. The tenement is located mainly within the Palaeo-Proterozoic Bonya Schist on the northeastern boundary of the Arunta Orogenic Domain. The Arunta Orogenic Domain in the north western part of the tenement is overlain unconformably by Neo-Proterozoic sediments of the Georgina Basin.

The prospective lithologies within the tenement have been identified as the Bonya Schist, Division 2 of Arunta Orogenic Domain (Freeman, 1986). This unit is made up of quartzofeldspathic muscovite and sericite schists, ranging from pelitic to psammo-pelitic in composition, and has local occurrences of cordierite, sillimanite, garnet and andalusite. The mine sequence, in addition to these lithologies, also contains chlorite schist, garnet  $\pm$ magnetite, quartzite, magnetite quartzite, calc-silcates, and impure marbles.

The topography of the tenement is dominated by the Jervois Range, composed of Georgina Basin sediments to the west, and the "J Range," comprised of Bonya Schist, and includes the mine sequence. Peters et al (1985) recognised three deformation periods in the Jervois area, with refolding of the mine sequence resulting in the "J" shape of the Bonya Schist outcrop in the tenement area. Mineralisation in the area occurs mostly as stratiform/bound copper and/or lead-silver-zinc associated with variable garnet and calc- silicate alteration, although tungsten occurs as disseminated scheelite in calc-silicate rocks.

In brief, Reward regards the copper-lead-zinc mineralisation as stratigraphic in nature, probably relating to the discharge of base metal-rich fluids in association with volcanism or metamorphism or dewatering of the underlying rocks at a particular time in the geological history of the area. In other words it occurred within a single stratigraphic horizon and is near-contemporaneous with the sediments that enclose it. In detail there may be several closely-spaced mineralised zones forming a package at more or less the same stratigraphic horizon representing episodic emission of fluids over a short period of time. In addition there is almost certainly a repetition of lithological units due to deformation, with concomitant deformation of the enclosed mineralised horizons. For example, we interpret the three mineralised zones commonly intersected during drilling in the Marshall-Reward area as being the same horizon, being the three limbs of an isoclinal fold. In contrast to the considerable areal extent of the copper mineralisation, the distribution of lead and zinc is spatially restricted at Jervois and these metals may have accumulated near points of discharge of metalliferous fluids.

In the Bellbird area mesoscopic and macroscopic folding have complicated the geometry of the stratigraphic sequence. Consequently the mineralised horizon is not everywhere easy to locate. Furthermore an interpreted fault in the Rockface area has apparently displaced the succession causing a substantial geological mismatch across the fault zone.

#### 5. **PREVIOUS EXPLORATION**

Following the discovery of the Jervois mineralisation in the 1920s, some small-scale mining of the oxides took place and concentrates were transported to Mt Isa for treatment. Since that time there has been episodic exploration (including one attempted mining operation) by a succession of companies. These have been described in some detail in previous annual reports (eg Cranley 2003) and in the Reward prospectus, so they are merely listed here:

- 1961 1965 New Consolidated Goldfields (Australasia) Pty Ltd
- 1969 1973 Petrocarb Mineral exploration (SA) Pty Ltd
- 1973 1974 Petrocarb Joint Venture with Union Corporation (Australia) Pty Ltd
- 1980 1983 Plenty River Mining Company NT Limited
- 1983 1984 Plenty River Mining Anaconda Australia Inc Joint Venture
- 1991 1996 Plenty River Mining Poseidon Exploration Limited Joint Venture
- 1997 1999 Britannia Gold NL
- 1999 2002 MIM Exploration Pty Ltd

#### 6. EXPLORATION 2005/6

#### Drilling

In July 2006 Reward Minerals commenced an exploration drilling program focused on the Bellbird, Green Parrot, Rockface, Marshall and Reward prospects with a second program commenced in August, 2006. At the end of the second program (September 2006) a total of 38 RC holes had been drilled for a total of 3399m. The drilling occurred entirely within the smaller leases MCS 13-28, MLS 10, 16, 17, 23, 51-57, 61, 62, and 90. Strong copper mineralisation was encountered in several holes at the Bellbird prospect.

The drillers were Underdale and Arinooka. All RC drilling was done with a face sampling hammer and all metre intersections were riffle split. The collars were an 8<sup>°</sup> hammer to a depth of 6 metres lined with PVC pipe.

The majority of the Arinooka holes were surveyed with a Reflex ez-shot down hole camera, the data of which is recorded in Table 1. They employed a chrome barrel behind the RC bit rod and the diamond barrel to reduce the effect of induced ferromagnetism in the drilling rods.

Samples were either 1m riffle split where significant sulphides were observed, or 4m composite speared. All samples were analysed for Ag, Au, Cu, Mo, Pb, W and Zn. The samples were dissolved in a mixed acid digest and analysed by ICP MS at the Ultratrace Laboratories in Canning Vale.

All holes were geologically logged.

A complete set of plans and significant sections are present in Appendix 1.

7. DISCUSSION A list of the collar positions and associated surveys is shown in Table 1.

Hole Id	AMGN	AMGE	RL	S.Depth	Azimuth	Dip	Depth
RJ032	7490420	627200	365	0	260	-60	96
RJ033	7490367	627172	351	0	260	-60	56
RJ034	7490381	627189	351	0	260	-60	70
RJ035	7491561	627102	351	0	260	-60	60
RJ040	7491482	627109	351	0	250	-60	78
RJ044	7491440	627120	351	0	270	-60	78
RJ048	7494643	630290	351	0	270	-60	190
				50	264.8	-42.6	
				100	267.5	-34.5	
				120	185.4	-30.9	
RJ049	7494645	630302	351	0	270	-75	228
				46	270.5	-72.5	
				100	273.5	-64.5	
				148	270.9	-55.4	
				216	302.7	-48.8	
RJ050	7494552	630302	351	0	270	-60	175
				52	283.32	-49.1	
				100	285	-45	
				120	290	-24.4	
RJ052	7495152	630163	351	0	90	-60	174
				52	95	-49.9	
				100	97	-33.5	
				150	106	-27.2	
RJ053	7495150	630148	351	0	90	-70	168
				50	90	-59.2	
				102	90	-37.5	
				150	90	-19.4	
RJ055	7495504	630369	351	0	90	-65	120
				50	90	-51	
				108	90	-47.8	
RJ061	7495203	630150	351	0	90	-80	198
				50	89.3	-79.6	
				100	81.6	-75.1	
				148	95.7	-74.6	
				190	131.4	-75.1	
RJ062	7495103	630150	351	0	90	-70	270
				50	99	-68	
				100	104	-68.4	
				148	104	-70	
				200	131	65.9	
				250	144.9	-60.4	
RJ063	7495215	630144	351	0	90	-65	174
	<u> </u>			50	141.5	-50.7	
				100	126.3	-41.3	
				166	180.3	43.3	
RJ065	7495215	631086	351	0	90	-60	154
RJ067	7493425	630031	351	0	270	-60	66
RJ068	7493391	630028	351	0	270	-60	78
RJ069	7490110	627500	362	0	205	-60	50
RJ072	7490208	627290	351	0	235	-60	50
RJ073	7490194	627255	351	0	55	-60	72
RJ074	7490178	627236	351	0	55	-60	100
RJ075	7490152	627561	351	0	205	-60	50
RJ076	7490163	627544	351	0	205	-60	50
RJ077	7490177	627530	351	0	205	-60	50
RJ078	7490142	627525	351	0	205	-60	50
RJ079	7490160	627576	351	0	205	-60	60
RJ080	7490197	627525	351	0	205	-60	44
RJ081	7491220	627077	351	0	265	-60	40
RJ082	7491522	627108	351	0	250	-60	54
RJ083	7490194	627506	351	0	0	-90	70

Table 1 \_

Hole Id	AMGN	AMGE	RL	S.Depth	Azimuth	Dip	Depth
RJ084	7490186	627527	351	0	0	-90	110
				96	331.6	-75.4	
RJ085	7490183	627549	351	0	0	-90	80
RJ086	7490200	627490	351	0	210	-60	48
RJ087	7490122	627478	351	0	220	-60	100
RJ088	7490376	627206	351	0	250	-60	100
RJ089	7490330	627188	351	0	250	-60	60
RJ090	7490333	627210	351	0	250	-60	112
RJ091	7491535	627115	351	0	240	-60	60

#### Total Metres:

3399

### Anomalous intercepts for Cu, Pb and Zn are tabulated below in Table 2 and 3: Table 2

Hole	From (m)	Interval (m)	Cu %	Pb%	Zn%	Ag (g/t)	
Bellbird							
RJ 32	36	4	1.18	-	-	8.3	
	40	4	0.69	-	-	2.7	
	56	4	0.61	-	-	6.1	
	64	2	1.80	-	-	8.1	
RJ 33	0	20	1.04	-	-	4.5	
INCL	0	3	2.14	-	-	5.3	
	12	1	7.53	-	-	10.9	
	16	2	1.08	-	-	7.1	
RJ 34	12	1	1.13	-	-	1.5	
	36	8	1.82	-	-	6.6	
Killeen West							
RJ 69	27	1	2.65	0.30	3.83	8.9	
Killeen							
RJ 75	33	8	0.77	1.12	6.0	33	
INCL	39	2	2.84	2.12	11.5	67	
RJ 76	28	1	0.02	0.05	2.3	6	
	33	2	0.34	0.42	4.8	24	
RJ 77	28	7	0.64	1.60	18.6	62	
RJ 78	26	2	0.19	0.49	2.9	13	
INCL	30	1	0.97	2.03	13.4	64	
RJ 79	47	5	0.22	0.32	3.8	14	
RJ 80	25	6	0.28	0.77	8.2	15	
Bellbird North							
RJ 82	26	3	0.74	2.02	5.11	35	

### Significant Intersections July Program

Hole	From (m)	Interval (m)	Cu %	Pb%	Zn%	Ag (g/t)
Reward						
RJ048	69	8	1.22	-	-	22
RJ048	76	3	1.25	-	-	94
RJ048	90	13	2.25	-	-	26
RJ049	189	13	2.00	-	-	36
RJ049	213	1	1.09	-	-	5
RJ052	113	1	0.26	1.93	1.72	27
RJ052	114	3	1.24	-	-	4
RJ062	227	2	1.29	-	-	4
Bellbird						
RJ088	49	2	1.09	-	-	6
RJ088	63	5	1.08	-	-	2
RJ090	16	3	1.15	-	-	1
RJ090	28	2	1.06	-	-	1
Bellbird North						
RJ035	22	1	0.46	2.56	3.06	9
RJ035	25	12	0.20	1.83	1.30	17
Including	39	2	0.28	1.06	10.13	1
RJ035	32	5	0.17	1.04	2.08	10
RJ035	38	4	0.20	0.63	5.73	7
Marshall						
RJ048	77	1	1.68	1.52	0.76	189
RJ048	83	4	0.27	1.33	0.99	126
RJ048	88	1	0.11	0.86	1.12	72
Killeen						
RJ086	20	8	0.14	-	5.56	2

Table 3

Significant Intersections September Program

#### Bellbird Prospect

Results of the drilling at Bellbird have confirmed the presence of a significant high-grade copper resource, including some outstanding mineralised intersections (see accompanying table). A zone of copper mineralisation showing good continuity has now been confirmed over a strike length of about 300m and down dip for about 150m (Figure 2). Besides copper, some mineralised intersections also have minor silver, gold, lead and zinc. The mineralised zone is open at depth and along strike to the south. An apparent truncation of the mineralisation to the north may be due to minor faulting. There is scope to significantly increase the size of this resource with further drilling and a series of follow-up holes is being planned.

Geophysical and surface sampling data indicates potential for a new zone of copper mineralisation at Bellbird north of line 7491200N. This zone appears not to have been drilled to date. A surface costean located on this line (Costean 4) returned 4 metres @ 0.68% Cu near its western end. It is planned to test this target in the next round of drilling as soon a rig becomes available.

#### **Green Parrot Prospect**

At Green Parrot copper mineralisation is accompanied by substantial lead mineralisation in a calc-silicate rock suite.

During the period results were received for 7 holes comprising 405 metres of RC drilling at the Green Parrot Prospect. A number of high to very high grade intersections were obtained from the programme including some interesting gold values in a few of the holes. Details of drilling at the Green Parrot Prospect are displayed in Table 1 with significant intercepts shown in Table 2.

#### **Reward Prospect**

Drilling at the Reward prospect, (on section 7494650N) has delineated strong tenor (>2% Cu) commencing at less than 20 metres from surface, and extending to a depth of at least 260 metres. Drilling conducted 450 metres to the north on line 7495100N has intersected the

same zone, albeit with lower tenor copper (>1% Cu) being intersected in the upper reaches. The drilling has better defined the geometry of mineralisation. Whilst copper mineralisation has now been encountered over the entire, Marshall/Reward, strike length (750m), the higher-grade mineralisation is interpreted to be in a shoot, plunging to the north. The next round of drilling aims to test this model.

#### REFERENCE

Cranley, N J, 2003: Technical Report EL 9518 "Jervois" Northern Territory; Annual Report for the year ending 2<sup>nd</sup> October 2003 Cranley, N J, 2005: Technical Report EL 9518 "Jervois" Northern Territory; Annual Report for the year ending 2<sup>nd</sup> October 2005 Thom, R, 2004: Technical Report EL 9518 "Jervois" Northern Territory; Annual Report for the year ending 2<sup>nd</sup> October 2004

### EL 9518 "JERVOIS"

#### STATEMENT OF EXPENDITURE FOR 12 MONTHS ENDED 2 OCTOBER 2006

SUPPLIES & SERVICE – OFFICE FIXED	<b>\$</b> 982
SUPPLIES & SERVICE – OFFICE VARIABLE	115
SUPPLIES & SERVICE – FIELD (INCL CAMP SET-UP)	9,125
TRAVEL & ACCOMMODATION	3,985
DRILLING	255,022
ASSAYING	23,100
CONSULTANTS & CONTRACTORS	17,715
LAND TENURE & ENVIRONMENT	<u>1,110</u>
TOTAL DIRECT COST	311,154
ADD: TECHNICAL SUPPORT & ADMINISTRATION	5,100
TOTAL CURRENT TERM EXPENDITURE	\$316,254

## **APPENDIX 1**

## DRILL HOLE PLANS AND SECTIONS



















# APPENDIX 3 DIGITAL DATA