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McINTYRE MINES (AUSTRALIA) PTY. LTD.

QUARTERLY REPORT (KARA)

Period Nov. 4th 1981 - Feb. 3rd 1982

E.L. 17/68 & C.L. 105M/77

OPEN FILE

McINTYRE MINES (AUSTRALIA) PTY. LTD.

EXPLORATION LICENCE 17/68 AND CONSOLIDATED LEASE 105M/77

QUARTERLY REPORT

FOR THE PERIOD

NOVEMBER 4th 1981 TO FEBRUARY 3rd 1982

(KARA).

Clifford H. Whitehead.

3rd February, 1982.

QUARTERLY REPORT - PERIOD, NOVEMBER 4th 1981 TO FEBRUARY 3rd 1982E. L. 17/68 and C.L. 105M/77Introduction

During the three month period to February 3rd 1982, McIntyre Mines (Australia) Pty. Ltd., as manager of a joint venture with Tasminex N.L. have continued to perform investigations within E.L. 17/68 and its associated mining tenement C.L. 105M/77.

Work has essentially revolved around continuing Phase 1 of a Pre-Development Programme - a six month programme of work scheduled for completion at the end of February 1982. Phase 1 work during the present quarter has consisted of:-

- an infill diamond drill programme at some of the main Kara skarn zones,
- metallurgical studies of various types of Kara tungsten ore,
- environmental base-line orientation studies.

During the quarter ending February 3rd 1982, McIntyre Mines (Australia) Pty., Ltd., have incurred expenditures totalling \$84,100.

1. Infill Diamond Drill Programme

To increase confidence in the categorisation of known reserves at Kara, and to test various extension possibilities of known ore, both up and down dip, plus along strike, McIntyre Mines as part of their Pre-Development work initiated a programme of infill diamond drilling.

A total of five skarn areas were recommended for investigation, namely Kara North 266 Zone, Bobs Bonanza, Kara No. 1 - Southern Extension, Eastern Ridge and the Western Limb, and during the present quarter, drilling at three of these areas has either been completed or initiated. Table No. 1 overleaf, tabulates details of completed drilling to date, and a brief resume of results is summarised below.

KARA PROPERTIES - INFILL DIAMOND DRILL PROGRAMME

<u>HOLE NO.</u>	<u>LOCATION</u>	<u>DRILL SEC.</u>	<u>COORDINATES</u>		<u>R.L.</u>	<u>INCLINATION</u>	<u>DEPTH DRILLED</u> (METRES)
			<u>NORTH</u>	<u>EAST</u>			
DDH 303	KARA N-266 ZONE	7160N	7161.8	7176.0	456.1	45 ⁰ W	48.46
DDH 304	KARA N-266 ZONE	7060N	7073.5	7198.6	454.7	55 ⁰ W	77.11
DDH 305	KARA N-266 ZONE	7120N	7111.0	7166.5	457.6	55 ⁰ W	38.71
DDH 306	KARA N-266 ZONE	7020N	7024.6	7215.6	448.9	45 ⁰ W	86.19
DDH 307	KARA N-266 ZONE	7220N	7220.5	7166.3	472.8	55 ⁰ W	66.14
DDH 308	BOBS BONANZA	5720N	5723.0	7684.8	543.8	65 ⁰ E	67.97
DDH 309	BOBS BONANZA	5820N	5821.0	7687.1	545.0	60 ⁰ E	54.56
DDH 310	BOBS BONANZA	5820N	5821.0	7687.1	545.0	83 ⁰ E	105.11
DDH 311	KARA 1 S.EXT.	5675N	5678.2	7328.8	535.7	70 ⁰ W	51.22
DDH 312	KARA 1 S.EXT.	5675N	5681.2	7329.2	535.5	55 ⁰ E	37.49
DDH 313	KARA 1 S.EXT.	5700N	5698.0	7347.8	535.5	45 ⁰ W	67.65
DDH 314	KARA 1 S.EXT.	5650N	5653.0	7335.2	537.6	55 ⁰ W	42.98
TOTAL METRES TO JANUARY 31st, 1982							<u>743.89</u>

a) Kara North - 266 Zone

The main objectives of drilling at this location were:-

- to investigate possible up dip extensions of known ore,
- to obtain a more accurate interpretation of oxidation levels,
- to investigate possible strike extensions to the south.

Between drill section lines 7020N and 7220N, five diamond drill holes (Nos. 303 to 307) were drilled with a total depth of 316.61 metres.

Drilling showed tungsten mineralisation to belong to a skarn having a magnetite content in excess of 30%. It appears confined to a pod-like lens structure, widest at the centre, and narrowing both in width and grade towards the top and bottom. For a strike distance of 240 metres, the ore lens is remarkably consistent, but still shows a variation in width from 4 to 22 metres. Between drill sections 7120N - 7160N, the top of the ore lens cuts the present surface, but elsewhere it is buried and not exposed.

WO₃ grades of the ore lens are quite high and consistent, being above normal for Kara skarns, averaging approximately 1% WO₃. Fresh, unoxidised scheelite bearing ore was found to be nearer the surface than originally thought, and there was a rapid demarcation between oxidised and fresh material.

As a result of the present drill programme, geological reserves of ore can be extended an additional 100 metres south of drill section 7120N. Geologic mapping and ground magnetics would also indicate a strong potential for additional strike extension of the known delineated 266 orezone.

On the basis of completed drilling, it is estimated that total geological reserves of fresh and partially weathered ore at Kara North 266 Zone between drill section lines 6960N and 7280N would amount to 378,541 tonnes averaging 1.02% WO₃. Until such time that an engineering evaluation of this deposit is completed, these above reserves can only be classified as geological reserves, and not as official mineable reserves.

b) Bobs Bonanza Location

Three diamond drill holes - Nos. 308 - 310 - with a total metreage of 227.94 metres were completed at this location.

The prime objective was to investigate the possible down dip extensions of a high grade ore lens in the Upper Skarn Unit previously mined on surface by Tasminex N.L. DDH 308 and 309 showed no intersections of tungsten mineralisation at depth in the Upper Skarn Unit, and no additional reserves of ore are now expected from this location.

DDH 309, drilled on Section Line 5820N, was also sited to investigate the possible northerly strike extensions of the mined ore lens. Again results were disappointing, drilling showing that a deep transgressive Tertiary valley of basalt and sediments has crosscut and eroded the upper levels of the Upper Skarn Unit. This hole did intersect low grade (0.32% WO_3) scheelite bearing mineralisation over 11 metres in the Lower Skarn Unit - a skarn not previously known to contain any significant mineralisation. However, subsequent DDH 310 drilled on the same drill section showed no further down dip extension of mineralisation in this skarn.

c) Kara No. 1 - Southern Extension

To date, four holes (DDH 311 to 314) with a total metreage of 199.34 metres have been completed at this skarn.

The intentions are to investigate the potential of additional reserves of fresh and partially weathered ore along the western margin of the Kara No. 1 Southern Extension skarn. If present, these reserves will influence the outline of a future open pit plan for the Kara No. 1 ore zone.

Results to date have been encouraging, but drilling is still in progress and incomplete.

Formal reports on the results of the infill diamond drill programme at the individual skarn locations, and their effect on the overall geological reserves for the Kara properties, will accompany the six monthly report for E.L. 17/68 due May 4th 1982.

2. Metallurgical Investigations

- a) Seven samples of partially weathered and oxidised ore have during the present quarter been submitted to Warman International Ltd., Sydney for metallurgical tests in the effort of evaluating their potential recoverable scheelite content. Originally it was the intention to obtain samples of oxidised ore containing some scheelite from the Kara No.1 Southern Extension ore zone. However on detailed examination it was found that both drill spacing and available remaining drill samples were insufficient to be representative of oxidised ore at this location. Consequently, five samples (Kara No.10, 12, 13, 14 and 15) were collected from the oxidised mineralised sections at the Kara No. 1 main ore zone. For simultaneous metallurgical tests, two additional samples (Kara 18 and 19) of partially weathered ore were collected from surface exposures at the 375 Level at Eastern Ridge and the 460 Level Kara North 266 Zone. Results of this test work are expected to be finalised by mid February.
- b) To form the basis of flotation research tests also being carried out by Warman International Ltd., one bulk sample (Kara 21) of fresh to partially weathered ore was collected from the lower levels of the Kara No. 1 main pit. These tests were initiated in January 1981, and will be continuing during the next quarter.
- c) Results of laboratory tests on a bulk sample of magnetite tailings collected from the Tasminex N.L. treatment plant during the month of September 1981 have been received and are attached with this report (Appendix A). Details of size fraction classification, detailed chemical analyses, S. G. determinations and Davis Tube tests were included in the tests. It is now proposed to undertake follow up tests to assess its possible potential as a heavy medium in the coal cleaning industry.

3. Environmental Studies

A base line orientation study to establish the current background of various elements in soil and water in and around the main Kara ore zone has been initiated. The first series of tests, consisting of 16 water samples has been completed and analytical results are being awaited.

Concurrently, a complete study of all the requirements needed to satisfy local environmental laws is being made.

4. General

a) Personnel The following McIntyre Mines (Australia) Pty. Ltd., personnel have been employed during the past quarter.

Full time - one geologist, one prospector, one diamond drill operator and one drill helper.

Part time - one field assistant, one typist, one draftsman.

b) Expenditures

Attachment "A" shows an itemised statement of expenditure incurred by McIntyre Mines for the three month period to February 3rd, 1982.

Total expenditures amount to \$84,100. 00 with an expenditure of \$19,250 allocated to exploration in E.L. 17/68, and \$64,850 to work undertaken within CL. 105M/77.



Clifford H. Whitehead,
McIntyre Mines (Australia) Pty. Ltd.

Burnie.
3rd February, 1982.

ATTACHMENTS

Attachment "A" - Statement Of Expenditure

~~Attachment "B" - Department Of Mines, Data Sheet~~

APPENDICES

Appendix A - Warman International Ltd. - Report No. 81/139604
Magnetite Sample MT. 1.

ATTACHMENT "A"STATEMENT OF EXPENDITURE - E.L. 17/68 & CL. 105M/77

McIntyre Mines (Australia) Pty. Ltd., as manager of a joint venture with Tasminex N.L., incurred the following expenditures within E.L. 17/68 and CL. 105M/77 during the three month period to February 3rd 1982.

	<u>E.L.17/68</u>	<u>CL 105M/77</u>	<u>TOTAL</u>
Office, Rent, Services	\$1,316	\$8,775	\$10,091
Camp - maintenance	-	293	293
Supplies - Hotel	-	686	686
Geology	3,934	7,466	11,400
Ground Magnetometry	-	136	136
Metallurgical	-	13,491	13,491
Geochemistry	1,202	-	1,202
Assays	2,316	1,437	3,753
Transportation	3,211	4,317	7,528
Environmental	-	4,293	4,293
Diamond Drilling	6,243	17,255	23,498
Assessment Work	-	320	320
Legal Fees	1,028	6,381	7,409
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Totals	19,250	64,850	84,100
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Total Expenditure Previously Reported \$1,917,320.

Total To Date \$2,001,420.

Clifford H. Whitehead

Clifford H. Whitehead,
McIntyre Mines (Australia) Pty. Ltd.

WARMAN INTERNATIONAL LTD.
RESEARCH & DEVELOPMENT DIVISION

APPENDIX "A"
REPORT 81/139604

Examination of Magnetite Tailing Sample

CLIENT McIntyre Mines (Australia) Pty. Ltd.,
LABORATORY No. 3051
DATE RECEIVED October 16, 1981
SAMPLE MARKS MT 1

QUANTITY AND DESCRIPTION 2 kg. of magnetite tailing

OBJECT OF TESTWORK Screen analysis, particle specific gravity, chemical analysis and Davis tube fractionation.

~~SUMMARY OF~~ RESULTS

1. Screen Analysis

Screen fraction μm	retained wt. %	passing wt. %
+ 3350	0.0	100.0
-3350 + 2360	0.5	99.5
-2360 + 1700	0.5	99.0
-1700 + 1180	1.1	97.9
-1180 + 850	1.6	96.3
- 850 + 600	3.3	93.0
- 600 + 425	6.0	87.0
- 425 + 300	10.0	77.0
- 300 + 212	14.2	62.8
- 212 + 150	12.4	50.4
- 150 + 106	13.6	36.8
- 106 + 75	10.7	26.1
- 75	26.1	-

2. Particle Specific Gravity

By the pycnometer method - - - 4.2

Testwork supervised by:

A. I. Bellingham
J. C. Sarkies

November 13, 1981

Our reference:

AIB/pb
81/5505

3. Chemical Analyses

tungsten (WO ₃ %)	0.17
ferrous iron (Fe%)	15.5
ferric iron (Fe%)	43.1
titanium (Ti%)	0.09
aluminium (Al%)	1.0
tin (Sn%)	0.02
nickel (Ni%)	0.01
vanadium (V%)	<0.05
silicon (Si%)	4.1
phosphorus (P ppm)	120
sulphur (S ppm)	<500

4. Davis Tube Fractionation

Five tests were made at field strengths of 400, 600, 700, 800, and 1000 gauss. The field strength was measured at a point midway between the poles.

Common test conditions:

weight of sample	22.8 g/test
feed time	5 minutes
wash water flow rate	0.6 l/min
wash time	5 minutes
tube strokes	117/minute
tube slope	25°

Preliminary tests showed that the sample was too coarse to be used directly in the Davis tube apparatus so it was first screened on 600 μm with the undersize only being put through the Davis tube. The minus 600 μm fraction was 92.5% of the total sample so the results would be indicative for the total sample.

Analyses of the + 600 μm and - 600 μm fractions gave the following results:

fraction μm	wt.%	WO ₃ %	ferrous Fe %	ferric Fe %
-3350 +600	7.5	0.10	14.5	42.3
- 600	92.5	0.20	15.2	43.9

The following table gives the results of the Davis tube fractionation and analyses of the fractions:

test no.	field strength gauss	Davis tube fraction	weight %	analyses %		
				WO ₃	ferrous Fe	ferric Fe
1	400	magnetic non-magnetic	5.4 94.6			
2	600	magnetic non-magnetic	34.2 65.8	0.04	17.4	56.0
3	700	magnetic non-magnetic	54.3 45.7	0.04	17.5	49.5
4	800	magnetic non-magnetic	77.9 22.1	0.05	17.1	49.5
5	1000	magnetic non-magnetic	86.5 13.5	0.05 0.94	17.2 2.5	48.6 9.6